

AGENDA
CITY COUNCIL OF THE CITY OF MORENO VALLEY
MORENO VALLEY COMMUNITY SERVICES DISTRICT
CITY AS SUCCESSOR AGENCY FOR THE
COMMUNITY REDEVELOPMENT AGENCY OF
THE CITY OF MORENO VALLEY
MORENO VALLEY HOUSING AUTHORITY
BOARD OF LIBRARY TRUSTEES

October 14, 2014

SPECIAL PRESENTATIONS – 5:30 P.M.
REGULAR MEETING – 6:00 P.M.

City Council Study Sessions

First & Third Tuesdays of each month – 6:00 p.m.

City Council Meetings

Second & Fourth Tuesdays of each month – 6:00 p.m.

City Council Closed Sessions

*Immediately following Regular City Council Meetings and
Study Sessions, unless no Closed Session Items are Scheduled*

City Hall Council Chamber - 14177 Frederick Street

Upon request, this agenda will be made available in appropriate alternative formats to persons with disabilities, in compliance with the Americans with Disabilities Act of 1990. Any person with a disability who requires a modification or accommodation in order to participate in a meeting should direct such request to Mark Sambito, ADA Coordinator, at 951.413.3120 at least 48 hours before the meeting. The 48-hour notification will enable the City to make reasonable arrangements to ensure accessibility to this meeting.

Victoria Baca, Mayor Pro Tem
Richard A. Stewart, Council Member

Jesse L. Molina, Mayor

George E. Price, Council Member
_____, Council Member

AGENDA
CITY COUNCIL OF THE CITY OF MORENO VALLEY
October 14, 2014

CALL TO ORDER – 5:30 PM

SPECIAL PRESENTATIONS

1. Proclamation Recognizing National Community Planning Month -
October 2014
2. Business Spotlight
 - a) Valley Live Scan
 - b) Lighthouse Social Service Center

**AGENDA
JOINT MEETING OF THE
CITY COUNCIL OF THE CITY OF MORENO VALLEY
MORENO VALLEY COMMUNITY SERVICES DISTRICT
CITY AS SUCCESSOR AGENCY FOR THE
COMMUNITY REDEVELOPMENT AGENCY OF THE
CITY OF MORENO VALLEY
MORENO VALLEY HOUSING AUTHORITY
AND THE BOARD OF LIBRARY TRUSTEES**

***THE CITY COUNCIL RECEIVES A SEPARATE STIPEND FOR CSD
MEETINGS***

**REGULAR MEETING - 6:00 PM
OCTOBER 14, 2014**

CALL TO ORDER

Joint Meeting of the City Council, Community Services District, City as Successor Agency for the Community Redevelopment Agency, Housing Authority and the Board of Library Trustees - actions taken at the Joint Meeting are those of the Agency indicated on each Agenda item.

PLEDGE OF ALLEGIANCE

INVOCATION

Thomas Krug - Spiritual Assembly of the Bahá'is of Moreno Valley

ROLL CALL

INTRODUCTIONS

PUBLIC COMMENTS ON MATTERS ON THE AGENDA WILL BE TAKEN UP AS THE ITEM IS CALLED FOR BUSINESS, BETWEEN STAFF'S REPORT AND CITY COUNCIL DELIBERATION (SPEAKER SLIPS MAY BE TURNED IN UNTIL THE ITEM IS CALLED FOR BUSINESS.)

**PUBLIC COMMENTS ON ANY SUBJECT NOT ON THE AGENDA UNDER THE
JURISDICTION OF THE CITY COUNCIL**

Those wishing to speak should complete and submit a BLUE speaker slip to the Bailiff. There is a three-minute time limit per person. All remarks and questions shall be addressed to the presiding officer or to the City Council and not to any individual Council member, staff member or other person.

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JOINT CONSENT CALENDARS (SECTIONS A-D)

All items listed under the Consent Calendars, Sections A, B, C, and D are considered to be routine and non-controversial, and may be enacted by one motion unless a member of the City Council, Community Services District, City as Successor Agency for the Community Redevelopment Agency, Housing Authority or the Board of Library Trustees requests that an item be removed for separate action. The motion to adopt the Consent Calendars is deemed to be a separate motion by each Agency and shall be so recorded by the City Clerk. Items withdrawn for report or discussion will be heard after public hearing items.

A. CONSENT CALENDAR-CITY COUNCIL

A.1 ORDINANCES - READING BY TITLE ONLY

Recommendation: Waive reading of all Ordinances.

A.2 MINUTES - REGULAR MEETING OF SEPTEMBER 23, 2014 (Report of: City Clerk's Department)

Recommendation:

1. Approve as submitted.

A.3 CITY COUNCIL REPORTS ON REIMBURSABLE ACTIVITIES (Report of: City Clerk's Department)

Recommendation:

1. Receive and file the Reports on Reimbursable Activities for the period of September 17 – October 7, 2014.

A.4 APPROVAL OF PAYMENT REGISTER FOR AUGUST, 2014 (Report of: Financial & Management Services Department)

Recommendations

1. Adopt Resolution No. 2014-82. A Resolution of the City Council of the City of Moreno Valley, California, Approving the Payment Register for the Month of August, 2014 in the Amount of \$10,314,358.30.
2. Acknowledge future payment registers will be posted directly to the City's transparency website.

A.5 AUTHORIZATION TO SUBMIT SUSTAINABLE TRANSPORTATION PLANNING GRANT APPLICATION TO CALTRANS AND RESOLUTION NO. 2014-83 AUTHORIZING THE CITY MANAGER TO EXECUTE AGREEMENTS WITH CALTRANS FOR THE MORENO VALLEY PEDESTRIAN MASTER PLAN (Report of: Public Works Department)

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Recommendations

1. Authorize staff to submit an application for a Sustainable Transportation Planning Grant.
2. Approve Resolution No. 2014-83. A Resolution of the City Council of the City of Moreno Valley, California, Authorizing the City Manager to Execute Agreements with Caltrans for the Moreno Valley Pedestrian Master Plan.

- A.6 APPROVE THE EXTENSION OF THE CITY'S CURRENT FUEL PURCHASE AGREEMENT WITH THE SOCO GROUP, INC. AND AUTHORIZE THE CONTINUED PIGGYBACK USE OF THE COUNTY OF RIVERSIDE CONTRACT WITH SOCO FOR PURPOSES OF NEGOTIATED FUEL PRICE ONLY
(Report of: Administrative Services Department)

Recommendations

1. Approve the use (piggyback) of the County of Riverside Agreement with The SoCo Group, Inc. through June 30, 2015, for purposes of the negotiated fuel price only; all other terms remain per the City's agreement with the company.
2. Approve the extension of the City's existing annual fuel agreement with The SoCo Group, Inc., by execution of a City Agreement Amendment through June 30, 2015, in the not to exceed amount of \$450,000 (\$95,000 plus \$355,000 in FY 2014/15).
3. Ratify FY 2014/15 Purchase Order 2015-0000082 to The SoCo Group in the amount of \$95,000.
4. Authorize the Purchasing & Facilities Manager to issue a FY 2014/15 purchase order to The SoCo Group in the amount of \$355,000.
5. Authorize the City Manager or designee to execute any amendments, purchase orders and/or change orders to The Soco Group necessary for operational fuel needs through June 30, 2015.

- A.7 ACCEPTANCE OF THE FISCAL YEAR 2014 EMERGENCY MANAGEMENT PERFORMANCE GRANT PROGRAM (EMPG) AWARD
(Report of: Fire Department)

Recommendation:

1. Accept the Fiscal Year 2014 Emergency Management Performance Grant Program (EMPG) grant award of \$46,896 from the Riverside County Office of Emergency Services.

A.8 EXECUTION OF EASEMENT DEED FOR ELECTRICAL PURPOSES TO SOUTHERN CALIFORNIA EDISON
(Report of: Public Works Department)

Recommendations

1. Authorize the Mayor to execute the Easement Deed for Electrical Easement on Moreno Beach Drive A.P.N. 478-262-005.
2. Direct the City Clerk to forward the signed Easement Deed to Southern California Edison for further processing and recordation.

A.9 AUTHORIZATION TO PURCHASE ADDITIONAL CAMERAS, STORAGE, AND TRANSMISSION EQUIPMENT FROM AVRIO RMS GROUP FOR THE CITYWIDE CAMERA SYSTEM
(Report of: Financial & Management Services Department)

Recommendations

1. Authorize the purchase of cameras, storage, and transmission equipment from Avrio RMS Group for an amount not-to-exceed \$59,122 and authorize the City Manager to sign a contract approved as to form by the City Attorney.

A.10 PA06-0021 (PARCEL MAP 34577) – REDUCE IRREVOCABLE LETTER OF CREDIT AS FAITHFUL PERFORMANCE SECURITY AND ADOPT THE RESOLUTION AUTHORIZING ACCEPTANCE OF THE PUBLIC IMPROVEMENTS AS COMPLETE AND ACCEPTANCE OF THOSE PORTIONS OF HEACOCK STREET, CARDINAL AVENUE, INDIAN STREET, AND SAN MICHELE ROAD ASSOCIATED WITH THIS PROJECT INTO THE CITY’S MAINTAINED STREET SYSTEM
(Report of: Public Works Department)

Recommendations

1. Adopt Resolution No. 2014-84. A Resolution of the City Council of the City of Moreno Valley, California, Authorizing the Acceptance of the Public Improvements as Complete within Project PA06-0021 (Parcel Map 34577) and Accepting Those Portions of Heacock Street, Cardinal Avenue, Indian Street, and San Michele Road Associated with this Project into the City’s Maintained Street System.
2. Authorize the City Engineer to execute a 90% reduction to an Irrevocable Letter of Credit serving as Faithful Performance security, exonerate an Irrevocable Letter of Credit serving as Material and Labor security in 90 days if there are no stop notices or liens on file with the City Clerk, and exonerate the final 10% of the Irrevocable Letter of Credit serving as Faithful Performance security in one year when all clearances are received.

- A.11 APPROVE MEMORANDUM OF UNDERSTANDING (MOU) BETWEEN THE COUNTY OF LOS ANGELES AND THE CITY OF MORENO VALLEY TO IMPLEMENT ENERGY EFFICIENCY UPGRADES IN BUILDINGS AND FACILITIES SERVED BY MORENO VALLEY UTILITY (MVU)
(Report of: Public Works Department)

Recommendations

1. Approve Memorandum of Understanding (MOU) between the County of Los Angeles and the City of Moreno Valley to Implement Energy Efficiency Upgrades in Buildings and Facilities served by MVU.
2. Authorize the City Manager to execute the Agreement on behalf of the City of Moreno Valley.

B. CONSENT CALENDAR-COMMUNITY SERVICES DISTRICT

- B.1 ORDINANCES - READING BY TITLE ONLY

Recommendation: Waive reading of all Ordinances.

- B.2 MINUTES - REGULAR MEETING OF SEPTEMBER 23, 2014 (Report of: City Clerk's Department)

Recommendation:

1. Approve as submitted.

- B.3 CERTIFICATION OF SPECIAL ELECTION RESULTS FOR COMMUNITY FACILITIES DISTRICT NO. 1 (PARK MAINTENANCE)—ANNEXATION NO. 2014-32

(Report of: Financial & Management Services Department)

Recommendation:

1. As the legislative body of Community Facilities District No. 1 (Park Maintenance) approve and adopt Resolution No. CSD 2014-22. A Resolution of the Moreno Valley Community Services District of the City of Moreno Valley, California, Certifying the Results of an Election and Adding Property to Community Facilities District No. 1 (Park Maintenance) for Annexation No. 2014-32.

C. CONSENT CALENDAR - HOUSING AUTHORITY

- C.1 ORDINANCES - READING BY TITLE ONLY

Recommendation: Waive reading of all Ordinances.

- C.2 MINUTES - REGULAR MEETING OF SEPTEMBER 23, 2014 (Report of: City Clerk's Department)

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Recommendation:

1. Approve as submitted.

D. CONSENT CALENDAR - BOARD OF LIBRARY TRUSTEES

D.1 ORDINANCES - READING BY TITLE ONLY

Recommendation: Waive reading of all Ordinances.

D.2 MINUTES - REGULAR MEETING OF SEPTEMBER 23, 2014 (Report of: City Clerk's Department)

Recommendation:

1. Approve as submitted.

E. PUBLIC HEARINGS

Questions or comments from the public on a Public Hearing matter are limited to five minutes per individual and must pertain to the subject under consideration. Those wishing to speak should complete and submit a GOLDENROD speaker slip to the Bailiff.

E.1 PUBLIC HEARING REGARDING THE MAIL BALLOT PROCEEDINGS FOR ASSESSOR'S PARCEL NUMBERS (APNS) 481-250-002 AND 481-250-003 BALLOTING FOR THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) MAXIMUM RESIDENTIAL REGULATORY RATE; AND FOR APN 479-020-050 BALLOTING FOR THE NPDES MAXIMUM COMMERCIAL REGULATORY RATE (Report of: Financial & Management Services Department)

Recommendations That the City Council:

1. Conduct the Public Hearing and accept public testimony regarding the mail ballot proceedings for APNs 481-250-002 and 481-250-003 for approval of the NPDES maximum residential regulatory rate; and for APN 479-020-050 for approval of the NPDES maximum commercial regulatory rate.
2. Direct the City Clerk to tabulate the NPDES ballots for APNs 481-250-002 and 481-250-003; and for APN 479-020-050.
3. Verify and accept the results of the mail ballot proceedings as identified on the Official Tally Sheet.
4. Receive and file with the City Clerk's office the Official Tally Sheet.
5. If approved, authorize and impose the applicable NPDES maximum

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regulatory rate to APNs 481-250-002, 481-250-003, and 479-020-050.

- E.2 PUBLIC HEARING FOR THE FUTURE ANNEXATION OF TERRITORY TO CITY OF MORENO VALLEY COMMUNITY FACILITIES DISTRICT NO. 2014-01 (MAINTENANCE SERVICES) AND INTRODUCTION OF AN ORDINANCE PROVIDING FOR FUTURE ANNEXATION OF TERRITORY TO CITY OF MORENO VALLEY COMMUNITY FACILITIES DISTRICT NO. 2014-01 (MAINTENANCE SERVICES) AND AMENDING AND RESTATING THE RATE AND METHOD OF APPORTIONMENT FOR THE DISTRICT TO DESIGNATE TAX RATE AREAS NO. LM-01 AND SL-01
(Report of: Financial & Management Services Department)

Recommendations That the City Council:

1. Conduct the Public Hearing regarding the future annexation of territory to City of Moreno Valley Community Facilities District No. 2014-01 (Maintenance Services) as shown on proposed Annexation Map No. 1 to that District.
2. Introduce Ordinance No. 882. An Ordinance of the City Council of the City of Moreno Valley, California, Providing for Future Annexation of Territory to City of Moreno Valley Community Facilities District No. 2014-01 (Maintenance Services) and Amending and Restating the Rate and Method of Apportionment for the District to Designate Tax Rate Areas No. LM-01 and SL-01.

- E.3 A PUBLIC HEARING FOR THE PROLOGIS EUCALYPTUS INDUSTRIAL PARK PROJECT AND RELATED ENVIRONMENTAL IMPACT REPORT. THE PROJECT PROPOSES A GENERAL PLAN AMENDMENT FOR APPROXIMATELY 33 ACRES AND A ZONE CHANGE FOR APPROXIMATELY 84 ACRES. THE LAND USE CHANGES ARE REQUIRED FOR DEVELOPMENT OF FOUR WAREHOUSE DISTRIBUTION BUILDINGS TOTALING 1,529,498 SQUARE FEET. THE DEVELOPER ALSO PROPOSES TENTATIVE PARCEL MAP NO. 35679 TO SUBDIVIDE THE PROJECT SITE INTO FIVE PARCELS. A GENERAL PLAN AMENDMENT IS ALSO REQUIRED FOR PROPOSED CHANGES TO THE CITY'S GENERAL PLAN CIRCULATION ELEMENT AND THE MASTER PLAN OF TRAILS. THE SITE IS LOCATED SOUTH OF STATE ROUTE 60 AND EAST OF THE MORENO VALLEY AUTO MALL, AT FIR AVENUE (FUTURE EUCALYPTUS AVENUE) AND BETWEEN PETTIT STREET AND THE QUINCY CHANNEL. THE APPLICANT IS PROLOGIS. (CONTINUED FROM AUGUST 26, 2014) (Report of: Community & Economic Development Department)

Recommendations That the City Council:

1. Reopen the public hearing for Prologis Eucalyptus Industrial Park

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Project to receive additional comments on the Reduced Intensity Alternative.

2. Approve Resolution No. 2014-56. A Resolution of the City Council of the City of Moreno Valley, California, Certifying the Final Environmental Impact Report (P07-186) and Adopting the Findings and Statement of Overriding Considerations and Approving the Mitigation Monitoring Program for the Prologis Eucalyptus Industrial Park Project.
3. Approve Resolution No. 2014-57. A Resolution of the City Council of the City of Moreno Valley, California, Approving a General Plan Amendment (PA07-0082) from the R15 land use designation to Business Park for approximately 33 acres for development of a 1,529,498 square foot industrial park located within Assessor's Parcel Numbers 488-330-011, 488-330-022, 488-330-023, 488-330-024 and 488-330-032.
4. Introduce Ordinance No. 883. An Ordinance of the City Council of the City of Moreno Valley, California, Approving a Zone Change (PA07-0081) from Business Park, Business Park Mixed-use, and R15 to Light Industrial for approximately 84 acres for development of a 1,529,498 square foot industrial park located within Assessor's Parcel Numbers 488-330-011, 488-330-022, 488-330-023, 488-330-024 and 488-330-032.
5. Approve Resolution No. 2014-58. A Resolution of the City Council of the City of Moreno Valley, California, Approving Master Plot Plan application PA07-0083 and Plot Plan applications PA07-0158 through PA07-0160 for development of the 1,529,498 square foot Prologis Eucalyptus Industrial Park Project within the 84 acres of Assessor's Parcel Numbers 488-330-011, 488-330-022, 488-330-023, 488-330-024 and 488-330-032.
6. Approve Resolution No. 2014-59. A Resolution of the City Council of the City of Moreno Valley, California, Approving Tentative Parcel Map 35679 (PA07-0084) for development of the 1,529,498 square foot Prologis Eucalyptus Industrial Park Project within the 84 acres of Assessor's Parcel Numbers 488-330-011, 488-330-022, 488-330-023, 488-330-024 and 488-330-032.

F. ITEMS REMOVED FROM CONSENT CALENDARS FOR DISCUSSION OR SEPARATE ACTION

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G. REPORTS

- G.1 CITY COUNCIL REPORTS ON REGIONAL ACTIVITIES (Informational Oral Presentation - not for Council action)
 - G.1.1 Mayor Pro Tem Victoria Baca - Western Riverside Council of Government (WRCOG)
 - G.1.2 Council Member Richard A. Stewart reports on March Joint Powers Commission (MJPC)
- G.2 CITY MANAGER'S REPORT (Informational Oral Presentation - not for Council action)
- G.3 CITY ATTORNEY'S REPORT (Informational Oral Presentation - not for Council action)

H. LEGISLATIVE ACTIONS

H.1 ORDINANCES - 1ST READING AND INTRODUCTION

- H.1.1 INTRODUCE AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF MORENO VALLEY, CALIFORNIA, SIMPLIFYING THE BUSINESS LICENSE FEES FOR MULTIPLE SINGLE FAMILY RESIDENTIAL RENTAL PROPERTY (Report of: Financial & Management Services Department)

Recommendations That the City Council:

- 1. Introduce Ordinance No. 881. An Ordinance of the City Council of the City of Moreno Valley, California, Amending Section 5.02.085 of Title 5 of the City of Moreno Valley Municipal Code Relating to the Separate Computation of License Fee and Tax – Branch Establishments. This amendment provides an exception for owners of single family residential rental properties who own ten or less properties and require that they only pay one business license fee, currently \$61, rather than one fee per property.

- H.1.2 INTRODUCE ORDINANCE NO. 884 REPEALING ORDINANCE NO. 25 AND ADDING CHAPTER 12.44 TO THE CITY OF MORENO VALLEY MUNICIPAL CODE PROHIBITING VEHICLES FOR SALE ON CERTAIN STREETS
(Report of: Public Works Department)

Recommendations That the City Council:

- 1. Introduce Ordinance No. 884. An Ordinance of the City Council of the

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City of Moreno Valley, California, Repealing Ordinance No. 25 and Amending the City of Moreno Valley Municipal Code by Adding Chapter 12.44 "PARKING RESTRICTIONS ON VEHICLES DISPLAYING FOR SALE SIGNS WHILE PARKED ON PUBLIC STREETS."

- H.1.3 ORDINANCE NO. 885. AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF MORENO VALLEY, CALIFORNIA, ADDING CHAPTER 11.11 TO TITLE 11 OF THE CITY OF MORENO VALLEY MUNICIPAL CODE PROHIBITING THE POSSESSION, STORAGE, SALE OR DISTRIBUTION OF INTOXICATING CHEMICAL COMPOUNDS KNOWN AS SYNTHETIC DRUGS (Report of: City Manager Department)

Recommendations That the City Council:

1. Introduce Ordinance No. 885. An Ordinance of the City Council of the City of Moreno Valley, California, Adding Chapter 11.11 to Title 11 of the City of Moreno Valley Municipal Code Prohibiting the Possession, Storage, Sale or Distribution of Intoxicating Chemical Compounds Known as Synthetic Drugs.

H.2 ORDINANCES - 2ND READING AND ADOPTION

- H.2.1 ADOPT ORDINANCE NO. 880. AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF MORENO VALLEY, CALIFORNIA, APPROVING PA13-0068 (CHANGE OF ZONE) CHANGING THE ZONING AND PLACING THE MIXED USE OVERLAY DISTRICTS DESIGNATION ON THREE PARCELS (APNS: 485-220-019, 485-220-026, AND 485-220-027) LOCATED AT THE SOUTHWEST CORNER OF PERRIS BOULEVARD AND SANTIAGO DRIVE FROM NEIGHBORHOOD COMMERCIAL (NC) TO RESIDENTIAL 30 (R30) (RECEIVED INTRODUCTION AND FIRST READING ON SEPTEMBER 23, 2014 BY A 4-0 VOTE) (Report of: Community & Economic Development Department)

Recommendations That the City Council:

1. Adopt Ordinance No. 880. An Ordinance of the City Council of the City of Moreno Valley, California, Approving PA13-0068 (Change of Zone) Changing the Zoning and Placing the Mixed Use Overlay Districts Designation on Three Parcels (APNS: 485-220-019, 485-220-026, and 485-220-027) Located at the Southwest Corner of Perris Boulevard and Santiago Drive from Neighborhood Commercial (NC) to Residential 30 (R30).

H.3 ORDINANCES - URGENCY ORDINANCES - NONE

H.4 RESOLUTIONS - NONE

**CLOSING COMMENTS AND/OR REPORTS OF THE CITY COUNCIL,
COMMUNITY SERVICES DISTRICT, CITY AS SUCCESSOR AGENCY FOR THE
COMMUNITY REDEVELOPMENT AGENCY OR HOUSING AUTHORITY**

Materials related to an item on this Agenda submitted to the City Council/Community Services District/City as Successor Agency for the Community Redevelopment Agency/Housing Authority or Board of Library Trustees after distribution of the agenda packet are available for public inspection in the City Clerk's office at 14177 Frederick Street during normal business hours.

CLOSED SESSION

A Closed Session of the City Council, Community Services District, City as Successor Agency for the Community Redevelopment Agency and Housing Authority will be held in City Manager's Conference Room, Second Floor, City Hall. The City Council will meet in Closed Session to confer with its legal counsel regarding the following matter(s) and any additional matter(s) publicly and orally announced by the City Attorney in the Council Chamber at the time of convening the Closed Session.

- **PUBLIC COMMENTS ON MATTERS ON THE CLOSED SESSION AGENDA UNDER THE JURISDICTION OF THE CITY COUNCIL**

There is a three-minute time limit per person. Please complete and submit a BLUE speaker slip to the City Clerk. All remarks and questions shall be addressed to the presiding officer or to the City Council and not to any individual Council member, staff member or other person.

The Closed Session will be held pursuant to Government Code:

- 1 SIGNIFICANT EXPOSURE TO LITIGATION PURSUANT TO PARAGRAPH (2) OR (3) OF SUBDIVISION (D) OF SECTION 54956.9

Number of Cases: 5

- 2 SECTION 54956.9(d)(4) - CONFERENCE WITH LEGAL COUNSEL - INITIATION OF LITIGATION

Number of Cases: 5

REPORT OF ACTION FROM CLOSED SESSION, IF ANY, BY CITY ATTORNEY

ADJOURNMENT

CERTIFICATION

I, Jane Halstead, City Clerk of the City of Moreno Valley, California, certify that the City Council Agenda was posted in the following places pursuant to City of Moreno Valley Resolution No. 2007-40:

City Hall, City of Moreno Valley
14177 Frederick Street

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Moreno Valley Library
25480 Alessandro Boulevard

Moreno Valley Senior/Community Center
25075 Fir Avenue

Jane Halstead, CMC,
City Clerk

Date Posted: _____

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MINUTES
CITY COUNCIL REGULAR MEETING OF THE CITY OF MORENO VALLEY
September 23, 2014

CALL TO ORDER

SPECIAL PRESENTATIONS

1. Proclamation Recognizing National Fire Prevention Week October 5 - 11, 2014
2. Proclamation Recognizing Constitution Week September 17 - 23, 2014
3. Waste Management Recycle Often Recycle Right - Calendar Art Contest
4. Recognition of Dancing Images' Nationals Dance Competition Championship Awards

**MINUTES
JOINT MEETING OF THE
CITY COUNCIL OF THE CITY OF MORENO VALLEY
MORENO VALLEY COMMUNITY SERVICES DISTRICT
CITY AS SUCCESSOR AGENCY FOR THE
COMMUNITY REDEVELOPMENT AGENCY OF
THE CITY OF MORENO VALLEY
MORENO VALLEY HOUSING AUTHORITY
BOARD OF LIBRARY TRUSTEES**

**REGULAR MEETING – 6:00 PM
September 23, 2014**

CALL TO ORDER

The Joint Meeting of the City Council of the City of Moreno Valley, Moreno Valley Community Services District, City as Successor Agency for the Community Redevelopment Agency of the City of Moreno Valley, Moreno Valley Housing Authority and the Board of Library Trustees was called to order at 6:14 p.m. by Mayor Jesse L. Molina in the Council Chamber located at 14177 Frederick Street.

Mayor Jesse L. Molina announced that the City Council receives a separate stipend for CSD meetings.

PLEDGE OF ALLEGIANCE - Pledge of Allegiance was led by Mayor Jesse L. Molina

INVOCATION

Pastor O. J. Philpot - Christ Community Church

ROLL CALL

Council:

Jesse L. Molina	Mayor
Victoria Baca	Mayor Pro Tem
George E. Price	Council Member
Richard A. Stewart	Council Member

Staff:

Michelle Dawson	City Manager
Suzanne Bryant	City Attorney
Jane Halstead	City Clerk
Tom DeSantis	Assistant City Manager
Ahmad Ansari	Public Works Director
Joel Ontiveros	Police Chief
Chris Paxton	Administrative Services Director

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John Terrell
Ewa Lopez
Steve Hargis

Community and Economic Development Director
Deputy City Clerk
Technology Services Division Manager

**PUBLIC COMMENTS ON ANY SUBJECT NOT ON THE AGENDA UNDER THE
JURISDICTION OF THE CITY COUNCIL**

Timiathea Walker

1. Support for Mayor Pro Tem Victoria Baca

Pastor Paul Wood

1. Endorsed Jeffrey Giba for City Council

Luke Fuller II

1. Endorsed his father Luke Fuller for city council for District 2

Jeff Giba

1. Supports the Mayor, and Measure M

Danielle Belton

1. Supports Luke Fuller for city council

Glenn Jacobs

1. City Council candidate for District 2

Scott Heveran

1. Candidates forum
2. Recall

Christopher Baca

1. Recall
2. Encouraged residents to register to vote

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Louise Palomarez

1. Encouraged residents to vote
2. Recall

Robert Palomarez

1. Election/council candidates

Deanna Reeder

1. City Council candidates/interviews with candidates posted on the Web
2. Recall

Daryl Terrell

1. New community spirit

Tom Jerele

1. Elections/School Board

Luke Fuller

1. City Council candidate for District 2

Roy Bleckert

1. School District bond Measure M

Pete Bleckert

1. Directly elected mayor and redistricting

Takiya Moore

1. City Council candidate for District 4
2. Vector control
3. Public Safety issues

JOINT CONSENT CALENDARS (SECTIONS A-D)

Mayor Jesse Molina opened the agenda items for the Consent Calendar, which were received from Stephen Rogers (Item A.9), Roy Bleckert (Item A. 6), and Pete Bleckert (Item A.6).

A. CONSENT CALENDAR-CITY COUNCIL

A.1 ORDINANCES - READING BY TITLE ONLY

Recommendation: Waive reading of all Ordinances.

A.2 MINUTES - REGULAR MEETING OF SEPTEMBER 9, 2014 (Report of: City Clerk's Department)

Recommendation:

Approve as submitted.

A.3 CITY COUNCIL REPORTS ON REIMBURSABLE ACTIVITIES (Report of: City Clerk's Department)

Recommendation:

Receive and file the Reports on Reimbursable Activities for the period of September 3 – 16, 2014.

A.4 ADOPT A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF MORENO VALLEY, CALIFORNIA, DECLINING TO ESTABLISH AN ENERGY STORAGE TARGET FOR MORENO VALLEY UTILITY (MVU) (Report of: Public Works Department)

Recommendation:

Adopt Resolution No. 2014-77. A Resolution of the City Council of the City of Moreno Valley, California, Declining to Establish an Energy Storage Target for Moreno Valley Utility (MVU).

A.5 AUTHORIZATION TO AWARD CONSTRUCTION CONTRACT TO E. AVICO, INC. FOR FIRE STATION NO. 48 REMODELING, PROJECT NO. 803 0022 70 77 (Report of: Public Works Department)

Recommendations:

1. Award the construction contract to E. Avico, Inc., 1260 S. La Cienega Blvd. Los Angeles, the lowest responsible bidder, for the Fire Station No. 48 Remodeling Project.
2. Authorize the City Manager to execute a contract with E. Avico, Inc.
3. Authorize the issuance of a Purchase Order to E. Avico, Inc., for the

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amount of \$703,113.40 (\$639,194.00 bid amount plus 10% contingency) when the contract has been signed by all parties.

4. Authorize the Public Works Director/City Engineer to execute any subsequent related minor change orders to the contract with E. Avico, Inc. up to, but not exceeding, the 10% contingency amount of \$63,919.40, subject to the approval of the City Attorney.

A.6 RESOLUTION OF THE CITY OF MORENO VALLEY SERVING AS THE SUCCESSOR AGENCY FOR THE COMMUNITY REDEVELOPMENT AGENCY OF THE CITY OF MORENO VALLEY APPROVING THE RECOGNIZED OBLIGATION PAYMENT SCHEDULE INCLUDING THE RESTRUCTURING OF TOWNGATE ACQUISITION NOTES PAYMENT SCHEDULE, AND ADMINISTRATIVE BUDGET FOR THE PERIOD OF JANUARY 1, 2015 THROUGH JUNE 30, 2015 (ROPS 14-15 B)
(Report of: Financial & Management Services Department)

Recommendations:

1. Adopt Resolution No. SA 2014-02 approving a Recognized Obligation Payment Schedule (ROPS 14-15 B) for the period of January 1, 2015 through June 30, 2015, including the restructuring of the Towngate Acquisition Notes Payment Schedule, as well as Administrative Budget.
2. Authorize the Executive Director or their designee to make modifications to the Schedule.
3. Authorize the transmittal of the ROPS 14-15 B, for the period of January 1, 2015 through June 30, 2015, including the restructuring of the Towngate Acquisition Notes Payment Schedule, as well as Administrative Budget for the said period, ("Exhibit A") to the Oversight Board for review and approval.
4. Authorize the Chief Financial Officer or their designee to amend the FY 2014/15 budget per the Recognized Obligation Payment Schedules, following the approval by the State of California, Department of Finance.

A.7 AUTHORIZATION TO AWARD AGREEMENT FOR PROFESSIONAL CONSULTANT SERVICES TO PARSONS BRINCKERHOFF FOR THE SUNNYMEAD MASTER DRAINAGE PLAN STORM DRAIN LINES F AND F-7; PROJECT NO. 804 0008 (Report of: Public Works Department)

Recommendations:

1. Approve the Agreement for Professional Consultant Services with Parsons Brinckerhoff, 451 E. Vanderbilt Way, Suite 200, San

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Bernardino, CA to provide design services for the Sunnymead Master Drainage Plan Storm Drain Lines F and F-7 project.

2. Authorize the City Manager to execute the Agreement for Professional Consultant Services with Parsons Brinckerhoff.
3. Authorize issuance of a Purchase Order with Parsons Brinckerhoff in the amount of up to but not to exceed \$620,000 once the Agreement has been signed by all parties.

A.8 APPROVE RESOLUTION NO. 2014-78, SETTING FORTH THE CITY OF MORENO VALLEY'S COMMITMENT TO SUPPORTING AND PROMOTING A "HEALTHY MORENO VALLEY"
(Report of: City Manager Department)

Recommendation:

Adopt Resolution No. 2014-78. A Resolution of the City Council of the City of Moreno Valley, California, Setting Forth the City of Moreno Valley's Commitment to Supporting and Promoting a "Healthy Moreno Valley".

A.9 READOPTING CONFLICT OF INTEREST CODE
(Report of: City Clerk Department)

Recommendations:

1. The City Council Adopt Resolution No. 2014-79. A Resolution of the City Council of the City of Moreno Valley, California, Readopting a Conflict of Interest Code to amend the list of designated employees having filing requirements, and repealing all prior enactments on the same subject.
2. The City Council, acting in the capacity of the City as Successor Agency for the Community Redevelopment Agency of the City of Moreno Valley. Adopt Resolution No. SA 2014-03. A Resolution of the Successor Agency for the Community Redevelopment Agency of the City of Moreno Valley, California, Readopting a Conflict of Interest Code to amend the list of designated employees having filing requirements, and repeal all prior enactments on the same subject.

A.10 PARTICIPATION IN THE RIVERSIDE COUNTY MORTGAGE CREDIT CERTIFICATE PROGRAM
(Report of: Financial & Management Services Department)

Recommendations:

1. Adopt Resolution 2014-81. A Resolution of the City Council of the City of Moreno Valley, California Approving Participation With the County of Riverside Mortgage Credit Certificate (MCC) Program.

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2. Authorize the Chief Financial Officer to certify the status of the City's Housing Element.

B. CONSENT CALENDAR-COMMUNITY SERVICES DISTRICT

- B.1 ORDINANCES - READING BY TITLE ONLY
Recommendation: Waive reading of all Ordinances.

- B.2 MINUTES - REGULAR MEETING OF SEPTEMBER 9, 2014 (Report of: City Clerk's Department)

Recommendation:
Approve as submitted.

- B.3 READOPTING CONFLICT OF INTEREST CODE
(Report of: City Clerk Department)

Recommendations:
The City Council, acting in its capacity as President and Members of the Board of Directors of the Moreno Valley Community Services District (CSD). Adopt Resolution No. CSD 2014-21. A Resolution of the Community Services District of the City of Moreno Valley, California, Readopting a Conflict of Interest Code to amend the list of designated employees having filing requirements, and repeal all prior enactments on the same subject.

C. CONSENT CALENDAR - HOUSING AUTHORITY

- C.1 ORDINANCES - READING BY TITLE ONLY
Recommendation: Waive reading of all Ordinances.

- C.2 MINUTES - REGULAR MEETING OF SEPTEMBER 9, 2014 (Report of: City Clerk's Department)

Recommendation:
Approve as submitted.

- C.3 READOPTING CONFLICT OF INTEREST CODE
(Report of: City Clerk Department)

Recommendations:
The City Council, acting in its capacity as Members of the Moreno Valley Housing Authority. Adopt Resolution No. HA 2014-03. A Resolution of the Moreno Valley Housing Authority of the City of Moreno Valley, California, Readopting a Conflict of Interest Code to amend the list of designated

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employees having filing requirements, and repealing all prior enactments on the same subject.

D. CONSENT CALENDAR - BOARD OF LIBRARY TRUSTEES

D.1 ORDINANCES - READING BY TITLE ONLY

Recommendation: Waive reading of all Ordinances.

D.2 MINUTES - REGULAR MEETING OF SEPTEMBER 9, 2014 (Report of: City Clerk's Department)

Recommendation:

Approve as submitted.

Motion to amend Item A.8 by adding verbiage "and pollutants" at the end of the fifth paragraph of Resolution No. 2014-78 following "optimal environment free of hazards" by m/Council Member Richard A. Stewart, s/Council Member George E. Price

Passed by a vote of 4-0.

Motion to Approve Joint Consent Calendar Items A.1 through D.2, as amended, by m/Council Member Richard A. Stewart, s/Mayor Pro Tem Victoria Baca

Passed by a vote of 4-0.

E. PUBLIC HEARINGS

E.1 A PUBLIC HEARING FOR APPROVAL OF GENERAL PLAN AMENDMENT (PA13-0069) FROM COMMERCIAL (C) TO RESIDENTIAL 30 (R30) AND CHANGE OF ZONE (PA13-0068) FROM NEIGHBORHOOD COMMERCIAL (NC) TO RESIDENTIAL 30 (R30) FOR THREE PARCELS TOTALLING 2.68 ACRES AT THE SOUTHWEST CORNER OF PERRIS BOULEVARD AND SANTIAGO DRIVE. THE MIXED USE DISTRICTS OVERLAY WILL ALSO BE EXPANDED TO INCLUDE THESE THREE PARCELS AS MIXED-USE NEIGHBORHOOD (MUN). THERE IS NO PROPOSAL TO DEVELOP THE SITE AT THIS TIME. THE APPLICANT IS PERRIS AT PENTECOSTAL LLC.

(Report of: Community & Economic Development Department)

Recommendations That the City Council:

1. Adopt a Negative Declaration for PA13-0069 (General Plan Amendment) and PA13-0068 (Change of Zone). The projects, individually and cumulatively, will not result in a significant effect on the environment.

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2. Approve Resolution No. 2014-80. A Resolution of the City Council of the City of Moreno Valley, California, Approving PA13-0069 (General Plan Amendment) to change the Land Use from Commercial (C) to Residential 30 (R30) for three parcels (APNS: 485-220-019, 485-220-026, and 485-220-027) located at the southwest corner of Perris Boulevard and Santiago Drive.
3. Introduce Ordinance No. 880. An Ordinance of the City Council of the City of Moreno Valley, California, Approving PA13-0068 (Change of Zone) Changing the Zoning and Placing the Mixed Use Overlay Districts Designation on Three Parcels (APNS: 485-220-019, 485-220-026, and 485-220-027) Located at the Southwest Corner of Perris Boulevard and Santiago Drive from Neighborhood Commercial (NC) to Residential 30 (R30).

Jeff Weber, an applicant, made a presentation.

Mayor Jesse Molina opened the public testimony portion of the public hearing; there being none, public testimony was closed.

Adopt a Negative Declaration for PA13-0069 (General Plan Amendment) and PA13-0068 (Change of Zone). The projects, individually and cumulatively, will not result in a significant effect on the environment.

Approve Resolution No. 2014-80. A Resolution of the City Council of the City of Moreno Valley, California, Approving PA13-0069 (General Plan Amendment) to change the Land Use from Commercial (C) to Residential 30 (R30) for three parcels (APNS: 485-220-019, 485-220-026, and 485-220-027) located at the southwest corner of Perris Boulevard and Santiago Drive by m/Council Member Richard A. Stewart, s/Mayor Pro Tem Victoria Baca

Passed by a vote of 4-0.

Introduce Ordinance No. 880. An Ordinance of the City Council of the City of Moreno Valley, California, Approving PA13-0068 (Change of Zone) Changing the Zoning and Placing the Mixed Use Overlay Districts Designation on Three Parcels (APNS: 485-220-019, 485-220-026, and 485-220-027) Located at the Southwest Corner of Perris Boulevard and Santiago Drive from Neighborhood Commercial (NC) to Residential 30 (R30). by m/Council Member Richard A. Stewart, s/Mayor Pro Tem Victoria Baca

Passed by a vote of 4-0.

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F. ITEMS REMOVED FROM CONSENT CALENDARS FOR DISCUSSION OR SEPARATE ACTION - none

G. REPORTS

G.1 CITY COUNCIL REPORTS ON REGIONAL ACTIVITIES (Informational Oral Presentation - not for Council action)

G.1.1 Mayor Jesse L. Molina reports on Riverside Transit Agency (RTA)

Mayor Molina reported that RTA's Proposed 10 Year Transit Network plan is being developed as part of an 18-month Comprehensive Operational Analysis (COA), which will guide bus service over the next ten years. RTA received input from over 12,000 surveys and numerous community meetings, which led to recommendations for frequent and later service, better transfers and shorter travel times. Some changes will take effect as early as spring of 2015. RTA also plans to boost bus stop amenities and offer real-time bus arrival information at more bus stops and via a mobile phone application.

There are six remaining outreach meetings at college campuses, and the public hearing for the proposed plan is scheduled to close on November 20.

G.1.2 Council Member Richard A. Stewart reports on March Joint Powers Commission (MJPC)

Council Member Stewart reported the following: General Aviation ribbon-cutting ceremony has been continued with no date certain, as some issues need to be resolved; corrected his statement made at the last council meeting, as he was provided incorrect information - the first property of the March Medical has not closed escrow yet, but is it very close to closing escrow; LNR gave a presentation on Meridian project and a briefing on widening of Van Buren up to Barton Road; widening will improve traffic; LNR showed a map with a Metrolink station. The station will be called March Moreno Metrolink Station.

G.2 PUBLIC MEETING REGARDING THE MAIL BALLOT PROCEEDINGS FOR ASSESSOR'S PARCEL NUMBERS (APNS) 481-250-002 AND 481-250-003 BALLOTING FOR THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) MAXIMUM RESIDENTIAL REGULATORY RATE; AND FOR APN 479-020-050 BALLOTING FOR THE NPDES MAXIMUM COMMERCIAL REGULATORY RATE (Report of: Financial & Management Services Department)

Recommendations That the City Council:

Accept public comments regarding the mail ballot proceedings for APNs

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481-250-002 and 481-250-003 for approval of the NPDES maximum residential regulatory rate; and for APN 479-020-050 for approval of the NPDES maximum commercial regulatory rate.

Mayor Jesse Molina opened the agenda item for public comments; there being none, public comments were closed.

No action required.

G.3 APPOINTMENT TO THE PARKS AND RECREATION COMMISSION
(TEENAGE MEMBER)

(Report of: City Clerk Department)

Recommendations That the City Council:

1. Appoint Stephanie Torres to the Parks and Recreation Commission as a teenage member for a term expiring three years after the effective date of appointment, or until high school graduation, whichever comes first; or
2. If an appointment is not made, declare the position vacant and authorize the City Clerk to re-notice the position as vacant.

Mayor Jesse Molina opened the agenda item for public comments; there being none, public comments were closed.

Appoint Stephanie Torres to the Parks and Recreation Commission as a teenage member for a term expiring three years after the effective date of appointment, or until high school graduation, whichever comes first by m/Council Member Richard A. Stewart, s/Mayor Pro Tem Victoria Baca

Passed by a vote of 4-0.

G.4 BUSINESS TAX COMPLIANCE INSPECTION PROGRAM

(Report of: Financial & Management Services Department)

Recommendations:

1. Direct staff to reestablish the Business Tax Compliance Inspection Program.
2. Authorize staff to add the full-time temporary position Business Tax Inspector at a range of C18 within the non-exempt employee group.
3. Authorize the amendment to the FY 2014-15 budget for the expenditures presented in the Fiscal Impact section of this report.

MINUTES
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Continued to a date to be determined. by m/Council Member Richard A. Stewart, s/Council Member George E. Price

Passed by a vote of 4-0.

- G.5 ADOPT A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF MORENO VALLEY, CALIFORNIA, TO AMEND THE ELECTRIC RATES FOR MORENO VALLEY UTILITY
(Report of: Public Works Department)

Recommendation:

Adopt Resolution No. 2014-76. A Resolution of the City Council of the City of Moreno Valley, California, to Amend the Electric Rates for Moreno Valley Utility.

Mayor Jesse Molina opened the agenda item for public comments, which were received from Takiya Moore.

Adopt Resolution No. 2014-76. A Resolution of the City Council of the City of Moreno Valley, California, to Amend the Electric Rates for Moreno Valley Utility and forward the agenda item to the Utilities Commission to study computation of the utilities rates. by m/Council Member Richard A. Stewart, s/Council Member George E. Price

Failed by a vote of 2-2, Mayor Pro Tem Victoria Baca, Mayor Jesse L. Molina opposed.

Motion to forward the agenda item to the Utilities Commission to study computation of the utilities rates by m/Council Member Richard A. Stewart, s/Council Member George E. Price

Passed by a vote of 4-0.

- G.6 CITY MANAGER'S REPORT (Informational Oral Presentation - not for Council action)

none

- G.7 CITY ATTORNEY'S REPORT (Informational Oral Presentation - not for Council action)

The City Attorney Suzanne Bryant reported: Settlement has been reached in the cases City of Moreno Valley v. Thomas Chen, et al., Riverside Superior Court Case No. RIC 1213875 which was consolidated with City of Moreno Valley v. Equitable Moreno Valley II Partnership, Riverside Superior Court Case No. RIC 1213880. These cases were condemnation

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cases for the acquisition of property for the widening, construction, improvement, and maintenance for the State Route 60 Moreno Beach Interchange Improvement Project Phase 2. The acquisition includes purchase of a fee interest, a roadway easement, a slope/drainage easement and 2 temporary construction easements. The City already made a deposit of \$774,000 and is scheduled to make a final payment of \$368,790.10 by October 1, 2014 to Equitable. The City will pay to the Chens \$704,209.90 in full settlement and compromise by October 1, 2014. The City had already made a deposit of \$1,478,000 previously made and withdrawn. The City took possession of the property on September 15, 2013.

Settlement was also reached in City of Moreno Valley v Chado & Chado Moreno Valley Ltd., Riverside Superior Court Case No. RIC 1213878. This case was also a condemnation case for the acquisition of property for the widening, construction, improvement, and maintenance for the State Route 60 Moreno Beach Interchange Improvement Project Phase 2. The acquisition includes purchase of a fee interest, a slope/drainage easement, temporary construction easements, and a roadway easement. The City has already made a deposit of \$1,272,000 and is scheduled to make final payment of \$258,000 by October 1, 2014. The City Council discussed these cases in Closed Session on July 1, 2014 and authorized settlement authority 5-0. A Judgment and final order of condemnation will be entered in these cases.

The case Maria Duarte v City of Moreno Valley Riverside Superior Court Case Number RIC 1405929 has been dismissed. The Court sustained the City's demurrer.

H. LEGISLATIVE ACTIONS

H.1 ORDINANCES - 1ST READING AND INTRODUCTION

- H.1.1 INTRODUCE AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF MORENO VALLEY, CALIFORNIA, SIMPLIFYING THE BUSINESS LICENSE FEES FOR MULTIPLE SINGLE FAMILY RESIDENTIAL RENTAL PROPERTY**
(Report of: Financial & Management Services Department)

Recommendations That the City Council:

Introduce Ordinance No. 881. An Ordinance of the City Council of the City of Moreno Valley, California, Amending Section 5.02.085 of Title 5 of the City of Moreno Valley Municipal Code Relating to the Separate Computation of License Fee and Tax – Branch Establishments.

Continued to October 14, 2014. by m/Council Member Richard A.

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Stewart, s/Mayor Pro Tem Victoria Baca

Passed by a vote of 4-0.

H.2 ORDINANCES - 2ND READING AND ADOPTION - NONE

H.3 ORDINANCES - URGENCY ORDINANCES - NONE

H.4 RESOLUTIONS - NONE

**CLOSING COMMENTS AND/OR REPORTS OF THE CITY COUNCIL,
COMMUNITY SERVICES DISTRICT, CITY AS SUCCESSOR AGENCY FOR THE
COMMUNITY REDEVELOPMENT AGENCY OR HOUSING AUTHORITY**

Mayor Pro Tem Victoria Baca

1. Visited Adrienne Park, with the City Manager and Parks & Community Services Director; unused horseshoe pits will be replaced with above ground skate ramps, which will be great for the kids in the surrounding community of Edgemont; above ground skate ramps are also planned for Fairway Park

2. Commented on speaker's comments regarding recall in District 5

3. Encouraged everybody to register to vote. October 20 is the last day to register; voter can ask for an absentee ballot

4. Thanked everyone for coming here

Council Member George E. Price

1. Thanked everyone who came to his Coffee with your Councilman event last Saturday at the Vanguard Art Gallery; it was a successful event

2. Measure R issue – it is about giving people the option on number of districts (four or six districts), if directly elected mayor measure is passed

3. This Saturday, 10 a.m. - 4 p.m., dedication for Lasselle Sports Park will be held; encouraged residents to attend

4. Thanked Perris Mayor Daryl Busch and RCTC Executive Director for inviting him on a High Rail Train tour on the Perris Valley line; four stops are planned initially, but more routes to Riverside will be added; it was very informative tour

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Council Member Richard A. Stewart

1. District 2 has nine candidates running; stated that he is not endorsing anyone; hopes people will study the positions
2. Regarding Measure R - stated that people need to have a choice on number of council districts (four or six)
3. Responded to a speaker's comments about shootings at different events
4. Regarding racial profiling claim - residents can file a complaint against a police officer; the complaint will be investigated thoroughly and independently
5. Police Department continues using cameras and arrests are made; asked residents to report suspicious people; citizens reporting and Neighborhood Watch are the best crime fighters
6. On October 2, at the Moreno Valley Ranch Golf Club, the Boy Scout CIEC-5 Nations District will be honoring two distinguished citizens this year: City of Perris Mayor Daryl Busch and Moreno Valley Chamber of Commerce CEO Oscar Valdepeña; donations for silent auction are welcome

Mayor Jesse L. Molina

1. Stated that he attended RTA meeting on September 10; and the next day participated in Read with Children program in the library
2. Office hours for the Mayor are every Friday, 9 a.m. - 1 p.m.; encouraged residents to visit him and let him know what their concerns are
3. On September 13, attended YouthFest and on September 15, attended Cal State San Bernardino the Consulate of Mexico
4. On September 17, a Coffee with a Cop was held - it is a great opportunity to meet with law enforcement officers; Zone's meeting will be held on October 1
5. Attended RTA T-Now meeting; T-Now is an advocacy group that promotes bus ridership; encouraged residents to take a bus
6. Attended 452nd AMW POW/MIA Recognition Day Ceremony honoring missing in action and prisoners of war
7. On September 27, will participate in hike to Lake Perris, and after that attend Lasselle Sports Park grand opening

MINUTES
September 23, 2014

CLOSED SESSION

Canceled

ADJOURNMENT

There being no further business to conduct, the meeting was adjourned at 9:00 p.m. by unanimous informal consent.

Submitted by:

City Clerk Jane Halstead, CMC
Secretary, Moreno Valley Community Services District
Secretary, City as Successor Agency for the Community Redevelopment Agency of the City of Moreno Valley
Secretary, Moreno Valley Housing Authority
Secretary, Board of Library Trustees

Approved by:

Mayor Jesse L. Molina
President, Moreno Valley Community Services District
Chairperson, City as Successor Agency for the Community Redevelopment Agency of the City of Moreno Valley
Chairperson, Moreno Valley Housing Authority
Chairperson, Board of Library Trustees

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Report to City Council

TO: Mayor and City Council

FROM: Jane Halstead, City Clerk

AGENDA DATE: October 14, 2014

TITLE: CITY COUNCIL REPORTS ON REIMBURSABLE ACTIVITIES

RECOMMENDED ACTION

Recommendation:

1. Receive and file the Reports on Reimbursable Activities for the period of September 17 – October 7, 2014.

<i>Reports on Reimbursable Activities</i>			
September 17 – October 7, 2014			
Council Member	Date	Meeting	Cost
Victoria Baca	9/24/14	Moreno Valley Chamber of Commerce Wake-Up Moreno Valley	\$15.00
	9/25/14	Western Riverside Council of Governments (WRCOG) 15 Annual Advancing the Choice Expo	\$45.00
	10/2/14	Boy Scouts of America CIEC-Five Nations District 2014 Distinguished Citizen of the Year	\$75.00
Jesse L. Molina	10/2/14	Boy Scouts of America CIEC-Five Nations District 2014 Distinguished Citizen of the Year	\$75.00
George E. Price	9/24/14	2014 State of Riverside County	\$50.00
	9/25/14	Western Riverside Council of Governments (WRCOG) 15 Annual Advancing the Choice Expo	\$45.00

Richard A. Stewart	10/2/14	Boy Scouts of America CIEC-Five Nations District 2014 Distinguished Citizen of the Year	\$75.00
	10/7/14	Moreno Valley Hispanic Chamber of Commerce Adelante	\$10.00

Prepared By:
 Cindy Miller
 Executive Assistant to the Mayor/City Council

Department Head Approval:
 Jane Halstead
 City Clerk



APPROVALS	
BUDGET OFFICER	<i>me</i>
CITY ATTORNEY	<i>SMB</i>
CITY MANAGER	<i>d</i>

Report to City Council

TO: Mayor and City Council

FROM: Richard Teichert, Chief Financial Officer

AGENDA DATE: October 14, 2014

TITLE: APPROVAL OF PAYMENT REGISTER FOR AUGUST, 2014

RECOMMENDED ACTION

Recommendations:

1. Adopt Resolution No. 2014-82. A Resolution of the City Council of the City of Moreno Valley, California, Approving the Payment Register for the Month of August, 2014 in the Amount of \$10,314,358.30.
2. Acknowledge future payment registers will be posted directly to the City's transparency website.

DISCUSSION

To facilitate Council's review, the Payment Register lists in alphabetical order all checks and wires in the amount of \$25,000 or greater, followed by a listing in alphabetical order of all checks and wires less than \$25,000. The Payment Register also includes the fiscal year-to-date (FYTD) amount paid to each vendor.

Although City Council ratification for monthly payments drawn and delivered is not required under Government Code section 37208, City policy has been to ratify the payment register monthly with the City Council. In order to continue to provide this information in a timely and accessible manner to the Council and interested residents, future monthly Payment Registers will instead be produced and published on the City's website on a routine basis. Staff will continue to produce this monthly report, beginning with the September 2014 Payment Register, and publish on the City's website within thirty (30) days of the end of the month. Additionally, all future payments will be presented to City Council for ratification and approval annually in the form of an audited comprehensive annual financial report.

FISCAL IMPACT

The disbursements itemized in the attached Payment Register are reflected in the 2014-15 budget. Therefore, there is no fiscal impact other than the expenditure of budgeted funds.

ATTACHMENTS

Attachment 1: Proposed Resolution

Attachment 2: Payment Register for Month of August, 2014

Prepared By:
Dena Heald
Financial Operations Division Manager

Department Head Approval:
Richard Teichert
Chief Financial Officer

RESOLUTION NO. 2014-82

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF MORENO VALLEY, CALIFORNIA, APPROVING THE PAYMENT REGISTER FOR THE MONTH OF AUGUST, 2014

WHEREAS, the Financial & Management Services Department has prepared and provided the Payment Register for the period August 1, 2014 through August 31, 2014, for review and approval by the City Council of the City of Moreno Valley; and

WHEREAS, it is in the best interest of the City that the referenced Payment Register be approved.

NOW, THEREFORE, IT IS HEREBY RESOLVED BY THE CITY COUNCIL OF THE CITY OF MORENO VALLEY, CALIFORNIA, that the Payment Register for the period August 1, 2014 through August 31, 2014, in the total amount of \$10,314,358.30 is approved.

APPROVED AND ADOPTED this 14th day of October, 2014.

Mayor

ATTEST:

City Clerk

APPROVED AS TO FORM:

City Attorney

1
Resolution No. 2014-82
Date Adopted: October 14, 2014

RESOLUTION JURAT

STATE OF CALIFORNIA)
COUNTY OF RIVERSIDE) ss.
CITY OF MORENO VALLEY)

I, Jane Halstead, City Clerk of the City of Moreno Valley, California, do hereby certify that Resolution No. 2014-82 was duly and regularly adopted by the City Council of the City of Moreno Valley at a regular meeting thereof held on the 14th day of October, 2014 by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

CITY CLERK

Resolution No. 2014-82²
Date Adopted: October 14, 2014



City of Moreno Valley
Payment Register
 For Period 8/1/2014 through 8/31/2014

CHECKS IN THE AMOUNT OF \$25,000 OR GREATER

<u>Vendor Name</u>	<u>Check/EFT Number</u>	<u>Payment Date</u>	<u>Inv Number</u>	<u>Invoice Description</u>	<u>Payment Amount</u>
ALL AMERICAN ASPHALT, INC.	222163	08/04/2014	163407	CONSTRUCTION - ALESSANDRO MEDIAN	\$270,641.46
Remit to: CORONA, CA					<u>FYTD:</u> \$285,198.25
CANON SOLUTIONS AMERICA, INC.	13063	08/11/2014	1103031201309151	COPIER SVCS-PD-APRIL THRU JUNE 2014	\$29,849.34
		08/11/2014	1103031201309152	COPIER SVCS-ANNEX 1-APRIL THRU JUNE 2014	
		08/11/2014	1103031201309153	COPIER SVCS-CH-APRIL THRU JUNE 2014	
Remit to: BURLINGTON, NJ					<u>FYTD:</u> \$57,049.47
COUNTY OF RIVERSIDE SHERIFF	13152	08/19/2014	SH0000024293	CONTRACT LAW ENF. BILLING #12 (5/1-5/28/14)	\$2,380,978.61
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$8,548,565.77
CSAC EXCESS INSURANCE AUTHORITY	13021	08/04/2014	15100204	WORKERS' COMP-PROGRAM ANALYSIS SVCS 7/1/14-7/1/15	\$164,199.00
Remit to: FOLSOM, CA					<u>FYTD:</u> \$164,199.00
DATA TICKET, INC.	13066	08/11/2014	54731	ADMIN CITATION PROCESSING	\$27,839.23
		08/11/2014	54623	ADMIN CITATION PROCESSING-A/S-JUN14	
		08/11/2014	54623TPC	THIRD PARTY COLLECTIONS-A/S-JUN14	
		08/11/2014	53470	ADMIN CITATION PROCESSING-CODE-MAY14	
		08/11/2014	53575	ADMIN CITATION PROCESSING-CODE-APR14	
		08/11/2014	54624	ADMIN CITATION PROCESSING-B&S-JUN14	
Remit to: NEWPORT BEACH, CA					<u>FYTD:</u> \$50,772.27
EASTERN MUNICIPAL WATER DISTRICT	222303	08/18/2014	JUL-14 8/18/14	WATER CHARGES	\$70,037.57

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Item No. A.4



City of Moreno Valley
Payment Register
 For Period 8/1/2014 through 8/31/2014

CHECKS IN THE AMOUNT OF \$25,000 OR GREATER

<u>Vendor Name</u>	<u>Check/EFT Number</u>	<u>Payment Date</u>	<u>Inv Number</u>	<u>Invoice Description</u>	<u>Payment Amount</u>
EASTERN MUNICIPAL WATER DISTRICT	222362	08/25/2014	JUL-14 8/25/14	WATER CHARGES	\$54,775.95
Remit to: PERRIS, CA					<u>FYTD:</u> \$423,231.39
EMPLOYMENT DEVELOPMENT DEPARTMENT	13049	08/08/2014	2015-00000036	CA TAX - STATE TAX WITHHOLDING	\$35,822.45
	13160	08/22/2014	2015-00000077	CA TAX - STATE TAX WITHHOLDING*	\$35,873.79
Remit to: SACRAMENTO, CA					<u>FYTD:</u> \$153,292.68
ENCO UTILITY SERVICES MORENO VALLEY LLC	13117	08/18/2014	0402-MF-01533A	SOLAR METER INSTALLATION	\$512,384.75
		08/18/2014	40-291B-10	WORK AUTHORIZATION 291B	
		08/18/2014	40-299B-04	WORK AUTHORIZATION 40-299B	
		08/18/2014	40-299A-06	WORK AUTHORIZATION 40-299A	
		08/18/2014	0402-MF-01532A	SOLAR METER INSTALLATION	
		08/18/2014	0406-TEMP MF-094	ELECTRIC METER FEES	
		08/18/2014	40-280B-10	WORK AUTHORIZATION 40-280B	
		08/18/2014	40-247B-19	WORK AUTHORIZATION 40-247B	
		08/18/2014	40-306B-03	WORK AUTHORIZATION 40-306B	
		08/18/2014	40-305B-03	WORK AUTHORIZATION 40-305B	
		08/18/2014	40-284B-03	WORK AUTHORIZATION 40-284B	
		08/18/2014	0405-1-182	DISTRIBUTION CHARGES 3/4-4/5/14	
		08/18/2014	40-282B-11	WORK AUTHORIZATION 40-282B	
		08/18/2014	0405-1-183	DISTRIBUTION CHARGES 4/1-5/1/14	
		08/18/2014	0402-MF-01531A	SOLAR METER INSTALLATION	
		08/18/2014	40-292B-11	WORK AUTHORIZATION 40-292B	



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ENCO UTILITY SERVICES MORENO VALLEY LLC	13117	08/18/2014	40-296A-06	WORK AUTHORIZATION 40-296A	\$512,384.75
		08/18/2014	40-305A-03	WORK AUTHORIZATION 40-305A	
		08/18/2014	40-297B-06	WORK AUTHORIZATION 40-297B	
		08/18/2014	40-297A-04	WORK AUTHORIZATION 40-297A	
		08/18/2014	40-292A-09	WORK AUTHORIZATION 40-292A	
		08/18/2014	40-304B-03	WORK AUTHORIZATION 40-304B	
		08/18/2014	40-302B-02	WORK AUTHORIZATION 40-302B	
	08/18/2014	0405-MTS1-SP109	ELECTRIC METER FEES		
	08/18/2014	40-301A-07	WORK AUTHORIZATION 40-301A		
	13170	08/25/2014	0405-1-184	DISTRIBUTION CHARGES 5/1-5/31/14	\$556,998.59
08/25/2014		0405-1-185	DISTRIBUTION CHARGES 5/31-6/27/14		
Remit to: ANAHEIM, CA					FYTD: \$1,109,658.27
HILLCREST CONTRACTING, INC	13172	08/25/2014	PB 22889	CONTRACTOR - NASON/CACTUS TO FIR	\$117,646.76
Remit to: CORONA, CA					FYTD: \$127,911.81
INTERNAL REVENUE SERVICE CENTER	13051	08/08/2014	2015-00000038	MEDICARE - MEDICARE TAX WITHHOLDING*	\$137,229.34
	13161	08/22/2014	2015-00000078	FED TAX - FEDERAL TAX WITHHOLDING*	\$139,699.81
Remit to: OGDEN, UT					FYTD: \$547,507.58
LIBRARY SYSTEMS & SERVICES, LLC	222236	08/11/2014	14244	LIBRARY SERVICES & MATERIALS-JUL14	\$108,917.58
Remit to: GERMANTOWN, MD					FYTD: \$108,917.58

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M.C. ALYEA CONSTRUCTION	13030	08/04/2014	102	CONSTRUCTION - SECURITY FENCING FIRE STATION 48 & 65	\$29,847.81
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$34,158.94
MORENO VALLEY UTILITY	222311	08/18/2014	AUG-14 8/18/14	ELECTRICITY	\$115,857.16
Remit to: HEMET, CA					<u>FYTD:</u> \$208,429.15
NATIONWIDE RETIREMENT SOLUTIONS CP	13053	08/08/2014	2015-00000041	8010 - DEF COMP 457 - NATIONWIDE*	\$25,162.98
	13155	08/22/2014	2015-00000072	8010 - DEF COMP 457 - NATIONWIDE*	\$60,162.98
Remit to: COLUMBUS, OH					<u>FYTD:</u> \$148,537.45
NOBLE AMERICAS ENERGY SOLUTIONS	13135	08/18/2014	141910003668803	ELECTRIC ENERGY PURCHASE FOR MV UTILITY	\$362,262.24
Remit to: PASADENA, CA					<u>FYTD:</u> \$723,881.01
ONESOURCE DISTRIBUTORS, INC.	13085	08/11/2014	S4243082.005	EQUIPMENT FOR MOVAL SUBSTATION-5000KVA PAD-MOUNTED TRANSFORMER	\$236,898.00
		08/11/2014	S4243082.007	EQUIPMENT FOR MOVAL SUBSTATION-5000KVA PAD-MOUNTED TRANSFORMER	
		08/11/2014	S4243082.003	EQUIPMENT FOR MOVAL SUBSTATION-25KVA PAD-MOUNTED TRANSFORMER	
		08/11/2014	S4243082.009	EQUIPMENT FOR MOVAL SUBSTATION-5000KVA PAD-MOUNTED TRANSFORMER	
Remit to: OCEANSIDE, CA					<u>FYTD:</u> \$236,898.00
PERS HEALTH INSURANCE	13153	08/08/2014	W140801	EMPLOYEE HEALTH INSURANCE	\$184,872.28
Remit to: SACRAMENTO, CA					<u>FYTD:</u> \$373,983.61



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PERS RETIREMENT	13046	08/01/2014	P140718	PERS RETIREMENT DEPOSIT - CLASSIC	\$245,341.60
	13104	08/15/2014	P140801	PERS RETIREMENT DEPOSIT - CLASSIC	\$248,492.59
	13240	08/29/2014	P140815	PERS RETIREMENT DEPOSIT - CLASSIC	\$245,533.89
Remit to: SACRAMENTO, CA					FYTD: \$1,278,906.11
POWELL CONSTRUCTORS, INC.	222247	08/11/2014	15-R	CONSTRUCTION - SR-60 MORENO BEACH PH. 1	\$54,594.92
Remit to: FONTANA, CA					FYTD: \$57,468.34
PRICE FAMILY CHARITABLE TRUST	222201	08/04/2014	1ST QTR 2014	SALES TAX REIMBURSEMENT	\$121,855.00
Remit to: LA JOLLA, CA					FYTD: \$121,855.00
PRINCIPLES CONTRACTING, INC.	13034	08/04/2014	5	CONSTRUCTION - CIVIC CENTER IMPROVEMENTS	\$111,439.75
Remit to: RIVERSIDE, CA					FYTD: \$111,439.75
RIVERSIDE CONSTRUCTION COMPANY, INC	13139	08/18/2014	140604	CONSTRUCTION - SR-60 NASON OC	\$232,140.79
Remit to: RIVERSIDE, CA					FYTD: \$301,029.87
SHEFFIELD FORECLOSURE RENOVATION	222319	08/18/2014	MV0256	REHABILITATION COSTS FOR NSP3 PROPERTY AT 14861 WINTERGREEN	\$150,523.56
		08/18/2014	MV0260	OVERHEAD BILLING FOR NSP3 PROPERTY AT 12669 GORHAM	
		08/18/2014	MV0258	FINAL REHAB COSTS FOR NSP 3 PROPERTY AT 13546 RUNDELL	
		08/18/2014	MV0257	OVERHEAD BILLING FOR NSP3 PROPERTY AT 14861 WINTERGREEN	
		08/18/2014	MV0259	REHABILITATION COSTS FOR NSP3 PROPERTY AT 12669 GORHAM	
		08/18/2014	MV0261	FINAL REHAB COSTS FOR NSP3 PROPERTY AT 11972 SUGAR CREEK	

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Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$198,523.56
SHELL ENERGY NORTH AMERICA (US) L.P.	13090	08/11/2014	1315641	ELECTRIC ENERGY PURCHASE FOR MV UTILITY	\$623,000.00
Remit to: PHILADELPHIA, PA					<u>FYTD:</u> \$623,000.00
SIRE TECHNOLOGIES/HYLAND SOFTWARE	13142	08/18/2014	268272	SIRE VIDEO PLUS-ANNUAL VIDEO STREAMING HOSTING 8/1/14- 7/31/15	\$28,817.60
		08/18/2014	236259	SIRE SOFTWARE MAINTENANCE 8/1/14-7/31/15	
Remit to: WESTLAKE, OH					<u>FYTD:</u> \$29,972.49
SOUTHERN CALIFORNIA EDISON 1	222321	08/18/2014	JUL-14 8/18/14	ELECTRICITY	\$178,541.66
		08/18/2014	587-9520 JUL-14	ELECTRICITY-FERC CHARGES	
		08/18/2014	707-6081 JUL-14	ELECTRICITY	
		08/18/2014	721-3449 JUL-14	IFA CHARGES-SUBSTATION	
	222322	08/18/2014	7500466429	WDAT CHARGES-NANDINA AVE. LOCATION	\$48,147.51
		08/18/2014	7500466427	WDAT CHARGES-GRAHAM ST. LOCATION	
		08/18/2014	7500466635	RELIABILITY SERVICE - DLAP_SCE_SEES_HV	
		08/18/2014	7500466428	WDAT CHARGES-GLOBE ST. LOCATION	
		08/18/2014	7500466431	WDAT CHARGES-SUBSTATION 115KV INTERCONNECTION	
		08/18/2014	7500466430	WDAT CHARGES-FREDERICK AVE. LOCATION	
		08/18/2014	7500466426	WDAT CHARGES-IRIS AVE. LOCATION	
	222381	08/25/2014	JUL-14 8/25/14	ELECTRICITY	\$31,347.82
Remit to: ROSEMEAD, CA					<u>FYTD:</u> \$547,879.82
STANDARD INSURANCE CO	13093	08/11/2014	140801a	LIFE & DISABILITY INSURANCE	\$25,537.34



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Remit to: PORTLAND, OR					<u>FYTD:</u> \$53,818.69
U.S. BANK/CALCARDS	13040	08/04/2014	07-28-14	PAYMENT FOR JULY 2014 CALCARD ACTIVITY	\$220,916.61
Remit to: ST. LOUIS, MO					<u>FYTD:</u> \$526,648.73
WILLDAN ENGINEERING	13150	08/18/2014	002-14567	PLAN CHECK & INSPECTION SERVICES FOR BLDG. & SAFETY DEPT.	\$68,762.58
	13192	08/25/2014	002-14640	PLAN CHECK & INSPECTION SERVICES FOR BLDG. & SAFETY DEPT.	\$27,092.74
Remit to: ANAHEIM, CA					<u>FYTD:</u> \$134,081.05
-47- WRCOG WESTERN RIVERSIDE CO. OF GOVT'S.	222330	08/18/2014	JUL-14 TUMF	TUMF FEES COLLECTED FROM 7/1-7/31/14	\$918,011.97
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$1,059,979.97
TOTAL AMOUNTS OF \$25,000 OR GREATER					\$9,238,055.61



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ACCESS SECURITY CONTROLS INT., INC.	222159	08/04/2014	14-2017	QUARTERLY MONITORING-SUNNYMEAD M/S (JUL-SEPT14)	\$75.00
Remit to: TEMECULA, CA					<u>FYTD:</u> \$75.00
ACTION DOOR REPAIR CORP.	13107	08/18/2014	90212	REPAIR SVCS FOR PURCHASING GATE @ CITY YARD	\$1,138.05
		08/18/2014	90213	REPAIR SVCS-PROVIDE & INSTALL NEW TRANSFORMER-FS#2	
Remit to: ORLANDO, FL					<u>FYTD:</u> \$2,783.22
ADLERHORST INTERNATIONAL INC.	13108	08/18/2014	20716	MONTHLY TRAINING FOR K-9 DRE-JUL14	\$425.01
		08/18/2014	20718	MONTHLY TRAINING FOR K-9 IVAN-JUL14	
		08/18/2014	20717	MONTHLY TRAINING FOR K-9 OZZI-JUL14	
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$850.02
ADMINSURE	222160	08/04/2014	7041	WORKERS' COMP CLAIMS ADMINISTRATION-JUL14	\$4,350.00
		08/04/2014	7101	WORKERS' COMP CLAIMS ADMINISTRATION-AUG14	
Remit to: DIAMOND BAR, CA					<u>FYTD:</u> \$4,350.00
ADVANCE REFRIGERATION & ICE SYSTEMS, INC	222161	08/04/2014	3284-38592	ICE MACHINE MAINT-FS#91	\$195.00
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$1,655.00
ADVANCED ELECTRIC	222162	08/04/2014	11083	PSB RELAMPING	\$5,175.00
		08/04/2014	11084	PSB RELAMPING	
		08/04/2014	11092	INSTALL TV MOUNT IN PD CHIEF'S OFFICE	
	222213	08/11/2014	11096	ELECTRICAL SVCS-FS#91	\$1,486.40
		08/11/2014	11093	ELECTRICAL SERVICES-TS	



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ADVANCED ELECTRIC	222213	08/11/2014	11097	ELECTRICAL SVCS-FS#91	\$1,486.40
Remit to: RIVERSIDE, CA					FYTD: \$16,694.92
AEROTEK, INC.	13109	08/18/2014	OP05078300	TEMPORARY STAFFING 7/14-7/17/14	\$603.84
		08/18/2014	OP05091826	TEMPORARY STAFFING 7/22/14	
Remit to: CHICAGO, IL					FYTD: \$1,625.28
AFECO, INC DBA FIRE ETC	13056	08/11/2014	64175	MSA 5200 HD2 THERMAL IMAGING CAMERA	\$9,990.77
Remit to: SAN DIEGO, CA					FYTD: \$9,990.77
AKM CONSULTING ENGINEERS, INC	222214	08/11/2014	7869	CONSULTING - SAN TIMOTEO FOOTHILL SD	\$22,608.00
Remit to: IRVINE, CA					FYTD: \$50,158.00
ALBARRAN, ROBERT	222268	08/11/2014	8/18-8/21/14	TRAVEL PER DIEM-VIOLENT CRIME BEHAVIORAL ANALYSIS SEMINAR	\$200.00
Remit to: MORENO VALLEY, CA					FYTD: \$200.00
ALL AMERICAN ASPHALT, INC.	13154	08/14/2014	W140804	RETENTION RELEASE PER ESCROW AGREEMENT-INV#163407	\$14,556.79
Remit to: CORONA, CA					FYTD: \$285,198.25
ALTERNATIVES TO DOMESTIC VIOLENCE	13016	08/04/2014	JAN 2014	CDBG REIMBURSMENT FOR DOMESTIC VIOLENCE SERVICES	\$1,768.78
		08/04/2014	DEC 2013	CDBG REIMBURSEMENT FOR DOMESTIC VIOLENCE SERVICES	
	13110	08/18/2014	APR 2014	CDBG REIMBURSEMENT TO DOMESTIC VIOLENCE SERVICES	\$1,690.64
		08/18/2014	MAR 2014	CDBG REIMBURSEMENT FOR DOMESTIC VIOLENCE SERVICES	
		08/18/2014	MAY 2014	CDBG REIMBURSEMENT TO DOMESTIC VIOLENCE SERVICES	

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Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$3,459.42
AMEKO POWER SOLAR	222206	08/04/2014	BL#27984-YR2014	REFUND OF DUPLICATE PAYMENT FOR B/L#27984	\$68.00
Remit to: SOUTH EL MONTE, CA					<u>FYTD:</u> \$68.00
AMERICAN FORENSIC NURSES	13057	08/11/2014	65055	PHLEBOTOMY SERVICES	\$2,735.00
		08/11/2014	65033	PHLEBOTOMY SERVICES	
		08/11/2014	64912	PHLEBOTOMY SERVICES	
		08/11/2014	64966	PHLEBOTOMY SERVICES	
		08/11/2014	65056	PHLEBOTOMY SERVICES	
		08/11/2014	64932	PHLEBOTOMY SERVICES	
	13111	08/18/2014	65101	PHLEBOTOMY SERVICES	\$1,420.00
		08/18/2014	65123	PHLEBOTOMY SERVICES	
Remit to: PALM SPRINGS, CA					<u>FYTD:</u> \$4,155.00
AMTECH ELEVATOR SERVICES	222164	08/04/2014	DVB05046614	ELEVATOR ROUTINE MAINT-EOC-JUN14	\$328.57
		08/04/2014	DVB65909213	ELEVATOR ROUTINE MAINT-EOC (FEB13)	
		08/04/2014	DVB65909A12	ELEVATOR ROUTINE MAINT-EOC (OCT12)	
	222215	08/11/2014	DVB30526001	TESTING PER STATE REQUIREMENTS-EOC	\$1,495.00
	222294	08/18/2014	DVB05044514	ELEVATOR ROUTINE MAINT-CITY HALL-MAY14	\$243.84
		08/18/2014	DVB05044414	ELEVATOR ROUTINE MAINT-CITY HALL-APR14	
Remit to: PASADENA, CA					<u>FYTD:</u> \$2,572.33
ANIMAL EMERGENCY CLINIC, INC.	13162	08/25/2014	7312014	AFTER HOURS EMERGENCY VET SVCS-JULY 2014	\$462.00
Remit to: GRAND TERRACE, CA					<u>FYTD:</u> \$682.00



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ANIMAL PEST MANAGEMENT SERVICES, INC.	13017	08/04/2014	127474	PEST CONTROL SVCS-CITY PARKS	\$600.00
Remit to: CHINO, CA					<u>FYTD:</u> \$1,900.50
APPDEV PRODUCTS, LLC DBA LEARNNOWPLUS	13058	08/11/2014	99-64523	APPDEV ANNUAL SUBSCRIPTION	\$1,260.00
Remit to: EDEN PRAIRIE, MN					<u>FYTD:</u> \$1,260.00
APPIAN ESCROW COMPANY	13045	08/08/2014	W140802	TITLE AND ESCROW FEES-NSP3 PROGRAM-22862 ADRIENNE AVE	\$3,345.90
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$3,345.90
APWA-AMERICAN PUBLIC WORKS ASSOCIATION	222359	08/25/2014	613352 FY14/15	MICRO PAVER ANNUAL MAINTENANCE	\$550.00
Remit to: KANSAS CITY, MO					<u>FYTD:</u> \$550.00
ARC OF RIVERSIDE COUNTY, THE	13112	08/18/2014	4 (APR-JUN 2014)	REIMB-MV RESOURCE CENTER-CDBG	\$1,515.38
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$1,515.38
AREVALO, JULIE	222401	08/25/2014	1169500	REFUND FOR PICNIC SHELTER RESERVATION	\$80.00
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$80.00
ARROWHEAD WATER	13059	08/11/2014	04G0029115177	WATER PURIF. UNITS RENTAL-ANIMAL SHELTER	\$107.96
		08/11/2014	04G0029115201	WATER PURIF. UNIT RENTAL-SENIOR CENTER	
		08/11/2014	04G0029115359	WATER PURIF. UNIT RENTAL-CRC	
Remit to: LOUISVILLE, KY					<u>FYTD:</u> \$1,025.62
AT&T MOBILITY	222216	08/11/2014	872455379X070614	CELLULAR PHONE SVC-MCC	\$92.36

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Remit to: CAROL STREAM, IL					<u>FYTD:</u> \$92.36
AT&T/MCI	222217	08/11/2014	5572211	LANDLINE PHONE SVC-GANG TASK FORCE	\$360.38
		08/11/2014	5483645	LANDLINE PHONE SVC-GANG TASK FORCE	
Remit to: CAROL STREAM, IL					<u>FYTD:</u> \$360.38
ATHALYE CONSULTING ENGINEERING SERVICES	13018	08/04/2014	MV-Nisan-01	CONSULTING - NASON/CACTUS TO FIR	\$17,552.05
Remit to: LAKE FOREST, CA					<u>FYTD:</u> \$17,552.05
BACA, VICTORIA	222393	08/25/2014	9/3-9/5/14	TRAVEL PER DIEM-LCC ANNUAL CONF. & EXPO	\$177.50
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$177.50
BALLOTE, TANICIA	222333	08/18/2014	1150934	REFUND BASKETBALL	\$60.00
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$60.00
BARTLETT, NANCY	222334	08/18/2014	LD130035	REFUND-RESEARCH FEE	\$87.00
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$87.00
BAYLARK, JAMES	222335	08/18/2014	1156623	CRC RENTAL DEPOSIT REFUND	\$500.00
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$500.00
BEMUS LANDSCAPE, INC.	13060	08/11/2014	257908	LANDSCAPE MAINT-VETERAN'S MEMORIAL	\$1,332.30
Remit to: SAN CLEMENTE, CA					<u>FYTD:</u> \$6,056.60
BENESYST	13019	08/04/2014	IN335706	FSA ADMIN FEES-AUG14	\$384.32
		08/04/2014	IN321506	FSA ADMIN FEES-JUL14	



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BENESYST	13163	08/25/2014	IN352336	ADMINISTRATION FEES-COBRA	\$397.16
		08/25/2014	IN351857	ADMINISTRATION FEES-FSA	
Remit to: MINNEAPOLIS, MN					<u>FYTD:</u> \$781.48
BICKMORE RISK SERVICES & CONSULTING	13020	08/04/2014	BRS-0010774	GENERAL LIABILITY ALLOCATION STUDY	\$4,500.00
		08/04/2014	BRS-0010775	WORKERS' COMP ALLOCATION REPORT	
Remit to: SACRAMENTO, CA					<u>FYTD:</u> \$4,500.00
BISHOP, JARRED	222269	08/11/2014	8/18-8/21/14	TRAVEL PER DIEM-VIOLENT CRIME BEHAVIORAL ANALYSIS SEMINAR	\$200.00
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$200.00
BUREAU VERITAS NORTH AMERICA, INC	13061	08/11/2014	1238601	PLAN REVIEW SVCS-FIRE PREV-JUN14	\$738.00
Remit to: LOS ANGELES, CA					<u>FYTD:</u> \$738.00
BURNS & MCDONNELL ENGINEERING COMPANY, INC	222218	08/11/2014	77878-2	COST OF SERVICE AND RATE DESIGN STUDY	\$5,249.00
Remit to: KANSAS CITY, MO					<u>FYTD:</u> \$5,249.00
CALGO VEBA CITY OF MORENO VALLEY	13062	08/11/2014	2015-00000044	4020 - EXEC VEBA*	\$8,192.50
	13164	08/25/2014	2015-00000065	4030 - MVMA VEBA*	\$1,845.00
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$19,665.00
CALIFORNIA DEPARTMENT OF SOCIAL SERVICES	222165	08/04/2014	FAC. 334809653	COMMUNITY CARE LICENSING FEES-ARMADA ELEMENTARY FACILITY	\$220.00

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<u>Vendor Name</u>	<u>Check/EFT Number</u>	<u>Payment Date</u>	<u>Inv Number</u>	<u>Invoice Description</u>	<u>Payment Amount</u>
Remit to: SACRAMENTO, CA					<u>FYTD:</u> \$220.00
CALIFORNIA DEPT OF EDUCATION	222166	08/04/2014	C-053466	FY12/13 CHILD'S PLACE GRANT EXCESS RESERVES	\$3,185.00
		08/04/2014	C-053464	FY12/13 CHILD'S PLACE GRANT OVERPAYMENT	
Remit to: SACRAMENTO, CA					<u>FYTD:</u> \$3,185.00
CALIFORNIA HIGHWAY PATROL	222295	08/18/2014	M0058289	SECURITY - SR-60 MORENO BEACH PH. 1	\$23,793.98
		08/18/2014	M0058288	SECURITY - SR-60 MORENO BEACH PH. 1	
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$23,793.98
CALIFORNIA MUNICIPAL UTILITIES ASSOC.	222219	08/11/2014	1874	2014 ASSESSMENT FOR CCSE NOTIFICATION, OUTREACH & EDUC EFFORTS	\$6,592.00
		08/11/2014	1905	FY14/15 ANNUAL MEMBERSHIP	
Remit to: SACRAMENTO, CA					<u>FYTD:</u> \$6,592.00
CALIFORNIA WATERSHED ENGINEERING CORP.	13165	08/25/2014	14387	PLAN CHECK SVCS-PWQMP-JUL14	\$376.00
Remit to: FULLERTON, CA					<u>FYTD:</u> \$376.00
CALLAHAN, JERRY	222336	08/18/2014	R14-075129	AS REFUND-RABIES DEPOSIT	\$20.00
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$20.00
CARE ANIMAL HOSPITAL	222296	08/18/2014	178794	VET CARE SVCS-SET K-9 DRE	\$197.61
Remit to: TEMECULA, CA					<u>FYTD:</u> \$197.61
CASA FOR RIVERSIDE COUNTY, INC.	13113	08/18/2014	MAR-JUN 2014	CASA REIMBURSEMENT-CDBG	\$3,037.20



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<u>Vendor Name</u>	<u>Check/EFT Number</u>	<u>Payment Date</u>	<u>Inv Number</u>	<u>Invoice Description</u>	<u>Payment Amount</u>
Remit to: INDIO, CA					<u>FYTD:</u> \$3,037.20
CASS, HORTENCIA	222273	08/11/2014	R14-076014	AS REFUND-RET OF COLLAR,HARNESS	\$17.59
Remit to: MENIFEE, CA					<u>FYTD:</u> \$17.59
CENTRAL OCCUPATIONAL MEDICINE PROVIDERS	13064	08/11/2014	04CTY107-0330633	PRE-EMPLOYMENT PHYSICAL/DRUG TESTING	\$1,254.00
		08/11/2014	04-0330633	PRE-EMPLOYMENT PHYSICAL/DRUG TESTING	
		08/11/2014	04CTY107-0330619	PRE-EMPLOYMENT PHYSICAL/DRUG TESTING	
		08/11/2014	04CTY107-0330134	PRE-EMPLOYMENT PHYSICAL/DRUG TESTING	
	13166	08/25/2014	04CTY107-0332038	PRE-EMPLOYMENT PHYSICAL/DRUG TESTING	\$787.00
		08/25/2014	04CTY107-0331434	PRE-EMPLOYMENT PHYSICAL/DRUG TESTING	
		08/25/2014	04CTY107-0331749	PRE-EMPLOYMENT PHYSICAL/DRUG TESTING	
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$4,035.00
CERNA, JASMINE	222402	08/25/2014	1169774	REFUND FOR BASKETBALL CLINIC	\$35.00
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$35.00
CINTAS CORPORATION	13065	08/11/2014	150319048	UNIFORM RENTAL SVC.-MECHANICS	\$898.83
		08/11/2014	150319049	UNIFORM RENTAL SVC.-TREE MAINT.	
		08/11/2014	150326153	UNIFORM RENTAL SVC.-FACILITIES	
		08/11/2014	150311926	UNIFORM RENTAL SVC.-PURCHASING DEPT.	
		08/11/2014	150315502	UNIFORM RENTAL SVC.-PURCHASING DEPT.	
		08/11/2014	150319044	UNIFORM RENTAL SVC.-PURCHASING DEPT.	
		08/11/2014	150315503	UNIFORM RENTAL SVC.-TRAFFIC SIGNAL	
		08/11/2014	150319047	UNIFORM RENTAL SVC.-GRAFFITI RMVL.	

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CINTAS CORPORATION	13065	08/11/2014	150319046	UNIFORM RENTAL SVC.-ST. SIGNS/STRIPING	\$898.83
		08/11/2014	150315513	UNIFORM RENTAL SVC.-FACILITIES	
		08/11/2014	150311937	UNIFORM RENTAL SVC.-FACILITIES	
		08/11/2014	150326144	UNIFORM RENTAL SVC.-ST. SIGNS/STRIPING	
		08/11/2014	150322618	UNIFORM RENTAL SVC.-ST. SIGNS/STRIPING	
		08/11/2014	150322620	UNIFORM RENTAL SVC.-MECHANICS	
		08/11/2014	150311927	UNIFORM RENTAL SVC.-TRAFFIC SIGNAL	
		08/11/2014	150322616	UNIFORM RENTAL SVC.-PURCHASING DEPT.	
		08/11/2014	150322627	UNIFORM RENTAL SVC.-CONCRETE MAINT.	
		08/11/2014	150326143	UNIFORM RENTAL SVC.-TRAFFIC SIGNAL	
		08/11/2014	150315508	UNIFORM RENTAL SVC.-CFD #1 STAFF	
		08/11/2014	150319043	UNIFORM RENTAL SVC.-PARKS MAINT. STAFF	
		08/11/2014	150319050	UNIFORM RENTAL SVC.-CFD #1 STAFF	
		08/11/2014	150322615	UNIFORM RENTAL SVC.-PARKS MAINT. STAFF	
		08/11/2014	150319056	UNIFORM RENTAL SVC.-GOLF COURSE STAFF	
		08/11/2014	150322623	UNIFORM RENTAL SVC.-ST. SWEEPING	
		08/11/2014	150319045	UNIFORM RENTAL SVC.-TRAFFIC SIGNAL	
		08/11/2014	150315504	UNIFORM RENTAL SVC.-ST. SIGNS/STRIPING	
		08/11/2014	150319051	UNIFORM RENTAL SVC.-ST. SWEEPING	
		08/11/2014	150319052	UNIFORM RENTAL SVC.-DRAIN MAINT.	
		08/11/2014	150322628	UNIFORM RENTAL SVC.-FACILITIES	
		08/11/2014	150319053	UNIFORM RENTAL SVC.-STREET MAINT.	
		08/11/2014	150322619	UNIFORM RENTAL SVC.-GRAFFITI RMVL.	
		08/11/2014	150315514	UNIFORM RENTAL SVC.-GOLF COURSE STAFF	



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CINTAS CORPORATION	13065	08/11/2014	150311928	UNIFORM RENTAL SVC.-ST. SIGNS/STRIPING	\$898.83
		08/11/2014	150315501	UNIFORM RENTAL SVC.-PARKS MAINT. STAFF	
		08/11/2014	150311938	UNIFORM RENTAL SVC.-GOLF COURSE STAFF	
		08/11/2014	150311932	UNIFORM RENTAL SVC.-CFD #1 STAFF	
		08/11/2014	150322621	UNIFORM RENTAL SVC.-TREE MAINT.	
		08/11/2014	150322617	UNIFORM RENTAL SVC.-TRAFFIC SIGNAL	
		08/11/2014	150311925	UNIFORM RENTAL SVC.-PARKS MAINT. STAFF	
		08/11/2014	150319055	UNIFORM RENTAL SVC.-FACILITIES	
		08/11/2014	150322629	UNIFORM RENTAL SVC.-GOLF COURSE STAFF	
		08/11/2014	150322624	UNIFORM RENTAL SVC.-DRAIN MAINT.	
		08/11/2014	150322626	UNIFORM RENTAL SVC.-STREET MAINT.	
		08/11/2014	150319054	UNIFORM RENTAL SVC.-CONCRETE MAINT.	

Remit to: ONTARIO, CA FYTD: \$2,951.75

CITY OF FOSTER CITY	222220	08/11/2014	8464	CALOPPS ANNUAL FEE	\$1,500.00
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Remit to: FOSTER CITY, CA FYTD: \$1,500.00

CMA FOUNDATION	222337	08/18/2014	1167520	CRC RENTAL DEPOSIT REFUND	\$212.50
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Remit to: SACRAMENTO, CA FYTD: \$212.50

COLONIAL SUPPLEMENTAL INSURANCE	222291	08/11/2014	7133069-0801407	SUPPLEMENTAL INSURANCE	\$5,477.49
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emit to: COLUMBIA, SC FYTD: \$11,299.83

COMMUNITY ASSISTANCE PROGRAM - CAP	13114	08/18/2014	JUN 2014	CAP FOOD PROGRAM-CDBG	\$8,896.53
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<u>Vendor Name</u>	<u>Check/EFT Number</u>	<u>Payment Date</u>	<u>Inv Number</u>	<u>Invoice Description</u>	<u>Payment Amount</u>
COMMUNITY ASSISTANCE PROGRAM - CAP	13114	08/18/2014	MAY 2014	CAP FOOD PROGRAM-CDBG	\$8,896.53
		08/18/2014	APR 2014	CAP FOOD PROGRAM-CDBG	
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$8,896.53
COMMUNITY CONNECT	222297	08/18/2014	JUNE 2014	211 CALL CENTER INFO & REFERRAL-CDBG	\$162.01
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$712.87
COMMUNITY HEALTH CHARITIES	222221	08/11/2014	2015-00000045	8725 - CH CHARITY	\$85.00
	222360	08/25/2014	2015-00000066	8725 - CH CHARITY	
Remit to: COSTA MESA, CA					<u>FYTD:</u> \$343.00
COMPETITIVE STRIDE	222212	08/04/2014	3215	SPORTS TROPHIES & PLAQUES-4TH OF JULY PARADE	\$3,226.50
		08/04/2014	3221	SPORTS AWARDS SUPPLIES-SUMMER BASKETBALL	
		08/04/2014	3220	SPORTS AWARDS SUPPLIES-TBALL	
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$3,226.50
CONTEMPORARY SERVICES CORPORATION	222167	08/04/2014	158362	SECURITY SVCS- JULY 4TH CELEBRATION 7/3-7/5/14	\$6,088.50
Remit to: LOS ANGELES, CA					<u>FYTD:</u> \$6,088.50
CONTINUING EDUCATION OF THE BAR	222298	08/18/2014	10292257	BOOKS FOR THE LAW LIBRARY	\$170.95
Remit to: OAKLAND, CA					<u>FYTD:</u> \$170.95
COOMBS, NENE	222403	08/25/2014	1170037	REFUND CLASS PROGRAM NO LONGER OFFERED	\$37.00
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$37.00



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<u>Vendor Name</u>	<u>Check/EFT Number</u>	<u>Payment Date</u>	<u>Inv Number</u>	<u>Invoice Description</u>	<u>Payment Amount</u>
CORDERO, JOSE	222274	08/11/2014	7008596-04	SOLAR INCENTIVE REBATE	\$7,064.00
Remit to: MORENO VALLEY, CA					FYTD: \$7,064.00
COSTCO	222168	08/04/2014	20742	MISC. SUPPLIES FOR EOC	\$854.80
		08/04/2014	20740	SNACK SUPPLIES-CELEBRATION PARK	
		08/04/2014	20739	SNACK SUPPLIES-COTTONWOOD GOLF COURSE	
		08/04/2014	20757	SNACK SUPPLIES-CELEBRATION PARK	
		08/04/2014	20735	SNACK SUPPLIES-SPECIAL EVENTS	
	222299	08/18/2014	20818	TELEVISION AND WALL MOUNT-FS#6	\$987.48
	222361	08/25/2014	20752	SNACK SUPPLIES FOR A CHILD'S PLACE	\$4,208.75
		08/25/2014	20789	SNACK SUPPLIES FOR CELEBRATION PARK	
		08/25/2014	20823	SNACK SUPPLIES FOR SKATE PARK	
		08/25/2014	20785	SNACK SUPPLIES FOR A CHILD'S PLACE	
		08/25/2014	20824	SNACK SUPPLIES FOR COTTOWOOD GOLF COURSE	
Remit to: MORENO VALLEY, CA					FYTD: \$6,072.32
COUNSELING TEAM, THE	222169	08/04/2014	23310	EMPLOYEE SUPPORT SERVICES-HR	\$7,300.00
		08/04/2014	23239	CONSULTING SERVICES-CAPITAL PROJECTS	
		08/04/2014	23393	EMPLOYEE SUPPORT SERVICES	
Remit to: SAN BERNARDINO, CA					FYTD: \$7,300.00
COUNTRY SQUIRE ESTATES	222170	08/04/2014	JULY 2014	UUT REIMBURSEMENT JULY 2014	\$65.87
Remit to: ONTARIO, CA					FYTD: \$115.81
COUNTY OF RIVERSIDE SHERIFF	222222	08/11/2014	SH0000024304	LAW ENFORCEMENT EXTRA DUTY HOURS-DUI CHECKPOINT 5/9/14	\$481.80

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COUNTY OF RIVERSIDE SHERIFF	222222	08/11/2014	SH0000024412	LAW ENFORCEMENT EXTRA DUTY HOURS-DUI CHECKPOINT 5/30/14	\$481.80
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$8,548,565.77
COUNTY OF RIVERSIDE, AUDITOR- CONTROLLER	222171	08/04/2014	AC0000001022	LAFCO-FY 2015 FEES	\$12,491.61
	222300	08/18/2014	JUN-14	TRANSMITTAL OF AB544-PARKING CONTROL FEES	\$18,527.04
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$50,431.90
COUNTY OF RIVERSIDE-BUILDING & SAFETY	222301	08/18/2014	31443	COPIES OF COUNTY BLDG RECORDS	\$8.00
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$8.00
CPRS DISTRICT XI	222172	08/04/2014	124499 8/14-8/15	RENEWAL MEMBERSHIP-MEL ALONZO	\$165.00
Remit to: SACRAMENTO, CA					<u>FYTD:</u> \$165.00
CRANK, HEATHER	222404	08/25/2014	R14-075594	AS-REFUND-SPAY/NEUTER DEPOSIT	\$75.00
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$75.00
D & D SERVICES DBA D & D DISPOSAL, INC.	222223	08/11/2014	52785	DECEASED ANIMAL DISPOSAL SVCS-JUL14	\$745.00
Remit to: VALENCIA, CA					<u>FYTD:</u> \$1,490.00
DATA TICKET, INC.	13115	08/18/2014	54625TPC	THIRD PARTY COLLECTIONS-CODE-JUN14	\$15,420.29
		08/18/2014	54805-2	PRINTED SUPPLIES-100 ROLLS W/ 85 TICKETS/ROLL	
		08/18/2014	54805	ADMIN CITATION PROCESSING-CODE-JUN14	
		08/18/2014	54625	ADMIN CITATION PROCESSING-CODE-JUN14	
		08/18/2014	54805-1	THIRD PARTY COLLECTIONS-CODE-JUN14	



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DATA TICKET, INC.	13115	08/18/2014	54690	ADMIN CITATION PROCESSING-CODE (RED)-JUN14	\$15,420.29
Remit to: NEWPORT BEACH, CA					<u>FYTD:</u> \$50,772.27
DATAQUICK CORPORATE HEADQUARTERS	222224	08/11/2014	B1-2302641	ONLINE SOFTWARE SUBSCRIPTION-POP UNIT-JUN14	\$130.50
	222302	08/18/2014	B1-2312820	ONLINE SOFTWARE SUBSCRIPTION-POP UNIT-JUL14	
Remit to: LOS ANGELES, CA					<u>FYTD:</u> \$261.00
DAVID TURCH & ASSOCIATES	222173	08/04/2014	JUN 2014	FEDERAL LEGISLATIVE ADVOCATE SERVICES JUNE 1-30, 2014	\$4,166.67
Remit to: WASHINGTON, DC					<u>FYTD:</u> \$4,166.67
DAWSON, MICHELLE	222394	08/25/2014	9/3-9/5/14	TRAVEL PER DIEM-LCC ANNUAL CONF. & EXPO	\$177.50
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$177.50
DELTA DENTAL OF CALIFORNIA	13102	08/11/2014	BE000864902	EMPLOYEE DENTAL INSURANCE-PPO	\$10,536.88
Remit to: SAN FRANCISCO, CA					<u>FYTD:</u> \$21,073.76
DELTACARE USA	222292	08/11/2014	BE000865925	EMPLOYEE DENTAL INSURANCE-HMO	\$5,131.49
Remit to: DALLAS, TX					<u>FYTD:</u> \$10,262.98
DENNIS GRUBB & ASSOCIATES, LLC	13067	08/11/2014	1261	PLAN REVIEW SERVICES 7/1-7/15/14	\$11,320.00
	13167	08/25/2014	1264	PLAN REVIEW SERVICES 7/16-7/31/14	\$8,160.00
Remit to: MIRA LOMA, CA					<u>FYTD:</u> \$31,380.00
DESUTTON, NANCY CORRAL	222353	08/18/2014	MVP67705	REFUND-CITATION OVERPAYMENT	\$62.50
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$62.50

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DUNNE, LAURIE	222354	08/18/2014	MV2130322021	REFUND-CITATION OVERPAYMENT-MV2130322021 & MV2130405021	\$345.00
Remit to: WALNUT CREEK, CA					<u>FYTD:</u> \$345.00
DUVAL, ROBERTA	222225	08/11/2014	JUL-2014	INSTRUCTOR SERVICES-CPR CLASS	\$360.00
Remit to: SUN CITY, CA					<u>FYTD:</u> \$360.00
E.R. BLOCK PLUMBING & HEATING, INC.	13068	08/11/2014	115674	BACKFLOW DEVICE TEST-FS#99	\$4,847.12
		08/11/2014	115665	REPLACED BACKFLOW DEVICE-ZONE D	
		08/11/2014	115666	REPLACED BACKFLOW DEVICE-ZONE D	
		08/11/2014	115667	REPLACED BACKFLOW DEVICE-ZONE 05	
		08/11/2014	115628	BACKFLOW DEVICE TESTS-VARIOUS LOCATIONS	
		08/11/2014	115589	BACKFLOW DEVICE TEST-FS#58	
		08/11/2014	115668	REPLACED BACKFLOW DEVICE-ZONE 02	
	13168	08/25/2014	115570	BACKFLOW DEVICE TESTS-VRS LOCATIONS-PARKS	\$100.00
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$9,187.12
E2I NET DESIGN, LLC	13116	08/18/2014	MV14001	SOFTWARE UPGRADE AND MAINTENANCE	\$4,200.00
Remit to: MENIFEE, CA					<u>FYTD:</u> \$4,200.00
EASTERN MUNICIPAL WATER DISTRICT	222174	08/04/2014	JUL-14 8/4/14	WATER CHARGES	\$23,301.77
Remit to: PERRIS, CA					<u>FYTD:</u> \$423,231.39
EASY TURF, INC.	13069	08/11/2014	821-1	REPAIR OF CFD SYNTHETIC TURF	\$3,900.00
Remit to: VISTA, CA					<u>FYTD:</u> \$3,900.00



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EDGELANE MOBILE HOME PARK	13169	08/25/2014	JULY 2014	UUT REIMBURSEMENT JULY 2014	\$3.33
Remit to: LOS ANGELES, CA					FYTD: \$6.85
EMPLOYMENT DEVELOPMENT DEPARTMENT	13197	08/21/2014	2ND QTR 2014	UNEMPLOYMENT INSURANCE 4/1-6/30/14	\$12,309.00
Remit to: SACRAMENTO, CA					FYTD: \$153,292.68
ENCO UTILITY SERVICES MORENO VALLEY LLC	13070	08/11/2014	0402-MF-01528A	SOLAR METER INSTALLATION	\$5,965.86
		08/11/2014	40-294A-01	WORK AUTHORIZATION 40-294A	
		08/11/2014	0402-MF-01529A	SOLAR METER INSTALLATION	
		08/11/2014	40-294B-01	WORK AUTHORIZATION 40-294B	
		08/11/2014	0402-MF-01525A	SOLAR METER INSTALLATION	
		08/11/2014	40-284B-02	WORK AUTHORIZATION 40-284B	
		08/11/2014	0402-MF-01526A	SOLAR METER INSTALLATION	
		08/11/2014	0402-MF-01530A	SOLAR METER INSTALLATION	
		08/11/2014	0402-MF-01523A	SOLAR METER INSTALLATION	
Remit to: ANAHEIM, CA					FYTD: \$1,109,658.27
ESGIL CORPORATION	13071	08/11/2014	06143896	PLAN CHECK SVCS-JUN14	\$450.00
Remit to: SAN DIEGO, CA					FYTD: \$6,364.60
EVANS ENGRAVING & AWARDS	13022	08/04/2014	61814-01	RESIGNATION PLAQUE FOR SARAH MARTINEZ	\$30.24
	13072	08/11/2014	73014-23	RECOGNITION PLAQUE FOR FRANK KIM	\$92.88
		08/11/2014	72914-15	ENGRAVING/BADGES FOR COMMISSIONERS	
		08/11/2014	71714-14	VOLUNTEER RECOGNITION PLAQUE	

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EVANS ENGRAVING & AWARDS	13118	08/18/2014	61814-9	BADGES FOR COMMISSIONERS	\$86.40
		08/18/2014	61714-28	PLAQUES FOR COMMISSIONERS	
	13171	08/25/2014	81414-8	BADGES/ENGRAVING FOR ARTS COMMISSIONERS	\$60.48
		08/25/2014	8714-4	PLAQUE-EMPLOYEE OF THE QUARTER	
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$759.24
EWING IRRIGATION PRODUCTS	222175	08/04/2014	8272718	IRRIGATION PARTS AND SUPPLIES FOR CFD#1 PARKS	\$19,153.31
Remit to: PHOENIX, AZ					<u>FYTD:</u> \$19,153.31
EXCEL LANDSCAPE, INC	13073	08/11/2014	81331	LANDSCAPE MAINT-NPDES-JUL14	\$6,240.00
Remit to: CORONA, CA					<u>FYTD:</u> \$15,719.16
FAIR HOUSING COUNCIL OF RIV CO, INC.	13119	08/18/2014	JUN 2014 (LT)	LANDLORD/TENANT MEDIATION PROGRAM-CDBG	\$5,477.31
		08/18/2014	JUN 2014 (LM)	FORECLOSURE PREV/LOSS MITIGATION PROGRAM-CDBG	
		08/18/2014	JUN 2014 (FH)	FAIR HOUSING DISCRIMINATION PROGRAM-CDBG	
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$16,460.06
FALCON ENGINEERING SERVICES, INC.	13120	08/18/2014	2012-18	CONSULTING - SR-60 MORENO BEACH PH. 1	\$3,231.11
Remit to: CORONA, CA					<u>FYTD:</u> \$77,875.92
FAST AUTO LOANS, INC	222338	08/18/2014	BL#28213-YR2014	REFUND OF OVERPAYMENT FOR B/L#28213	\$187.50
Remit to: ATLANTA, GA					<u>FYTD:</u> \$187.50
FAST SIGNS	222176	08/04/2014	70-34539	NEW HOURS OF OPERATIONS DECAL-CH	\$388.26
		08/04/2014	70-34546	VIDEO CAM STICKERS	



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FAST SIGNS	222304	08/18/2014	70-34552	NAME PLATE FOR A. DAVIS	\$21.60
	222363	08/25/2014	70-13007	PRINTING SERVICES-FOAMBOARD SIGNS	\$1,732.88
		08/25/2014	70-13002	PRINTING SERVICES-STATE OF THE CITY CANVAS BANNERS	
Remit to: MORENO VALLEY, CA					FYTD: \$3,519.20
FIRST AMERICAN CORE LOGIC, INC.	13074	08/11/2014	81206728	REAL QUEST WEB SVCS-JUN14 (ACCESS)	\$640.00
		08/11/2014	81206688	REAL QUEST WEB SVCS-JUN14 (IMAGING)	
Remit to: DALLAS, TX					FYTD: \$640.00
FIRST CHOICE SERVICES	13023	08/04/2014	548328	EMPLOYEE PAID COFFEE SVC-CH/CITY MGR	\$773.39
		08/04/2014	548331	EMPLOYEE PAID COFFEE SVC-CH/CITY COUNCIL	
		08/04/2014	548327	EMPLOYEE PAID COFFEE SVC-CH/BREAKROOM	
		08/04/2014	548330	EMPLOYEE PAID COFFEE SVC-CH/COUNCIL CHAMBERS	
		08/04/2014	548329	EMPLOYEE PAID COFFEE SVC-CH/PUBLIC WORKS	
	13075	08/11/2014	548317	EMPLOYEE PAID COFFEE SVC-CRC	\$89.35
Remit to: ONTARIO, CA					FYTD: \$1,662.72
FIRST INDUSTRIAL REALTY TRUST	222211	08/04/2014	2495253	PROPERTY LEASE RENT-MV UTILITY-AUG14	\$1,000.00
		08/04/2014	2486255	PROPERTY LEASE RENT-MV UTILITY-JUL14	
Remit to: PASADENA, CA					FYTD: \$1,000.00
FITNESS 19 CA 155 11C	222364	08/25/2014	2015-00000055	8730 - GYM MEMBERSHIP*	\$143.00
Remit to: MORENO VALLEY, CA					FYTD: \$286.00
FLINT, LORRAINE	222275	08/11/2014	R14-073599/07491	AS REFUND-S/N DEPOSITS ON 2 CATS	\$150.00

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Remit to: LA MESA, CA					<u>FYTD:</u> \$150.00
FLORES, KIMBERLY DENISE	222355	08/18/2014	MV3120403003	REFUND-CITATION OVERPAYMENT	\$115.00
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$115.00
FRANCHISE TAX BOARD	222226	08/11/2014	2015-00000046	1015 - GARNISHMENT - CREDITOR %*	\$639.25
	222365	08/25/2014	2015-00000056	1015 - GARNISHMENT - CREDITOR %*	\$663.13
Remit to: SACRAMENTO, CA					<u>FYTD:</u> \$2,871.18
FRANCHISE TAX BOARD (2)	222366	08/25/2014	F/Y 2013-14	FORM 199 FILING FEE-MV PUBLIC FACILITIES FIN CORP	\$25.00
Remit to: SACRAMENTO, CA					<u>FYTD:</u> \$25.00
FRED'S GLASS & MIRROR, INC.	222305	08/18/2014	186213	REPAIR SVCS-ANNEX 1 (STE 9)	\$125.00
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$125.00
FRIENDS OF THE MV SENIOR CENTER	13121	08/18/2014	2013-2014-002	MOVAN PROGRAM-JAN, MAR-JUN 2014 (CDBG)	\$8,829.60
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$8,829.60
FUSION SIGN AND DESIGN, INC	13122	08/18/2014	71976	SIGNS - WAYFINDING SIGNS	\$729.00
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$729.00
G/M BUSINESS INTERIORS, INC.	222177	08/04/2014	0203589-IN	RENTAL FURNITURE-CH RE-CARPETING PROJ.	\$2,180.45
		08/04/2014	0203595-IN	RENTAL FURNITURE-CH RE-CARPETING PROJ.	
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$2,180.45
GALLS INC., INLAND UNIFORM	13024	08/04/2014	2501420	SECURITY GUARD UNIFORM-BECKY CORNWELL	\$142.93



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GALLS INC., INLAND UNIFORM	13076	08/11/2014	BC0089742	UNIFORMS FOR POP UNIT	\$242.67
Remit to: PASADENA, CA					FYTD: \$518.42
GENERAL SECURITY SERVICES, INC.	13025	08/04/2014	177993	SECURITY SVCS-CRC SPECIAL EVENTS 6/14/14	\$2,193.62
		08/04/2014	177819	SECURITY SVCS-CRC 5/27-5/29/14	
		08/04/2014	177992	SECURITY SVCS-CRC 6/9-6/12/14	
		08/04/2014	178382	SECURITY SVCS-SENIOR CTR 6/21/14	
		08/04/2014	178153	SECURITY SVCS-SENIOR CTR 6/29/14	
		08/04/2014	178152	SECURITY SVCS-SENIOR CTR 6/28/14	
		08/04/2014	178003	SECURITY SVCS-SENIOR CTR 6/15/14	
		08/04/2014	178002	SECURITY SVCS-SENIOR CTR 6/14/14	
		08/04/2014	177367	SECURITY SVCS-SENIOR CTR 4/13/14	
		08/04/2014	177930	SECURITY SVCS-CRC 6/2-6/5/14	
		08/04/2014	178027	SECURITY GUARD SVCS-CITY CLERKS 6/9/14	
		08/04/2014	178005	SECURITY SVCS-CRC SPECIAL EVENTS 6/15/14	
		08/04/2014	177609	SECURITY SVCS-CRC 5/5-5/8/14	
		08/04/2014	178151	SECURITY SVCS-CRC SPECIAL EVENTS 6/28/14	
	13123	08/18/2014	177631-CRC	SECURITY SVCS-CRC SPECIAL EVENTS 5/17/14	\$1,227.20
		08/18/2014	177558	SECURITY SVCS-CRC SPECIAL EVENTS 4/19/14	
		08/18/2014	177632	SECURITY SVCS-CRC SPECIAL EVENTS 5/15-5/16/14	
		08/18/2014	177994	SECURITY SVCS-TOWNGATE 6/13/14	
		08/18/2014	177610	SECURITY SVCS-TOWNGATE 5/10/14	
		08/18/2014	178071	SECURITY SVCS-TOWNGATE 6/21/14	
		08/18/2014	178159	SECURITY SVCS-TOWNGATE 6/28/14	

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GENERAL SECURITY SERVICES, INC.	13123	08/18/2014	177624	SECURITY SVCS-TOWNGATE 5/17/14	\$1,227.20
		08/18/2014	177996	SECURITY SVCS-TOWNGATE 6/8/14	
		08/18/2014	177694	SECURITY SVCS-TOWNGATE 5/18/14	
		08/18/2014	177820	SECURITY SVCS-TOWNGATE 5/29/14	
		08/18/2014	177821	SECURITY SVCS-TOWNGATE 6/2/14	
		08/18/2014	177995	SECURITY SVCS-TOWNGATE 6/14/14	
		08/18/2014	177931	SECURITY SVCS-TOWNGATE 6/9/14	
Remit to: WILMINGTON, CA					<u>FYTD:</u> \$5,668.15
GIBBS, GIDEN, LOCHER,TURNER, SENET & WITTBRODT LLP	13026	08/04/2014	224473-002	LEGAL SVCS-LINEAR PARK BOND SAFEGUARD	\$194.00
	13077	08/11/2014	224473-003	CONSULTANT - MORRISON PARK FIRE STATION	\$1,159.98
		08/11/2014	224473-001	LEGAL SVCS-RE: AEI-CASC (DAY ST)	
Remit to: LOS ANGELES, CA					<u>FYTD:</u> \$1,353.98
GISI, JEROLD	222405	08/25/2014	R14-075906	AS-REFUND-S/N DEPOSITS ON 2 DOGS	\$150.00
Remit to: THOUSAND PALMS, CA					<u>FYTD:</u> \$150.00
GOZDECKI, DAN	13124	08/18/2014	AUG-2014 ADULT	INSTRUCTOR SERVICES-KUNG FU CLASS	\$351.00
		08/18/2014	AUG-2014 YOUTH	INSTRUCTOR SERVICES-KUNG FU CLASS	
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$756.00
GRAVES & KING, LLP	222227	08/11/2014	1406-0009459	LEGAL SVCS-MV1329 (S. BOE)	\$4,796.37
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$5,414.93



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GREINES, MARTIN, STEIN & RICHLAND, LLP	222228	08/11/2014	59594	LEGAL SVCS-M. MOBBS CASE	\$10,407.05
Remit to: LOS ANGELES, CA					FYTD: \$10,407.05
GROUND CONTROL SYSTEMS, INC.	13125	08/18/2014	I-99152	MOBILE SATELLITE INTERNET SERVICE FOR MCC	\$1,908.00
Remit to: SAN LUIS OBISPO, CA					FYTD: \$1,908.00
HABITAT FOR HUMANITY RIVERSIDE	13126	08/18/2014	APR-JUN 2014	HELPING HANDS PROGRAM-CDBG	\$21,963.27
		08/18/2014	DRAW NO.10 JUN14	NSP 3 - 8 SINGLE FAMILY HOMES-24265 MYERS AVE	
Remit to: RIVERSIDE, CA					FYTD: \$21,963.27
HARGIS, STEVE	222395	08/25/2014	9/3-9/5/14	TRAVEL PER DIEM-LCC ANNUAL CONF. & EXPO	\$177.50
Remit to: TEMECULA, CA					FYTD: \$177.50
HARRISON , KATRINA	222406	08/25/2014	R14-073931	AS-REFUND-RABIES DEPOSIT	\$20.00
Remit to: CORONA, CA					FYTD: \$20.00
HAYES, LINDA	222276	08/11/2014	R14-075832	AS REFUND-SPEC HANDLING FEE CHGD TWICE	\$21.00
Remit to: MORENO VALLEY, CA					FYTD: \$21.00
HDL SOFTWARE LLC	222367	08/25/2014	0009627-IN	BUSINESS LICENSE SOFTWARE ANNUAL MAINT.	\$13,389.61
Remit to: DIAMOND BAR, CA					FYTD: \$13,389.61
HERNANDEZ, SANDRA	222277	08/11/2014	R14-073991	AS REFUND-SPAY/NEUTER DEPOSIT	\$75.00
Remit to: MORENO VALLEY, CA					FYTD: \$75.00

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HERNANDEZ, VALERIE	222278	08/11/2014	VARIOUS REFUNDS	REFUND NOS. 1167730, 1167729	\$39.91
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$39.91
HICKMAN, LANISE	222368	08/25/2014	AUG-2014	INSTRUCTOR SERVICES-FITNESS BOOTCAMP CLASS	\$24.00
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$24.00
HILLCREST CONTRACTING, INC	13078	08/11/2014	PB 22831	CONSTRUCTION - HEMLOCK/GRAHAM TO DAVID	\$10,265.05
		08/11/2014	PB 22814	CONSTRUCTION - HEMLOCK/GRAHAM TO DAVID	
Remit to: CORONA, CA					<u>FYTD:</u> \$127,911.81
HLP, INC.	13079	08/11/2014	9695	WEB LICENSE FEE	\$19.60
	13173	08/25/2014	9741	ANNUAL MAINTENANCE-A/S CHAMELEON SOFTWARE	\$17,658.85
		08/25/2014	9786	WEB LICENSE MONTHLY SVC FEE	
Remit to: LITTLETON, CO					<u>FYTD:</u> \$17,678.45
HOEFLIN, LINDSAY	222407	08/25/2014	R14-075893	AS-REFUND-RABIES DEPOSIT	\$20.00
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$20.00
HONDA YAMAHA OF REDLANDS	13127	08/18/2014	38539	MAINT & REPAIRS-TRAFFIC MOTORCYCLE	\$646.41
		08/18/2014	38524	MAINT & REPAIRS-TRAFFIC MOTORCYCLE	
Remit to: REDLANDS, CA					<u>FYTD:</u> \$646.41
HUA, JENNY,	222369	08/25/2014	JUL-2014	INSTRUCTOR SERVICES-DRAWING FOR KIDS CLASS	\$349.20
		08/25/2014	MAY-2014	INSTRUCTOR SERVICES-DRAWING FOR KIDS CLASS	
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$349.20



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HUNSAKER & ASSOCIATES IRVINE, INC	222229	08/11/2014	14060371	CONSULTING - CYCLE 1 CITYWIDE PAVEMENT	\$10,228.00
		08/11/2014	14060372	CONSULTING - HEMLOCK/GRAHAM SIDEWALKS	
		08/11/2014	14060373	CONSULTING - CYCLE 2 ACCESS RAMPS	
		08/11/2014	14060374	CONSULTING - ALESSANDRO MEDIAN INDIAN TO PERRIS	
Remit to: RIVERSIDE, CA					FYTD: \$22,188.00
ICMA RETIREMENT CORP	13050	08/08/2014	2015-00000037	8030 - DEF COMP 457 - ICMA	\$8,731.59
	13158	08/22/2014	2015-00000075	8030 - DEF COMP 457 - ICMA	
Remit to: BALTIMORE, MD					FYTD: \$35,863.04
IES COMMERCIAL, INC	13027	08/04/2014	108868	REPLACE PEDESTRIAN DOORS W/ BI-FOLDING SLIDER-PSB	\$382.50
Remit to: TEMPE, AZ					FYTD: \$382.50
IMMANUEL HOUSE	222408	08/25/2014	BL#28243-YR2014	REFUND OF OVERPAYMENT FOR BL#28243	\$62.00
Remit to: MORENO VALLEY, CA					FYTD: \$62.00
ING USA ANNUITY & LIFE INSURANCE CO.	222370	08/25/2014	2015-00000071	8792 - ING - EMPLOYEE *	\$325.00
Remit to: DES MOINES, IA					FYTD: \$650.00
INLAND EMPIRE PROPERTY SERVICE, INC	13174	08/25/2014	3204	WEED ABATEMENT SVCS-CITY PARKS	\$2,930.00
Remit to: MORENO VALLEY, CA					FYTD: \$35,144.76
INLAND PETROLEUM EQUIPMENT & REPAIR, INC	13128	08/18/2014	395549	FUEL TANK MODIFICATIONS & INSPECTIONS	\$2,000.00

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Remit to: BLOOMINGTON, CA					<u>FYTD:</u> \$2,350.00
INSIDE PLANTS, INC.	222178	08/04/2014	51613	INSIDE PLANT MAINT SERVICE-JUL14	\$327.00
	222230	08/11/2014	51962	INSIDE PLANT MAINT SERVICE-AUG14	
Remit to: CORONA, CA					<u>FYTD:</u> \$654.00
J D H CONTRACTING	13175	08/25/2014	081214-01	ADA CONCRETE IMPROVEMENTS @ MORRISON PARK	\$11,534.00
		08/25/2014	080714-01	CONSTRUCTION REPAIRS-CFD#1 (CELEB. PARK)	
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$30,051.00
JACK HENRY & ASSOCIATES	222231	08/11/2014	1755911	PROFIT STARTS MONTHLY SERVICE FEE	\$316.45
Remit to: MONETT, MO					<u>FYTD:</u> \$606.90
JACOBS, GLENN FITZGERALD	222339	08/18/2014	0374089	REIMBURSEMENT-FILING FEE OVERPAYMENT	\$5.00
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$5.00
JAMES D. ENGLISH & ASSOCIATES	222279	08/11/2014	REGIST-J. SLOVER	REGISTR. FEE-J. SLOVER FOR SEPT. 8-9 CDR TECH I & II COURSE	\$250.00
Remit to: LAKESIDE, CA					<u>FYTD:</u> \$250.00
JENKS, GINA	222280	08/11/2014	R14-073893	AS REFUND-RABIES DEPOSIT	\$20.00
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$20.00
JOE A. GONSALVES & SON	13028	08/04/2014	24549	LOBBYIST SERVICES-JUL14	\$6,000.00
		08/04/2014	24616	LOBBYIST SERVICES-AUG14	
Remit to: SACRAMENTO, CA					<u>FYTD:</u> \$6,000.00
JOHNSON, TRACY	222232	08/11/2014	JUL-2014	INSTRUCTOR SERVICES - SHITO-RYU KARATE CLASS	\$242.80



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Remit to: MORENO VALLEY, CA					FYTD: \$242.80
JONES III, JOSEPH	222179	08/04/2014	4/1-6/30/14	MILEAGE REIMBURSEMENT	\$146.16
Remit to: FONTANA, CA					FYTD: \$146.16
JORDAN, STACIE	222281	08/11/2014	7010483-10	SOLAR INCENTIVE REBATE	\$7,618.00
Remit to: MORENO VALLEY, CA					FYTD: \$7,618.00
JORRY KEITH	222180	08/04/2014	JUN-2014	INSTRUCTOR SERVICES-COMIC BOOK CREATION CLASS	\$240.00
Remit to: FONTANA, CA					FYTD: \$240.00
JTB SUPPLY CO., INC.	222233	08/11/2014	97668	15" TRAFFICALM DFB W/ 85 WATT SOLAR KIT	\$3,904.20
Remit to: ORANGE, CA					FYTD: \$5,558.76
KELLY, JOSHUA	222409	08/25/2014	1170612	REFUND FOR PEE WEE T-BALL	\$49.60
Remit to: MORENO VALLEY, CA					FYTD: \$49.60
KEPLER, JANELLE	13129	08/18/2014	AUG-2014	INSTRUCTOR SERVICES-CHEERLEADING 101 CLASS	\$336.00
Remit to: RIVERSIDE, CA					FYTD: \$735.00
KOSMONT COMPANIES	222234	08/11/2014	0007	ECONOMIC DEV'T. CONSULTANT SVCS-JUN14	\$2,587.98
Remit to: LOS ANGELES, CA					FYTD: \$2,587.98
KTU+A	13080	08/11/2014	26840	CONSULTING - BICYCLE MASTER PLAN UPDATE	\$11,346.66
		08/11/2014	26877	CONSULTING - BICYCLE MASTER PLAN UPDATE	
Remit to: SAN DIEGO, CA					FYTD: \$37,922.96

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LA FOLLETTE, JOHNSON, DE HAAS, FESLER & AMES	222235	08/11/2014	282735	LEGAL SVCS-MV1216	\$116.16
Remit to: LOS ANGELES, CA					<u>FYTD:</u> \$116.16
LATITUDE GEOGRAPHICS	222181	08/04/2014	201400883	M & O EMERGENCY MGT MOBILE APPS-MILESTONE 2	\$6,834.00
Remit to: VICTORIA, BC					<u>FYTD:</u> \$19,682.50
LEADING EDGE LEARNING CENTER	222371	08/25/2014	MAY/JUL-2014	INSTRUCTOR SERVICES-MAY ESL & JULY READING RASCALS CLASSES	\$420.00
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$420.00
LEAGUE OF CALIFORNIA CITIES- RIV CNTY DIV 1	222372	08/25/2014	9/5/14 BRK. MTG.	ANNUAL CONFERENCE BREAKFAST MEETING FEE FOR 7 ATTENDEES	\$175.00
Remit to: MIRA LOMA, CA					<u>FYTD:</u> \$455.00
LEE, JERI	13176	08/25/2014	JUL-AUG 2014	INSTRUCTOR SERVICES-ZUMBA KIDS CLASSES	\$120.00
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$120.00
LEIGHTON CONSULTING, INC.	13029	08/04/2014	15988	CONSULTING - SR-60 NASON OVERCROSSING	\$625.15
Remit to: IRVINE, CA					<u>FYTD:</u> \$3,091.39
LEVERETT, KYLE	222282	08/11/2014	R14-075696	AS REFUND-ADOPT,CHIP,VACS	\$67.00
Remit to: CORONA, CA					<u>FYTD:</u> \$67.00
LEWIS BRISBOIS BISGAARD & SMITH LLP	222306	08/18/2014	1361348	LEGAL SERVICES-A. NORTON CASE	\$58.00
Remit to: LOS ANGELES, CA					<u>FYTD:</u> \$58.00
LEXISNEXIS PRACTICE MGMT.	13130	08/18/2014	1407080095	LEGAL RESEARCH TOOLS-JUL14	\$1,180.00



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Remit to: LOS ANGELES, CA					FYTD: \$3,540.00
LIBRERIA DEL PUEBLO, INC.	222332	08/18/2014	8222014	REGIS. FEE-RECOGNITION DINNER-V. BACA	\$65.00
Remit to: SAN BERNARDINO, CA					FYTD: \$65.00
LIEBERT, CASSIDY, WHITMORE	222182	08/04/2014	180893	ERC MEMBERSHIP W/ PREMIUM LIBRARY SUBS 7/1/14-6/30/15	\$5,702.87
		08/04/2014	1389542	LEGAL SERVICES-MO140-00001	
Remit to: LOS ANGELES, CA					FYTD: \$12,274.53
LIGHTHOUSE SOCIAL SERVICE CENTER	13131	08/18/2014	4-JUN 2014	CASE MANAGEMENT CONSULTANT-CDBG	\$943.70
Remit to: ALTA LOMA, CA					FYTD: \$943.70
LOZANO SMITH, LLP	222307	08/18/2014	22560	LEGAL SERVICES-GENERAL MATTERS	\$471.00
Remit to: FRESNO, CA					FYTD: \$1,798.67
LYONS SECURITY SERVICE, INC	222308	08/18/2014	21385	SECURITY GUARD SVCS-LIBRARY SPECIALS-JUL14	\$1,164.61
		08/18/2014	21384	SECURITY GUARD SVCS-LIBRARY-JUL14	
	222373	08/25/2014	21388	SECURITY GUARD SVC-CRC SPECIAL EVENT 7/26/14	\$1,977.50
		08/25/2014	21383	SECURITY GUARD SVC-CRC JUL14	
		08/25/2014	21415	SECURITY GUARD SVC-7/4/14 COUNCIL CHAMBER	
Remit to: ANAHEIM, CA					FYTD: \$3,142.11
M.C. ALYEA CONSTRUCTION	13132	08/18/2014	103 - RETENTION	RETENTION - SECURITY FENCING FOR FIRESTATION 48 & 65	\$4,311.13
Remit to: RIVERSIDE, CA					FYTD: \$34,158.94

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MALCOLM SMITH MOTORCYCLES, INC.	13133	08/18/2014	100151460	MAINT. & REPAIRS-TRAFFIC MOTORCYCLES	\$640.30
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$640.30
MANCILLAS, MARIA	222283	08/11/2014	1155334	REFUND ON DEPOSIT FOR CONTRACT #24360	\$750.00
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$750.00
MARCH JOINT POWERS AUTHORITY	222183	08/04/2014	0031866	GAS CHARGES-MFPCC BLDG. 823-JUN14	\$5.57
		08/04/2014	0031870	GAS CHARGES-BLDG. 938-JUN14	
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$22,633.18
MARIPOSA HORTICULTURAL ENTERPRISES, INC.	13177	08/25/2014	65246	LANDSCAPE MAINT.-JUL14 EXTRA WORK-SENIOR CTR.	\$85.09
Remit to: IRWINDALE, CA					<u>FYTD:</u> \$78,762.54
MCKENZIE, JULIENNE	222340	08/18/2014	R14-076361	AS REFUND-OVERPMT ON LIC, RABIES EXP	\$19.00
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$19.00
MEEKS, DANIEL	13031	08/04/2014	071714	SPORTS OFFICIATING SERVICES-SOFTBALL	\$294.00
		08/04/2014	072414	SPORTS OFFICIATING SERVICES-SOFTBALL	
		08/04/2014	072714	SPORTS OFFICIATING SERVICES-SOFTBALL	
		08/04/2014	071014	SPORTS OFFICIATING SERVICES-SOFTBALL	
		08/04/2014	072014	SPORTS OFFICIATING SERVICES-SOFTBALL	
	13178	08/25/2014	081714	SPORTS OFFICIATING SERVICES-SOFTBALL	\$252.00
		08/25/2014	081014	SPORTS OFFICIATING SERVICES-SOFTBALL	
		08/25/2014	080714	SPORTS OFFICIATING SERVICES-SOFTBALL	



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MEEKS, DANIEL	13178	08/25/2014	073114	SPORTS OFFICIATING SERVICES-SOFTBALL	\$252.00
		08/25/2014	081414	SPORTS OFFICIATING SERVICES-SOFTBALL	
Remit to: PERRIS, CA					<u>FYTD:</u> \$945.00
MERCHANTS LANDSCAPE SERVICES INC	13081	08/11/2014	42530	IRRIGATION REPAIRS FOR MAR 2014-ZONE E-3	\$3,434.01
		08/11/2014	42531	IRRIGATION REPAIRS FOR MAR 2014-ZONE E-8	
Remit to: MONTEREY PARK, CA					<u>FYTD:</u> \$62,761.65
MEYERS, ROBERT	222290	08/11/2014	JUN-2014	INSTRUCTOR SERVICES-PHOTOGRAPHY CLASS	\$63.00
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$63.00
MICHAEL BRANDMAN ASSOCIATES	222309	08/18/2014	00061798	CONSULTING - CYCLE 2 CITYWIDE PAVEMENT	\$4,035.72
Remit to: IRVINE, CA					<u>FYTD:</u> \$4,035.72
MILLER, CINDY A.	222270	08/11/2014	REIMB-7/31/14	REFRESHMENTS & DONUTS FOR MAYOR'S MEET & GREET ON 7/31/14	\$195.18
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$195.18
MINORI, JASMINE	222341	08/18/2014	R14-070873	AS REFUND-RABIES DEPOSIT	\$20.00
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$20.00
MIRACLE RECREATION EQUIPMENT	13134	08/18/2014	747512	PLAYGROUND EQUIPMENT PARTS	\$1,269.47
		08/18/2014	748822	PLAYGROUND EQUIPMENT PARTS	
Remit to: CHICAGO, IL					<u>FYTD:</u> \$1,269.47

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MOLINA , CARLOS	222284	08/11/2014	R14-074821	AS REFUND-SPAY/NEUTER DEPOSIT	\$75.00
Remit to: YORBA LINDA, CA					<u>FYTD:</u> \$75.00
MOLINA, JESSE L.	222396	08/25/2014	9/3-9/5/14	TRAVEL PER DIEM-LCC ANNUAL CONF. & EXPO	\$177.50
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$177.50
MONTGOMERY PLUMBING INC	222184	08/04/2014	050214	PLUMBING SERVICES-MFPCC	\$540.00
		08/04/2014	071214	PLUMBING SERVICES-ANIMAL SHELTER	
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$4,600.00
MORENO VALLEY CHAMBER OF COMMERCE	222237	08/11/2014	4268	WAKE-UP MEETING ATTENDANCE-7/23/14	\$150.00
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$330.00
MORENO VALLEY CITY EMPLOYEES ASSOC.	13052	08/08/2014	2015-00000039	8710 - MVCEA EMPLOYEE DUES	\$1,279.00
	13159	08/22/2014	2015-00000076	8710 - MVCEA EMPLOYEE DUES	\$1,269.50
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$5,121.00
MORENO VALLEY MANAGEMENT ASSOCIATION	13179	08/25/2014	2015-00000068	8705 - MVMA EMPLOYEE DUES*	\$700.00
	222238	08/11/2014	2015-00000047	8705 - MVMA EMPLOYEE DUES	
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$2,090.00
MORENO VALLEY UNIFIED SCHOOL DISTRICT	222310	08/18/2014	141913	BUS SERVICE FOR VALLEY KIDS CAMP & A CHILD'S PLACE FIELD TRIPS	\$4,120.00
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$4,120.00



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MORENO VALLEY UTILITY	222239	08/11/2014	7009235-01 JUN14	ELECTRICITY-CRC (ADDL)	\$2,870.40
Remit to: HEMET, CA					<u>FYTD:</u> \$208,429.15
MORNING OPTIMIST CLUB OF MORENO VALLEY	222185	08/04/2014	071514 INV	JULY 4TH BEER GARDEN PURCHASE REIMBURSEMENT	\$568.00
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$1,068.00
MR. CLEAN MAINTENANCE SYSTEMS	13082	08/11/2014	11431	POWER WASHING OF CRC MAIN ENTRANCE WALKWAY & SIDEWALK	\$428.00
Remit to: COLTON, CA					<u>FYTD:</u> \$428.00
MTGL, INC	13083	08/11/2014	0049802	CONSULTING - CYCLE 1 CITYWIDE PAVEMENT	\$3,062.00
		08/11/2014	49803-R	CONSULTING - ALESSANDRO MEDIAN/INDIAN TO PERRIS	
Remit to: ANAHEIM, CA					<u>FYTD:</u> \$5,491.00
MUSICSTAR	222312	08/18/2014	JUN-2014	INSTRUCTOR SERVICES-ROBOTICS CAMP	\$1,006.20
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$1,006.20
N P G CORPORATION	13180	08/25/2014	1112864	ADA RAMP & WALKWAY IMPROVEMENTS AT SHADOW MTN. PARK	\$14,135.00
Remit to: PERRIS, CA					<u>FYTD:</u> \$22,780.00
N.E.A.D., INC	222240	08/11/2014	748	DEVELOPMENT OF MY CITY IPHONE APP - 50% DUE WITH APP DEPLOYMENT	\$2,250.00
Remit to: HUNTINGTON BEACH, CA					<u>FYTD:</u> \$4,500.00
NAJUMI, HASHEMA	222342	08/18/2014	1168436 1168437	TOWNGATE RENTAL REFUND DEPOSIT AND CREDIT	\$270.00
	222410	08/25/2014	1167001	REFUND FOR PICNIC SHLETER RESERVATION	\$64.00

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Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$270.00
NAMEKATA, DOUGLAS	222241	08/11/2014	JUL-2014	INSTRUCTOR SERVICES - SHITO-RYU KARATE CLASS	\$242.80
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$518.00
NAMEKATA, JAMES	222242	08/11/2014	JUL-2014	INSTRUCTOR SERVICES - SHITO-RYU KARATE CLASS	\$242.80
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$242.80
NATIONWIDE RETIREMENT SOLUTIONS CP	13054	08/08/2014	2015-00000042	8020 - DEF COMP PST - NATIONWIDE*	\$2,602.20
	13156	08/22/2014	2015-00000073	8020 - DEF COMP PST - NATIONWIDE	\$2,415.91
Remit to: COLUMBUS, OH					<u>FYTD:</u> \$148,537.45
NAVA, GILBERT	222411	08/25/2014	14189449	DUPLICATE PAYMENT FOR 14189449	\$32.00
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$32.00
NBS GOVERNMENT FINANCE GROUP	13084	08/11/2014	71400069	2015 COMPREHENSIVE FEE STUDY SERVICES	\$5,250.00
Remit to: TEMECULA, CA					<u>FYTD:</u> \$20,090.00
NEW HORIZON MOBILE HOME PARK	13181	08/25/2014	JULY 2014	UUT REIMBURSEMENT JULY 2014	\$4.64
Remit to: LOS ANGELES, CA					<u>FYTD:</u> \$13.39
NEW IMAGE COMMERCIAL FLOORING	222243	08/11/2014	13792	MOISTURE TEST-FIRE ST. #65	\$300.00
Remit to: SAN BERNARDINO, CA					<u>FYTD:</u> \$300.00
NORTON II, GARLAND J	222356	08/18/2014	MV4131004023	REFUND-CITATION OVERPAYMENT	\$71.00



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Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$71.00
NOSSAMAN, LLP.	222244	08/11/2014	428835	LEGAL DEFENSE SERVICES	\$863.45
Remit to: LOS ANGELES, CA					<u>FYTD:</u> \$16,586.76
OPERATION SAFEHOUSE, INC.	13136	08/18/2014	JUN 2014	CDBG REIMBURSEMENT FOR SHELTER PROGRAM	\$113.70
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$774.45
ORELLANA, MARK	222207	08/04/2014	1143647	REFUND DEPOSIT FOR TAKE YOUR CITY PEACE MARCH	\$75.00
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$75.00
ORROCK, POPKA, FORTINO & BRISLIN	13086	08/11/2014	90-040M STMT 9	LEGAL DEFENSE COSTS-WALDEN ENVIRONMENT V. CITY CASE	\$9,648.50
	13182	08/25/2014	90-040M STMT 10	LEGAL DEFENSE COSTS-WALDEN ENVIRONMENT V. CITY CASE	\$5,643.00
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$30,407.14
OVERLAND PACIFIC & CUTLER, INC.	13032	08/04/2014	1406068	CONSULTING - NASON/CACTUS TO FIR	\$3,202.50
Remit to: LONG BEACH, CA					<u>FYTD:</u> \$6,702.50
PACIFIC ALARM SERVICE, INC	13137	08/18/2014	R 104213	BURGLAR ALARM SYSTEM RENT/SVC/MONITORING-MVU SUBSTATION/JUL14	\$244.00
Remit to: BEAUMONT, CA					<u>FYTD:</u> \$244.00
PACIFIC TELEMAGEMENT SERVICES	13183	08/25/2014	660159	PAY PHONE SERVICES	\$501.12
		08/25/2014	669109	PAY PHONE SERVICES	
Remit to: SAN RAMON, CA					<u>FYTD:</u> \$814.32

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PAINTING BY ZEB BODE	13138	08/18/2014	081114	PATCH & PAINT CONF. ROOM D (FORMER ERF ROOM) AT CITY HALL	\$625.00
Remit to: NORCO, CA					<u>FYTD:</u> \$4,090.00
PARSONS TRANSPORTATION GROUP, INC.	13033	08/04/2014	1407A775	CONSULTANT - SR-60 MORENO BEACH PH. 1	\$6,117.16
		08/04/2014	1407A773	CONSULTANT - SR-60 NASON OC	
Remit to: IRVINE, CA					<u>FYTD:</u> \$48,549.62
PARTNERS IN DIVERSITY, INC.	222186	08/04/2014	019050	TEMP SERVICES - CAPITAL PROJECTS INFRASTRUCTURE	\$403.65
	222313	08/18/2014	019209	TEMP SERVICES - CAPITAL PROJECTS INFRASTRUCTURE	\$2,148.32
		08/18/2014	019102	TEMP SERVICES - CAPITAL PROJECTS INFRASTRUCTURE	
		08/18/2014	019158	TEMP SERVICES - CAPITAL PROJECTS INFRASTRUCTURE	
Remit to: Ft. Worth, TX					<u>FYTD:</u> \$7,292.62
PAUMIER, CANDICE	222343	08/18/2014	ACCT 7008634-06	SOLAR INCENTIVE REBATE	\$9,098.25
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$9,098.25
PEDLEY SQUARE VETERINARY CLINIC	13087	08/11/2014	JUN-2014	VETERINARY SERVICES FOR MV ANIMAL SHELTER	\$12,092.00
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$19,661.00
PERRIS VALLEY PRINTING CO.	222419	08/25/2014	11619	VEHICLE PARKING WARNING FORM	\$723.06
Remit to: HOMELAND, CA					<u>FYTD:</u> \$723.06
PERS LONG TERM CARE PROGRAM	222245	08/11/2014	2015-00000048	4720 - PERS LONG TERM CARE	\$458.63
	222374	08/25/2014	2015-00000069	4720 - PERS LONG TERM CARE	



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Remit to: PASADENA, CA					FYTD: \$1,834.52
PERS RETIREMENT	13047	08/01/2014	P140718P	PERS RETIREMENT DEPOSIT - PEPRA	\$1,720.43
	13048	08/01/2014	P140704b	PERS RETIREMENT - PEPRA	\$13,283.96
	13103	08/15/2014	P140718b	PERS RETIREMENT - PEPRA	\$11,760.95
	13105	08/15/2014	P140801P	MISCELLANEOUS SERVICES	\$1,248.71
	13106	08/15/2014	P140718a	PERS RETIREMENT CLASSIC	\$712.14
	13241	08/29/2014	P140815P	PERS RETIREMENT DEPOSIT - PEPRA	\$2,612.06
	13242	08/29/2014	P140801b	PERS RETIREMENT - PEPRA	\$12,654.85
	13250	08/27/2014	CY1Q2014	PERS REPLACEMENT BENEFIT	\$9,966.55
Remit to: SACRAMENTO, CA					FYTD: \$1,278,906.11
PIONEER CREDIT RECOVERY, INC	222246	08/11/2014	2015-00000049	1015 - GARNISHMENT - CREDITOR %	\$223.19
	222375	08/25/2014	2015-00000060	1015 - GARNISHMENT - CREDITOR %	\$223.33
Remit to: ARCADE, NY					FYTD: \$885.73
PIZZA FIVE85	222208	08/04/2014	BL#27798-YR2014	REFUND OF DUPLICATE PAYMENT FOR B/L#27798	\$62.00
Remit to: DIAMOND BAR, CA					FYTD: \$62.00
POWELL CONSTRUCTORS, INC.	13195	08/21/2014	W140805	RETENTION RELEASE PER ESCROW AGREEMENT-INV#15	\$2,873.42
Remit to: FONTANA, CA					FYTD: \$57,468.34
PRICE, GEORGE E.	222397	08/25/2014	9/3-9/5/14	TRAVEL PER DIEM-LCC ANNUAL CONF. & EXPO	\$177.50
Remit to: MORENO VALLEY, CA					FYTD: \$177.50
PRIDE ELECTRIC ENTERPRISES	222344	08/18/2014	BL#18624-YR2014	ACCOUNT IS CLOSED REFUND OF CREDIT FOR B/L#18624	\$51.50

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Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$51.50
PROVASI, RYAN	222285	08/11/2014	R14-074673	AS REFUND-SPAY/NEUTER DEPOSIT	\$75.00
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$75.00
PSOMAS	222314	08/18/2014	98399	CONSULTANT - MV MASTER DRAINAGE LINE F	\$1,890.00
Remit to: LOS ANGELES, CA					<u>FYTD:</u> \$21,119.89
PTM GENERAL ENGINEERING	222202	08/04/2014	RETENTION BAL	RELEASE OF RETENTION	\$15,662.50
	222203	08/04/2014	07072014	RETENTION RELEASE FOR STOP NOTICE-BALANCE OWED	\$700.00
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$16,362.50
PW ENHANCEMENT CENTER	13035	08/04/2014	4 - JUNE 2014	CDBG REIMBURSEMENT-COMMUNITY EMERGENCY OUTREACH PROGRAM	\$4,052.48
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$4,052.48
QUALTECH CONCRETE, INC	222345	08/18/2014	BL#18711-YR2014	REFUND OF OVERPAYMENT FOR B/L#18711	\$56.50
Remit to: TEMECULA, CA					<u>FYTD:</u> \$56.50
QUIN, TAI	222412	08/25/2014	1167048	REFUND DUE TO SCHEDULE CONFLICT	\$31.20
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$31.20
QUINTANA, DARLENE	222346	08/18/2014	1168444	TOWNGATE RENTAL DEPOSIT REFUND MINUS BALANCE OWED	\$187.50
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$187.50
RAMOS, ROBERTO	13184	08/25/2014	JUL-2014	INSTRUCTOR SERVICES-KINDER KARATE & TAE KWON DO CLASSES	\$490.00
	222248	08/11/2014	JUN-2014	INSTRUCTOR SERVICES-KINDER KARATE & TAE KWON DO CLASSES	\$983.50



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RAMOS, ROBERTO	222248	08/11/2014	MAY-2014	INSTRUCTOR SERVICES-KINDER KARATE & TAE KWON DO CLASSES	\$983.50
Remit to: MORENO VALLEY, CA					FYTD: \$1,473.50
RCLEAA	222188	08/04/2014	REGISTR.-9/18/14	REGISTR. FEE FOR CAPT. J. ONTIVEROS FOR RCLEAA 2014 ANNUAL CONF.	\$50.00
Remit to: MURRIETA, CA					FYTD: \$50.00
REGALADO, BLANCA E	13088	08/11/2014	JUL-2014	INSTRUCTOR SERVICES-FOLKLORIC DANCE ADULT & YOUTH CLASSES	\$159.00
	13185	08/25/2014	AUG-2014 YOUTH	INSTRUCTOR SERVICES-FOLKLORIC DANCE YOUTH CLASS	\$180.00
		08/25/2014	AUG-2014 ADULT	INSTRUCTOR SERVICES-FOLKLORIC DANCE ADULT CLASS	
Remit to: MORENO VALLEY, CA					FYTD: \$615.00
REILLY, MATTHEW	222204	08/04/2014	REIMB.-7/22/14	REIMBURSEMENT FOR WATER PURCHASED FOR CRITICAL INCIDENT (COSTCO)	\$104.00
Remit to: MORENO VALLEY, CA					FYTD: \$104.00
RENO, BRIAN	222271	08/11/2014	8/18-8/21/14	TRAVEL PER DIEM-VIOLENT CRIME BEHAVIORAL ANALYSIS SEMINAR	\$200.00
Remit to: MORENO VALLEY, CA					FYTD: \$200.00
REPUBLIC MASTER CHEFS TEXTILE RENTAL SERVICE	13036	08/04/2014	11333154	LINENS RENTAL FOR CRC BANQUET ROOM	\$75.03
		08/04/2014	11327474	LINENS RENTAL FOR CRC BANQUET ROOM	
		08/04/2014	S366793	LINENS FOR SPECIAL EVENTS AT CRC	
		08/04/2014	11338453	LINENS RENTAL FOR CRC BANQUET ROOM	
Remit to: LOS ANGELES, CA					FYTD: \$303.20

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REYES, JULIE	222205	08/04/2014	8/3-8/5/14	TRAVEL PER DIEM-CRRA/SWANA 38TH ANNUAL CONF./TRADESHOW	\$84.00
	222398	08/25/2014	9/3-9/5/14	TRAVEL PER DIEM-LCC ANNUAL CONF. & EXPO	\$177.50
Remit to: MORENO VALLEY, CA					FYTD: \$261.50
REYNOSO, STEPHEN	222357	08/18/2014	MV2140423018	REFUND-CITATION OVERPAYMENT	\$57.50
Remit to: MORENO VALLEY, CA					FYTD: \$57.50
RICK ENGINEERING COMPANY	13037	08/04/2014	0037942	ENGINEERING - PERRIS/IRONWOOD TO MANZANITA	\$10,105.00
Remit to: RIVERSIDE, CA					FYTD: \$10,105.00
RIGHTWAY SITE SERVICES, INC.	222249	08/11/2014	50018	PORTABLE RESTROOM/SVC-COTTONWOOD GOLF COURSE	\$72.30
	222376	08/25/2014	51218	PORTABLE RESTROOMS/SVC-EQUESTRIAN CENTER	\$1,183.40
		08/25/2014	51219	PORTABLE RESTROOMS/SVC-MARCH MIDDLE SCHOOL	
		08/25/2014	52373	PORTABLE RESTROOMS/SVC-MARCH MIDDLE SCHOOL	
		08/25/2014	52371	PORTABLE RESTROOM/SVC-COTTONWOOD GOLF COURSE	
		08/25/2014	52372	PORTABLE RESTROOMS/SVC-EQUESTRIAN CENTER	
		08/25/2014	51217	PORTABLE RESTROOM/SVC-COTTONWOOD GOLF COURSE	
Remit to: LAKE ELSINORE, CA					FYTD: \$1,978.78
RIPPETOE LAW, P.C.	222250	08/11/2014	120337	LEGAL DEFENSE SERVICES	\$808.95
	222377	08/25/2014	120383	LEGAL DEFENSE SERVICES RE: VENVEST BALLARD CASE	\$1,683.90
Remit to: IRVINE, CA					FYTD: \$2,492.85
RIV CO FLOOD CONTROL & WATER CONSERVATN	222189	08/04/2014	FC0000014562	PLAN CHECK DEPOSIT-PM33532/LINE F, I & J	\$500.00



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Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$500.00
RIVERSIDE AREA RAPE CRISIS CENTER	222251	08/11/2014	FEBRUARY 2014	CDBG REIMBURSEMENT-CHILD ABUSE PREVENTION PROGRAM	\$4,502.36
		08/11/2014	JANUARY 2014	CDBG REIMBURSEMENT-CHILD ABUSE PREVENTION PROGRAM	
		08/11/2014	JUNE 2014	CDBG REIMBURSEMENT-CHILD ABUSE PREVENTION PROGRAM	
		08/11/2014	MAY 2014	CDBG REIMBURSEMENT-CHILD ABUSE PREVENTION PROGRAM	
		08/11/2014	MARCH 2014	CDBG REIMBURSEMENT-CHILD ABUSE PREVENTION PROGRAM	
		08/11/2014	APRIL 2014	CDBG REIMBURSEMENT-CHILD ABUSE PREVENTION PROGRAM	
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$8,562.00
RIVERSIDE COUNTY DEPARTMENT OF HEALTH	222252	08/11/2014	HS0000004534	RABIES TESTING @ PUBLIC HEALTH LAB-JUN14	\$100.00
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$100.00
RIVERSIDE COUNTY DEPT OF PUBLIC HEALTH	222209	08/04/2014	REMIT REF 13895	REFUND DUPLICATE PAYMENT-CONFERENCE CTR. RENTAL FOR 5/6/14 EVENT	\$125.00
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$125.00
RIVERSIDE COUNTY SHERIFF CIVIL DIVISION-WEST	222253	08/11/2014	2015-00000050	1015 - GARNISHMENT - CREDITOR %	\$624.73
	222378	08/25/2014	2015-00000061	1015 - GARNISHMENT - CREDITOR %	\$584.60
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$2,350.93
RJN INVESTIGATIONS, INC	222190	08/04/2014	031239	INVESTIGATION SERVICES	\$1,284.10
		08/04/2014	031353	INVESTIGATION SERVICES	
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$4,012.25

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ROBINSON, JACK	222379	08/25/2014	JUL-2014 BEG. JR	INSTRUCTOR SERVICES-TENNIS/BEGINNING JUNIOR CLASS	\$204.00
		08/25/2014	JUL-2014 ADV. JR	INSTRUCTOR SERVICES-TENNIS/ADVANCED JUNIOR CLASS	
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$619.80
ROJAS, IVAN	222286	08/11/2014	1165373	CRC RENTAL DEPOSIT REFUND	\$750.00
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$750.00
ROSENOW SPEVACEK GROUP (RSG, INC.)	222191	08/04/2014	0030050	CONSULTANT SERVICES-NSP3 PROGRAM ELIGIBILITY REVIEW-BROWN	\$1,500.00
		08/04/2014	0030055	CONSULTANT SERVICES-NSP3 PROGRAM ELIGIBILITY REVIEW-SALINAS	
		08/04/2014	0030054	CONSULTANT SERVICES-NSP3 PROGRAM ELIGIBILITY REVIEW-BOWDEN	
Remit to: SANTA ANA, CA					<u>FYTD:</u> \$1,500.00
RUIZ CONCRETE & PAVING, INC	222315	08/18/2014	3 - RETENTION	RELEASE OF RETENTION - CYCLE 2 CITY SIDEWALKS	\$7,014.44
Remit to: LONG BEACH, CA					<u>FYTD:</u> \$7,014.44
SAFEWAY SIGN CO.	13140	08/18/2014	99399	TRAFFIC SIGNS, POSTS, HARDWARE	\$5,650.24
Remit to: ADELANTO, CA					<u>FYTD:</u> \$5,650.24
SALVATION ARMY	222192	08/04/2014	14-001	CDBG REIMBURSEMENT-FOOD PANTRY PROGRAM	\$8,562.00
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$8,562.00
SAN BERNARDINO SHERIFF'S DEPT. EVOC	222254	08/11/2014	REG.-R. SAYLES	JULY 14-25, 2014 MOTORCYCLE BASIC ACADEMY REGISTR. FEE	\$1,329.00
Remit to: SAN BERNARDINO, CA					<u>FYTD:</u> \$1,329.00



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SANDOVAL, SANTIAGO	222287	08/11/2014	1166291	TOWNGATE RENTAL DEPOSIT AND GUARD REFUND	\$320.00
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$320.00
SANDOVAL, SOCORRO	222316	08/18/2014	SUMMER 2014	TUITION FEE REIMBURSEMENT	\$649.62
Remit to: MENIFEE, CA					<u>FYTD:</u> \$649.62
SC SIGNS	222317	08/18/2014	FEB-JULY 2014	SITE POSTINGS-PLANNING COMMISSION & CITY COUNCIL PUBLIC HEARINGS	\$2,280.00
Remit to: TEMECULA, CA					<u>FYTD:</u> \$2,280.00
SCHIEFELBEIN, LORI C.	222318	08/18/2014	JUL 2014	CONSULTANT SERVICES-ROTATIONAL TOW PROGRAM	\$536.25
Remit to: BULLHEAD CITY, AZ					<u>FYTD:</u> \$1,691.25
SCOTT FAZEKAS & ASSOCIATES, INC	222255	08/11/2014	17615	PLAN CHECK SERVICES FOR BLDG. & SAFETY DEPT.	\$2,075.32
Remit to: IRVINE, CA					<u>FYTD:</u> \$11,477.66
SECURITY LOCK & KEY	13089	08/11/2014	26667	LOCK CYLINDER CHANGE & DUPLICATE KEYS FOR LIBRARY SERVER ROOM	\$1,211.47
		08/11/2014	26591	LOCK REPAIR & PARTS-WESTBLUFF PARK	
		08/11/2014	26630	RE-KEYED CONFERENCE ROOM AT CITY HALL	
		08/11/2014	26629	KEYED PW ADMIN STORAGE ROOM AT CITY HALL	
		08/11/2014	26625	REPLACE PANIC HARDWARE NEAR CHIEF'S OFFICE AT PSB	
Remit to: YUCAIPA, CA					<u>FYTD:</u> \$1,211.47
SHEFFIELD FORECLOSURE RENOVATION	222193	08/04/2014	MV0248	DEVELOPER FEES (NSP3) FOR PROPERTY AT 14598 ANTILLES	\$16,000.00

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SHEFFIELD FORECLOSURE RENOVATION	222194	08/04/2014	MV0250	DEVELOPER FEES (NSP3) FOR PROPERTY AT 23680 MARK TWAIN ST.	\$16,000.00
	222195	08/04/2014	MV0251	DEVELOPER FEES (NSP3) FOR PROPERTY AT 24270 BAY AVE.	
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$198,523.56
SHELL OIL CO.	222380	08/25/2014	065124489408	FUEL PURCHASES-PD MOTORCYCLES	\$1,362.63
Remit to: COLUMBUS, OH					<u>FYTD:</u> \$2,919.26
SINGER & COFFIN, APC	13141	08/18/2014	4260	LEGAL SERVICES - SR-60 MORENO BEACH PH. 2	\$24,767.25
Remit to: IRVINE, CA					<u>FYTD:</u> \$93,656.16
SIRE TECHNOLOGIES/HYLAND SOFTWARE	13043	08/04/2014	257381	TRAVEL EXPENSES-PROF. CONSULTANT SVCS.	\$1,154.89
		08/04/2014	212141	CREDIT INVOICE	
Remit to: WESTLAKE, OH					<u>FYTD:</u> \$29,972.49
SKECHERS	222288	08/11/2014	JULY 2014	SOLAR INCENTIVE REBATE-ACCT# 7013669-01 / 29800 EUCALYPTUS, M.V.	\$6,883.16
Remit to: MANHATTAN BEACH, CA					<u>FYTD:</u> \$6,883.16
SKY TRAILS MOBILE VILLAGE	13186	08/25/2014	JULY 2014	UUT REIMBURSEMENT JULY 2014	\$38.73
Remit to: LOS ANGELES, CA					<u>FYTD:</u> \$112.91
SMARTLINK	222347	08/18/2014	FP14-0434	REFUND FOR INSPECTION FEES PAID IN ERROR	\$211.00
Remit to: BELLEVUE, WA					<u>FYTD:</u> \$211.00
SOCRATA INC.	222320	08/18/2014	2238	ANNUAL PAYMENT FOR OPEN DATA PLATFORM BASIC PLAN	\$12,555.00



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Remit to: SEATTLE, WA					FYTD: \$12,555.00
SOLCIUS, LLC	222210	08/04/2014	BL#27881-YR2014	REFUND OF DUPLICATE PAYMENT FOR B/L#27881	\$77.00
Remit to: OREM, UT					FYTD: \$77.00
SOLEX CONTRACTING, INC.	222413	08/25/2014	B1201903	80% REFUND OF PERMIT FEE	\$369.60
Remit to: TEMECULA, CA					FYTD: \$369.60
SOSA, HUGO	13038	08/04/2014	JUL-2014	INSTRUCTOR SERVICES-TRADITIONAL KARATEDO CLASS	\$390.00
	13187	08/25/2014	AUG-2014	INSTRUCTOR SERVICES-TRADITIONAL KARATEDO CLASS	\$420.00
Remit to: ELK GROVE, CA					FYTD: \$1,140.00
SOUTHERN CALIFORNIA EDISON 1	222196	08/04/2014	JUL-14 8/4/14	ELECTRICITY	\$3,914.79
	222256	08/11/2014	JUL-14 8/11/14	ELECTRICITY	\$9,808.09
Remit to: ROSEMEAD, CA					FYTD: \$547,879.82
SOUTHERN CALIFORNIA GAS CO.	222323	08/18/2014	JUL-2014	GAS CHARGES	\$2,635.21
Remit to: MONTEREY PARK, CA					FYTD: \$5,113.00
SOUTHERN PET SUPPLIES	13188	08/25/2014	9397	PET SUPPLIES-ASSORTED COLLARS, LEADS, & HARNESSSES	\$1,014.80
Remit to: SAN DIEGO, CA					FYTD: \$1,014.80
SPARKLETTS	13091	08/11/2014	7364596 070214	BOTTLED WATER/SVC-CREEKSIDE ELEMENTARY "A CHILD'S PLACE"	\$83.01
		08/11/2014	10050036 070214	BOTTLED WATER/SVC. - EOC/ERF	
		08/11/2014	7363683 070214	BOTTLED WATER/SVC-ARMADA ELEMENTARY "A CHILD'S PLACE"	

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Remit to: DALLAS, TX					<u>FYTD:</u> \$183.01
SPRINT	13092	08/11/2014	417544340-092	CELLULAR PHONE SERVICE FOR PD GTF	\$63.78
Remit to: CAROL STREAM, IL					<u>FYTD:</u> \$547.04
STAINE, KADISHA	222414	08/25/2014	1164686	REFUND FOR SHELTER RESERVATION CANCELLATION	\$29.60
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$29.60
STANDARD INSURANCE CO	222293	08/11/2014	140801	SUPPLEMENTAL INSURANCE	\$1,473.76
Remit to: PORTLAND, OR					<u>FYTD:</u> \$53,818.69
STANLEY CONVERGENT SECURITY SOLUTIONS, INC	13039	08/04/2014	11379568	ALARM SYSTEM MONITORING SERVICES-EOC/JUL14	\$3,000.75
		08/04/2014	11295606	ALARM SYSTEM MONITORING SERVICES-SENIOR CENTER	
		08/04/2014	11384887	ALARM SYSTEM MONITORING SERVICES-ANNEX 1 BURGLAR ALARM	
		08/04/2014	11397981	ALARM SYSTEM MONITORING SERVICES-TOWNGATE COMM. CTR.	
		08/04/2014	11307117	ALARM SYSTEM MONITORING SERVICES-ANIMAL SHELTER	
		08/04/2014	11394845	ALARM SYSTEM MONITORING SERVICES-PUBLIC SAFETY BLDG.	
		08/04/2014	11309591	ALARM SYSTEM MONITORING SERVICES-CITY YARD & TRANSP. TRAILER	
		08/04/2014	11305469	ALARM SYSTEM MONITORING SERVICES-FIRE ST. #58	
		08/04/2014	11389161	ALARM SYSTEM MONITORING SERVICES-CRC	
		08/04/2014	11399015	ALARM SYSTEM MONITORING SERVICES-FIRE ST. #99/JUL14	
	13094	08/11/2014	11461604	ALARM SYSTEM MONITORING SERVICES-GANG TASK FORCE OFFICE	\$2,439.92
		08/11/2014	11291828	ALARM SYSTEM MONITORING SERVICES-FIRE ST. #99/JUN14	



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STANLEY CONVERGENT SECURITY SOLUTNS, INC	13094	08/11/2014	11212405	ALARM SYSTEM MONITORING SERVICES-FIRE ST. #99/MAY14	\$2,439.92
		08/11/2014	11376911	SECURITY SYSTEM MONITORING-SUNNYMEAD & BETHUNE PARKS SNACK BARS	
		08/11/2014	11443958	INSTALL WIRING & PANEL FOR GOLF COURSE BANQUET ROOM RENOVATION	
	13143	08/18/2014	11431085	SECURITY EQUIPMENT SERVICE CALL/2 BATTERIES REPLACED-EOC	\$4,411.35
		08/18/2014	11473655	ALARM SYSTEM MONITORING SERVICES-LIBRARY	
		08/18/2014	11489784	ALARM SYSTEM MONITORING SERVICES-CITY HALL	
		08/18/2014	11490794	ALARM SYSTEM MONITORING SERVICES-COTTONWOOD GOLF PRO SHOP	
		08/18/2014	11494952	ALARM SYSTEM MONITORING SERVICES-FIRE ST. #99/AUG14	
		08/18/2014	11464810	ALARM SYSTEM MONITORING SERVICES-ANNEX 1 FIRE ALARM	
		08/18/2014	11365135	ALARM SYSTEM MONITORING SERVICES-MARCH FIELD PARK COMM. CTR.	
		08/18/2014	11458012	ALARM SYSTEM MONITORING SERVICES-EOC/AUG14	
		08/18/2014	11441090	SERVICE CALL/POWER SUPPLY & BATTERIES REPLACED-EOC	
		08/18/2014	11197222	ALARM SYSTEM MONITORING SERVICES-ANNEX 1 FIRE ALARM	
		08/18/2014	11430624	SERVICE CALL/ELEVATOR TEST-EOC	
		08/18/2014	11326839	SERVICE CALL/BATTERY REPLACED-COTTONWOOD GOLF SHOP	
	08/18/2014	11444360	EQUIPMENT SERVICE CALL/REPLACE FIRE ALARM SYSTEM-PSB		
	13189	08/25/2014	11468579	SECURITY SYSTEM MONITORING-MORRISON PARKS SNACK BAR	\$227.16
emit to: PALATINE, IL					FYTD: \$10,265.35
STARK, MATTHEW	222348	08/18/2014	R14-075977	AS REFUND-ADOPT,CHIP,VACS, LIC	\$65.00
emit to: MORENO VALLEY, CA					FYTD: \$65.00

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STATE BOARD OF EQUALIZATION 1	13196	08/22/2014	073114	SALES & USE TAX REPORT FOR 7/1-7/31/14	\$3,539.00
Remit to: SACRAMENTO, CA					FYTD: \$7,758.00
STATE DISBURSEMENT UNIT	13055	08/08/2014	2015-00000043	1005 - GARNISHMENT - CHILD SUPPORT*	\$2,514.59
	13157	08/22/2014	2015-00000074	1005 - GARNISHMENT - CHILD SUPPORT*	\$2,481.22
Remit to: WEST SACRAMENTO, CA					FYTD: \$9,998.26
STATE OF CALIFORNIA DEPT. OF JUSTICE	222257	08/11/2014	046136	BLOOD ALCOHOL ANALYSIS SERVICES FOR PD	\$974.00
		08/11/2014	036717 (HR2)	FINGERPRINTING SERVICES-HR/A.S. VOLUNTEERS	
	222324	08/18/2014	042441 (BL)	FINGERPRINTING SERVICES-BUS. LICENSE RELATED	\$1,487.00
		08/18/2014	042441 (HR)	FINGERPRINTING SERVICES-HR/EMPLOYMENT/VOLUNTEER RELATED	
		08/18/2014	042441 (PCS)	FINGERPRINTING SERVICES-PARKS CONTRACT CLASS RELATED	
Remit to: SACRAMENTO, CA					FYTD: \$12,762.00
STEWART, RICHARD A.	222399	08/25/2014	9/3-9/5/14	TRAVEL PER DIEM-LCC ANNUAL CONF. & EXPO	\$177.50
Remit to: MORENO VALLEY, CA					FYTD: \$177.50
STRADLING, YOCCA, CARLSON & RAUTH	13144	08/18/2014	289241-0031	LEGAL SERVICES	\$6,248.77
		08/18/2014	289247-0000	LEGAL SERVICES	
		08/18/2014	289915-0031	LEGAL SERVICES	
		08/18/2014	289925-0000	LEGAL SERVICES	
		08/18/2014	289242-0032	LEGAL SERVICES	
		08/18/2014	289916-0032	LEGAL SERVICES	



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STRADLING, YOCCA, CARLSON & RAUTH	13144	08/18/2014	289243-0035	LEGAL SERVICES	\$6,248.77
		08/18/2014	289250-0000	LEGAL SERVICES	
Remit to: NEWPORT BEACH, CA					<u>FYTD:</u> \$21,445.74
STRASBURG, SHANNON	222349	08/18/2014	R14-075511	AS REFUND-SPAY/NEUTER DEPOSIT	\$75.00
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$75.00
STREET, TAMKIA	222415	08/25/2014	1168840	REFUND FOR BASKETBALL CLINIC	\$28.00
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$28.00
SUNNYMEAD ACE HARDWARE	222258	08/11/2014	57264	MISC. SUPPLIES FOR PD	\$54.38
		08/11/2014	57327	MISC. SUPPLIES FOR PD	
	222325	08/18/2014	56192	MISC. SUPPLIES FOR FIRE STATION MAINT. & REPAIR	\$693.28
		08/18/2014	56156	MISC. SUPPLIES FOR FIRE STATION MAINT. & REPAIR	
	08/18/2014	56294	MISC. SUPPLIES FOR FIRE STATION #2 PAINTING/REPAIR PROJECTS		
		56291	MISC. SUPPLIES FOR FIRE STATION #2 PAINTING/REPAIR PROJECTS		
	08/18/2014	56650	MISC. SUPPLIES FOR FIRE STATION MAINT. & REPAIR		
	08/18/2014	55226	MISC. SUPPLIES FOR PD		
	08/18/2014	56123	MISC. SUPPLIES FOR PD		
	08/18/2014	56320	MISC. SUPPLIES FOR FIRE STATION #2 PAINTING/REPAIR PROJECTS		
	08/18/2014	56204	MISC. SUPPLIES FOR FIRE STATION #2 PAINTING/REPAIR PROJECTS		
08/18/2014	56473	MISC. SUPPLIES FOR PD			

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SUNNYMEAD ACE HARDWARE	222325	08/18/2014	56153	MISC. SUPPLIES FOR FIRE STATION MAINT. & REPAIR	\$693.28
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$1,275.25
SUNNYMEAD ANIMAL HOSPITAL	222259	08/11/2014	266028	VETERINARY SERVICES FOR PATROL K-9 IVAN	\$289.00
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$306.20
SZUSZKIEWICZ, JILL	222350	08/18/2014	R14-076355	AS REFUND-OVERPMT ON LICENSE, RABIES EXP	\$19.00
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$19.00
T.Y. LIN INTERNATIONAL	222326	08/18/2014	1408028	CONSULTING - SR-60 NASON ST. INTERCHANGE	\$185.00
Remit to: PALATINE, IL					<u>FYTD:</u> \$370.00
THE CITY OF IRVINE	222289	08/11/2014	REGISTR. FEES	B. MARKER & P. LONTHAIR FOR COMMERCIAL ENF. COURSE 9/25/14	\$190.00
Remit to: IRVINE, CA					<u>FYTD:</u> \$190.00
THERMAL COMBUSTION INNOVATORS	222197	08/04/2014	126821	BIOHAZARDOUS MEDICAL WASTE PICKUP FROM ANIMAL SHELTER	\$73.12
Remit to: COLTON, CA					<u>FYTD:</u> \$73.12
THOMPSON COBURN LLP	13145	08/18/2014	3052978	LEGAL SERVICES FOR MVU RE: RELIABILITY STANDARD COMPLIANCE	\$1,094.69
		08/18/2014	3052349	LEGAL SERVICES FOR MVU RE: NERC COMPLIANCE	
Remit to: WASHINGTON, DC					<u>FYTD:</u> \$1,173.62
TIME WARNER CABLE	222382	08/25/2014	031518001 7/1/14	CABLE TV SERVICE FOR COTTONWOOD GOLF COURSE	\$61.04
Remit to: PITTSBURGH, PA					<u>FYTD:</u> \$61.04



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TRICHE, TARA	13190	08/25/2014	AUG-2014	INSTRUCTOR SERVICES-DANCE CLASSES	\$2,131.20
Remit to: MORENO VALLEY, CA					FYTD: \$5,839.80
TRUGREEN LANDCARE	13095	08/11/2014	7727005	RE-STAKE TREES IN ZONE E-4	\$2,027.40
		08/11/2014	7727473	IRRIGATION REPAIRS FOR APRIL-ZONE E-4	
	13146	08/18/2014	7744300	IRRIGATION WORK AT BAYSIDE PARK	\$3,324.00
		08/18/2014	7758614	TRIMMING OF PALM TREES-MORRISON PARK	
		08/18/2014	7758632	TRIMMING OF PALM TREES-MARB BY PAL BLDG.	
		08/18/2014	7758638	TRIMMING OF PALM TREES-VICTORIANO PARK	
Remit to: RIVERSIDE, CA					FYTD: \$46,623.31
TTG ENGINEERS	222198	08/04/2014	00091053	CONSULTING - CIVIC CENTER IMPROVEMENTS	\$2,944.00
Remit to: PASADENA, CA					FYTD: \$2,944.00
TUKES, JOSHUA	222420	08/25/2014	JUL-AUG 2014	INSTRUCTOR SERVICES-WATERCOLOR TECHNIQUE CLASS	\$48.00
Remit to: MORENO VALLEY, CA					FYTD: \$48.00
TW TELECOM	222383	08/25/2014	06425072	TELECOM SVCS-LOCAL/LONG DISTANCE CALLS	\$3,147.53
		08/25/2014	06425072a	INTERNET & DATA SERVICES	
Remit to: DENVER, CO					FYTD: \$9,397.02
UNITED ROTARY BRUSH CORP	13096	08/11/2014	280238	STREET SWEEPER BROOM KITS/RECONDITIONING	\$4,379.57
		08/11/2014	280154	STREET SWEEPER BROOM KITS/RECONDITIONING	
		08/11/2014	280584	STREET SWEEPER BROOM KITS/RECONDITIONING	
		08/11/2014	280310	STREET SWEEPER BROOM KITS/RECONDITIONING	
		08/11/2014	280467	STREET SWEEPER BROOM KITS/RECONDITIONING	

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Item No. A.4



City of Moreno Valley
Payment Register
 For Period 8/1/2014 through 8/31/2014

CHECKS UNDER \$25,000

<u>Vendor Name</u>	<u>Check/EFT Number</u>	<u>Payment Date</u>	<u>Inv Number</u>	<u>Invoice Description</u>	<u>Payment Amount</u>
Remit to: KANSAS CITY, MO					<u>FYTD:</u> \$5,260.71
UNITED SITE SERVICES OF CA, INC.	13097	08/11/2014	114-2155317	FENCE RENTAL AT ANIMAL SHELTER	\$106.65
	13191	08/25/2014	114-2221182	FENCE RENTAL AT ANIMAL SHELTER	
Remit to: PHOENIX, AZ					<u>FYTD:</u> \$319.95
UNITED STATES TREASURY - 4	222260	08/11/2014	2015-00000051	1001 - GARNISHMENT - IRS TAX LEVY	\$50.38
	222384	08/25/2014	2015-00000062	1001 - GARNISHMENT - IRS TAX LEVY	\$86.23
Remit to: FRESNO, CA					<u>FYTD:</u> \$237.37
UNITED STATES VETERANS INITIATIVE	222327	08/18/2014	1 - FY 13/14	CDBG REIMBURSEMENT-VETERANS IN PROGRESS PROGRAM	\$6,062.00
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$6,062.00
UNITED WAY OF INLAND VALLEYS	222261	08/11/2014	2015-00000052	8720 - UNITED WAY	\$342.00
	222385	08/25/2014	2015-00000070	8720 - UNITED WAY	
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$1,370.00
VACATE TERMITES & PEST ELIMINATION COMPANY	13147	08/18/2014	50123	TREATMENT FOR BEES & HIVE REMOVAL SERVICES	\$1,875.00
		08/18/2014	50617	TREATMENT FOR BEES & HIVE REMOVAL SERVICES	
		08/18/2014	49317	TREATMENT FOR BEES & HIVE REMOVAL SERVICES	
		08/18/2014	50618	TREATMENT FOR BEES & HIVE REMOVAL SERVICES	
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$3,495.00
VAVRINEK, TRINE, DAY & CO., LLP	222262	08/11/2014	0107316-IN	ASES INVENTORY PROJECT SERVICES	\$3,015.00



**City of Moreno Valley
Payment Register
For Period 8/1/2014 through 8/31/2014**

CHECKS UNDER \$25,000

<u>Vendor Name</u>	<u>Check/EFT Number</u>	<u>Payment Date</u>	<u>Inv Number</u>	<u>Invoice Description</u>	<u>Payment Amount</u>
Remit to: RANCHO CUCAMONGA, CA					FYTD: \$10,735.00
VAZQUEZ, ALYDRIS/LUIS	222351	08/18/2014	R14-072951	AS REFUND-SPAY/NEUTER DEPOSIT	\$75.00
Remit to: SAN DIEGO, CA					FYTD: \$75.00
VEHICLE REGISTRATION COLLECTIONS	222386	08/25/2014	2015-00000064	1015 - GARNISHMENT - CREDITOR %	\$234.00
Remit to: RANCHO CORDOVA, CA					FYTD: \$234.00
VERGARA OR JUAN TELLEZ, CINDY	222358	08/18/2014	MV2140618015	REFUND-CITATION OVERPAYMENT	\$57.50
Remit to: MORENO VALLEY, CA					FYTD: \$57.50
VERIZON	222387	08/25/2014	EQN6913105-14209	BACKBONE COMMUNICATION CHARGES	\$581.57
Remit to: TRENTON, NJ					FYTD: \$1,167.68
VERIZON CALIFORNIA	222388	08/25/2014	951 UH2-7052 AUG	PHONE CHARGES - ERC	\$622.80
Remit to: DALLAS, TX					FYTD: \$1,501.62
VERIZON WIRELESS	222263	08/11/2014	9728469901	CELLULAR SERVICE FOR PD TICKET WRITERS	\$159.45
Remit to: DALLAS, TX					FYTD: \$319.05
VICTOR MEDICAL CO	222389	08/25/2014	3560449	ANIMAL MEDICAL SUPPLIES/VACCINES	\$1,737.94
Remit to: LAKE FOREST, CA					FYTD: \$6,663.23
VISHWANAUTH, SUNIL	222416	08/25/2014	1135776	REFUND-RENTAL DEPOSIT (REF#1135776 DTD 4/22/14)	\$75.00
Remit to: MORENO VALLEY, CA					FYTD: \$75.00
VISION SERVICE PLAN	13101	08/11/2014	140801	EMPLOYEE VISION INSURANCE	\$4,042.67

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Item No. A.4



City of Moreno Valley
Payment Register
 For Period 8/1/2014 through 8/31/2014

CHECKS UNDER \$25,000

<u>Vendor Name</u>	<u>Check/EFT Number</u>	<u>Payment Date</u>	<u>Inv Number</u>	<u>Invoice Description</u>	<u>Payment Amount</u>
Remit to: SAN FRANCISCO, CA					<u>FYTD:</u> \$8,086.69
VISTA PAINT CORPORATION	13148	08/18/2014	2014-549527-00	TRAFFIC PAINT	\$5,143.11
		08/18/2014	2014-502385-00	PAINT FOR CITY PARKS-TOWNGATE PARK	
Remit to: FULLERTON, CA					<u>FYTD:</u> \$5,143.11
VULCAN MATERIALS CO, INC.	222264	08/11/2014	70432166	ASPHALTIC MATERIALS	\$2,324.93
		08/11/2014	70440826	ASPHALTIC MATERIALS	
		08/11/2014	70423991	ASPHALTIC MATERIALS	
		08/11/2014	70421229	ASPHALTIC MATERIALS	
		08/11/2014	70426863	ASPHALTIC MATERIALS	
		08/11/2014	70421230	ASPHALTIC MATERIALS	
		08/11/2014	70417046	ASPHALTIC MATERIALS	
		08/11/2014	70426862	ASPHALTIC MATERIALS	
		08/11/2014	70429626	ASPHALTIC MATERIALS	
		08/11/2014	70435653	ASPHALTIC MATERIALS	
		08/11/2014	70421228	ASPHALTIC MATERIALS	
		08/11/2014	70438337	ASPHALTIC MATERIALS	
		08/11/2014	70435654	ASPHALTIC MATERIALS	
Remit to: LOS ANGELES, CA					<u>FYTD:</u> \$4,377.80
WATER SPECIALIST CONSULTANTS	222272	08/11/2014	REGISTR-9/16/14	REGISTR. FEE-MEL ALONZO FOR RECYCLED WATER SITE SUPV. TRAINING	\$45.00
Remit to: LA MESA, CA					<u>FYTD:</u> \$45.00
WEBFORTIS, LLC	222328	08/18/2014	10031	CRM CODE & SYSTEM UPGRADE V2011 TO V2013	\$3,387.50



City of Moreno Valley
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 For Period 8/1/2014 through 8/31/2014

CHECKS UNDER \$25,000

<u>Vendor Name</u>	<u>Check/EFT Number</u>	<u>Payment Date</u>	<u>Inv Number</u>	<u>Invoice Description</u>	<u>Payment Amount</u>
WEBFORTIS, LLC	222328	08/18/2014	10030	CRM/IT CONSULTING SERVICES	\$3,387.50
Remit to: WALNUT CREEK, CA					FYTD: \$3,387.50
WELLS FARGO CORPORATE TRUST	13044	08/07/2014	W140803	DEBT SERVICE-SPECIAL TAXES-TOWNGATE IMP AREA #1	\$429.00
	222199	08/04/2014	1092090	ANNUAL TRUSTEE FEE FOR MV 2005 LRB 7/7/14-7/6/15	\$2,000.00
Remit to: LOS ANGELES, CA					FYTD: \$1,243,068.82
WEST PAYMENT CENTER	222390	08/25/2014	830136558	LEGAL LIBRARY PUBLICATIONS UPDATES	\$355.39
Remit to: CAROL STREAM, IL					FYTD: \$2,567.79
WESTERN ELECTRICITY COORDINATING COUNCIL	13149	08/18/2014	INV004382	MVU SHARE OF 2013 UNSCHEDULED FLOW MITIGATION PLAN COSTS	\$203.74
Remit to: SALT LAKE CITY, UT					FYTD: \$203.74
WESTERN MUNICIPAL WATER DISTRICT	222391	08/25/2014	23866-018292/JL4	WATER CHARGES-SKATE PARK	\$2,551.58
		08/25/2014	24753-018620/JL4	WATER CHARGES-MARB BALLFIELDS	
		08/25/2014	23821-018258/JL4	WATER CHARGES-MFPCC BLDG. 938	
		08/25/2014	23821-018257/JL4	WATER CHARGES-MFPCC LANDSCAPE	
Remit to: ARTESIA, CA					FYTD: \$13,275.62
WESTERN RENEWABLE ENERGY GENERATION	222265	08/11/2014	18430	WREGIS CERTIFICATE-RETIRED VOLUME FEE	\$120.00
Remit to: SALT LAKE, UT					FYTD: \$120.00
WILLDAN ENGINEERING	13098	08/11/2014	02210979	CONSULTANT - BOX SPRINGS COMM. TOWER	\$10,260.00
Remit to: ANAHEIM, CA					FYTD: \$134,081.05

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Item No. A.4



City of Moreno Valley
Payment Register
 For Period 8/1/2014 through 8/31/2014

CHECKS UNDER \$25,000

<u>Vendor Name</u>	<u>Check/EFT Number</u>	<u>Payment Date</u>	<u>Inv Number</u>	<u>Invoice Description</u>	<u>Payment Amount</u>
WILLIAMS, LATRICE	222417	08/25/2014	1166548	REFUND FOR A CHILD'S PLACE	\$19.00
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$19.00
WILLIS, ROBERT H	222200	08/04/2014	072714	SPORTS OFFICIATING SERVICES-SOFTBALL	\$231.00
		08/04/2014	071714	SPORTS OFFICIATING SERVICES-SOFTBALL	
		08/04/2014	072014	SPORTS OFFICIATING SERVICES-SOFTBALL	
		08/04/2014	072414	SPORTS OFFICIATING SERVICES-SOFTBALL	
	222392	08/25/2014	081714	SPORTS OFFICIATING SERVICES-SOFTBALL	\$252.00
		08/25/2014	080714 / 081014	SPORTS OFFICIATING SERVICES-SOFTBALL	
		08/25/2014	081414	SPORTS OFFICIATING SERVICES-SOFTBALL	
		08/25/2014	073114	SPORTS OFFICIATING SERVICES-SOFTBALL	
Remit to: PERRIS, CA					<u>FYTD:</u> \$966.00
WIN-911 SOFTWARE	222329	08/18/2014	1406032355	ANNUAL RENEWAL OF SOFTWARE MAINT. & SUPPORT FOR WIN-911	\$395.00
Remit to: AUSTIN, TX					<u>FYTD:</u> \$395.00
WINGS AND ROTORS AIR MUSEUM	222266	08/11/2014	1101	FLYOVER OF HUEY GUNSHIP FOR JULY 4, 2014 PARADE	\$200.00
Remit to: MURRIETA, CA					<u>FYTD:</u> \$200.00
WINN, MARGARET	222352	08/18/2014	1168382 1168383	TOWNGATE RENTAL DEPOSIT/CREDIT REFUND	\$340.00
Remit to: MORENO VALLEY, CA					<u>FYTD:</u> \$340.00
WRCRCA	222331	08/18/2014	JUL-2014 MSHCP	MSHCP FEES COLLECTED FOR JULY, 2014-RESIDENTIAL	\$21,318.00
Remit to: RIVERSIDE, CA					<u>FYTD:</u> \$29,070.00



**City of Moreno Valley
Payment Register
For Period 8/1/2014 through 8/31/2014**

CHECKS UNDER \$25,000

<u>Vendor Name</u>	<u>Check/EFT Number</u>	<u>Payment Date</u>	<u>Inv Number</u>	<u>Invoice Description</u>	<u>Payment Amount</u>
WURM'S JANITORIAL SERVICES, INC.	13099	08/11/2014	23147	JANITORIAL SERVICES-EMP. RESOURCE CTR.	\$532.81
Remit to: CORONA, CA					FYTD: \$31,413.27
XEROX CAPITAL SERVICES, LLC	222267	08/11/2014	074760862	COPIER LEASE/BILLABLE PRINTS FOR GRAPHICS DEPT.-JUN14	\$4,254.74
		08/11/2014	074843058	COPIER LEASE/BILLABLE PRINTS FOR PARKS DEPT	
		08/11/2014	074760861	COPIER LEASE FOR PARKS DEPT	
		08/11/2014	075297901	COPIER LEASE/BILLABLE PRINTS FOR GRAPHICS DEPT.-JUL14	
		08/11/2014	074760863	COPIER LEASE FOR GRAPHICS DEPT.	
		08/11/2014	075297902	COPIER LEASE FOR GRAPHICS DEPT.	
Remit to: PASADENA, CA					FYTD: \$7,479.82
ZEPEDA, JAIME	222418	08/25/2014	1170043	REFUND CLASS PROGRAM NO LONGER OFFERED	\$37.00
Remit to: MORENO VALLEY, CA					FYTD: \$37.00
ZUMAR INDUSTRIES, INC.	13151	08/18/2014	0152713	SIGNS FOR CFD #1 PARKS	\$390.08
		08/18/2014	0152758	FREIGHT CHARGES ON SIGNS FOR CFD #1 PARKS-INVOICE #152713	
Remit to: SANTA FE SPRINGS, CA					FYTD: \$390.08

TOTAL CHECKS UNDER \$25,000	\$1,076,302.69
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GRAND TOTAL	\$10,314,358.30
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Item No. A.4

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APPROVALS	
BUDGET OFFICER	<i>me</i>
CITY ATTORNEY	<i>SMB</i>
CITY MANAGER	<i>d</i>

Report to City Council

TO: Mayor and City Council

FROM: Ahmad R. Ansari, P.E., Public Works Director/City Engineer

AGENDA DATE: October 14, 2014

TITLE: AUTHORIZATION TO SUBMIT SUSTAINABLE TRANSPORTATION PLANNING GRANT APPLICATION TO CALTRANS AND RESOLUTION NO. 2014-83 AUTHORIZING THE CITY MANAGER TO EXECUTE AGREEMENTS WITH CALTRANS FOR THE MORENO VALLEY PEDESTRIAN MASTER PLAN

RECOMMENDED ACTION

Recommendations:

1. Authorize staff to submit an application for a Sustainable Transportation Planning Grant.
2. Approve Resolution No. 2014-83. A Resolution of the City Council of the City of Moreno Valley, California, Authorizing the City Manager to Execute Agreements with Caltrans for the Moreno Valley Pedestrian Master Plan.

SUMMARY

This report recommends authorization to submit an application for a Sustainable Transportation Planning Grant and approval of Resolution 2014-83 authorizing the City Manager to execute agreements with Caltrans. The planning grant would be used to prepare a Pedestrian Master Plan, with special emphasis on identifying gaps in the City's sidewalk infrastructure and on enhancing Safe Routes to School.

DISCUSSION

Transportation Planning Grants offered by Caltrans are intended to promote a balanced, comprehensive multi-modal transportation system. Goals of the grants are the following:

1. Improve Mobility and Accessibility: Expanding the system and enhancing modal choices and connectivity to meet the State's future transportation demands.
2. Preserve the Transportation System: Maintaining, managing, and efficiently utilizing California's existing transportation system.
3. Support the Economy: Maintaining, managing, and enhancing the movement of goods and people to spur the economic development and growth, job creation, and trade.
4. Enhance Public Safety and Security: Ensuring the safety and security of people, goods, services, and information in all modes of transportation.
5. Reflect Community Values: Finding transportation solutions that balance and integrate community values with transportation safety and performance, and encourage public involvement in transportation decisions.
6. Enhance the Environment: Planning and providing transportation services while protecting our environment, wildlife, and historical and cultural assets.

It is the intent of staff to submit a grant application for the purpose of preparing a Pedestrian Master Plan. The purpose of the plan would be to provide policies and guidelines for improvements within the City to make walking safer, accessible, easier, and more attractive for pedestrians. The plan will also serve as a framework for implementation of City plans and policies that relate to the importance of the pedestrian in the planning process. The plan would include policy review, identification of issues and potential solutions, identification of route types and treatments, development of a pedestrian priority model, recommended infrastructure projects, and identification of potential funding sources. Special emphasis will be placed on identifying gaps in the City's sidewalk infrastructure and on enhancing Safe Routes to School.

As part of the grant application, a local resolution is required that states the title of the person authorized to execute agreements with Caltrans if the City is awarded grant funding.

ALTERNATIVES

1. Authorize staff to submit a Transportation Planning Grant and approve the proposed Resolution which authorizes the City Manager to execute agreements with the California Department of Transportation for the Moreno Valley Pedestrian Master Plan, if the City of Moreno Valley secures grant funding. *Staff recommends this action.*
2. Do not authorize staff to submit a Transportation Planning Grant and do not approve the proposed Resolution which would not authorize the City Manager to execute agreements with the California Department of Transportation for the

Moreno Valley Pedestrian Master Plan. *If such authority is not granted, the City would not submit an application for a Transportation Planning Grant.*

FISCAL IMPACT

All applications for the Transportation Planning Grant require a minimum of 11.47 percent match from the agency submitting the application. Staff anticipates submitting an application requesting approximately \$177,000 in grant funds with \$23,000 in matching funds from the Transportation Division’s existing budget. If the grant application is selected by Caltrans for funding, then City staff will bring to Council a request to accept the grant and appropriate funds for reimbursement by Caltrans. Successful grant applications are anticipated to be announced in April 2015. There is no impact to the General Fund with this action.

CITY COUNCIL GOALS

REVENUE DIVERSIFICATION AND PRESERVATION:

Develop a variety of city revenue sources and policies to create a stable revenue base and fiscal policies to support essential city services, regardless of economic climate.

PUBLIC SAFETY:

Provide a safe and secure environment for people and property in the community, control the number and severity of fire and hazardous materials incidents, and provide protection for citizens who live, work and visit the City of Moreno Valley.

PUBLIC FACILITIES AND CAPITAL PROJECTS:

Ensure that needed public facilities, roadway improvements, and other infrastructure improvements are constructed and maintained.

ATTACHMENTS

Attachment 1: Proposed Resolution

Prepared By:
Michael Lloyd
Senior Engineer, P.E.

Department Head Approval:
Ahmad R. Ansari, P.E.
Public Works Director/City Engineer

Concurred By:
Eric Lewis, P.E., T.E.
City Traffic Engineer

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RESOLUTION NO. 2014-83

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF MORENO VALLEY, CALIFORNIA, AUTHORIZING THE CITY MANAGER TO EXECUTE AGREEMENTS WITH CALTRANS FOR THE MORENO VALLEY PEDESTRIAN MASTER PLAN

WHEREAS, the City of Moreno Valley is eligible to receive Federal and/or State funding for certain transportation planning related plans, through the California Department of Transportation; and

WHEREAS, a Fund Transfer Agreement is needed to be executed with the California Department of Transportation before such funds can be claimed through the Transportation Planning Grant Programs; and

WHEREAS, the City of Moreno Valley wishes to delegate authorization to execute these agreements and any amendments thereto;

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF MORENO VALLEY, CALIFORNIA, DOES HEREBY RESOLVE AS FOLLOWS: It does hereby authorize the City Manager to execute agreements and any amendments thereto with the California Department of Transportation for the Moreno Valley Pedestrian Master Plan, if awarded to the City.

APPROVED AND ADOPTED this 14th day of October, 2014.

Mayor of the City of Moreno Valley

ATTEST:

City Clerk

APPROVED AS TO FORM:

City Attorney

1
Resolution No. 2014-83
Date Adopted: October 14, 2014

RESOLUTION JURAT

STATE OF CALIFORNIA)
COUNTY OF RIVERSIDE) ss.
CITY OF MORENO VALLEY)

I, Jane Halstead, City Clerk of the City of Moreno Valley, California, do hereby certify that Resolution No. 2014-83 was duly and regularly adopted by the City Council of the City of Moreno Valley at a regular meeting thereof held on the 14th day of October, 2014 by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

(Council Members, Mayor Pro Tem and Mayor)

CITY CLERK

(SEAL)

Resolution No. 2014-83²
Date Adopted: October 14, 2014



APPROVALS	
BUDGET OFFICER	<i>me</i>
CITY ATTORNEY	<i>SMB</i>
CITY MANAGER	<i>d</i>

Report to City Council

TO: Mayor and City Council

FROM: Chris Paxton, Administrative Services Director

AGENDA DATE: October 14, 2014

TITLE: APPROVE THE EXTENSION OF THE CITY'S CURRENT FUEL PURCHASE AGREEMENT WITH THE SOCO GROUP, INC. AND AUTHORIZE THE CONTINUED PIGGYBACK USE OF THE COUNTY OF RIVERSIDE CONTRACT WITH SOCO FOR PURPOSES OF NEGOTIATED FUEL PRICE ONLY

RECOMMENDED ACTION

Recommendations:

1. Approve the use (piggyback) of the County of Riverside Agreement with The SoCo Group, Inc. through June 30, 2015, for purposes of the negotiated fuel price only; all other terms remain per the City's agreement with the company.
2. Approve the extension of the City's existing annual fuel agreement with The SoCo Group, Inc., by execution of a City Agreement Amendment through June 30, 2015, in the not to exceed amount of \$450,000 (\$95,000 plus \$355,000 in FY 2014/15).
3. Ratify FY 2014/15 Purchase Order 2015-0000082 to The SoCo Group in the amount of \$95,000.
4. Authorize the Purchasing & Facilities Manager to issue a FY 2014/15 purchase order to The SoCo Group in the amount of \$355,000.
5. Authorize the City Manager or designee to execute any amendments, purchase orders and/or change orders to The Soco Group necessary for operational fuel needs through June 30, 2015.

SUMMARY

This report recommends the extension of the existing City contract with The SoCo Group for the purchase of unleaded and diesel fuel for official City needs and the continued use of a piggyback agreement with The SoCo Group under the agreement with the County of Riverside for the negotiated fuel price only. Fuel companies typically permit smaller agencies to piggyback onto their contracts with larger agencies. It is in the best interest of the City to piggyback on the County of Riverside's competitive fuel award due to their purchase volume and favorable pricing.

DISCUSSION

In 2009 the City Council authorized a piggyback fuel agreement with the County of Riverside's competitive award to The SoCo Group. The City's agreement with SoCo allowed for an initial one-year term and subsequent annual renewals. The FY 2013/14 expenditures under this agreement for vehicle fuel needs was approximately \$384,000.

In September of 2011 the County of Riverside once again competitively awarded fuel needs to The SoCo Group. The extended agreement provides favorable pricing based on the County's competitive award. The City wishes to extend the agreement with SoCo utilizing the County of Riverside's agreement which is valid through June of 2015 and has an additional one-year extension.

The County of Riverside bid and award documents have been examined and indicate a competitive award has been made to The SoCo Group. The piggyback agreement provides fuel at County pricing and Internet monitoring of our tanks to ensure timely delivery.

Due to immediate FY 2014/15 operational fuel needs, purchase order 2015-0000082 was created in the amount of \$95,000 and issued to The SoCo Group. This staff report is to ratify this purchase and request an extension of the piggyback agreement to The SoCo Group via a City Agreement Amendment.

ALTERNATIVES

1. Approve the use (piggyback) of the County of Riverside Agreement with The SoCo Group, Inc. through June 30, 2015, for purposes of the negotiated fuel price only, all other terms remain per the City's agreement with the company; approve the extension of the City's existing annual fuel agreement with The SoCo Group, Inc., by execution of a City Agreement Amendment through June 30, 2015, in the not to exceed amount of \$450,000 (\$95,000 plus \$355,000 in FY 2014/15); ratify FY 2014/15 Purchase Order 2015-0000082 to The Soco Group in the amount of \$95,000; authorize the Purchasing & Facilities Manager to issue a FY 2014/15 purchase order to The SoCo Group in the amount of \$355,000; and authorize the City Manager or designee to execute any amendments, purchase

orders and/or change orders to The Soco Group necessary for operational fuel needs through June 30, 2015. *Staff recommends this alternative.*

2. Do not approve the use (piggyback) of the County of Riverside Agreement with The SoCo Group, Inc. through June 30, 2015, for purposes of the negotiated fuel price only, all other terms remain per the City's agreement with the company; do not approve the continuation of the City's existing annual fuel agreement with The SoCo Group, Inc., by execution of a City Agreement Amendment through June 30, 2015, in the not to exceed amount of \$450,000 (\$95,000 plus \$355,000 in FY 2014/15); do not ratify FY 2014/15 Purchase Order 2015-0000082 to The SoCo Group in the amount of \$95,000; do not authorize the Purchasing & Facilities Manager to issue a FY 2014/15 purchase order to The SoCo Group in the amount of \$355,000; and do not authorize the City Manager or designee to execute any amendments, purchase orders and/or change orders to The Soco Group necessary for operational fuel needs through June 30, 2015. *Staff does not recommend this alternative.*

FISCAL IMPACT

Approval of Alternative No. 1 will obligate the City to a total FY 2014/15 expenditure of \$450,000, which is a \$40,000 increase to the current City Council approved budget. Portions of the expenses incurred through the Equipment Maintenance Fund are recovered through administrative charges from the various operating activities utilizing fuel/diesel. For FY 2013/14, the General Fund incurred direct expenses of approximately \$140,000 or 32% of the total citywide fuel/diesel expenses of approximately \$433,000.

Description	Fund	GL Account No.	Type (Rev/Exp)	FY 14/15 Budget	Proposed Adjustments	FY 14/15 Amended Budget
Operational Equip	Equip. Maint.	7410-70-78-45360-630330	Exp	\$416,500	\$(410,000)	\$6,500
Purchase of Fuel	Equip. Maint.	7410-70-78-45360-630355	Exp	0	326,800	326,800
Purchase of Diesel	Equip. Maint.	7410-70-78-45360-630356	Exp	0	119,200	119,200
Purchase of Alternative Fuel	Equip. Maint.	7410-70-78-45360-630357	Exp	0	4,000	4,000

ATTACHMENTS

Attachment 1: First Amendment to Agreement

Prepared By:
Rix Skonberg
Purchasing & Facilities Division Manager

Department Head Approval:
Chris Paxton
Administrative Services Director

Concurred By:
Robert Lemon
Maintenance & Operations Division Manager

Department Head Approval:
Ahmad Ansari
Public Works Director/City Engineer

**FIRST AMENDMENT TO AGREEMENT
FOR FUEL PURCHASES**

The First Amendment to Agreement is by and between the CITY OF MORENO VALLEY, a municipal corporation, hereinafter referred to as “City,” and The SoCo Group, Inc., hereinafter referred to as “Contractor.” This First Amendment to Agreement is made and entered into effective on the date the City signs this Amendment.

RECITALS:

Whereas, the City and Contractor entered into an Agreement entitled “INDEPENDENT CONTRACTOR AGREEMENT, for purchase of operational fuel needs, hereinafter referred to as “Agreement,” dated 09/01/09.

Whereas, the Contractor is providing Operational Unleaded and Diesel Fuel.

Whereas, it is desirable to amend the Agreement as described in Section 1 of this First Amendment.

Whereas, the Contractor had submitted a Proposal dated 10/01/12 regarding the cost of fuels. A copy of said Proposal is attached as “Exhibit A - First Amendment, SoCo Amendment #3 and Minutes of the Board – Riverside County” and is incorporated herein by this reference.

SECTION 1 AMENDMENT TO ORIGINAL AGREEMENT:

1.1 The Agreement termination date is extended by this Amendment until 06/30/15 to provide delivered diesel and unleaded fuel to the City per the County of Riverside’s pricing agreement.

1.2 Exhibit “A” to the Agreement is hereby amended by adding to the scope of work section described in “Exhibit A – First Amendment, SoCo Amendment #3 and Minutes of the Board – Riverside County.”

1.3 Exhibit "B" to the Agreement is hereby further amended by adding to the Terms of Payment section thereof described in "Exhibit A – First Amendment, SoCo Amendment #3 and Minutes of the Board – Riverside County."

1.4 The City agrees to pay the Contractor and the Contractor agrees to receive a "Not-to-Exceed" fee of \$450,000 per fiscal year, as set forth in the above-referenced Cost Summary, in consideration of the Contractor's performance of the work set forth in "Exhibit A – First Amendment, SoCo Amendment #1 and Minutes of the Board – Riverside County."

1.5 Exhibit "C" to the Agreement is hereby further amended by adding the County of Riverside Contract # RIVCO-40500-002-10/12 to The SoCo Group as described in "Exhibit A – First Amendment, SoCo Amendment #3 and Minutes of the Board – Riverside County."

SECTION 2

2.1 Except as otherwise specifically provided in this Amendment, all other terms and conditions of the Agreement shall remain in full force and effect.

SIGNATURE PAGE TO FOLLOW

IN WITNESS HEREOF, the parties have each caused their authorized representative to execute this Agreement.

City of Moreno Valley

The Soco Group, Inc

By: _____

By: _____

Mayor

Title: _____

(Vice President)

Date: _____

Date: _____

INTERNAL USE ONLY

APPROVED AS TO FORM:

By: _____

City Attorney

Title: _____

(Corporate Secretary)

Date

Date: _____

RECOMMENDED FOR APPROVAL:

Department Head

Date

Attachments: Exhibit A – SoCo Amendment #1 and Minutes of the Board of Supervisors - County of Riverside
Exhibit B – Terms of Payment
Exhibit C – Piggyback Contract Language

EXHIBIT A

SoCo Amendment #3 and Minutes of the Board - County of Riverside

THE SOCO GROUP INC

CONTRACTOR: The SoCo Group Inc.
Effective Date of Amendment: October 1, 2012

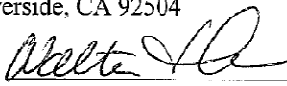
The Agreement between Riverside County; herein referred to as COUNTY and The SoCo Group Inc., herein referred to as CONTRACTOR, is amended as follows:

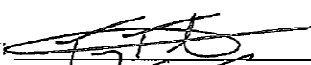
1. On page 3 of the Agreement, amend Section 2 the "Period of Performance": To amend all reference to the Period of Performance from expiration of September 30, 2012 to a Period of Performance of October 1, 2012 through September 30, 2013, unless terminated as specified in Section 9 TERMINATION. All other terms of the Period of Performance in the Agreement shall apply.
2. All other terms and conditions of the Agreement are to remain unchanged.

IN WITNESS WHEREOF, the Parties hereto have caused their duly authorized representatives to execute this Amendment.

County
County of Riverside
Purchasing and Fleet Services
2980 Washington Street
Riverside, CA 92504

Contractor
The SoCo Group Inc.
240 E. Perris Street
Perris, CA 92570

By: 
Name: Walter Mack
Title: Sr. Procurement Contract Specialist
Date: 10/1/12

By: 
Name: TOBY TAITANO
Title: CFO
Date: 9/19/12

SoCo Amendment #3 and Minutes of the Board - County of Riverside

**SUBMITTAL TO THE BOARD OF SUPERVISORS
COUNTY OF RIVERSIDE, STATE OF CALIFORNIA**

879



FROM: Purchasing and Fleet Services

SUBMITTAL DATE:
August 30, 2011

**SUBJECT: PURCHASE OF UNLEADED FUEL AND ULTRA LOW SULFUR DIESEL FUEL FROM
OTHER THAN THE LOW BID, FOR THE COUNTY OF RIVERSIDE**

RECOMMENDED MOTION: That the Board of Supervisors:

1. Approve purchase of unleaded fuel and ultra low sulfur diesel from other than the low bidder, in accordance with Ordinance No. 459.4, at an additional cost of \$86,600, and;
2. Authorize the Purchasing Agent, in accordance with Ordinance No. 459.4 to issue an agreement for five (5) years, renewed annually in one (1) year increments, based on the availability of fiscal funding and the adjusted aggregate amount based on OPIS Price Listing and actual usage.

BACKGROUND: In October 1995, the Board of Supervisors approved a Local Vendor Preference Policy to encourage business growth and provide jobs in Riverside County. On May 16, 2011,

(Continued on Page 2)

ROBERT J. HOWDYSHELL, Director
Purchasing and Fleet Services Dept.

FINANCIAL DATA	Current F.Y. Total Cost:	\$13,500,000	In Current Year Budget:	Yes
	Current F.Y. Net County Cost:	\$8,910,000	Budget Adjustment:	No
	Annual Net County Cost:	\$10,620,000	For Fiscal Year:	FY 11/12

SOURCE OF FUNDS: ISF Fuel Rates	Positions To Be Deleted Per A-30	<input type="checkbox"/>
	Requires 4/5 Vote	<input type="checkbox"/>

C.E.O. RECOMMENDATION: APPROVE
BY:
Serena Chow
County Executive Office Signature

Dept's Recomm.:
 Per Exec. Ofc.:
 Consent
 Policy
 Consent
 Policy
 Departmental Concurrence

MINUTES OF THE BOARD OF SUPERVISORS

On motion of Supervisor Tavaglione, seconded by Supervisor Buster and duly carried, IT WAS ORDERED that the above matter is approved as recommended.

Ayes: Buster, Tavaglione, Benoit and Ashley
 Nays: None
 Absent: Stone
 Date: September 13, 2011
 xc: Purchasing

Keçia Harper-Ihem
 Clerk of the Board
 By:
 Deputy

Prev. Agn. Ref.:	District:	Agenda Number: 3.73
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SoCo Amendment #3 and Minutes of the Board - County of Riverside

BOARD OF SUPERVISORS

**FORM 11: PURCHASE OF UNLEADED FUEL AND ULTRA LOW SULFUR DIESEL FUEL
OTHER THAN THE LOW BID, FOR THE COUNTY OF RIVERSIDE**

PAGE 2

BACKGROUND (Continued)

the Purchasing Department, acting as the lead agency, released a Cooperative Request for Proposal (RFP PUARC-1175) for bulk fuel for all Riverside County departments and several outside agencies including the City of Palm Springs, Hemet Unified School District, Ontario School District, Riverside Unified School District, Riverside Transit Authority, and Corona Unified School District. Solicitations were mailed to 19 companies and advertised on the County Purchasing Internet site. A statement informing bidders of the local preference policy was included in the bid instructions.

The RFP requested delivered pricing based on County usage per storage location and the OPIS rack price as of a specific date and time. OPIS is an organization that monitors the price of fuel at over 390 fuel storage/delivery locations across the country. The OPIS rack price is the wholesale price for fuel from the refineries our vendors pay when picking up fuel and can change at least 2 times per day. The closest site is in Colton. Vendors were instructed to provide a fixed markup per gallon to the Colton OPIS rack price to cover all costs and profit associated with delivery to our fuel sites. While the rack price may vary with each delivery, the markup the vendors charge will remain a fixed rate through the contract period.

Four (4) bid responses were received ranging from \$15,780,775 to \$16,548,117 for the estimated County requirement based on the Colton OPIS rack price. The overall low responsive and responsible bidder was IPC (Irvine, CA) in the amount of \$15,780,775; however, this bidder did not quote for all County delivery sites. The County would have to contract for the missing areas with the lowest vendor for those sites, making the lowest overall total cost \$16,003,730. Currently, the County splits the award based on the lowest cost per delivery site between two local vendors. Utilizing local preference, we again are requesting to split the award to the low responsive and responsible Riverside County firms, Downs Energy and SoCo Group, in an aggregate amount of \$16,090,330, resulting in a local preference cost difference of \$86,600, or about one half of one percent of the total cost. This differential is well within the Local Vendor Preference policy of 5.0%.

SoCo Amendment #3 and Minutes of the Board - County of Riverside

Contract ID: RIVCO-40500-002-10/12

This Agreement, made and entered into this 1st day of October, 2011, by and between The SoCo Group Inc, (herein referred to as "CONTRACTOR"), and the COUNTY OF RIVERSIDE, a political subdivision of the State of California, (herein referred to as "COUNTY"). The parties agree as follows:

1. Description of Services

1.1 CONTRACTOR shall provide all services as outlined and specified in Exhibit A, Scope of Services/Payment Provisions, consisting of pages.

1.2 CONTRACTOR represents that it has the skills, experience and knowledge necessary to fully and adequately perform under this Agreement, and the COUNTY relies upon this representation. CONTRACTOR shall perform to the satisfaction of the COUNTY and in conformance to and consistent with the highest standards of firms/professionals in the same discipline in the State of California.

1.3 CONTRACTOR affirms this it is fully apprised of all of the work to be performed under this Agreement; and the CONTRACTOR agrees it can properly perform this work at the prices stated in Exhibit B. CONTRACTOR is not to perform services or provide products outside of the Agreement.

1.4 Acceptance by the COUNTY of the CONTRACTOR's performance under this Agreement does not operate as a release of CONTRACTOR's responsibility for full compliance with the terms of this Agreement.

2. Period of Performance

2.1 This Agreement shall be effective upon signature of this Agreement by both parties and continue in effect through September 30, 2012, with the option to renew for four (4) additional years, renewable in one year increments by written amendment, unless terminated earlier. CONTRACTOR shall commence performance upon signature of this Agreement by both parties and shall diligently and continuously perform thereafter.

3. Compensation

3.1 The COUNTY shall pay the CONTRACTOR for services performed, products provided and expenses incurred in accordance with the terms of Exhibit A. Maximum payments by COUNTY to CONTRACTOR shall not exceed three million seven hundred thousand dollars (\$3,700,000) annually including all expenses. ~~The COUNTY is not responsible for any fees or costs incurred above or beyond the contracted amount and shall have no obligation to purchase any specified amount of services or products. Unless otherwise specifically stated in Exhibit A, COUNTY shall not be responsible for payment of any of CONTRACTOR's expenses related to this Agreement.~~

3.2 No price increases will be permitted during the first year of this Agreement. All price decreases (for example, if CONTRACTOR offers lower prices to another governmental entity) will automatically be extended to the COUNTY. The COUNTY requires written proof satisfactory to COUNTY of cost increases prior to any approved price adjustment. After the first year of the award, a minimum of 30-days advance notice in writing is required to be considered and approved by COUNTY. No retroactive price adjustments will be considered. Any price increases must be stated in a written amendment to this Agreement. The net dollar amount of profit will remain firm during the period of the Agreement. Annual increases shall not exceed the Consumer Price Index- All Consumers, All Items - Greater Los Angeles, Riverside and Orange County areas for fuel delivery services and be subject to satisfactory performance review by the COUNTY and approved (if needed) for budget funding by the Board of Supervisors.

3.3 ~~CONTRACTOR shall be paid only in accordance with an invoice submitted to COUNTY by CONTRACTOR within fifteen (15) days from the last day of each calendar month, and COUNTY shall pay the invoice within thirty (30) working days from the date of receipt of the invoice. Payment shall be made to CONTRACTOR only after services have been rendered or delivery of materials or products, and acceptance has been made by COUNTY. Prepare invoices in duplicate. For this Agreement, send the original and duplicate copies of invoices to:~~

EXHIBIT B

TERMS OF PAYMENT

Amendment #1

1. The Contractor's compensation shall not exceed Four Hundred and Fifty Thousand Dollars (\$450,000) based on the per gallon price evidenced in the County of Riverside's Contract ID RIVCO-40500-002-10/12.
2. Fuel pricing is based on the County of Riverside Fuel RFP PUARC-1175. Pricing is as follows:
 - a. Unleaded: OPIS Daily Rate + .0750
 - b. Diesel: OPIS Daily Rate + .0750

Daily receipts will include that day's OPIS rate report.

3. The Contractor shall submit to the City an original invoice identifying the service and any associated purchase order numbers. Each invoice must reference the appropriate Purchase Order number.
4. The City will review each invoice submitted by the Contractor, along with any accompanying required documentation in order to determine that the Contractor has properly invoiced, documented and executed the required services. Payment is made by the City within 30 days of approval of completed work.
5. Failure to comply with all requirements of this Agreement may result in non-payment for work performed or product delivered.

EXHIBIT C

PIGGYBACK CONTRACT LANGUAGE

Amendment #1

1. The City of Moreno Valley will piggyback on the contract awarded by The County of Riverside, to The SoCo Group, Inc. and the purchase fuel based on the pricing set forth in the agreement.
2. The County of Riverside Contract RIVCO-40500-002-10/12 with items described as fuel, Unleaded/Ultra Low Sulfur Diesel.
3. The City of Moreno Valley starting date is July 1st, 2014 and the Contract Ending Date is June 30th, 2015.

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APPROVALS	
BUDGET OFFICER	<i>me</i>
CITY ATTORNEY	<i>SMB</i>
CITY MANAGER	<i>d</i>

Report to City Council

TO: Mayor and City Council

FROM: Abdul R. Ahmad, Fire Chief

AGENDA DATE: October 14, 2014

TITLE: ACCEPTANCE OF THE FISCAL YEAR 2014 EMERGENCY MANAGEMENT PERFORMANCE GRANT PROGRAM (EMPG) AWARD

RECOMMENDED ACTION

Recommendation:

1. Accept the Fiscal Year 2014 Emergency Management Performance Grant Program (EMPG) grant award of \$46,896 from the Riverside County Office of Emergency Services.

SUMMARY

This report recommends acceptance of the Fiscal Year 2014 Emergency Management Performance Grant Program (EMPG) in the amount of \$46,896. Funds will be utilized to support Emergency Management related activities.

DISCUSSION

The purpose of the Emergency Management Performance Grant (EMPG) is to sustain and improve comprehensive emergency management programs at the state, tribal and local levels from all man-made and natural disasters through the prevention, mitigation, response, and recovery of all hazard events. An all hazards approach to emergency response, including the development of a comprehensive program of planning, training, and exercises, means that there can be an effective and consistent response to disasters and emergencies regardless of the cause. Additionally, it involves building long-term strategic partnerships within the emergency management community.

This grant is authorized by the *Robert T. Stafford Disaster Relief and Emergency Assistance Act* (42 U.S.C. 5121 et seq.) and provides a system of emergency preparedness for the protection of life and property in the United States from hazards.

The EMPG grant program provides reimbursement of up to 50 percent of allowable costs, with the City providing the other 50 percent match. The City's match requirement is typically met each year when City Council adopts the budget and allocates funding for the Office of Emergency Management Program Manager.

The Riverside County Office of Emergency Services (OES), on behalf of all jurisdictions in Riverside County, applies for this grant on an annual basis. Riverside County OES then distributes the grant funding to eligible agencies throughout the Operational Area. This year, the Fire Department has submitted to utilize the grant funding for the salary and benefits associated with the Office of Emergency Program Specialist from December 2014 through April 2015.

Additionally, grant funds will be utilized to purchase emergency management related equipment. In past years this funding has been used to purchase weather monitoring equipment, manual fuel pumps for the fuel tanks at the City's seven fire stations, and computers for the Emergency Operations Center. This year, in addition to partially funding the salary and benefits of the Office of Emergency Management Program Specialist, the Fire Department is judiciously examining several emergency management related purchases to determine which will provide the greatest benefit to Moreno Valley. The items currently being considered include:

- Digital fire extinguisher training system;
- Water purification tablets for the City's onsite emergency water supply;
- Emergency "go kits" for city staff in the event of an evacuation; and
- Consultant support for emergency operations plan revisions and simulation training.

ALTERNATIVES

1. Approve and authorize the recommended action as presented in this staff report. *This alternative will allow the City to receive Emergency Management Grant money which will allow the Office of Emergency Management to better prepare City staff to operate efficiently during a disaster.*
2. Do not approve and authorize the recommended action as presented in this staff report. *This alternative will prohibit the City from receiving Emergency Management Grant money which will inhibit the City's ability to operate efficiently during a disaster.*

FISCAL IMPACT

The funding for this grant has already been allocated by City Council through the budget adoption process as this is an annual, reoccurring grant. The revenue and expenditures for this grant have been allocated in 2503-40-47-74105. The City's 50 percent match requirement has also been allocated by City Council in 1010-40-47-30310 for the salaries and benefits associated with the Office of Emergency Management Program Manager.

CITY COUNCIL GOALS

PUBLIC SAFETY:

Provide a safe and secure environment for people and property in the community, control the number and severity of fire and hazardous material incidents, and provide protection for citizens who live, work and visit the City of Moreno Valley.

ATTACHMENTS

None

Prepared By:
Cynthia Owens
Management Analyst

Department Head Approval:
Abdul R. Ahmad
Fire Chief

Concurred By:
Alia Rodriguez
Office of Emergency Management Program Manager

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APPROVALS	
BUDGET OFFICER	<i>me</i>
CITY ATTORNEY	<i>SMB</i>
CITY MANAGER	<i>d</i>

Report to City Council

TO: Mayor and City Council

FROM: Ahmad R. Ansari, P.E., Public Works Director/City Engineer

AGENDA DATE: October 14, 2014

TITLE: EXECUTION OF EASEMENT DEED FOR ELECTRICAL PURPOSES TO SOUTHERN CALIFORNIA EDISON

RECOMMENDED ACTION

Recommendations:

1. Authorize the Mayor to execute the Easement Deed for Electrical Easement on Moreno Beach Drive A.P.N. 478-262-005.
2. Direct the City Clerk to forward the signed Easement Deed to Southern California Edison for further processing and recordation.

SUMMARY

This report recommends authorization to execute an anchor easement deed for electrical purposes to Southern California Edison on Moreno Beach Drive.

DISCUSSION

As part of the street improvements for the Frontier Communities project, two Southern California Edison transmission poles will be relocated along Moreno Beach Drive. The relocation of one transmission pole results in the need for an anchor easement located on Moreno Valley Electric Utility Field Office property.

The anchor easement deed will provide Southern California Edison the legal authorization to construct, use, maintain, alter, add to, repair, replace, inspect, relocate and/or remove at any time stub poles, guy wires, anchors and other appurtenant fixtures

needed for anchorage purposes. The proposed easement is a strip of land ten (10.00) foot wide.

ALTERNATIVES

1. Approve and authorize the recommended actions as presented in this Staff Report. This alternative will allow the City to provide Southern California Edison access to their facilities as identified and is essential for the Frontier Communities project.
2. Do not approve and authorize the recommended actions as presented in this Staff Report. This alternative will not allow the City to provide Southern California Edison access to their facilities.

FISCAL IMPACT

No fiscal impact.

NOTIFICATION

Publication of the agenda.

ATTACHMENTS

Attachment 1 – Easement Deed and Exhibits

Prepared By:
John Goatcher, P.E.
Senior Electrical Engineer

Department Head Approval:
Ahmad R. Ansari, P.E.
Public Works Director/City Engineer

Concurred By:
Jeannette Olko
Electric Utility Division Manager

RECORDING REQUESTED BY
SOUTHERN CALIFORNIA EDISON COMPANY

WHEN RECORDED MAIL TO

SOUTHERN CALIFORNIA EDISON COMPANY
2131 WALNUT GROVE AVENUE
GO3 - 2ND FLOOR
ROSEMEAD, CA 91770

ATTN: TITLE AND REAL ESTATE SERVICES

SPACE ABOVE THIS LINE FOR RECORDER'S USE

ANCHOR EASEMENT

Location: City of Moreno Valley
A.P.N.: 478-262-005
RP File No.: REL202742783
SCE Doc No.: 508750

DOCUMENTARY TRANSFER TAX \$ _____	Serial No. 70500A Service Order 801177799
_____ COMPUTED ON FULL VALUE OF PROPERTY CONVEYED OR COMPUTED ON FULL VALUE LESS LIENS AND ENCUMBRANCES REMAINING AT TIME OF SALE	Approved REAL PROPERTIES DEPARTMENT
_____ SO. CALIF. EDISON CO. SIGNATURE OF DECLARANT OR AGENT DETERMINING TAX FIRM	
	BY LC DATE 8/20/14

The CITY OF MORENO VALLEY, a municipal corporation, does hereby grant to SOUTHERN CALIFORNIA EDISON COMPANY, a corporation, their successors and assigns, (hereinafter referred to as "Grantee"), an easement to construct, use, maintain, alter, add to, repair, replace, inspect, relocate and/or remove at any time and from time to time, stub poles, guy wires, anchors and other appurtenant fixtures and/or equipment needed for anchorage purposes (hereinafter referred to as "Grantees' facilities"), in, on, over and across a strip of land ten (10.00) feet wide, lying within that certain real property of the Grantor, situated in the City of Moreno Valley, County of Riverside, State of California, described as follows:

A portion of Lot 5 in Block 90 of Map No. 1 of the Lands of the Bear Valley and Alessandro Development Company, records of San Bernardino County, in the City of Moreno Valley, County of Riverside, State of California, as shown by map on file in Book 11, Page 10 of Maps, in the office of the County Recorder of said County.

Said ten (10.00) foot wide strip of land is more particularly described on the Exhibit "A" and more particularly shown on the Exhibit "B" both attached hereto and by this reference made a part hereof.

The Grantee shall have free access to said facilities, and every part thereof, at all times, for the purpose of exercising the rights herein granted.

This space intentionally left blank.

Anchor Easement
City of Moreno Valley to
S.C.E., a corp.
Serial No. 70500A
RP File No.: REL202742783

EXECUTED this _____ day of _____, 20_____.

CITY OF MORENO VALLEY, a municipal
corporation

By: _____

Name: _____

Its: _____

By: _____

Name: _____

Its: _____

State of California)

County of _____)

On _____ before me, _____, a Notary Public,
personally appeared _____, who proved to me on the
basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within
instrument and acknowledged to me that he/she/they executed the same in his/her/their
authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s),
or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the
foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____

Anchor Easement
City of Moreno Valley to
S.C.E., a corp.
Serial No. 70500A
RP File No.: REL202742783

State of California)

County of _____)

On _____ before me, _____, a Notary Public, personally appeared _____, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

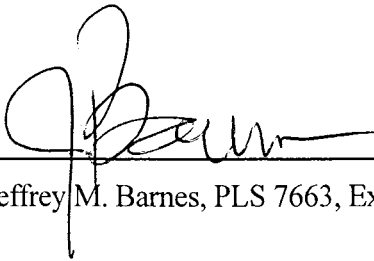
Signature _____

EXHIBIT "A"
LEGAL DESCRIPTION

That portion of Lot 5, Block 90, of Map No. 1 of the Lands of the Bear Valley and Alessandro Development Company as shown by map on file in Book 11, page 10 of Maps, Records of San Bernardino County, State of California, lying in Section 10, Township 3 South, Range 3 West, San Bernardino Base and Meridian, more particularly described as follows:

A strip of land 10.00 feet in width, lying 5.00 feet on each side of the following described centerline;
Commencing at the intersection of the centerline of Bay Avenue and the centerline of Moreno Beach Drive as shown on Tract number 1773 filed in Book 147, Pages 57 through 59 of Maps, Records of said County and State.
Thence North $00^{\circ}26'34''$ East along the centerline of Moreno Beach Drive, a distance of 178.52 feet;
Thence South $89^{\circ}33'26''$ East, a distance of 55.00 feet to the easterly right-of-way of Moreno Beach Drive and the TRUE POINT OF BEGINNING of said centerline description.
Thence continuing South $89^{\circ}33'26''$ East, a distance of 10.00 feet to the end of said centerline description;
Contains 100.00 square feet, more or less
See Exhibit "B" attached hereto and made a part hereof

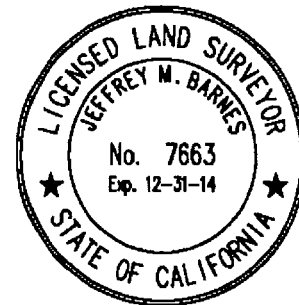
This description was prepared by me or under my direction in conformance with the requirements of the Land Surveyors Act.



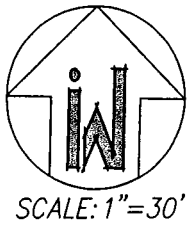
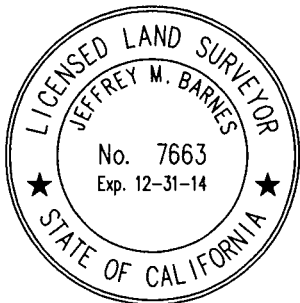
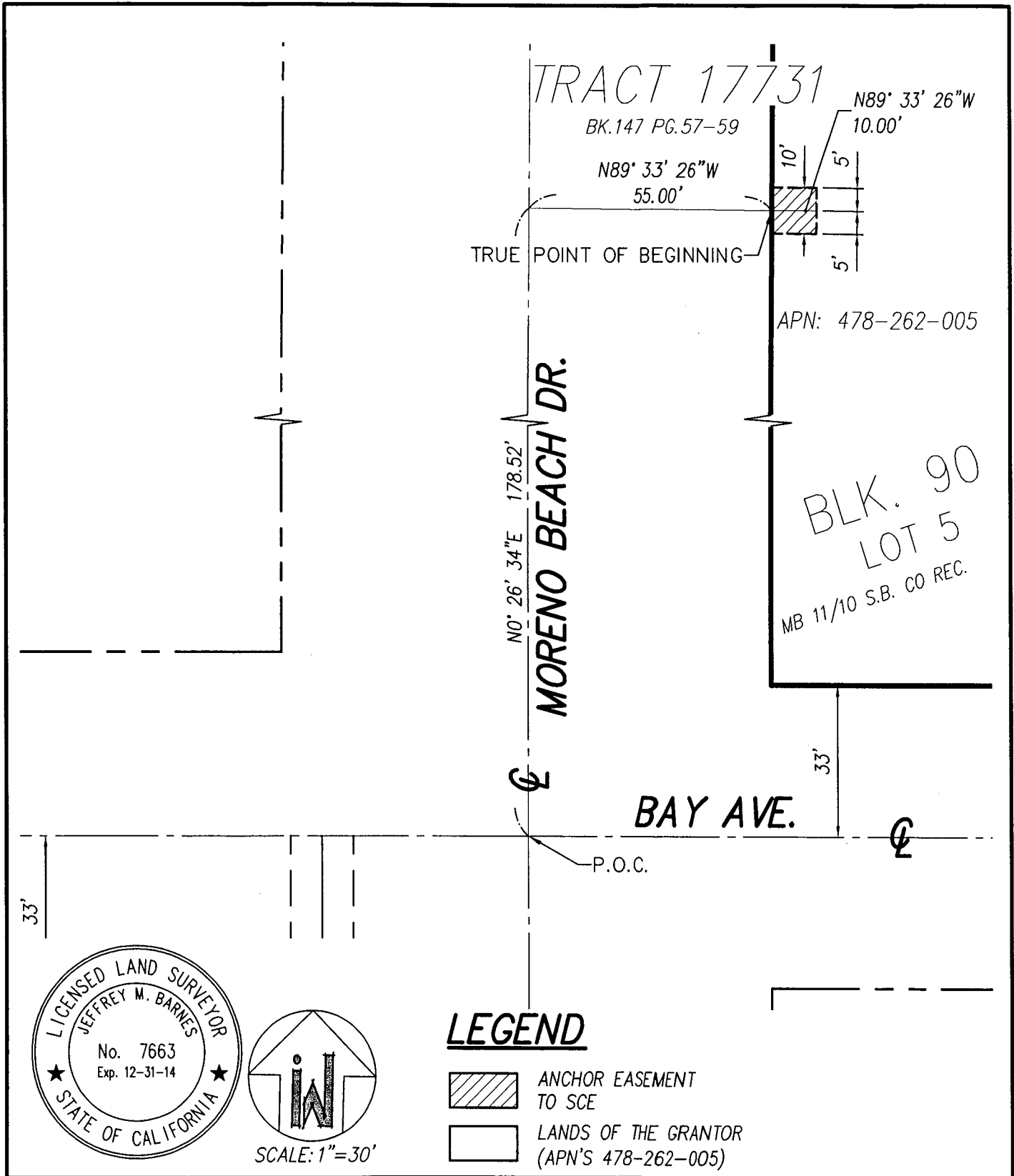
Jeffrey M. Barnes, PLS 7663, Exp. 12-31-14

8/13/2014



Date



Serial 70500A



LEGEND

-  ANCHOR EASEMENT TO SCE
-  LANDS OF THE GRANTOR (APN'S 478-262-005)



IW CONSULTING ENGINEERS, INC.

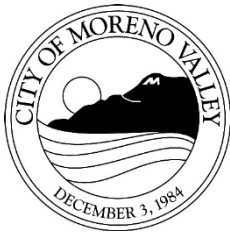
- CIVIL ENGINEERING
- AERIAL MAPPING
- ENTITLEMENTS
- LAND PLANNING
- SURVEYING
- GOVERNMENT RELATIONS

3544 UNIVERSITY AVENUE RIVERSIDE, CA 92501
TEL: 951.905.5300 FAX: 951.905.5302
WWW.IWCEI.COM

EXHIBIT "B"

W.O. 469.001
BY: JMB
DATE: 07/2014
SCALE: 1"=30'

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APPROVALS	
BUDGET OFFICER	<i>me</i>
CITY ATTORNEY	<i>SMB</i>
CITY MANAGER	<i>d</i>

Report to City Council

TO: Mayor and City Council

FROM: Richard Teichert, Chief Financial Officer

AGENDA DATE: October 14, 2014

TITLE: AUTHORIZATION TO PURCHASE ADDITIONAL CAMERAS, STORAGE, AND TRANSMISSION EQUIPMENT FROM AVRIO RMS GROUP FOR THE CITYWIDE CAMERA SYSTEM

RECOMMENDED ACTION

Recommendations:

1. Authorize the purchase of cameras, storage, and transmission equipment from Avrio RMS Group for an amount not-to-exceed \$59,122 and authorize the City Manager to sign a contract approved as to form by the City Attorney.

SUMMARY

On August 28, 2012, the City Council awarded a contract to build the Citywide Camera System to Avrio RMS Group (Avrio). The camera system has been built and is actively used daily by several departments within the City, particularly the Police Department. Over the last year the camera system has successfully assisted in the investigation of over 230 crimes in the City.

A feature of the contract stipulated that Avrio would continue to offer the same discounted prices for subsequent purchases for a three-year period (through August 2015). Both the Transportation Division and the Parks and Community Services Department have budgeted funds to purchase additional equipment. The Transportation Division needs to purchase camera storage equipment, as part of the Integrated Transportation System (ITS) Phase 1A project, to increase system capacity for cameras that are part of that project. Attachment 1 enumerates the equipment to be purchased in support of ITS Phase 1A.

In the near future, Parks and Community Services (PCS) will need to purchase cameras, storage, and transmission equipment in order to incorporate Lasselle Sports Park and Celebration Park into the Citywide Camera System.

Since the Transportation project is ready to purchase equipment, City Council approval is requested for the ITS Phase 1A project which will cost \$59,122.

DISCUSSION

In August 2012, the City Council awarded a contract and a five (5) year support agreement to Avrio following a Request for Proposals (RFP) process. The award capped an extensive review of camera systems at other jurisdictions and a competitive proposal process from vendors nationwide. During the fourth quarter of 2011 and the first quarter of 2012, Police and City Staff reviewed camera systems and met with representatives from several Southern California cities concerning their camera system. After evaluating various camera systems, City Staff determined that a citywide camera system would enhance the law enforcement capabilities of the Moreno Valley Police Department and enable other City Departments to benefit from the same system.

It is in the best interests of the City that expansion of the Citywide Camera System be performed by Avrio as a sole source provider (City Procurement Policy #3.18, Section V, Paragraphs A.8 & 9). Since the system was designed and built by Avrio after a competitively bid process, the expertise to enhance that system is uniquely held by Avrio. Additionally, the City is approximately 13 months into a 5-year agreement with Avrio to provide maintenance for the system. Avrio's knowledge of the complete system, how it works and how to enhance it, is not easily, quickly, or inexpensively obtainable in the open market.

In order to comply with the City's Purchasing Ordinance, City Council approval is required for purchases to the same vendor that exceed \$100,000 in a single fiscal year (City Procurement Policy, Policy 3.18, Section II, paragraph A). In order for departments to expand the Citywide Camera System with additional cameras, storage, or transmission equipment, City Council approval is sought for this first purchase even though it is less than the \$100,000 threshold requiring this approval.

The Transportation portion of the Citywide Camera System expansion will upgrade the servers and storage components to accommodate the 60 cameras that will be added by the ITS project over the next few years. Specifically, the expansion will:

Citywide Camera System Enhancements - Transportation

- Expand storage for 60 additional high-definition cameras, each with 30 days of video data retention. The additional storage recommended is approximately forty-eight terabytes (48TB).
- Increase input and output capabilities to handle additional demand on the storage and retrieval of video data.

- Upgrade servers' storage network architecture to provide necessary additional throughput and redundancy.

Citywide Camera System Enhancements – Parks & Community Services

The Parks & Community Services portion of the Citywide Camera System expansion will add camera, radios, and video storage for Lasselle Sports Park. The park can accommodate up to twelve camera locations and will utilize several wireless radios to transmit video back to the City Hall campus where the video images will be stored. Current plans have ten of the camera locations fitted with 1-3 cameras each. A single camera will be used when the viewing area is focused and multiple cameras will be used when the location can see multiple areas within the park (e.g. light poles near the playing fields and Lasselle Street). Multiple radios and antennas will be required to transmit the video images back to City Hall for viewing and storage. The equipment necessary to complete this project includes:

- Expanded storage for up to 20 high-definition cameras, each with 30 days of video data retention. The additional storage recommended is 16TB.
- Multiple high-bandwidth radios and antennas capable of transmitting two megabits per second (2 mbs) per camera.
- Professional services necessary to install the cameras and radios, and to integrate the cameras into the Citywide Camera System.

Recommended purchases to expand the camera system to serve Parks facilities will return to the Council for approval.

ALTERNATIVES

1. Authorize the purchase of cameras, storage, and transmission equipment from Avrio RMS Group for an amount not-to-exceed \$59,122 and enter into a contract approved as to form by the City Attorney and authorize the City Manager to sign a contract approved as to form by the City Attorney.
2. Provide other direction to staff.

Staff recommends Alternative 1.

FISCAL IMPACT

Funding for the cameras and associated storage equipment is budgeted and available in the operating budget of the requesting division as listed below due to the City Council's approval of the FY 2014-15 budget and Capital Improvement Plan.

Transportation Division – Integrated Traffic System (ITS) Project, Phase 1A – Account 3302-70-76-80008-720199, Project No. 808 0006 70 76 3302 06

Ongoing fiscal impacts include depreciation and maintenance costs. Since this equipment will add to the capabilities of the Citywide Camera System, the equipment will become part of that asset and depreciation will increase based on the useful life of the asset. Depreciation costs (20% based on a 5 year useful life) are added to the Technology Services ISF (Internal Service Fund), since TS is responsible for the asset, and recuperated through the annual cost allocation plan. Annual maintenance expense will be absorbed within the Transportation Division's annual operating budget and will be included as part of the proposed FY 2015/16 budgets.

ATTACHMENTS

Attachment 1: Proposal for System Upgrade

Prepared By:
Steve Hargis
Technology Services Division Manager

Department Head Approval by:
Richard Teichert
Chief Financial Officer

Concurred By:
Ahmad Ansari
Public Works Director/City Engineer

Concurred By:
Betsy Adams
Parks and Community Services Director



System Upgrade Proposal for **City of Moreno Valley**

June 13th, 2014

Table of Contents

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Storage Upgrade Specifications	4
I/O Upgrade Specifications	5
Current Server / Storage Architecture Diagram	6
Proposed Server / Storage Architecture Diagram	7

Introduction

This document details the proposed expansion for the City of Moreno Valley video surveillance system to include:

- Expanded storage for 60 additional HD cameras with 30 days of retention.
- Increased I/O capabilities to handle additional demand on the storage and retrieval of video data.
- Upgrade backend storage network architecture to provide necessary additional throughput and redundancy.

Storage Upgrade Specifications

Current Storage:

Raw Storage – 194.9TB

Capacity of all allocated Volumes: 171TB

Capacity after VMWare overhead: 136TB

Current Usage: 112TB

Unused Space: 24TB

Necessary Overhead Space (10%): 13.6TB

Space Available: 10.4TB

Proposed Storage Upgrade:

Additional Camera Requirements – 60 HD Cameras 30 Days Storage (~18GB/Day): 32.5TB

Additional Usable Space Needed – 32.5TB – 10.4TB: ~ 22TB

Additional Overhead Space Needed from Raw Storage: ~3TB

Additional Overhead for VMWare: ~3TB

Additional Raw Storage Required: ~28TB

Proposed Additional Storage - 2 RAID groups of RAID6 (8+2) drives: ~48TB Raw Storage

I/O Upgrade Specifications

Current Environment Configuration

There are two storage controllers each with 2-1GB connections to a single backend storage switch providing 4GB of bandwidth to the storage array.

There are three physical servers each with 3-1GB connection to a single backend storage switch and 3-1GB Etherchannels to the video network.

There is a single backend storage switch capable of 24 1GB connections.

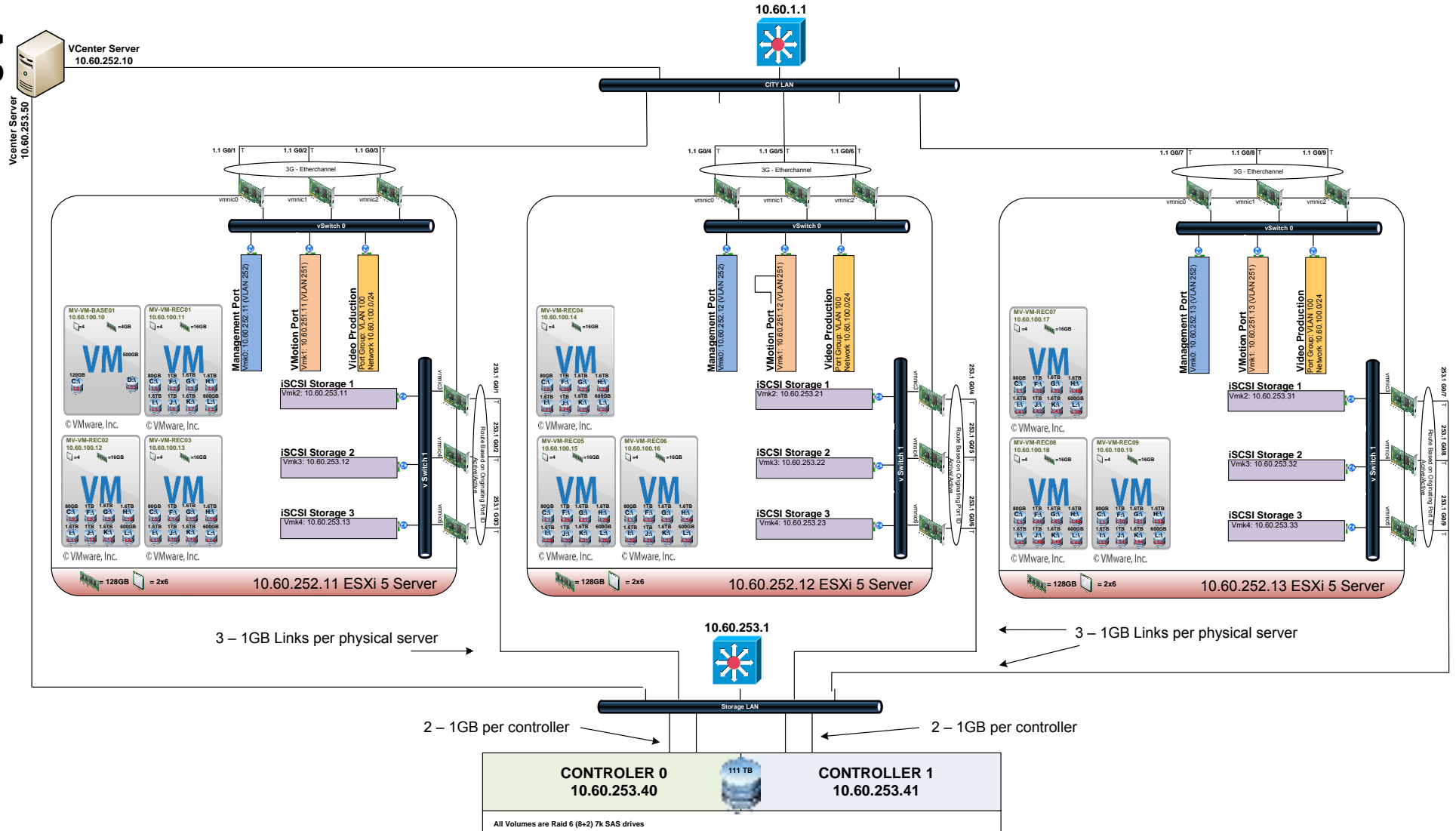
Proposed Configuration

The proposed upgrade to the I/O of the system will increase the throughput capabilities allowing for greater expansion of the video network.

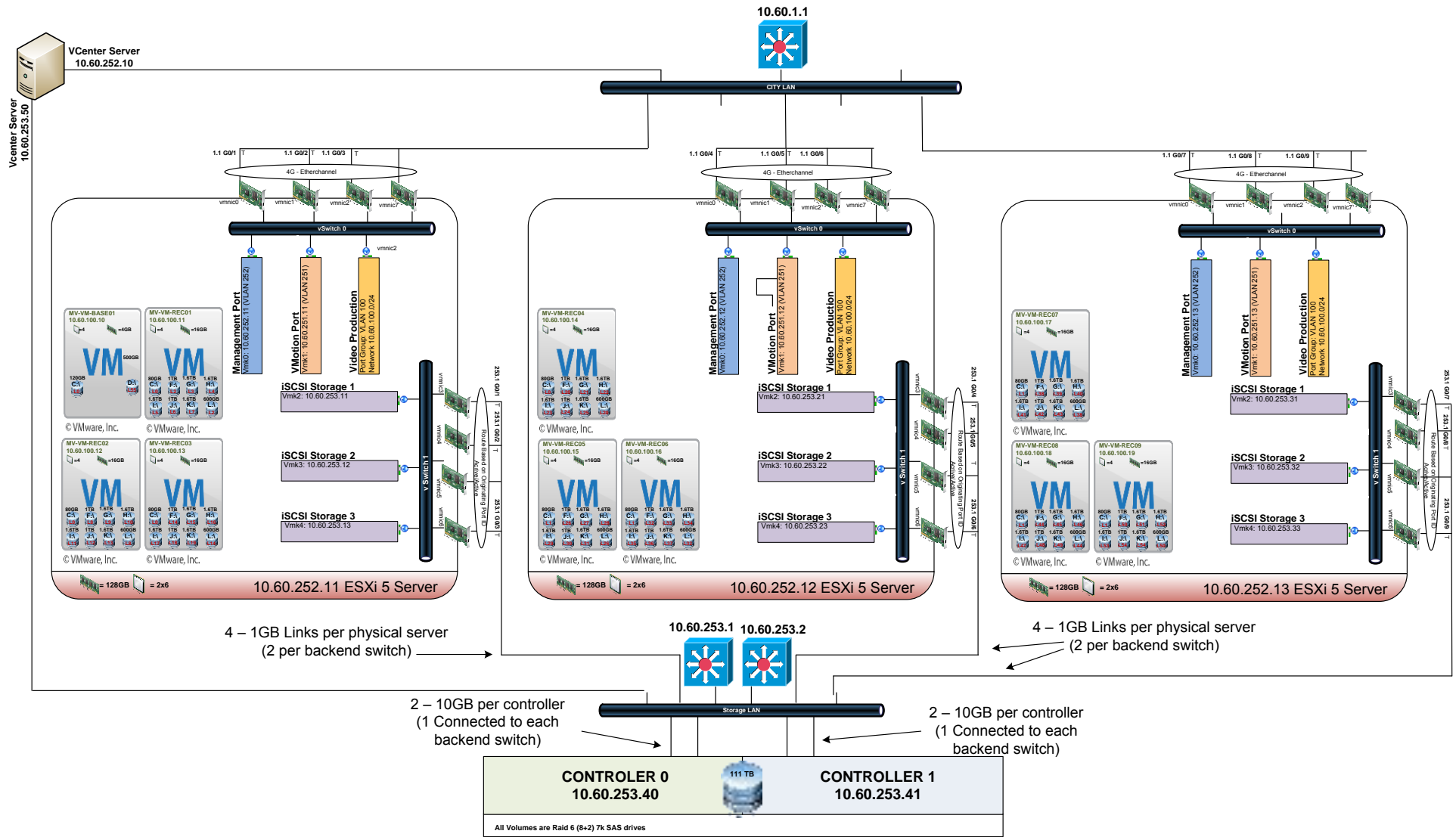
The controllers have the capacity to handle a total of 2 interface boards. The upgrade will replace the current 1GB interface boards with 10GB interface boards, providing an increase in connectivity from 4GB to 40GB. Although this increase is great deal more than required for the upgrade, the current configuration would be present a bottleneck with the proposed increase in cameras.

It is also necessary at this time to increase the capabilities of the backend storage switch to allow for 4-10GB interface connections to the controllers and to increase the number of connections to the storage physical servers. To address these needs and to provide redundancy for the backend, we are proposing to replace the single backend switch with 2 switches that will address both the 4-10GB interface requirement and will provide enhanced throughput and redundancy to the system. (See diagrams below)

Current Server / Storage Architecture Diagram



Proposed Server / Storage Architecture Diagram



-147-

Item No. A.9



Quote

Date: June 13, 2014
 Quote #: Q-061314
 Expiration Date: 11/13/2014

To: City of Moreno Valley, CA

Account Manager	Job	Payment Terms	Due Date
AVRIO	Storage Upgrade	Net 30	

Qty	Description	Unit Price	Line Total
2	Cisco Catalyst2960X-24TD-L Switch	2,496.00	4,992.00
2	8x5xNBD Catalyst 2960-X 2G	113.00	226.00
4	10G Base-SR SFP, MMF850-nm, LC	957.00	3,828.00
1	48TB Total Storage -Controller upgrade to 4 - 10GB interfaces	42,896.00	42,896.00
12	Storage Configuration/Allocation	185.00	2,220.00
16	Server/Network Configuration	185.00	2,960.00
1	Avrio/FM Field Services - 1 Day	2,000.00	2,000.00
		Subtotal	\$ 59,122.00
		Sales Tax	
		Total	\$ 59,122.00

Notes:

To accept this quotation, sign here and return: _____

Avrio Group Surveillance Solutions, LLC 3 N. Harrison St, Suite 100, Easton, MD 21601 Phone (410) 820-9334 Fax (410) 820-4304
 mjules@avriormsgroup.com



APPROVALS	
BUDGET OFFICER	<i>me</i>
CITY ATTORNEY	<i>SMB</i>
CITY MANAGER	<i>d</i>

Report to City Council

TO: Mayor and City Council

FROM: Ahmad R. Ansari, P.E., Public Works Director/City Engineer

AGENDA DATE: October 14, 2014

TITLE: PA06-0021 (PARCEL MAP 34577) – REDUCE IRREVOCABLE LETTER OF CREDIT AS FAITHFUL PERFORMANCE SECURITY AND ADOPT THE RESOLUTION AUTHORIZING ACCEPTANCE OF THE PUBLIC IMPROVEMENTS AS COMPLETE AND ACCEPTANCE OF THOSE PORTIONS OF HEACOCK STREET, CARDINAL AVENUE, INDIAN STREET, AND SAN MICHELE ROAD ASSOCIATED WITH THIS PROJECT INTO THE CITY’S MAINTAINED STREET SYSTEM

RECOMMENDED ACTION

Recommendations:

1. Adopt Resolution No. 2014-84. A Resolution of the City Council of the City of Moreno Valley, California, Authorizing the Acceptance of the Public Improvements as Complete within Project PA06-0021 (Parcel Map 34577) and Accepting Those Portions of Heacock Street, Cardinal Avenue, Indian Street, and San Michele Road Associated with this Project into the City’s Maintained Street System.
2. Authorize the City Engineer to execute a 90% reduction to an Irrevocable Letter of Credit serving as Faithful Performance security, exonerate an Irrevocable Letter of Credit serving as Material and Labor security in 90 days if there are no stop notices or liens on file with the City Clerk, and exonerate the final 10% of the Irrevocable Letter of Credit serving as Faithful Performance security in one year when all clearances are received.

SUMMARY

This staff report recommends acceptance of the improvements associated with PA06-0021 (Parcel Map 34577) into the City's maintained street system. This staff report also authorizes the City Engineer to execute a 90% reduction to the Irrevocable Letter of Credit serving as Faithful Performance security, exonerate the Irrevocable Letter of Credit serving as Material and Labor security in 90 days if there are no stop notices or liens on file with the City Clerk, and exonerate the final 10% warranty portion of the Irrevocable Letter of Credit serving as Faithful Performance security in one year, subject to completion of any defective work during this period.

DISCUSSION

On January 11, 2007, the Planning Commission of the City of Moreno Valley approved Tentative Parcel Map (TPM) No. 34577 (PA06-0021) along with Plot Plan (PA06-0022) for a commercial development. The tentative parcel map was a proposal for a two-lot subdivision. On November 28, 2011, Amended Plot Plan P11-090 (Building #1; 455,000 square feet) and Amended Plot Plan P11-091 (Building #2; 1,250,000 square feet) were approved by the Planning Director as amendments to the original plot plan. The developer constructed Building #2 as part of Phase I. Subsequently, the developer secured a lease with a tenant that required an expanded parking lot in lieu of construction of the second building. Amended Plot Plan P13-076, approved on September 4, 2013, provided the developer the option of developing the second building (455,000 square feet) into a parking lot. The project is bounded by Indian Street to the east, Heacock Street to the west, San Michelle Road to the south, and Cardinal Avenue to the north and was conditionally approved requiring construction of certain public improvements. The public improvements included asphalt concrete pavement, curb, gutter, sidewalk, driveway approaches, street lights, signing, striping, drainage facilities, relocation of overhead utilities, reclaimed water main line, water main line, and sewer lateral improvements. Those improvements received on-going inspection during the construction process. Upon completion of the improvements, the Public Works Department, Land Development Division performed an inspection, and a punch list was generated. The required corrective actions have been completed, and the improvements are now eligible for acceptance into the City's maintained street system.

In accordance with the Streets and Highway Code, the method for acceptance of improvements, per Section 1806 (a) and (b), is by action of the governing body, by resolution. It is therefore appropriate to accept those improvements into the City's maintained street system and to provide a 90% reduction to the Irrevocable Letter of Credit serving as Faithful Performance security of \$5,365,000 issued by Wells Fargo Bank. Ninety days after City Council approves the reduction of the Irrevocable Letter of Credit serving as Faithful Performance security, the Irrevocable Letter of Credit serving as Material and Labor security will be exonerated by the City Engineer provided there are no stop notices or liens on file with the City Clerk. The remaining 10% of the Irrevocable Letter of Credit serving as Faithful Performance security will be held for the one-year guarantee and warranty period. At the end of the guarantee and warranty

period, the remaining 10% of the Irrevocable Letter of Credit serving as Faithful Performance security will be released by the City Engineer subject to completion of any defective work that may appear during this period.

ALTERNATIVES

1. Adopt the proposed Resolution authorizing the acceptance of the public improvements within PA06-0021 (Parcel Map 34577) as complete and accepting those portions of Heacock Street, Cardinal Avenue, Indian Street, and San Michele Road associated with this project into the City's maintained street system. Authorize the City Engineer to execute the 90% reduction to the Irrevocable Letter of Credit serving as Faithful Performance security, exonerate the Irrevocable Letter of Credit serving as Material and Labor security in 90 days if there are no stop notices or liens on file with the City Clerk, and exonerate the final 10% of the Irrevocable Letter of Credit serving as Faithful Performance security in one year when all clearances are received. *The required improvements have been completed according to City of Moreno Valley Standards and therefore should be included in the City's maintained street system.*

2. Do not adopt the proposed Resolution authorizing the acceptance of the public improvements within PA06-0021 (Parcel Map 34577) as complete and accepting those portions of Heacock Street, Cardinal Avenue, Indian Street, and San Michele Road associated with this project into the City's maintained street system. Do not authorize the City Engineer to execute the 90% reduction to the Irrevocable Letter of Credit serving as Faithful Performance security, exonerate the Irrevocable Letter of Credit serving as Material and Labor security in 90 days if there are no stop notices or liens on file with the City Clerk, and exonerate the final 10% of the Irrevocable Letter of Credit serving as Faithful Performance security in one year when all clearances are received. *The required improvements have been completed according to City of Moreno Valley Standards and therefore should be included in the City's maintained street system.*

FISCAL IMPACT

The acceptance of these street improvements into the City's maintained street system will create an additional fiscal impact to the street maintenance program of the City Fund 2000-Gas Tax, Fund 2001-Measure A, and Fund 2007-Storm Water Maintenance. Fund 2000 is restricted to the construction and maintenance of streets and roadways. Fund 2001 is restricted for transportation projects only for the purposes of construction, maintenance and operation of streets and roadways. Street maintenance costs over a 20 year period are estimated to average almost \$12,000 per 13 foot wide lane mile per year. Based on the current street section being accepted of 2.56 lane miles, the estimated annual costs is \$30,720. The street section also includes 32 additional street lights with an estimated annual operating cost of \$250 each. Currently no new funding source has been identified to fund these maintenance costs.

CITY COUNCIL GOALS

Public Facilities and Capital Projects:

Ensure that needed public facilities, roadway improvements, and other infrastructure improvements are constructed and maintained.

NOTIFICATION

Publication of agenda

ATTACHMENTS

Attachment 1 - Vicinity Map

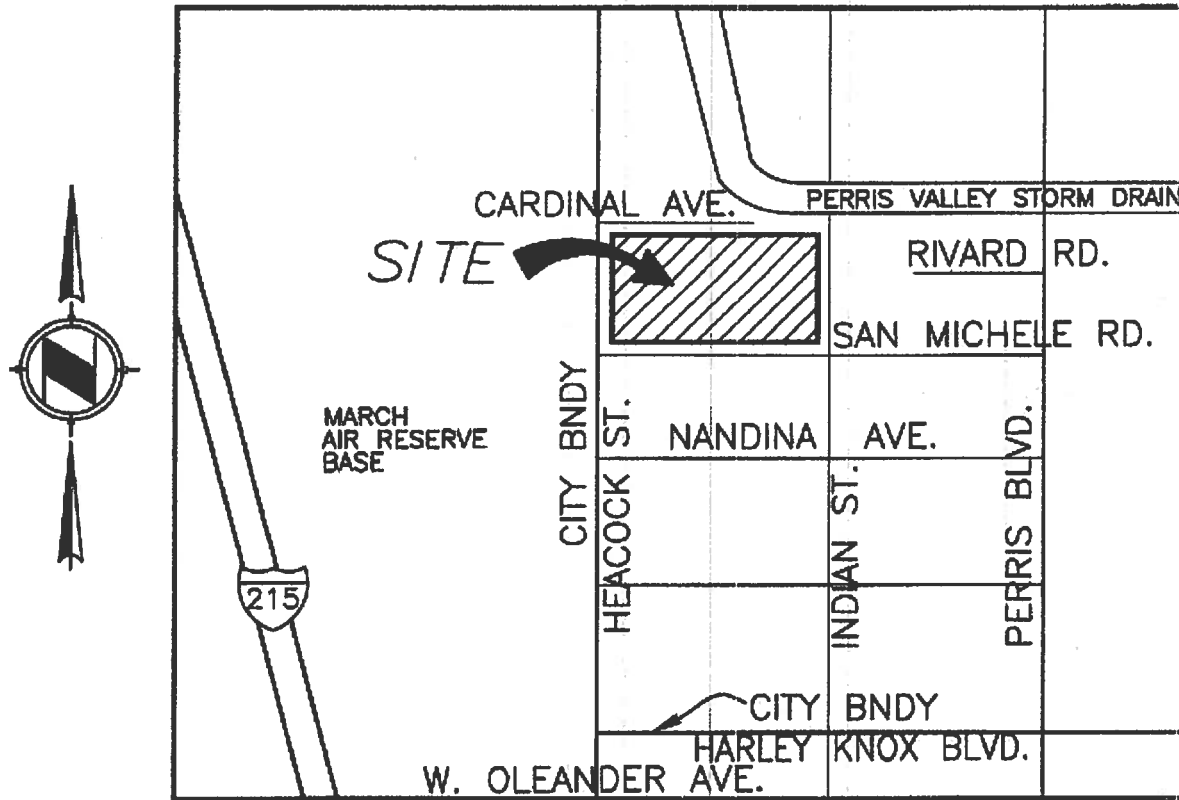
Attachment 2 - Proposed Resolution

Prepared By:
Zara Terrell
Management Analyst

Department Head Approval:
Ahmad R. Ansari, P.E.
Public Works Director/City Engineer

Concurred By:
Clement Jimenez
Senior Engineer, P.E.

Concurred By:
Mark W. Sambito, P.E.
Engineering Division Manager



VICINITY MAP

NTS

CITY OF MORENO VALLEY
PUBLIC WORKS DEPARTMENT - LAND DEVELOPMENT

PA06-0021 (PM 34577)

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RESOLUTION NO. 2014-84

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF MORENO VALLEY, CALIFORNIA, AUTHORIZING THE ACCEPTANCE OF THE PUBLIC IMPROVEMENTS AS COMPLETE WITHIN PROJECT PA06-0021 (PARCEL MAP 34577) AND ACCEPTANCE OF THOSE PORTIONS OF HEACOCK STREET, CARDINAL AVENUE, INDIAN STREET, AND SAN MICHELE ROAD ASSOCIATED WITH THIS PROJECT INTO THE CITY'S MAINTAINED STREET SYSTEM

WHEREAS, the City Engineer has determined that the public improvements constructed by I-215 Logistics, LLC, a Delaware limited liability company on those portions of Heacock Street, Cardinal Avenue, Indian Street, and San Michele Road associated with this project were constructed according to the approved plans on file with the City of Moreno Valley; and

WHEREAS, the City Engineer has determined that those improvements were inspected during construction and were completed in an acceptable manner; and

WHEREAS, the City Engineer has requested that the City Council authorize the acceptance of said public improvements as complete within project PA06-0021 (Parcel Map 34577) and acceptance of those portions of Heacock Street, Cardinal Avenue, Indian Street, and San Michele Road associated with this project into the City's maintained street system; and

WHEREAS, it is in accordance with Streets and Highway Code, Section 1806, (a) and (b), for City Council to perform this action by resolution;

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF MORENO VALLEY, CALIFORNIA, DOES HEREBY RESOLVE AS FOLLOWS: that the public improvements within PA06-0021 (Parcel Map 34577) are complete, and those portions of Heacock Street, Cardinal Avenue, Indian Street, and San Michele Road associated with this project are accepted into the City's maintained street system.

1
Resolution No. 2014-84
Date Adopted: October 14, 2014

APPROVED AND ADOPTED this 14th day of October, 2014.

Mayor of the City of Moreno Valley

ATTEST:

City Clerk

APPROVED AS TO FORM:

City Attorney

Resolution No. 2014-84²
Date Adopted: October 14, 2014

RESOLUTION JURAT

STATE OF CALIFORNIA)
COUNTY OF RIVERSIDE) ss.
CITY OF MORENO VALLEY)

I, Jane Halstead, City Clerk of the City of Moreno Valley, California, do hereby certify that Resolution No. 2014-84 was duly and regularly adopted by the City Council of the City of Moreno Valley at a regular meeting thereof held on the 14th day of October, 2014 by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

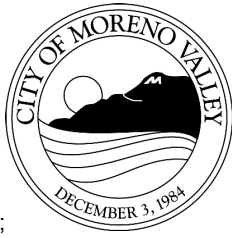
(Council Members, Mayor Pro Tem and Mayor)

CITY CLERK

(SEAL)

3
Resolution No. 2014-84
Date Adopted: October 14, 2014

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APPROVALS	
BUDGET OFFICER	<i>me</i>
CITY ATTORNEY	<i>SMB</i>
CITY MANAGER	<i>d</i>

Report to City Council

TO: Mayor and City Council

FROM: Ahmad R. Ansari, P.E., Public Works Director/City Engineer

AGENDA DATE: October 14, 2014

TITLE: APPROVE MEMORANDUM OF UNDERSTANDING (MOU) BETWEEN THE COUNTY OF LOS ANGELES AND THE CITY OF MORENO VALLEY TO IMPLEMENT ENERGY EFFICIENCY UPGRADES IN BUILDINGS AND FACILITIES SERVED BY MORENO VALLEY UTILITY (MVU)

RECOMMENDED ACTION

Recommendations:

1. Approve Memorandum of Understanding (MOU) between the County of Los Angeles and the City of Moreno Valley to Implement Energy Efficiency Upgrades in Buildings and Facilities served by MVU.
2. Authorize the City Manager to execute the Agreement on behalf of the City of Moreno Valley.

SUMMARY

The Energy Network was authorized by the California Public Utilities Commission in 2012 to provide resources and assistance to residents, businesses, and public agencies with the identification and installation of energy saving measures. The County of Los Angeles is the administrator of the Energy Network program.

This program is available to over 700 public agencies that are located in the counties of Los Angeles, San Bernardino, Riverside, Ventura, Inyo, Imperial, and Mono, and portions of Orange, Kern, Tulare, Santa Barbara, and Kings. Qualifying agencies include cities, counties, school districts, water districts, sanitation districts, and other

public agencies. The MOU is required for participation in the Energy Network Program for City facilities that are served by MVU.

DISCUSSION

The MOU applies only to work performed on City buildings and facilities that are served by MVU. The MVU-served buildings include City Hall, the Community and Recreation Center, the Animal Shelter, the Public Safety Building, and the Emergency Operations Center.

The highlights of the MOU include the following:

1. The County of Los Angeles, as the administrator of the Southern California Regional Energy Network (Energy Network), will be responsible for the performance of energy audits and related analyses and deliver energy audit reports regarding MVU-served City facilities.
 - a. The energy audits will include lighting inventory and analysis, equipment inventory and analysis, and HVAC inventory and analysis.
 - b. The audit reports will include a description of the facilities' energy use, description of recommended energy efficiency measures to install, recommended demand response improvements, potential energy savings that could be achieved, potential energy cost savings, and design and construction costs for implementation.
2. The MOU will expire at the end of the Energy Network program, which is currently December 31, 2015.
3. Either party may terminate the MOU for cause or convenience with written notice 30 days in advance.

If the City chooses to implement the recommended energy efficiency measures, the Energy Network will provide support that includes project management, coordination, monitoring, control and reporting.

The cost of the audits for all MVU-served City facilities is \$44,176, which is consistent with cost paid by SCE for SCE served city facilities. Any work performed by the Energy Network for the implementation of recommended energy efficiency measures will be billed on a time and materials basis.

ALTERNATIVES

1. Approve the Memorandum of Understanding (MOU) between the County of Los Angeles and the City of Moreno Valley. Staff recommends this alternative because execution of this Agreement creates a mutually beneficial agreement to provide Energy Efficiency services and upgrades.

2. Do not approve the Memorandum of Understanding (MOU). Staff does not recommend this alternative because it will impair the utility's ability to offer energy efficiency upgrades to MVU-served municipal facilities.

FISCAL IMPACT

There is no impact to the General Fund. All phases of the projects will be funded from Public Purpose Program funds. Funding is available in account 6010-70-80-45511-710144, Energy Efficiency Programs, as \$180,000 is budgeted for fiscal year 14/15.

NOTIFICATION

Posting of Agenda

ATTACHMENTS

Attachment 1: Memorandum of Understanding Between the County of Los Angeles and the City of Moreno Valley to Implement Energy Efficiency Upgrades in Buildings and Facilities served by Moreno Valley Utility.

Prepared By:
Michelle Pierce
Electric Utility Program Coordinator

Department Head Approval:
Ahmad R. Ansari, P.E.
Public Works Director/City Engineer

Concurred By:
Jeannette Olko
Electric Utility Division Manager

Concurred By:
Chris Paxton
Administrative Service Director

Concurred By:
Rix Skonberg
Purchasing & Facilities Division Manager

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MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding is by and between

the County of Los Angeles, a political subdivision of the State of California (“County”), through its County Office of Sustainability (“COS”), individually and on behalf of the Southern California Regional Energy Network (“SoCalREN”), and

the City of Moreno Valley (the “City”)

for the County to implement certain energy efficiency upgrades in City buildings and facilities, based upon the follow recitals:

Recitals

- R1. The County is administrator of, and the contracting agent for, the SoCalREN;
- R2. The California Public Utilities Commission (“CPUC”) authorized a portfolio of energy efficiency programs and budgets for implementation by SoCalREN in 2013-2014, with extension into 2015 currently pending CPUC approval. Those programs and budgets are reflected in the *2013-2014 Energy Efficiency Programs and Budgets Agreement* (the “Programs Agreement”).
- R3. In compliance with CPUC orders, the Programs Agreement designates Southern California Gas Company (“SoCalGas”), individually and on behalf of Southern California Edison (“Edison”), as the fiscal manager for the SoCalREN;
- R4. The SoCalREN seeks to implement energy efficiency programs and initiatives that will lead to long-term, sustainable benefits to participating public agencies throughout the SoCalGas and Edison service areas; and
- R5. As authorized by the CPUC, the County has the independent authority to design, manage and deliver SoCalREN programs and initiatives;
- R6. As authorized by the County’s Board of Supervisors on January 15, 2013, the Director of the County’s Internal Services Department, or his designee, has delegated to enter into memoranda of understanding with other public entities as may be necessary or desirable to support implementation and administration of any of the energy efficiency programs under the Programs Agreement; and
- R7. The County and the City desire to leverage the project management and technical service capabilities of the SoCalREN to assist in designing and implementing energy efficiency projects in City buildings and facilities served by the Moreno Valley Electric Utility (MVU);

NOW THEREFORE, The Parties further agree as followings:

I. General Provisions

- A. The County and City are jointly referred to herein as the “Parties,” and individually as “Party.”
- B. The Parties agree that all work contemplated under this MOU related to natural gas measures and equipment must be consistent with the applicable terms and conditions in the Programs Agreement.
- C. This MOU shall commence on the earliest date of approval by all Parties, and shall continue to the end of the SoCalREN program defined under CPUC Decision 12-11-015. The ending date of the SoCalREN may be impacted by any other relevant CPUC Decisions.
- D. This MOU applies only to work performed by the SoCalREN on behalf of City buildings and facilities that are served by Moreno Valley Electric Utility (MVU).
- E. Either Party may terminate this MOU for cause or convenience with written notification delivered to the other Party thirty (30) calendars in advance.

II. Responsibilities of each of the Parties

A. County of Los Angeles – Southern California Regional Energy Network

- 1. County will administer the SoCalREN pursuant to the terms of the Programs Agreement and will provide energy efficiency upgrade services to the City for all eligible natural gas measures and equipment.
- 2. SoCalREN will deliver project analysis, procurement, financing and implementation services and documents for energy efficiency projects.
- 3. SoCalREN will provide project management and technical services for eligible natural gas efficiency projects at no cost to the City in City buildings and facilities that are served by SoCalGas.
- 4. SoCalREN will provide project management and technical services for electric efficiency projects at no cost to the City in City buildings and facilities that are served by Edison.
- 5. SoCalREN will provide project management and technical services for electric efficiency projects on a time and materials cost basis, which will be reimbursed to the County by the City, in City buildings and facilities that are served by the Moreno Valley Electric Utility (MVU).
- 6. The County will submit monthly invoices to the City for labor and expenses related to energy efficiency project work for electric savings in City buildings and facilities served by the MVU with the following information: subtask description, title of staff providing labor, number of hours worked, date of hours worked, description of work and detailed description of direct expenses with back-up documentation.

B. City of Moreno Valley

- 1. City will provide the name of a City point-of-contact to the County who will be responsible for the City’s project management and program administration tasks.

2. City will participate in the identification of energy efficiency projects and assist in the development of a final Scope of Work and corresponding budget that must be approved in writing by both the City and the County before work commences.
3. City will obtain and share data requested by the County regarding City's municipal building energy usage and other building and facility technical information.
4. City will pay for project management, technical services, and any other agreed-upon services provided by the SoCalREN for efficiency projects in buildings and facilities served by MVU on a time-and-materials basis.
5. City will submit payment to the County for services provided under this MOU within 30 days of receipt of invoice from the County.

For the County of Los Angeles

Signed: _____

Date: _____

For the City of Moreno Valley

Signed: _____

Date: _____

Attachment 1: Scope of Work

Attachment 2: Budget

ATTACHEMENT 1

MEMORENDUM OF UNDERSTANDING
SCOPE OF WORK

1. SITES FOR AUDITS

1.1 Civic Center Campus

- a. City Hall
- b. Conference & Recreation Center (CRC)
- c. Public Safety Building (PSB)
- d. Emergency Operations Center (EOC)

1.2 Animal Shelter

2. AUDIT SCOPE OF WORK

The SoCalREN will conduct energy audits and related analyses and deliver energy audit reports as specified in the guiding documents of the program.

Task 2.1: Conduct Energy Audits

The SoCalREN will complete site audits to assess the implementation of energy efficiency improvements. If potential cost-effective energy savings opportunities are identified, the County and/or City shall collect the data needed to evaluate and make recommendations for potential retro-commissioning opportunities, energy efficiency measures and assess demand response potential.

For retro-commissioning, the SoCalREN will:

- Collect field information related to HVAC set-points, sequences of operation, equipment sequences, hours of operation, and process flow diagrams.
- Collect existing equipment data.

For Lighting Energy Audits, in areas deemed to have cost-effective energy savings potential, the SoCalREN will conduct a lighting inventory of each area. If room numbers are not available, the SoCalREN shall develop an annotated floor plan for each floor that assigns unique designations to each space being audited. The lighting data to be collected may include:

- Room number corresponding to room number on floor plan.
- Type of space (lobby, conference room, office, storage room, etc.)
- Fixture types
- Fixture quantities
- Lighting controls
- Hours of use
- Availability of daylight

For Mechanical Energy Audits, the SoCalREN will conduct an equipment inventory that will include the following data as required:

- Conduct thorough survey of occupancy and on-site facility operators.
- Gather and review existing facility documentation (M&O as-builts, service records, utility bills, etc.).

- Make, model, nameplate data
- Equipment Capacity and efficiency
- Schedule and sequence of operations
- System performance data
- System schematics
- Building envelope data
- Plug Loads
- Process Loads

For Demand Response, the SoCalREN will:

- Interview key facility personnel to identify detailed operating characteristics and energy use patterns including major energy using equipment and controls.
- Collect and evaluate additional facility data specific to demand response such as interval data, equipment switching and electrical circuiting, and metering.
- Perform a demand response assessment and provide a written description of current demand response readiness and recommendations for improvements.

Task 2.2: Identify Energy Efficiency Measures (EEMs)

The SoCalREN will identify energy efficiency measures. The SoCalREN will meet with agency staff to discuss the Agency's general policies regarding lighting and mechanical retrofits. Specific measures to be considered include but are not limited to:

Retro commissioning

- Propose recommended retro-commissioning type scope of work, purpose, goals and budget such as:
 - HVAC system control improvements
 - Optimization of control sequences of operation and reset schedules
 - Refinement or improvement of scheduling control

Lighting

- Replacement of T8 or T12 lamps with 2nd or 3rd generation T8 lamps and premium electronic ballasts
- Replacement of HID lighting with fluorescent lighting
- Replacement of incandescent lighting with fluorescent or LED lighting
- Fixture upgrades
- Daylighting and occupancy sensor controls

Mechanical

- Evaluation of cost effective system replacements
- Installation of variable frequency drives
- Motor replacements
- Implementation of variable-air-volume systems
- Consideration of building envelope improvements
- Consideration of site specific energy saving opportunities
- Plug load and process measures

Task 2.3: Perform Technical Evaluation

The SoCalREN will evaluate EEMs that have been approved by SoCalREN and the City. The summary table shall show the total savings and costs per measure.

For the lighting systems, the SoCalREN will develop a lighting spreadsheet that lists each unique type of fixture and shows the quantities of each fixture type as required. The lighting spreadsheet will indicate the proposed retrofit for each fixture type and the costs and savings associated with each retrofit in each room. For the mechanical systems, the SoCalREN will utilize a methodology appropriate to the measure being evaluated, for example, projects with weather related impacts to be evaluated with an hourly or temperature bin simulation method. The presentation of data should contain the identification and location of existing and proposed equipment for each measure and associated costs and savings. The level of detail provided should be proportional to the cost-risk of the project. For example, larger, more complex and costly measures should include more analysis and site measured data than simple and inexpensive opportunities. The level of detail to be performed will be discussed with and agreed to by The SoCalREN prior to the evaluation effort.

Task 2.4: Prepare Draft Audit Reports

As directed, the SoCalREN will prepare a draft report that summarizes the audit results. The report will include the following as directed by the SoCalREN project manager:

- § Description of the facilities' energy using systems
- § Discussion of the facilities' annual energy use
- § Description of recommended EEMs
- § Description of current Demand Response readiness and recommended Demand Response improvements.
- § Results of analysis associated with each recommended EEM, including energy savings, energy cost savings, design and construction costs.
- § Assumptions and calculations used in the analyses.

The report will be standardized and formatted according to specifications in the guiding documents of the program. The SoCalREN will prepare for and coordinate a meeting to present the draft report to the City.

Task 2.5: Prepare Final Audit Reports

The SoCalREN will prepare a final report that incorporates the City's comments and is standardized and formatted according to specifications in the guiding documents of the program.

Deliverables

- The SoCalREN will provide Draft and Final Audit reports standardized and formatted according to specifications in the guiding documents of the program.

3. AUDIT PROJECT MANAGENT

SoCalREN will provide project management support for work identified in the Audit Scope of Work. Project management support includes:

- § Project coordination with the City, any assigned consultants, facility staff, and other key team members as required.

[Type text]

- § Project monitoring, control and reporting.
- § Attendance at project meetings and production of meeting minutes as needed.
- § Project oversight of key tasks, project deliverables and quality control in accordance with program
- § Other support tasks as identified by the City

ATTACHEMENT 2

MEMORENDUM OF UNDERSTANDING
SCHEDULE FOR PAYMENTS

1. PAYMENT OF BASE SERVICES

SoCalREN work will be performed on a Time-and-Materials Basis. The estimated cost to perform the services set forth in Attachment I "Scope of Services" is \$44,176. Notwithstanding this estimate, the City shall pay for all services rendered under this MOU.

**MINUTES – REGULAR MEETING OF September 23, 2014
(Report of: City Clerk Department)**

Recommendation: Approve as submitted.

SEE AGENDA ITEM A.2

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APPROVALS	
BUDGET OFFICER	<i>me</i>
CITY ATTORNEY	<i>SMB</i>
CITY MANAGER	<i>d</i>

Report to City Council

TO: Mayor and City Council Acting in its Capacity as President and Members of the Board of Directors of the Moreno Valley Community Services District (CSD)

FROM: Richard Teichert, Chief Financial Officer

AGENDA DATE: October 14, 2014

TITLE: CERTIFICATION OF SPECIAL ELECTION RESULTS FOR COMMUNITY FACILITIES DISTRICT NO. 1 (PARK MAINTENANCE)—ANNEXATION NO. 2014-32

RECOMMENDED ACTION

Recommendation:

1. As the legislative body of Community Facilities District No. 1 (Park Maintenance) approve and adopt Resolution No. CSD 2014-22. A Resolution of the Moreno Valley Community Services District of the City of Moreno Valley, California, Certifying the Results of an Election and Adding Property to Community Facilities District No. 1 (Park Maintenance) for Annexation No. 2014-32.

SUMMARY

The action to certify the results of the special election annexing 2 parcels into Community Facilities District No. 1 only affects 1 property owner, not the general citizens or taxpayers of the City. Certifying the results of the special election authorizes the special tax to be applied to the annual property tax bill of the two parcels that approved the annexation to Community Facilities District No. 1 (Park Maintenance) and levy of the special tax on their annual property tax bill. The special tax is subject to an annual CPI adjustment, which must be reviewed and approved by the City Council each year. **Attachment 3** is a process chart showing the procedure the property owner/developer follows to voluntarily elect to annex into CFD No. 1 (Park Maintenance).

The property owner of Assessor's Parcel Numbers 481-250-002 and 481-250-003 approved the annexation to Community Facilities District No. 1 (Park Maintenance), which included authorization to levy a special tax on its annual property tax bills to fund the ongoing maintenance services of park facilities in the District. Annexation to Community Facilities District No. 1 (Park Maintenance) generates special taxes that preserve CSD Zone A funds for the maintenance of existing (prior to July 8, 2003) parks and recreation programs.

DISCUSSION

History

The Moreno Valley Community Services District established zones to allocate the costs of specific services that are provided in the City. Revenue from the CSD Zone A program funds the maintenance of parks, park facilities, and multi-use trails, as well as recreation program services, to serve the citizens of Moreno Valley. The CSD Zone A parcel tax has remained fixed at \$87.50 per parcel (per Dwelling Unit [DU] for apartments) since fiscal year ("FY") 1992/93. The Zone A parcel tax alone was insufficient to fund expenses for the operation and maintenance of existing and future parks and community services. Residential development projects are now conditioned to provide an ongoing funding source for maintenance and/or repair of parks and park improvements and all efforts by Park Rangers within the district (as defined below).

On July 8, 2003, the CSD Board of Directors ("CSD Board") established Community Facilities District No. 1 (Park Maintenance) ("CFD No. 1" or "District") to provide a financing mechanism for development projects to satisfy this condition. The developers of Tentative Tracts 30924, 30998, and 31050 elected to satisfy their conditions by utilizing the District and were used as the originating boundaries which formed the District. At that time, the CSD Board also authorized future annexations to the District to allow subsequent property owners or developers to utilize the tool. Since District formation, the CSD Board has certified and approved an additional 64 property owner requests to annex their residential developments into the District. Likewise, the developer of residential housing Tract 36598 (Habitat for Humanity) has elected to satisfy its condition of approval to provide an ongoing funding source for park maintenance services by annexing into CFD No. 1.

Annexation to the District

The Mello-Roos Community Facilities Act of 1982 states that if there are fewer than 12 registered voters living within the proposed annexation area, an election of the landowners may be held. On August 25, 2014, the Office of the Riverside County Registrar of Voters confirmed that there were no registered voters residing at Assessor's Parcel Numbers 481-250-002 and 481-250-003 (the "Parcels"). Having fewer than twelve registered voters allows for a special election of the landowners to be conducted.

Ballot materials were provided to the property owner of the Parcels on September 2, 2014. The ballot materials included a cover letter, a Consent and Waiver form, Rate

and Method of Apportionment of Special Tax, official ballot, ballot envelope, and a postage-paid envelope for returning the ballot.

The property owners submitted their ballot to the Secretary of the CSD Board prior to the scheduled due date of 5:00 p.m. on September 15, 2014. In addition to their ballot, the property owner executed a Consent and Waiver form requesting the CSD to shorten the time to conduct a special election for their property proposed to be annexed to CFD No. 1.

On September 16, 2014, following the determination of the adequacy of the Consent and Waiver form, the Secretary of the CSD Board canvassed the ballot. The property owner unanimously approved the annexation into the District and authorized the levy of the special tax onto their annual property tax bill. The attached Resolution (Attachment 1) certifies the results of the election and adds the subject property to CFD No 1 as Annexation No. 2014-32.

ALTERNATIVES

1. **Adopt the CSD Resolution** to certify the results of the special election and add property to CFD No. 1 (Park Maintenance). *Certification of the election results will allow the Parcels to be annexed into CFD No. 1 and authorize the levy of the special tax on the annual property tax bill for only those 2 parcels the property owner approved.*
2. **Do not adopt the CSD Resolution** to certify the results of the special election and add property to CFD No. 1 (Park Maintenance). *If the attached Resolution is not adopted, the CSD is unable to annex the Parcels to CFD No. 1 or levy the annual special tax on the property tax bill at the property owner's request. This will delay the developer's ability to satisfy conditions of approval.*
3. **Do not adopt the CSD Resolution to certify the results of the special election and add property to CFD No. 1 (Park Maintenance) but rather continue the item to a future Council meeting.** *This alternative may delay the development of Tract 36598.*

FISCAL IMPACT

The FY 2014/15 maximum special tax rate is \$155.33 per dwelling unit; the applied special tax is \$122.40. The maximum special tax is subject to an annual inflation adjustment by the percentage increase for the prior fiscal year in the Los Angeles-Riverside-Orange County Regional Consumer Price Index for All Urban Consumers, as published by the Department of Labor's Bureau of Labor Statistics or by two percent (2%), whichever is greater. The annual special tax is collected on the Riverside County property tax bills.

The developer of Tract 36598 is scheduled to construct 8 residential dwelling units. Calculated at the FY 2014/15 applied special tax rate, the tract will contribute \$979.20 in additional revenue for the District. CFD No. 1 special taxes are restricted for the maintenance and operation of CFD No. 1 park facilities and services and are only collected on properties that have previously approved the special tax to be levied on the property tax bill.

CITY COUNCIL GOALS

Revenue Diversification and Preservation

Develop a variety of City revenue sources and policies to create a stable revenue base and fiscal policies to support essential City services, regardless of economic climate.

Public Facilities and Capital Projects

Ensure that needed public facilities, roadway improvements, and other infrastructure improvements are constructed and maintained.

NOTIFICATION

On September 2, 2014, election materials for the annexation to CFD No. 1 (Park Maintenance) were provided to the property owner.

ATTACHMENTS

1. CSD Resolution Certifying the Results of the Election for Annexation No. 2014-32 and Adding Property to CFD No. 1
2. Annexation No. 2014-32 Map
3. Process Chart to Annex into CFD

Prepared by:
Jennifer Terry,
Management Analyst

Department Head Approval:
Richard Teichert
Chief Financial Officer

Concurred by:
Candace E. Cassel,
Special Districts Division Manager

Concurred by:
Betsy Adams
Parks & Community Services Director

RESOLUTION NO. CSD 2014-22

A RESOLUTION OF THE MORENO VALLEY COMMUNITY SERVICES DISTRICT OF THE CITY OF MORENO VALLEY, CALIFORNIA, CERTIFYING THE RESULTS OF AN ELECTION AND ADDING PROPERTY TO COMMUNITY FACILITIES DISTRICT NO. 1 (PARK MAINTENANCE) FOR ANNEXATION NO. 2014-32

WHEREAS, the Board of Directors of the Moreno Valley Community Services District of the City of Moreno Valley, California ("Board of Directors"), previously formed a Community Facilities District pursuant to the provisions of the "Mello-Roos Community Facilities Act of 1982", being Chapter 2.5, Part 1, Division 2, Title 5 of the Government Code of the State of California. The existing Community Facilities District is designated as Community Facilities District No. 1 ("District"); and

WHEREAS, the legislative body has established a procedure to allow and provide for future annexations to the District and the territory proposed to be so annexed in the future was designated as Community Facilities District No. 1, Future Annexation Area; and

WHEREAS, at this time the unanimous consent to the annexation of certain territory to the District has been received from the property owner of such territory, and such territory has been designated as Annexation No. 2014-32 ("Annexed Area"); and

WHEREAS, less than twelve (12) registered voters have resided within the territory of Annexed Area for each of the ninety (90) days preceding August 25, 2014, therefore, pursuant to the Act the qualified electors of the Annexed Area shall be the "landowners" of such Annexed Area as such term is defined in Government Code Section 53317(f) and each such landowner who is the owner of record as of September 15, 2014, or the authorized representative thereof, shall have one vote for each acre or portion of an acre of land that she or he owns within such Annexed Area; and

WHEREAS, the time limit specified by the Act for conducting an election to submit the levy of the special taxes on the property within the Annexed Area to the qualified electors of the Annexed Area and the requirements for impartial analysis and ballot arguments have been waived with the unanimous consent of the qualified electors of the Annexed Area; and

WHEREAS, the Secretary of the Board of Directors has caused a ballot to be distributed to the qualified elector of the Annexed Area, has received and canvassed such ballot and made a report to this Board of Directors regarding the results of such canvass, a copy of which is attached as Exhibit A hereto and incorporated herein by this reference; and

1
Resolution No. CSD 2014-22
Date Adopted: October 14, 2014

WHEREAS, at this time the measure has been voted upon and such measure did receive unanimous vote of the qualified elector, and this Board of Directors desires to declare the results of the election; and

WHEREAS, a map showing the Annexed Area and designated as Annexation Map No. 2014-32 ("Annexation Map"), a copy of which is attached as Exhibit B hereto and incorporated herein by this reference, has been submitted to this legislative body.

NOW, THEREFORE, THE MORENO VALLEY COMMUNITY SERVICES DISTRICT OF THE CITY OF MORENO VALLEY, CALIFORNIA, DOES HEREBY RESOLVE AS FOLLOWS:

SECTION 1. Recitals. The above recitals are all true and correct.

SECTION 2. Findings. This legislative body does hereby further determine as follows:

A. Less than twelve (12) registered voters have resided within the territory of Annexed Area for each of the ninety (90) days preceding August 25, 2014, therefore, pursuant to the Act the qualified electors of the Annexed Area are to be the "landowner" of such Annexed Area as such term is defined in Government Code Section 53317(f).

B. The unanimous consent to shorten the timeframe to conduct the annexation to the District and such consent shall be kept on file in the Office of the Secretary of the Board of Directors.

C. The qualified elector of the Annexed Area has unanimously voted in favor of the levy of special taxes within the Annexed Area upon its annexation to the District.

SECTION 3. Annexed Area. The boundaries and parcels of territory within the Annexed Area and on which special taxes will be levied in order to pay for the costs and expenses of authorized public services are shown on the Annexation Map as submitted to and hereby approved by this legislative body.

SECTION 4. Declaration of Annexation. This legislative body does hereby determine and declare that the Annexed Area is now added to and becomes a part of the District and is hereby empowered to levy the authorized special tax within the Annexed Area.

SECTION 5. Notice. Immediately upon adoption of this Resolution, notice shall be given as follows:

A. A copy of the Annexation Map as approved shall be filed in the Office of the County Recorder no later than fifteen (15) days after the date of adoption of this Resolution.

2
Resolution No. CSD 2014-22
Date Adopted: October 14, 2014

B. An Amendment to the Notice of Special Tax Lien (Notice of Annexation) shall be recorded in the Office of the County Recorder no later than fifteen (15) days after the date of adoption of this Resolution.

SECTION 6. Effective Date. This Resolution shall become effective upon its adoption.

APPROVED AND ADOPTED this 14th day of October, 2014.

Mayor of the City of Moreno Valley,
Acting in the capacity of President of the
Moreno Valley Community Services District

ATTEST:

City Clerk, acting in the capacity of
Secretary of the Moreno Valley
Community Services District

APPROVED AS TO FORM:

City Attorney, acting in the capacity
of General Counsel of the Moreno
Valley Community Services District

3
Resolution No. CSD 2014-22
Date Adopted: October 14, 2014

RESOLUTION JURAT

STATE OF CALIFORNIA)
COUNTY OF RIVERSIDE) ss.
CITY OF MORENO VALLEY)

I, Jane Halstead, Secretary of the Moreno Valley Community Services District, Moreno Valley, California do hereby certify that Resolution No. CSD 2014-22 was duly and regularly adopted by the Board of Directors of the Moreno Valley Community Services District at a regular meeting held on the 14th day of October, 2014, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

(Boardmembers, Vice-President and President)

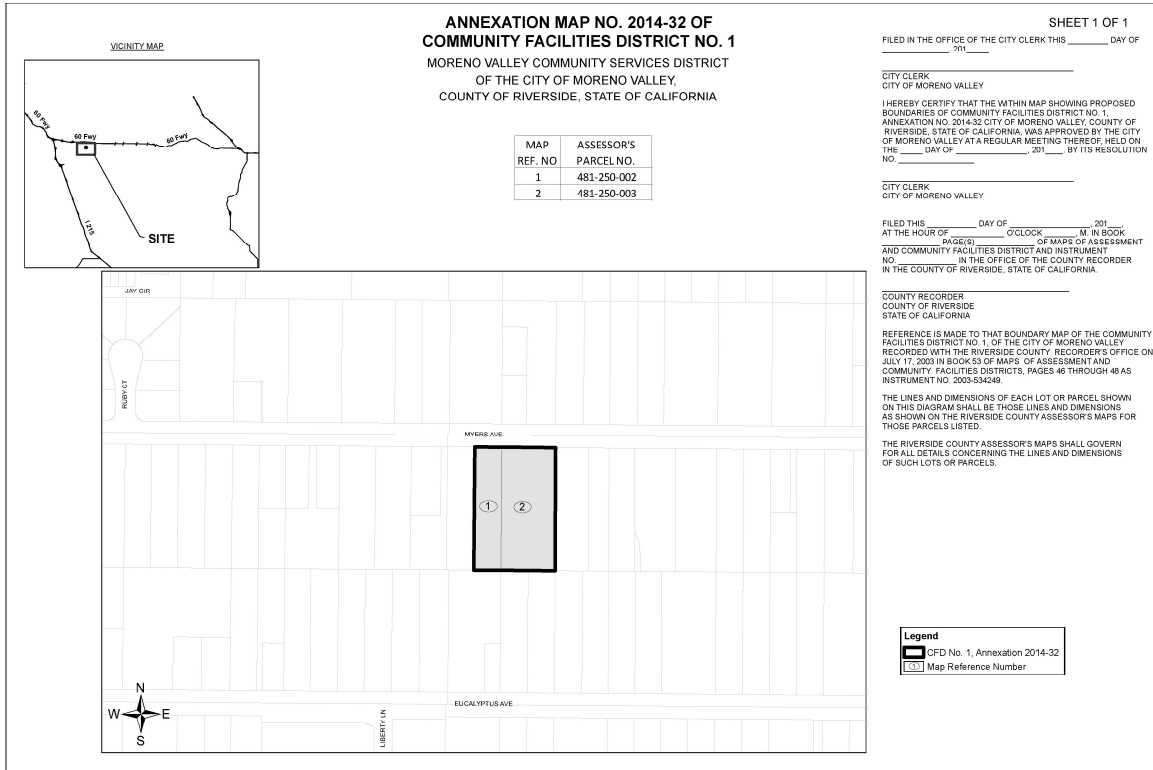
SECRETARY

(SEAL)

4
Resolution No. CSD 2014-22
Date Adopted: October 14, 2014

EXHIBIT B

Boundary Map for Community Facilities District Annexation No. 2014-32



6
Resolution No. CSD 2014-22
Date Adopted: October 14, 2014

**ANNEXATION MAP NO. 2014-32 OF
COMMUNITY FACILITIES DISTRICT NO. 1**

MORENO VALLEY COMMUNITY SERVICES DISTRICT
OF THE CITY OF MORENO VALLEY,
COUNTY OF RIVERSIDE, STATE OF CALIFORNIA

SHEET 1 OF 1

FILED IN THE OFFICE OF THE CITY CLERK THIS _____ DAY OF _____, 201__.

CITY CLERK _____
CITY OF MORENO VALLEY

I HEREBY CERTIFY THAT THE WITHIN MAP SHOWING PROPOSED BOUNDARIES OF COMMUNITY FACILITIES DISTRICT NO. 1, ANNEXATION NO. 2014-32 CITY OF MORENO VALLEY, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, WAS APPROVED BY THE CITY OF MORENO VALLEY AT A REGULAR MEETING THEREOF, HELD ON THE _____ DAY OF _____, 201__, BY ITS RESOLUTION NO. _____.

CITY CLERK _____
CITY OF MORENO VALLEY

FILED THIS _____ DAY OF _____, 201__, AT THE HOUR OF _____ O'CLOCK _____ M. IN BOOK _____ PAGE(S) _____ OF MAPS OF ASSESSMENT AND COMMUNITY FACILITIES DISTRICT AND INSTRUMENT NO. _____ IN THE OFFICE OF THE COUNTY RECORDER IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA.

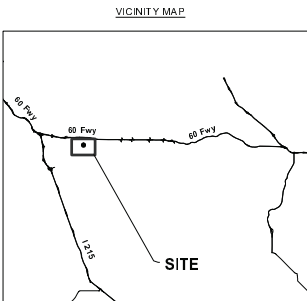
COUNTY RECORDER _____
COUNTY OF RIVERSIDE
STATE OF CALIFORNIA

REFERENCE IS MADE TO THAT BOUNDARY MAP OF THE COMMUNITY FACILITIES DISTRICT NO. 1, OF THE CITY OF MORENO VALLEY RECORDED WITH THE RIVERSIDE COUNTY RECORDER'S OFFICE ON JULY 11, 2003 IN BOOK 53 OF MAPS OF ASSESSMENT AND COMMUNITY FACILITIES DISTRICTS, PAGES 46 THROUGH 48 AS INSTRUMENT NO. 2003-534249.

THE LINES AND DIMENSIONS OF EACH LOT OR PARCEL SHOWN ON THIS DIAGRAM SHALL BE THOSE LINES AND DIMENSIONS AS SHOWN ON THE RIVERSIDE COUNTY ASSESSOR'S MAPS FOR THOSE PARCELS LISTED.

THE RIVERSIDE COUNTY ASSESSOR'S MAPS SHALL GOVERN FOR ALL DETAILS CONCERNING THE LINES AND DIMENSIONS OF SUCH LOTS OR PARCELS.

MAP REF. NO.	ASSESSOR'S PARCEL NO.
1	481-250-002
2	481-250-003



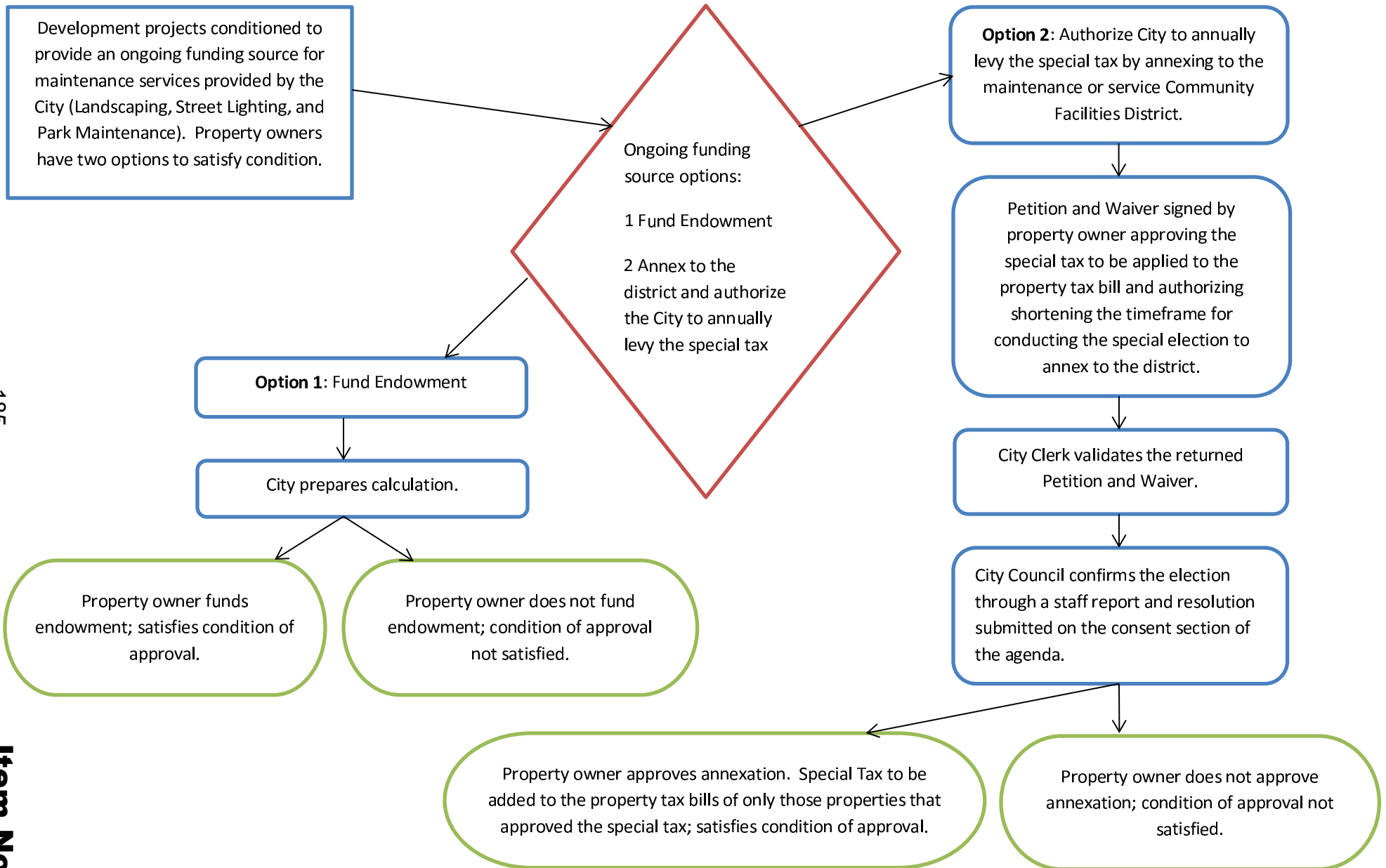
Legend

CFD No. 1, Annexation 2014-32

Map Reference Number

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Process Flow for Property Owners/Developers to Satisfy Funding Requirement for Existing Maintenance or Service Community Facilities Districts



-185-

Item No. B.3

This process flow is simplified for illustration purposes. Contact the Special Districts Division at 951.413.3480 for the detailed process. The developer has the option to fund the maintenance through a home owners association for Community Facilities District No. 2014-01 (Maintenance Services).

October 1, 2014

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**MINUTES – REGULAR MEETING OF September 23, 2014
(Report of: City Clerk Department)**

Recommendation: Approve as submitted.

SEE AGENDA ITEM A.2

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**MINUTES – REGULAR MEETING OF September 23, 2014
(Report of: City Clerk Department)**

Recommendation: Approve as submitted.

SEE AGENDA ITEM A.2

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APPROVALS	
BUDGET OFFICER	<i>me</i>
CITY ATTORNEY	<i>SMB</i>
CITY MANAGER	<i>d</i>

Report to City Council

TO: Mayor and City Council

FROM: Richard Teichert, Chief Financial Officer

AGENDA DATE: October 14, 2014

TITLE: PUBLIC HEARING REGARDING THE MAIL BALLOT PROCEEDINGS FOR ASSESSOR'S PARCEL NUMBERS (APNS) 481-250-002 AND 481-250-003 BALLOTING FOR THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) MAXIMUM RESIDENTIAL REGULATORY RATE; AND FOR APN 479-020-050 BALLOTING FOR THE NPDES MAXIMUM COMMERCIAL REGULATORY RATE

RECOMMENDED ACTION

Recommendations: That the City Council:

1. Conduct the Public Hearing and accept public testimony regarding the mail ballot proceedings for APNs 481-250-002 and 481-250-003 for approval of the NPDES maximum residential regulatory rate; and for APN 479-020-050 for approval of the NPDES maximum commercial regulatory rate.
2. Direct the City Clerk to tabulate the NPDES ballots for APNs 481-250-002 and 481-250-003; and for APN 479-020-050.
3. Verify and accept the results of the mail ballot proceedings as identified on the Official Tally Sheet.
4. Receive and file with the City Clerk's office the Official Tally Sheet.
5. If approved, authorize and impose the applicable NPDES maximum regulatory rate to APNs 481-250-002, 481-250-003, and 479-020-050.

SUMMARY

The action before the City Council is to conduct a Public Hearing to publicly discuss the item for transparency to the property owners and the public, tabulate the returned ballots, verify, and accept the results of the mail ballot proceedings for APNs 481-250-002 and 481-250-003 and APN 479-020-050. **The action to accept 3 parcels into the City's NPDES annual parcel charge levy process only affects 2 property owners, not the general citizens or taxpayers of the City.** Conducting the Public Hearing satisfies requirements of the state law. **Attachment 3** is a process chart showing the procedure the property owner/developer follows to voluntarily elect to become a participant in the NPDES annual parcel charge levy process and rate. The NPDES Program and related revenue provides a funding source for stormwater cleanup, lessening the impact of compliance with federal requirements on the general taxpayer in Moreno Valley.

The property owners of APNs 481-250-002 and 481-250-003 (Habitat for Humanity Riverside, Inc.) and APN 479-020-050 (TS Marketplace) have chosen to satisfy their Conditions of Approval to help support the NPDES program by approving the annual NPDES rate to be collected on the Riverside County property tax bill or as a monthly charge on a utility bill. The special tax is subject to an annual CPI adjustment, which must be reviewed and approved by the City Council each year.

The NPDES rates collected from property owners support the current Permit programs and reduce the level of General Fund support necessary to remain in compliance with unfunded federal mandates, as administered by the State. Funds collected from the NPDES rates are restricted for use only within the Storm Water Management program. Mail ballot proceedings are being conducted in compliance with Proposition 218, which requires that any new or proposed increase in property-related assessments, fees, or charges be submitted to the property owners for approval. The property owners being balloted are given two opportunities to address the legislative body. These two opportunities are the Public Meeting, which was held on September 23, 2014 and the Public Hearing scheduled for October 14, 2014, after which the results of the ballot proceedings will be announced.

DISCUSSION

To comply with the 1972 Federal Clean Water Act, Land Development, a division of the Public Works Department, conditions new development projects to participate in the appropriate NPDES regulatory rate to fund federally mandated programs. The City Council adopted the residential regulatory rate on June 10, 2003, and the commercial regulatory rate on January 10, 2006.

New development projects are subject to the current NPDES Permit requirements for storm water management as mandated by the Federal Clean Water Act. Public agencies are to obtain Permits to discharge urban storm water runoff from municipally owned drainage facilities, including streets, highways, storm drains, and flood control

channels. With funding support provided by the NPDES commercial rate, the City annually inspects site design, source and treatment control Best Management Practices, monitors maintenance records for those on-site facilities, and performs annual inspections of the affected areas to ensure compliance with federally mandated NPDES Permit requirements, as administered by the State. The City of Moreno Valley provides the necessary services for the continuous operation, enhancement, and maintenance of the storm water discharge system, and performs inspections of the affected areas to ensure compliance with federally mandated NPDES Permit requirements with funding provided by the NPDES residential rate.

Habitat for Humanity Riverside, Inc., property owner of APNs 481-250-002 and 481-250-003 and TS Marketplace, property owner of APN 479-020-050 (the "Property Owners") have chosen to satisfy their Conditions of Approval to help support the NPDES program by approving the annual NPDES rate to be collected on the Riverside County property tax bill or as a monthly charge on a utility bill. Mail ballot proceedings are being conducted in compliance with Proposition 218, which requires that any new or proposed increase in property-related assessments, fees, or charges be submitted to the Property Owners for approval. The Property Owners are given two opportunities to address the legislative body. These two opportunities are the Public Meeting, which was held on September 23, 2014 and the Public Hearing scheduled for October 14, 2014, after which the results of the ballot proceedings will be announced.

Approval of the NPDES maximum regulatory rate fulfills their Conditions of Approval. Provided the mail ballot is approved, the City will be authorized to annually levy the NPDES maximum residential regulatory rate to APNs 481-250-002 and 481-250-003 and the NPDES maximum commercial regulatory rate to APN 479-020-050 on the Riverside County property tax bill or as a monthly charge on a utility bill. **Only 3 parcels are balloting for acceptance into the City's NPDES program, which affects 2 property owners, not the general citizens or taxpayers of the City.**

ALTERNATIVES

1. **Conduct the Public Hearing**, tabulate the ballots, verify, and accept the results of the mail ballot proceedings as identified on the Official Tally Sheet, receive and file with the City Clerk's office the Official Tally Sheet, and if approved, authorize and impose the NPDES maximum residential regulatory rate to APNs 481-250-002 and 481-250-003 and the NPDES maximum commercial regulatory rate to APN 479-020-050. *This alternative will fulfill the 45-day noticing period and Public Hearing requirements as mandated by Proposition 218 for the project being balloted.*
2. **Open the Public Hearing and continue** the hearing to a future regular City Council meeting. *This alternative will fulfill the 45-day noticing period and Public Hearing requirements as mandated by Proposition 218. This alternative will not incur any additional costs for re-noticing but could delay the release for certificate of occupancy for the projects being balloted.*

3. **Do not conduct the Public Hearing**, tabulate the ballots, verify, or accept the results of the mail ballot proceedings. *This alternative prohibits the Property Owners from satisfying their Conditions of Approval utilizing this funding mechanism and would delay the release for certificate of occupancy for the project. This alternative would also be contrary to state statutes and would require the noticing period for the mail ballot proceedings to begin again causing additional costs to be incurred for re-noticing.*
4. **Do not conduct the Public Hearing** at this time but reschedule it to a date certain, at a regular City Council meeting. *This alternative would require the 45-day noticing period to start over and cause additional costs to be incurred for re-noticing. Rescheduling the public hearing may also delay the release for certificate of occupancy for the projects being balloted.*

FISCAL IMPACT

For fiscal year (FY) 2014/15, the NPDES maximum annual regulatory rate for residential properties is \$300.14 per parcel and the NPDES maximum annual regulatory rate for commercial properties is \$226.01 per parcel. If approved, the NPDES rates will be applied to the property tax bills for only those 3 parcels that approved the NPDES rates. Beginning FY 2015/16, the maximum regulatory rates will be subject to an annual adjustment based on the percentage change calculated for the previous year in the Los Angeles-Riverside-Orange County Regional Consumer Price Index for All Urban Consumers, as published by the Department of Labor's Bureau of Labor Statistics.

The NPDES rates collected from property owners support the current Permit programs and reduce the level of General Fund support necessary to remain in compliance with unfunded federal mandates, as administered by the State. **Funds collected from the NPDES rates are restricted for use only within the Storm Water Management program.**

CITY COUNCIL GOALS

Advocacy

Management of the storm water will ensure that water pollutants are discharged in compliance with federal mandates and City policies.

Revenue Diversification and Preservation

The NPDES maximum regulatory rates provide funding for program costs, which include maintenance and administration.

NOTIFICATION

The Property Owners were given the required 45-day noticing period to review the ballot documents. The documents included a notice to the property owner, map of the project

area, NPDES ballot, instructions for marking and returning the ballot, and a postage-paid envelope for returning the ballot to the City Clerk. (See Attachments 1 and 2)

Newspaper advertising for the September 23, 2014, Public Meeting and October 14, 2014 Public Hearing was published in The Press-Enterprise on September 4, 2014. Additionally, the Public Hearing notification was published on September 25 and again on October 2, 2014.

ATTACHMENTS

1. Mail Ballot Packet for TM 36598 (APNs 481-250-002 and 481-250-003)
2. Mail Ballot Packet for TS Marketplace (APN 479-020-050)
3. Process Flow for Property Owners/Developers Joining the NPDES Annual Parcel Charge Levy Process

Prepared by:
Jennifer Terry,
Management Analyst

Department Head Approval:
Richard Teichert
Chief Financial Officer

Concurred by:
Candace E. Cassel,
Special Districts Division Manager

Concurred by:
Mark W. Sambito, P.E.
Engineering Division Manager

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TEL: 951.413.3480
 FAX: 951.413.3498
 WWW.MOVAL.ORG



14331 FREDERICK STREET, SUITE 2
 P. O. BOX 88005
 MORENO VALLEY, CA 92552-0805

Habitat for Humanity Riverside, Inc.
 Attention: Kathy Michalak
 2180 Iowa Ave.
 Riverside, CA 92507

August 28, 2014

NOTICE TO PROPERTY OWNER-MAIL BALLOT PROCEEDING FOR THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) MAXIMUM RESIDENTIAL REGULATORY RATE FOR APNS 481-250-002 AND 481-250-003

***** OFFICIAL BALLOT ENCLOSED *****

Introduction

In November of 1996, California voters passed Proposition 218 (“The Right to Vote on Taxes Act”). As a result, any new or proposed increase in a property-related charge requires approval of the charge by the property owner of record. In compliance with Proposition 218 legislation, the City of Moreno Valley Special Districts Division is conducting a mail ballot proceeding to provide the owner of Assessor’s Parcel Numbers (APNs) 481-250-002 and 481-250-003 the opportunity to express support for or opposition to the approval of the NPDES Maximum Residential Regulatory Rate and services. Approval of the NPDES Maximum Residential Regulatory Rate through a mail ballot proceeding will fulfill the Conditions of Approval to provide a funding source for the NPDES program.

Background

The City shall provide the services necessary to meet mandates of the Federal Clean Water Act. The current NPDES Permit, as administered by the State, regulates the volume and amount of pollutants in storm water runoff from all development types. NPDES Maximum Residential Regulatory Rate provides financial support for monitoring, maintaining, and if necessary, improving the storm water discharge system, and performing inspections of the affected areas to ensure compliance with federally mandated NPDES Permit requirements, as administered by the State.

Services Provided

In compliance with the Federal Clean Water Act, the City of Moreno Valley shall provide the necessary services for the continuous operation, enhancement, and maintenance of the storm water discharge system, and perform inspections of the affected areas to ensure compliance with federally mandated NPDES Permit requirements.

How is the Amount of the Charge Determined?

Each fiscal year (FY), the City of Moreno Valley shall determine the type of services necessary to comply with NPDES Permit requirements and levy the rate applicable for that service. The rate levied shall not exceed the rate previously approved by the property owner.

Proposed Charge

For FY 2014/15, the NPDES Maximum Residential Regulatory Rate is \$300.14 per parcel. The total amount of the NPDES rates levied for FY 2014/15 for the program as a whole was \$439,115.06.

Annual Adjustment

Beginning in FY 2015/16, the NPDES Maximum Residential Regulatory Rate will be subject to an annual adjustment based on the percentage change calculated for the previous year in the Los Angeles-Riverside-Orange County Regional Consumer Price Index for All Urban Consumers, as published by the Department of Labor’s Bureau of Labor Statistics.

Duration of the Charge

Upon approval of the NPDES Maximum Residential Regulatory Rate, the annual levy amount will be assessed to APNs 481-250-002 and 481-250-003 (and any division thereof) and shall be placed on the Riverside County property tax bill or included as a monthly charge on a utility bill. The NPDES Maximum Residential Regulatory Rate will be levied each following year at the proposed rate, which may include an annual inflation adjustment.

Public Hearing

To provide information concerning this mail ballot proceeding the City has scheduled one (1) Public Meeting and one (1) Public Hearing, which will be held at the **Moreno Valley City Hall Council Chamber located at 14177 Frederick Street, Moreno Valley.**

<u>Public Meeting</u>	<u>Public Hearing</u>
Tuesday, September 23, 2014 6:00 P.M. (Or As Soon Thereafter As The Matter May Be Called)	Tuesday, October 14, 2014 6:00 P.M. (Or As Soon Thereafter As The Matter May Be Called)

Tabulation of returned ballots will commence after the close of the Public Hearing. All ballots received shall be tabulated under the direction of the City Clerk in compliance with the current Policy For Conducting Mail Ballot Proceedings Policy #1.12.

Effect if Approval of the Charge is Approved

Approval of the NPDES Maximum Residential Regulatory Rate will be confirmed if the ballot is marked in favor of the NPDES rate. Approving the NPDES Maximum Residential Regulatory Rate through a mail ballot proceeding will fulfill the Conditions of Approval to provide a funding source for the NPDES program.

Effect if Approval of the Charge is Not Approved

Not approving the NPDES Maximum Residential Regulatory Rate to meet federally mandated NPDES Permit requirements may result in noncompliance with the Conditions of Approval. If the returned valid ballot is marked opposing the NPDES rate, then the rate will not be levied on the property tax bill.

For More Information

If you have any questions about the proposed program, the annual rate, or about the mail ballot proceeding process, please contact Jennifer Terry, Management Analyst, Special Districts, a

Division of the Financial and Management Services Department, Monday through Thursday from 7:30 a.m. to 5:30 p.m. and Friday from 7:30 a.m. to 4:30 p.m. at 951.413.3505 or via email at JenniferT@moval.org.

Completing Your Ballot

The enclosed ballot shall be submitted to the City Clerk in support of or opposition to the proposed program and the annual rate. Please follow the instructions listed below to complete and return your ballot. Procedures for the completion, return, and tabulation of the ballot are also on file in the City Clerk's office.

1. Mark the enclosed ballot in support of or opposition to the proposed program and annual rate **by placing a mark in the corresponding box.**
2. Sign your name on the ballot. Ballots received without signature(s) will be considered invalid *and will not be counted.*
3. Mail or personally deliver your completed ballot in a sealed envelope to the City Clerk's office, 14177 Frederick Street, Moreno Valley, California, 92553. For your convenience, a postage-paid envelope has been included for return of the ballot.
4. Ballot(s) must be **received** by the City Clerk prior to the close of the Public Hearing to be held on **Tuesday, October 14, 2014**, at the Moreno Valley City Hall Council Chamber. The Public Hearing will be held at 6:00 p.m. or as soon thereafter as the matter may be called. Ballots received after the close of the Public Hearing cannot be legally counted.

Ballot Marks

Appropriate ballot markings include any one of the following for either the YES/Approved or NO/Not Approved blank box:

- A check mark substantially inside a box;
- An X mark substantially inside a box;
- A dot or oval mark substantially inside a box;
- A completely shaded or filled mark substantially inside a box;
- A line, single or dashed, or combination of lines, through the box area. Lines may be any one of the following marks: horizontal, vertical, or diagonal. The mark may either run from side to side or corner to corner. All valid lines must be substantially within the box area and not marking any part of another blank box on the ballot;
- A circle around the box and/or associated clause; or
- A square or rectangle around the box and/or associated clause.

Balloting marks shall not extend past one box area into any portion of another nor surround the perimeter or any portion of more than one box area. Markings that extend past one box area into any portion of another or surround the perimeter or any portion of more than one box area shall be considered invalid and not counted.

Ballot Mark Revisions (Changes): An error or desire to revise (change) a selection made on the ballot may be completed and returned any time prior to the conclusion of public testimony at the Public Hearing. **The revision must be initialed by the record owner(s) of property. Initials must be clearly printed and placed at the right top corner of the revised selection.**

RESIDENTIAL NPDES RATE SCHEDULE
 Adopted by the City Council on June 10, 2003 (Level I, II, III, IV)
 Adopted by the City Council on June 10, 2008 (Level II-A)

LEVEL 1		LEVEL II		Level II-A		LEVEL III		LEVEL IV			
NPDES Administration (Not covered by CSA 152)	Water Quality Pond/Basin Maintenance	Water Quality Pond/Basin Maintenance	Sand Filter Maintenance	Water Quality Pond/Basin Remediation/Reconstruction	Water Quality System Retrofit	Proposed Parcel Rate	Per/Yr.	Proposed Parcel Rate	Per/Yr.		
Costs associated with personnel, administration and management of the storm water management program. Administrative tasks include development and filing of various storm water reports and data collection and management.	Costs associated with the maintenance and monitoring of the water quality pond/basin. This includes, but is not limited to maintenance on a quarterly basis of vegetative material, civil work and utility and personnel costs.	Costs associated with the maintenance and monitoring of the sand filter within a water quality pond/basin. This includes, but is not limited to maintenance of a sand bed, bleeder lines and costs for personnel.	Costs associated with the remediation and reconstruction of water quality pond/basin. Remediation and reconstruction may include the following: replacement of soil, plants, irrigation, removal and hauling of wastes and possible civil work.	Costs associated with the retrofitting, replacement, monitoring and maintenance of the water quality pond/basin systems and appurtenances. This may include retrofitting of catch basin insert filters, vortex devices, installation of in-line filter systems, and nutrient baskets, etc.		\$2.50	\$30.00	\$2.50	\$30.00	\$9.64	\$115.68
Level I is levied on all parcels conditioned for the NPDES Rate Schedule.	Level II, in addition to Level I is levied on all properties within tracts that have a water quality pond/basin or on properties that benefit from a neighboring water quality pond/basin.	Level II-A, in addition to Level II and Level I is levied on all properties within residential developments that have a water quality pond/basin with a sand filter or on properties that benefit from a neighboring water quality pond/basin with a sand filter.				\$4.75	\$57.00	\$4.24	\$50.88		

Each Service Level may be imposed on an as-needed basis and cumulative (if required)

Fiscal Year (FY) 2003/2004 - Base Year Calculation, subject to inflation factor based on the Los Angeles-Riverside-Orange County Regional Consumer Price Index

Inflation Factor Adjustments:

- 2004/2005 - 1.8% = (\$31.00, \$8.00, \$2.00 & 118.00)
- 2005/2006 - 4.4% = (\$32.00, \$1.00, \$4.00 & 123.00)
- 2006/2007 - 4.5% = (\$33.00, \$4.00, \$6.00, & 128.00)
- 2007/2008 - 3.1% = (\$34.00, \$6.00, \$8.00, & 132.00)
- 2008/2009 - 4.2% = (\$35.00, \$9.00, \$31.00, \$60.00, \$138.00)
- 2009/2010 - no change = (\$35.00, \$9.00, \$31.00, \$60.00, \$138.00)
- 2010/2011 - no change = (\$35.00, \$9.00, \$31.00, \$60.00, \$138.00)
- 2011/2012 - 3.8% = (\$36.00, \$7.00, \$32.00, \$62.00, \$143.00)
- 2012/2013 - 2.7% = (\$37.00, \$7.00, \$33.00, \$64.00, \$147.00)
- 2013/2014 - 2.0% = (\$38.00, \$7.50, \$34.00, \$65.00, \$150.00) rounded to the nearest whole dollar
- 2014/2015 - 1.14% = (\$39.38, \$7.48, \$34.10, \$66.73, \$151.84) Pursuant to City Council approval on June 10, 2014.

**OFFICIAL MAIL BALLOT for
Assessor's Parcel Numbers (APNs) 481-250-002 and 481-250-003
National Pollutant Discharge Elimination System (NPDES)
Maximum Residential Regulatory Rate**

YES* — as property owner of APNs 481-250-002 and 481-250-003, **I approve** the NPDES Maximum Residential Regulatory Rate and services. For fiscal year (FY) 2014/15, the NPDES Maximum Residential Regulatory Rate is \$300.14 per parcel. Upon approval of the maximum regulatory rate, the annual levy amount shall be placed on the Riverside County property tax bill or included as a monthly charge on a utility bill. Beginning FY 2015/16, the maximum regulatory rate will be subject to an annual adjustment based on the percentage change calculated for the previous year in the Los Angeles-Riverside-Orange County Regional Consumer Price Index for All Urban Consumers, as published by the Department of Labor's Bureau of Labor Statistics. The City will provide storm water maintenance to residential neighborhoods for the continuous operation, systems evaluation/enhancement of the affected areas and the implementation of federally mandated NPDES requirements. Additionally, the rate schedule provides funds for monitoring, maintaining, and if necessary, for improving the storm water discharge system.

NO** — as property owner of APNs 481-250-002 and 481-250-003, **I do not approve** the NPDES Maximum Residential Regulatory Rate and services. I understand that not approving the NPDES Maximum Residential Regulatory Rate to fund federally mandated NPDES Permit requirements may result in noncompliance with the project's Conditions of Approval. If the NPDES Maximum Residential Regulatory Rate is not approved the rate will not be levied on the Riverside County property tax bill.

Assessor's Parcel Number	YES*	NO**	NPDES Maximum Residential Regulatory Rate
481-250-002 (and any division thereof)	<input type="checkbox"/>	<input type="checkbox"/>	\$300.14
481-250-003 (and any division thereof)	<input type="checkbox"/>	<input type="checkbox"/>	\$300.14

This ballot must be received by the City Clerk of the City of Moreno Valley prior to the close of the Public Hearing to be held on October 14, 2014, at the Moreno Valley City Hall Council Chamber, 14177 Frederick Street, Moreno Valley, California. The Public Hearing will be held at 6:00 p.m. or as soon thereafter as the matter may be called.

PROPERTY OWNER SIGNATURE DATE

Please remember to mark the appropriate box, sign and date the ballot and return to the City Clerk's office in the enclosed envelope prior to the close of the October 14, 2014 Public Hearing

Tract Map 36598

APN

 481250002

 481250003

 Roads

 Parcels

 City Boundary

Map reflects all changes indicated
on Riverside County Assessor Maps
as of August 14, 2014.

N



G:\VAP\SDA\TM 36598 PA13-0045.mxd

The information shown on this map was compiled from the Riverside County GIS and the City of Moreno Valley GIS. The land base and facility information on this map is for display purposes only and should not be relied upon without independent verification as to its accuracy. Data and information on this map is subject to update and modification. Riverside County and City of Moreno Valley will not be held responsible for any claims, losses or damages resulting from the use of this map. This map is not to be recycled or resold.



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 WWW.MOVAL.ORG



14331 FREDERICK STREET, SUITE 2
 P. O. BOX 88005
 MORENO VALLEY, CA 92552-0805

TS Marketplace
 c/o TX Market Place LLC
 Attn: Edward Wong
 15565 Brookhurst Street, Suite B
 Westminster, CA 92683

August 28, 2014

NOTICE TO PROPERTY OWNER-MAIL BALLOT PROCEEDING FOR THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) MAXIMUM COMMERCIAL/INDUSTRIAL REGULATORY RATE FOR APN 479-020-050

***** OFFICIAL BALLOT ENCLOSED *****

Introduction

In November of 1996, California voters passed Proposition 218 (“The Right to Vote on Taxes Act”). As a result, any new or proposed increase in a property-related charge requires approval of the charge by the property owner of record. In compliance with Proposition 218 legislation, the City of Moreno Valley Special Districts Division is conducting a mail ballot proceeding to provide the owner of Assessor’s Parcel Number (APN) 479-020-050 the opportunity to express support for or opposition to the approval of the NPDES Maximum Commercial/Industrial Regulatory Rate and services. Approval of the NPDES Maximum Commercial/Industrial Regulatory Rate through a mail ballot proceeding will fulfill the Conditions of Approval to provide a funding source for the NPDES program.

Background

The City shall provide the services necessary to meet mandates of the Federal Clean Water Act. The current NPDES Permit, as administered by the State, regulates the volume and amount of pollutants in stormwater runoff from all development types. NPDES Maximum Commercial/Industrial Regulatory Rate provides financial support for inspecting site design, source and treatment control Best Management Practices, monitoring maintenance records for those on-site facilities, and performing annual inspections of the affected areas to ensure compliance with federally mandated NPDES Permit requirements, as administered by the State.

Services Provided

In compliance with the Federal Clean Water Act, the City of Moreno Valley shall annually inspect site design, source and treatment control Best Management Practices, verify monitoring and maintenance records for those on-site facilities, and perform annual inspections of the affected areas to ensure compliance with federally mandated NPDES Permit requirements.

How is the Amount of the Charge Determined?

Each fiscal year (FY), the City of Moreno Valley shall determine the type of services necessary to comply with NPDES Permit requirements and levy the rate applicable for that service. The

rate levied shall not exceed the rate previously approved by the property owner.

Proposed Charge

For FY 2014/15, the NPDES Maximum Commercial/Industrial Regulatory Rate is \$226.01 per parcel. The total amount of the NPDES rates levied for FY 2014/15 for the program as a whole was \$439,115.06.

Annual Adjustment

Beginning in FY 2015/16, the NPDES Maximum Commercial/Industrial Regulatory Rate will be subject to an annual adjustment based on the percentage change calculated for the previous year in the Los Angeles-Riverside-Orange County Regional Consumer Price Index for All Urban Consumers, as published by the Department of Labor’s Bureau of Labor Statistics.

Duration of the Charge

Upon approval of the NPDES Maximum Commercial/Industrial Regulatory Rate, the annual levy amount will be assessed to APN 479-020-050 (and any division thereof) and shall be placed on the Riverside County property tax bill or included as a monthly charge on a utility bill. The NPDES Maximum Commercial/Industrial Regulatory Rate will be levied each following year at the proposed rate, which may include an annual inflation adjustment.

Public Hearing

To provide information concerning this mail ballot proceeding the City has scheduled one (1) Public Meeting and one (1) Public Hearing, which will be held at the **Moreno Valley City Hall Council Chamber located at 14177 Frederick Street, Moreno Valley.**

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Effect if Approval of the Charge is Not Approved

Not approving the NPDES Maximum Commercial/Industrial Regulatory Rate to meet federally mandated NPDES Permit requirements may result in noncompliance with the Conditions of Approval. If the returned valid ballot is marked opposing the NPDES rate, then the rate will not be levied on the property tax bill.

For More Information

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COMMON INTEREST, COMMERCIAL, INDUSTRIAL AND QUASI-PUBLIC USE NPDES RATE SCHEDULE
 Adopted by the City Council on January 10, 2006

LEVEL 1	LEVEL II												
<p align="center">NPDES Administration <i>(Not covered by CSA 152)</i></p> <p>Costs associated with personnel, administration and management of the storm water management program. Administrative tasks include development and filing of various stormwater reports and data collection and management.</p> <p>Level I is levied on all parcels conditioned for the NPDES Rate Schedule.</p>	<p align="center">Site Design, Source Control and Treatment Control BMPs Monitoring and Maintenance</p> <p>Costs associated with stormwater and non-stormwater runoff monitoring, inspection of the project's site design, source control and treatment control BMPs; evaluation of site stormwater compliance activities, review of site-specific technical reports and treatment control BMP maintenance records.</p>												
<p>Fiscal Year (FY) 2005/2006 - Base Year Calculation, subject to an annual inflation factor based on the Los Angeles-Riverside-Orange County Regional Consumer Price Index for All Urban Consumers, as published by the Department of Labor's Bureau of Labor Statistics</p>													
<table border="1"> <thead> <tr> <th align="center">PROPOSED PARCEL RATE</th> <th align="center">Per Month</th> <th align="center">Per Year</th> </tr> </thead> <tbody> <tr> <td></td> <td align="center">\$2.67</td> <td align="center">\$32.00</td> </tr> </tbody> </table>	PROPOSED PARCEL RATE	Per Month	Per Year		\$2.67	\$32.00	<table border="1"> <thead> <tr> <th align="center">PROPOSED PARCEL RATE</th> <th align="center">Per Month</th> <th align="center">Per Year</th> </tr> </thead> <tbody> <tr> <td></td> <td align="center">\$12.58</td> <td align="center">\$151.00</td> </tr> </tbody> </table>	PROPOSED PARCEL RATE	Per Month	Per Year		\$12.58	\$151.00
PROPOSED PARCEL RATE	Per Month	Per Year											
	\$2.67	\$32.00											
PROPOSED PARCEL RATE	Per Month	Per Year											
	\$12.58	\$151.00											

Inflation Factor Adjustments

- FY 2006/2007 - 4.5% = (\$33.00 & \$158.00)
- FY 2007/2008 - 3.1% = (\$34.00 & \$163.00)
- FY 2008/2009 - 4.2% = (\$35.00 & \$170.00)
- FY 2009/2010 - no change = (\$35.00 & \$170.00)
- FY 2010/2011 - no change = (\$35.00 & \$170.00)
- FY 2011/2012 - 3.8% = (\$36.00 & \$176.00)
- FY 2012/2013 - 2.7% = (\$37.00 & \$181.00)
- FY 2013/2014 - 2.0% = (\$38.00 & \$185.00) rounded to the nearest dollar
- FY 2014/2015 - 1.14% = (\$39.52 & \$186.49) Pursuant to City Council approval on June 10, 2014.

**OFFICIAL MAIL BALLOT for
Assessor's Parcel Number (APN) 479-020-050**

**National Pollutant Discharge Elimination System (NPDES)
Maximum Commercial/Industrial Regulatory Rate**

YES* — as property owner of APN 479-020-050, I approve the NPDES Maximum Commercial/Industrial Regulatory Rate and services. For fiscal year (FY) 2014/15, the NPDES Maximum Commercial/Industrial Regulatory Rate is \$226.01 per parcel. Upon approval of the maximum regulatory rate, the annual levy amount shall be placed on the Riverside County property tax bill or included as a monthly charge on a utility bill. Beginning FY 2015/16, the maximum regulatory rate will be subject to an annual adjustment based on the percentage change calculated for the previous year in the Los Angeles-Riverside-Orange County Regional Consumer Price Index for All Urban Consumers, as published by the Department of Labor's Bureau of Labor Statistics. The City will annually inspect site design, source and treatment control Best Management Practices, verify monitoring and maintenance records for those on-site facilities, and perform annual inspections of the affected areas to ensure compliance with federally mandated NPDES Permit requirements, as administered by the State.

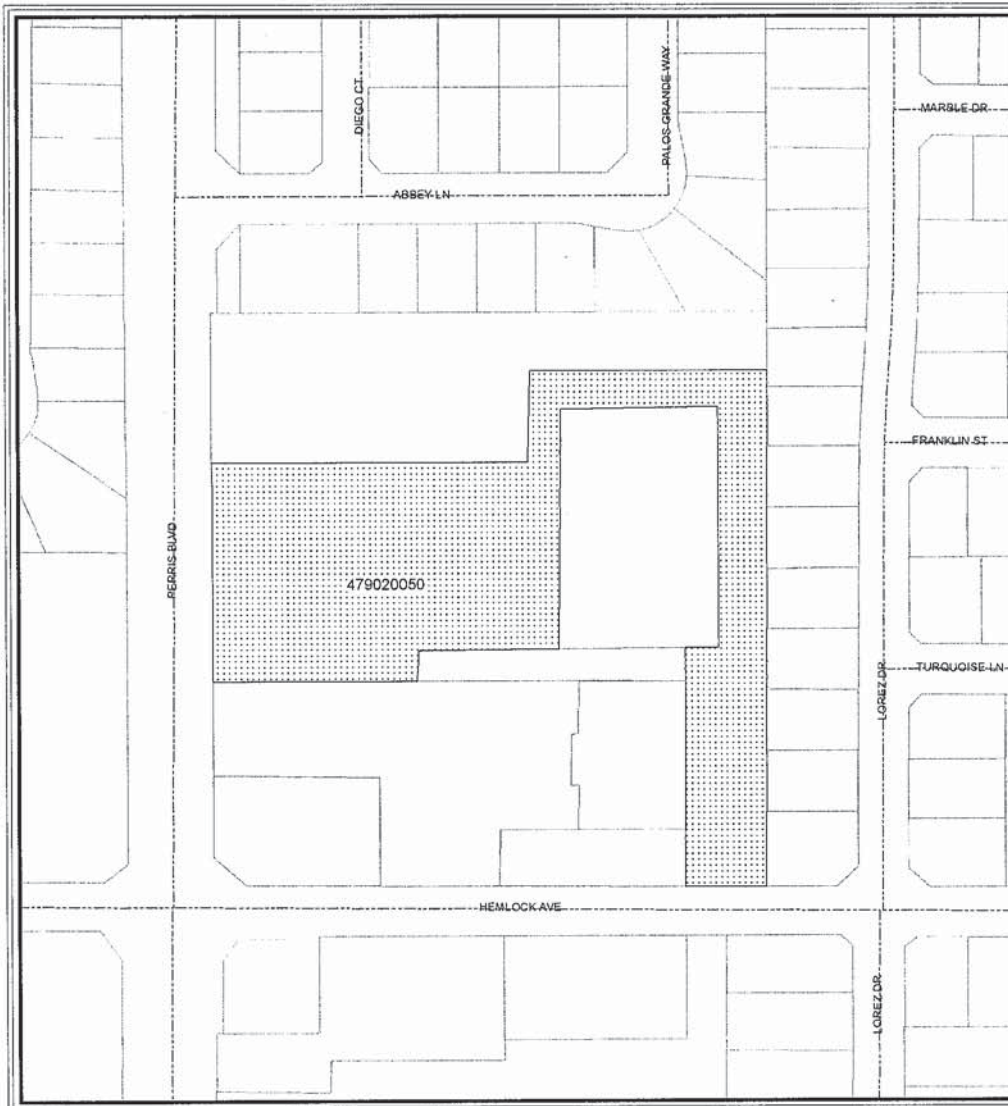
NO** — as property owner of APN 479-020-050, I do not approve the NPDES Maximum Commercial/Industrial Regulatory Rate and services. I understand that not approving the NPDES Maximum Commercial/Industrial Regulatory Rate to fund federally mandated NPDES Permit requirements may result in noncompliance with the project's Conditions of Approval. The NPDES maximum commercial/industrial regulatory rate will not be levied on the Riverside County property tax bill.

Assessor Parcel Number	YES*	NO**	NPDES Maximum Commercial/Industrial Regulatory Rate
479-020-050 (and any division thereof)	<input type="checkbox"/>	<input type="checkbox"/>	\$226.01





This ballot must be received by the City Clerk of the City of Moreno Valley prior to the close of the Public Hearing to be held on October 14, 2014, at the Moreno Valley City Hall Council Chamber, 14177 Frederick Street, Moreno Valley, California. The Public Hearing will be held at 6:00 p.m. or as soon thereafter as the matter may be called.

PROPERTY OWNER SIGNATURE DATE

Please remember to mark the appropriate box, sign and date the ballot and return to the City Clerk's office in the enclosed envelope prior to the close of the October 14, 2014 Public Hearing



**PA13-0055
 Kroger
 Fueling Station**

- APN**
-  479020050
 -  Roads
 -  Parcels
 -  City Boundary

Map reflects all changes indicated on Riverside County Assessor Maps as of August 19, 2014.



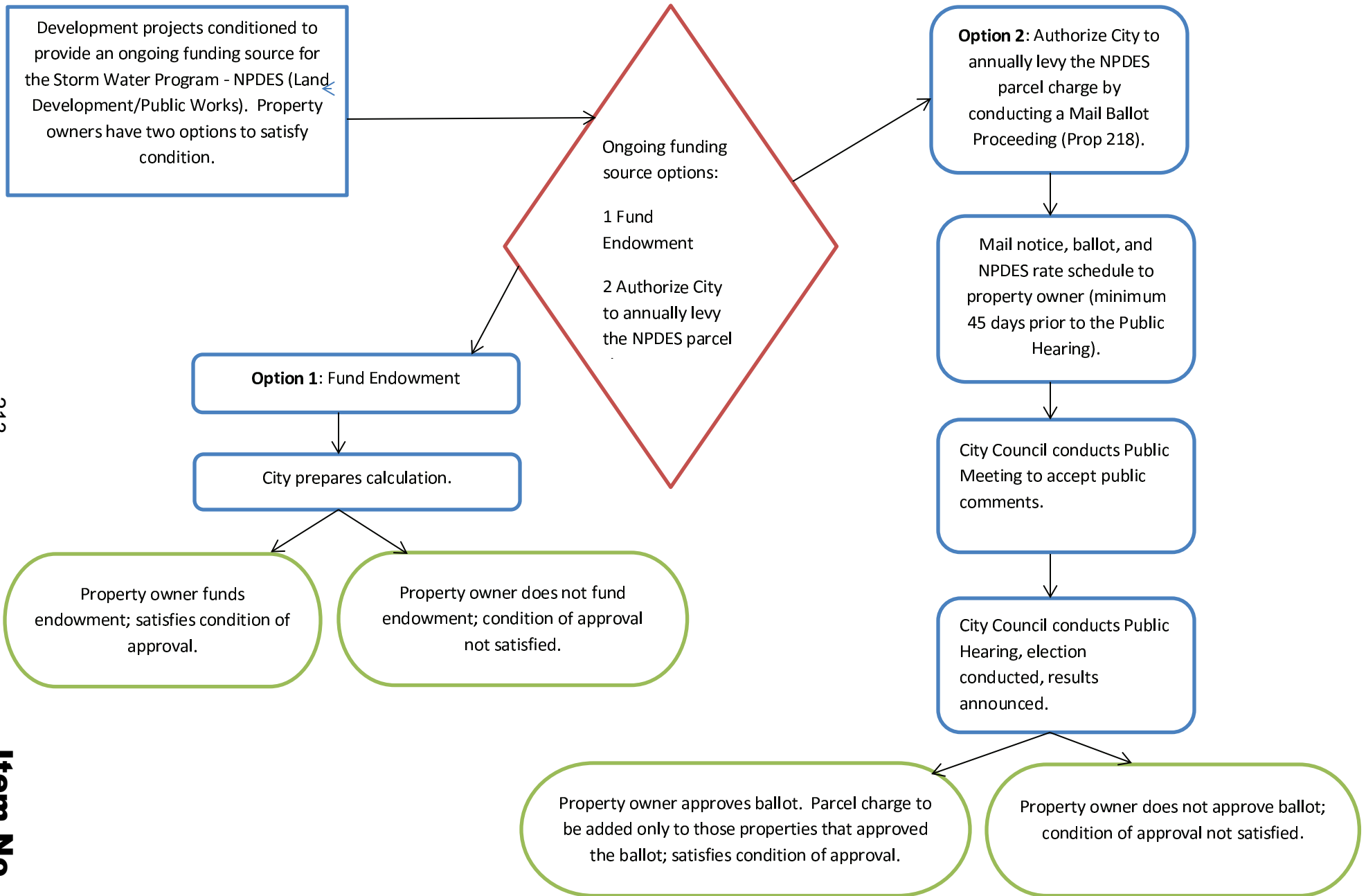
G:\AVP\SDA\PA13-0055KrogerFuelingStation.mxd

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Process Flow for Property Owners/Developers to Satisfy Funding Requirement for the Storm Water Program



-213-

Item No. E.1

This process flow is simplified for illustration purposes. Contact the Special Districts Division at 951.413.3480 for the detailed process.

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APPROVALS	
BUDGET OFFICER	<i>me</i>
CITY ATTORNEY	<i>SMB</i>
CITY MANAGER	<i>d</i>

Report to City Council

TO: Mayor and City Council

FROM: Richard Teichert, Chief Financial Officer

AGENDA DATE: October 14, 2014

TITLE: PUBLIC HEARING FOR THE FUTURE ANNEXATION OF TERRITORY TO CITY OF MORENO VALLEY COMMUNITY FACILITIES DISTRICT NO. 2014-01 (MAINTENANCE SERVICES) AND INTRODUCTION OF AN ORDINANCE PROVIDING FOR FUTURE ANNEXATION OF TERRITORY TO CITY OF MORENO VALLEY COMMUNITY FACILITIES DISTRICT NO. 2014-01 (MAINTENANCE SERVICES) AND AMENDING AND RESTATING THE RATE AND METHOD OF APPORTIONMENT FOR THE DISTRICT TO DESIGNATE TAX RATE AREAS NO. LM-01 AND SL-01

RECOMMENDED ACTION

Recommendations: That the City Council:

1. Conduct the Public Hearing regarding the future annexation of territory to City of Moreno Valley Community Facilities District No. 2014-01 (Maintenance Services) as shown on proposed Annexation Map No. 1 to that District.
2. Introduce Ordinance No. 882. An Ordinance of the City Council of the City of Moreno Valley, California, Providing for Future Annexation of Territory to City of Moreno Valley Community Facilities District No. 2014-01 (Maintenance Services) and Amending and Restating the Rate and Method of Apportionment for the District to Designate Tax Rate Areas No. LM-01 and SL-01.

SUMMARY

On March 25, 2014, Community Facilities District ("CFD") No. 2014-01 ("District") was formed by adoption of Resolution No. 2014-25. The District was established to provide the development community with an alternative financing mechanism to fund the

ongoing costs of providing public landscape maintenance and standard residential street lighting services. The original boundaries of the District only encompass Tract 31618 (the development used to establish the CFD). The developer for Tract 35698 (Habitat for Humanity) wishes to use the CFD to satisfy its conditions of approval of providing an ongoing funding source for standard residential street lighting. The proposed ordinance (Attachment 1) designates a citywide future annexation area for the District. Designating the future annexation area allows property owners (i.e. Habitat for Humanity) to annex into the District in a more timely manner, if they so choose, while maintaining appropriate levels of public notification and transparency. **Attachment 5-1** is a process chart showing the procedure to Amend the Rate and Method of Apportionment for the CFD. **Attachment 5-2** outlines the process the property owner/developer will follow to voluntarily elect to annex into CFD 2014-01 (Maintenance Services) after the amendment. Utilizing the CFD maintenance financing tool enables developing property owners to provide an ongoing funding source for the increase in services (residential street lighting and landscape maintenance) required as part of their development at no cost to the general taxpayer in Moreno Valley.

In addition, the ordinance amends and restates the Rate and Method of Apportionment (Attachment 3). The Rate and Method of Apportionment sets forth the manner in which the special taxes are calculated each year and to which parcels it applies. The amendment reassigns the District's existing Tax Rate Area No. 1 into two separate Tax Rate Areas: LM-01 for public landscape maintenance and SL-01 for standard residential street lighting. This reassignment of the current Tax Rate Area provides flexibility when assigning funding options for developments that may only have public landscaping or standard residential street lighting (or both) requiring an ongoing funding source. Thus, the amendment will allow Tract 35698 to utilize the CFD to satisfy its conditions to provide an ongoing funding source for standard residential street lighting (this development is not subject to ongoing funding for landscape maintenance).

This amendment will not increase the total Maximum Special Tax for those properties currently in the District. For fiscal year 2014/15, the Maximum Special Tax is \$665.75. The amendment separates the public landscape maintenance (LM-01) and standard residential street lighting services (SL-01) and their respective costs. For Tax Rate Area No. LM-01, the amount is \$468.36 while the amount for Tax Rate Area No. SL-01 is \$197.39, the sum of which does not exceed the previously approved Maximum Special Tax of \$665.75. The special tax is subject to an annual CPI adjustment, which must be reviewed and approved by the City Council each year.

DISCUSSION

Community Facilities District ("CFD") No. 2014-01 (Maintenance Services) ("District") was formed by adoption of Resolution No. 2014-25 to provide an alternative financing tool for the development community. The District provides funding for ongoing public landscape maintenance and standard residential street lighting services by authorizing the City to apply a special tax onto the property tax bills (after approval by the property owners). Residential Tract 31618 (southwest corner of Moreno Beach Drive and Bay

Avenue) was the development used to establish the CFD and currently is the only tract within the District and subject to the Maximum Special Tax.

Establishment of Future Annexation Area Boundaries

The property owner of residential housing Tract 36598 (Habitat for Humanity) wishes to utilize the District to satisfy its condition of approval to provide an ongoing funding source for standard residential street lighting. Pursuant to Section 53339.7(a) of the Mello-Roos Community Facilities Act of 1982, the City must first designate future annexation boundaries of the District in order to meet the property owner's development schedule. Designating the future annexation boundaries Citywide will establish parcels throughout the City as eligible for incorporation into the District. However, a parcel will only actually be annexed to the District (and therefore be subject to the special tax) when the owner of that parcel requests and consents to annexation. Any future annexations will be completed with proper public notification and transparency.

On August 26, 2014, the City Council adopted the Resolution of Intention (Resolution No. 2014-73) to initiate proceedings to establish the future annexation area and to amend and restate the Rate and Method of Apportionment. The Resolution set October 14, 2014 as the date for the required public hearing. After conducting the public hearing, the Council can consider adoption of the ordinance, provided there is not a majority protest from the public opposing the designation of the future annexation area.

Amendment and Restatement of the Rate and Method of Apportionment

In addition to designating future annexation boundaries, the ordinance amends and restates the Rate and Method of Apportionment. The Rate and Method of Apportionment sets forth the manner in which the special taxes are calculated each year and to which parcels it applies. Funds collected for the District are restricted and can only be used for the purposes for which they are collected.

The amendment reassigns the existing Tax Rate Area No. 1 into two separate tax rate areas: LM-01 and SL-01. LM-01 funds expenses related to maintenance of public landscaping and SL-01 funds expenses related to the operation of standard residential street lighting. This reassignment of the current tax rate area provides more flexibility when providing funding options for developments that may only have public landscaping or standard residential street lighting (or both) they need to fund. In the future, should the City elect to add additional tax rate areas, developers will have a menu of tax rate areas to choose from to satisfy the funding requirements for varying conditions of approval placed on development projects.

The amendment **does not** increase the Maximum Special Tax Rate for properties already in the District. It separates the special tax rate for each of the services provided. Under the current Rate and Method of Apportionment, the 2014/15 Maximum Special Tax Rate for Tax Rate Area No. is \$665.75 per parcel. The amendment designates \$468.36 for Tax Rate Area No. LM-01 and \$197.39 for Tax Rate Area No. SL-01 for fiscal year 2014/15. The sum of the two proposed Tax Rate Areas equals the previously approved Maximum Special Tax of \$665.75.

ALTERNATIVES

1. **Conduct the public hearing and adopt the ordinance** to provide for the future annexation of territory to the District and to amend and restate the Rate and Method of Apportionment for the District, designating Tax Rate Areas No. LM-01 and SL-01. *Designating the boundaries for future annexation of territory into the CFD will enable other developments to annex into the CFD in a more timely manner. The Amended and Restated Rate and Method of Apportionment increases flexibility when assisting the development community in satisfying their conditions of approval.*
2. **Conduct the public hearing but do not adopt the ordinance** to provide for the future annexation of territory to the District and to amend and restate the Rate and Method of Apportionment for the District to designate Tax Rate Areas No. LM-01 and SL-01. *Not establishing the future annexation boundaries of the CFD will limit the ability of the development community to take advantage of the CFD financing mechanism in a manner consistent with their development schedule. In addition, not approving the Amended and Restated Rate and Method of Apportionment will limit flexibility in providing funding alternatives for the development community.*
3. **Open or fully conduct the public hearing and continue the item to a future Council meeting.** *This alternative may delay the development of Tract 36598 or prevent the developer from utilizing CFD No. 2014-01 to satisfy their conditions of approval.*

FISCAL IMPACT

Third party costs associated with establishing the future annexation area for the CFD and amending the Rate and Method of Apportionment are projected to not exceed \$12,400. Third party services include a special tax consultant, special legal counsel, legal noticing publication, recording costs, and other related expenses. The developer for Tract 36598 was not charged fees for services related to the future annexation of territory as it is part of the overall design of the CFD, which is intended to be available for use by all future development projects. However, the developer did pay the \$3,375 Mail Ballot/Special Election Processing fee (per the City's User Fee Schedule) to cover costs related to the creation of the new tax rate area for standard residential street lighting and the election process. The difference of \$9,025 will be absorbed within the Special Districts Administrative Fund 2006-30-79-25701.

The amendment designates \$468.36 for Tax Rate Area No. LM-01 and \$197.39 for Tax Rate Area No. SL-01 for fiscal year 2014/15 to fund the expenses related to public landscape maintenance and standard residential street lighting within the CFD. The sum of the two proposed Tax Rate Areas equals the previously approved Maximum Special Tax of \$665.75. The Maximum Special Tax is subject to an annual inflation adjustment based on the change in the CPI for All Urban Consumers for the Los Angeles-Riverside-Orange County Region as published by the Department of Labor's Bureau of Labor Statistics or five percent (5%), whichever is greater.

CITY COUNCIL GOALS

Community Image, Neighborhood Pride, and Cleanliness

A maintenance CFD provides developers and property owners with an alternative method to satisfying their conditions of approval for providing a funding source for the ongoing maintenance of public landscaping and operation of standard residential street lighting within the City.

Revenue Diversification and Preservation

A maintenance and service CFD provides developers and property owners with an opportunity to fund desired City services and secure the provision of those services. The CFD will further stabilize the revenue base for special district services and programs and is consistent with prudent financial practices.

NOTIFICATION

Newspaper advertising for the October 14, 2014, Public Hearing was published in The Press-Enterprise on Thursday, October 2, 2014 to provide any interested person, including persons owning property within the District, the opportunity to appear and present any matters relating to the proposed future annexation area boundaries of the CFD. Publication in the newspaper exceeds the legal requirement to publish a notice seven days prior to the date of the Public Hearing.

ATTACHMENTS

1. Proposed Ordinance
2. Recorded Annexation No. 1 Boundary Map (Citywide Future Annexation Area)
3. Amended and Restated Rate and Method of Apportionment
4. Redline of the Rate and Method of Apportionment
- 5-1. Process Flow Detailing the Procedure to Amend the Rate and Method of Apportionment for the CFD
- 5-2. Process Flow Detailing the Procedure the Property Owner/Developer Follows to Voluntarily Elect to Annex into CFD 2014-01

Prepared by:
Jennifer Terry,
Management Analyst

Department Head Approval:
Richard Teichert
Chief Financial Officer

Concurred by:
Candace E. Cassel,
Special Districts Division Manager

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ORDINANCE NO. 882

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF MORENO VALLEY, CALIFORNIA, PROVIDING FOR FUTURE ANNEXATION OF TERRITORY TO CITY OF MORENO VALLEY COMMUNITY FACILITIES DISTRICT NO. 2014-01 (MAINTENANCE SERVICES) AND AMENDING AND RESTATING THE RATE AND METHOD OF APPORTIONMENT FOR THE DISTRICT TO DESIGNATE TAX RATE AREAS NO. LM-01 AND SL-01

The City Council of the City of Moreno Valley does ordain as follows:

SECTION 1. FINDINGS:

- A. The Mello-Roos Community Facilities Act of 1982 (Government Code Section 53311 *et seq.*) (the "Act") authorizes the City Council to establish a community facilities district to finance certain services within the district.
- B. Section 53339.7(a) of the Act authorizes the City Council, following a properly noticed public hearing, to provide for the future annexation of territory to a community facilities district. Annexation of the territory for which such provision is made requires unanimous approval of the owner or owners of each parcel or parcels at the time that the parcel or parcels are annexed, but does not require additional public hearing.
- C. By its Resolution No. 2014-25 adopted on March 25, 2014, the City Council established its City of Moreno Valley Community Facilities District No. 2014-01 (Maintenance Services) (the "CFD").
- D. By its Ordinance No. 874, adopted on April 8, 2014 (the "Special Tax Ordinance"), the City Council levied an annual special tax (the "Special Tax") pursuant to Section 53340 of the Act against all non-exempt parcels of real property within the CFD.
- E. By its Resolution No. 2014-73, adopted on August 26, 2014 (the "Resolution of Intention"), the City Council declared its intention to provide for future annexation of territory to the CFD.
- F. The proposed future annexation area, which constitutes the entire territory of the City aside from the territory currently constituting the CFD, is shown on the map titled "Annexation Map No. 1 of Community Facilities District No. 2014-01 (Maintenance Services) of City of Moreno Valley, County of Riverside, California (Territory proposed for annexation in the future, with the condition that parcels within that territory may be annexed only with the unanimous approval of the owner or owners of each parcel or parcels at the

time that parcel or those parcels are annexed)” (the “Annexation Map”). The Annexation Map is recorded in Book 77 of Maps of Assessment and Community Facilities Districts at page 52, in the office of the County Recorder for the County of Riverside, State of California and is on file in the Office of the City Clerk, available for public inspection, and incorporated herein by reference.

- G. The Resolution of Intention also proposed to amend and restate the rate and method of apportionment of the special tax for the CFD in order to provide for multiple tax rate areas to fund different services.
- H. On October 14, 2014, at 6:00 PM (or as soon thereafter as practical), in the City Council Chamber located at 14177 Frederick Street, Moreno Valley, California 92553, the City Council held a full and fair public hearing (the “Hearing”) on the designation of the territory shown on the Annexation Map for annexation to the CFD in the future.
- I. Notice of the Hearing was published pursuant to Section 53339.4 of the Act in the October 2, 2014 edition of The Press-Enterprise.
- J. At the Hearing, the City Council heard oral and written testimony from all those wishing to provide such testimony. There was no majority protest (as defined by Section 53339.3 of the Act) against the proposed addition of territory to the CFD in the future.
- K. City Council now desires to provide for the future annexation of territory to the CFD, to amend and restate the rate and method of apportionment for the special tax levied in connection with the CFD and to take other related actions.

SECTION 2. PROVISION FOR ANNEXATION IN THE FUTURE:

The City Council hereby provides for the annexation to the CFD of the territory shown on the Annexation Map upon the unanimous approval of the owner or owners of each parcel or parcels at the time that the parcel or parcels are annexed, without additional hearings.

SECTION 3. AMENDMENT AND RESTATEMENT OF RATE AND METHOD OF APPORTIONMENT:

The Rate and Method of Apportionment of the annual Special Tax, as approved by the Special Tax Ordinance, is hereby amended and restated as set forth in Exhibit “A” to this Ordinance, which is incorporated herein by reference (the “Restated RMA”).

The Special Tax will be collected in the same manner as ordinary ad valorem

property taxes are collected and shall be subject to the same penalties and the same procedure, sale, and lien priority in case of delinquency as is provided for ad valorem taxes. Notwithstanding the forgoing, any Special Taxes that cannot be collected on the County tax roll, or are not so collected, may be collected through direct billing by the City.

Under no circumstances will the special tax levied in any fiscal year against any parcel be increased as a consequence of delinquency or default by the owner or owners of any other parcel or parcels within the CFD by more than 10 percent above the amount that would have been levied in that fiscal year had there never been any such delinquencies or defaults. This tax may not be prepaid.

The Restated RMA represents a restatement of the existing rate and method of apportionment, amended to provide for Tax Rate Area Nos. LM-01 and SL-01. For clarity, the text of the existing RMA has been reorganized and edited. As explained in more detail in Section J of the Restated RMA, the existing Tax Rate Area of the CFD (currently designated Tax Rate Area No. 1) has been redesignated as Tax Rate Area No. LM-01 and SL-01, and all territory currently assigned to Tax Rate Area No. 1 is assigned to both of these newly designated Tax Rate Areas under the Restated RMA. Tax Rate Area No. LM-01 is the rate for territory in the CFD that is provided with landscape maintenance services for the public landscaping maintained in connection with Tax Rate Area No. LM-01. Tax Rate Area No. SL-01 is the rate for territory in the CFD that is provided with standard residential street lighting services on publicly accepted and maintained streets.

The designated future annexation area is designated for annexation as part of both Tax Rate Areas; and any annexation action shall specify to which Tax Rate Area(s) the annexed territory will be added.

SECTION 4. USE OF TAX:

In addition to the administrative expenses described in the Rate and Method of Apportionment, proceeds of the Special Tax may be used to fund:

- A. Landscape Maintenance Services: Maintaining, servicing and operating landscape improvements and associated appurtenances located within the public right-of-way and within dedicated landscape easements for the CFD. These improvements may include but are not limited to parkways, medians, open space landscaping, fencing, monuments, ornamental lighting, drainage, turf, ground cover, shrubs, vines and trees, irrigation systems, and appurtenant facilities and structures. Fundable costs may include, but are not limited to: (i) contracting costs for landscape maintenance services, including litter removal, (ii) salaries and benefits of City staff, (iii) expenses related to equipment, apparatus, and supplies related to these services, (iv) City administrative and overhead costs associated with providing such services within the CFD, and (v) lifecycle costs associated with the repair

and replacement of facilities.

- B. Street Lighting Services: Maintaining, servicing and operating street lights and appurtenant improvements. Fundable costs may include, but are not limited to: (i) contracting costs for street light maintenance, (ii) salaries and benefits of City staff, if the City directly provides street light maintenance services, (iii) utility expenses and the expense related to equipment, apparatus, and supplies related to these services and authorized by the Act, (iv) City overhead costs associated with providing such services for the CFD, and (v) lifecycle costs associated with the repair and replacement of facilities.

These services are in addition to those provided in the territory within the CFD prior to the establishment of the CFD and that such Services will not supplant services already available within the territory. Not all of the listed services are provided to every parcel in the CFD. The actual services provided depend on the Tax Rate Area to which the parcel is assigned. The City may, at some future point, add additional services to the CFD. Any such changes will only affect parcels annexed to the CFD after such changes are made.

SECTION 5. ACCOUNTABILITY MEASURES:

The Special Tax will be subject to the following accountability measures:

- (i) Proceeds of the Special Tax will be deposited in a special account and used only for the purpose of financing the costs identified in Section 4 of this Ordinance; and
- (ii) An annual report will be filed by the Special Districts Division of the Financial and Management Services Department of the City at least once a year containing a description of the amount of funds in the Special Account and the status of any costs identified in Section 4 of this Ordinance.

SECTION 6. ADMINISTRATION:

The Special Districts Division of the Financial and Management Services Department, which is located at 14177 Frederick Street, Moreno Valley, California 92553 and can be telephoned at 951.413.3480 will be responsible for annually preparing a current roll of special tax levy obligations by assessor's parcel number and will be responsible for estimating future special tax levies pursuant to Section 53340.2 of the Act.

SECTION 7. NOTICE OF SPECIAL TAX LIEN:

The City Council directs that a revised notice of special tax lien be recorded pursuant to Section 3117.5 of the Streets and Highways Code to reflect the adoption of the Restated RMA.

SECTION 8. INTERPRETATION:

The CFD Administrator is authorized to issue such interpretations of this Ordinance as he or she feels is necessary or useful to administer the Special Tax. Any such interpretations may be ratified or disapproved by resolution of the City Council, but shall be treated as official interpretations in the absence of Council action.

SECTION 9. CORRECTION OF ERRORS:

If a Special Tax is calculated or applied in error with respect to a parcel, the CFD Administrator is authorized to modify or correct the Special Tax applied, and to issue a credit or refund as appropriate. The CFD Administrator will respond in writing to any written request from a taxpayer for a modification or correction. Any such written response may be appealed by the taxpayer through the filing of a claim following the normal claims procedures of the City.

SECTION 10. EFFECT ON EXISTING TAX:

The City Council finds that the actions taken by this Ordinance do not increase the rate of the Special Tax applicable to parcels that are already in the CFD above the rate previously approved by the voters.

SECTION 11. SEVERABILITY:

If any section, subsection, sentence, clause or phrase of this ordinance is for any reason held to be invalid or unconstitutional by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of the ordinance. The City Council hereby declares that it would have passed this ordinance and each section, subsection, sentence, clause and phrase hereof, irrespective of the fact that any one or more of the sections, subsections, sentences, clauses or phases hereof be declared invalid or unconstitutional.

SECTION 12. EFFECT OF ENACTMENT:

Except as specifically provided herein, nothing contained in this ordinance shall be deemed to modify or supersede any prior enactment of the City Council which addresses the same subject addressed herein.

SECTION 13 NOTICE OF ADOPTION:

Within fifteen days after the date of adoption hereof, the City Clerk shall certify to the adoption of this ordinance and cause it to be posted in three public places within the city.

SECTION 14 EFFECTIVE DATE:

This ordinance shall take effect thirty days after the date of its adoption.

APPROVED AND ADOPTED this 28th day of October, 2014.

Mayor

ATTEST:

City Clerk

APPROVED AS TO FORM:

City Attorney

6
Ordinance No. 882
Date Adopted: October 28, 2014

ORDINANCE JURAT

STATE OF CALIFORNIA)
COUNTY OF RIVERSIDE) ss.
CITY OF MORENO VALLEY)

I, Jane Halstead, City Clerk of the City of Moreno Valley, California, do hereby certify that Ordinance No. 882 had its first reading on October 14, 2014 and had its second reading on October 28, 2014, and was duly and regularly adopted by the City Council of the City of Moreno Valley at a regular meeting thereof held on the 28th day of October, 2014, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

(Council Members, Mayor Pro Tem and Mayor)

CITY CLERK

(SEAL)



FIRST AMENDED AND RESTATED RATE AND METHOD OF APPORTIONMENT OF SPECIAL TAX

A Special Tax for the City of Moreno Valley Community Facilities District No. 2014-01 (Maintenance Services) (the "CFD") shall be levied on all Assessor's Parcels in the CFD and collected each Fiscal Year in an amount determined by the City through the application of the rate and method of apportionment of the Special Tax set forth below. All of the real property in the CFD, unless exempted by law or by the provisions hereof, shall be taxed for the purposes, to the extent and in the manner herein provided.

A. DEFINITIONS

The terms hereinafter set forth have the following meanings:

"Act" means the Mello-Roos Community Facilities Act of 1982 (Government Code Section 53311 *et seq.*).

"Administrative Expenses" means the expenses incurred by the City as administrator of the CFD to determine, levy and collect the Special Taxes, including salaries and benefits of City employees whose duties are related to administration of the CFD and the fees of consultants, legal counsel, the costs of collecting installments of the Special Taxes, preparation of required reports; and any other costs required to administer the CFD as determined by the City.

"Annual Escalation Factor" means the greater of the increase in the annual percentage change in the Consumer Price Index (CPI) for All Urban Consumers for the Los Angeles-Riverside-Orange County Region as published by the Department of Labor's Bureau of Labor Statistics or five percent (5%). If the CPI for the Los Angeles-Riverside-Orange County area is discontinued, the CFD administrator may replace it with a similar index for the purposes of calculating the Annual Escalation Factor.

"Assessor's Parcel" or "Parcel" means a lot or parcel shown on the official map of the Riverside County Assessor designating parcels by assessor's parcel number.

"CFD Administrator" means an official of the City, or designee thereof, responsible for determining the Special Tax Requirement and administering the levy and collection of the Special Taxes.

"CFD" means City of Moreno Valley Community Facilities District No. 2014-01 (Maintenance Services).

"City" means the City of Moreno Valley.

"Fiscal Year" means the period starting July 1 and ending the following June 30.

“**Lot**” means property within a recorded Final Map, which is identified by a lot number for which a building permit could be issued.

“**Maximum Special Tax**” means the Maximum Special Tax, determined in accordance with Section C below that can be levied in the CFD in any Fiscal Year on any Assessor’s Parcel.

“**Property Owner Association Property**” means any property within the boundaries of the CFD that is owned by, or irrevocably dedicated as indicated in an instrument recorded with the County Recorder to a property owner association, including any master or sub-association.

“**Proportionately**” means in a manner such that the ratio of the actual Special Tax levy to the Maximum Special Tax is equal for all Assessor’s Parcels within each Land Use Class within each Tax Rate Area.

“**Public Property**” means any property within the boundaries of the CFD that is owned by or irrevocably offered for dedication to the federal government, the State, the County, the City or any other public agency and is used for public purposes.

“**Special Tax**” means the Special Tax to be levied in each Fiscal Year on each Assessor’s Parcel of Taxable Property to fund the Special Tax Requirement, and shall include Special Taxes levied or to be levied under Sections C and D, below.

“**Special Tax Requirement**” means, for each Tax Rate Area separately, the amount required in any Fiscal Year to: (i) pay for the services financed by the CFD; (ii) pay Administrative Expenses; (iii) pay any amounts required to establish or replenish any Reserve Funds; and (iv) pay for anticipated delinquent Special Taxes (not to exceed 10% of total requirement) less any surplus of funds available from the previous Fiscal Year’s Special Tax levy.

“**State**” means the State of California.

“**Taxable Property**” means all of the Assessor’s Parcels within the boundaries of the CFD other than Public Property, Property Owner Association Property, or property exempted by law from the Special Tax.

“**Tax-Exempt Property**” means an Assessor’s Parcel not subject to the Special Tax. Tax-Exempt Property includes: (i) Public Property, (ii) Property Owner Association Property, and (iii) property owned in common.

“**Tax Rate Area**” means a grouping of parcels that are taxed to fund a specific service. For example, Tax Rate Area No. SL-01 includes all parcels that are taxed for standard residential street lighting services on publicly accepted and maintained streets and Tax Rate Area No. LM-01 includes all parcels that are taxed for landscape maintenance services for the public landscaping maintained in connection with Tax Rate Area No.

LM-01. Tax Rate Areas may be created from time to time, and each parcel annexed to the CFD shall, at the time it is annexed, be assigned to one or more Tax Rate Area(s) by action of the City Council (with the consent of the property owner or with voter approval).

B. MAXIMUM SPECIAL TAX RATES

Each Tax Rate Area has a separate Maximum Special Tax for Taxable Property. On each July 1 following its indicated "base year", the Maximum Special Tax for Taxable Property for a Tax Rate Area shall be increased in accordance with the Annual Escalation Factor. No Special Tax shall be levied on Tax-Exempt Property.

1. Tax Rate Area No. LM-01 (Residential Landscaping)

The Maximum Special Tax for Taxable Property in Tax Rate Area No. LM-01 will be \$468.36 per Lot. The base year for Tax Rate Area No. LM-01 is Fiscal Year 2014/15.

2. Tax Rate Area No. SL-01 (Residential Street Lighting)

The Maximum Special Tax for Taxable Property in Tax Rate Area No. SL-01 will be \$197.39 per Lot. The base year for Tax Rate Area No. SL-01 is Fiscal Year 2014/15.

C. METHOD OF APPORTIONMENT OF THE SPECIAL TAX

For each Fiscal Year, the CFD Administrator shall, separately within each Tax Rate Area, levy the Special Tax Proportionately on each Assessor's Parcel, whether Developed or Undeveloped, within that Tax Rate Area at up to 100% of the applicable Maximum Special Tax until the amount levied is equal to the Special Tax Requirement assigned to that Tax Rate Area in that Fiscal Year.

D. APPEALS

Any taxpayer that believes that the amount of the Special Tax assigned to a Parcel is in error may file a written notice with the CFD Administrator appealing the levy of the Special Tax. This notice is required to be filed with the CFD Administrator during the Fiscal Year the error is believed to have occurred. The CFD Administrator or its designee will then promptly review the appeal and, if necessary, meet with the taxpayer. If the CFD Administrator verifies that the tax should be changed the Special Tax levy shall be corrected and, if applicable, a refund shall be granted.

The City Council may interpret this Rate and Method of Apportionment for purposes of clarifying any ambiguity and make determinations relative to the annual administration of the Special Tax and any landowner appeals. Any decision of the City Council shall be final and binding as to all persons.

E. MANNER OF COLLECTION

The Special Tax as levied pursuant to Section D above and shall be collected in the same manner and at the same time as ordinary *ad valorem* property taxes; however, the CFD Administrator may directly bill the Special Tax or collect Special Taxes at a different time, if necessary, to meet the financial obligations of the CFD as otherwise determined appropriate by the CFD Administrator.

The Special Tax shall be subject to the same penalties, procedure, sale, and lien priority in any case of delinquency as applicable for ad valorem taxes.

F. PREPAYMENT OF SPECIAL TAX OBLIGATION

The Special Tax may not be prepaid.

G. TERM OF SPECIAL TAX

Taxable Property in the CFD shall remain subject to the Special Tax in perpetuity or until the City Council takes appropriate actions to terminate the Special Tax pursuant to the Act.

H. ANNEXATIONS

It is intended that territory will, from time to time, be annexed to the CFD. Such territory will be assigned to new Tax Rate Areas, existing Tax Rate Areas, or a combination of new and existing Tax Rate Areas. In the event annexed territory is assigned to an existing Tax Rate Area, services (of a nature similar to those already provided in connection with the Tax Rate Area) will be provided to the annexed territory (or public improvements associated with the annexed territory).

I. RESTATEMENT

This document has been amended and restated from its original form. The purpose of restatements is to maintain the clarity of this document over time; to allow the document to be relevant to both existing and newly annexed parcels; and to aid in the efficient administration of the CFD. Amendments, except where approved by the relevant property owners, are not intended to increase the Maximum Special Tax Rate(s) applicable to parcels already a part of the CFD at the time of the amendment. To the extent an amendment inadvertently increases the Maximum Special Tax Rate(s) applicable to a Parcel, the Maximum Special Tax Rate(s) (adjusted by any associated Annual Escalation Factor) consented to by the owners of that Parcel at the time the Parcel was annexed to the CFD (or the voter-approved Maximum Special Tax Rate(s)) shall apply to that Parcel.

For purposes of the preceding paragraph, with respect to actions that occurred before a Parcel (the "Current Parcel") existed, the owners of the Current Parcel shall be understood to mean the owners of the Parcel that included the territory of the Current Parcel at the time the action occurred.

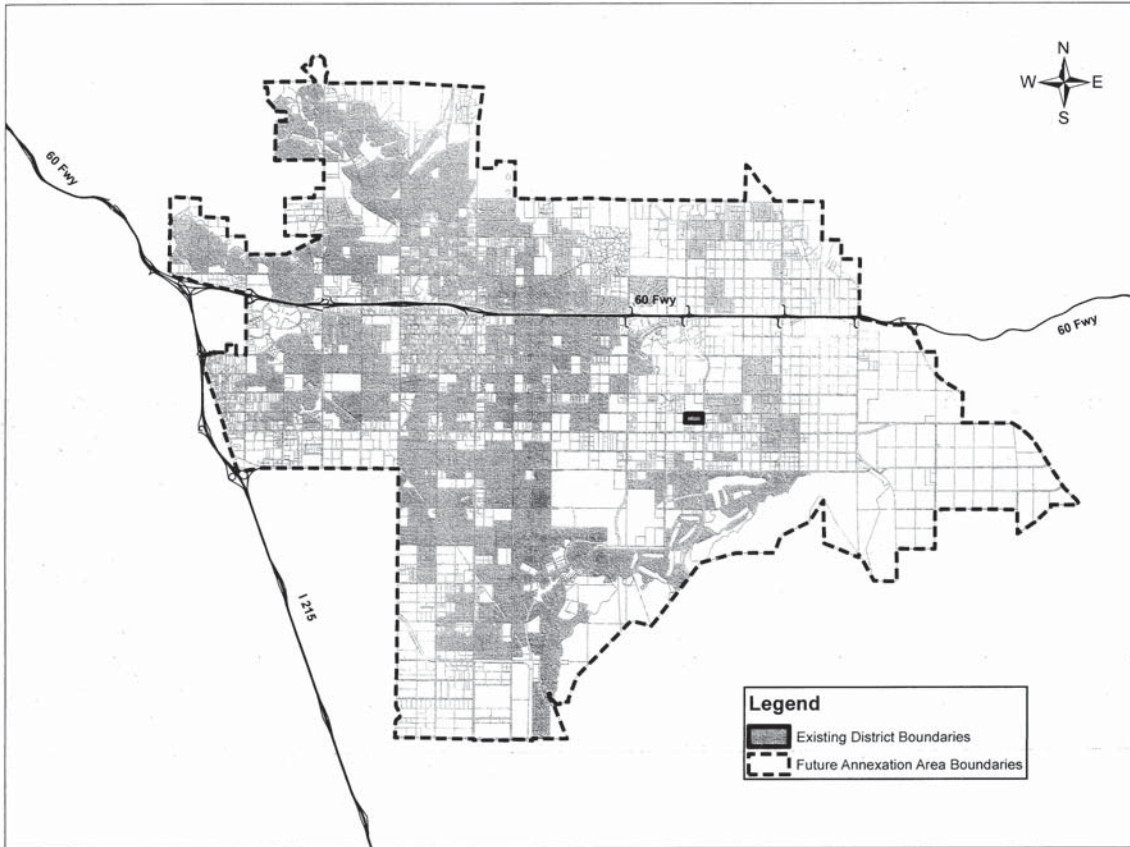
J. FORMER TAX RATE AREA NO. 1

Note that the Tax Rate Area that was designated Tax Rate Area No. 1 in previous versions of this document has been redesignated as Tax Rate Area Nos. LM-01 and SL-01 (the "Successor Areas"). The combined Maximum Special Tax Rates of the Successor Areas is equal to the Maximum Special Tax Rate for former Tax Rate Area No. 1 and, together, the Successor Areas fund all services funded by the former Tax Rate Area No. 1. This change was made for administrative convenience and is not intended to increase the tax on the parcels included in former Tax Rate Area No. 1.

CITY

Annexation Map No. 1 of Community Facilities District No. 2014-01 (Maintenance Services) of City of Moreno Valley, County of Riverside, California

(Territory proposed for annexation in the future, with the condition that parcels within that territory may be annexed only with the unanimous approval of the owner or owners of each parcel or parcels at the time that parcel or those parcels are annexed)



Legend

- Existing District Boundaries
- Future Annexation Area Boundaries

FILED IN THE OFFICE OF THE CITY CLERK THIS 25th DAY OF August, 2014

Don Halstead
CITY CLERK
CITY OF MORENO VALLEY

I HEREBY CERTIFY THAT THE WITHIN MAP SHOWING PROPOSED BOUNDARIES OF COMMUNITY FACILITIES DISTRICT NO. 2014-01 (MAINTENANCE SERVICES), CITY OF MORENO VALLEY, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, WAS APPROVED BY THE CITY OF MORENO VALLEY AT A REGULAR MEETING THEREOF, HELD ON THE 21st DAY OF August, 2014, BY ITS RESOLUTION NO. 7014-73

Don Halstead
CITY CLERK
CITY OF MORENO VALLEY

FILED THIS 2ND DAY OF SEPTEMBER, 2014, AT THE HOUR OF 1:22 O'CLOCK P. M. IN BOOK 77 PAGE(S) 52 OF MAPS OF ASSESSMENT AND COMMUNITY FACILITIES DISTRICT AND INSTRUMENT NO. 2014-033999 IN THE OFFICE OF THE COUNTY RECORDER IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA. FEE: \$10-

Maria J. Abney
COUNTY RECORDER
COUNTY OF RIVERSIDE
STATE OF CALIFORNIA

REFERENCE IS MADE TO THAT BOUNDARY MAP OF THE COMMUNITY FACILITIES DISTRICT NO. 2014-01 (MAINTENANCE SERVICES) OF THE CITY OF MORENO VALLEY RECORDED WITH THE RIVERSIDE COUNTY RECORDER'S OFFICE ON FEBRUARY 20, 2014 IN BOOK 76 OF MAPS OF ASSESSMENT AND COMMUNITY FACILITIES DISTRICTS, PAGE 69 AS INSTRUMENT NO. 2014-005614.

THE LINES AND DIMENSIONS OF EACH LOT OR PARCEL SHOWN ON THIS DIAGRAM SHALL BE THOSE LINES AND DIMENSIONS AS SHOWN ON THE RIVERSIDE COUNTY ASSESSOR'S MAPS FOR THOSE PARCELS LISTED.

THE RIVERSIDE COUNTY ASSESSOR'S MAPS SHALL GOVERN FOR ALL DETAILS CONCERNING THE LINES AND DIMENSIONS OF SUCH LOTS OR PARCELS.

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FIRST AMENDED AND RESTATED RATE AND METHOD OF APPORTIONMENT OF SPECIAL TAX

A Special Tax for the City of Moreno Valley Community Facilities District No. 2014-01 (Maintenance Services) (the “CFD”) shall be levied on all Assessor's Parcels in the CFD and collected each Fiscal Year in an amount determined by the City through the application of the rate and method of apportionment of the Special Tax set forth below. All of the real property in the CFD, unless exempted by law or by the provisions hereof, shall be taxed for the purposes, to the extent and in the manner herein provided.

A. DEFINITIONS

The terms hereinafter set forth have the following meanings:

“**Act**” means the Mello-Roos Community Facilities Act of 1982 (Government Code Section 53311 *et seq.*).

“**Administrative Expenses**” means the expenses incurred by the City as administrator of the CFD to determine, levy and collect the Special Taxes, including salaries and benefits of City employees whose duties are related to administration of the CFD and the fees of consultants, legal counsel, the costs of collecting installments of the Special Taxes, preparation of required reports; and any other costs required to administer the CFD as determined by the City.

“**Annual Escalation Factor**” means the greater of the increase in the annual percentage change in the Consumer Price Index (CPI) for All Urban Consumers for the Los Angeles-Riverside-Orange County Region as published by the Department of Labor’s Bureau of Labor Statistics or five percent (5%). If the CPI for the Los Angeles-Riverside-Orange County area is discontinued, the CFD administrator may replace it with a similar index for the purposes of calculating the Annual Escalation Factor.

“**Assessor's Parcel**” or “**Parcel**” means a lot or parcel shown on the official map of the Riverside County Assessor designating parcels by assessor's parcel number.

“**CFD Administrator**” means an official of the City, or designee thereof, responsible for determining the Special Tax Requirement and administering the levy and collection of the Special Taxes.

“**CFD**” means City of Moreno Valley Community Facilities District No. 2014-01 (Maintenance Services).

“**City**” means the City of Moreno Valley.

“**Fiscal Year**” means the period starting July 1 and ending the following June 30.

“**Lot**” means property within a recorded Final Map, which is identified by a lot number for which a building permit could be issued.

“**Maximum Special Tax**” means the Maximum Special Tax, determined in accordance with Section C below that can be levied in the CFD in any Fiscal Year on any Assessor's Parcel.

“**Property Owner Association Property**” means any property within the boundaries of the CFD that is owned by, or irrevocably dedicated as indicated in an instrument recorded with the County Recorder to a property owner association, including any master or sub-association.

“**Proportionately**” means in a manner such that the ratio of the actual Special Tax levy to the Maximum Special Tax is equal for all Assessor's Parcels within each Land Use Class within each Tax Rate Area.

“**Public Property**” means any property within the boundaries of the CFD that is owned by or irrevocably offered for dedication to the federal government, the State, the County, the City or any other public agency and is used for public purposes.

“**Special Tax**” means the Special Tax to be levied in each Fiscal Year on each Assessor's Parcel of Taxable Property to fund the Special Tax Requirement, and shall include Special Taxes levied or to be levied under Sections C and D, below.

“**Special Tax Requirement**” means, for each Tax Rate Area separately, the amount required in any Fiscal Year to: (i) pay for the services financed by the CFD; (ii) pay Administrative Expenses; (iii) pay any amounts required to establish or replenish any Reserve Funds; and (iv) pay for anticipated delinquent Special Taxes (not to exceed 10% of total requirement) less any surplus of funds available from the previous Fiscal Year's Special Tax levy.

“**State**” means the State of California.

“**Taxable Property**” means all of the Assessor's Parcels within the boundaries of the CFD other than Public Property, Property Owner Association Property, or property exempted by law from the Special Tax.

“**Tax-Exempt Property**” means an Assessor's Parcel not subject to the Special Tax. Tax-Exempt Property includes: (i) Public Property, (ii) Property Owner Association Property, and (iii) property owned in common.

“**Tax Rate Area**” means a grouping of parcels that are taxed to fund a specific service. For example, Tax Rate Area No. SL-01 includes all parcels that are taxed for standard residential street lighting services on publicly accepted and maintained streets and Tax Rate Area No. LM-01 includes all parcels that are taxed for landscape maintenance services for the public landscaping maintained in connection with Tax Rate Area No.

LM-01. Tax Rate Areas may be created from time to time, and each parcel annexed to the CFD shall, at the time it is annexed, be assigned to one or more Tax Rate Area(s) by action of the City Council (with the consent of the property owner or with voter approval).

B. MAXIMUM SPECIAL TAX RATES

Each Tax Rate Area has a separate Maximum Special Tax for Taxable Property. On each July 1 following its indicated “base year”, the Maximum Special Tax for Taxable Property for a Tax Rate Area shall be increased in accordance with the Annual Escalation Factor. No Special Tax shall be levied on Tax-Exempt Property.

1. Tax Rate Area No. LM-01 (Residential Landscaping)

The Maximum Special Tax for Taxable Property in Tax Rate Area No. LM-01 will be \$468.36 per Lot. The base year for Tax Rate Area No. LM-01 is Fiscal Year 2014/15.

2. Tax Rate Area No. SL-01 (Residential Street Lighting)

The Maximum Special Tax for Taxable Property in Tax Rate Area No. SL-01 will be \$197.39 per Lot. The base year for Tax Rate Area No. SL-01 is Fiscal Year 2014/15.

C. METHOD OF APPORTIONMENT OF THE SPECIAL TAX

For each Fiscal Year, the CFD Administrator shall, separately within each Tax Rate Area, levy the Special Tax Proportionately on each Assessor’s Parcel, whether Developed or Undeveloped, within that Tax Rate Area at up to 100% of the applicable Maximum Special Tax until the amount levied is equal to the Special Tax Requirement assigned to that Tax Rate Area in that Fiscal Year.

D. APPEALS

Any taxpayer that believes that the amount of the Special Tax assigned to a Parcel is in error may file a written notice with the CFD Administrator appealing the levy of the Special Tax. This notice is required to be filed with the CFD Administrator during the Fiscal Year the error is believed to have occurred. The CFD Administrator or its designee will then promptly review the appeal and, if necessary, meet with the taxpayer. If the CFD Administrator verifies that the tax should be changed the Special Tax levy shall be corrected and, if applicable, a refund shall be granted.

The City Council may interpret this Rate and Method of Apportionment for purposes of clarifying any ambiguity and make determinations relative to the annual administration of the Special Tax and any landowner appeals. Any decision of the City Council shall be final and binding as to all persons.

E. MANNER OF COLLECTION

The Special Tax as levied pursuant to Section D above and shall be collected in the same manner and at the same time as ordinary *ad valorem* property taxes; however, the CFD Administrator may directly bill the Special Tax or collect Special Taxes at a different time, if necessary, to meet the financial obligations of the CFD as otherwise determined appropriate by the CFD Administrator.

The Special Tax shall be subject to the same penalties, procedure, sale, and lien priority in any case of delinquency as applicable for ad valorem taxes.

F. PREPAYMENT OF SPECIAL TAX OBLIGATION

The Special Tax may not be prepaid.

G. TERM OF SPECIAL TAX

Taxable Property in the CFD shall remain subject to the Special Tax in perpetuity or until the City Council takes appropriate actions to terminate the Special Tax pursuant to the Act.

H. ANNEXATIONS

It is intended that territory will, from time to time, be annexed to the CFD. Such territory will be assigned to new Tax Rate Areas, existing Tax Rate Areas, or a combination of new and existing Tax Rate Areas. In the event annexed territory is assigned to an existing Tax Rate Area, services (of a nature similar to those already provided in connection with the Tax Rate Area) will be provided to the annexed territory (or public improvements associated with the annexed territory).

I. RESTATEMENT

This document has been amended and restated from its original form. The purpose of restatements is to maintain the clarity of this document over time; to allow the document to be relevant to both existing and newly annexed parcels; and to aid in the efficient administration of the CFD. Amendments, except where approved by the relevant property owners, are not intended to increase the Maximum Special Tax Rate(s) applicable to parcels already a part of the CFD at the time of the amendment. To the extent an amendment inadvertently increases the Maximum Special Tax Rate(s) applicable to a Parcel, the Maximum Special Tax Rate(s) (adjusted by any associated Annual Escalation Factor) consented to by the owners of that Parcel at the time the Parcel was annexed to the CFD (or the voter-approved Maximum Special Tax Rate(s)) shall apply to that Parcel.

For purposes of the preceding paragraph, with respect to actions that occurred before a Parcel (the “Current Parcel”) existed, the owners of the Current Parcel shall be understood to mean the owners of the Parcel that included the territory of the Current Parcel at the time the action occurred.

J. FORMER TAX RATE AREA NO. 1

Note that the Tax Rate Area that was designated Tax Rate Area No. 1 in previous versions of this document has been redesignated as Tax Rate Area Nos. LM-01 and SL-01 (the “Successor Areas”). The combined Maximum Special Tax Rates of the Successor Areas is equal to the Maximum Special Tax Rate for former Tax Rate Area No. 1 and, together, the Successor Areas fund all services funded by the former Tax Rate Area No. 1. This change was made for administrative convenience and is not intended to increase the tax on the parcels included in former Tax Rate Area No. 1.

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~~**CITY OF MORENO VALLEY COMMUNITY FACILITIES
DISTRICT NO. 2014-01 (MAINTENANCE SERVICES)
FIRST AMENDED AND RESTATED**~~
RATE AND METHOD OF APPORTIONMENT OF SPECIAL TAX

A Special Tax for the City of Moreno Valley Community Facilities District No. 2014-01 (Maintenance Services) (the "CFD") shall be levied on all Assessor's Parcels in the CFD and collected each Fiscal Year ~~commencing in Fiscal Year 2014/15~~ in an amount determined by the City through the application of the rate and method of apportionment of the Special Tax set forth below. All of the real property in the CFD, unless exempted by law or by the provisions hereof, shall be taxed for the purposes, to the extent and in the manner herein provided.

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“**Proportionately**” means in a manner such that the ratio of the actual Special Tax levy to the Maximum Special Tax is equal for all Assessor's Parcels within each Land Use Class within each Tax Rate Area.

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“**Special Tax**” means the Special Tax to be levied in each Fiscal Year on each Assessor's Parcel of Taxable Property to fund the Special Tax Requirement, and shall include Special Taxes levied or to be levied under Sections C and D, below.

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~~“Tax Rate Area” means a mutually exclusive geographic area in which the Special Tax may be levied pursuant to this RMA. All of the property in the CFD at the time of formation is within Tax Rate Area No. 1. Additional Tax Rate Areas may be created when property is annexed into the CFD, and a separate Special Tax, is identified for property within the new Tax Rate Area at the time of such annexation.~~

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~~A different Maximum Special Tax shall be identified for Tax Rate Areas added to the CFD as a result of future annexations.~~

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~~No Special Tax shall be levied on Tax-Exempt Property.~~

~~1. **Tax Rate Area No. LM-01 (Residential Landscaping)**~~

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I. RESTATEMENT

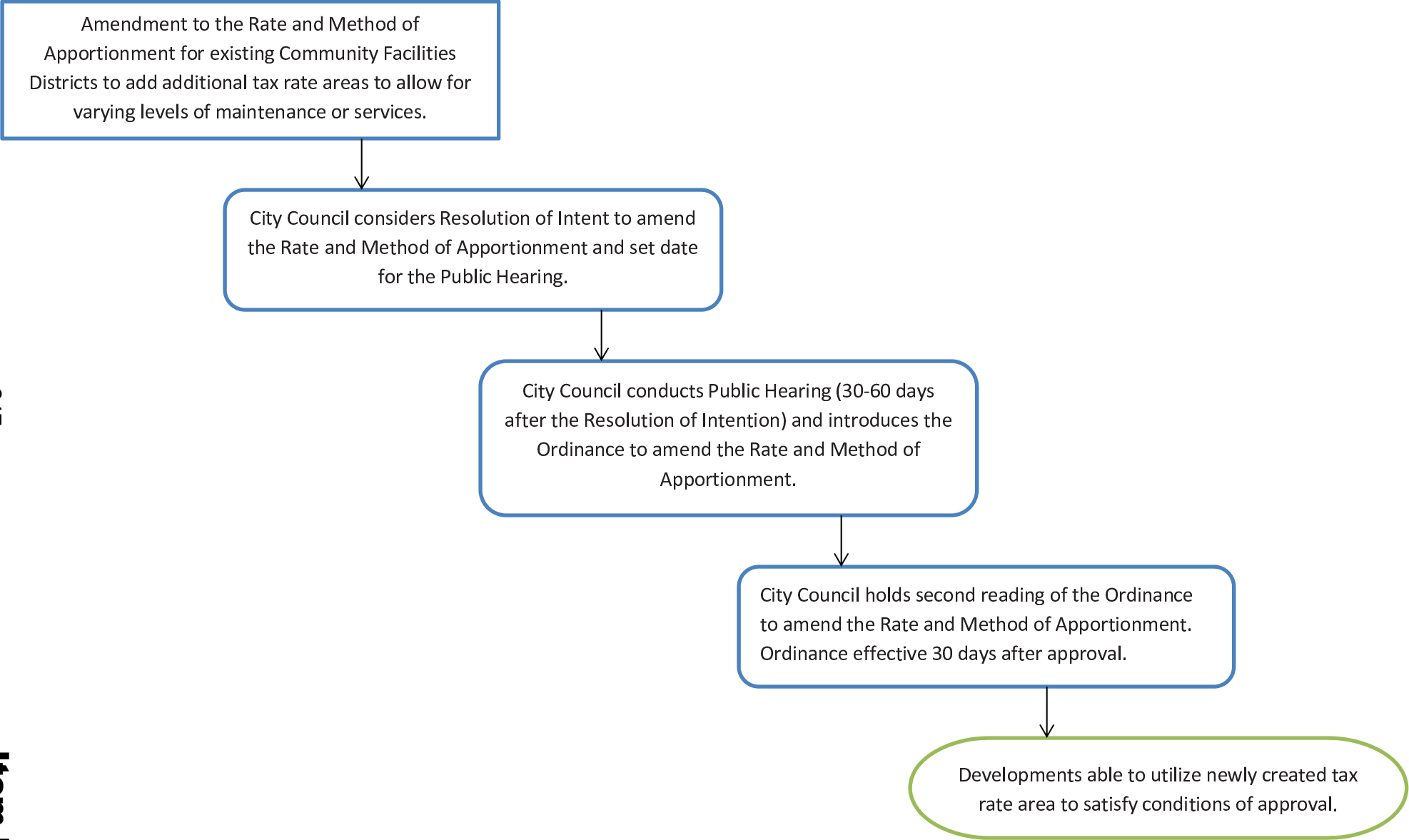
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Process Flow for Procedure to Amend the Rate and Method of Apportionment for Existing Maintenance or Service Community Facilities Districts

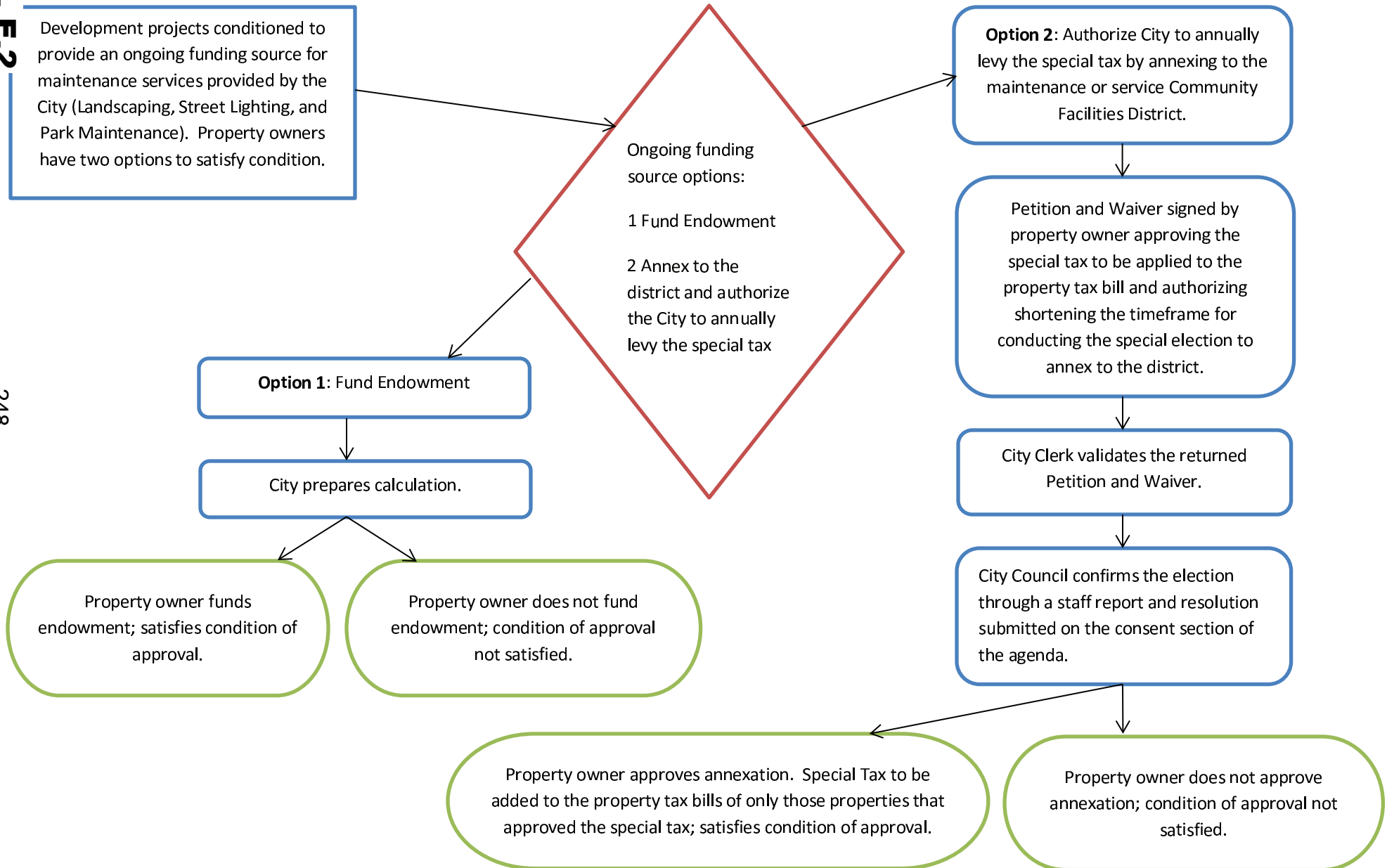


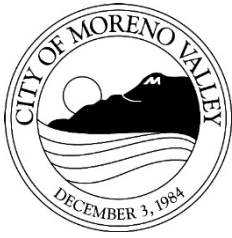
-247-

Item No. E.2

This process flow is simplified for illustration purposes. Contact the Special Districts Division at 951.413.3480 for the detailed process.

Process Flow for Property Owners/Developers to Satisfy Funding Requirement for Existing Maintenance or Service Community Facilities Districts





APPROVALS	
BUDGET OFFICER	<i>me</i>
CITY ATTORNEY	<i>SMB</i>
CITY MANAGER	<i>d</i>

Report to City Council

TO: Mayor and City Council

FROM: John C. Terell, Community and Economic Development Director

AGENDA DATE: October 14, 2014 (Continued from August 26, 2014)

TITLE: A PUBLIC HEARING FOR THE PROLOGIS EUCALYPTUS INDUSTRIAL PARK PROJECT AND RELATED ENVIRONMENTAL IMPACT REPORT. THE PROJECT PROPOSES A GENERAL PLAN AMENDMENT FOR APPROXIMATELY 33 ACRES AND A ZONE CHANGE FOR APPROXIMATELY 84 ACRES. THE LAND USE CHANGES ARE REQUIRED FOR DEVELOPMENT OF FOUR WAREHOUSE DISTRIBUTION BUILDINGS TOTALING 1,529,498 SQUARE FEET. THE DEVELOPER ALSO PROPOSES TENTATIVE PARCEL MAP NO. 35679 TO SUBDIVIDE THE PROJECT SITE INTO FIVE PARCELS. A GENERAL PLAN AMENDMENT IS ALSO REQUIRED FOR PROPOSED CHANGES TO THE CITY'S GENERAL PLAN CIRCULATION ELEMENT AND THE MASTER PLAN OF TRAILS. THE SITE IS LOCATED SOUTH OF STATE ROUTE 60 AND EAST OF THE MORENO VALLEY AUTO MALL, AT FIR AVENUE (FUTURE EUCALYPTUS AVENUE) AND BETWEEN PETTIT STREET AND THE QUINCY CHANNEL. THE APPLICANT IS PROLOGIS.

RECOMMENDED ACTION

Recommendations: That the City Council:

1. Reopen the public hearing for Prologis Eucalyptus Industrial Park Project to receive additional comments on the Reduced Intensity Alternative.
2. Approve Resolution No. 2014-56. A Resolution of the City Council of the City of Moreno Valley, California, Certifying the Final Environmental Impact Report (P07-186) and Adopting the Findings and Statement of Overriding Considerations and Approving the Mitigation Monitoring Program for the Prologis Eucalyptus Industrial Park Project.

3. Approve Resolution No. 2014-57. A Resolution of the City Council of the City of Moreno Valley, California, Approving a General Plan Amendment (PA07-0082) from the R15 land use designation to Business Park for approximately 33 acres for development of a 1,529,498 square foot industrial park located within Assessor's Parcel Numbers 488-330-011, 488-330-022, 488-330-023, 488-330-024 and 488-330-032.
4. Introduce Ordinance No. 883. An Ordinance of the City Council of the City of Moreno Valley, California, Approving a Zone Change (PA07-0081) from Business Park, Business Park Mixed-use, and R15 to Light Industrial for approximately 84 acres for development of a 1,529,498 square foot industrial park located within Assessor's Parcel Numbers 488-330-011, 488-330-022, 488-330-023, 488-330-024 and 488-330-032.
5. Approve Resolution No. 2014-58. A Resolution of the City Council of the City of Moreno Valley, California, Approving Master Plot Plan application PA07-0083 and Plot Plan applications PA07-0158 through PA07-0160 for development of the 1,529,498 square foot Prologis Eucalyptus Industrial Park Project within the 84 acres of Assessor's Parcel Numbers 488-330-011, 488-330-022, 488-330-023, 488-330-024 and 488-330-032.
6. Approve Resolution No. 2014-59. A Resolution of the City Council of the City of Moreno Valley, California, Approving Tentative Parcel Map 35679 (PA07-0084) for development of the 1,529,498 square foot Prologis Eucalyptus Industrial Park Project within the 84 acres of Assessor's Parcel Numbers 488-330-011, 488-330-022, 488-330-023, 488-330-024 and 488-330-032.

SUMMARY

This report recommends Certification of an Environmental Impact Report for the Prologis Eucalyptus Industrial Park Project and approval of the related plot plan and tentative parcel map applications. This item was continued from the August 26, 2014 City Council meeting at the applicant's request to allow them time to prepare a site plan layout that would be consistent with the Reduced Intensity Alternative of the Final Environmental Impact Report (FEIR). That effort is complete.

DISCUSSION

Background

This item was considered by the City Council at a public hearing held on June 24, 2014, and at City Council meetings held on July 8, 2014 and August 26, 2014. The project then continued to the October 14, 2014 City Council public hearing at the applicant's request. This project was continued from the August 26, 2014 City Council meeting agenda at the request of the applicant to allow for time to withdraw Plot Plan applications PA07-0161 (Building 5) and PA07-0162 (Building 6) and to revise project

exhibits for consistency with the Reduced Intensity Alternative of the Final EIR. The Final EIR was also updated for consistency with the Reduced Intensity Alternative.

A City Council public hearing for this project was held on June 24, 2014. At the meeting, information about the project and the related FEIR was presented to the City Council by Planning Division staff and representatives from LSA Associates, Inc., the consulting firm that prepared the environmental documentation. Following the staff report, comments were taken from the applicant and interested parties and residents. At the public hearing, a majority of the fifteen speakers expressed concerns with the project.

After taking comments from the applicant and the public, the public hearing was closed and the City Council voted to continue the item to the City Council's July 8, 2014 agenda.

The meeting on July 8, 2014 was continued to August 26, 2014 at the applicant's request to allow for more time to review comment letters received at the Planning Commission hearing and to consider modifications to the project. The applicant requested a subsequent continuance at the August 26, 2014 meeting. The City Council agreed to the continuance with the item re-scheduled to appear on the October 14, 2014 City Council agenda.

Project

As described previously, the applicant has decided to withdraw the Plot Plan applications for Buildings 5 and 6 and reduce the size of the project from the original proposed project of approximately 2.2 million square feet to approximately 1.5 million square feet.

Staff has worked with the applicant to prepare plot plan and tentative parcel map exhibits that are consistent with the Reduced Intensity Alternative. This has included withdrawal of Plot Plan applications PA07-0161 (Building 5) and PA07-0162 (Building 6) and revisions to the Master Plot Plan and the related Plot Plan and Tentative Parcel Map applications. The southeast corner of the site will no longer be developed but will remain zoned for residential use (R5 and RA-2 zones).

The revised site design has resulted in a reduction in the areas proposed for the General Plan Amendment and Zone Change. The Reduced Intensity Alternative includes a reduction in total building area of approximately 32% from the original proposal.

The Reduced Intensity Alternative version of the project is generally described as a General Plan Amendment for approximately 33 acres from R15 to Business Park and a Zone Change from Business Park, Business Park Mixed-use, and R15 to Light Industrial for approximately 84 acres. The land use changes are required for development of four warehouse distribution facilities totaling 1,529,498 square feet with building sizes that range from 160,106 square feet to 862,035 square feet. The applicant also proposes Tentative Parcel Map No. 35679 to subdivide the project site into five parcels (four parcels for industrial development and a fifth parcel for future

residential development). A General Plan Amendment is also required for proposed changes to the City's circulation element and the Master Plan of Trails. Approval of this project will require certification of an EIR.

The project site is generally located South of State Route 60 and east of Moreno Valley Auto Mall, at Fir Avenue (Future Eucalyptus Avenue) and between Pettit Street and the Quincy Channel.

General Plan Amendment

The project site has current General Plan land use designations that include approximately 50 acres of Business Park, 36 acres of R15 (Residential – up to 15 units per acre), 23 acres of R5 (Residential – up to 5 units per acre), and 12 acres of RA-2 (Residential/Agriculture – up to 2 units per acre).

The applicant proposes to change the land use designation for the R15 portion of the site to Business Park. The proposed change would expand the Business Park designation onto approximately 33 acres that is currently designated for multiple family residential development.

Land uses to the north include the adjacent freeway with Office Commercial, R2 and RA-2 zoned land north of the freeway. Land uses to the east include a mix of Light Industrial and Community Commercial zoned land and RA-2 zoned land with an approved warehouse facility located immediately to the east and a developed warehouse facility further to the east between Redlands Boulevard and Theodore Street. Land uses to the south include vacant RA-2 zone with developed tract homes across the channel from the project site.

The General Plan Amendment also proposes a change to the Circulation Element that would eliminate the connection from Fir Avenue/Future Eucalyptus Avenue to Eucalyptus Avenue/Future Encilia Avenue to the south. The change ensures that traffic generated by existing and proposed non-residential uses is kept separate from residents that live along Eucalyptus Avenue/Future Encilia Avenue to the southeast.

Additionally, the General Plan Amendment proposes changes to the Master Plan of Trails. The proposed change would remove an existing trail segment that runs north/south along the west side of the Quincy Channel between Fir Avenue/Future Eucalyptus Avenue to State Route 60. This trail segment was originally intended to cross the freeway on an overpass at Quincy Street. This overpass is no longer on the City's General Plan Circulation element. With the loss of the overpass, the trail would end in a cul-de-sac at State Route 60.

Staff met with the City's Recreational Trails Board in February 2012 to discuss replacement of the dead end segment of the trail with a new segment of trail on the north side of Fir Avenue/Eucalyptus Avenue that would run from the Quincy Channel west to the site's western boundary ending at the Fire Station #58. The Board was supportive of the change. The applicant has agreed to install the new segment of trail.

Zone Change

The project site has current zoning designations that include approximately 49.5 acres of Business Park, 0.5 acre of Business Park Mixed-use, 36 acres of R15, 23 acres of R5, and 12 acres of RA-2. The applicant proposes to change the Zoning for the portions of the site which are zoned Business Park, Business Park Mixed-Use and R15 to Light Industrial. The proposed change to Light Industrial is compatible with the 50 acres that is currently within a Business Park General Plan designation but would replace approximately 33 acres of R15 zoned land with a Light Industrial zone. The R5 and RA-2 zoned portions of the site will remain unchanged. Development of the project will no longer result in the removal of a portion of the site from the PAKO (Primary Animal Keeping Overlay).

Land uses to the north include the adjacent freeway with Office Commercial, R2 and RA-2 zoned land north of the freeway. Land uses to the east include a mix of Light Industrial and Community Commercial zoned land and RA-2 zoned land with an approved warehouse facility located immediately to the east and a developed warehouse facility further to the east between Redlands Boulevard and Theodore Street. Land uses to the south include vacant RA-2 zone with developed tract homes across the channel from the project site.

Warehouse distribution uses are permitted in both the Business Park and Light Industrial zones, but the size of the buildings proposed by the project requires a Zone Change to Light Industrial to allow for the warehouse facilities over 50,000 square feet.

Plot Plans

Master Plot Plan PA07-0083 proposes the development of an industrial park to include a total of 2,244,419 square feet of warehouse distribution on 122 acres. This application also includes Building #2 on Parcel 2 of TPM 35679 for development of an 862,035 square foot warehouse distribution building on 39.32 acres with 311 required employee parking spaces and 135 required truck parking spaces.

Plot Plan PA07-0158 for Building #1 on Parcel 1 of TPM 35679 proposes development of a 168,342 square foot warehouse distribution building on 8.84 acres with 100 required employee parking spaces and 21 required truck parking spaces.

Plot Plan PA07-0159 for Building #3 on Parcel 3 of TPM 35679 proposes development of a 160,106 square foot warehouse distribution building on 8.5 acres with 98 required employee parking spaces and 20 required truck parking spaces.

Plot Plan PA07-0160 for Building #4 on Parcel 4 of TPM 35679 proposes development of a 339,015 square foot warehouse distribution building on 15.66 acres with 180 required employee parking spaces and 36 required truck parking spaces.

The loading and truck parking areas have been oriented away from adjacent residential zoned parcels and meet/exceed the Municipal Codes minimum buffer distance of 250 feet provided for in the Municipal Code.

All truck courts are screened by perimeter concrete tilt-up walls with a citrus tree row required along the State Route 60 frontage as an extension of the tree plantings along the rear of Fire Station #58. A tree row is also required along the Quincy Channel and southern property lines.

The project has been conditioned to provide standard parking lot and setback landscape to include ground cover shrubs and trees. Detention/water quality basins will be extensively landscaped. The project's Fir Avenue/Future Eucalyptus Avenue frontage will be developed with curb, gutter, parkway, sidewalk and a segment of multi-use trail. A segment of multi-use trail will also be installed on the west side of the Quincy Channel from Fir Avenue/Future Eucalyptus Avenue south to Eucalyptus Avenue/Future Encilia Avenue.

Tentative Parcel Map

Tentative Parcel Map No. 35679 proposes to re-configure the five parcels located within the project site into five new parcels with lettered lots to convey property to Caltrans for future development and to the City for public streets and for maintenance of a water quality basin and portions of the adjacent Quincy Channel

Site

The project site is comprised of vacant land that is mostly level and at grade with Fir Avenue/Future Eucalyptus Avenue and at or below grade of adjacent State Route 60. There are no trees, rock outcroppings or existing structures located within the limits of the project site. The project site includes a portion of the Quincy Channel which includes some riparian vegetation.

Surrounding Area

The project is located in an area that includes a mix of business park, office, commercial, residential and agricultural uses.

Developed land within proximity to the project site includes the Moreno Valley Auto Mall and Moreno Beach Plaza (Walmart) center to the west at Moreno Beach Drive, the 800,430 square foot regional headquarters for ALDI Foods (under construction) to the immediate east, and the 1.8 million square foot Highland Fairview Business Park (Skechers) warehouse facility further to the east between Redlands and Theodore and large lot subdivisions in the RA-2 zone across the channel from the project site.

Access/Parking

The project site will be accessed directly from Fir Avenue/Future Eucalyptus Avenue via Moreno Beach Boulevard or Redlands Boulevard and State Route 60. This portion of Fir Avenue/Future Eucalyptus Avenue, including the bridge crossing at the Quincy Channel would be constructed by the applicant/developer as a condition of the project.

The driveways and interior drive aisles associated with the project have been approved by the Fire Prevention Bureau for fire truck access and turnaround. The site has also been designed for adequate truck maneuvering and turnaround within the designated loading zones. The project as designed satisfies all parking requirements of the City's Municipal Code.

Design/Landscaping

Site design of the proposed warehouse distribution facility is consistent with requirements of the City's Municipal Code. The architectural design of the buildings is concrete tilt-up construction. Building and wall colors include earthtones, with varying amounts of accent colors and vertical features to enhance the architectural character of building. Roof top equipment will be screened from public view by parapet walls.

Staff worked with the applicant to ensure that all sides of the buildings include architectural treatment. The loading bays and trailer storage areas have been screened from view. The screen walls are of concrete tilt-up construction which will match the material and colors of the building.

Landscaping for the project as proposed is at around 18% of the site area including the water quality/detention basins. The City's Municipal Code does not require a minimum percentage of landscape on a site. Instead, there are requirements for landscape setback areas along perimeter streets, parking lot landscape, street trees and landscape treatments around the perimeter of the buildings where visible from the public right-of-way. The project as designed meets the City's landscape criteria.

Signs are not a part of this approval and will be reviewed and approved under separate permit.

This project design conforms to all development standards of the Light Industrial zone and the design guidelines for industrial uses as required within the City's Municipal Code.

REVIEW PROCESS

The project was originally reviewed by the Project Review Staff Committee (PRSC) in September 2007. Modifications were required to the plot plan exhibits and preliminary grading plan.

Revised plans were submitted in January and August 2008 and again in July and November 2011 and July and October 2012. Upon review of a final draft of the site plan and completion of the Final Environmental Impact Report in early 2014, a determination was made to schedule this project for a Planning Commission public hearing.

Community outreach efforts by the applicant in 2012 included mail distribution of project brochures to area residents, neighborhood walks to pass out brochures and open house invitations for an open house held in August 2012 at the Moreno Valley Ranch Golf Club.

Planning Commission Public Hearings for this project were held on March 13 and April 24, 2014. On April 24, 2014, the Planning Commission voted 4-3 recommending that the City Council certify the project Environmental Impact Report and approve the Prologis Eucalyptus Industrial Park project subject to expanding the CEQA findings in the statement of overriding considerations before it was taken to the City Council.

Staff worked with LSA Associates, Inc. to expand the CEQA findings per the direction of the Planning Commission (see pages 139 to 146 of Attachment 21).

Staff worked with the applicant most recently in August and September to prepare a site design that is consistent with the Reduced Intensity Alternative in consideration of the request made to the City Council by the applicant at the August 26, 2014 meeting.

ENVIRONMENTAL

Initial Study/Notice of Preparation

An Initial Study was completed after all discretionary applications were deemed complete. Based on the information within the Initial Study, an Environmental Impact Report (EIR) was recommended to be prepared. A Notice of Preparation for the EIR was issued on February 4, 2008, with the public comment period beginning on February 4, 2008 and ending on March 4, 2008. A public meeting to receive input on the issues to be covered by the EIR was held at City Hall on February 13, 2008.

Draft Environmental Impact Report

Subsequent to the February 13, 2008 meeting, draft environmental documents were prepared by the applicant's consultant LSA Associates, Inc. and submitted to the City and its peer consultant for review.

City staff and the peer review consultant reviewed the draft environmental documents for compliance with the California Environmental Quality Act (CEQA) Guidelines and required revisions to address identified questions and concerns. After revisions were incorporated into the document, the Draft EIR was circulated for a 45-day public review period, starting on July 18, 2012, and ending on September 4, 2012.

The Draft EIR was sent to all required State and local agencies and numerous interested parties on July 17, 2012, as well as to the City's Environmental and Historical Preservation Board. Thirteen comment letters were provided during the 45-day review period.

Final Environmental Impact Report

Responses to the thirteen comment letters received during the 45 day review period are included in the Response to Comments. The Response to Comments and related documents were mailed to all interested parties and responsible agencies on February 26, 2014, to allow for their review prior to the Planning Commission hearing, consistent with the minimum notice period of 10 days required by CEQA. Both the Draft EIR, and the Final EIR were made available for public review at City Hall, the City Library and

posted on the City's website in advance of the March 13, 2014 Planning Commission public hearing.

At the March 13, 2014 Planning Commission public hearing, one speaker identified a letter that had not been addressed in the Final Environmental Impact Report. The project was continued to the April 24, 2014 meeting to allow for time to update the FEIR to include the August 31, 2012 letter and responses to the letter.

Planning worked with LSA Associates, Inc. to update the FEIR to address the concerns raised in the letter. The FEIR was then redistributed to all agencies and interested parties and published on the City's webpage. Notice of the status of the FEIR and the Planning Commission's April 24, 2014 meeting was published in the newspaper, posted at the project site and sent to all property owners within 300 feet and all interested parties.

Questions were raised at the March 13, 2014 Planning Commission hearing about the City's documentation of the SB 18 Tribal Consultation process as referenced in Appendix B. The status of the City's interaction with listed tribal groups has been updated in Appendix B to more accurately describe the City's efforts to satisfy consultation as prescribed by State law.

The Final EIR was updated in September 2014 for consistency with the applicant's request to develop the Reduced Intensity Alternative. The updated FEIR was redistributed to all commenting agencies and interested parties in advance of this October 14, 2014 public hearing.

Significant and Unavoidable Impacts

Analysis presented in the EIR indicates that the proposed project will have a number of potentially significant impacts. The EIR includes mitigation measures to reduce or eliminate potential significant impacts. However, even with proposed mitigation, a number of potential impacts cannot be reduced to a less than significant level. As identified in the Final EIR document, these impacts are considered to be significant and unavoidable.

Where a project's impacts cannot be reduced to less than significant levels, CEQA allows a decision making body to consider a statement of overriding considerations and findings. CEQA requires the decision making agency to balance the economic, legal, social, technological or other benefits of a proposed project against its unavoidable environmental impacts when determining whether to approve the proposed project. This would include project benefits such as the creation of jobs or other beneficial project features versus project impacts that cannot be mitigated to less than significant levels. If the decision making body determines that the benefits of a proposed project outweigh the unavoidable adverse environmental effects, it may approve a statement of overriding considerations and approve the project.

As stated previously, the Planning Commission recommended Certification of the Final EIR on April 24, 2014 subject to expanding the CEQA findings in the Statement of Overriding Considerations. Planning staff worked with LSA Associates, Inc. to provide more detailed facts in support of the findings in the statement of overriding considerations. The expanded language is attached to the staff report as Exhibit A of Attachment 2. A strikeout/underline version of the revised findings is included for reference as Attachment 20.

Mitigation Measures

The EIR includes mitigation measures intended to reduce project-specific and cumulative impacts for Air Quality, Biological Resources, Cultural Resources, Hydrology and Water Quality, Noise, Transportation, and Greenhouse Gases and Global Climate Change. All other environmental effects evaluated in the EIR are considered to be less than significant, or can be adequately mitigated below significant thresholds.

Mitigation measures are included to reduce the environmental impacts where possible, even where the impacts could not be reduced to less than significant levels. All mitigation measures have also been included as conditions of approval for the project.

Approval and Certification

The City Council has taken public testimony on the EIR and project. Before the proposed project can be acted upon, the City Council will need to review the final environmental document before making a decision to either certify or reject the EIR and project Mitigation Monitoring Program.

ALTERNATIVES

1. Certify the Environmental Impact Report and approve the applications for the Prologis Eucalyptus Industrial Park project. This action would establish Light Industrial zoning along the south side of State Route 60, allowing development of approximately 1.5 million square feet of warehouse distribution use. This action would change 33 acres of R15 zoned land and allow expansion of warehouse distribution uses south of Fir Avenue/Future Eucalyptus Avenue. Staff recommends this alternative.
2. Do not Certify the Environmental Impact Report and Deny the applications for the Prologis Eucalyptus Industrial Park Project. This action would retain the current General Plan and Zoning designations for the project site which allow for limited commercial, business park and office type uses in buildings of 50,000 square feet or less along the State Route 60 frontage. Also, the R15, R5 and RA-2 zoned land would remain available for future residential development. Staff does not recommend this alternative.

FISCAL IMPACT

Not applicable.

CITY COUNCIL GOALS

The recommended Reduced Intensity Alternative is consistent with the following City Council goals:

- Revenue diversification – Development of the project will develop a variety of City revenue sources and policies to create a stable revenue base and fiscal policies to support essential City services, regardless of economic climate.
- Positive Environment – The architectural design and the site design of the proposed project will create a positive environment for the development of Moreno Valley's future.
- Community Image, Neighborhood Pride and Cleanliness - The project as designed and conditioned will construct needed public infrastructure and provide attractive parkway and private landscape which will promote a sense of community pride and foster an excellent image about our City.

NOTIFICATION

A notice of the public hearing was published in the newspaper, posted at required City locations and at the project site, and mailed to property owners within 300 feet of the proposed project. Notice was also provided to all interested parties that requested a notice.

As of the date of report preparation, staff has received no public inquiries in response to the noticing for the City Council public hearing for this project.

ATTACHMENTS

1. Public Hearing Notice
2. City Council Staff Report – August 26, 2014
3. City Council Staff Report – July 8, 2014
4. City Council Staff Report – June 24, 2014
5. Proposed Resolution No. 2014-56
6. Proposed Resolution No. 2014-57
7. Proposed Ordinance No. 883
8. Proposed Resolution No. 2014-58
9. Proposed Resolution No. 2014-59
10. Aerial Map
11. Original Master Plot Plan
12. Reduced Intensity Alternative - Architectural Plans
13. Preliminary Grading Plan
14. Tentative Parcel Map 35679
15. Public comment letters – March 13, 2014 Planning Commission meeting
16. Public comment letters – April 24, 2014 Planning Commission meeting

17. Responses to April 24, 2014 comment letters
18. Planning Commission Staff Report – March 13, 2014
19. Planning Commission Staff Report – April 24, 2014
20. Planning Commission minutes from March 13, 2014 and April 24, 2014 meetings
21. Revisions to CEQA Findings – June 2014
22. Revisions to CEQA Findings and Statement of Overriding Considerations
23. Continuance Request Letter - July 3, 2014
24. Continuance Request Letter - June 30, 2014
25. Continuance Request Letter - October 5, 2014
26. Revisions to Final Environmental Report – September 2014
27. Final Environmental Impact Report
28. Draft Environmental Impact Report
29. Revisions to CEQA Findings – October 2014

Prepared By:
Jeff Bradshaw
Associate Planner

Department Head Approval:
John C. Terell, AICP
Community & Economic Development Director

Concurred By:
Richard J. Sandzimier
Planning Official



Notice of PUBLIC HEARING

This may affect your property. Please read.

Notice is hereby given that a Public Hearing will be held by the City Council of the City of Moreno Valley on the following item(s):

CASE: PA07-0081 - Zone Change
 PA07-0082 - General Plan Amendment
 PA07-0083 - Master Plot Plan including Building 2
 PA07-0084 - Tentative Parcel Map 35679
 PA07-0158 - Plot Plan for Building 1
 PA07-0159 - Plot Plan for Building 3
 PA07-0160 - Plot Plan for Building 4
 P07-186 - Environmental Impact Report

APPLICANT: Prologis
OWNER: Prologis
REPRESENTATIVE: Prologis

LOCATION: South of State Route 60 and east of Moreno Valley Auto Mall, at Fir Avenue (Future Eucalyptus Avenue) and between Pettit Street and the Quincy Channel.

PROPOSAL: General Plan Amendment for approximately 33 acres from R15 to Business Park and Zone Change from Business Park, Business Park Mixed-use, and R15 to Light Industrial for approximately 84 acres to develop four warehouse distribution facilities totaling 1,529,498 square feet with building sizes that range from 160,106 to 862,035 square feet. Tentative Parcel Map No. 35679 proposes to subdivide the project site into five parcels. Parcels 1 through 4 to be used for four industrial buildings and Parcel 5 for future residential development under its existing R5 and RA-2 zoning. A General Plan Amendment is also required for proposed changes to the City's circulation element and the Master Plan of Trails. This item was considered by the City Council at public hearings held on June 24, 2014, July 8, 2014 and August 26, 2014 and last continued to the October 14, 2014 City Council public hearing at the applicant's request to prepare a site plan layout consistent with the Reduced Intensity Alternative presented in the Draft Environmental Impact Report. Plot Plan applications PA07-0161 and PA07-0162 have been withdrawn and the Master Plot Plan and the related Plot Plan and Tentative Parcel Map applications updated to reflect the Reduced Intensity Alternative with a reduction in total building area of approximately 32% from the original proposal.

ENVIRONMENTAL DETERMINATION: Environmental Impact Report

COUNCIL DISTRICT: 3

Any person interested in any listed proposal can contact the Community & Economic Development Department, Planning Division, at 14177 Frederick St., Moreno Valley, California, during normal business hours (7:30 a.m. to 5:30 p.m., Monday through Thursday and Fridays from 7:30 a.m. to 4:30 p.m.), or may telephone (951) 413-3206 for further information. The associated documents will be available for public inspection at the above address.

In the case of Public Hearing items, any person may also appear and be heard in support of or opposition to the project or recommendation of adoption of the Environmental Determination at the time of the Hearing.

The City Council, at the Hearing or during deliberations, could approve changes or alternatives to the proposal.

If you challenge any of these items in court, you may be limited to raising only those items you or someone else raised at the Public Hearing described in this notice, or in written correspondence delivered to the City Council at, or prior to, the Public Hearing.



LOCATION N Ø

CITY COUNCIL HEARING

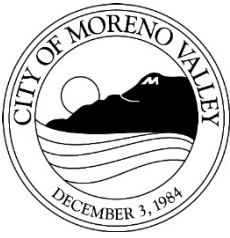
City Council Chamber, City Hall
 14177 Frederick Street
 Moreno Valley, Calif. 92553

DATE AND TIME: October 14, 2014 at 6 PM

CONTACT PLANNER: Jeff Bradshaw

PHONE: (951) 413-3224

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APPROVALS	
BUDGET OFFICER	<i>me</i>
CITY ATTORNEY	<i>SMB</i>
CITY MANAGER	<i>d</i>

Report to City Council

TO: Mayor and City Council

FROM: John C. Terell, Community and Economic Development Director

AGENDA DATE: August 26, 2014

TITLE: A PUBLIC HEARING FOR THE PROLOGIS EUCALYPTUS INDUSTRIAL PARK PROJECT AND RELATED ENVIRONMENTAL IMPACT REPORT. THE PROJECT PROPOSES A GENERAL PLAN AMENDMENT AND A ZONE CHANGE FOR 122 ACRES. THE LAND USE CHANGES ARE REQUIRED FOR DEVELOPMENT OF SIX WAREHOUSE DISTRIBUTION FACILITIES TOTALING 2,244,419 SQUARE FEET. THE DEVELOPER ALSO PROPOSES TENTATIVE PARCEL MAP NO. 35679 TO SUBDIVIDE THE PROJECT SITE INTO SIX PARCELS. A GENERAL PLAN AMENDMENT IS ALSO REQUIRED FOR PROPOSED CHANGES TO THE CITY'S GENERAL PLAN CIRCULATION ELEMENT AND THE MASTER PLAN OF TRAILS. THE SITE IS LOCATED SOUTH OF STATE ROUTE 60 AND EAST OF THE MORENO VALLEY AUTO MALL, AT FIR AVENUE (FUTURE EUCALYPTUS AVENUE) AND BETWEEN PETTIT STREET AND THE QUINCY CHANNEL. THE APPLICANT IS PROLOGIS

RECOMMENDED ACTION

Recommendations: That the City Council:

1. Consider the applicant's request for a continuance of this item to the City Council's October 14, 2014 public hearing agenda to allow for time to modify the project documents for consistency with the reduced intensity alternative.

SUMMARY

A public hearing was held for this item on July 8, 2014. After taking comments from the applicant regarding their request for a continuance, the item was continued to the City

Council's August 26, 2014 agenda. In a letter dated August 5, 2014, the applicant requested that the City Council review and then provide input and direction on a modified plan that is consistent with the project Final Environmental Impact Report (FEIR)'s reduced intensity alternative. The letter also requests a continuance to the October 14, 2014 public hearing agenda if the City Council is supportive of the modified plan.

DISCUSSION

In a letter dated August 5, 2014, the applicant has requested a continuance of this item to the Council's October 14, 2014 agenda (see Attachment 1) to consider a modified version of the project.

The applicant stated in the August 5th letter that in an attempt to be responsive to concerns raised by the City Council, the Planning Commission, and the public during the various public hearings, Prologis has decided to prepare a modified version of the project that would be consistent with the reduced intensity alternative referenced in the project EIR. Staff agrees that the reduced intensity alternative addresses concerns raised during prior hearings on the project. Prologis is requesting that the City Council not take action on the original project but instead continue the item to consider the "Less Intensive Modified Plan."

Prologis indicates that it is prepared to work with City staff to update the FEIR and other project documents as needed to reflect the reduced intensity alternative and re-circulate the FEIR prior to a final vote by the City Council. The preparation of the plans consistent with the reduced intensity alternative will require the expenditure of additional money to prepare updated plans and studies. Prologis has stated their willingness to undertake the additional time and cost.

A City Council public hearing for this project was held on June 24, 2014. At the meeting, information about the project and the related FEIR was presented to the City Council by Planning Division staff and representatives from LSA Associates, Inc., the consulting firm that prepared the environmental documentation. Following the staff report, comments were taken from the applicant and interested parties and residents. At the public hearing, a majority of the fifteen speakers expressed concerns with the project.

After taking comments from the applicant and the public, the public hearing was closed and the item was continued to the City Council's July 8, 2014 agenda.

The applicant submitted letters to the City on June 30, 2014 and July 3, 2014, requesting a continuance of their item from the July 8, 2014 meeting to the August 26, 2014 meeting to allow for more time to review comment letters received at the Planning Commission hearing and to consider modifications to the project.

Copies of the previous City Council staff reports, the project EIR and plans are available at the City's website at the following link: http://www.moval.org/city_council/agendas-sire.shtml

ALTERNATIVES

1. Consider the applicant's request for a continuance of this item to the City Council's October 14, 2014 public hearing agenda to allow for time to modify the project for consistency with the reduced intensity alternative. **Staff recommends this alternative.**
2. Certify the Environmental Impact Report and approve the applications for the Prologis Eucalyptus Industrial Park project.
3. Do not Certify the Environmental Impact Report and Deny the applications for the Prologis Eucalyptus Industrial Park Project.

FISCAL IMPACT

Not applicable.

CITY COUNCIL GOALS

Not applicable.

NOTIFICATION

A notice of the August 26, 2014 public hearing was not necessary since this item was continued to a date specific at the July 8, 2014 public hearing.

EXHIBITS

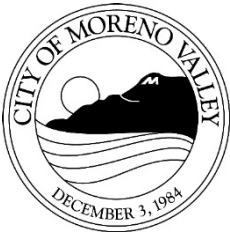
1. Reduced intensity alternative letter and continuance request
2. Attachments 1 through 19 from June 24th Public Hearing

Prepared By:
Jeff Bradshaw
Associate Planner

Department Head Approval:
John C. Terell, AICP
Community & Economic Development Director

Concurred By:
Chris Ormsby
Interim Planning Official

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APPROVALS	
BUDGET OFFICER	<i>me</i>
CITY ATTORNEY	<i>SMB</i>
CITY MANAGER	<i>d</i>

Report to City Council

TO: Mayor and City Council

FROM: John C. Terell, Community and Economic Development Director

AGENDA DATE: July 8, 2014 (Continued from June 24, 2014)

TITLE: A PUBLIC HEARING FOR THE PROLOGIS EUCALYPTUS INDUSTRIAL PARK PROJECT AND RELATED ENVIRONMENTAL IMPACT REPORT. THE PROJECT PROPOSES A GENERAL PLAN AMENDMENT AND A ZONE CHANGE FOR 122 ACRES. THE LAND USE CHANGES ARE REQUIRED FOR DEVELOPMENT OF SIX WAREHOUSE DISTRIBUTION FACILITIES TOTALING 2,244,419 SQUARE FEET. THE DEVELOPER ALSO PROPOSES TENTATIVE PARCEL MAP NO. 35679 TO SUBDIVIDE THE PROJECT SITE INTO SIX PARCELS. A GENERAL PLAN AMENDMENT IS ALSO REQUIRED FOR PROPOSED CHANGES TO THE CITY'S GENERAL PLAN CIRCULATION ELEMENT AND THE MASTER PLAN OF TRAILS. THE SITE IS LOCATED SOUTH OF STATE ROUTE 60 AND EAST OF THE MORENO VALLEY AUTO MALL, AT FIR AVENUE (FUTURE EUCALYPTUS AVENUE) AND BETWEEN PETTIT STREET AND THE QUINCY CHANNEL. THE APPLICANT IS PROLOGIS

RECOMMENDED ACTION

Recommendations: That the City Council:

1. Pursuant to the applicant's request, continue this item to the City Council's August 26, 2014, public hearing agenda.

SUMMARY

A public hearing was held for this item on June 24, 2014. After taking comments from the applicant and the public, the public hearing was closed and the item was continued to the City Council's July 8, 2014 agenda.

DISCUSSION

Background

A City Council public hearing for this project was held on June 24, 2014. At the meeting, information about the project and the related Final Environmental Impact Report (FEIR) was presented to the City Council by Planning Division staff and representatives from LSA Associates, Inc., the consulting firm that prepared the environmental documentation. Following the staff report, comments were taken from the applicant and interested parties and residents. At the public hearing, a majority of the fifteen speakers expressed concerns with the project.

In addition to the comments of the speakers, there were several letters and emails submitted to the City Council expressing opposition to the project and the related Environmental Impact Report.

LSA Associates, Inc. prepared written responses to most of the comment letters. There was not sufficient time to prepare a written response to comments submitted the afternoon of the meeting.

After taking comments from the applicant and the public, the public hearing was closed and the item was continued to the City Council's July 8, 2014 agenda.

The applicant submitted a letter to the City on June 30, 2014, requesting a continuance of their item from the July 8, 2014 meeting to the August 26, 2014 meeting to allow for more time to review comment letters received at the June 24, 2014 meeting. See Attachment 1 for a copy of the continuance request letter.

ALTERNATIVES

Not applicable.

FISCAL IMPACT

Not applicable.

CITY COUNCIL GOALS

Not applicable.

NOTIFICATION

A notice of the July 8, 2014 public hearing was not necessary since this item was continued to a date specific at the June 24, 2014 public hearing. As of the date of report preparation, staff had received no additional public inquiries for this project.

ATTACHMENTS

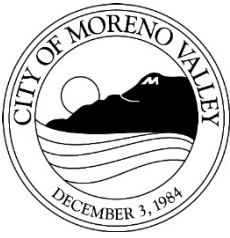
1. Continuance request letter

Prepared By:
Jeff Bradshaw
Associate Planner

Department Head Approval:
John C. Terell, AICP
Community & Economic Development Director

Concurred By:
Chris Ormsby
Interim Planning Official

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APPROVALS	
BUDGET OFFICER	<i>JTT</i>
CITY ATTORNEY	<i>JMB</i>
CITY MANAGER	<i>[Signature]</i>

Report to City Council

TO: Mayor and City Council

FROM: John C. Terell, Community and Economic Development Director

AGENDA DATE: June 24, 2014

TITLE: A PUBLIC HEARING FOR THE PROLOGIS EUCALYPTUS INDUSTRIAL PARK PROJECT AND RELATED ENVIRONMENTAL IMPACT REPORT. THE PROJECT PROPOSES A GENERAL PLAN AMENDMENT AND A ZONE CHANGE FOR 122 ACRES. THE LAND USE CHANGES ARE REQUIRED FOR DEVELOPMENT OF SIX WAREHOUSE DISTRIBUTION FACILITIES TOTALING 2,244,419 SQUARE FEET. THE DEVELOPER ALSO PROPOSES TENTATIVE PARCEL MAP NO. 35679 TO SUBDIVIDE THE PROJECT SITE INTO SIX PARCELS. A GENERAL PLAN AMENDMENT IS ALSO REQUIRED FOR PROPOSED CHANGES TO THE CITY'S GENERAL PLAN CIRCULATION ELEMENT AND THE MASTER PLAN OF TRAILS. THE SITE IS LOCATED SOUTH OF STATE ROUTE 60 AND EAST OF THE MORENO VALLEY AUTO MALL, AT FIR AVENUE (FUTURE EUCALYPTUS AVENUE) AND BETWEEN PETTIT STREET AND THE QUINCY CHANNEL. THE APPLICANT IS PROLOGIS

RECOMMENDED ACTION

Recommendations: That the City Council:

1. Conduct a public hearing for Prologis Eucalyptus Industrial Park Project and subsequent to the public hearing:
2. Approve Resolution No. 2014-56. A Resolution of the City Council of the City of Moreno Valley, California, Certifying the Final Environmental Impact Report (P07-186) and Adopting the Findings and Statement of Overriding Considerations and Approving the Mitigation Monitoring Program for the Prologis Eucalyptus Industrial Park Project, included as Exhibits A and B.

3. Approve Resolution No. 2014-57. A Resolution of the City Council of the City of Moreno Valley, California, Approving a General Plan Amendment (PA07-0082) from R15, R5, and RA-2 land use designations to Business Park for approximately 71 acres for development of a 2,244,419 square foot industrial park located within Assessor's Parcel Numbers 4880330-011, -012, -013, -017, -018, -019, -020 and -021, as shown on the General Plan Amendment Map included as Exhibit A.
4. Introduce Ordinance No. 880. An Ordinance of the City Council of the City of Moreno Valley, California, Approving a Zone Change (PA07-0081) from Business Park, Business Park Mixed-use, R15, R5, and RA-2 to Light Industrial for approximately 122 acres for development of a 2,244,419 square foot industrial park located within Assessor's Parcel Numbers 488-330-011, 012, -013, -017, -018, -019, -020, and -021, as shown on the Zone Change Map included as Exhibit A.
5. Approve Resolution No. 2014-58. A Resolution of the City Council of the City of Moreno Valley, California, Approving Master Plot Plan application PA07-0083 and Plot Plan applications PA07-0158 through PA07-0162 for development of the 2,244,419 square foot Prologis Eucalyptus Industrial Park Project within the 122 acres of Assessor's Parcel Numbers 488-330-011, 012, -013, -017, -018, -019, -020, and -021, subject to the conditions of approval included as Exhibit A.
6. Approve Resolution No. 2014-59. A Resolution of the City Council of the City of Moreno Valley, California, Approving Tentative Parcel Map 35679 (PA07-0084) for development of the 2,244,419 square foot Prologis Eucalyptus Industrial Park Project within the 122 acres of Assessor's Parcel Numbers 488-330-011, 012, -013, -017, -018, -019, -020, and -021, subject to the conditions of approval included as Exhibit A.

SUMMARY

This report recommends that the City Council conduct a Public Hearing and consider staff's recommendation to approve the Prologis Eucalyptus Industrial Park project and related Environmental Impact Report. Following the Planning Commission Public Hearing on April 24, 2014, the Planning Commission approved a resolution recommending that the City Council approve this project.

DISCUSSION

Background

A Planning Commission Public Hearing for this project was held on March 13, 2014. At the meeting information about the project and the related Final Environmental Impact Report (FEIR) was presented to the Planning Commission by Planning Division staff and representatives from LSA Associates, Inc. who prepared the FEIR. Following the staff report, comments were taken from the applicant and interested parties and residents.

At the public hearing, one speaker identified a letter that had not been addressed in the FEIR. The project was continued to the April 24, 2014 meeting to allow for time to update the FEIR to include the August 31, 2012 letter and responses to the letter.

Planning worked with LSA Associates, Inc. to update the FEIR to address the concerns raised in the letter. The FEIR was redistributed to all agencies and interested parties and published on the City's webpage. Notice of the status of the FEIR and the Planning Commission's April 24, 2014 meeting was published in the newspaper, posted at the project site and sent to all property owners within 300 feet and all interested parties.

A second Planning Commission Public Hearing was held on April 24, 2014. At the meeting updated information about the project and the related FEIR was presented to the Planning Commission by Planning Division staff and representatives from LSA Associates, Inc. Following the staff report, public comments were provided by the applicant, interested parties and residents.

The Planning Commission supported staff's recommendation to restrict development of the two parcels located immediately adjacent to the Auto Mall. Planning condition of approval P3 states that, "No building permits shall be issued for the warehouse distribution buildings approved for Plot Plan PA07-0158 and Plot Plan PA07-0159 during the initial 18 months of this approval."

The Planning Commission voted 4-3 to recommend that the City Council certify the project Environmental Impact Report and approve the Prologis Eucalyptus Industrial Park project subject to expanding the findings in the Statement of Overriding Considerations (SOC) before it was taken to the City Council. The SOC is required by the California Environmental Quality Act (CEQA) when an agency approves a project with potential significant environmental impacts.

Project

The applicant, Prologis, has submitted ten applications for development of the Prologis Eucalyptus Industrial Park Project, which include a General Plan Amendment, Zone Change, Master Plot Plan, related Plot Plans, a Tentative Parcel Map, and an Environmental Impact Report, in order to develop a 2,244,419 square foot industrial park on a 122 acre site (Assessor's Parcel Numbers 488-330-011, 012, -013, -017, -018, -019, -020, and -021) located South of State Route 60 and east of Moreno Valley Auto Mall, at Fir Avenue (Future Eucalyptus Avenue) and between Pettit Street and the Quincy Channel.

General Plan Amendment

The project site has current General Plan land use designations that include approximately 50 acres of Business Park, 36 acres of R15 (Residential – up to 15 units per acre), 23 acres of R5 (Residential – up to 5 units per acre), and 12 acres of RA-2 (Residential/Agriculture – up to 2 units per acre). The applicant proposes to change the land use designation for the entire project site to BP (Business Park).

Land uses to the north include the adjacent freeway with OC (Office Commercial), R2 (Residential – up to 2 units per acre) and RA-2 zoned land north of the freeway. Land uses to the east include a mix of BP and CC (Community Commercial) zoned land and RA-2 zoned land with an approved warehouse facility located immediately to the east and a developed warehouse facility further to the east between Redlands Boulevard and Theodore Street. Land uses to the south include RA-2 with developed tract homes to the southeast. Land uses to the west include CC (Auto Mall, Moreno Beach Plaza and Stoneridge Towne Centre).

The General Plan Amendment also proposes a change to the Circulation Element to eliminate the connection from Fir Avenue/Future Eucalyptus Avenue to Eucalyptus Avenue/Future Encilia Avenue to the south. The change ensures that traffic generated by existing and proposed non-residential uses would be kept separate from residential areas along Eucalyptus Avenue/Future Encilia Avenue to the south and southeast.

Additionally, the General Plan Amendment proposes changes to the Master Plan of Trails. The proposed change would remove an existing trail segment that runs north/south along the west side of the Quincy Channel between Fir Avenue/Future Eucalyptus Avenue to State Route 60. This trail segment was originally intended to cross the freeway on an overpass at Quincy Street. This overpass is no longer on the City's General Plan Circulation element. Without the overpass, trail would end in a cul-de-sac at State Route 60.

The City's Recreational Trails Board met in February 2012 to discuss replacement of the dead end segment of the trail with a new segment of trail on the north side of Fir Avenue/Eucalyptus Avenue that would run from the Quincy Channel west to the site's western boundary ending at the Fire Station #58. The Board was supportive of the change. The General Plan Amendment would add the new trail segment.

Zone Change

The project site has current zoning designations that include 49.5 acres of BP, 0.5 acre of BPX (Business Park Mixed-use), 36 acres of R15, 23 acres of R5, and 12 acres of RA-2. The applicant proposes to change the zoning for the entire project site to LI (Light Industrial). The proposal would also result in the removal of a portion of the site from the PAKO (Primary Animal Keeping Overlay).

Zoning to the north includes OC, R2 and RA-2 land north of the freeway. Zoning to the east includes LI, CC and RA-2 land. Zoning to the south include vacant and developed RA-2 land. Zoning to the west is C (Commercial) under Specific Plan 209 and CC.

Warehouse distribution uses are permitted in both the BP and LI zones, but the size of the buildings proposed by the project requires a Zone Change to Light Industrial to allow for the warehouse facilities over 50,000 square feet.

Plot Plans

Master Plot Plan PA07-0083 proposes the development of an industrial park with 2,244,419 square feet of warehouse facilities on 122 acres. This application also

includes Building #2 on Parcel 2 of TPM 35679 for development of an 862,035 square foot warehouse distribution building on 39.32 acres with 311 required employee parking spaces and 135 required truck parking spaces.

Plot Plan PA07-0158 for Building #1 on Parcel 1 of TPM 35679 proposes development of a 168,342 square foot warehouse distribution building on 8.84 acres with 100 required employee parking spaces and 21 required truck parking spaces.

Plot Plan PA07-0159 for Building #3 on Parcel 3 of TPM 35679 proposes development of a 160,106 square foot warehouse distribution building on 8.5 acres with 98 required employee parking spaces and 20 required truck parking spaces.

Plot Plan PA07-0160 for Building #4 on Parcel 4 of TPM 35679 proposes development of a 339,015 square foot warehouse distribution building on 15.66 acres with 180 required employee parking spaces and 36 required truck parking spaces.

Plot Plan PA07-0161 for Building #5 on Parcel 5 of TPM 35679 proposes development of a 390,102 square foot warehouse distribution building on 19.29 acres with 173 required employee parking spaces and 53 required truck parking spaces.

Plot Plan PA07-0162 for Building #6 on Parcel 6 of TPM 35679 proposes development of a 325,038 square foot warehouse distribution building on 17.55 acres with 176 required employee parking spaces and 53 required truck parking spaces.

The loading and truck parking areas have been oriented away from adjacent residential zoned parcels and meet or exceed the Municipal Codes minimum buffer distance of 250 feet provided for in the Municipal Code.

All truck courts are screened by perimeter concrete tilt-up walls with a citrus tree row required along the State Route 60 frontage as an extension of the tree plantings along the rear of Fire Station #58. A tree row is also required along the Quincy Channel and southern property lines to soften the visual impact of the project and reflect back on the citrus groves previously on the site.

The project has been conditioned to provide standard parking lot and setback landscape to include ground cover shrubs and trees. Detention/water quality basins will be extensively landscaped. The project's Fir Avenue/Future Eucalyptus Avenue frontage will be developed with curb, gutter, parkway, sidewalk and a segment of multi-use trail. A segment of multi-use trail will also be installed on the west side of the Quincy Channel from Fir Avenue/Future Eucalyptus Avenue south to Eucalyptus Avenue/Future Encilia Avenue.

Tentative Parcel Map

Tentative Parcel Map No. 35679 proposes to re-configure the eight parcels located within the project site into six parcels with lettered lots to convey property to Caltrans for future development and to the City for public streets.

Site

The project site is comprised of vacant land that is mostly level and at grade with Fir Avenue/Future Eucalyptus Avenue and at or below grade of adjacent State Route 60. There are no trees, rock outcroppings or existing structures located within the limits of the project site. The project site includes a portion of the Quincy Channel which includes some riparian vegetation.

Surrounding Area

The project is located in an area that includes a mix of business park, office, commercial, residential and agricultural uses.

Developed land within proximity to the project site includes the Moreno Valley Auto Mall and Moreno Beach Plaza (Walmart) center to the west at Moreno Beach Drive, the 800,430 square foot regional headquarters for ALDI Foods (under construction) to the immediate east, and the 1.8 million square foot Highland Fairview Business Park (Skechers) warehouse facility further to the east between Redlands and Theodore and large lot subdivisions in the RA-2 zone across the channel from the project site.

Access/Parking

The project site will be accessed directly from Fir Avenue/Future Eucalyptus Avenue via Moreno Beach Boulevard or Redlands Boulevard and State Route 60. This portion of Fir Avenue/Future Eucalyptus Avenue, including the bridge crossing at the Quincy Channel would be constructed by the applicant/developer as a condition of the project.

The driveways and interior drive aisles associated with the project have been approved by the Fire Prevention Bureau for fire truck access and turnaround. The site has also been designed for adequate truck maneuvering and turnaround within the designated loading zones. The project as designed satisfies all parking requirements of the City's Municipal Code.

Design/Landscaping

Site design of the proposed warehouse distribution facility is consistent with requirements of the City's Municipal Code.

The architectural design of the buildings is concrete tilt-up construction. Building and wall colors include earthtones, with varying amounts of accent colors and vertical features to break up the architecture of building. Roof top equipment will be screened from public view by parapet walls.

Staff worked with the applicant to ensure that all sides of the buildings include architectural treatment. The loading bays and trailer storage areas have been screened from view. The screen walls are of concrete tilt-up construction which will match the building designs and colors.

Landscaping for the project as proposed is at around 18% of the site area including the water quality/detention basins. The City's Municipal Code does not require a minimum percentage of landscape on a site. Instead, there are requirements for landscape setback areas along perimeter streets, parking lot landscape, street trees and landscape treatments around the perimeter of the buildings where visible from the public right-of-way. The project as designed meets the City's current landscape criteria.

Signs are not a part of this approval and would be reviewed and approved under separate administrative permit.

This project design conforms to all development standards of the Light Industrial zone and the design guidelines for industrial uses as required within the City's Municipal Code.

REVIEW PROCESS

The project was originally reviewed by the Project Review Staff Committee (PRSC) in September 2007. Modifications were required to the plot plan exhibits and preliminary grading plan.

Revised plans were submitted in January and August 2008 and again in July and November 2011 and July and October 2012. Upon review of a final draft of the site plan and completion of the Final Environmental Impact Report in early 2014, a determination was made to schedule this project for a Planning Commission public hearing.

Community outreach efforts by the applicant in 2012 included mail distribution of project brochures to area residents, neighborhood walks to pass out brochures and open house invitations for an open house held in August 2012 at the Moreno Valley Ranch Golf Club.

ENVIRONMENTAL

Initial Study/Notice of Preparation

An Initial Study was completed after all discretionary applications were deemed complete. Based on the information within the Initial Study, an Environmental Impact Report (EIR) was recommended to be prepared. A Notice of Preparation for the EIR was issued on February 4, 2008, with the public comment period beginning on February 4, 2008 and ending on March 4, 2008. A public meeting to receive input on the issues to be covered by the EIR was held at City Hall on February 13, 2008.

Draft Environmental Impact Report

Subsequent to that meeting, draft environmental documents were prepared by the applicant's consultant LSA Associates, Inc. and submitted to the City.

City staff and the City's peer consultant reviewed the draft environmental documents for compliance with the California Environmental Quality Act (CEQA) Guidelines and required revisions to address identified questions and concerns. After revisions were

incorporated into the document, the Draft EIR was circulated for a 45-day public review period, starting on July 18, 2012, and ending on September 4, 2012.

The Draft EIR was sent to all required State and local agencies and interested parties on July 17, 2012, as well as to the City's Environmental and Historical Preservation Board. Thirteen comment letters were provided during the 45-day review period.

Final Environmental Impact Report

Responses to the thirteen comments received during the 45 day review period are included in the Response to Comments. The Response to Comments and related documents were mailed to all interested parties and responsible agencies on February 26, 2014, to allow for their review prior to the Planning Commission hearing, within the minimum notice period of 10 days required by CEQA. As was the case with the Draft Environmental Impact Report (DEIR), the draft Final Environmental Impact Report (FEIR) was provided for public review at City Hall, the City Library and posted on the City's website.

As discussed previously, a comment letter and appropriate responses were added to the FEIR following the March 13, 2014 Planning Commission hearing. The FEIR was re-distributed to all commenting agencies and interested parties in advance of the April 24, 2014 public hearing.

Additional questions were raised at the March 13, 2014 Planning Commission hearing about the City's documentation of the SB 18 Tribal Consultation process as referenced in Appendix B. The status of the City's interaction with some of the listed tribal groups has been updated in Appendix B to more accurately describe the City's efforts to satisfy consultation as prescribed by State law.

Significant and Unavoidable Impacts

Analysis presented in the FEIR indicates that the proposed project will have a number of potentially significant impacts. The FEIR includes a number of proposed mitigation measures to reduce or eliminate potential significant impacts. Even with proposed mitigation, a number of potential impacts cannot be reduced to a less than significant level. As identified in the FEIR document, these impacts are considered to be significant and unavoidable.

Where a project's impacts cannot be reduced to less than significant levels, CEQA allows a decision making body to consider a statement of overriding considerations and findings. CEQA requires the decision making agency to balance the economic, legal, social, technological or other benefits of a proposed project against its unavoidable environmental impacts when determining whether to approve the proposed project. This would include project benefits such as the creation of jobs or other beneficial project features versus project impacts that cannot be mitigated to less than significant levels. If the decision making body determines that the benefits of a proposed project outweigh the unavoidable adverse environmental effects, it may approve a statement of overriding considerations and approve the project.

The Planning Commission recommended Certification of the FEIR on April 24, 2014 subject to expanding the CEQA findings in the Statement of Overriding Considerations. Planning staff worked with LSA Associates, Inc. to provide more detailed facts in support of the findings in the in the statement of overriding considerations. The expanded language is attached to the staff report as Exhibit A to Attachment 2. A strikeout/underline version of the revised findings is included for reference as Attachment 15.

Mitigation Measures

The EIR includes mitigation measures intended to reduce project-specific and cumulative impacts for Air Quality, Biological Resources, Cultural Resources, Hydrology and Water Quality, Noise, Transportation, and Greenhouse Gases and Global Climate Change. All other environmental effects evaluated in the FEIR are considered to be less than significant, or can be adequately mitigated below significant thresholds.

Mitigation measures are included to reduce the environmental impacts where possible, even where the impacts could not be reduced to less than significant levels. All mitigation measures have also been included as conditions of approval for the project.

Approval and Certification

The City Council will take public testimony on the FEIR and project. Before the proposed project can be acted upon, the City Council will need to review the final environmental document before making a decision to either certify or reject the FEIR and project Mitigation Monitoring Program.

ALTERNATIVES

1. Certify the Environmental Impact Report and approve the applications for the Prologis Eucalyptus Industrial Park project. **Staff recommends this alternative.**
2. Do not Certify the Environmental Impact Report and Deny the applications for the Prologis Eucalyptus Industrial Park Project. **Staff does not recommend this alternative.**

FISCAL IMPACT

Not applicable.

CITY COUNCIL GOALS

Not applicable.

NOTIFICATION

A notice of the public hearing was published in the newspaper, posted at required City locations and at the project site, and mailed to property owners within 300 feet of the proposed project. Notice was also provided to all interested parties that requested a notice.

As of the date of report preparation, staff had received no public inquiries in response to the noticing for the City Council public hearing for this project.

ATTACHMENTS

1. Public Hearing Notice
2. Proposed Resolution
 - Exhibit A to ATT 2 – Statement of Overriding Considerations
 - Exhibit B to ATT 2 – Mitigation Monitoring Program
3. Proposed Resolution
 - Exhibit A to ATT 3 – General Plan Amendment Map
4. Proposed Ordinance
 - Exhibit A to ATT 4 – Zone Change Map
5. Proposed Resolution
 - Exhibit A to ATT 5 - Plot Plan Conditions of Approval
6. Proposed Resolution
 - Exhibit A to ATT 6 – Tentative Parcel Map 35679 Conditions of Approval
7. Architectural Plans
8. Preliminary Grading Plan
9. Tentative Parcel Map 35679
10. Aerial Map
11. Public Comment letters – March 13, 2014 Planning Commission meeting
12. Public Comment letters – April 24, 2014 Planning Commission meeting
13. Responses to April 24, 2014 comment letters
14. Planning Commission Staff Report – March 13, 2014
15. Planning Commission Staff Report – April 24, 2014
16. Planning Commission minutes from March 13, 2014 and April 24, 2014 meetings
17. Revisions to CEQA Findings and Statement of Overriding Considerations
18. Final Environmental Impact Report
19. Draft Environmental Impact Report

Prepared By:
Jeff Bradshaw
Associate Planner

Department Head Approval:
John C. Terell, AICP
Community & Economic Development Director

Concurred By:
Chris Ormsby
Interim Planning Official

RESOLUTION NO. 2014-56

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF MORENO VALLEY, CALIFORNIA, CERTIFYING THE FINAL ENVIRONMENTAL IMPACT REPORT (P07-186) AND ADOPTING THE FINDINGS AND STATEMENT OF OVERRIDING CONSIDERATIONS AND APPROVING THE MITIGATION MONITORING PROGRAM FOR THE PROLOGIS EUCALYPTUS INDUSTRIAL PARK PROJECT

WHEREAS, the applicant, Prologis, submitted applications for the Prologis Eucalyptus Industrial Park which include an Environmental Impact Report (P07-186), a General Plan Amendment (PA07-0082), a Zone Change (PA07-0081), Master Plot Plan PA07-0083 and related Plot Plans for a total of five buildings. The development of the industrial park includes a total of 1,529,498 square feet of warehouse distribution space on approximately 84 acres (this application also includes an 862,035 square foot warehouse facility on 39.32 acres), Plot Plan PA07-0158 for a 168,342 square foot warehouse distribution building on 8.84 acres, Plot Plan PA07-0159 for a 160,106 square foot warehouse distribution building on 8.5 acres, Plot Plan PA07-0160 for a 339,015 square foot warehouse distribution building on 15.66 acres, and Tentative Parcel Map 35679 (PA07-00084). A General Plan Amendment is also required for proposed changes to the City's Circulation Element and the Master Plan of Trails. The above applications shall not be approved unless the Final Environmental Impact Report (P07-186) is certified and approved; and

WHEREAS, the applicant, Prologis, and the environmental consultant, LSA Associates, worked with the City in the preparation of an Initial Study checklist and a Notice of Preparation (NOP). A Notice of Completion and Environmental Document Transmittal was filed with the State Clearinghouse on February 4, 2008 for the Notice of Preparation (NOP) of a Draft EIR for the project. The public review period of the NOP was February 4, 2008 through March 4, 2008. A public scoping meeting was held in connection with the NOP on February 13, 2008 in the Council Chamber at City Hall; and

WHEREAS, the applicant, Prologis, and the environmental consultant, LSA, worked with the City in the review of NOP response comments for the preparation of a Draft Environmental Impact Report (EIR) for this project. The Draft EIR was circulated to the public and to responsible agencies for comments for a 45 day period beginning on July 18, 2012 and ending on September 4, 2012; and

WHEREAS, the City has prepared responses to comments on the Draft EIR received during the 45 day comment period, which have been included in the Final EIR; and

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WHEREAS, on March 1, 2014 and April 12, 2014, the City published a notice in the local newspaper (Press Enterprise) and distributed copies of the draft Final EIR to the State Clearinghouse, local agencies and other interested parties; and

WHEREAS, the draft and final EIR concerning the proposed Prologis Eucalyptus Industrial Park Project were prepared in sufficient detail and duly circulated in compliance with the California Environmental Quality Act (CEQA), the State CEQA Guidelines and the City of Moreno Valley Rules and Procedures to Implement CEQA; and

WHEREAS, since July 18, 2012, copies of the draft EIR have been made available to the public at the City's offices, on the City's website and at the City's public library; and

WHEREAS, the Final EIR includes a review of potential impacts associated with the implementation of the Prologis Eucalyptus Industrial Park Project, including, but not limited to Aesthetics, Agricultural Resources, Air Quality, Land Use and Planning, and Transportation; and

WHEREAS, a Mitigation Monitoring Program has been completed to ensure that all of the mitigation measures outlined in the final EIR are implemented; and

WHEREAS, A Final EIR, (including the Draft EIR, and responses to comments), has been completed and is being recommended for certification, prior to the approval of discretionary permits related to the project; and

WHEREAS, on March 13, 2014, the Planning Commission conducted a public hearing to consider the Final EIR for the proposed project and continued the item to their April 24, 2014 agenda; and

WHEREAS, on April 24, 2014, the Planning Commission conducted a public hearing to consider the Final EIR for the proposed project and recommended City Council approval; and

WHEREAS, on June 24, 2014, the City Council conducted a public hearing to consider the Final EIR for the proposed project; and

WHEREAS, on June 24, 2014, the City Council continued the public hearing for this project to the July 8, 2014 City Council agenda; and

WHEREAS, on July 8, 2014 the applicant requested a continuance to the August 26, 2014 City Council agenda to allow for time to respond to public comments submitted at the June 24, 2014 public hearing; and

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WHEREAS, on July 8, 2014, the City Council continued the project to the August 26, 2014 City Council agenda; and

WHEREAS, on August 26, 2014 the applicant requested a continuance to the October 14, 2014 City Council agenda to allow for time to revise project exhibits that would be consistent with the Reduced Intensity Alternative of the Final EIR; and

WHEREAS, on August 26, 2014, the City Council continued the project to the October 14, 2014 City Council agenda; and

WHEREAS, on October 14, 2014, the City Council conducted a public hearing to consider the Final EIR for the proposed project; and

WHEREAS, all legal prerequisites to the adoption of this Resolution have occurred.

NOW, THEREFORE, BE IT RESOLVED, it is hereby found, determined and resolved by the City Council of the City of Moreno Valley as follows:

A. This City Council hereby specifically finds that all of the facts set forth above in this Resolution are true and correct.

B. Based upon substantial evidence presented to this City Council during the above-referenced meetings on June 24, 2014, July 8, 2014, August 26, 2014 and October 14, 2014, including written and oral staff reports, and the record from the public hearing, this City Council hereby specifically finds as follows:

1. Independent Judgment and Analysis – The Final Environmental Impact Report represents the City's independent judgment and analysis.

FACT: Public hearings were conducted by the City Council on June 24, 2014 and October 14, 2014, during which opportunity was given to address the adequacy of the Final Environmental Impact Report. All comments on the Final EIR raised during the public and agency comment period and at the Public Hearing(s) on the project were considered by the City Council.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF MORENO VALLEY, CALIFORNIA, DOES HEREBY RESOLVE AS FOLLOWS:

1. CERTIFYS that the Final Environmental Impact Report (EIR) for the Prologis Eucalyptus Industrial park Project on file with the Community & Economic Development Department, incorporated herein by this reference, has been completed in compliance with the California Environmental Quality Act, that the City Council reviewed and considered the information contained in the

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Final EIR and that the Final EIR reflects the City's independent judgment and analysis; and

2. ADOPTS the Findings and Statement of Overriding Considerations regarding the Final EIR for the Prologis Eucalyptus Industrial Park Project, attached hereto as Exhibit A; and
3. APPROVES the Mitigation Monitoring Program for the Final EIR for the proposed Prologis Eucalyptus Industrial Park Project, attached hereto as Exhibit B.

APPROVED AND ADOPTED this 14th day of October, 2014.

Mayor

ATTEST:

City Clerk

APPROVED AS TO FORM:

City Attorney

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Date Adopted: October 14, 2014

RESOLUTION JURAT

STATE OF CALIFORNIA)
COUNTY OF RIVERSIDE) ss.
CITY OF MORENO VALLEY)

I, Jane Halstead, City Clerk of the City of Moreno Valley, California, do hereby certify that Resolution No. 2014-56 was duly and regularly adopted by the City Council of the City of Moreno Valley at a regular meeting thereof held on the 14th day of October, 2014, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

(Council Members, Mayor Pro Tem and Mayor)

CITY CLERK

(SEAL)

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**Facts, Findings and Statement of Overriding Considerations
Regarding the Environmental Effects and the Approval of the
ProLogis Eucalyptus Industrial Park
(State Clearinghouse No. 2008021002)**

I. INTRODUCTION

The City Council of the City of Moreno Valley (this “Council”), in certifying the EIR for the Prologis Eucalyptus Industrial Park and approving a General Plan Amendment, a Zone Change, Tentative Parcel Map 35679 and a Master Plot Plan and related Plot Plans authorizing the construction of 1,529,498 square feet of distribution warehouse space (the “Project”), makes the Findings described below and adopts the Statement of Overriding Considerations presented at the end of the Findings. The Environmental Impact Report (“EIR”) was prepared by the City of Moreno Valley (“City”) acting as lead agency pursuant to the California Environmental Quality Act (“CEQA”). Hereafter, unless specifically identified, the Notice of Preparation (“NOP”), Notice of Availability & Completion (“NOA/NOC”), Draft EIR (“DEIR”), Technical Studies, Final EIR containing Responses to Comments and textual revisions to the Draft EIR (“FEIR”), and the Mitigation Monitoring and Reporting Program (“MMRP”) will be referred to collectively herein as the “EIR.” These Findings are based on the entire record before this Council, including the EIR. This Council adopts the facts and analyses in the EIR, which are summarized below for convenience. The omission of some detail or aspect of the EIR does not mean that it has been rejected by this Council.

Background

The DEIR analyzed the Prologis Eucalyptus Industrial Park, Tentative Parcel Map 35679, and Site Plan as the construction of up to approximately 2,244,638 square feet of distribution warehouse space. Based on input received at the City’s public hearings and after completion of the FEIR on April 2, 2014, the applicant proposed the City adopt a less intensive modified plan which is consistent with the Reduced Intensity Alternative evaluated in DEIR (pages 6-18 through 6-24 and 6-37 through 6-40). The Reduced Intensity Alternative evaluated developing 25% less warehousing on the site (1.7 million square feet) compared to the proposed Project (2.2 million square feet). The applicant has now proposed to

ProLogis Eucalyptus Industrial Park – Facts, Findings, and Statement of Overriding Considerations

develop 4 of the 6 warehouse buildings (1.5 million square feet) which is consistent with the Reduced Intensity Alternative evaluated in DEIR Section 6.0 (1.7 million square feet). The DEIR did not contain a specific site plan depicting the Reduced Intensity Alternative, so the applicant has prepared a site plan that is consistent with the Reduced Intensity Alternative.

The proposed plan is consistent with the Reduced Intensity Alternative and proposes that 84.8 acres of the site would be developed for warehousing while the remaining 38 acres would remain undeveloped at this time. The vacant land would retain its existing General Plan and zoning designations (RA-2 and R-5). This represents a net decrease in square footage of approximately 32 percent compared to the original Proposed Project, and a 7 percent reduction in square feet compared to the Reduced Intensity Alternative evaluated in the DEIR (see Table 4.A of the FEIR). The plot plan applications for the two industrial buildings (Buildings 5 and 6 in the original site plan) that were closest to the residential homes to southeast of the project site have been withdrawn and the buildings removed from the master plot plan.

Warehouse buildings under the Reduced Intensity Alternative are 1,515 feet from the nearest existing residential neighborhood (southwest), and 1,636 feet from the existing neighborhood at the southeast corner. The proposed plan also provides a 250-foot buffer between the nearest warehouse truck court and future residential uses. In addition, the large detention basin that was proposed at the south end of Building 6 in the original plan would be moved to near the southeast corner of Building 4. Approval of this plan would also establish a minimum 250-foot buffer from truck activity areas and future residential uses on the former location of warehouse Buildings 5 and 6 under the original plan. Otherwise, the development characteristics of Buildings 1 through 4 would remain the same as those outlined and analyzed in the Draft EIR. For the purposes of the environmental analysis, the modified plan is considered equivalent to the Reduced Intensity Alternative except where noted in the FEIR that impacts are less than those of the Reduced Intensity Alternative. The modified Master Plot Plan exhibit is shown in Figure 4.2 in the FEIR.

It is important to emphasize that the proposed modified plan would allow development of future residential uses in the southeast portion of the project site, consistent with the existing R5 and RA-2 zoning (Parcel 5), adjacent to the existing residential neighborhood to the southeast. The modified plan

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also has a 250-foot setback from the project warehouses to the future residential uses, consistent with the City's municipal code requirements (i.e., use of a 250-foot buffer and a non-building easement over a portion of Parcel 5).

II. PROJECT SUMMARY

A. PROJECT DESCRIPTION

1. Site Location

The Project is located in the eastern portion of the City of Moreno Valley. The Project site consists of ten parcels totaling approximately 122.8 net acres located south of and adjacent to SR-60, east of Moreno Valley Auto Mall, and adjacent to and west of the Quincy Channel.

The Project site is vacant and supports mainly weedy vegetation. The major road that provides access to the Project site is Eucalyptus Avenue. Land adjacent to the Project site includes vacant land east and south of the proposed Project site, SR-60 to the north, and the Moreno Valley Auto Mall and the City of Moreno Valley Fire Station No. 58 northwest of the Project site. Existing single-family residential uses are located approximately 50 feet southeast of the southeastern corner of the Project site.

2. Project Description of the Reduced Intensity Alternative

The Project site is approximately 122.8 acres in size. The proposed Project includes the construction and operation of a warehouse distribution facility comprised of four buildings totaling 1,529,498 square feet on four separate parcels. The Project site is divided into northern and southern areas. The northern area, north of the future Eucalyptus Avenue, would contain approximately 1,131,379 square feet of warehouse uses divided between two buildings (No. 1 and 2). Development in the southern area, south of the future Eucalyptus Avenue, would consist of approximately 398,121 square feet of warehouse uses divided among two separate buildings (No. 3 and 4). The Project includes the construction of asphalt/concrete surfaces in parking and driving areas, and landscaping along the perimeter and roadway frontages.

The Project site is currently designated R15, R5 and RA-2 Residential and Business Park in the City's General Plan. The site is zoned as Business Park (BP), Business Park/Mixed Use (BPX), ProLogis Eucalyptus Industrial Park – Facts, Findings, and Statement of Overriding Considerations

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Residential 15 District (R15), Residential 5 District (R5), and Residential Agriculture 2 (RA-2). The proposed project is not consistent with the existing General Plan land use and Zoning. Therefore the Project requires a General Plan Amendment which would change the 33 acres of Residential 15 designation to Business Park and a Zone Change that would change the zoning of 84 acres of the site from Business Park and Residential 15 to Light Industrial (LI)res. The 38 acres south of future Eucalyptus Avenue will remain R-5 and RA-2 General Plan land use and zoning to accommodate future residential units.

Finding: From this point forward the Reduced Intensity Alternative is reflected in the findings and the statement of overriding considerations. The modified plan is identified as the “Project” the City Council has considered as “environmentally superior” to the Project analyzed in the DEIR. Additional analysis comparing the Project as proposed in the DEIR has been provided in the FEIR.

4. Actions Covered by the EIR

The EIR will support the following discretionary and non-discretionary approvals:

- General Plan Amendment to amend the Land Use Element resulting in a change of land use designations for portions of the project site (33 acres) from Residential 15 to Business Park.
- General Plan Amendment to amend the Circulation Element including (1) elimination of undeveloped Quincy Street from Eucalyptus Avenue to Encilia Avenue; and (2) realignment of Encilia Avenue from its current alignment such that its westerly terminus is located at Moreno Beach Drive instead of the current General Plan westerly terminus at Eucalyptus Avenue. The segment between Quincy Channel and Moreno Beach Drive would be classified as a Collector.
- Change of Zone resulting in a change for 84 acres from Business Park (BP), Business Park Mixed-Use (BPX), and Residential 15 (R15), to Light Industrial (LI) on the project site.
- Modification of the Master Plan of Trails to eliminate trail segment along the west side of the Quincy Channel north of the future Eucalyptus Avenue and add a segment

along the north side of Eucalyptus Avenue from the Quincy Channel to the west boundary of the project site.

- Approval of a Master Plot Plan and three related Plot Plans.
- Tentative Parcel Map approval.
- Certification of the Environmental Impact Report.
- Final Parcel Map, public improvement agreement, and related securities approval.
- Issuance of an encroachment permit for any construction work done in any City-controlled ROW. Encroachment permit issuance requires approval of improvement plans, public improvement agreement execution with securities posted, and satisfying those conditions of approval required prior to grading.
- Approval of a Storm Water Pollution Prevention Plan (SWPPP) to accommodate site runoff during construction.
- Approval of a Preliminary Water Quality Management Plan (P-WQMP) and Final Water Quality Management Plan (F-WQMP) to mitigate for post-construction runoff flows (non-discretionary).
- Issuance of a Grading Permit that requires approval of a grading plan, approval of the final drainage study, approval of the F-WQMP, obtaining an Notice of Intent and Water Discharge Identification Number, obtaining a WQMP#, and satisfying those conditions of approval required prior to grading (non-discretionary).
- Issuance of a Building Permit. The comprehensive building permit includes building, plumbing, mechanical, and electrical permits (non-discretionary).

Approvals and permits required by other agencies include:

- Approval from the City and Riverside County Flood Control and Water Conservation District (RCFCWCD) to ensure that construction site drainage velocities are equal to or less than the pre-construction conditions and downstream water quality is not worsened

- Approval of Quincy Channel improvements from the RCFCWCD
- A Section 404 Permit from the U.S. Army Corps of Engineers (USACE)
- A Section 401 Water Quality Certification from the Regional Water Quality Control Board (RWQCB)
- A Section 1602 Streambed Alteration Agreement from the California Department of Fish and Wildlife (CDFW)
- Encroachment permits from Caltrans for any construction work done in any State-controlled right of way(i.e., SR-60)

B. PROJECT OBJECTIVES

The Project Objectives include the following:

- Provide industrial warehouse facilities that meet the substantial and unmet demands of businesses located in the City and County;
- Provide new industrial development that is attractive and minimizes conflicts with the surrounding existing uses;
- Provide a variety of new employment opportunities for the citizens of Moreno Valley and surrounding communities;
- Encourage warehouse distribution services that take advantage of the area’s close proximity to various freeways and transportation corridors;
- Encourage new development consistent with the capacity and municipal service capabilities;
- Provide infrastructure improvements to meet phased Project needs in an efficient and cost-effective manner;
- Cluster industrial warehouse uses near access points to the state highway system to reduce traffic congestion on surface streets and to reduce air pollutant emissions from vehicle sources;
- Develop land uses that provide the City with a positive revenue/cost ratio and provide needed infrastructure in a timely fashion;

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- Address community circulation, both vehicular and pedestrian, utilizing available capacity within the existing circulation system, and provide fair share improvements to various future-year deficient intersection or road segments; and
- Reduce peak hour vehicle trips, energy, and water consumption compared to existing General Plan land uses.

III. ENVIRONMENTAL REVIEW AND PUBLIC PARTICIPATION

The City has conducted an extensive review of this Project which included the DEIR, FEIR and supporting technical studies, along with a public review and comment period first during the circulation of the Notice of Preparation/Initial Study and then through the circulation of the DEIR. The following is a summary of the environmental review of this Project:

- On February 4, 2008, the City circulated a Notice of Preparation (“NOP”) and the Initial Study that identified the environmental issues that the City anticipated would be analyzed in the Project’s DEIR to the State Clearinghouse, responsible agencies, and other interested parties.
- On February 13, 2008, the City conducted a public scoping meeting to allow members of the public to provide comments and input regarding the scope and content of the DEIR.
- The NOP public review period ran for 30 days, from February 4 to March 4, 2008. Written comments on the NOP were received from 22 different agencies, organizations, and individuals. The scope of the issues identified in the comments expressing concern included potential impacts associated with:
 - Change in use from established General Plan and zoning designations. This issue was discussed in Section 4.1, Aesthetics, and Section 4.8, Land Use, of the DEIR and FEIR;
 - Short-term and long-term air pollutant emissions including dust and diesel particulates from truck exhaust that could negatively affect nearby residential

uses. This issue was discussed in Section 4.3, Air Quality, of the DEIR and FEIR;

- Short-term and long-term noise impacts that could affect nearby residential uses. These issues were discussed in Section 4.9, Noise, of the DEIR and FEIR;
 - Potential impacts to future planned school sites were addressed in Section 4.8, Land Use, of the DEIR and FEIR;
 - Potential water-related impacts (drainage, water quality of runoff from the project) were addressed in Section 4.7, Hydrology and Water Quality, in the DEIR and FEIR;
 - Project truck traffic causing congestion on local roads, intersections, and freeway ramps, primarily on Redlands Boulevard, and impacts to vehicular, bicycle, and pedestrian safety. These issues were discussed in Section 4.11, Transportation, of the DEIR and FEIR;
 - Impacts to aesthetics from loss of views, loss of neighborhood character, and increased night lighting as this area transitions from previously planned residential and business park uses to industrial uses along the south side of SR-60. These issues were discussed in Section 4.1, Aesthetics, and 4.8, Land Use, of the DEIR and FEIR; and
 - Potential loss of biological or cultural (archaeological) resources by grading and development of the site, and suggestions to consult with local Native American tribes per SB 18. These issues were discussed in Section 4.4, Biological Resources, and 4.5, Cultural Resources, of the DEIR and FEIR.
- Based on the Initial Study, included in the DEIR in Appendix A, and comments received pursuant to the NOP, it was determined that some issues need not be addressed in depth in the DEIR because previous studies of other analyses provided sufficient information, analysis, and mitigation to conclude that there was little or no potential for significant

impacts. These environmental topics included: (1) Geology and Soils; (2) Mineral Resources; (3) Public Services; (4) Recreation; and, (5) Forest Resources.

- As required by the California Environmental Quality Act (CEQA) Guidelines Section 15087, a Notice of Completion (NOC) of the Draft EIR State Clearinghouse No. 2008021002 for the Eucalyptus Industrial Park project was filed with the State Clearinghouse on July 17, 2012, and the Notice of Availability (NOA) of the Draft EIR was filed with the Riverside County Clerk on July 18, 2012.
- The Draft EIR was circulated for public review for a period of 48 days, from July 18, 2012 to September 4, 2012. Copies of the Draft EIR were distributed to all Responsible Agencies and to the State Clearinghouse in addition to various public agencies, citizen groups, and interested individuals. Copies of the Draft EIR were also made available for public review at the City Planning Department, at one area library, and on the internet. A total of fourteen (14) comment letters were received on the DEIR. Ten of the comment letters received were from Federal, State, regional, or local agencies. Four comment letters were received from private organizations or conservation groups – no letters were received from individuals. The City prepared specific responses to all comments. The responses to comments are included in Section 2.0 of the FEIR.
- On August 26, 2014 the applicant requested the City Council consider the Reduced Intensity plan.
- On September 29, 2014 in accordance with *Public Resources Code* Section 21092.5, the City provided written responses to public agencies that commented on the DEIR.
- On October 3, 2014 Notice of the City Council hearing to consider the Project was provided in the following newspaper(s) of general and/or regional circulation: Press Enterprise.
- On October 14, 2014 this Council held a public hearing to consider the Project and staff recommendations. The City, after considering written comments and oral testimony on the EIR, determined that no new information was presented that would require recirculation of the EIR. Following public testimony, submission of additional written

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comments, and staff recommendations, this Council certified the EIR, adopted these Facts, Findings and the Statement of Overriding Considerations, and the further recommendations in the Staff Report, and approved the Project (collectively the “Approvals”).

IV. INDEPENDENT JUDGMENT FINDING

The Applicant retained the independent consulting firm of LSA Associates, Inc. (“LSA”) to prepare the EIR for the Project. LSA has prepared the EIR under the supervision, direction and review of the City with the assistance of an independent peer review (Willdan Engineering). The City of Moreno Valley is the Lead Agency for the preparation of the EIR, as defined by CEQA CPRC Section 21067 as amended. The City Council has received and reviewed the EIR prior to certifying the EIR and prior to making any decision to approve or disapprove the Project.

Finding: The EIR for the Project reflects the City’s independent judgment. The City has exercised independent judgment in accordance with *Public Resources Code* Section 21082.1(c) (3) in directing the consultant in the preparation of the EIR, as well as reviewing, analyzing, and revising material prepared by the consultant.

A. GENERAL FINDING ON MITIGATION MEASURES

In preparing the Approvals for this Project, City staff incorporated the mitigation measures recommended in the EIR as applicable to the Project. In the event that the Approvals do not use the exact wording of the mitigation measures recommended in the EIR, in each such instance, the adopted Approvals are intended to be identical or substantially similar to the recommended mitigation measure. Any minor revisions were made for the purpose of improving clarity or to better define the intended purpose.

Finding: Unless specifically stated to the contrary in these findings, it is this Council’s intent to adopt all mitigation measures recommended by the EIR which are applicable to the Project. If a measure has, through error, been omitted from the Approvals or from these Findings, and that measure is not specifically reflected in these Findings, that measure shall be deemed to be adopted pursuant to this paragraph. In addition, unless specifically stated to the contrary in these Findings, all Approvals repeating ProLogis Eucalyptus Industrial Park – Facts, Findings, and Statement of Overriding Considerations

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or rewording mitigation measures recommended in the EIR are intended to be substantially similar to the mitigation measures recommended in the EIR and are found to be equally effective in avoiding or lessening the identified environmental impact. In each instance, the Approvals contain the final wording for the mitigation measures.

V. ENVIRONMENTAL IMPACTS AND FINDINGS

City staff reports, the EIR, written and oral testimony at public meetings or hearings, these facts, findings, and statement of overriding considerations, and other information in the administrative record, serve as the basis for the City's environmental determination.

The detailed analysis of potentially significant environmental impacts and proposed mitigation measures for the Project is presented in Section 4.0 of the DEIR and Sections 3.0 and 4.0 of the FEIR. Responses to comments on the DEIR, along with copies of the comments, are provided in Chapter 2.0 of the FEIR.

The EIR evaluated thirteen major environmental categories for potential impacts including Aesthetics, Agricultural Resources, Air Quality, Biological Resources, Cultural Resources, Hazards and Hazardous Materials, Hydrology and Water Quality, Land Use, Noise, Population and Housing, Transportation, Utilities and Service Systems, and Greenhouse Gases and Global Climate Change. Both Project-specific and cumulative impacts were evaluated. Of these thirteen major environmental categories, this Council concurs with the conclusions in the EIR that the issues and sub issues discussed in Sections V.A and V. B below either are less-than-significant without mitigation or can be mitigated below a level of significance. For the remaining potential environmental impacts that cannot feasibly be mitigated below a level of significance discussed in Section V.C, overriding considerations exist which make these potential impacts acceptable to this Council.

A. LESS-THAN-SIGNIFICANT ENVIRONMENTAL IMPACTS NOT REQUIRING MITIGATION

The Moreno Valley City Council hereby finds that the following potential environmental impacts of the Project are less-than-significant and therefore do not require the imposition of mitigation measures.

1. Aesthetics

a. Light and Glare

Potential Significant Impact: Whether the Project would create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

Findings: Potential impacts of the Project related to light and glare are discussed in detail in Section 4.1 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to light and glare with the adherence to established City ordinances and development guidelines, therefore, no mitigation is required.

Facts in Support of the Findings: Section 4.1 identifies no sources of light or glare on the Project site. Development of the Project site would introduce new sources of light and glare into the area in the form of street lighting, parking lot lighting, and security lighting for the buildings. Lighting within loading areas (areas within the public view include the loading areas of Buildings 1, 2, and 3) will be directed downward so as to not Project lighting into the sky. The overall increase in ambient light in the area is expected to be incremental with compliance with the City's development standards for lighting. The Project will incrementally increase the amount of daytime glare in the Project area from introducing windows and metal fixtures into the area. All development in the City, which includes light generated from warehouse buildings and parking lots, is required to adhere to lighting requirements contained in the City's Municipal Code. The Project is consistent with General Plan policies and Municipal Code requirements regarding light and glare, therefore, no impacts associated with this issue would occur and no mitigation is required (DEIR, pgs. 4.1-8 to 4.1-9).

2. Agricultural Resources

a. Conflict with an Existing Agricultural Zone

Potential Significant Impact: Would the proposed project conflict with an existing agricultural zone?

Findings: Potential impacts of the Project related to agricultural resources are discussed in detail in Section 4.1 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to with the existing agricultural zone; therefore, no mitigation is required.

Facts in Support of the Findings: The Project would not conflict with an existing agricultural zone. An approximately 12-acre portion of the project site is zoned Residential Agriculture (RA-2) with a PAKO designation, and is located near the southern border. With the development of the Project, this portion of the site would not be rezoned to Light Industrial to allow for the proposed warehouse distribution uses. This zone change would not conflict with the existing zone for this area of the project site. This type of change is expected, and planned for within the City, and is consistent with the City's overall vision. (FEIR, Section 3.0. Table 1.C, pg. 254)

3. Air Quality

a. **Construction-Chronic Health Risk Impacts**

Potential Significant Impact: Whether the Project would expose sensitive receptors to substantial pollutant concentrations.

For Maximum Individual Cancer Risk (MICR), the applicable thresholds are:

- An increased cancer risk greater than 10 in 1 million (1.0×10^{-5}) at any receptor location; or
- A cancer burden greater than 0.5.

For non-cancer chronic Hazard Index (HI); the applicable threshold is:

- A cumulative increase for any target organ system exceeding 1.0 at any receptor location.

Findings: Potential impacts of the Project related to construction-chronic health risks are discussed in detail in Section 4.3 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to sensitive receptor health risks and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.3 of the DEIR, the only toxic air pollution emissions in any significant quantity associated with the construction of the Project occur from diesel-ProLogis Eucalyptus Industrial Park – Facts, Findings, and Statement of Overriding Considerations

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powered equipment exhaust. A screening health risk assessment was performed according to the published Office of Environmental Health Hazard Assessment (OEHHA) health risk techniques.¹ According to the health risk assessment, the cancer risk due to construction of the Project is less than the threshold of 10 in 1 million. Therefore, health risks would be less than significant and no mitigation is required. (DEIR, pgs. 4.3-13 to 4.3-14)

b. Operational-Acute Health Risk Emission Impacts

Potential Significant Impact: Whether the Project would expose sensitive receptors to substantial pollutant concentrations.

For MICR, the applicable thresholds are:

- An increased cancer risk greater than 10 in 1 million (1.0×10^{-5}) at any receptor location; or

For non-cancer chronic and acute HI; the applicable threshold is:

- A cumulative increase for any target organ system exceeding 1.0 at any receptor location.

Findings: Potential impacts of the Project related to operational-acute health risks are discussed in detail in Section 4.3 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to operational-acute health risks and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.3 of the DEIR, a screening level health risk assessment was performed for the operational emissions associated with the Project based on the SCAQMD's *Health Risk Assessment Guidance for Analyzing Cancer Risk from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis* guidance. The operations expected to occur at this facility will not emit any toxic chemicals in any significant quantity other than vehicle exhaust. According to the health risk assessment the nearest residences would experience a cancer risk of 4.33 in 1 million, which is below the 10 in 1 million threshold. The nearest residences would also experience a chronic HI of 0.0016 and an acute HI of 0.0000088. Both the chronic and acute HI would be below the chronic and acute HI threshold of 1.0. Since the operational phase of the Project would not exceed any of the long-

¹ OEHHA, *Air Toxics Hot Spots Program Risk Assessment Guidelines*, August 2003, Appendix D, *Risk Assessment Procedures to Evaluate Particulate Emissions from Diesel-Fueled Vehicles*.

term acute health risk assessment thresholds, a less than significant impact would occur. No mitigation is required. (DEIR, pgs. 4.3-14 to 4.3-18)

c. Operational-Carcinogenic and Chronic Health Risk Emission Impacts

Potential Significant Impact: Whether the proposed Project would expose sensitive receptors to substantial pollutant concentrations.

For MICR, the applicable thresholds are:

- An increased cancer risk greater than 10 in 1 million (1.0×10^{-5}) at any receptor location; or

For non-cancer health risk HI; the applicable threshold is:

- A cumulative increase for any target organ system exceeding 1.0 at any receptor location.

Findings: Potential impacts of the Project related to operational-carcinogenic and chronic health risk emission impacts are discussed in detail in Section 4.3 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to health risks related to operational emissions and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.3 of the DEIR, the closest residences to the Project would be exposed to a lifetime inhalation cancer risk of no more than 4.33 in 1 million, a 30-year inhalation cancer risk of no more than 3.88 in 1 million, and nearby workers a 40-year career inhalation cancer risk of no more than 1.5 in 1 million. The chronic health risk index is significantly less than the threshold of 1.0, in this case 0.0016 for residents and workers. No significant carcinogenic or chronic health risks would occur from Project-related traffic. No significant health risk would occur from Project related truck traffic, and no mitigation is necessary. (DEIR, pg. 4.3-18)

d. Air Quality Impacts to Adjacent Future Development

Potential Significant Impact: Whether the proposed Project would expose sensitive receptors to substantial pollutant concentrations.

Findings: Potential impacts of the Project related to air quality impacts to adjacent future developments are discussed in detail in Section 4.3 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to air quality impacts to adjacent future development and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.3 of the DEIR, based on the land use assumptions for the future L-Aquila D’Pietra (LADP) Project, residential development would be located along the southern Project boundary between the Project and the proposed LADP. It is anticipated that the Project site would be fully developed prior to the occupation of any dwelling units in LADP; therefore, no construction-related air quality impacts to adjacent sensitive receptors would result from development of the Project.

The primary health risk is from heavy-duty truck emissions is diesel particulate exhaust. According to the screening-level assessment, the future residential units south of the Project site would be exposed to an unmitigated inhalation cancer risk of approximately 4.3 in 1 million, which is less than the threshold of 10 in 1 million. The corresponding chronic and acute hazard indices would be approximately 0.0016 and 0.000088, which is less than the threshold of 1.0 for the chronic hazard index and acute hazard index. Since the screening-level analysis overall Project health risks are below established thresholds, any detailed assessment would also produce less than significant health risk levels. Therefore, a less than significant impact associated with future uses that may occupy adjacent properties subsequent to development of the Project would occur. No mitigation is required. (DEIR, pgs. 4.3-18 to 4.3-19)

e. Long-Term Microscale (CO Hotspot) Impacts

Potential Significant Impact: Whether the proposed Project would violate any air quality standard or contribute substantially to an existing or projected air quality violation. For CO, the applicable thresholds are:

- California State one-hour CO standard of 20.0 ppm; and
- California State eight-hour CO standard of 9.0 ppm.

Findings: Potential impacts of the Project related to long-term microscale emissions are discussed in detail in Section 4.3 of the DEIR. Based on the entire record before us, this Council finds that

development of the Project will not result in significant impacts related to long-term microscale emissions and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.3 of the DEIR, the highest one-hour CO concentration experienced at any of the intersections in the Project vicinity would not exceed the one hour CO State standard of 20 ppm. Based on the *Air Quality Analysis* prepared for the Project, the Project would contribute, at most, a 0.1 ppm increase to the one-hour CO concentrations for all scenarios. This is below the 1.0 ppm increase threshold. Also the highest eight-hour CO concentration experienced at any of the intersections in the Project vicinity would not exceed the eight-hour CO state standard of 35 ppm. Based on the *Air Quality Analysis* prepared for the proposed Project, the proposed Project would contribute, at most, a 0.1 ppm increase to the eight-hour CO concentrations for all scenarios. This is below the 0.45 ppm increase threshold. Since the Project would not exceed the one-hour or eight-hour CO concentration standards, it is reasonable to conclude that no CO hot spots would occur. Therefore, the Project would not have a significant impact on local air quality for CO and no mitigation measures would be required. (DEIR, pgs. 4.3-19 to 4.3-20)

f. Odors

Potential Significant Impact: Whether the Project would create objectionable odors affecting a substantial number of people.

Findings: Potential impacts of the Project related to objectionable odors are discussed in detail in Section 4.3 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts due to objectionable odors and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.3 of the DEIR, the Project does not propose land uses typically associated with emitting objectionable odors. Potential odors during Project construction may result from heavy equipment exhaust and the application of asphalt and architectural coatings. Standard construction requirements would minimize odor impacts from construction. The construction odor emissions would be temporary, short-term, and intermittent in nature and would cease upon completion of the respective phase of construction and is thus considered less-than-significant. Project-related operational odor sources such as vehicle exhaust and routine painting/ maintenance activities are typical of industrial/commercial activities and would be localized to the immediate Project

vicinity, with little or no off-site effects. Accordingly, impacts related to objectionable odors will be less-than-significant and no mitigation is required. (DEIR, pg. 4.3-20)

4. Biological Resources

a. Habitat Fragmentation/Wildlife Movement

Potential Significant Impact: Whether the Project would interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

Findings: Potential impacts of the Project related to habitat fragmentation and wildlife movement are discussed in detail in Section 4.4 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts to habitat and wildlife movement and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.4 of the DEIR, the Project site is isolated from regional wildlife corridors by existing barriers including urban development, agricultural uses, and roadways. Land uses adjacent to the Project site include fallow agricultural land to the south and east, commercial uses to the west, and residential uses to the north across SR-60. Due to the nature of development occurring in the Project area and the current condition of the Project site, it is highly unlikely that the Project site is utilized as a wildlife movement corridor, with the exception of the Quincy Channel. The Project will not affect the majority of Quincy Channel, thus allowing wildlife to continue using the existing channel to traverse the site. The quality of on-site habitat has been diminished due to the previous and frequent ground disturbance and past agricultural activities. In addition, the existing roadways and infrastructure features further isolate the Project site from natural areas. Due to the disturbed condition of the Project site, the nature of development to the southeast and west, the intervening presence of roadways and infrastructure, and adherence to City development standards identified in the Municipal Code, development of the Project will not result in significant habitat fragmentation or substantially affect established wildlife corridors or wildlife movement. A less than significant impact would result and no mitigation is required. (DEIR, pg. 4.4-23)

b. Adopted Policies and Ordinances

Potential Significant Impact: Whether the Project would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Findings: Potential impacts of the Project related to adopted policies and ordinances are discussed in detail in Section 4.4 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in conflict with local policies or ordinances and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.4 of the DEIR, city policies or ordinances identified in the General Plan protecting biological resources include: mitigation of impacts to riparian areas or other natural sensitive communities (Policy 7.4.1), preservation of natural drainage courses in their natural hydrological state (Policy 7.4.3), and City fulfillment of obligations set forth within any agreements and permits related to the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) implementation (Policy 7.4.5).

The Quincy Channel, located adjacent and to the east of the Project site, is considered a sensitive natural habitat due to the value it provides as nesting sites and foraging sites for migratory birds. The Project would be designed to minimize encroachment into this natural area through setback requirements established in Sections 9.16.120 and 9.05.040 of the City's Municipal Code, thus preserving this habitat area in its natural state pursuant to the City's General Plan. At the northeast corner of Building 2, the development plans call for a minimum setback from Quincy Channel due to the topography and alignment of the creek. From that point, the plan provides a setback and landscaped buffer area between the drainage area and the structures proposed on the site that widens and varies from 25 to 50 feet (including the flood control access road). Therefore, the Project would not conflict with local policies or ordinances protecting biological resources and a less than significant impact would occur. No mitigation is required. (DEIR, pg. 4.4-24)

c. Adopted Habitat Conservation Plans

Potential Significant Impact: Whether the Project would conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Findings: Potential impacts of the Project related to adopted habitat conservation plans are discussed in detail in Section 4.4 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in conflicts with local habitat conservation plans and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.4 of the DEIR, the Project site is located within the Western Riverside County MSHCP, however, the Project site is not within any MSHCP criteria cell or habitat linkage. Furthermore, the Project site is not located within an MSHCP mammal or amphibian survey area; a Narrow Endemic Plant Species Survey Area or Criteria Area Plant Species Survey Area; or a riparian, wetland, or vernal pool habitat/species survey area. A habitat assessment for the burrowing owl is required under the MSHCP. While the Project site is not within any MSHCP conservation areas, the Project is still subject to provisions of the MSHCP. In particular, the Project applicant will be required to provide payment of mitigation fees and adhere to the requirements established in the MSHCP. Pursuant to agreements with the USFWS and the CDFG, the payment of the mitigation fee prior to the issuance of a building permit by the City, and compliance with applicable provisions of the MSHCP provides full mitigation under CEQA, FESA, and CESA for impacts to the species and habitats covered by the MSHCP. Therefore, development of the Project will not conflict with the provisions of the MSHCP. A less than significant impact would occur and no mitigation is required.

In addition to the MSHCP, the Project site is within the boundaries of the Stephens Kangaroo Rat Habitat Conservation Plan (SKR HCP) established by the County of Riverside. Development of the Project will not conflict with the provisions of the SKR HCP. The payment of a local mitigation fee prior to issuance of a grading permit by the City will be required. There are no other requirements for the Project under the SKR HCP and a less than significant impact would occur with payment of the fee and no further mitigation is required. (DEIR, pg. 4.4-24)

d. Endangered and Threatened Species

Potential Significant Impact: Whether the Project would have a substantial adverse effect, either directly or through habitat modifications, on any species identified as endangered or threatened in local or ProLogis Eucalyptus Industrial Park – Facts, Findings, and Statement of Overriding Considerations

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regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or U.S. Fish and Wildlife Service (USFWS).

Findings: Potential impacts of the Project related to endangered and threatened species are discussed in detail in Section 4.4 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts to endangered or threatened species and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.4 of the DEIR, no species listed by the State and/or Federal Government as Endangered or Threatened was identified on site during the field surveys; however, Swainson's hawk, a State-listed species, and Stephens' kangaroo rat, a federally and State-listed species, have a low potential to occur on the site.

The Project site is not located within any USFWS designated critical habitat. Swainson's hawk would be expected to occur on the site, if at all, only during migration as foraging individuals. Swainson's hawk is covered by the MSHCP. Mitigation for covered species consists of participation in the MSHCP.

The Project site is also within the SKR HCP Fee Area. The Project site is not within an SKR Core Area. The SKR HCP provides Take Authorization for the SKR within its boundaries, and no surveys or additional measures are required other than paying a development fee prior to issuance of a grading permit by the City. In the absence of a significant impact, no mitigation is warranted. (DEIR, pg. 4.4-25)

e. Cumulative Biological Impacts

Potential Significant Impact: Whether the Project in connection with past, current, and probably future projects would incrementally affect biological resources.

Findings: Potential impacts of the Project related to cumulative biological impacts are discussed in detail in Section 4.4 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant cumulative impacts to biological resources and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.4 of the DEIR, the Project would not make a cumulatively considerable contribution to impacts on endangered or threatened species, riparian habitat or natural plant communities, jurisdictional waters, habitat fragmentation, wildlife movement, local policies

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and ordinances, or habitat conservation plans. There are no projects that would, in combination with the proposed Project, produce a significant impact to non-listed sensitive species. Therefore, there are no significant cumulative impacts anticipated to occur that are associated with biological resources. With implementation of Project-level Mitigation Measures 4.4.6.1 through 4.4.6.3, the Project's contribution to cumulative biological impacts will not be cumulatively considerable and no additional mitigation is required. (DEIR, pgs 4.4-30 to 4.4-31)

5. Cultural Resources

a. Historical Structures and Features

Potential Significant Impact: Whether the Project would cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5.

Findings: Potential impacts of the Project related to historical structures and features are discussed in detail in Section 4.5 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts to historical structures and features and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.5 of the DEIR, no structures or unique features are currently located within the Project limits. An online title search was conducted and historic maps were reviewed to determine the potential for structures and/or the remains of former sites of buildings or resources within the Project limits. No evidence of past structures or historic features was identified, nor was evidence of such structures identified during the on-site cultural resource survey or the records search. As no evidence has been identified to suggest the presence of past or current structures on site, no impacts related to historic structures or features will occur. In the absence of a significant impact, no mitigation is warranted. (DEIR, pg.4.5-5)

b. Human Remains

Potential Significant Impact: Whether the Project would disturb any human remains, including those interred outside of formal cemeteries.

Findings: Potential impacts of the Project related to human remains are discussed in detail in Section 4.5 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts to human remains and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.5 of the DEIR, the Project site was utilized for agricultural production. No evidence suggesting the Project site has been utilized in the past for human burials has been identified.² In the unlikely event human remains are discovered during grading or construction activities, State law (Health and Safety Code §7050.5) requires that no further disturbance shall occur until the County Coroner has made determination of the origin and disposition pursuant to Public Resources Code 5097.98. Because adherence to provisions of Health and Safety Code §7050.5 is required of all development projects, and because adherence to the requirements in State law sufficiently mitigates for potential impacts to human remains, no significant impact related to this issue will occur. Because potential impacts associated with this issue are less than significant, no mitigation is required. (DEIR, pg. 4.5-5)

c. Cumulative Cultural Resources

Potential Significant Impact: Whether the Project in connection with past, current, and probable future projects would have a cumulative significant impact on cultural resources.

Findings: Potential impacts of the Project related to cumulative cultural resources are discussed in detail in Section 4.5 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant cumulative impacts to cultural resources and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.5 of the DEIR, on-site sediments and cumulative archaeological and paleontological discoveries elevate the potential for the on-site presence of archaeological and paleontological resources. The Project includes measures to identify, recover, and/or record any archaeological or paleontological resource that may occur within the Project limits. Although unlikely to occur, potential impacts associated with human remains would be reduced to a less than significant level through adherence to existing State law. There are no projects that would, in combination with the Project, result in any significant cumulative impacts on historical, archaeological, or paleontological resources, or cumulative impacts to human remains. Therefore, the Project will not make

a significant contribution to any cumulatively considerable impacts associated with cultural resources, and no mitigation is required. (DEIR, pg. 4.5-8)

6. Hazards and Hazardous Materials

a. Routine Transport, Use, or Disposal of Hazardous Materials and Reasonable Foreseeable Upset and Accident Conditions

Potential Significant Impact: Whether the Project would create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Also, whether the Project would create a significant hazard to the public through the routine transport, use, or disposal of hazardous materials.

Findings: Potential impacts of the Project related to routine transport, use or disposal of hazardous materials and/or the risk of upset or accidental release of hazardous materials into the environment are discussed in detail in Section 4.6 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to routine transport, use or disposal of hazardous materials and, therefore, no mitigation is required.

As a result of the comments received on the DEIR, a mitigation measure has been added to reduce any potential impact from past agricultural uses on the project site even though there were detectable concentrations of organochlorine pesticides and PCBs in samples collected from possible drainage accumulation and pesticide usage on site.

4.6.6.1A *Prior to issuance of a grading permit for the project, a qualified contractor shall test onsite soils for contamination by agricultural chemicals. If present in concentrations above established actionable levels or thresholds, these materials shall be removed and transported to an appropriate landfill by a licensed contractor. This measure shall be implemented to the satisfaction of the Building Division including written documentation of the disposal of any agricultural chemical residue in conformance with all applicable regulations.*

Facts in Support of the Findings: Two *Phase I Environmental Site Assessments* (ESAs) were prepared for the Project site. During the on-site inspection, no hazardous materials handling, storage, or disposal

² *Chapter 5.10, Cultural Resources, City of Moreno Valley General Plan Final EIR, July 2006.*
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areas were observed. Additionally, no evidence of stressed vegetation, discolored water, or pools of liquid was observed during the on-site reconnaissance. However, because the Project site has been historically utilized for agricultural production and because of the close proximity to SR-60, soil samples were taken in various parts of the Project site to further evaluate the potential contamination on the site. Laboratory results indicated no detectable concentrations of hydrocarbon compounds in the samples collected. However, there were detectable concentrations of organochlorine pesticides and PCBs in samples collected from possible drainage accumulation and pesticide usage on site. These concentrations were within the allowable Preliminary Remedial Goals (PRGs) for the Project.

During the Project's construction and operation, it is likely that materials such as fuels, lubricants, solvents, cleansers, and paints will be transported to and from the site. The use and transport of these materials and all potentially hazardous materials would be handled according to the appropriate State and Federal regulations. Adherence to existing regulations as they relate to the handling and transport of potentially hazardous materials during construction would reduce impacts associated with this issue to a less than significant level and no mitigation is required. (DEIR, pgs. 4.6-6 through 4.6-11)

b. Hazardous Material Sites

Potential Significant Impact: Whether the Project would be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.

Findings: Potential impacts of the Project related to hazardous material sites are discussed in detail in Section 4.6 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts due to hazardous material sites and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.6 of the DEIR, a database review was conducted for both of the Phase 1 ESAs conducted for the Project site. Based on the database review, the Project site is not included on the State of California Hazardous Waste and Substances Site List (Cortese list) pursuant to the California Code (Section 65962.5). The Project site is not listed in the NPL; Corrective Action Order Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) list; Emergency Response Notification System (ERNS) list; Resource Conservation and Recovery Act System; Toxic Release Inventory System (TRIS); CAL-SITES Database for Annual Work ProLogis Eucalyptus Industrial Park – Facts, Findings, and Statement of Overriding Considerations

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Plan; California Department of Toxic Substances Control (DTSC); Regional Water Quality Control Board (RWQCB); California Waste Management Board (CWMB); Solid Waste Information System (SWIS); Waste Management Units Database System (WMUDS); California Border Zone Properties (Deed Restriction Properties); DTSC Hazardous Waste and Substances Site List (Cortese list); or any Leaking Underground Storage Tank (LUST) database.

Because the Project site is not identified on a list of hazardous materials sites, the potential that the development of the site would create a significant hazard to the public or environment is less than significant. In addition, the results of the site investigations performed by RM Environmental indicate that no significant amount of any hazardous material exists on site. Therefore, impacts associated with this issue are less than significant and no mitigation would be required. (DEIR, pgs. 4.6-11 through 4.6-12)

c. Existing or Proposed Schools

Potential Significant Impact: Whether the Project would create hazardous emissions or handle acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

Findings: Potential impacts of the Project related to existing or proposed schools are discussed in detail in Section 4.6 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to existing or proposed schools and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.6 of the DEIR, at the time the NOP for the proposed Project was released, the Moreno Valley Unified School District (MVUSD) had identified three potential school sites within the Project vicinity. Of these potential school sites, High School #5 was the closest planned school to the Project site as it was to be located on the adjacent parcel east of the Project site. Due to MVUSD concerns regarding the placement of schools in areas that may be rezoned with warehousing uses, MVUSD has made a decision to abandon the development of these school facility projects on the identified sites.³ Therefore, no planned school facilities would be located adjacent to or within 0.25 mile of the Project site. Since there are no schools planned, proposed, or operating within 0.25 mile of the Project site, no impacts associated with this issue would occur and no mitigation is required. (DEIR, pgs. 4.6-12 through 4.6-13)

d. Emergency Response Plan

Potential Significant Impact: Whether the Project would impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Findings: Potential impacts of the Project related to emergency response plans are discussed in detail in Section 4.6 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to emergency response plans and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.6 of the DEIR, in February 2006, the County of Riverside, in cooperation with the cities and special districts, completed its Emergency Operations Plan

³ Resolution No. 2007-08-8, Board of Education of the Moreno Valley Unified School District, April 15, 2008.
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(EOP). The EOP establishes the emergency organization, assigns tasks, specifies general procedures, and provides for coordination of planning efforts of the various emergency staff and resources.

Construction activities that may temporarily restrict vehicular traffic would be required to implement adequate measures to facilitate the passage of people and vehicles through/around any required road closures. During the operational phase of the Project on-site access for fire and emergency vehicles would be required to comply with standards established by the City Public Works Department. The size and location of fire suppression facilities (e.g., hydrants) and fire access routes would be required to conform to Fire Department standards. As required of all development in the City, the operation of the Project would be required to conform to applicable Uniform Fire Code standards. The submittal of such plans would be considered a condition of approval, which would be part of the permitting process initiated by the applicant and approved by the City in accordance with City standards. As with any development, access to and through the Project would be required to comply with the required street widths, as determined in the General Plan Circulation Element, and the Uniform Fire Code. Therefore, implementation of the Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. No significant impact would occur and no mitigation is required. (DEIR, pg. 4.6-13)

e. Wildland Fires

Potential Significant Impact: Whether the Project would expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildland.

Findings: Potential impacts of the Project related to wildland fires are discussed in detail in Section 4.6 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to wildland fires and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.6 of the DEIR, the Project site is not located within a “High Fire Hazard Area” or within an area susceptible to wildfires identified by the City of Moreno Valley. Areas surrounding the Project site consist of urban, built, and open space. Because of lack of abundant vegetation and the extensive amount of development within the vicinity of the Project site, on-site and adjacent areas do not have the capability to support a wildfire. The proposed uses on site do not typically create a fire hazards nor are they subject to wildland fire hazards due to the type of ProLogis Eucalyptus Industrial Park – Facts, Findings, and Statement of Overriding Considerations

construction materials used. The Project will be designed and constructed to comply with adopted standards and guidelines for fire protection. Irrigated landscaping will surround Project buildings, and are required to include fire suppression features by law. Due to the location of the fire station adjacent to the Project in the northwest corner and the low probability that the Project site would be subject or susceptible to wildland fires, no significant impact related to this issue would occur. No mitigation is required. (DEIR, pgs. 4.6-13 through 4.6-14)

f. Cumulative Impacts from Hazards and Hazardous Materials

Potential Significant Impact: Whether the Project in connection with past, current, and probable future projects would cumulatively increase the risk of hazardous materials and exposure to hazardous materials.

Findings: Potential impacts of the Project related to cumulative hazardous materials impacts are discussed in detail in Section 4.6 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to cumulative hazardous materials and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.6 of the DEIR, the Project would not result in significant cumulative impacts associated with the routine transport, use, and disposal of hazardous materials; or the emission or handling of hazardous substances. As areas of the eastern portion of Moreno Valley continue to develop, the amount of truck traffic is expected to increase in proportion to the amount of industrial or commercial development that take place in the area. The trucks traveling in the area of the Project and the surrounding areas may contain hazardous materials as well as contribute to emission in the cumulative area. Accidental spills and leaks are unplanned occurrences. It is impossible to predict the occurrences of such events and the likelihood of such events occurring in close proximity to each other at the same time is very small; therefore, such events cannot be considered cumulatively significant.

As anticipated in the City's General Plan, demographic increases, continued retail and service demands, and the availability of vacant property will lead to the new residential, commercial, and industrial development in the City and surrounding area. While the project-specific hazardous material impacts of individual development projects will be addressed separately in future CEQA documents, anticipated future development will contribute, through increases in the number of locations that sell, store, transport, or dispose of hazardous materials, to a cumulative increase in risk for hazardous material incidents. As with the proposed Project, it is anticipated that future development projects will be required to adhere to ProLogis Eucalyptus Industrial Park – Facts, Findings, and Statement of Overriding Considerations

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applicable local, State, and Federal requirements that regulate the use, release, storage, sale, and transport of hazardous materials. Such compliance would ensure that the Project will not make a significant contribution to a cumulatively considerable impact in this regard, and no mitigation measures for cumulative impacts are required. (DEIR, pg. 4.6-14)

7. **Hydrology, Drainage, and Water Quality**

a. **Groundwater**

Potential Significant Impact: Whether the Project would substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level

Findings: Potential impacts of the Project related to groundwater are discussed in detail in Section 4.7 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to groundwater and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.7 of the DEIR, the Project would obtain water service from the EMWD. It is anticipated that the Project would primarily utilize imported water purchased from Metropolitan. In the event that imported water is not available, this imported water would be supplemented by local groundwater sources.

The implementation of the existing West San Jacinto Groundwater Basin Management Plan would ensure that local groundwater resources are conserved and groundwater overdraft does not occur. If the use of groundwater supplies was necessary, the Project would be required to comply with any future water use restricting regulations further minimizing impacts to groundwater supply.

As identified in the City's General Plan, the Project would not interfere with groundwater recharge as the Project site is not identified as a groundwater recharge area.⁴ Therefore, the Project would not interfere with groundwater recharge activities. Impacts associated with this issue are less than significant and no mitigation measure is required. (DEIR, pg. 4.7-14)

b. **Flooding-Related Impacts**

Potential Significant Impact: Whether the Project would place within a 100-year flood hazard area structures that would impede or redirect flood flows.

⁴ Section 5.7 Hydrology/Water Quality, City of Moreno Valley General Plan Final Program EIR, City of Moreno Valley, July 2006. ProLogis Eucalyptus Industrial Park – Facts, Findings, and Statement of Overriding Considerations

Findings: Potential impacts of the Project related to flooding are discussed in detail in Section 4.7 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to flooding and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.7 of the DEIR, flooding in the City of Moreno Valley could result from intense storms resulting in rapid runoff. The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) identify areas subject to flooding during the 100-year storm.⁵ Based on these FIRMs and the Project site does not fall within a 100-year flood zone.⁶ The Project is industrial in nature and the implementation of the Project would not result in the placement of housing within a 100-year floodplain. Because the Project site does not lie within a 100-year floodplain and does not include housing, impacts related to this issue are less than significant. No further discussion or mitigation is required. (DEIR, pgs. 4.7-14 through 4.7-17)

c. Drainage Pattern-Related Impacts

Potential Significant Impact: Whether the Project would substantially alter the existing local drainage patterns of the site and substantially increase the rate or amount of surface runoff in a manner which would result in substantial erosion, siltation, or flooding on or off site.

Findings: Potential impacts of the Project related to drainage patterns are discussed in detail in Section 4.7 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to drainage patterns and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.7 of the DEIR, the proposed Project would alter the existing drainage patterns and affect surface runoff; however, several BMPs would be designed and installed on site to minimize these alterations, resulting in a less than significant impact. Development of the Project site would result in increased impervious surfaces in the form of roadways, parking lots, and industrial warehouse buildings. The Project incorporates detention/sedimentation basins for both water quality and quantity control purposes. The Project would also include vegetated swales, detention/sedimentation basins, and sand filters.

⁵ The term "100-year" is a measure of the size of the flood, not how often it occurs. The "100-year flood" is a flooding event that has a one percent chance of occurring in any given year.

⁶ FEMA DFIRM Data, 2008.

Under post-development conditions, all on-site flows would be routed to Quincy Channel. This drainage pattern would mimic the existing drainage pattern, which has flows draining to the Quincy Channel and the unnamed dry wash to the south. Since the unnamed dry wash connects to Quincy Channel farther south of the Project, all flows under existing conditions drain into Quincy Channel. Flows in Quincy Channel are routed to the Perris Valley Storm Drain where flows continue onto the San Jacinto River and eventually reach Lake Elsinore.

Increased runoff from the site could result in substantial erosion of local drainage ways and siltation of downstream receiving waters. However, with the proposed drainage system installed on site, the Project would not produce any post-development peak flow leaving the site larger than the pre-development peak flows leaving the site for the analyzed storms. In addition, because the implementation of various BMPs will reduce off-site flow velocity and volume, erosional runoff and silt volumes would be minimized to the greatest extent practical. Because the Project would maintain existing drainage patterns on site and implement BMPs that would minimize erosion and generation of silt on site, impacts associated with this issue are less than significant and no mitigation measures are required. (DEIR, pg. 4.7-17)

d. Hydrology and Water Quality Cumulative Impacts

Potential Significant Impact: Whether the Project in connection with past, current, and probable future projects would have significant cumulative impacts on hydrology and water quality.

Findings: Potential impacts of the Project related to cumulative hydrology and water quality impacts are discussed in detail in Section 4.7 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant cumulative impacts to hydrology and water quality and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.7 of the DEIR, increases in the amount and extent of development in the City and surrounding areas will increase the potential for pollutants in runoff, which in turn would affect water quality. The Project's water quality impacts will be mitigated through on-site detention/sedimentation basins and other water pollution control mechanisms such as vegetated swales, sand filters, and storm drain inlet filters. Similar requirements will be placed on all other development in the Project vicinity by the City and the RWQCB, further reducing the potential for cumulative impacts. Since all development within the City is required to account and mitigate for their individual water quality impacts before runoff leaves each individual site, it is reasonable to conclude that ProLogis Eucalyptus Industrial Park – Facts, Findings, and Statement of Overriding Considerations

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water quality would be maintained throughout the cumulative area. Adherence to NPDES, SWPPP, and WQMP requirements will reduce any such cumulative water quality impact to a less than significant level.

Groundwater recharge policies and practices implemented by the RWQCB and local agencies will ensure groundwater supplies are maintained at appropriate levels. As such, no significant cumulative groundwater supply impacts are anticipated to occur with the development of the Project.

The drainage system for the Project would be designed so that runoff from the Project site after Project development is directed to on-site treatment BMPs and flow volumes would be equal to or less than historic conditions at any given discharge location. This same requirement will be placed on all other development in the vicinity of the Project site by the City of Moreno Valley. Therefore, the Project will not make a significant contribution to any cumulatively considerable impacts related to drainage or water quality and no mitigation is required. (DEIR, pgs. 4.7-28 through 4.7-29)

8. Land Use and Planning

a. Physically Divide an Established Community

Potential Significant Impact: Whether the Project would physically divide an established community.

Findings: Potential impacts of the Project related to the physically dividing an established community are discussed in detail in Section 4.8 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts due to a physical divide of an established community and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.8 of the DEIR, land uses adjacent to the Project site include residential uses to the southeast, vacant land to the south, commercial uses to the west, SR-60 and residential uses to the north, and active hay/alfalfa production uses to the east. The Project site does not contain any existing housing, nor does the site complement or constitute part of a community or neighborhood. Based on this information, the Project will not physically divide an existing established community. No impact related to this issue would occur; therefore, no mitigation is required. (DEIR, pgs. 4.8-4 through 4.8-5)

b. Conflict with Any Applicable Habitat or Natural Community Conservation Plan

Potential Significant Impact: Whether the Project would conflict with any applicable habitat conservation plan or natural community conservation plan.

Findings: Potential impacts of the Project related to the conflict with any applicable habitat conservation plan are discussed in detail in Section 4.8 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts due to a conflict with any applicable habitat or natural community conservation plan and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.8 in the DEIR, the Project site is located within the MSHCP area⁷. The Project site is not within an MSHCP criteria cell or habitat linkage. Furthermore, the Project site is not located within an MSHCP mammal or amphibian survey area, Narrow Endemic Plant Species Survey Area (NEPSSA), Criteria Area Plant Species Survey Area (CAPSSA), or a riparian, wetland, or vernal pool habitat/species survey area.⁸

While the Project site is not within any conservation area delineated in the MSHCP, the Project is still subject to provisions of the MSHCP. In particular, the Project proponent will be required to provide payment of mitigation fees and adhere to the requirements established in the MSHCP. Pursuant to agreements with the USFWS and the CDFW, the payment of the mitigation fees and compliance provisions of the MSHCP provides full mitigation under the CEQA, FESA, and CESA for impacts to the species and habitats covered by the MSHCP. Since the City has adopted the MSHCP and its requirements and provisions, and since the Project is within the City, the Project would be required to adhere to applicable MSHCP requirements and fees. Therefore, the Project would not conflict with any applicable HCP and no significant impact associated with this issue would occur. No mitigation would be required. (DEIR, pg. 4.8-4)

c. Cumulative Land Use Impacts

Potential Significant Impact: Whether the Project in connection with past, current, and foreseeable future projects would incrementally affect biological resources.

⁷ City of Moreno Valley General Plan Final Program EIR, Figure 5.9-4 Reche Canyon/Badlands Area.

⁸ <http://www.rctlma.org/gis/rciprepgen.html>, site accessed December 4, 2007.

Findings: Potential impacts of the Project related to cumulative land use impacts are discussed in detail in Section 4.8 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant cumulative impacts related to land uses and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.8 of the DEIR, implementation of the Project represents establishment of new land uses within the currently undeveloped Project site that would result in an intensification of permitted land uses associated with a land use change from Business Park and Residential to Light Industrial uses, changes to the General Plan Circulation Element. However, the Project is generally consistent with regional plans and planning efforts, although it is not fully consistent with the SCAG's RTP and Compass Blueprint Plan because it eliminates some housing in favor of industrial employment uses. It will incrementally improve the City's long-standing jobs/housing ratio, which is also a regional goal of the various SCAG plans. It is also not consistent with existing General Plan land use designations, objectives and policies, nor is it consistent with existing zoning designations on the site. For these reasons, a General Plan Amendment and Zone Change are proposed for consideration by the City.

The proposed changes in land use will also result in a loss of up to 584 (R-15) multi-family residential units, many of which could have contributed to the City's affordable housing supply at some point in the future. However, this was determined to be a less than significant Project impact on local housing because the City's Housing Element identifies over twice as much potential affordable housing as the City's RHNA allocation, so it will not make a significant contribution to a cumulatively considerable impact on regional housing.

The Project would also not make a similar cumulatively considerable land use impact relative to dividing an established community or conflicting with an approved habitat conservation plan and no mitigation is required. (DEIR, pgs. 4.8-17 to 4.8-18)

8. Noise

a. Airport Noise

Potential Significant Impacts: Whether a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would results in

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exposure of people residing or working in the Project area to excessive noise levels. Or if a Project within the vicinity of a private airstrip, would expose people residing or working in the Project area to excessive noise levels.

Findings: Potential impacts of the Project relating to airport noise are discussed in detail in Section 4.9 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to airport noise will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.9 of the DEIR, the proposed Project site is located approximately 5 miles northeast of the March Air Reserve Base. Aircraft operations from the airport currently contribute intermittent single-event noise. However, the Project is not identified as being within the noise or safety contours delineated for the MARB Airport. The Project is not located within two miles of a public or private airport; therefore, the Project would not have the potential to expose people to excessive noise levels from airport operations and no impact regarding this issue would occur with implementation of the Project. No mitigation is required. (DEIR, pg. 4.9-10)

b. Ground-Borne Vibrations

Potential Significant Impact: Whether the Project would result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

Findings: Potential impacts of the Project relating groundborne vibration and groundborne noise are discussed in detail in Section 4.9 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to ground-borne vibration and groundborne noise will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.9 of the DEIR, the Project site is not located near steel-wheeled trains. Additionally, roadways in the Project area are either paved or would be paved and would not result in traffic driving over rough roads. Construction activities for the Project site do not include blasting or pile driving. The primary vibratory source during the construction of the proposed Project would be large bulldozers. Based on published data, typical bulldozer activities generate an approximate vibration level of 0.089 in/sec at a distance of 25 feet. At the distance of the nearest residence to the Project boundary (about 50 feet) the estimated vibration level will be 0.0415 in/sec. While heavy-duty earthmoving equipment would be used during the construction phase of the Project, the

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level of vibration would not be excessive or permanent, nor would it exceed the level at which building damage typically occurs. Therefore, impacts from construction-related groundborne vibration construction would be less than significant and no mitigation is required. (DEIR, pg. 4.-11)

c. Long-Term Traffic Noise

Potential Significant Impact: Whether the Project would result in a substantial temporary, periodic, and/or permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project.

Findings: Potential impacts of the Project related to long-term noise are discussed in detail in Section 4.9 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to long-term noise will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.9 of the DEIR, the *Noise Impact Analysis* (Appendix H) indicates that implementation of the Project would result in relatively minor changes in traffic noise levels except along Eucalyptus Avenue between Moreno Beach Drive and Driveway A. The largest Project-related increase in traffic noise would be along Eucalyptus Avenue/Fir Avenue between Auto Mall Drive and Redlands Boulevard. This segment would experience a 13.6 dBA increase over the baseline (with the Project) scenario and a 13.3 dBA increase over the baseline (with the Project) scenario in opening year (2012). In addition, the roadway segment along Eucalyptus Avenue between Moreno Beach Drive and Auto Mall Drive would experience a 4.5 dBA increase over the baseline scenario in 2012. However, no noise-sensitive uses exist or are planned near either roadway segment.

For the Project build out year (2035) analysis, the greatest increase in noise levels is along Eucalyptus Avenue between Auto Mall Drive and Redlands Boulevard, where an increase of up to 1.3 dBA is predicted, with the ambient noise level predicted to be 71.6 dBA at 50 feet from the centerline of the street. In addition, the greatest increases in noise levels associated with the General Plan Build Out Year is along Eucalyptus Avenue between Auto Mall Drive and Redlands Boulevard, where an increase of up to 0.9 dBA is predicted, with the ambient noise level predicted to be 73.0 dBA at 50 feet from the centerline of the street. However, no noise-sensitive uses exist or are planned near the roadway segment. Therefore, noise impacts at the roadway segments where an increase of more than 3.0 dBA would occur are considered less than significant because there are no sensitive receptors located along the roadway

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segments that would be affected. All other roadway segments would have an increase in noise of less than 3.0 dBA, which would not be perceptible to the human ear in an outdoor environment. Therefore, impacts would be less than significant and no mitigation measures would be required for off-site areas. (DEIR, pgs. 4.9-11 to 4.9-19)

d. Long-Term Operational Noise

Potential Significant Impact: Whether the Project would cause exposure of persons to or generation of noise levels in excess of standards established in the City of Moreno Valley General Plan, Moreno Valley Municipal Code, or applicable standards of other agencies.

Findings: Potential impacts of the Project related to long-term operational noise are discussed in detail in Section 4.9 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to long-term operational noise will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.9 of the DEIR, potential long-term stationary noise impacts would primarily be associated with operations at the proposed warehouse and the light industrial uses. The proposed on-site uses would generate noise from truck delivery, loading/unloading activities at the loading areas, and other noise-producing activities within the parking lot. Through distance divergence, attenuation, and building shielding these sources of noise would be reduced to less than significant levels; and no mitigation is required. (DEIR, pgs. 4.9-20 to 4.9-22)

e. Noise Impacts to Adjacent Future Development

Potential Significant Impact: Whether the Project would result in a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project.

Findings: Potential impacts of the Project related to noise impacts to adjacent future development are discussed in detail in Section 4.9 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to noise impacts to adjacent future development and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.9 of the DEIR, based on the land use assumptions for the future LADP Project, residential development would be located along the southern ProLogis Eucalyptus Industrial Park – Facts, Findings, and Statement of Overriding Considerations

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Project boundary between the Project and the proposed LADP. It is anticipated that the Project site would be fully developed prior to the occupation of any dwelling units in LADP; therefore, no construction-related noise impacts to future adjacent sensitive receptors would result from development of the Project. Also, the proposed on-site uses would generate noise from truck delivery, loading/unloading activities at the loading areas, and other noise-producing activities within the parking lot. Through distance divergence, attenuation, and building shielding these sources of noise would be reduced to less than significant levels. Therefore, a less than significant impact would occur to adjacent future development and no mitigation is required. (DEIR, pgs. 4.9-23 to 4.9-24)

f. Cumulative Noise Impacts

Potential Significant Impact: Whether the Project in connection with past, current, and probable future Project would cause cumulative noise impacts within the City of Moreno Valley.

Findings: Potential impacts of the Project related to cumulative noise are discussed in detail in Section 4.9 of the DEIR. Based on the entire record before us, this Council finds that no significant cumulative impacts related to noise will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: Construction crew commutes and the transport of construction equipment, materials, and fill to the site for the proposed Project would incrementally increase noise levels on access roads leading to the site. Secondary sources of noise would include noise generated during excavation, grading, and building erection on the Project site. Although it is unlikely that adjacent properties will be developed at the same time as the Project, if adjacent properties are developed at the same time as the Project, implementation of the stated mitigation measures in Section 4.9 of the DEIR would render the cumulative impacts of the Project to less than significant levels.

Section 4.9 of the DEIR compared cumulative noise levels that would occur both with and without the Project. According to the analysis the Project would not expose sensitive uses located adjacent to area roadways to excessive noise levels. The future roadway noise assessment concludes that there will be no significant roadway noise impacts associated with cumulative and cumulative plus Project conditions. Therefore, there are no projects that would, in combination with the Project, produce significant noise impacts to sensitive land uses from on-site operational noise. Thus, no cumulatively considerable noise impacts are expected to occur in this area, and the Project will not make a significant contribution to cumulative noise impacts, so no mitigation measures are required. (DEIR, pg. 4.9-27)

9. Population and Housing

a. Population Growth

Potential Significant Impact: Whether the Project would induce substantial population growth in an area, either directly (e.g., new homes and businesses) or indirectly (e.g., extension of roads and infrastructure).

Findings: Potential impacts of the Project related to population growth are discussed in detail in Section 4.10 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to population growth will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.10 of the DEIR, the development of the proposed on-site warehouse distribution uses would create new jobs in the local economy. The Project would generate up to 1,532 job (1,044 jobs with the modified plan) opportunities.⁹ The new employment opportunities resulting from development of the proposed warehouse uses would improve the City's current jobs-to-housing ratio by providing jobs to local residents. While the places of residence of the persons accepting employment provided by the proposed uses is uncertain, due to the City's projected jobs-to-housing ratio, it is reasonable that a large percentage of these jobs would be filled by persons already living within the City or Project area; therefore, no significant increase in population of the City would result from the development or operation of the proposed on-site uses. In the absence of a significant impact, no mitigation is required. (DEIR, pgs. 4.10-3 to 4.10-5)

b. Displace Substantial Housing/People

Potential Significant Impact: Whether the Project would displace substantial numbers of people or existing housing, necessitating the construction of replacement housing elsewhere.

Findings: Potential impacts of the Project related to displacement of housing or people are discussed in detail in Section 4.10 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to displacement of housing or people will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.10 of the DEIR, the Project site has not been historically utilized for residential uses, and no residential structures are currently located within the Project limits. The construction and operation of the proposed on-site uses would neither displace existing housing or residents nor require the construction of replacement housing elsewhere in the City. However, the areas currently zoned for residential uses on the site could support up to 681 units. Approximately 80 percent of that potential new housing was in the R15 category, which is considered high enough density to support affordable housing programs. In addition, a portion of the Project site is shown in the latest

Housing Element for the City (2008–2014) as a potential location for affordable housing in the future (2011 Housing Element, Vacant Properties Inventory). Development of the site as proposed could eliminate as many as 681 housing units from the site, with 80 percent of those units (548) at a density that is generally accepted as helping to promote housing affordability (15 units per acre) on a regional level. These changes may incrementally hinder the City’s ability to achieve its affordable housing goals in the future. However, the Project would not reduce the City’s potential pool of affordable housing to below its RHNA number; therefore, it would not create a significant impact related to the City’s Housing Element, and no mitigation is required. (DEIR, pg. 4.10-6)

c. Cumulative Population and Housing Impacts

Potential Significant Impact: Whether the Project could cause an increase in population that is substantial in relation to the past, current, and probable future projects.

Findings: Potential impacts of the Project related to cumulative impacts of the Project on housing or population are discussed in detail in Section 4.10 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to cumulative impacts on housing or population will occur as a result of development of the Project and, therefore, no mitigation is required.

Fact Supporting the Findings: The project includes development of 2.2 million square feet (1.5 million square feet with the modified plan) of new industrial uses, but would eliminate the potential for up to 681 new residential units (548 new residential units with the modified plan), most of which would be in the R15 category, which can support affordable housing programs. The proposed industrial uses would provide additional employment opportunities for City and area residents. The Project, together with the other developments identified in Chapter 3 of the DEIR, will serve existing and future cumulative demands for both housing and employment within the City. The proposed uses would not induce significant population or housing growth in areas where growth was not previously anticipated.

10. Transportation

a. Air Traffic Patterns

Potential Significant Impact: Whether the Project would result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

Findings: Potential impacts of the Project related to air traffic patterns are discussed in detail in Section 4.11 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to air traffic patterns will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.11 of the DEIR, the Project site is located approximately 5.5 miles northwest of the March Air Reserve Base and is not within the designated safety zones or the flight paths established for this facility.¹⁰ The Project does not consist of any uses that would cause changes to air traffic volumes or otherwise affect air traffic patterns. Additionally, the Project does not include any visual, electronic, or physical hazards to aircraft in flight and is not anticipated to disrupt or alter air traffic patterns, including either an increase in traffic levels or a change in location. As such, no impacts associated with this issue would occur and no mitigation is required. (DEIR, pg. 4.11-16)

b. Design Features or Incompatible Uses

Potential Significant Impact: Whether the proposed Project would substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

Findings: Potential impacts of the Project related to design features or incompatible uses are discussed in detail in Section 4.11 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to design features or incompatible uses will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.11 of the DEIR, roadway improvements in and around the Project site would be designed and constructed to satisfy all City requirements for street widths, corner radii, intersection control as well as incorporate design standards tailored specifically to site access requirements.

The final design of all roadways and intersections within the Project site access would be reviewed by a licensed professional civil engineer to ensure adequate safety when traveling to and from the Project site. The Project does not include any sharp curves or dangerous intersections in its design. Adherence to applicable existing requirements of the City of Moreno Valley consistent with the City's Circulation

Element Objectives 5.1 (create a safe, efficient, and neighborhood-friendly street system), 5.5 (maximize efficiency of the local circulation system by using appropriate policies and standards to design, locate, and size roadways), and 5.11 (eliminate obstructions that impede safe movement of vehicles, bicyclists, and pedestrians) and other agencies would reduce impacts associated with this issue to a less than significant level and no mitigation is required. (DEIR, pgs. 4-17)

c. Inadequate Emergency Access

Potential Significant Impact: Whether the Project would result in inadequate emergency access.

Findings: Potential impacts of the Project related to emergency access are discussed in detail in Section 4.11 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to emergency access will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.11 of the DEIR, the developers of the Project would be required to design, construct, and maintain structures, roadways, and facilities to provide for adequate emergency access and evacuation. Construction activities, which may temporarily restrict vehicular traffic, would be required to implement adequate and appropriate measures to facilitate the passage of persons and vehicles through/around any required road closures. The Project design would be submitted to and approved by the City's Fire and Police Departments prior the issuance of building permits. Adherence to applicable existing requirements of the City of Moreno Valley and other agencies would reduce impacts associated with this issue to a less than significant level and no further discussion is required. (DEIR, pgs. 4.11-17 to 4.11-18)

d. Inadequate Parking Capacity

Potential Significant Impact: Whether the Project would result in inadequate parking capacity.

Findings: Potential impacts of the Project related to parking capacity are discussed in detail in Section 4.11 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to parking capacity will occur as a result of development of the Project and, therefore, no mitigation is required.

¹⁰ March Air Reserve Compatibility Plan, December 29, 2004. [http://www.rcaluc.org/filemanager/plan/old//March%20Air%20Reserve%20Base%20\(MARB\).pdf](http://www.rcaluc.org/filemanager/plan/old//March%20Air%20Reserve%20Base%20(MARB).pdf). Accessed June 3, 2008.

Facts in Support of the Findings: According to Section 4.11 of the DEIR, the preliminary site plan indicates that 1,091 automobile parking spaces are provided, which includes spaces for employees, drivers, and handicap spaces, and is well above the minimum requirement of 562 spaces. The design of the would be required to comply with parking standards prior to final site plan approval. Adherence to parking standards contained in the Zoning Code would ensure that the Project would not result in inadequate parking capacity. Impacts associated with parking capacity are less than significant and no mitigation is required. (DEIR, pg. 4.11-18)

e. Alternative Transportation

Potential Significant Impact: Whether the proposed Project would conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

Findings: Potential impacts of the Project related to alternative transportation are discussed in detail in Section 4.11 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to alternative transportation will occur as a result of development of the and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.11 of the DEIR, the design of the would be required to adhere to applicable City of Moreno Valley standards that support and/or facilitate alternative modes of transportation, including but not limited to pedestrian pathways and sidewalks consistent with the City’s Circulation Element Objective 5.8. Through the City’s project review process, policies, plans, and/or programs supporting alternative transportation would be reviewed and incorporated as applicable. Consequently, a less than significant impact would occur as a result of the and no mitigation is required. (DEIR, pg. 4.11-18)

11. Utilities and Service Systems

a. Solid Waste Facilities

Potential Significant Impact: Whether the Project would be served by a landfill with insufficient permitted capacity to accommodate the Project’s solid waste disposal needs.

Findings: Potential impacts of the Project related to solid waste facilities are discussed in detail in Section 4.12 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to solid waste facilities will occur as a result of development of the and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.12 of the DEIR, based on a solid waste generation of 0.006 pound per square foot per day for industrial uses, the Project is anticipated to generate approximately 6.73 tons of solid waste per day and 2,456 tons/year (4.59 tons/day and 1,675 tons/year for the modified plan). Solid waste from the Project would be hauled by Waste Management of Inland Valley

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and transferred to the Badlands Sanitary Landfill, located in Moreno Valley, northeast of the Project site. The Badlands Sanitary Landfill has a daily permitted throughput of 4,000 tons per day, a remaining capacity of 14,730,025 cubic yards, and an estimated closure date of 2024. The average daily throughput at the Badlands Sanitary Landfill for 2011 is estimated at 1,683 tons/day with a current surplus capacity totaling 2,317 tons/day. The volume of solid waste generated by the Project per day represents 0.17 percent (0.11 percent for the modified plan) of the current permitted throughput and 0.29 percent (0.19 percent for the modified plan) of the current surplus capacity at the Badlands Sanitary Landfill. As adequate daily surplus capacity exists at the receiving landfill, development of the Project would not significantly affect current operations or the expected lifetime of the landfill serving the Project area. No significant solid waste disposal impact would occur and no mitigation is required. (DEIR, pgs. 4.12-3 to 4.12-4)

b. Solid Waste Reduction

Potential Significant Impact: Whether the Project would fail to comply with applicable Federal, State, and local statutes and regulations related to solid waste.

Findings: Potential impacts of the Project related to solid waste reduction are discussed in detail in Section 4.12 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to solid waste reduction will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.12 of the DEIR, the Project would be required to coordinate with the waste hauler to develop collection of recyclable materials for the Project on a common schedule as set forth in applicable local, regional, and State programs. Recyclable materials that would be recycled by the Project include paper products, glass, aluminum, and plastic.

Additionally, the Project would be required to comply with applicable elements of AB 1327, Chapter 18 (California Solid Waste Reuse and Recycling Access Act of 1991) and other applicable local, State, and Federal solid waste disposal standards, thereby ensuring that the solid waste stream to the Badlands Sanitary Landfill is reduced in accordance with existing regulations. Impacts are considered less than significant and require no mitigation. (DEIR, pg. 4.12-4)

c. Solid Waste Cumulative Impacts

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Potential Significant Impact: Whether the Project in connection with past, current, and probable future projects would have an incremental impact on solid waste.

Findings: Potential impacts of the Project related to cumulative solid waste are discussed in detail in Section 4.12 of the DEIR. Based on the entire record before us, this Council finds that no significant cumulative impacts related to solid waste will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.12 of the DEIR, the Badlands Sanitary Landfill has an estimated closure date of 2024, the City's waste hauler will also use other County landfills in the area (e.g., Lamb Canyon Landfill and El Sobrante Landfill). The estimated closure date of the Lamb Canyon Landfill is 2023 and the estimated closure date of the El Sobrante Landfill is 2030. With planned expansion activities of landfills in the Project vicinity and projected growth rates contained within the City's General Plan EIR, sufficient landfill capacity would exist to accommodate future disposal needs through City build out in 2030. Therefore, build out of the City General Plan would not create demands for solid waste services that would exceed the capabilities of the County's waste management system. Consequently, cumulative impacts associated with solid waste within the City would be considered less than significant and no mitigation is required. (DEIR, pg. 4.12-5)

d. Construction or Expansion of Water Treatment Facility

Potential Significant Impact: Whether the Project would require the construction of new water treatment facilities or expansion of existing facilities, the construction of which would cause significant environmental effects.

Findings: Potential impacts of the Project related to construction or expansion of water treatment facilities are discussed in detail in Section 4.12 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts that would cause the construction or expansion of water treatment facilities will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.12 of the DEIR, the water demand required for the Project totals 0.04 and 0.03 percent of the 2015 and 2035 projected Eastern Municipal Water District (EMWD) supplies. The amount of water demand would be within the existing available supply

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even with a reduction in deliveries from the State Water Project (SWP). Imported sources of water will be supplemented by an increase in desalination of brackish groundwater, recycled water use, and water use efficiency, and implementation of aggressive conservation measures by the EMWD. The Project would not require the construction of new water treatment facilities or expansion of existing facilities, which could cause significant environmental effects. Impacts related to this issue would be less than significant and no mitigation is required. (DEIR, pgs. 4.12-15 to 4.12-16)

e. Adequate Water Supply

Potential Significant Impact: Whether the Project would have sufficient water supplies available to serve the Project from existing entitlements and resources, or are new or expanded entitlements needed.

Findings: Potential impacts of the Project related to adequate water supply are discussed in detail in Section 4.12 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to adequate water supply will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.12 of the DEIR, the anticipated water demand for the Project is substantially less than what is identified for the General Plan land uses and what was used in the formulation of the 2010 Urban Water Management Plan. The water demand required for the Project is would total 0.05 and 0.04 percent of the EMWD's 2015 and 2035 supplies and for the less intense plan would total approximately 56,000 gallons per day (gpd)¹¹ or 62 AFY.¹² The less intense plan would total 0.02 and 0.02 percent of the EMWD's 2015 and 2035 supplies of 213,900 and 302,200 AFY in 2015 and 2035. The Project's water consumption represents substantially less than 1 percent of the consumption yearly capacity and because the EMWD indicates that water to service the Project's proposed industrial uses is available, no significant water supply impacts would occur with implementation of the industrial use, and no mitigation would be necessary. (DEIR, pg. 4.12-17 to 4.12-22)

f. Cumulative Impacts to Water Supply Services

Potential Significant Impact: Whether the Project in connection with past, current, and probable future projects would have a cumulative impact to water supply services.

Findings: Potential impacts of the Project related to cumulative water supply services are discussed in detail in Section 4.12 of the DEIR. Based on the entire record before us, this Council finds that no significant cumulative impacts related to water supply services will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.12 of the DEIR, the projected demand for the EMWD service area for the year 2015 is 213,900 acre-feet per year (AFY). The cumulative projects including the Project would make up approximately 0.11 percent of the projected demand for 2015. For the year 2035, the EMWD service area projected demand is 302,200 AFY. As the cumulative projects including the Project constitute less than one percent of the projected water demand in both 2015 and 2025, the cumulative impact of the Project would be less than significant.

Metropolitan Water District (Metropolitan) will continue to rely on the plans and policies outlined in its Regional Urban Water Master Plan (RUWMP) and Integrated Regional Water Plan (IRP) to address water supply shortages and interruptions (including potential shut downs of SWP pumps) to meet water demands. Metropolitan has also analyzed the reliability of water delivery through the SWP and the Colorado River Aqueduct. Metropolitan's IRP and RUWMP conclude that, with the storage and transfer programs developed by Metropolitan, there will be a reliable source of water to serve its member agencies' needs through 2035. The EWMD is a member agency of Metropolitan and would have water supplies for projected growth through 2035 in wet, dry, and multiple-dry years, so cumulative impacts to water supply would be less than significant. The Project would connect to existing conveyance infrastructure and adequate treatment capacity is available, so the Project would not make a significant contribution to any cumulatively considerable impacts on water supply or infrastructure and no mitigation is required. (DEIR, pg 4.12-22)

g. Wastewater Treatment Requirements

Potential Significant Impact: Whether the Project would exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board (RWQCB).

Findings: Potential impacts of the Project related to wastewater treatment requirements are discussed in detail in Section 4.12 of the DEIR. Based on the entire record before us, this Council finds that no

¹¹ 700 gallons per acre per day × 80 net acres = 56,000 gallons per day.

¹² 56,000 gallons per day = 0.17 acre-foot per day × 365 days per year = 62.05 acre-feet per year.

significant impacts related to wastewater treatment requirements will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.12 of the DEIR, the Project would result in a connection to the sewer line underlying the future Eucalyptus Avenue. The EMWD expects this sewer to be in service once it is necessary for demand expected from the Project. It is anticipated that all wastewater generated by the Project would be routed to and treated by the Moreno Valley Regional Water Reclamation Facility (MVRWRF). The MVRWRF is a Publically Owned Treatment Works (POTW), so operational discharge flows treated at the MVRWRF would be required to comply with the Waste Discharge Requirements (WDRs) for that facility. Compliance with condition or permit requirements established by the City and WDRs at the MVRWRF would ensure that discharges into the wastewater treatment facility system from the operation of the Project would not exceed applicable Santa Ana RWQCB wastewater treatment requirements. Expected wastewater flows from the Project will not exceed the capabilities of the serving treatment plant, so no significant impact related to this issue would occur and no mitigation would be required. (DEIR, pg. 4.12-24)

h. Wastewater Treatment Capacity and/or New or expanded Wastewater Treatment Facilities

Potential Significant Impact: Whether the Project would result in a determination by the wastewater treatment provider, which serves or may serve the Project, that it lacks adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments.

Also, whether the Project would require the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Findings: Potential impacts of the Project related to wastewater capacity are discussed in detail in Section 4.12 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to wastewater capacity will occur as a result of development of the Project and no new wastewater treatment facilities or expansion of existing facilities would be required, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.12 of the DEIR, the Project would result in a connection to the sewer line underlying the future Eucalyptus Avenue. The EMWD expects this sewer to

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be in service once it is necessary for demand expected from the Project. It is anticipated that all wastewater generated by the Project would be routed to and treated by the MVRWRF. The MVRWRF is a POTW, so operational discharge flows treated at the MVRWRF would be required to comply with the WDRs for that facility. Compliance with condition or permit requirements established by the City and WDRs at the MVRWRF would ensure that discharges into the wastewater treatment facility system from the operation of the Project would not exceed applicable Santa Ana RWQCB wastewater treatment requirements. Expected wastewater flows from the Project will not exceed the capabilities of the serving treatment plant, so no significant impact related to wastewater would occur and no mitigation would be required. (DEIR, pg. 4.12-25)

i. Cumulative Impacts to Wastewater Facilities

Potential Significant Impact: Whether the Project in connection with past, current, and probable future projects would result in cumulative impacts to wastewater facilities.

Findings: Potential impacts of the Project related to cumulative wastewater facilities are discussed in detail in Section 4.12 of the DEIR. Based on the entire record before us, this Council finds that no significant cumulative impacts related to wastewater facilities will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.12 of the DEIR, the Project would not have a cumulatively significant impact on wastewater infrastructure because the Project would not require the expansion of existing infrastructure; only connections to existing infrastructure would be required by the Project. By adhering to the wastewater treatment requirements established by the Santa Ana RWQCB through the NPDES permit, wastewater from the Project site that is processed through the MVRWRF would meet established standards. As the wastewater from all development within the service area of the MVRWRF would be similarly treated under the NPDES, no cumulatively significant exceedance of Santa Ana RWQCB wastewater treatment requirements would occur.

The Project would not result in significant impacts to wastewater treatment or wastewater treatment facilities. The MVRWRF also plans expand the capacity of the wastewater facility. The ultimate expansion of the MVRWRF will allow it to process 41 mgd of wastewater. The wastewater generation of the listed cumulative projects represents 4.8 percent of the future capacity of the 2013 expansion and 2.5 percent of the ultimate expansion of the MVRWRF. The projected wastewater generation of the ProLogis Eucalyptus Industrial Park – Facts, Findings, and Statement of Overriding Considerations

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cumulative projects represents a small percentage of the average wastewater capacity and, because there are no projects that would, in combination with the proposed industrial uses, result in any significant impact related to wastewater treatment or cause significant environmental effects, the Project will not make a significant contribution to any cumulatively considerable impacts associated with wastewater and no mitigation is required. (DEIR, pg. 4.12-26)

12. Global Climate Change

a. Greenhouse Gas Plan, Policy, Regulation Consistency

Potential Significant Impact: Whether the Project would conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

Findings: Potential impacts of the Project related to greenhouse gas plans, policies, or regulation consistency are discussed in detail in Section 4.13 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related greenhouse gas plans, policies or regulations will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.13 of the DEIR, the Project includes a variety of physical attributes and operational programs that would generally contribute to a reduction in operational-source pollutant emissions including GHG emissions. Future development that would occur under the Project would be consistent with state and local greenhouse gas emission reduction strategies and policies. The Project would implement appropriate GHG reduction strategies and would ensure that it does not conflict with or impede implementation of reduction goals identified in AB 32, Governor's Executive Order S-3-05, and other strategies to help reduce GHGs to the level proposed by the Governor. In addition, the Project would also be subject to all applicable regulatory requirements, which would also reduce the GHG emissions of the Project. Therefore, the Project would not conflict with any applicable plan, program, policy, or regulation related to the reduction of GHG emissions. Impacts are considered less than significant and no mitigation is required. (DEIR, pgs. 4.13-10 to 4.13-17)

B. ENVIRONMENTAL IMPACTS MITIGATED TO A LEVEL OF LESS-THAN-SIGNIFICANT

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Public Resources Code Section 21081 states that no public agency shall approve or carry out a project for which an EIR has been completed which identifies one or more significant effects unless the public agency makes one or more of the following findings:

- I. Changes or alterations have been required in, or incorporated into, the Project which mitigate or avoid the significant effects on the environment.
- II. Those changes or alterations are within the responsibility and jurisdiction of another public agency and have been, or can and should be, adopted by that other agency.
- III. Specific economic, legal, social, technological, or other considerations make infeasible the mitigation measures or alternatives identified in the EIR, and overriding economic, legal, social, technological, or other benefits of the Project outweigh the significant effects on the environment.

Certain of the following issues from the environmental categories analyzed in the EIR, including biological resources, cultural and paleontological resources, hydrology, drainage, and water quality, noise (short-term construction), transportation (local intersections), utilities, and global climate change (individually and cumulatively) were found to be potentially significant, but can be mitigated to a less-than-significant level with the imposition of mitigation measures. This Council hereby finds pursuant to *Public Resources Code* Section 21081 that all potentially significant impacts listed below can and will be mitigated to below a level of significance by imposition of the mitigation measures in the EIR; and that these mitigation measures are included as Conditions of Approval and set forth in the Mitigation Monitoring and Reporting Program (MMRP) adopted by this Council. Specific findings of this Council for each category of such impacts are set forth in detail below.

1. **Air Quality**

a. **Localized Construction Equipment Exhaust Emissions Impacts**

Potentially Significant Impact: The EIR evaluated and concluded that the Project has the potential to exceed short-term construction thresholds.

Finding: Implementation of the following mitigation measures will reduce the potential adverse impacts to sensitive or special status species to less than significant:

4.3.6.3A *Prior to the issuance of grading permits, the project applicant shall require by contract specifications that all trucks hauling dirt, sand, soil, or other loose materials are to be covered or shall maintain at least 2 feet of freeboard in accordance with the requirements of California Vehicle Code (CVC) Section 23114 (freeboard means vertical space between the top of the load and top of the trailer).*

4.3.6.3B *Prior to the issuance of grading permits, the project applicant shall provide evidence to the City that construction access roads shall be paved at least 100 feet onto the site from the main road.*

4.3.6.3C *Prior to the issuance of grading permits, the project applicant shall require by contract specifications that all streets within the construction site shall be swept once per day if visible soil materials are carried to adjacent streets.*

Facts in Support of the Finding: SCAQMD has developed LST methodology that can be used to determine whether or not a project may generate significant adverse localized air quality impacts. LSTs represent the maximum emissions from a project that would not cause or contribute to an exceedance of the most stringent applicable Federal or State ambient air quality standard and are developed based on the ambient concentrations of that pollutant for each source receptor area. The emissions of concern from construction activities are NO_x, CO, PM₁₀, and PM_{2.5} resulting from on-site combustion emissions from construction equipment and on-site fugitive PM₁₀ dust from construction site preparation activities.

According to Section 4.3 of the DEIR, the air pollutant emission rates for the proposed construction activities are below the localized construction thresholds at the nearest sensitive receptor for CO, NO_x, PM₁₀, and PM_{2.5}. Thus, no mitigation is required. However, implementation of **Mitigation Measures 4.3.6.2A through 4.3.6.2M** and the incorporation of these additional requirements as **Mitigation Measures 4.3.6.3A through 4.3.6.3C** are designed to track both standard requirements and mitigation measures as part of the project's Mitigation Monitoring and Reporting Program (MMRP). Therefore, impacts related to construction exhaust emissions are less than significant. (DEIR, pgs. 4.3-29 to 4.3-30)

2. Biological Resources

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a. Candidate, Non-listed Sensitive, or Other Special Status Species

Potential Significant Impact: The EIR evaluated and concluded that the Project has the potential to affect migratory bird species and 15 non-listed special status species, including burrowing owl.

Finding: Implementation of the following mitigation measures will reduce the potential adverse impacts to sensitive or special status species to less than significant:

4.4.6.1A *If tree removal or clearing and grubbing activities must take place during the general nesting season (February 1 through August 31), a nesting bird survey shall be conducted within seven (7) days prior to any vegetation disturbance activities. If passerine birds are found to be nesting or there is evidence of nesting behavior inside the impact area, an exclusion buffer, to be determined by the appropriate agency (e.g. the City, County, and/or CDFG), shall be set in place around the nest where no vegetation disturbance will be permitted. For raptor species, such as hawks and owls, this buffer may be as large as 500 feet. A qualified biologist shall closely monitor nests until it is determined that they are no longer active, at which time construction activity in the vicinity of nests may continue.*

4.4.6.1B *Prior to site grading, a pre-construction survey shall be required for the burrowing owl to confirm the presence/absence of this species from the site. The survey shall be conducted by a qualified biologist within 30 days prior to ground disturbance, and in accordance with MSHCP survey requirements, to avoid direct take of burrowing owls. If burrowing owls are determined to occupy the project site or immediate vicinity, the City of Moreno Valley Planning Department shall be notified and avoidance measures as identified in Mitigation Measure 4.4.6.1C shall be implemented. Implementation of avoidance measures shall be executed pursuant to the MSHCP, the California Fish and Game Code, and the MBTA, and according the Burrowing Owl Survey Protocol and Mitigation Guidelines (CBOC 1993) and reviewed the City of Moreno Valley, the County of Riverside, and/or by the CDFG.*

4.4.6.1C *As recommended in the BUOW Survey and Mitigation Guidelines prepared by the CBOC, no disturbance to an occupied burrow shall occur within approximately 160 feet of an occupied burrow during the non-breeding season (September 1 through January*

31), or within approximately 250 feet of an occupied burrow during the breeding season (February 1 through August 31). For unavoidable impacts, passive relocation of burrowing owls shall be implemented. Passive relocation shall be conducted by a qualified biologist in accordance with procedures set forth by the MSHCP and California Burrowing Owl Consortium. Passive relocation of occupied burrows supporting a breeding pair of burrowing owls shall be conducted outside of the breeding season pursuant to the California Fish and Game Code and the MBTA.

Facts in Support of the Finding: According to Section 4.4 of the DEIR, one non-listed special status species, grasshopper sparrow, was observed on the site during the burrowing owl survey. Fourteen other non-listed special status species, including burrowing owl, have a low to moderate potential to occur on the site based on existing habitat quality. None of these species is listed as Threatened or Endangered under State or Federal law, all are relatively widespread, and the site does not contain high quality habitat for any of them. Therefore, any impacts to these species by the Project would not be considered significant. Neither additional surveys nor additional conservation measures for these species will be required for the Project, with the exception of burrowing owl.

The planning area may support habitat for bird species protected under the California Fish and Game Code and Migratory Bird Treaty Act (MBTA). If clearing and grubbing activities take place during the general bird nesting season (February 1 through August 31), potential impacts to bird species protected under the California Fish and Game Code and MBTA may occur, therefore **Mitigation Measure 4.4.6.1A** is required.

The Project site also contains habitat suitable to support the burrowing owl. Although burrowing owl was not found on the site during the focused survey, the species is highly mobile, so there is a potential that at some future date prior to Project development, this species may occupy the site. This is a potentially significant impact requiring **Mitigation Measures 4.4.6.1B and 4.4.6.1C**. Implementation of the above-listed mitigation measures would reduce impacts to migratory bird species and non-listed sensitive species to a less than significant level. (DEIR, pgs. 4.4-25 to 4.4-27).

b. Riparian Habitat or Other Sensitive Natural Communities

Potential Significant Impact: The EIR evaluated and concluded that the Project has the potential to permanently affect 0.36 acre of riparian/riverine habitat and to temporarily affect 0.35 acre of riparian/riverine habitat.

Finding: Implementation of the following mitigation measures will reduce the potential adverse impacts to riparian habitat or other sensitive natural communities to less than significant:

4.4.6.2A *As outlined in the project's Determination of a Biologically Equivalent or Superior Preservation (DBESP) report, the project applicant shall compensate for the temporary and permanent impact on and loss of jurisdictional waters and streambeds by providing a minimum 2:1 off-site replacement of equivalent riverine/riparian habitat prior to project construction. Offsite restoration, enhancement, and/or land purchase mitigation for the drainage impacts will occur at an offsite location through one or more of the following: an USACE approved mitigation bank, through an in lieu fee mitigation program, and/or land purchase and conservation. DFG and USFWS will need to provide concurrence that this mitigation is equivalent or superior to that proposed for impact through their review and acceptance of the DBESP.*

4.4.6.2B *Riparian/riverine resources that are temporarily impacted by project construction shall be returned to their preconstruction contours and hydroseeded, as outlined in the DBESP.*

Facts in Support of the Findings: According to Section 4.4 of the DEIR, the Project site consists of highly disturbed land from which most natural vegetation has been removed by regular disking for weed abatement and historical citrus cultivation. No special status species plants were recorded on site within the southern and western drainages due to the site's long-standing disturbances and the fact that on-site soils may not be capable of supporting most sensitive plant species.

However, implementation of the Project would result in permanent impacts on 0.36 acre of riparian/riverine areas as a result of the construction of the detention basins, and drain outlets. In addition to permanent impacts, the Project would result in temporary impacts on 0.35 acre of riparian/riverine areas associated with construction activities. Minimal intrusion into the drainages would be necessary and no construction is anticipated in the drainages themselves.

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Following construction, temporary impact areas would be restored to their pre-construction contours and revegetated per a Habitat Mitigation and Monitoring Plan (HMMP) to be written for the Project site. The HMMP would be developed to address temporary impacts on riverine/riparian areas subject to jurisdiction under the MSHCP, waters of the United States subject to jurisdiction under Section 404 of the Clean Water Act (CWA), waters of the state subject to jurisdiction under Section 401 of the CWA, and jurisdictional streambeds subject to jurisdiction under Sections 1600–1616 of the California Fish and Game Code. Therefore, the proposed mitigation design is directed at providing adequate mitigation based on impacts on the largest jurisdictional area (namely, CDFW jurisdictional streambeds). Because implementation of the Project would have impacts on riparian/riverine areas on site, mitigation would be required. Implementation of the **Mitigation Measures 4.4.6.2A and 4.4.6.2B** would reduce impacts to riparian habitat to a less than significant level. (DEIR, pgs. 4.4-29 to 4.4-27)

c. Jurisdictional Waters/Wetlands

Potential Significant Impact: The EIR evaluated and concluded that the Project has the potential to permanently affect 0.051 non-wetland waters of the United States (US) and 0.362 acre of CDFW jurisdictional area, and to temporarily affect 0.054 acre of non-wetland waters of the U.S. and 0.33 acre of CDFW jurisdictional area.

Findings: Implementation of the following mitigation measures will reduce the potential adverse impacts to jurisdictional waters and wetlands to less than significant:

4.4.6.3A *The project applicant shall obtain a Section 404 Nationwide or Individual Permit, as appropriate, from the USACE, a Section 401/Porter-Cologne Water Quality Certification from the RWQCB, and a Section 1602 Streambed Alteration Agreement from the CDFG. Offsite restoration, enhancement, and/or land purchase mitigation of jurisdictional drainage impacts will occur at an off-site location through one or more of the following: an USACE approved mitigation bank, through an in-lieu fee mitigation program, and/or land purchase and conservation.*

Facts in Support of the Findings: According to Section 4.4 of the DEIR, there is a clear connection to drainages associated with the San Jacinto watershed, and all three drainages (western, southern, and eastern) located on or adjacent to the Project site are determined to be jurisdictional waters of the United States. Implementation of the Project would result in permanent impacts to 0.051 acre (354 linear feet) of ProLogis Eucalyptus Industrial Park – Facts, Findings, and Statement of Overriding Considerations

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non-wetland waters of the US and waters of the State and 0.362 acre (440 linear feet) of state streambed associated with the eastern, southern, and western drainages. In addition to permanent impacts, the Project would result in temporary impacts to 0.054 acre (332 linear feet) of non-wetland waters of the US and waters of the State and 0.33 acre (547 linear feet) of State streambed associated with construction activities. This is a significant impact requiring mitigation.

The proposed on-site restoration of temporary impact areas and the long-term enhancement of off-site riparian/riverine habitat managed by Santa Ana Water Authority provides adequate mitigation for identified impacts to on-site jurisdictional areas. Implementation of the recommended **Mitigation Measure 4.4.6.3A** would reduce impacts to jurisdictional waters to less than significant levels. (DEIR, pgs. 4.4-29 to 4.4-30)

3. Cultural Resources

a. Prehistoric Cultural Resources

Potential Significant Impact: The EIR evaluated and concluded that the Project could have an adverse effect on significant archaeological resource pursuant to Section 15064.5.

Finding: Implementation of the following mitigation measures will reduce the impact to unique archaeological resources to less than significant:

4.5.6.1A *Prior to the issuance of a grading permit, the Project Applicant shall provide evidence to the City of Moreno Valley that a Cultural Resources Monitoring Agreement has been secured for qualified Tribal representatives, and that a professional archaeological monitor meeting Secretary of Interior standards has been retained by the Applicant to conduct monitoring of all mass grading and trenching activities and has the authority to temporarily halt and redirect earthmoving activities in the event that suspected archaeological resources are unearthed during Project construction. The Project Archaeologist and Tribal representatives shall attend the pre-grading meeting with the City and contractors to explain and coordinate the requirements of the monitoring program.*

4.5.6.1B *Prior to the issuance of a grading permit, the Applicant shall provide evidence to the City of Moreno Valley that appropriate Native American representative(s), Project*

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Archaeologist, and the Tribal representative(s) shall be allowed to monitor and have received a minimum of 30 days advance notice of all mass grading and trenching activities. During grading and trenching operations, the Tribal representatives and the project archaeological monitor shall observe all mass grading and trenching activities per the Cultural Resources Monitoring Agreement. If the Tribal representatives suspect that an archaeological resource may have been unearthed, the archaeologist, in consultation with the tribal representative, shall immediately halt and redirect grading operations in a 100-foot radius around the find to allow identification and evaluation of the suspected resource. In consultation with the appropriate Native American Tribe(s), the archaeological monitor shall evaluate the suspected resource and make a determination of significance pursuant to California Public Resources Code Section 21083.2.

4.5.6.1C If a significant archaeological resource(s) is discovered on the property, ground disturbing activities shall be suspended 100 feet around the resource(s). The archaeological monitor and representatives of the appropriate Native American Tribe(s), the Project Applicant, and the City Planning Division shall confer regarding mitigation of the discovered resource(s). A treatment plan and/or preservation plan shall be prepared and by the archaeological monitor and reviewed by representatives of the appropriate Native American Tribe(s), the Project Applicant, and the City Planning Division and implemented by the archaeologist to protect the identified archaeological resource(s) from damage and destruction. The landowner shall relinquish ownership of all archaeological artifacts that are of Native American origin found on the Project site to the culturally affiliated Native American tribe(s) for proper treatment and disposition. A final report containing the significance and treatment findings shall be prepared by the archaeologist and submitted to the City Planning Division, the appropriate Native American tribe(s), and the Eastern Information Center at the University of California, Riverside. All cultural material, excluding sacred, ceremonial, grave goods and human remains, collected during the grading monitoring program and from any previous archaeological studies or excavations on the project site shall be curated, as determined by the treatment plan, according to the current professional repository standards and may include the Pechanga Bands curatorial facility.

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4.5.6.1D *Prior to grading permit issuance, the City shall verify that the following note is included on the Grading Plan:*

“If any suspected archaeological resources are discovered during ground-disturbing activities and the archaeological monitor or Tribal representatives are not present, the construction supervisor is obligated to halt work in a 100-foot radius around the find and call the project archaeologist and the Tribal representatives to the site to assess the significance of the find.”

4.5.6.1E *If human remains are encountered, California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the Riverside County Coroner has made the necessary findings as to origin. Further, pursuant to California Public Resources Code Section 5097.98(b), remains shall be left in place and free from disturbance until a final decision as to the treatment and disposition has been made by the Coroner. If the Riverside County Coroner determines the remains to be Native American, the California Native American Heritage Commission must be contacted within 24 hours. The Native American Heritage Commission must then immediately notify the “most likely descendant(s)” of receiving notification of the discovery. The most likely descendant(s) shall then make recommendations within 48 hours, and engage in consultations concerning the treatment of the remains as provided in Public Resources Code §5097.98.*

Facts in Support of the Finding: Based on Section 4.5 of the DEIR, a reconnaissance pedestrian-survey for the Project site was conducted in November 2007. Although the Project site is located within the Moreno Hills Complex, no archaeological resources were identified on the Project site during the field survey, and the cultural resource assessment concluded the Project would have no significant impacts; however, there is a potential for Project grading to disturb previously undiscovered cultural resources. While there is no recorded or surface evidence that archaeological resources are present on site, the Project is located in an area with a high potential of containing prehistoric archaeological resources. Therefore, a potential exists that excavation and construction activities may uncover previously undetected prehistoric or historic cultural resources. This is a potentially significant impact under CEQA and requires mitigation. Adherence to the above **Mitigation Measures 4.5.6.1A** through **4.5.6.1E** would

reduce potential impacts to archaeological resources to a less than significant level. (DEIR, pgs. 4.5-6 to 4.5-7)

b. Paleontological Resources

Potential Significant Impact: The EIR evaluated and concluded that the Project could have an adverse effect on significant paleontological resource or site or unique geologic feature.

Findings: Implementation of the following mitigation measures will reduce the impact to unique paleontological resource or unique geologic feature to less than significant:

4.5.6.2A *Prior to the issuance of grading permits, the project applicant shall submit to and receive approval from the City, a Paleontological Resource Impact Mitigation Program (PRIMP). The PRIMP shall include the provision of a trained paleontological monitor during on-site soil disturbance activities. The monitoring for paleontological resources shall be conducted during the rough-grading phase of the project. In the event that paleontological resources are unearthed or discovered during excavation, Mitigation Measure 4.5.6.2C shall apply. Conversely, if no paleontological resources are unearthed or discovered on site during excavation, no additional action is required.*

4.5.6.2B *The paleontological monitor shall be equipped to rapidly remove any large fossil specimens encountered during excavation. During monitoring, samples of soil shall be collected and processed to recover microvertebrate fossils. Processing shall include wet screen washing and microscopic examination of the residual materials to identify small vertebrate remains.*

4.5.6.2C *If paleontological resources are unearthed or discovered during excavation of the project site, the monitoring for paleontological resources shall be conducted on a full-time basis for the duration of the rough-grading of the project site. The following recovery processes shall apply:*

- *Upon encountering a large deposit of bone, salvage of all bone in the area shall be conducted with additional field staff and in accordance with modern paleontological techniques.*

- *All fossils collected during the project shall be prepared to a reasonable point of identification. Excess sediment or matrix shall be removed from the specimens to reduce the bulk and cost of storage. Itemized catalogs of all material collected and identified shall be provided to the museum repository along with the specimens.*
- *A report documenting the results of the monitoring and salvage activities and the significance of the fossils shall be prepared.*
- *All fossils collected during this work, along with the itemized inventory of these specimens, shall be deposited in a museum repository for permanent curation and storage.*

4.5.6.2D *Prior to grading permit issuance, the City shall verify that the following note is included on the Grading Plan:*

“If any suspected paleontological resources are discovered during ground-disturbing activities, the construction supervisor is obligated to halt work in a 100-foot radius around the find and call a qualified paleontologist to the site to assess the significance of the find. A qualified paleontologist shall evaluate the suspected resource. If the paleontologist determines that the find is not unique, construction shall be permitted to proceed. However, if the paleontologist determines that further information is needed to evaluate significance, the City of Moreno Valley shall be notified and a treatment plan shall be prepared and implemented in consultation with the City to protect the identified paleontological resource(s) from damage and destruction.”

Facts in Support of the Findings: According to Section 4.5 of the DEIR, the Project site is located within an area that has a high potential to contain near-surface Pleistocene fossils.¹³ The paleontological literature search indicated that there is potential for significant, nonrenewable resources that to encountered during onsite construction activities. Therefore, a paleontological resources impact mitigation program (PRIMP), including excavation monitoring by a qualified paleontologist, is recommended for earthmoving activities in Pleistocene sediments on the Project site with potential to contain significant, nonrenewable paleontological resources. Although no paleontological resources were

identified on site during the field survey, because of the location of the Project site and associated sensitivity for paleontological resources, the potential exists that paleontological resources may be uncovered during construction. Adherence to the **Mitigation Measures 4.5.6.2A through 4.5.6.2D** will reduce potential impacts to paleontological resources to a less than significant level. (DEIR, pgs. 4.5-7 to 4.5-8)

4. Hydrology, Drainage, and Water Quality

a. **Construction-Related Water Quality Impacts**

Potential Significant Impact: The EIR evaluated and concluded that the Project could violate water quality standards or waste discharge requirements during construction phases of the Project in form of increased soil erosion, sedimentation, or storm water discharges.

Findings: Implementation of the following mitigation measures will reduce the impact to construction-related water quality to less than significant:

4.7.6.1A *Prior to grading plan approval and the first issuance of a grading permit by the City, the project applicant shall provide evidence to the City that a Notice of Intent (NOI) has been filed with the Regional Water Quality Control Board for coverage under the State NPDES General Construction Permit for discharge of storm water associated with construction activities.*

4.7.6.1B *Prior to grading plan approval and the first issuance of a grading permit by the City, the project applicant shall submit to the City of Moreno Valley a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP shall include a surface water control plan and erosion control plan citing specific measures to control on-site and off-site erosion during the entire grading and construction period. Additionally, the SWPPP shall identify structural and nonstructural BMPs to control sediment and nonvisible discharges from the site. BMPs to be implemented in the SWPPP may include (but shall not be limited to) the following:*

- *Sediment discharges from the site may be controlled by the following: sandbags, silt fences, straw wattles and temporary debris basins (if deemed necessary), and*

¹³ Ibid.

other discharge control devices. The construction and condition of the BMPs will be periodically inspected during construction, and repairs will be made when necessary as required by the SWPPP.

- *No materials of any kind shall be placed in drainage ways.*
- *Materials that could contribute nonvisible pollutants to storm water must be contained, elevated, and placed in temporary storage containment areas.*
- *All loose piles of soil, silt, clay, sand, debris, and other earthen material shall be protected per RWQCB standards to eliminate any discharge from the site. Stockpiles will be surrounded by silt fences.*
- *The SWPPP will include inspection forms for routine monitoring of the site during the construction phase to ensure NPDES compliance.*
- *Additional BMPs and erosion control measures will be documented in the SWPPP and utilized if necessary.*
- *The SWPPP will be kept on site for the entire duration of project construction and will also be available to the local RWQCB for inspection at any time.*

In the event that it is not feasible to implement the above BMPs, the City of Moreno Valley can make a determination that other BMPs will provide equivalent or superior treatment either on or off site.

4.7.6.1C *Prior to the issuance of grading permits, the project applicant shall provide evidence to the City that the following provisions have been added to construction contracts for the project:*

- *The Construction Contractor shall be responsible for performing and documenting the application of BMPs identified in the SWPPP. Weekly inspections shall be performed on sediment control measures called for in the SWPPP. Monthly reports shall be maintained by the Contractor and submitted to the City for inspection. In addition, the Contractor will also be required to maintain an inspection log and have the log on site to be reviewed by the City of*

Moreno Valley and the representatives of the Regional Water Quality Control Board.

Facts in Support of the Findings: According to Section 4.7 of the DEIR, the construction and grading phases of the project site would require the disturbance of surface soils and removal of existing orange groves and vegetative cover. During the construction period, grading and excavation activities would result in exposure of soil to storm runoff, potentially causing erosion and sediment in runoff. If not managed through Best Management Practices (BMPs), the runoff could cause erosion and increased sedimentation in local drainage ways such as the Quincy Channel. The potential for chemical releases is present at most construction sites in the form of fuels, solvents, glues, paints, and other building construction materials. However, implementation of construction practices and adherence to existing water quality regulations and **Mitigation Measures 4.7.6.1A** through **4.7.6.1C** would reduce these impacts to a less than significant level. (DEIR, pgs. 4.7-21 to 4.7-23)

b. Operational-Related Water Quality Impacts

Potential Significant Impact: The EIR evaluated and concluded that the Project could violate water quality standards or waste discharge requirements during the operational phases of the project in the form of increased soil erosion, sedimentation, or urban runoff.

Findings: Implementation of the following mitigation measure will reduce the impact to operational-related water quality to less than significant:

4.7.6.2A *Prior to grading plan approval and the first issuance of a grading permit by the City, the project applicant shall receive approval from the City of Moreno Valley for a Final Water Quality Management Plan (F-WQMP). The F-WQMP shall specifically identify pollution prevention, site design, source control, and treatment control BMPs that shall be used on site to control predictable pollutant runoff in order to reduce impacts to water quality to the maximum extent practicable. BMPs to be implemented in the F-WQMP may include (but shall not be limited to) the following:*

- *Required landscaped areas shall not use decorative concrete or impervious surfaces.*

- *Landscape plans shall incorporate native and drought-tolerant plants, trees, and shrubs. Landscaping shall be maintained weekly and maintenance contractor will properly dispose of all landscape wastes.*
- *Irrigation systems shall be inspected monthly by the landscape contractor to check for overwatering, leaks, or excessive runoff to paved areas. Timers will be used to prevent overwatering.*
- *Signage will be inspected and maintained twice a year for legibility.*
- *Outdoor Loading/Unloading truck docks shall be kept in a clean and orderly condition with weekly inspections, continuous monitoring and immediate clean up of spills.*
- *Parking area maintenance shall be swept or vacuumed at least quarterly, if there is any trash or debris in between the routine sweeping, it shall be swept or vacuumed immediately.*
- *Trash enclosures will be inspected and maintained weekly or as needed by maintenance contractor.*
- *On-site extended detention/sedimentation basins and sand filters will treat all of the site's runoff via vegetated swales and will be maintained and inspected at least twice a year and prior to October 1.*
- *Additional BMPs will be documented in the WQMP and utilized if necessary.*

In the event that it is not feasible to implement the above BMPs, the City of Moreno Valley can make a determination that other BMPs will provide equivalent or superior treatment either on or off site.

Facts in Support of the Findings: According to Section 4.7 of the DEIR, the Project would result in the conversion of existing on-site permeable surfaces to impermeable surfaces, thereby altering the current drainage pattern. Upon development of the proposed on-site uses, storm runoff from the roadways, parking lots, and buildings may carry a variety of pollutants such as sediment, pathogens, petroleum products, commonly utilized construction materials, landscaping chemicals, and (to a lesser extent) trace

metals such as zinc, copper, lead, cadmium, and iron, which may lead to the degradation of storm water in downstream channels. These impacts to water quality are considered significant impacts that require mitigation. **Mitigation Measure 4.7.6.2A** has been identified to reduce impacts to water quality to less than significant.

The Project would also incorporate on-site drainage that would have hydrodynamic infrastructure components that would meet City and County water quality requirements. Through the use of site design BMPs, source control BMPs, and treatment control BMPs, the resulting pollutant loads coming from the Project would be reduced thereby ultimately reducing pollutants discharged from urban storm water runoff to surface water bodies. Because adherence to the requirements of the NPDES permit, which include implementation of the BMPs outlined in the WQMP, would be required by the City during the operation of the Project, potential water quality impacts resulting from storm water and urban runoff would be reduced to a less than significant level. (DEIR, pgs. 4.7-23 to 4.7-26)

c. Drainage Capacity-Related Impacts

Potential Significant Impact: The EIR evaluated and concluded that the Project could create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.

Findings: Implementation of the following mitigation measure will reduce the impact to drainage to less than significant:

4.7.6.3A *Prior to the approval of a rough grading plan, the project proponent shall receive approval on a project-specific Final Hydrology Study, with supporting engineering calculations, from the City Engineer. The Final Hydrology Study shall incorporate relevant requirements identified by the City, and/or site-specific geotechnical investigations.*

Facts in Support of the Findings: According to Section 4.7 of the DEIR, development and operation of the Project would result in the generation of the additional storm water flows that would be above those generated in existing site conditions. With the construction and maintenance of adequate storm water drainage systems, through the adherence of **Mitigation Measure 4.7.6.3A**, impacts would be less than

significant. In addition, the design and installation of the proposed drainage improvements will be required to adhere to applicable City and County standards. (DEIR, pgs. 4.7-26 to 4.7-28)

5. Noise

a. Short-Term Construction Noise

Potential Significant Impact: The EIR evaluated and concluded that noise levels from grading and other construction activities for the proposed Project may range up to 91 dBA at the closest residences southeast of the Project site for very limited times when construction occurs near the Project's boundary. Construction-related noise impacts from the Project would be potentially significant.

Finding: Implementation of the following mitigation measures will reduce potential short-term construction noise impacts to less than significant:

4.9.6.1A *During all project site excavation and grading on site, the project contractor shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards.*

4.9.6.1B *The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest to the project site.*

4.9.6.1C *The construction contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise sources and noise-sensitive receptors nearest to the project site during all project construction.*

4.9.6.1D *During project site construction activities at Building 6 (i.e., closest to existing residences), the construction contractor shall limit all construction-related activities to between the hours of 6:00 a.m. and 8:00 p.m. on weekdays and between the hours of 7:00 a.m. to 8:00 p.m. on weekends and holidays, unless written approval is obtained from the City Building Official or City Engineer for specific construction activities that must be conducted outside of the permitted time periods.*

Facts in Support of the Finding: According to Section 4.9 of the DEIR, two types of short-term noise impacts could occur during the construction of the Project. First, construction crew commutes and the transport of construction equipment and materials to the site for the Project would incrementally increase ProLogis Eucalyptus Industrial Park – Facts, Findings, and Statement of Overriding Considerations

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noise levels on access roads leading to the site. The second type of short-term noise impact is related to noise generated during excavation, grading, and building erection on the Project site. Construction of the Project is expected to require the use of scrapers, bulldozers, and water and pickup trucks. The site preparation phase, which includes excavation and grading of the site, tends to generate the highest noise levels, because the noisiest construction equipment is earthmoving equipment. Earthmoving equipment includes excavating machinery such as backfillers, bulldozers, draglines, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve one or two minutes of full-power operation followed by three to four minutes at lower power settings. The maximum noise level generated by each scraper on the Project site is assumed to be approximately 87 dBA L_{max} at 50 feet from the scraper. Each bulldozer would generate approximately 85 dBA L_{max} at 50 feet. The maximum noise level generated by water and pickup trucks is approximately 86 dBA L_{max} at 50 feet from these vehicles. Each doubling of the sound sources with equal strength increases the noise level by three (3) dBA. Assuming that each piece of construction equipment operates at some distance from the other equipment, the worst-case composite noise level during this phase of construction would be 91 dBA L_{max} at a distance of 50 feet from the active construction area.

The nearest noise-sensitive receptor locations to the Project site are existing residences approximately 50 feet to the southeast. These nearest residents may be subject to short-term, intermittent, maximum noise reaching 91 dBA L_{max} , generated by construction activities on the Project site. This noise level would exceed the City's exterior noise standard of 60 dBA¹⁴ CNEL for residential uses. However, no significant construction noise impacts would occur if construction of the Project would occur within the permitted hours of 6:00 a.m. to 8:00 p.m. of any working day, and within the permitted hours of 7:00 a.m. and 8:00 p.m. on Sundays and Federal holidays. Compliance with the construction hours specified in the City's Municipal Code would result in construction noise impacts that are less than significant. While impacts would be considered less than significant as long as construction activities occur within the designated hours identified in the City's Municipal Code, mitigation measures have been identified to reduce the noise levels that would expose nearby sensitive receptors to noise levels in excess of the City's noise standards.

¹⁴ Chapter 11.80.030 Table 11.80.030-2, City of Moreno Valley Municipal Code, City of Moreno Valley.
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With adherence to the City's designated construction hours and with implementation of the proposed **Mitigation Measures 4.9.6.1A through 4.9.6.1D**, potential short-term construction noise impacts would be reduced below the level of significance. (DEIR, pgs. 4.9-25 to 4.9-27)

6. Transportation

a. Future Year 2035 with Project Conditions (Intersection) Traffic and Level of Service

Potential Significant Impact: The EIR evaluated and concluded that the Project could cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system.

Findings: Implementation of the following mitigation measures will reduce the impact related to future traffic LOS to less than significant:

4.11.6.4A *Prior to issuance of a Certificate of Occupancy, the project applicant shall construct the following traffic improvements:*

- *Redlands Boulevard/SR-60 Westbound Ramps. Install a traffic signal. This improvement is currently approved, and permitted by Caltrans. If not otherwise completed prior to project opening, the required traffic signal shall be constructed by the Applicant prior to issuance of the first Certificate of Occupancy.*
- *Redlands Boulevard/Fir Avenue/Eucalyptus Avenue. If not otherwise completed prior to project opening, prior to issuance of the first Certificate of Occupancy, the Applicant shall construct the following improvements: Install a traffic signal and add a northbound left-turn lane and a southbound left-turn lane.*

If the improvements are constructed by others prior to the Certificate of Occupancy, the applicant shall pay its fair share towards the improvements through the City's DIF program.

4.11.6.4B *Prior to issuance of building permits, the project applicant shall pay the fair-share contribution toward the following traffic improvements through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program:*

- ***Moreno Beach Drive/SR-60 Eastbound Ramps.*** *The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The*

interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF would mitigate the significant impact at this location. This project is scheduled to go into construction by the end of this year and completed by the end of 2013.

- ***Redlands Boulevard/SR-60 Westbound Ramps.*** *Install a traffic signal. This improvement is currently approved, and permitted by Caltrans. If not otherwise completed prior to project opening, the required traffic signal shall be constructed by the Applicant prior to issuance of the first Certificate of Occupancy.*
- ***Redlands Boulevard/Fir Avenue/Eucalyptus Avenue.*** *If not otherwise completed prior to project opening, prior to issuance of the first Certificate of Occupancy, the Applicant shall construct the following improvements: Install a traffic signal. This improvement is listed in the City's DIF program. Add a northbound left-turn lane and a southbound left-turn lane.*

4.11.6.4C *Prior to issuance of building permits, the project applicant shall pay the fair-share contribution toward the following traffic improvements through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program:*

- ***Moreno Beach Drive/SR-60 Eastbound Ramps.*** *The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF would mitigate the significant impact at this location.*
- ***Moreno Beach Drive/Cottonwood Avenue.*** *Add a southbound through lane. This improvement is listed in the City's DIF program. Therefore, payment of the DIF would mitigate the significant impact at this location.*
- ***Moreno Beach Drive/Alessandro Boulevard.*** *Add a southbound through lane. This improvement is listed in the City's DIF program. Therefore, payment of the DIF would mitigate the significant impact at this location.*

- **Redlands Boulevard/SR-60 Westbound Ramps.** Install a traffic signal. This improvement is listed in the City's DIF program and will be installed before building occupancy since it was identified as a direct project impact. Add a northbound through lane. The Redlands Boulevard/SR-60 Interchange reconstruction would implement the northbound through lane. The interchange reconstruction project is programmed in the TUMF. Therefore, payment of the DIF and TUMF would mitigate the significant impact at this location.
- **Redlands Boulevard/SR-60 Eastbound Ramps.** The Redlands Boulevard/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF. Therefore, payment of the TUMF would mitigate the significant impact at this location.
- **Redlands Boulevard/Fir Avenue/Eucalyptus Avenue.** Install a traffic signal. Add a westbound right-turn lane and provide overlap phasing for the westbound right turns. Add a westbound left-turn lane and an eastbound left-turn lane. These improvements are programmed in the City's DIF program. Add a northbound left-turn lane a southbound through lane and a southbound left-turn lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF would mitigate the significant impact at this location.
- **Redlands Boulevard/Eucalyptus Avenue.** Add a southbound right-turn lane. This improvement is programmed in the TUMF. Therefore, payment of the TUMFs would mitigate the significant impact at this location.
- **Redlands Boulevard/Alessandro Boulevard.** Add a southbound left-turn lane. This improvement is programmed in the TUMF. Therefore, payment of the TUMFs would mitigate the significant impact at this location.

4.11.6.4D *Prior to issuance of building permits, the project applicant shall pay the fair-share contribution toward the following traffic improvements through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program. At some locations, the DIF and TUMFs would not fully mitigate the projects impact. For these*

locations, additional improvements shall be implemented by the project applicant prior to the issuance of a certificate of occupancy for the project:

- ***Nason Street/Eucalyptus Avenue.*** Add a northbound right-turn lane. This improvement is programmed in the City's DIF; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. In addition, the project shall contribute a fair share (calculated to be 1.76%) toward restriping the westbound approach to provide dual left-turn lanes
- ***Nason Street/Alessandro Boulevard.*** Add an eastbound through lane and a westbound through lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. In addition, the project shall contribute a fair share (calculated to be 1.4%) toward modification of the traffic signal to provide overlap phasing for the eastbound right-turn lane.
- ***Moreno Beach Drive/SR-60 Westbound Ramps.*** The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF would mitigate the significant impact at this location.
- ***Moreno Beach Drive/SR-60 Eastbound Ramps.*** The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF would mitigate the significant impact at this location.
- ***Moreno Beach Drive/Eucalyptus Avenue.*** Convert the existing eastbound through lane to a left-turn lane and the eastbound right-turn lane to a shared through/right-turn lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. In addition, the project shall contribute a fair share (calculated to be 8.63%) toward modification of the traffic signal to provide right-turn overlap phasing for the westbound right turn.

- **Moreno Beach Drive/Cottonwood Avenue.** Add a southbound through lane. This improvement is programmed in the City's DIF program. Therefore, payment of the DIF would mitigate the significant impact at this location.
- **Moreno Beach Drive/Alessandro Boulevard.** Add 2 southbound through lanes, 2 northbound through lanes, an eastbound through lane, and a westbound through lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would mitigate the significant impact at this location.
- **Redlands Boulevard/SR-60 Westbound Ramps.** Install a traffic signal. This improvement is programmed in the City's DIF program and will be installed before building occupancy since it was identified as a direct project impact.
- **Redlands Boulevard/SR-60 Eastbound Ramps.** The Redlands Boulevard/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF. Therefore, payment of the TUMF would mitigate the significant impact at this location.
- **Redlands Boulevard/Fir Avenue-Eucalyptus Avenue.** Install a traffic signal and add a westbound left-turn lane, eastbound through lane, eastbound left-turn lane, and a westbound right-turn lane with overlap phasing. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. In addition, add a southbound through lane, southbound left-turn lane, northbound through lane, northbound left-turn lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF would mitigate the significant impact at this location.
- **Redlands Boulevard/Eucalyptus Avenue.** Install a traffic signal and add a westbound left-turn lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. In addition, add a northbound left-turn lane and a southbound left-turn lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF would mitigate the significant impact at this location.

- **Redlands Boulevard/Alessandro Boulevard.** *Install a traffic signal. This improvement is programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. In addition, add a southbound left-turn lane, a northbound left-turn lane, a westbound left-turn lane, an eastbound left-turn lane, a westbound right-turn lane, and a southbound through lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF would mitigate the significant impact at this location.*

4.11.6.4E *Prior to issuance of building permits, the project applicant shall implement the following improvements, either through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program, or through a fair-share contribution to the City of Moreno Valley as noted below:*

- **Nason Street/Eucalyptus Avenue.** *Add a northbound right-turn lane and an eastbound right-turn lane. These improvements are programmed in the City's DIF; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. Implementation of the improvements identified for this intersection in **Mitigation Measure 4.11.6.4D** would also partially mitigate the significant impact at this intersection. In addition, the project shall pay a fair share (calculated to be 1.6%) toward modification of the traffic signal to provide right-turn overlap phasing for the eastbound and northbound right turns.*
- **Nason Street/Alessandro Boulevard.** *Add an eastbound through lane and westbound through lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. Implementation of the improvements identified for this intersection in **Mitigation Measure 4.11.6.4D** would also partially mitigate the significant impact at this intersection. In addition, the project shall pay a fair share (calculated to be 1.35%) toward the addition of an eastbound left-turn lane and modification of the traffic signal to provide overlap phasing for the westbound right-turn lane.*
- **Moreno Beach Drive/SR-60 Westbound Ramps.** *The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The*

interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF would mitigate the significant impact at this location.

- ***Moreno Beach Drive/SR-60 Eastbound Ramps.*** *The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF would mitigate the significant impact at this location.*
- ***Moreno Beach Drive/Eucalyptus Avenue.*** *Restripe eastbound approach to dual left-turn lanes and add a northbound through lane, a westbound through lane, and a southbound right-turn lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. Implementation of the improvements identified for this intersection in **Mitigation Measure 4.11.6.4D** would also partially mitigate the significant impact at this intersection. In addition, the project shall pay a fair share (calculated to be 5.17%) toward modification of the traffic signal to provide right-turn overlap phasing for the southbound right-turn lane.*
- ***Moreno Beach Drive/Cottonwood Avenue.*** *Add a southbound through lane, a northbound through lane, an eastbound left-turn lane, an eastbound through lane, a westbound through lane, and a westbound left-turn lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would mitigate the significant impact at this location.*
- ***Moreno Beach Drive/Alessandro Boulevard.*** *Add 2 southbound through lanes, add 2 northbound through lanes, an eastbound through lane, and a westbound through lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would mitigate the significant impact at this location.*
- ***Auto Mall Drive/Eucalyptus Avenue.*** *Install a traffic signal. This improvement is programmed in the City's DIF program; therefore, payment of the DIF would mitigate the significant impact at this location.*

- **Redlands Boulevard/SR-60 Westbound Ramps.** Install a traffic signal. This improvement is programmed in the City's DIF program and will be installed before building occupancy since it was identified as a direct project impact. Therefore, payment of the DIF would mitigate the significant impact at this location.
- **Redlands Boulevard/SR-60 Eastbound Ramps.** The Redlands Boulevard/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF. Therefore, payment of the TUMF would mitigate the significant impact at this location.
- **Redlands Boulevard/Fir Avenue-Eucalyptus Avenue.** Install a traffic signal and add a westbound left-turn lane, eastbound through lane, eastbound left-turn lane, a westbound right-turn lane with overlap phasing, and a southbound right-turn lane with overlap phasing. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. In addition, add a southbound through lane, a southbound left-turn lane, a northbound through lane, a northbound left-turn lane, and a northbound right-turn lane. These improvements are programmed in the TUMF. Therefore, payment of the TUMF would also partially mitigate the significant impact at this location. In addition, the project shall pay a fair share (calculated to be 10.44%) of the cost of adding a southbound left-turn lane.
- **Redlands Boulevard/Eucalyptus Avenue.** Install a traffic signal and add a westbound left-turn lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. In addition, add a northbound left-turn lane, a northbound through lane, a southbound left-turn lane, and a southbound through lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF would mitigate the significant impact at this location.
- **Redlands Boulevard/Cottonwood Avenue.** Add an eastbound through lane and westbound through lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. In addition, add a northbound through lane, and a southbound through

lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF would mitigate the significant impact at this location.

- **Redlands Boulevard/Alessandro Boulevard.** Install a traffic signal. This improvement is programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. In addition, add a southbound left-turn lane, a northbound left-turn lane, a westbound left-turn lane, an eastbound left-turn lane, a westbound right-turn lane, a southbound through lane, a westbound through lane, and an eastbound through lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF would mitigate the significant impact at this location.

4.11.6.4F If the Encilia Avenue and Quincy Street Connection plan is implemented as part of the proposed project, then prior to issuance of building permits, the project applicant shall implement the following improvements: In addition to those identified in **Mitigation Measure 4.11.6.4E**, either through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program, or through a fair-share contribution to the City of Moreno Valley as noted below:

- **Moreno Beach Drive/Eucalyptus Avenue.** Restripe the southbound shared through/right-turn lane to a southbound through lane. This improvement is programmed in the City's DIF program; therefore, payment of the DIF would mitigate the impacts of the project at this intersection.
- **Redlands Boulevard/Fir Avenue-Eucalyptus Avenue.** Pay the fair share (calculated to be 10.84%) to add a southbound right-turn lane.
- **Redlands Boulevard/Encilia Avenue-Eucalyptus Avenue.** Install a traffic signal and add a westbound left-turn lane. These improvements are programmed in the City's DIF program. In addition, add a northbound left-turn lane, northbound through lane, southbound left-turn lane, and a southbound through lane. These improvements are programmed in the TUMF program. Therefore, payment of the DIF and TUMF would fully mitigate the impact of the project at this intersection.

- **Moreno Beach Drive/Encilia Avenue.** *Install a traffic signal, add a northbound through lane, southbound left-turn lane, and a southbound through lane. This improvement is programmed in the City's DIF program; therefore, payment of the DIF would mitigate the impacts of the project at this intersection.*

Facts in Support of the Findings: Future Year (2035) with Project conditions considers the addition of traffic generated by the Project to Future Year (2035) Baseline conditions. The addition of project traffic to the Future Year (2035) scenario would result in conditions exceeding City and Caltrans LOS standards at twelve intersections.

All of the intersections that are forecast to experience a deficient LOS with the Project would also operate with a deficient LOS without the Project. Although the Project does not cause these intersections to operate at an unsatisfactory LOS, it does contribute to the worsening of the intersections' LOS and therefore mitigation would be required to offset the cumulative impact of the project.

Freeway mainline and ramp junctions were evaluated in the Future Year 2035 plus Project condition. Nine segments are forecast to operate at an unsatisfactory level of service in the Future Year 2035 Cumulative plus Project condition. The Traffic Study for the Project also analyzes the Future Year 2035 plus Project conditions a.m. and p.m. peak hour ramp merge-diverge volumes and levels of service for the freeway segments on SR-60. Nine ramp junctions are forecast to operate at an unacceptable level of service in the future Year 2035 plus Project condition. (DEIR pgs. 4.11-25 to 4.11-27)

According to Section 4.11 in the DEIR, with the implementation of the recommended improvements, the minimum level of service standards would be maintained for the Future Year (2035) with Project scenario and impacts would be reduced to a less than significant level for all identified intersections. In addition, reconstruction of the interchanges at the location of the deficient freeway ramp intersections identified in **Mitigation Measure 4.11.6.2D** is already programmed into the TUMF program. It is anticipated that by future year (2035) improvement to the identified freeway ramps and intersections would be built through the TUMF process and coordination by Caltrans, WRCOG, and the City of Moreno Valley. Because the project would pay its fair-share cost associated with these improvements and because such improvements are anticipated to be constructed by the future year (2035), impacts associated with this issue are less than significant after the identified mitigation measures have been implemented. (DEIR, pg. 4.11-35)

**b. General Plan Build Out With Project Conditions (Intersection)
Traffic and Level of Service Impacts**

Potential Significant Impact: The EIR evaluated and concluded that the Project could cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system.

Findings: Implementation of **Mitigation Measure 4.11.6.4E** will reduce the impact related to General Plan buildout to less than significant.

Facts in Support of the Findings: General Plan Build Out with project conditions considers the addition of traffic generated by the Project to General Plan Build Out baseline conditions. An intersection LOS analysis was conducted to determine General Plan Build Out intersection performance. The addition of project traffic to the General Plan Build Out scenario would result in conditions exceeding City and Caltrans LOS standards at 13 intersections.

All of the intersections that are forecast to experience a deficient LOS with the Project would also operate with a deficient LOS without the Project. Although the Project does not cause these intersections to operate at an unsatisfactory LOS, it does contribute to the worsening of the intersections' LOS and therefore mitigation would be required to offset the cumulative impact of the project. (DEIR, pg. 4.11-28)

According to Section 4.11 of the DEIR, with the implementation of the recommended improvements, the minimum level of service standards would be maintained for the General Plan Build Out with Project scenario and impacts would be reduced to a less than significant level for all identified intersections. However, as noted previously, improvements to the freeway intersections and infrastructure are under the authority of Caltrans. In addition, the deficient freeway ramp intersections identified in **Mitigation Measure 4.11.6.2E** are already programmed into the TUMF program. It is anticipated that by the General Plan Build Out, improvements to the identified freeway ramps and intersections would be built through the TUMF process and coordination by Caltrans, WRCOG, and the City of Moreno Valley. Because the project would pay its fair-share cost associated with these improvements and because such improvements are anticipated to be constructed by the future year (2035), impacts associated with this issue are less than significant after the identified mitigation measures have been implemented. (DEIR, pg. 4.11-37)

7. Utilities and Service Systems

a. **Storm Water Drainage Requirements**

Potential Significant Impact: The EIR evaluated and concluded that the Project could result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Findings: Implementation of the following mitigation measures will reduce the impact to storm water drainage to less than significant:

4.7.6.3A Prior to the approval of associated project rough grading plan, the project proponent shall receive approval on a project-specific Final Hydrology Study, with supporting engineering calculations, from the City Engineer. The Final Hydrology Study shall incorporate relevant requirements identified by the City, and/or site-specific geotechnical investigations.

Facts in Support of the Findings: According to Section 4.12 of the DEIR, the Project would route storm water flows from the Project site into Quincy Channel after flows are routed through a combination of water quality basins and sand filters. Due to the installation of impervious surfaces on the Project site, the post-development flows would be higher than the pre-development flows. To avoid a significant impact to the existing drainage capacity, the post-development flows coming from the Project site are required to be equal to or less than pre-development flows.¹⁵ To reduce flows to below or equal to pre-development conditions, the on-site storm water flows would be routed to the on-site detention basins¹⁶ before flows are routed off site. While the increase in impervious surfaces attributable to the Project would contribute to a greater volume and higher velocity of storm water flows, the Project's water quality basins would accept and accommodate runoff that would result from project construction at pre-project conditions.

¹⁵ As part of the MS4 Permit issuance requirements, projects must identify any Hydrologic Conditions of Concern and demonstrate that changes to hydrology are minimized to ensure that post-development runoff rates and velocities from a site do not adversely affect downstream erosion, sedimentation, or stream habitat.

¹⁶ A detention basin is an area where excess storm water is stored or held temporarily and then slowly drains when water levels in the receiving channel recede. In essence, the water in a detention basin is temporarily detained until additional room becomes available in the receiving channel.

As identified in the Preliminary Hydrology Calculations¹⁷ prepared for the Project, to adequately contain and store the greatest volume that would be generated, the Project site would require a minimum storage volume of 13.6 acre-feet. The proposed amount of storage area (20.3 acre-feet) is greater than the required amount of storage area. Based on this, it appears there is excess capacity of 6.7 acre-feet (20.3 acre-feet – 13.6 acre-feet = 6.7 acre-feet) of storage area available from the on-site detention basins; therefore, the Project appears to have adequate drainage capacity that would result in post-development flows being reduced to pre-development flows before leaving the Project site. However, to ensure that impacts associated with on-site drainage capacity are reduced to a less significant level, the **Mitigation Measure 4.7.6.3A** has been identified to reduce potential impacts to less than significant levels. (DEIR, pgs. 4.12-16 to 4.12-17)

8. Global Climate Change

a. Greenhouse Gas Emissions

Potential Significant Impact: The EIR evaluated and concluded that the Project could have an adverse effect due to the generation of greenhouse gas emissions (GHGs).

Findings: Implementation of the following mitigation measures will reduce the impact related to greenhouse gas emissions to less than significant:

4.13.6.1A *Prior to the issuance of building permits, the project applicant shall provide evidence to the City of Moreno Valley that building features have been incorporated in building plans as required by Title 24 of the California Code of Regulations. These features include but are not limited to the following:*

- *Exterior windows shall utilize window treatments for efficient energy conservation.*
- *Per CALGreen Code requirements, water-efficient fixtures and appliances, including but not limited to low-flow faucets, dual-flush toilets minimizing water consumption by 20 percent from the Building Standards Code baseline water consumption shall be used.*

¹⁷ Preliminary Hydrology Calculations for ProLogis Park Moreno Valley-Eucalyptus TPM 35679, Thienes Engineering, November 4, 2008. ProLogis Eucalyptus Industrial Park – Facts, Findings, and Statement of Overriding Considerations

- *Per CALGreen Code requirements, a Commissioning Plan shall be prepared and all building systems (e.g., heating, ventilation, and air-conditioning [HVAC], irrigation systems, lighting, and water heating) shall be commissioned by the Commissioning Authority.*
- *Per CALGreen Code, restrict watering methods (e.g., prohibit systems that apply water to non-vegetated surfaces) and control runoff.*

4.13.6.1B *Prior to the issuance of building permits, the project applicant shall provide evidence to the City of Moreno Valley that the following measures have been incorporated into the design and construction of the project:*

- *Use of locally produced and/or manufactured building materials for at least 10 percent of the construction materials used for the project.*
- *Use of “Green Building Materials,” such as those materials that are resource efficient, and recycled and manufactured in an environmentally friendly way, for at least 10 percent of the project.*
- *Limit unnecessary idling of construction equipment. A reduction in equipment idling would reduce fuel consumption, and therefore, GHG emissions.*
- *Maximize the use of electricity from the power grid by replacing diesel- or gasoline-powered equipment. This would reduce GHG emissions because electricity can be produced more efficiently at centralized power plants.*
- *Design the project building to exceed the California Building Code’s (CBC) Title 24 energy standard, including, but not limited to, any combination of the following:*
 - *Increase insulation such that heat transfer and thermal bridging is minimized.*
 - *Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption.*
 - *Incorporate ENERGY STAR or better rated windows, space heating and cooling equipment, light fixtures, appliances, or other applicable electrical equipment.*

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- *Provide a landscape and development plan for the project that takes advantage of shade, prevailing winds, and landscaping.*
- *Install efficient lighting and lighting control systems. Use daylight as an integral part of the lighting systems in buildings.*
- *Install light-colored “cool” roof and cool pavements.*
- *Install energy-efficient heating and cooling systems, appliances and equipment, and control systems.*
- *Install solar or light-emitting diodes (LEDs) for outdoor lighting for auto parking areas.*

4.13.6.1C *Prior to the issuance of occupancy permits, the project applicant shall provide evidence to the City of Moreno Valley that the following measures have been be incorporated into the operation of the project:*

- *The project applicant shall use less than 3,900 Global Warming Potential (GWP) hydrofluorocarbon (HCF) refrigerants or natural refrigerants (ammonia, propane, carbon dioxide [CO₂]) for refrigeration and fire suppression equipment.*
- *Provide vegetative or man-made exterior wall shading devices for east-, south-, and west facing walls with windows.*
- *Devise a comprehensive water conservation strategy appropriate for the project and its location. The strategy may include the following, plus other innovative measures that may be appropriate:*
 - *Install drought-tolerant plants for landscaping.*
 - *Use reclaimed water for landscape irrigation within the project. Install the infrastructure to deliver and use reclaimed water.*
 - *Install water-efficient irrigations systems, such as weather-based and soil-moisture-based irrigation controllers and sensors for landscaping according to*

the California Department of Water Resources Model Efficient Landscape Ordinance.

- *Provide employee education about reducing waste and available recycling services.*

Facts in Support of the Findings: Future development that could occur on the Project site could generate GHG emissions during construction and operation activities. It is anticipated that the majority of energy consumption (and associated generation of GHG emissions) would occur during the project's operation (as opposed to its construction). The total GHG emissions over the entire construction process are expected to be 2,700 metric tons. Under the less intensive modified plan, impacts due to operational air pollutant emissions would be reduced by eliminating 32% of development proposed in the southeast portion of the site (Buildings 5 and 6) compared to the Proposed Project. Based on a comparison of the Project to the South Coast Air Quality Management District tiered interim GHG significance criteria, the most applicable screening threshold listed is the Industrial at 10,000 ton per year (tpy) CO₂e. The long-term project operational GHG emissions for the Project are 79,000 tpy CO₂e and less for the modified plan but still exceed this threshold; therefore, the Project operational GHG emissions are significant. In order to ensure that the Project complies with and would not conflict with or impede the implementation of reduction goals identified in AB 32, the Governor's EO S-3-05, and other strategies to help reduce GHGs to the level proposed by the Governor, **Mitigation Measures 4.13.6.1A through 4.13.6.1C** shall be implemented. The mitigation measure would contribute to a reduction in GHG emissions from energy, mobile, and water usage sources. With implementation of the identified mitigation measures, the Project's GHG emissions would be reduced to less than significant levels.

C. ENVIRONMENTAL IMPACTS NOT FULLY MITIGATED TO A LEVEL OF LESS-THAN-SIGNIFICANT

The Moreno Valley City Council finds the following environmental impacts identified in the EIR remain significant even after application of all feasible mitigation measures: aesthetics (individually and cumulative), agricultural resources (individually and cumulative), air quality (individually and cumulative), cumulative population and housing, and transportation. In accordance with CEQA Guidelines Section 15092(b)(2), the City Council of the City of Moreno Valley cannot approve the Project unless it first finds (1) under *Public Resources Code* Section 21081(a)(3), and ProLogis Eucalyptus Industrial Park – Facts, Findings, and Statement of Overriding Considerations

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CEQA Guidelines Section 15091(a)(3), that specific economic, legal, social technological, or other considerations, including provisions of employment opportunities to highly trained workers, make infeasible the mitigation measures or Project alternatives identified in the EIR; and (2) under CEQA Guidelines section 15092(b), that the remaining significant effects are acceptable due to overriding concerns described in the CEQA Guidelines Section 15093 and, therefore, a statement of overriding considerations is included herein.

1. **Aesthetics (Individual and Cumulative Impacts)**

a. **Scenic Vistas**

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project could have adverse effects on one or more scenic vistas, notably views of the Box Springs Mountains, the Badlands, Moreno Peak, and the Russell Mountains.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant as there are no known feasible mitigation measures that could reduce this impact to a level of less than significant. Accordingly, Project-related impacts to scenic vistas will remain significant and unavoidable.

Facts in Support of the Finding: According to Section 4.1 of the DEIR, the nearest sensitive permanent visual receptor to the Project would be the existing single-family residences to the southeast across future Encilia Avenue. In general, views for the residences southeast of the site will change from vacant land to industrial buildings with extensive landscaping including rows of citrus trees to help provide a visual buffer. Permanent views for residences north of SR-60 and transient views for travelers on SR-60 will change as the tops of the proposed industrial buildings will partially block views of the mountains to the south. Despite the provision of ornamental landscaping and citrus trees along the northern, western, and southern boundaries, implementation of the Project would obstruct background views of the distant Box Springs Mountains for residences southeast of the Project, foreground and midground views of travelers on SR-60, and background views of the Mount Russell Range for residences north of SR-60 and along Pettit Street. This obstruction of views is a significant visual impact of the Project. The sizes, heights, and general locations of buildings on the site are limited by the types of uses being proposed as part of this Project. Therefore, there is no feasible mitigation available to reduce impacts related to the loss of this viewshed. Since there is no feasible mitigation available to reduce adverse effects on scenic vistas, impacts associated with this issue would remain significant and unavoidable. (DEIR, pgs. 4.1-9 to 4.1-17)

b. **Scenic Resources and Scenic Highways**

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project could have adverse effects on one or more scenic vistas, including views of the Box Springs Mountains and the Badlands for both residents and travelers on SR-60.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant as there are no known feasible mitigation measures that could reduce this impact to a level of less than significant. Accordingly, Project-related impacts to scenic vistas and scenic highways will remain significant and unavoidable.

Facts in Support of the Finding: According to Section 4.1 of the DEIR, the City of Moreno Valley identifies SR-60 as a local scenic road.¹⁸ According to the City's General Plan, the man-made environment is equally important as natural landforms in terms of scenic values (e.g., buildings, landscaping and signs). Agricultural uses, such as citrus groves, are one example of a man-made environment that constitutes a visually pleasing feature.

Existing views for motorists traveling eastbound and westbound on SR-60 consist of noise attenuation walls, commercial and residential development, landscaping, parking lots, open space, and orange groves in addition to the mountains and badlands in the distance. Development of the Project would alter the existing view by introducing large industrial buildings adjacent to the freeway. Existing eastbound views on SR-60 would be altered with the development of the Project. Motorists would still view noise attenuation walls, urban development, landscaping, and scattered trees as they look to the south, although these views would be of short duration for motorists traveling at normal freeway speeds.

The Project would have highly reflective surfaces at the taller (43 feet) glass veneered office towers, but would not result in development along ridge lines. The Project would result in an increased number of large bulk structures, but would include colors and materials that are compatible with the existing environment. The proposed ornamental landscaping and citrus trees would provide some visual screening. However, the Project would result in the obstruction of most of the Mount Russell Range for motorists traveling on SR-60, so the proposed buildings would obstruct the view of a scenic feature. The Project meets criteria in both the moderate and major visual intrusion categories. In an overabundance of caution, the worst-case scenario is utilized. Therefore, it is anticipated that based on Project design features, the Project would have a major visual intrusion (i.e., significant impact) for motorists traveling on SR-60. Incorporation of the proposed building façades and ornamental landscaping design features will soften the visual appearance of the buildings from SR-60; however, the obstruction of local views will still be significant, and there are no feasible mitigation measures available that would reduce these impacts to less

¹⁸ *Conservation Element, Figure 7-2 Major Scenic Resources*, City of Moreno Valley General Plan, adopted July 11, 2006.
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than significant levels. Therefore, impacts associated with this issue would remain significant and unavoidable. (DEIR, pgs. 4.1-17 to 4.1-19)

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c. Existing Visual Character or Quality of Site and its Surroundings

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project could have adverse effects that change the general character of the Project site (e.g., loss of open area), the components of the visual settings (e.g., landscaping and architectural elements), and the visual compatibility between proposed site uses and adjacent land uses.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant as there are no known feasible mitigation measures that could reduce this impact to a level of less than significant. Accordingly, Project-related impacts to the existing visual character of the site will remain significant and unavoidable.

Facts in Support of the Finding: The significance of visual impacts is inherently subjective as individuals respond differently to changes in the visual characteristics of an area. Development of the Project would change the existing character of the Project site from open space to a more urbanized setting with large industrial buildings. The change in the character of the site would constitute a significant alteration of the existing visual character of the Project site.

According to Section 4.1 of the DEIR, the Project features a variety of architectural elements including façade accents such as corner treatments and roof trim. The Project also provides variation in wall planes that serve to avoid an institutional appearance and break up the bulk of the buildings. This variation would create shadow lines at various times of the day. The proposed ornamental landscaping would replace the scattered weedy vegetation. Landscaping on the site would be provided in accordance with City Municipal Code Chapter 9.17, which requires the installation of landscaping on site and the planting of one tree for every 30 linear feet of building dimension that is visible from the parking lot or public right-of-way. As part of conditions of approval for the Project, orange trees would be planted on the northern portion of the Project site adjacent to SR-60 and along the perimeter of the Project site adjacent to the public right-of-way or residential zoning.

Since the Project site is currently vacant, suburban development of any type would cause a fundamental change in the visual characteristics of the Project site. In addition, the site is currently planned for industrial, business park, single-family, and multifamily uses, which would be different in appearance from the proposed industrial warehouse buildings. Of these uses, the lower density housing (R2) is currently designated adjacent to the existing residences southeast of the Project site.

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The Project would replace the existing vacant parcel and citrus groves with development that is visually compatible with the existing commercial development to the west and the existing and the approved Ridge industrial development to the east, but it will not be compatible with the residential uses to the southeast or farther to the north across SR-60.

Incorporation of the proposed building façades and landscaping design features will soften the visual appearance of the buildings from both SR-60 and nearby residences; however, the fundamental change in visual character of the area will still be significant. Even with compliance with the City’s General Plan and Municipal Code development guidelines for industrial development, including the 250-foot buffer between industrial and residential land uses, the anticipated fundamental change in views expected in this area will be significant. Due to the heights and masses of buildings needed to accommodate the proposed land uses, no feasible mitigation is available that would reduce these potential impacts to less than significant levels. Therefore, impacts associated with this issue would remain significant and unavoidable. (DEIR, pgs. 4.1-19 to 4.1-21)

d. Cumulative Aesthetics Impacts

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project could in connection with past, present, and probable future projects adversely affect one or more scenic vistas.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant as there are no known feasible mitigation measures that could reduce this cumulative impact to a level of less than significant. Accordingly, Project-related cumulative impacts to scenic vistas will remain significant and unavoidable.

Facts in Support of the Finding: The development of the Project would partially obstruct views of surrounding mountain ranges from current vantage points near the Project structures. However, vistas would not be completely obstructed from viewpoints through parking circulation areas, openings between rows of buildings or trees, or at the end of vehicular rights-of-way. Development of lands within the City, particularly along SR-60, would result in the cumulative conversion from open space to a more urbanized land use. The Project would continue a recent development trend in the City to expand industrial uses along the south side of SR-60 east of the City’s Auto Center. This development trend has not yet been incorporated into the City’s General Plan. The Project, in conjunction with other cumulative projects, would be developed in a manner consistent with existing development trends in the City. Since other ProLogis Eucalyptus Industrial Park – Facts, Findings, and Statement of Overriding Considerations

cumulative projects in the area would include similar distribution uses, it can be anticipated that such uses would have a similar design and massing as the Project. Since the Project would obstruct views of the surrounding mountains, it can be reasonable to conclude that similar warehouse distribution uses would also obstruct views of the surrounding mountains. In addition, General Plan Policy 7.7.4 in the Conservation Element requires the designation of SR-60 as a local scenic roadway. Therefore, the Project, in combination with other cumulative projects in the eastern portion of the City and along SR-60 would have a cumulatively significant and unavoidable impact on aesthetics (i.e., views and scenic resources) in this portion of the City. (DEIR, pgs. 4.1-21 to 4.1-22)

2. Agricultural Resources (Individual and Cumulative Impacts)

a. Conversion of State Designated Farmland

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project could impact 82.5 acres of Prime Farmland.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant as there are no known feasible mitigation measures that could reduce this impact to a level of less than significant. Accordingly, Project-related impacts to state designated farmland will remain significant and unavoidable.

Facts in Support of the Finding: Section 4.2 of the DEIR identifies several potential agricultural conservation measures contained in the City's General Plan that include: enrolling productive agricultural land into a Williamson Act Contract; providing protection to ongoing agricultural operations from complaints and nuisance complaints from adjacent new development; protecting productive agricultural land subject to conversion through the purchase of or transfer of its development rights; purchasing conservation easements on existing agricultural land to ensure that the land is never converted to urban uses; and donating funds to a regional or statewide program that promotes and implements the use of agricultural land conservation easements.

The potential agricultural conservation measures identified in the DEIR are not considered to be feasible by the City for the following reasons:

Williamson Act Contracts: Williamson Act contracts are entered into voluntarily by property owners and the City cannot force owners to participate in this program. In addition, Williamson Act contracts will

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result only in temporary preservation of agricultural land since property owners have the option of non-renewal of these contracts at any time after the ten-year contract period ends.

Protecting Existing Agricultural Operations: Providing protection for ongoing agricultural activities from new developments, such as buffers between agricultural operations and new development or requiring the notification and disclosure of agricultural activities to the purchasers adjacent properties, will not permanently protect agricultural land.

Transfer of Development Rights, Conservation Easements, or Agricultural Conservation Bank: The purchase or transfer of development rights, purchase of conservation easements, or donation of funds to assist in the conservation of agricultural land would need to be implemented to ensure the preservation of agricultural land. As stated previously, the City anticipates the conversion of agricultural land within the City and does not set aside land for permanent preservation. The current General Plan does not include any agricultural designations. The City allows agricultural uses in all land use designations as an interim use until such time as the land is developed per the vision identified in the General Plan. One of the goals stated in the City's recent General Plan is the "...orderly conversion of agricultural lands." For this reason, the City expects that the majority of the land within the City will be converted to urban uses, although some agriculture will continue as interim uses, as allowed by the City's Development Code for all zoning categories. The existing and continued reduction in productive agricultural operations within the City is produced by several factors including; urbanization in the City and Inland Empire resulting in dramatically increasing land prices; high water and labor costs; environmental regulation (e.g., insects, odors, groundwater contamination, and solid waste removal); and competition from Kern County and the Central Valley with lower land costs and reduced regulations. (DEIR, pgs. 4.1-10 to 4.1-14)

The City has determined that these measures are economically infeasible and that they are contrary to the City's vision (as stated in its General Plan) for the Project site and alternative mitigation has not been identified, and impacts related to this issue remain significant and unavoidable. (DEIR, pgs. 4.2-6 to 4.2-9)

b. Conversion of Farmland to a Non-Agricultural Use

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project would result in the development of industrial uses on land that has historically been utilized for citrus production.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant as there are no known feasible mitigation measures that could reduce this impact to a level of less than significant. Accordingly, Project-related impacts from the conversion of farmland to a non-agricultural use will remain significant and unavoidable.

Facts in Support of the Finding: According to Section 4.2 of the DEIR, the Project site has historically been in agricultural production and was most recently used to grow citrus. The conversion of the Project site to a non-agricultural use is a result of various economic and demographic factors. Increased cost for water and a continuing demand for housing and other development in the City and region are the primary reasons for this agricultural land conversion. A LESA model was also used to evaluate the site. It was determined that the Project LESA score is 85.3, which is considered significant. The Project does not include design features that would prevent the existing agricultural operations in the area from continuing. The Project would convert land that was previously used for agriculture and the development of the Project may contribute to the conversion of adjacent lands. However, the Project is a logical extension of development in the City and does not create leapfrog development or islands of agricultural land that would be difficult to farm. The City recognizes development pressures within the City, and that these pressures will increase as the City continues to build out. Additionally, while the Project would not directly cause the conversion of adjacent agricultural land to non-agricultural uses because it has lain fallow for several years, it would contribute to development pressure within the City that could potentially lead to the conversion of agricultural land off site. However, as stated in the previous discussion of these Findings regarding the conversion of state designated farmland, the City has determined the agricultural conservation measures identified by the City are economically infeasible and that they are contrary to the City's vision (as stated in its General Plan) for the Project site and alternative mitigation has not been identified. Therefore, impacts associated with this issue remain significant and unavoidable. (DEIR, pgs. 4.1-9 to 4.1-10)

c. Cumulative Agricultural Resource Impacts

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project would have a significant cumulative impact on agricultural resources in Riverside County.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant as there are no known feasible mitigation measures that could reduce this impact to a level of less than

significant. Accordingly, Project-related impacts to cumulative state designated farmland will remain significant and unavoidable.

Facts in Support of the Finding: According to Section 4.2 of the DEIR, the Project-related impacts to Prime Farmland and the conversion of agricultural land to a non-agricultural use cannot be mitigated through a local or regional program to mitigate impacts to agricultural resources. As stated previously, the City does not maintain a General Plan or zoning designation for agricultural uses and there are no Project-level feasible mitigation measures that would help reduce cumulative impacts. The cumulative effect of development in the region will continue to result in the conversion of agricultural lands to non-agricultural uses. Because agricultural land, including Prime Farmland, Farmland of Statewide Importance, and Farmland of Local Importance are finite resource, the conversion of approximately 122.8 acres of farmland to industrial uses, combined with planned and future development in the City and region, represents a significant cumulative impact to agricultural operations and resources. As stated in the previous discussion of these Findings regarding the conversion of state designated farmland and conversion of agricultural land to a non-agricultural land use, the City has determined the agricultural conservation measures identified by the City are economically infeasible and that they are contrary to the City’s vision (as stated in its General Plan) for the Project site and alternative mitigation has not been identified. Therefore, cumulative impacts to agricultural resources are considered significant and unavoidable. (DEIR, pg. 4.1-11)

2. Air Quality (Project-Specific and Cumulative Impact)

a. Air Quality Management Plan Consistency

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project has the potential to conflict with implementation of regional Air Quality Management Plan and the SIP.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant but will be reduced to the extent feasible through mitigation measures. The Council finds that **Mitigation Measures 4.3.6.2A through 4.3.6.2M and 4.3.6.3A through 4.3.6.3C** are incorporated into the MMRP for the Project, and will be implemented as specified therein. However, the Council finds that even with application of these mitigation measures, the Project will not be consistent with AQMP and the SIP and therefore impacts are considered significant and unavoidable.

Facts in Support of the Finding: An Air Quality Management Plan (AQMP) describes air pollution control strategies to be taken by counties or regions classified as nonattainment areas. The AQMP's main purpose is to bring the area into compliance with the requirements of Federal and State air quality standards. The AQMP uses the assumptions and projections by local planning agencies to determine control strategies for regional compliance status. Therefore, any projects causing a significant impact on air quality would impede the progress of the AQMP. CEQA requires that projects resulting in a General Plan Amendment be analyzed for consistency with the AQMP.

For a Project in the Basin to be consistent with the AQMP, the pollutants emitted from the Project must not exceed the South Coast AQMD significant threshold or cause a significant impact on air quality. One measurement tool in determining consistency with the AQMP is to determine how a Project accommodates the expected increase in population or employment. The Project site is located in an urbanizing area of the City of Moreno Valley along SR-60, which accommodates traffic in the area. In addition, the proposed warehouse uses would be within walking distance of existing homes and commercial areas in the local vicinity. The Project would add jobs resulting from the development of the warehouse uses to the City, with the potential to minimize the VMT traveled within the Project site and community.

The SCAQMD also has the following consistency criteria: the Project cannot result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay the timely attainment of air quality standards or the interim emissions reductions specified in the AQMP; and the Project cannot exceed the assumptions in the AQMP in 2010 or increments based on the year of Project build-out phase.

Implementation of the Project would require a zone change from Business Park (BP), Business Park Mixed Use (BPX), Multi-Family Residential (R-15), to Light Industrial for the entire 33 acres. Since the Project will require a General Plan Amendment, the Project has not been considered in preparation of the General Plan and therefore it is uncertain if it is consistent with the AQMP.

Because the Project site is located in a nonattainment air basin for ozone, PM₁₀ and PM_{2.5}, the Project's emission of ozone precursors (CO, ROG, and NO_x), PM₁₀ and PM_{2.5} would contribute to the existing nonattainment status in the Basin. Thus, according to the SCAQMD Consistency Criterion No. 1, the Project is not consistent with the AQMP.

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The Project would have significant impacts. **Mitigation Measures 4.3.6.2A** through **4.3.6.2M** and **Mitigation Measures 4.3.6.3A** through **4.3.6.3C** shall be implemented as part of the Project. The Project would be considered to be consistent only after the City of Moreno Valley General Plan Amendment is approved. Once the City's General Plan Amendment and the required zoning changes are approved, the Project would be included in the next SCAG and SCAQMD AQMP projections. When that occurs, the Project would be consistent with the regional AQMP and the SIP. However, until that occurs, the Project is inconsistent with the regional AQMP and the impacts are considered significant and unavoidable. (DEIR, pgs. 4.3-21 to 4.3-22)

b. Equipment Exhaust from Construction-Related Activities

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project has the potential to exceed applicable daily thresholds that may affect sensitive receptors.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant but will be reduced to the extent feasible through mitigation measures. The Council finds that Mitigation Measures 4.3.6.2A through 4.3.6.2M are incorporated into the MMRP for the Project, and will be implemented as specified therein. However, the Council finds that even with application of these mitigation measures, the Project will have a significant impact due to equipment exhaust from construction related activities and therefore impacts are considered significant and unavoidable.

4.3.6.2A *Prior to the issuance of a grading permit, the Project developer shall require by contract specifications that contractors shall place construction equipment staging areas at least 200 feet away from sensitive receptors. Contract specifications shall be included in the Project construction documents, which shall be reviewed by the City.*

4.3.6.2B *Prior to the issuance of a grading permit, the Project developer shall require by contract specifications that contractors shall utilize power sources (e.g., power poles) or clean-fuel generators. Contract specifications shall be included in the Project construction documents, which shall be reviewed by the City.*

4.3.6.2C *Prior to the issuance of a grading permit, the project developer shall require by contract specifications that contractors shall utilize California Air Resources Board (CARB) Tier II Certified equipment or better during the rough/mass grading phase for the following*

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pieces of equipment: rubber-tired dozers and scrapers. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the City.

Project start to December 31, 2014: All off-road diesel-powered construction equipment greater than 50 horsepower shall meet Tier 3 off-road emission standards. In addition, all construction equipment shall be outfitted with Best Available Control Technology (BACT) devices certified by CARB. Any emission control devices used by the contractor shall achieve emission reductions that are no less than what would be achieved by a Level 3 diesel emission control strategy for a similarly sized engine as defined by CARB regulations.

Post January 1, 2015: All off-road diesel-powered construction equipment greater than 50 horsepower shall meet Tier 4 emission standards, where available. In addition, all construction equipment shall be outfitted with Best Available Control Technology (BACT) devices certified by CARB. Any emission control devices used by the contractor shall achieve emission reductions that are no less than what would be achieved by a Level 3 diesel emission control strategy for a similarly sized engine as defined by CARB regulations.

A copy of each unit's certified tier specifications, BACT documentation, and CARB or SCAQMD operating permit shall be provided at the time of mobilization of each applicable unit of equipment.

4.3.6.2D *All clearing, grading, earthmoving, or excavation activities shall cease when winds (as instantaneous gusts) exceed 25 mph per SCAQMD guidelines in order to limit fugitive dust emissions.*

4.3.6.2E *The contractor shall ensure that all disturbed unpaved roads and disturbed areas within the Project are watered at least three times daily during dry weather. Watering, with complete coverage of disturbed areas, shall occur at least three times a day, preferably in the mid-morning, afternoon, and after work is done for the day.*

- 4.3.6.2F** *The contractor shall ensure that traffic speeds on unpaved roads and Project site areas are reduced to 15 miles per hour or less to reduce PM₁₀ and PM_{2.5} fugitive dust haul road emissions. Speed limit signs (15 mph maximum) shall be posted at entry points to the Project site, and along any unpaved roads providing access to or within the Project site and/or any unpaved designated on-site travel routes.*
- 4.3.6.2G** *Groundcover shall be replaced, and/or non-toxic soil stabilizers shall be applied (according to manufacturers' specifications) to any inactive construction areas (previously graded areas inactive for ten days or more).*
- 4.3.6.2H** *The contractor shall minimize pollutant emissions by maintaining equipment engines in good condition and in proper tune according to manufacturer's specifications and by not allowing construction equipment to be left idling for more than five minutes (per California law).*
- 4.3.6.2I** *The contractor shall ensure use of low-sulfur diesel fuel in construction equipment as required by the California Air Resources Board (CARB) (diesel fuel with sulfur content of 15 ppm by weight or less).*
- 4.3.6.2J** *Grading plans, construction specifications and bid documents shall also include the following requirements:*
- *Off-road construction equipment shall utilize alternative fuels where feasible e.g., biodiesel fuel (a minimum of B20), natural gas (CNG), liquefied natural gas (LNG), propane, except for equipment where use of such fuels would void the equipment warranty;*
 - *Gravel pads shall be provided at all access points to prevent tracking of mud onto public roads;*
 - *Install and maintain trackout control devices at all access points where paved and unpaved access or travel routes intersect;*

- *The contractor or builder shall designate a person or person(s) to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust off site;*
- *The contractor or builder shall post a publicly visible sign with the telephone number and person to contact regarding dust complaints. The contact person shall take corrective action within 24 hours;*
- *High-pressure injectors shall be provided on diesel construction equipment if available;*
- *Engine size of construction equipment shall be limited to the minimum practical size;*
- *Substitute gasoline-powered for diesel powered construction equipment where gasoline powered equipment is available;*
- *Use electric construction equipment where it is practical to use such equipment;*
- *Install catalytic converters on gasoline-powered equipment where this type of equipment is available;*
- *Ride-sharing program for the construction crew shall be supported by contractor(s) via incentives or other inducement;*
- *Documentation shall be provided to the City of Moreno Valley indicating that construction workers have been encouraged to carpool or otherwise reduce VMT to the greatest extent practical, including providing information on available park and ride programs;*
- *Lunch vendor services shall be allowed on site during construction to minimize the need for off-site vehicle trips; and*
- *All forklifts used during construction and in subsequent operation of the project shall be electric or natural gas powered.*

4.3.6.2K *Throughout project construction, a construction relations officer/community liaison, appointed by the Applicant, shall be retained on site. In coordination and cooperation*

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with the City, the construction relations officer/community liaison shall respond to any concerns related to PM10 (fugitive dust) generation or other construction-related air quality issues within 24 hours.

4.3.6.2L All Project entrances shall be posted with signs which state:

- Truck drivers shall turn off engines when not in use;
- Diesel delivery trucks servicing the Project shall not idle for more than three (3) minutes; and
- Telephone numbers of the building facilities manager and CARB, to report violations.

These measures shall be enforced by the on-site facilities manager (or equivalent).

4.3.6.2M During Project grading and construction, the various Project contractors shall adhere to the control measures listed in Tables 1 and 2.

Air Quality Measure 4.3.6.2M Table 1: Best Available Control Measures for Fugitive Dust (Applicable to All Construction Activity Sources)

<i>Source Category</i>	<i>Control Measures</i>	<i>Guidance</i>
<i>Backfilling</i>	<ul style="list-style-type: none"> • Stabilize backfill material when not actively handling; and • Stabilize backfill material during handling; and • Stabilize soil at completion of activity. 	<ul style="list-style-type: none"> • Mix backfill soil with water prior to moving; and • Dedicate water truck or high capacity hose to backfilling equipment; and • Empty loader bucket slowly so that no dust plumes are

Air Quality Measure 4.3.6.2M Table 1: Best Available Control Measures for Fugitive Dust (Applicable to All Construction Activity Sources)

<i>Source Category</i>	<i>Control Measures</i>	<i>Guidance</i>
		<p><i>generated; and</i></p> <ul style="list-style-type: none"> <i>Minimize drop height from loader bucket.</i>
<i>Clearing and grubbing</i>	<ul style="list-style-type: none"> <i>Maintain stability of soil through pre-watering of site prior to clearing and grubbing; and</i> <i>Stabilize soil during clearing and grubbing activities; and</i> <i>Stabilize soil immediately after clearing and grubbing activities.</i> 	<ul style="list-style-type: none"> <i>Maintain live perennial vegetation where possible; and</i> <i>Apply water in sufficient quantity to prevent generation of dust plumes.</i>
<i>Clearing forms</i>	<ul style="list-style-type: none"> <i>Use water spray to clear forms; or</i> <i>Use sweeping and water spray to clear forms; or</i> <i>Use vacuum system to clear forms.</i> 	<ul style="list-style-type: none"> <i>Use of high pressure air to clear forms may cause exceedance of Rule requirements.</i>
<i>Crushing</i>	<ul style="list-style-type: none"> <i>Stabilize surface soils prior to operation of support equipment; and</i> <i>Stabilize material after crushing.</i> 	<ul style="list-style-type: none"> <i>Follow permit conditions for crushing equipment; and</i> <i>Pre-water material prior to loading into crusher; and</i> <i>Monitor crusher emissions opacity; and</i>

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Air Quality Measure 4.3.6.2M Table 1: Best Available Control Measures for Fugitive Dust (Applicable to All Construction Activity Sources)

<i>Source Category</i>	<i>Control Measures</i>	<i>Guidance</i>
		<ul style="list-style-type: none"> • <i>Apply water to crushed material to prevent dust plumes.</i>
<i>Cut and fill</i>	<ul style="list-style-type: none"> • <i>Pre-water soils prior to cut and fill activities; and</i> • <i>Stabilize soil during and after cut and fill activities.</i> 	<ul style="list-style-type: none"> • <i>For large sites, pre-water with sprinklers or water trucks and allow time for penetration; and</i> • <i>Use water trucks/pulls to water soils to depth of cut prior to subsequent cuts.</i>
<i>Demolition – mechanical/manual</i>	<ul style="list-style-type: none"> • <i>Stabilize wind erodible surfaces to reduce dust; and</i> • <i>Stabilize surface soil where support equipment and vehicles will operate; and</i> • <i>Stabilize loose soil and demolition debris; and</i> • <i>Comply with AQMD Rule 1403.</i> 	<ul style="list-style-type: none"> • <i>Apply water in sufficient quantities to prevent the generation of visible dust plumes.</i>
<i>Disturbed soil</i>	<ul style="list-style-type: none"> • <i>Stabilize disturbed soil throughout the construction site; and</i> • <i>Stabilize disturbed soil between</i> 	<ul style="list-style-type: none"> • <i>Limit vehicular traffic and disturbances on soils where possible; and</i>

Air Quality Measure 4.3.6.2M Table 1: Best Available Control Measures for Fugitive Dust (Applicable to All Construction Activity Sources)

<i>Source Category</i>	<i>Control Measures</i>	<i>Guidance</i>
	<i>structures.</i>	<ul style="list-style-type: none"> <i>• If interior block walls are planned, install as early as possible; and</i> <i>• Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes.</i>
<i>Earthmoving activities</i>	<ul style="list-style-type: none"> <i>• Pre-apply water to depth of proposed cuts; and</i> <i>• Re-apply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 100 ft in any direction; and</i> <i>• Stabilize soils once earthmoving activities are complete.</i> 	<ul style="list-style-type: none"> <i>• Grade each Project phase separately, timed to coincide with construction phase; and</i> <i>• Upwind fencing can prevent material movement on site; and</i> <i>• Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes.</i>
<i>Importing/exporting of bulk materials</i>	<ul style="list-style-type: none"> <i>• Stabilize material while loading to reduce fugitive dust emissions; and</i> <i>• Maintain at least 6 inches of freeboard on haul vehicles; and</i> <i>• Stabilize material while transporting</i> 	<ul style="list-style-type: none"> <i>• Use tarps or other suitable enclosures on haul trucks; and</i> <i>• Check belly-dump truck seals regularly and remove any trapped rocks to prevent</i>

Air Quality Measure 4.3.6.2M Table 1: Best Available Control Measures for Fugitive Dust (Applicable to All Construction Activity Sources)

<i>Source Category</i>	<i>Control Measures</i>	<i>Guidance</i>
	<p><i>to reduce fugitive dust emissions; and</i></p> <ul style="list-style-type: none"> • <i>Stabilize material while unloading to reduce fugitive dust emissions; and</i> • <i>Comply with CVC Section 23114.</i> 	<p><i>spillage; and</i></p> <ul style="list-style-type: none"> • <i>Comply with track-out prevention/mitigation requirements; and</i> • <i>Provide water while loading and unloading to reduce visible dust plumes.</i>
<i>Landscaping</i>	<i>Stabilize soils, materials, slopes</i>	<ul style="list-style-type: none"> • <i>Apply water to materials to stabilize; and</i> • <i>Maintain materials in a crusted condition; and</i> • <i>Maintain effective cover over materials; and</i> • <i>Stabilize sloping surfaces using soil binders until vegetation or ground cover can effectively stabilize the slopes; and</i> • <i>Hydroseed prior to rain season.</i>
<i>Road shoulder maintenance</i>	<ul style="list-style-type: none"> • <i>Apply water to unpaved shoulders prior to clearing; and</i> 	<ul style="list-style-type: none"> • <i>Installation of curbing and/or paving of road shoulders can reduce recurring</i>

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<i>Source Category</i>	<i>Control Measures</i>	<i>Guidance</i>
	<ul style="list-style-type: none"> • <i>Apply chemical dust suppressants and/or washed gravel to maintain a stabilized surface after completing road shoulder maintenance.</i> 	<p><i>maintenance costs; and</i></p> <ul style="list-style-type: none"> • <i>Use of chemical dust suppressants can inhibit vegetation growth and reduce future road shoulder maintenance costs.</i>
<i>Screening</i>	<ul style="list-style-type: none"> • <i>Pre-water material prior to screening; and</i> • <i>Limit fugitive dust emissions to opacity and plume length standards; and</i> • <i>Stabilize material immediately after screening.</i> 	<ul style="list-style-type: none"> • <i>Dedicate water truck or high capacity hose to screening operation; and</i> • <i>Drop material through the screen slowly and minimize drop height; and</i> • <i>Install wind barrier with a porosity of no more than 50 percent upwind of screen to the height of the drop point.</i>
<i>Staging areas</i>	<ul style="list-style-type: none"> • <i>Stabilize staging areas during use; and</i> • <i>Stabilize staging area soils at Project completion.</i> 	<ul style="list-style-type: none"> • <i>Limit size of staging area; and</i> • <i>Limit vehicle speeds to 15 miles per hour; and</i> • <i>Limit number and size of staging area entrances/exits.</i>

Air Quality Measure 4.3.6.2M Table 1: Best Available Control Measures for Fugitive Dust (Applicable to All Construction Activity Sources)

<i>Source Category</i>	<i>Control Measures</i>	<i>Guidance</i>
<i>Stockpiles/ bulk material handling</i>	<i>Stabilize stockpiled materials, and stockpiles within 100 yards of off-site occupied buildings must not be greater than 8 ft in height; or must have a road bladed to the top to allow water truck access or must have an operational water irrigation system that is capable of complete stockpile coverage.</i>	<ul style="list-style-type: none"> • <i>Add or remove material from the downwind portion of the storage pile; and</i> • <i>Maintain storage piles to avoid steep sides or faces.</i>
<i>Traffic areas for construction activities</i>	<ul style="list-style-type: none"> • <i>Stabilize all off-road traffic and parking areas; and</i> • <i>Stabilize all haul routes; and</i> • <i>Direct construction traffic over established haul routes.</i> 	<ul style="list-style-type: none"> • <i>Apply gravel/paving to all haul routes as soon as possible to all future roadway areas; and</i> • <i>Barriers can be used to ensure vehicles are only used on established parking areas/haul routes.</i>
<i>Trenching</i>	<ul style="list-style-type: none"> • <i>Stabilize surface soils where trencher or excavator and support equipment will operate; and</i> • <i>Stabilize soils at the completion of trenching activities.</i> 	<ul style="list-style-type: none"> • <i>Pre-watering of soils prior to trenching is an effective preventive measure. For deep trenching activities, pre-trench to 18 inches, soak soils via the pre-trench and resuming trenching; and</i> • <i>Washing mud and soils from equipment at the conclusion</i>

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<i>Source Category</i>	<i>Control Measures</i>	<i>Guidance</i>
		<i>of trenching activities can prevent crusting and drying of soil on equipment.</i>
<i>Truck loading</i>	<ul style="list-style-type: none"> • <i>Pre-water material prior to loading; and</i> • <i>Ensure that freeboard exceeds 6 inches (CVC 23114).</i> 	<ul style="list-style-type: none"> • <i>Empty loader bucket such that no visible dust plumes are created; and</i> • <i>Ensure that the loader bucket is close to the truck to minimize drop height while loading.</i>
<i>Turf overseeding</i>	<ul style="list-style-type: none"> • <i>Apply sufficient water immediately prior to conducting turf vacuuming activities to meet opacity and plume length standards; and</i> • <i>Cover haul vehicles prior to exiting the site.</i> 	<ul style="list-style-type: none"> • <i>Haul waste material immediately off site.</i>
<i>Unpaved roads/parking lots</i>	<ul style="list-style-type: none"> • <i>Stabilize soils to meet the applicable performance standards; and</i> • <i>Limit vehicular travel to established unpaved roads (haul routes) and unpaved parking lots.</i> 	<ul style="list-style-type: none"> • <i>Restricting vehicular access to established unpaved travel paths and parking lots can reduce stabilization requirements.</i>
<i>Vacant land</i>	<i>In instances where vacant lots are 0.10 ac or larger and have a cumulative area</i>	

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<i>Source Category</i>	<i>Control Measures</i>	<i>Guidance</i>
	<i>of 500 sf or more that are driven over and/or used by motor vehicles and/or off-road vehicles, prevent motor vehicle and/or off-road vehicle trespassing, parking and/or access by installing barriers, curbs, fences, gates, posts, signs, shrubs, trees, or other effective control measures.</i>	

ac = acre(s) AQMD = Air Quality Management District
CVC = California Vehicle Code ft = feet sf = square feet

Air Quality Measure 4.3.6.2M Table 2: Contingency Control Measures for Fugitive Dust (During High Winds in Excess of 25 mph)

<i>Fugitive Dust Source Category</i>	<i>Control Measures</i>
<i>Earthmoving</i>	<ul style="list-style-type: none"> • <i>Cease all active operations; or</i> • <i>Apply water to soil not more than 15 minutes prior to moving such soil.</i>
<i>Disturbed surface areas</i>	<ul style="list-style-type: none"> • <i>On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than 4 consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than $\frac{1}{20}$ of the concentration required to maintain a stabilized</i>

Air Quality Measure 4.3.6.2M Table 2: Contingency Control Measures for Fugitive Dust (During High Winds in Excess of 25 mph)

<i>Fugitive Dust Source Category</i>	<i>Control Measures</i>
	<p><i>surface for a period of 6 months; or</i></p> <ul style="list-style-type: none"> • <i>Apply chemical stabilizers prior to wind event; or</i> • <i>Apply water to all unstabilized disturbed areas 3 times per day. If there is any evidence of wind driven fugitive dust, watering frequency is increased to a minimum of 4 times per day; or</i> • <i>Establish a vegetative ground cover within 21 days after active operations have ceased. Ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter; or</i> • <i>Utilize any combination of these control actions such that, in total, these actions apply to all disturbed surface areas.</i>
<i>Unpaved roads</i>	<ul style="list-style-type: none"> • <i>Apply chemical stabilizers prior to wind event; or</i> • <i>Apply water 2 times per hour during active operation; or</i> • <i>Stop all vehicular traffic.</i>
<i>Open storage piles</i>	<ul style="list-style-type: none"> • <i>Apply water 2 times per hour; or</i> • <i>Install temporary coverings.</i>
<i>Paved road track-out</i>	<ul style="list-style-type: none"> • <i>Cover all haul vehicles; or</i> • <i>Comply with the vehicle freeboard requirements of Section 23114 of the CVC for both public and private roads.</i>
<i>All categories</i>	<ul style="list-style-type: none"> • <i>Executive Officer and the USEPA as equivalent to the methods specified in</i>

Air Quality Measure 4.3.6.2M Table 2: Contingency Control Measures for Fugitive Dust (During High Winds in Excess of 25 mph)

<i>Fugitive Dust Source Category</i>	<i>Control Measures</i>
	<i>this table may be used.</i>

CVC = California Vehicle Code

USEPA = United States Environmental Protection Agency

Facts in Support of the Finding: Grading and other construction activities produce combustion emissions from various sources such as site grading, utility engines, on-site heavy-duty construction vehicles, equipment hauling materials to and from the site, asphalt paving, and motor vehicles transporting the construction crew. The use of construction equipment on site would result in localized exhaust emissions. Activity during peak grading days typically generates a greater amount of air pollutants than other Project construction activities.

Section 4.3 of the DEIR indicates construction equipment/vehicle emissions during proposed on-site grading periods would exceed the SCAQMD daily thresholds for ROG and NO_x. Although construction of the structures uses different types of equipment on site than during grading periods, similarities do exist in terms of equipment exhaust emissions and fugitive dust emissions. While it is anticipated that total emissions during construction would be below the peak grading day emissions, construction emissions of ROG and NO_x would still exceed the SCAQMD daily threshold. This is a significant impact requiring **Mitigation Measures 4.3.6.2A through 4.3.6.2M**. The use of low-NO_x diesel fuel in construction equipment typically reduces NO_x emissions by 16 percent.¹⁹ Use of this fuel would reduce NO_x emissions but not below SCAQMD thresholds. However, there is no reasonable way to ensure that that retrofitted diesel-powered equipment, low- NO_x diesel fuel, and alternative fuel sources would be available during the construction period; therefore, it is not possible to quantify reductions in NO_x emissions that would result from **Mitigation Measures 4.3.6.2A through 4.3.6.2M**. Because no additional feasible mitigation is available to reduce construction-related NO_x emissions, this impact remains significant and unavoidable. Furthermore, there is no feasible mitigation to reduce the ROG

¹⁹ <http://www.aqmd.gov/ceqa/igr/2006/feb/10-01.pdf>, site accessed December 30, 2011.
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emissions during architectural coating phase to less than the daily threshold. Thus, the emissions during construction of NO_x and ROG will remain significant. (DEIR, pgs. 4.3-22 to 4.3-29)

c. Architectural Coating Impacts

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project could potentially exceed applicable daily thresholds for VOC.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant but will be reduced to the extent feasible through mitigation measures. The Council finds that Mitigation Measure 4.2.6.4A is incorporated into the MMRP for the Project, and will be implemented as specified therein. However, the Council finds that even with application of this mitigation measures, impacts related to architectural coatings are considered significant and unavoidable.

4.3.6.4A *The Project applicant shall use “Low-Volatile Organic Compounds” paints, coatings, and solvents with a VOC content lower than required under Rule 1113 (not to exceed 150 grams/liter; 1.25 pounds/gallon). High Pressure Low Volume (HPLV) applications of paints, coatings, and solvents shall be consistent with South Coast Air Quality Management District Rule 1113. Alternatively, the Project applicant shall use materials that do not require painting or are pre-painted.*

Facts in Support of the Finding: Architectural coatings contain volatile organic compounds (VOC) that are similar to ROG and are part of the O₃ precursors. Rule 1113 is applicable to any person who applies or solicits the application of any architectural coating within the Basin. Rule 1113 sets limits on the amount of VOC emissions allowed for all types of architectural coatings, along with a time table for tightening the emissions standards in the future.

According to Section 4.3 of the DEIR, approximately 344 pounds of ROG would be generated during the architectural coating phase of the Project. Manual applications such as paintbrush, hand roller, trowel, spatula, dauber, rag, or sponge have 100 percent transfer efficiency. Construction of the Project using the required HVLP spray method reduces the daily VOC emissions to 224 pounds per day during the architectural coatings application period. The amount of VOC generated per day from the application of architectural coating even with the use of the required HVLP spray method (224 pounds) during the application of architectural coatings would exceed the SCAQMD VOC threshold of 75 lbs/day.

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Emissions associated with architectural coatings can be reduced by using precoated/natural-colored building materials, water-based or low VOC coating or by using coating transfer or spray equipment with high transfer efficiency. Adherence to SCAQMD Rule 1113 and **Mitigation Measure 4.3.6.4A** would reduce the Project's architectural coatings emissions impact. However, even with adherence to SCAQMD Rule 1113, the SQAQMD VOC threshold would still be exceeded. Therefore, impacts associated with this issue would remain significant and unavoidable. (DEIR, pg. 4.3-31)

d. Long-Term Project-Related Emissions Impacts

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project could potentially exceed applicable daily thresholds for operational activities.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant but will be reduced to the extent feasible through mitigation measures. The Council finds that Mitigation Measures 4.3.6.5A and 4.3.6.5B are incorporated into the MMRP for the Project, and will be implemented as specified therein. However, the Council finds that even with application of these mitigation measures, long term construction emissions-related air quality impacts are considered significant and unavoidable.

4.3.6.5A *Prior to issuance of building permits, the Project applicant shall provide evidence to the City that applicable (as determined by the City) Transportation Demand Management (TDM)/Transportation Control Measure (TCM) strategies such as preferential parking for employee vanpooling/carpooling, bicycle parking facilities (such as bicycle lockers and racks), bus turnouts, and other strategies are incorporated into the design of the Project.*

4.3.6.5B *Prior to issuance of building permits, the project applicant shall provide evidence to the City that energy-efficient and low-emission methods and features of building construction shall be incorporated into the project design. These methods and features may include (but are not limited to) the following:*

- *Construction of buildings that exceed statewide energy requirements beyond 10 percent of that identified in Title 24, Part 6 Energy Efficiency Standards:*
 - o *Use of low-emissions water heaters;*

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- o *Use of central water-heating systems;*
- o *Use of energy-efficient appliances;*
- o *Use of increase insulation;*
- o *Use of automated controls for air conditioners;*
- o *Use of energy-efficient parking lot lighting; and*
- o *Use of lighting controls and energy-efficient lighting.*
- *Utilize low-VOC interior and exterior coatings during project repainting.*
- *Provide on-site improvements such as sidewalks or pedestrian walkways to promote pedestrian activity and reduce the amount of vehicle trips.*
- *Installation of skylights and energy-efficient lighting that exceeds California Title 24 standards where feasible, including electronic dimming ballasts and computer-controlled daylight sensors in the buildings.*
- *Shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and building shall be planted at the proposed project site. These strategies will minimize the heat island effect and thereby reduce the amount of air conditioning required.*
- *Strategies to be considered include fans to assist natural ventilation, centralized water and space conditioning systems, high efficiency individual heating and cooling units, and automatic setback thermostats.*
- *Reduction of energy demand associated with potable water conveyance through the following methods:*
 - o *Incorporating drought-tolerant plants into the landscaping palette; and*
 - o *Use of water-efficient irrigation techniques.*

- *Energy-efficient low-pressure sodium parking lot lights or lighting equivalent as determined by the City, shall be used;*
- *Buildings shall be oriented north-south where feasible;*
- *Implement an on-site circulation plan in parking lots to reduce vehicle queuing;*
- *Develop a trip reduction plan to achieve 1.5 average vehicle ridership (AVR) for businesses with fewer than 250 employees or multitenant worksites;*
- *Include bicycle parking facilities such as bicycle lockers and racks;*
- *Include showers for bicycling employees use; and*
- *Construct on-site pedestrian facility improvements such as building access that is physically separated from street and parking lot traffic and walk paths.*

Facts in Support of the Finding: Although implementation of **Mitigation Measures 4.3.6.5A** through **4.3.6.5B** may reduce vehicle trips associated with the Project, it is not possible to quantify the reduction in the amount of emissions that may occur. Considering the volume of emissions generated and current commuter habits, it is unlikely the implementation of TDMs/TCMs will result in a reduction of operational Project emissions to below existing SCAQMD thresholds. Application of Leadership in Energy and Environmental Design (LEED) standards and green building design principles could reduce emissions from building operations such as heating and cooling; however, such standards and principles would not reduce emissions of CO, ROG, NO_x, PM₁₀, and PM_{2.5} to below SCAQMD thresholds. No other feasible mitigation measures have been identified to reduce the operational emissions of CO, ROG, NO_x, PM₁₀, and PM_{2.5} to a less than significant level. Because the Project site is located in a nonattainment air basin for criteria pollutants, the addition of air pollutants resulting from operation of the Project would contribute to the continuation of nonattainment status in the Basin. In the absence of mitigation to reduce the Project's emission of contribution of CO, ROG, NO_x, PM₁₀, and PM_{2.5} to below SCAQMD thresholds, long-term air quality impacts resulting from the operation of the Project would remain significant and unavoidable. (DEIR, pgs. 4.2-26 to 4.2.28)

e. Project-Related Localized Operational Emissions Impacts

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Significant Unavoidable Impact: The EIR evaluated and concluded that the Project could potentially exceed applicable long-term operational daily thresholds.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant but will be reduced to the extent feasible through mitigation measures. The Council finds that **Mitigation Measures 4.3.6.6A** and **4.3.6.6B** are incorporated into the MMRP for the Project, and will be implemented as specified therein. However, the Council finds that even with application of these mitigation measures, long term operational-related emission impacts are considered significant and unavoidable.

4.3.6.6A *Prior to issuance of the first building permit, building and site plan designs shall ensure that the project's energy efficiencies surpass applicable 2008 California Title 24, Part 6 Energy Efficiency Standards by a minimum of 10 percent until January 1, 2014. For building permits issued after that date, new state energy standards require a 20 percent reduction from 2008 Title 24, Part 6 Energy Efficiency Standards. Verification of increased energy efficiencies shall be documented in Title 24 Compliance Reports provided by the Applicant, and reviewed and approved by the City. The following design features shall be used to fulfill this requirement:*

- *Buildings shall exceed California Title 24 Energy Efficiency performance standards for water heating and space heating and cooling, as deemed acceptable by the City.*
- *Increase in insulation such that heat transfer and thermal bridging is minimized.*
- *Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption.*
- *Incorporate dual-paned or other energy efficient windows.*
- *Incorporate energy efficient space heating and cooling equipment.*
- *Interior and exterior energy efficient lighting which exceeds the California Title 24 Energy Efficiency performance standards shall be installed, as deemed acceptable by the City. Automatic devices to turn off lights when they are not needed shall be implemented.*
- *To the extent that they are compatible with landscaping guidelines established by the City, shade-producing trees, particularly those that shade paved surfaces such as streets*

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and parking lots and buildings shall be planted at the project site.

- *Paint and surface color palette for the project shall emphasize light and off-white colors which reflect heat away from the buildings.*
- *All buildings shall be designed to accommodate renewable energy sources, such as photovoltaic solar electricity systems, appropriate to their architectural design.*
- *To reduce energy demand associated with potable water conveyance, the project shall implement the following:*
 - *Landscaping palette emphasizing drought-tolerant plants;*
 - *Use of water-efficient irrigation techniques; and,*
 - *U.S. EPA Certified WaterSense labeled for equivalent faucets, high-efficiency toilets (HETs), and water-conserving shower heads.*
- *The project shall provide secure, weather-protected, on-site bicycle storage/parking.*
- *The project shall provide on-site showers (one for males and one for females). Lockers for employees shall be provided.*
- *The project will establish a Transportation Management Association (TMA). The TMA will coordinate with other TMAs within the City to encourage and coordinate carpooling among building occupants. The TMA will advertise its services to building occupants, and offer transit and/or other incentives to reduce greenhouse gas (GHG) emissions. A plan will be submitted by the TMA to the City within two months of project completion that outlines the measures implemented by the TMA, as well as contact information.*
- *The project shall provide preferential parking for carpools and vanpools. Locations and configurations of proposed preferential parking for carpools and vanpools are subject to review and approval by the City. Prior to final site plan approval, preferential parking for carpools and vanpools shall be delineated on the project site plan.*
- *The project shall provide at least two electric vehicle charging stations. Locations and configurations of proposed charging stations are subject to review and approval by the City. Prior to issuance of the first building permit, stub outs for charging stations shall be indicated on the project building plans.*

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- *Lease/purchase documents shall identify that tenants are encouraged to promote the following:*
 - *Implementation of compressed workweek schedules.*
 - *SmartWay partnership;*
 - *Achievement of at least 20 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of consolidated trips carried by SmartWay carriers until it reaches a minimum of 90 percent of all long-haul trips carried by SmartWay 1.0 or greater carriers.*
 - *Achievement of at least 15 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of long-haul trips carried by SmartWay carriers until it reaches a minimum of 85 percent of all consolidator trips carried by SmartWay 1.0 or greater carriers.*
 - *Use of fleet vehicles conforming to 2010 air quality standards or better.*
 - *Installation of catalytic converters on gasoline-powered equipment.*
 - *Inclusion of electric powered and/or compressed natural gas fueled trucks and/or vehicles in fleets.*
 - *Establishment and use of carpool/vanpool programs, complemented by parking fees for single-occupancy vehicles.*
 - *Provision of preferential parking for EV and CNG vehicles.*
 - *Use of electrical equipment (instead of gasoline-powered equipment) for landscape maintenance.*
 - *Use of electric (instead of diesel or gasoline-powered) yard trucks.*
 - *Use of SmartWay 1.25 rated trucks.*
 - *Each facility operator shall provide regular sweeping of onsite parking and drive areas using street sweepers that comply with applicable SCAQMD Rules.*
 - *Each facility operator shall maintain a log of all trucks entering the facility to ensure that, on average, the daily truck fleet meets applicable air quality emission*

standards. This log shall be available for inspection by City staff at any time.

- *Each facility operator shall prohibit all vehicles from idling in excess of five minutes in all onsite areas.*
- *Each facility operator shall ensure that onsite staff in charge of keeping the daily log and monitoring for excess idling will be trained and certified in diesel health effects and technologies, such as by requiring attendance at CARB-approved courses.*
- *Each facility operator which upon occupancy does not already operate 2007 and newer trucks shall in good faith be required to apply for funding to replace or retrofit their trucks such as Carl Moyer, VIP, Prop 1B or similar funds. Should funds be awarded, the tenant shall be required to accept and use them.*

4.3.6.6B

The Project shall be designed to facilitate the reduction of waste generated by building occupants that is hauled to and disposed of in landfills by providing easily accessible areas that are dedicated to the collection and storage of recyclable materials including paper, cardboard, glass, plastics, and metals. Locations of proposed recyclable materials collection areas are subject to review and approval by the City. Prior to Final Site Plan approval, locations of proposed recyclable materials collection areas shall be delineated on the Project site plan.

g. Cumulative Air Quality Impacts

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project could potentially result in a cumulatively considerable net increase of criteria pollutants for which the Project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant as there are no known feasible mitigation measures that could reduce this impact to a level of less than significant. Accordingly, Project-related impacts cumulative air quality impacts will remain significant and unavoidable.

Facts in Support of the Finding: Included in Section 4.3 of the DEIR, the Project would contribute criteria pollutants to the area during Project construction. A number of individual projects in the area may be under construction simultaneously with the Project. Depending on construction schedules and actual implementation of projects in the area, generation of fugitive dust and pollutant emissions during construction would result in substantial short-term increases in air pollutants. This would be a contribution to short-term cumulative air quality impacts.

The traffic study included vehicular trips from all present and future projects in the Project vicinity; therefore, the CO hot spot concentrations calculated at these intersections include the cumulative traffic effect. Based on this, no significant cumulative CO impacts would occur.

Long-term operation of the Project would exceed the standards for CO, ROC, NO_x, PM₁₀, and PM_{2.5}. The Basin is in nonattainment for PM₁₀ and ozone at the present time; therefore, the construction and operation of the Project would exacerbate nonattainment of air quality standards for PM₁₀ and ozone within the Basin and contribute to cumulative air quality impacts. Therefore, long-term cumulative air quality impacts are considered to be significant and unavoidable.

The Health Risk Assessment (HRA) conducted for the Project identified the increase in health risks to the nearby sensitive receptors from the Project's air pollutant emissions. This HRA identified that the Project's incremental increase is only a very small fraction of the ambient condition. Therefore, the concentration of diesel particulates at the Project site is below the established risk threshold. Individuals

living and working in southern California may be exposed to levels of diesel emissions that are cumulatively significant; however, that circumstance is not created by the Project.

It is reasonable to anticipate that advancements in truck/transportation technology would reduce the amount of particulate matter in future years. However, a determination of the amount and extent of that reduction in diesel particulate matter from these types of activities is not available at this time. Therefore, in an overabundance of caution, because other cumulative projects in the area would also contribute diesel particulates in the area and because the Riverside area has a level of particulate matter that is above the SCAQMD's recommended cancer risk threshold of 10 in one million, regional impacts associated with diesel particulate matter are considered cumulatively considerable and the Project will make a significant contribution to that cumulative impact. (DEIR, pgs. 4.3-37 to 4.3-38)

4. Land Use and Planning (Individual and Cumulative)

b. Conflict with Applicable Land Use Plans, Policies, or Regulations

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project would potentially conflict with various land use plans, policies, or regulations.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant as there are no known feasible mitigation measures that could reduce bring the Project into compliance with all land use plans. Accordingly, Project-related conflicts with land use plans will remain significant and unavoidable.

Facts in Support of the Finding: According to Section 4.8 of the DEIR, a discussion of the Project's consistency with the 2007 AQMP has been analyzed in Section 4.3 (Air Quality) of this EIR. "Since the Project will require a General Plan Amendment, the Project has not been considered in preparation of the City's General Plan and therefore is inconsistent with the AQMP. Amendments to the City of Moreno Valley General Plan, zoning reclassification, and plan approval are required before the affected portion of the Project can be implemented. This is a significant impact requiring mitigation." That section of this EIR concluded that, despite the recommended mitigation, Project air quality impacts related to the AQMP would remain significant.

The Project proposes the development of warehouse uses, which would result in an inconsistency with the existing residential zoning on the southern portion of the site, and the BP zone on the northern portion of ProLogis Eucalyptus Industrial Park – Facts, Findings, and Statement of Overriding Considerations

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the site. The development that would occur with the zone change has the potential to create indirect environmental impacts since the zone change would permit more intense and larger industrial/warehousing uses on the Project site, requiring a discretionary action based on an environmental determination of the Project. These environmental impacts are analyzed through this EIR for each of the environmental topics. The baseline for comparative analysis of environmental impacts would be the existing condition of the Project site. Currently, there is no existing development on the Project site, which represents the worst-case scenario on which the EIR analysis is based. With implementation of the zone change, the Project would be consistent with zoning requirements identified by the City.

According to the latest development plans, the closest loading and unloading operations of the Project (e.g., truck courts) would be located 395 feet northwest of the nearest single-family residence (see plans in Appendix K). In addition, the reconfigured roadways surrounding the Project site would discourage industrial traffic through the residential areas to the southeast. Despite these design characteristics, the fundamental change from residential/business park uses to industrial adjacent to residential represents an incremental adverse effect on the “quality of life” of existing residents in this area, which represents a potentially significant land use compatibility impact. This impact requires the City Council to approve a Zone Change to bring the proposed zoning designations into consistency with the Zoning Map and Municipal Code.

The Compass Growth Vision plan provides a framework for local and regional decision-making regarding growth, transportation, land use, and economic development. The main objective of the Compass Growth Vision is to manage the forecast growth while improving future living conditions for all people within the SCAG area, including live, work, and play activities.

The Project may not be fully consistent with the growth principles of the Compass Growth Vision plan. The nature of the Project allows the transport of commodities from a single area rather than multiple areas, minimizing vehicle trip generation. Conversely, trucks from the Project may increase localized and freeway congestion. The Project eliminates a planned transition of land uses that may incrementally reduce livability in this portion of the City. The Project does support increased prosperity by providing additional (mainly “blue collar”) employment opportunities close to existing housing within the City of Moreno Valley. The Project is located in an area where existing infrastructure (freeway, sewer, electrical, water, etc.) is present. The development of the Project will augment existing services available in the City

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and region. In these ways, the Project is only partially consistent with the principles of the Compass Growth Vision. (DEIR, pgs. 4.8-5 to 4.8-17)

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a. Cumulative Land Use and Planning

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project would have a cumulative impact to land use and planning issues.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant as there are no known feasible mitigation measures that could reduce this impact to a level of less than significant. Accordingly, Project-related cumulative impacts to land use and planning will remain significant and unavoidable.

Facts in Support of the Finding: Implementation of the Project represents establishment of new land uses within the currently undeveloped Project site that would result in an intensification of permitted land uses associated with a land use change from Business Park and Residential to Light Industrial uses, changes to the General Plan Circulation Element. The Project is generally consistent with regional plans and planning efforts, although it is not fully consistent with the SCAG's RTP and Compass Blueprint Plan because it eliminates some housing in favor of industrial employment uses. However, it will incrementally improve the City's long-standing jobs/housing ratio, which is also a regional goal of the various SCAG plans. It is also not consistent with existing General Plan land use designations, objectives and policies, nor is it consistent with existing zoning designations on the site. For these reasons, a General Plan Amendment and Zone Change are proposed for consideration by the City.

In addition, the Project represents a fundamental change in community character for this portion of the City (i.e., mixed residential and business park to industrial warehouse buildings), which can represent an incremental adverse change in terms of public perception. This change would be particularly acute if both the Project and the approved West Ridge Commerce Centre (an industrial Project just east of the Project) were built within a relatively short period of time, as they would both follow relatively closely the completion of the Sketchers Logistics Center (another warehouse Project) east of both the Project and the West Ridge Project, on the east side of Redlands Boulevard. Furthermore, the addition of industrial space from the Project and the adjacent West Ridge (industrial) Project may create an over-supply of warehousing space in the City, based on current economic conditions.

The proposed changes in land use will also result in a loss of up to 584 (R-15) multi-family residential units. However, this was determined to be a less than significant Project impact on local housing because the City's Housing Element identifies over twice as much potential affordable housing as the City's ProLogis Eucalyptus Industrial Park – Facts, Findings, and Statement of Overriding Considerations

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RHNA allocation, so it will not make a significant contribution to a cumulatively considerable impact on regional housing.

Similar to the Project, some of the cumulative projects within the Project vicinity would also require amendments to the existing General Plan and zoning, which may in turn cause additional cumulative impacts. Therefore, planned industrial development in the City may contribute to a cumulatively considerable impact or change in the overall character of the surrounding area, and the Project would make a significant contribution to that change in terms of consistency with adopted land use plans. No feasible mitigation is available to reduce this significant contribution. However, the Project would not make a similar cumulatively considerable land use impact relative to dividing an established community or conflicting with an approved habitat conservation plan. (DEIR, pgs. 4.8-17 to 4.8-18)

5. Transportation

a. **Existing (2011) With Project Conditions (Intersection) Traffic and Level of Service Impacts**

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project would cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant but will be reduced to the extent feasible through mitigation measures. The Council finds that **Mitigation Measure 4.11.6.4A** is incorporated into the MMRP for the Project, and will be implemented as specified therein. However, the Council finds that even with application of these mitigation measures, existing (2011) with Project LOS impacts are considered significant and unavoidable.

Facts in Support of the Finding: As indicated in Section 4.11 of the DEIR, with the addition of Project traffic, the following intersections are forecast to operate at unsatisfactory levels of service: Redlands Boulevard/SR-60 Westbound Ramps (a.m. and p.m. peak hours); and Redlands Boulevard/Eucalyptus Avenue-Fir Avenue (p.m. peak hour).

The Project would contribute to the worsening of the already unsatisfactory LOS at the intersection of Redlands Boulevard/SR-60 Westbound Ramps and would create a significant impact at the intersection of

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Redlands Boulevard/Eucalyptus Avenue-Fir Avenue. Therefore, mitigation is required at both intersections.

Also, the following segments are forecast to operate at an unsatisfactory level of service in the Existing plus Project condition: SR-60 Eastbound: Pigeon Pass Road to Heacock Street (a.m. and p.m. peak hours); SR-60 Westbound: Heacock Street to Perris Boulevard (a.m. peak hour); and SR-60 Westbound: Perris Boulevard to Nason Street (a.m. peak hour).

The Project would add to the existing unsatisfactory LOS on these three freeway segments; therefore, the addition of Project traffic would be considered a cumulative impact. Neither the Project applicant nor the City has jurisdiction over Caltrans facilities; therefore, implementation of improvements to the freeway mainline cannot be guaranteed. Review of the SCAG Regional Transportation Improvement Plan (RTIP) indicates that there are no projects programmed on SR-60 within the study area. Furthermore, Caltrans does not have a mechanism for development projects to contribute to improvements on State Highways. Therefore, the cumulative impact to these three segments of SR-60 would be significant and unavoidable. (DEIR, pgs. 4.11-19)

b. Opening Year 2016 With Project Conditions (Intersection) Traffic and Level of Service Impacts

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project would cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant but will be reduced to the extent feasible through mitigation measures. The Council finds that **Mitigation Measure 4.11.6.4B** is incorporated into the MMRP for the Project, and will be implemented as specified therein. However, the Council finds that even with application of these mitigation measures, existing (2016) with Project LOS impacts are considered significant and unavoidable.

Facts in Support of the Finding: Opening Year (2016) with Project conditions considers the addition of traffic generated by the Project to Opening Year (2016) without Project conditions. Section 4.11 of the DEIR indicates that the following intersections would operate at unsatisfactory LOS: Moreno Beach Drive/SR-60 Westbound Ramps (p.m. peak hour); Redlands Boulevard/SR-60 Westbound Ramps (a.m.

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and p.m. peak hours); and Redlands Boulevard/Eucalyptus Avenue-Fir Avenue (p.m. peak hour). The Project would have a significant impact at all three intersections, and therefore mitigation would be required.

Freeway mainline and ramp junctions were evaluated in the Opening Year (2016) plus Project condition. The following segments are forecast to operate at an unsatisfactory level of service in the Opening Year (2016) plus Project condition: SR-60 Eastbound: Pigeon Pass Road to Heacock Street (a.m. and p.m. peak hours); SR-60 Eastbound: Heacock Street to Perris Boulevard (p.m. peak hour); SR-60 Westbound: Heacock Street to Perris Boulevard (a.m. peak hour); and SR-60 Westbound: Perris Boulevard to Nason Street (a.m. peak hour).

The Project would add to the existing unsatisfactory LOS on these four freeway segments; therefore, the addition of Project traffic would be considered a cumulative impact. Neither the Project applicant nor the City has jurisdiction over Caltrans facilities; therefore, implementation of improvements to the freeway mainline cannot be guaranteed. Review of the RTIP indicates that there are no projects programmed on SR-60 within the study area. Furthermore, Caltrans does not have a mechanism for development projects to contribute to improvements on State Highways. Therefore, the cumulative impact to these three segments of SR-60 would be significant and unavoidable.

**c. Opening Year 2016 Cumulative With Project Conditions
(Intersection) Traffic and Level of Service Impacts**

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project would cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant but will be reduced to the extent feasible through mitigation measures. The Council finds that **Mitigation Measure 4.11.6.4C** is incorporated into the MMRP for the Project, and will be implemented as specified therein. However, the Council finds that even with application of these mitigation measures, existing (2016) cumulative with Project LOS impacts are considered significant and unavoidable.

Facts in Support of the Finding: According to Section 4.11 of the DEIR, an intersection LOS analysis was conducted to determine Opening Year (2016) Cumulative intersection performance. The addition of ProLogis Eucalyptus Industrial Park – Facts, Findings, and Statement of Overriding Considerations

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Project traffic to the Opening Year (2016) Cumulative scenario would result in conditions exceeding the established LOS standard at the following intersections: Moreno Beach Drive/SR-60 Eastbound Ramps (p.m. peak hour); Moreno Beach Drive/Cottonwood Avenue (p.m. peak hour); Moreno Beach Drive/Alessandro Avenue (p.m. peak hour); Redlands Boulevard/SR-60 Westbound Ramps (a.m. and p.m. peak hours); Redlands Boulevard/SR-60 Eastbound Ramps (a.m. and p.m. peak hours); Redlands Boulevard/Fir Avenue-Eucalyptus Avenue (a.m. and p.m. peak hours); Redlands Boulevard/Encilia Avenue-Eucalyptus Avenue (p.m. peak hour); and Redlands Boulevard/Alessandro Boulevard (p.m. peak hour).

While these intersections are forecast to exceed satisfactory levels of service in Opening Year (2016) Cumulative with Project conditions, with the exception of the intersection of Redlands Boulevard/Eucalyptus Avenue-Fir Avenue and Redlands Boulevard/Encilia Avenue-Eucalyptus Avenue, these intersections already exceeded established LOS standards in the Opening Year (2016) Cumulative without-Project condition. Because the Project would contribute to and would cause intersections to operate at unsatisfactory levels, mitigation is required.

Freeway mainline and ramp junctions were evaluated in the Opening Year 2016 Cumulative plus Project condition. The following segments are forecast to operate at an unsatisfactory level of service in the Opening Year 2016 Cumulative plus Project condition: SR-60 Eastbound: Pigeon Pass Road to Heacock Street (a.m. and p.m. peak hours); SR-60 Eastbound: Heacock Street to Perris Boulevard (a.m. and p.m. peak hours); SR-60 Eastbound: Perris Boulevard to Nason Street (a.m. and p.m. peak hours); SR-60 Westbound: Heacock Street to Perris Boulevard (a.m. and p.m. peak hours); SR-60 Westbound: Perris Boulevard to Nason Street (a.m. and p.m. peak hours); and SR-60 Westbound: Nason Street to Moreno Beach Drive (a.m. peak hour).

The Project would add to the existing unsatisfactory LOS on these six freeway segments; therefore, the addition of Project traffic would be considered a cumulative impact. Review of the RTIP indicates that there are no projects programmed on SR-60 within the study area. Furthermore, neither the Project applicant nor the City has jurisdiction over Caltrans facilities; therefore, implementation of improvements to the freeway mainline cannot be guaranteed. Furthermore, Caltrans does not have a mechanism for development projects to contribute to improvements on State Highways. Therefore, the cumulative impact to these segments of SR-60 would be significant and unavoidable.

d. Cumulative Transportation Impacts

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project would have a cumulative significant impact to transportation.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant but will be reduced to the extent feasible through mitigation measures. The Council finds that Mitigation Measure 4.11.6.4C is incorporated into the MMRP for the Project, and will be implemented as specified therein. However, the Council finds that even with application of these mitigation measures, cumulative transportation impacts are considered significant and unavoidable.

Facts in Support of the Finding: Cumulative impacts associated with traffic volumes are determined based the addition of traffic volumes from approved and pending projects in the area and projected traffic growth to existing traffic volumes. The cumulative analysis forecasts that, with the development of the Project and the cumulative projects, eight intersections would require improvements in order to maintain the City’s LOS standard of D.

Those intersections are as follows: Moreno Beach Drive/SR-60 Eastbound Ramps (p.m. peak hour); Moreno Beach Drive/Cottonwood Avenue (p.m. peak hour); Moreno Beach Drive/Alessandro Avenue (p.m. peak hour); Redlands Boulevard/SR-60 Westbound Ramps (a.m. and p.m. peak hours); Redlands Boulevard/SR-60 Eastbound Ramps (a.m. and p.m. peak hours); Redlands Boulevard/Fir Avenue-Eucalyptus Avenue (a.m. and p.m. peak hours); Redlands Boulevard/Encilia Avenue-Eucalyptus Avenue (p.m. peak hour); and Redlands Boulevard/Alessandro Boulevard (p.m. peak hour).

Although the suggested improvements are consistent with the City’s General Plan, the Project will be responsible for contributing its fair share toward the funding of the future improvements via payment of the City’s DIF. Of these eight affected intersections, five intersections are under the jurisdiction of the City of Moreno Valley.

Three intersections are under the jurisdiction of Caltrans. The improvements identified in Mitigation Measure 4.11.6.4C would reduce impacts at these intersections to a less than significant level. However, since the affected freeway ramp intersections are under the jurisdiction of Caltrans, neither the Project proponent nor the City has control over the specific timing of when the improvements would be constructed. It is anticipated that by opening year (2016), improvements at these intersections would not

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be constructed, as they are not currently planned for near-term construction. Therefore, this cumulative impact in opening year (2016) remains significant and unavoidable until such time as the improvements to this interchange are constructed by Caltrans, WRCOG, and the City of Moreno Valley through the TUMF process.

Because TUMF provides a mechanism for collecting fees from all development projects in the area that would contribute traffic to the existing roadway network, fees for the improvements to the affected freeway intersections would be collected. Therefore, it is anticipated that since these freeway intersection improvements are programmed into the TUMF program, such improvements would be constructed by future year (2035) and would be able to accommodate future year (2035) traffic levels, resulting in a less than significant cumulative impact.

D. ADEQUACY OF THE RANGE OF PROJECT ALTERNATIVES

The EIR analyzed four alternatives to the Project as proposed, and evaluated these alternatives for their ability to meet the Project’s objectives as described in Section II.B above. CEQA requires the evaluation of a “No Project Alternative” to assess a maximum net change in the environment as a result of implementation of the Project. The No Project Alternative, referred to as the No Project/Existing Zoning Alternative, makes a reasoned assessment as to the future development of the subject site should the Project under consideration not be developed yet the site would be developed in a similar manner to the Project and consistent with existing zoning for the site. A Reduced Intensity Alternative, a Commercial Center (mixed retail/office) Alternative, and an Off-site Alternative were also selected for analysis. CEQA requires the evaluation of alternatives that can reduce the significance of identified impacts and “feasibly attain most of the basic objectives of the Project.” Thus, in order to develop a range of reasonable alternatives, the Project Objectives must be considered when this Council is evaluating the alternatives.

1. Alternative 1 – No Project/Existing Zoning Alternative

Description: The No Project/Existing Zoning Alternative (hereinafter referenced as the “No Project” Alternative), considers the environmental conditions that would occur if the subject site were developed consistent with its existing Specific Plan 208 zoning designation, consisting of an underlying land use of Business Park/Industrial. To allow for quantified comparison of potential impacts, the No Project Alternative was assumed to result in the development of approximately 1,420,000 square feet of industrial ProLogis Eucalyptus Industrial Park – Facts, Findings, and Statement of Overriding Considerations

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warehouse uses on approximately 63 acres and approximately 180,000 square feet of commercial service uses on approximately 8 acres as would be allowed under the existing zoning and land use designations. The commercial service component of this alternative would be located along the frontage of Perris Boulevard while the industrial warehouse uses would occupy the remaining portion of the site. (DEIR, pg. 6-12)

Impacts: The No Build Alternative, as referenced in Section 6.0 of the DEIR, would result in similar impacts when compared to the Project. Similar to the Project, the No Build Alternative would result in less than significant impacts in the following areas: Aesthetics; Williamson Act Contracts/Agricultural Zoning and Forestry Resources; Biological Resources; Cultural Resources; Geology and Soils; Hazards and Hazardous Materials; Hydrology and Water Quality; Land Use; Mineral Resources; Noise; Population and Housing; Public Services; Recreation and Parks; and Utilities and Service Systems. The Project's significant and unavoidable agricultural impacts, air quality impacts, climate change and GHG impacts, and transportation impacts would also occur in the same manner as the Project. However, under the No Build Alternative, potential air quality, climate change, and traffic/transportation impacts would be greater than the Project because of the higher trip generation potential of the commercial uses.

Objectives: Under the No Build Alternative, the subject site would develop in a similar manner as the Project, and most of the Project Objectives would be achieved. However, the objectives specifically oriented towards warehouse and industrial uses would be met at a reduced level due to the commercial component included in this Alternative.

Finding: Under the No Build Alternative, the Project site would be developed with approximately 1,420,000 square feet of industrial warehouse uses on approximately 63 acres and approximately 180,000 square feet of commercial service uses on approximately 8 acres. This Alternative would result in the same significant and unavoidable impacts associated with agricultural resources, air quality, climate change and greenhouse gases, and traffic that have been identified within the DEIR. However, potential air quality, climate change, and traffic/transportation impacts would be greater than the Project because of the higher trip generation potential of the commercial uses. Because the No Build Alternative results in an increase in potential significant and unavoidable impacts in comparison to the Project, the City Council hereby rejects the No Build Alternative.

2. Alternative 2 – Reduced Intensity Alternative

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Description: The Reduced Intensity Alternative assumes the same general land use type as the Project, but at a development intensity scoped to reduce the extent of regional threshold exceedances for air pollution and greenhouse gas emissions that would otherwise result from the Project. In that the same type of development is proposed, most if not all the Project Objectives would be achieved to a certain extent but at a reduced level. Implementation of the Reduced Intensity Alternative would yield approximately 1,212,100 square feet of development, a reduction of approximately 25 percent or approximately 434,033 square feet, when compared to the approximately 1,616,133 square-foot Project analyzed in the EIR.

Impacts: Under the Reduced Intensity Alternative, impacts related to agricultural resources would be similar to the Project as the same amount of land would be disturbed. Similarly, impacts related to short-term construction-related air quality would be similar to the Project as the same amount of land would be disturbed and the same mix of equipment would be utilized. Because of the decrease in vehicle trips achieved under this alternative, impacts to the operation of local roadways and intersections would be proportionally reduced from what was identified for the Project; however, long-term traffic impacts to state freeway segments and merge/diverge areas would remain significant and unavoidable. Long-term operational-related air quality impacts would be reduced in magnitude when compared to the Project but would remain significant and unavoidable. Impacts associated with the generation of greenhouse gas emissions would also be reduced proportionate to the reduction in building area in comparison to the Project, but would remain significant and unavoidable.

Objectives: The Reduced Intensity Alternative would, to some degree, realize the Project Objectives. However, because the scale of the development would be diminished under this Alternative, the resulting generation of sales tax, the number of jobs created, and potential second tier economic benefits to the City and region (e.g. wholesale/retail support sales; temporary and long-term construction jobs, and facilities maintenance employment opportunities) would likely be reduced when compared to the Project.

Finding: Under the Reduced Intensity Alternative, a light industrial warehouse/ distribution facility reduced by approximately 25 percent (or 434,033 square feet) would be realized as compared to the Project. The City Council hereby finds that the Reduced Intensity Alternative will not avoid or substantially reduce the significant and unavoidable agricultural resources impacts, construction and operational air quality impacts, and cumulative greenhouse gas impacts identified in the EIR. This Alternative would not meet Project Objectives to the same extent as the Project. Furthermore, the scale of

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the reduction in intensity would not maximize or realize the economic potential of the site. Based on the reduced scope of development, the Reduced Intensity Alternative would diminish capacities and capabilities to satisfy existing and projected unmet market demands within the trade area. The Reduced Intensity Alternative would also result in comparatively fewer opportunities to provide jobs, as compared to the Project. Therefore, the City Council rejects the Reduced Intensity Alternative on the basis that it fails to avoid or substantially reduce the significant and unavoidable impacts of the Project and does not meet the Project Objectives as well as the Project. The City Council also finds that each of these considerations constitutes a ground for rejecting this alternative that is independently sufficient to support the City Council's rejection of this alternative.

3. Alternative 3 - Commercial Center (Mixed Commercial/Office)

Description: As identified in Section 6.0 of the DEIR, the Commercial Center Alternative would result in the development of commercial service and office uses on the Project site. Although business and professional offices, financial institutions, and medical clinics are permitted in SP208, they are permitted only in the industrial support areas while commercial service-oriented uses are a permitted throughout the SP208 Industrial designation. For this reason, the General Plan and zoning designations for the site would need to be amended to accommodate the business and professional offices. Permitted commercial service uses include, but are not limited to, Automotive Sales/Rental/Leasing & Accessories, Automotive/Truck Repair, Business Supply/Equipment Sales/Rental & Services, and Repair Services. Approximately 760,000 square feet of commercial service uses would be developed on approximately 35 acres. The balance of the site (35 acres) would be developed with up to approximately 760,000 square feet of office uses.

Impacts: As identified in Section 6.0 of the DEIR, the Commercial Center Alternative would result in similar impacts for the following eight environmental issues: Agriculture and Forestry Resources; Biological Resources; Cultural Resources; Geology and Soils; Hazards and Hazardous Materials; Hydrology and Water Quality; Land Use and Planning; and Mineral Resources. Because of the increase in vehicle trips under this alternative, impacts to the operation of local roadways and intersections would be proportionally greater than what was identified for the Project. Long-term traffic impacts to state freeway mainline segments and merge/diverge areas would remain significant and unavoidable. Under the Commercial Center Alternative, impacts related to short-term construction emissions would be similar to the Project as the same amount of land would be disturbed and the same mix of equipment would be utilized. Long-term operational-related air quality emissions would be increased in magnitude because of the increase in vehicle trips when compared to the Project and would remain significant and unavoidable. Traffic-related noise would be increased in magnitude but would be similarly mitigated like the Project and would remain less than significant.

Objectives: Under this alternative, some of the Project objectives are not met as warehouse uses would not be built. However, development of this alternative would provide new employment opportunities for residents of Moreno Valley, but not within the industrial employment sector.

Findings: Under the Commercial Center Alternative, development of commercial service and office uses would occur. This Alternative would have similar impacts that have been identified within the DEIR. However, the Commercial Center Alternative would result in an increase in trip generation in comparison to the Project, and would result in an increase in the severity of the significant and unavoidable impacts to construction and operational air pollution emissions, climate change and greenhouse gas emission, and traffic. The City Council finds that the Commercial Center Alternative would fulfill some but not all of the Project Objectives. Moreno Valley residents would have more opportunities for employment but a warehouse would not be built. Because the Commercial Center Alternative will not fulfill the primary objective of the Project and the severity of significant and unavoidable impacts would be increased in comparison to the Project, the Council hereby rejects the Commercial Center Alternative.

4. Alternative 4 - Off-Site Location

Description: As identified in Section 6.0 of the DEIR, this alternative would result in the same intensity of development of approximately 1,616,133 square feet of warehouse uses on approximately 70.3 acres. The alternative Project site identified by the City is bounded by Kramaria Street (extended) to the north, vacant and partially developed property and March Air Reserve Base to the west, Indian Street to the east, and the Perris Valley Storm Drain and vacant land to the south. The off-site location is approximately 1.0 miles northwest of the Project site and is within the same Industrial Area Specific Plan as the Project. This alternative off-site property is not owned or under the control of the applicant. The off-site location is currently zoned SP 208 I and is designated Business Park in the City's General Plan, identical to the Project development of this site would not require soil import, inherently reducing impacts from air pollution emissions during construction.

Impacts: Section 6.0 of the DEIR, identifies nine environmental issues that would have similar impacts as the Project. These issues are: Cultural Resources; Geology and Soils; Hydrology and Water Quality; Land Use and Planning; Mineral Resources; Population and Housing; Public Services; Recreation; and Utilities and Service Systems. With the Off-Site Location Alternative, impacts related to air quality and traffic impacts would be similar to those identified with the Project. Short-term construction and long-term air quality operational and climate change/greenhouse gas emissions impacts under this alternative would remain significant and unavoidable and would result in similar conditions as identified for the Project. Additionally, due to adjacent sensitive receptors, potential impacts to these receptors would be greater in magnitude when compared to the Project. Similarly, noise impacts would be greater in

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magnitude due to the adjacent sensitive receptors. Operational traffic would result in increased traffic on vanity roadways and may impact different intersection and roadways in comparison to the Project. Under this Alternative, impacts to agricultural resources would be eliminated.

Objectives: The Off-Site Alternative would meet most of the Project objectives. The location of the Off-Site Alternative further north of Harley Knox Boulevard would not meet the Project objectives of locating distribution services near transportation corridors and clustering such uses near the state highway system.

Finding: Under the Off-Site Alternative, development of the warehouse would occur in a different location. This Alternative would have similar impacts that have been identified within the DEIR. And most of the objectives of the Project would be met, would not meet the Project objectives of locating distribution services near transportation corridors and clustering such uses near the state highway system. The Council finds that the Off-Site Alternative would have similar impacts to all environmental issues except for agriculture because this Alternative would eliminate the significant and unavoidable impacts to agricultural resources.. Because the Off-Site Alternative will not substantially reduce the environmental impact of the Project and it would not meet the Project objectives of locating distribution services near transportation corridors and clustering such uses near the state highway system, the Council hereby rejects the Off-Site Alternative.

5. Alternatives Considered and Rejected

A variety of additional alternatives were considered as part of the DEIR's Alternatives Analysis. (DEIR, pgs. 6-3 through 6-5) Three possible alternatives were considered and rejected because they could not accomplish the basic objectives of the Project or they were considered infeasible. Per the *CEQA Guidelines* (Section 15126.6(c)), factors that may be considered when addressing the feasibility of alternatives include failure to meet most of the stated Project objectives, infeasibility, or inability to avoid significant environmental effects. The purpose of the Project is to provide for and expand employment and revenue opportunities within the City of Moreno Valley. The Project would expand employment options in a location that is convenient to existing transportation corridors, convenient to existing and future City residents and would augment the City's economic base. The following provides and discussion of the three development scenarios that were considered and rejected as potential alternatives to implementation of the Project based on Section 15126.6 of the *CEQA*

Guidelines because they did not feasibly attaining most of the basic objectives of the Project while reducing or avoiding any of the significant effects of the Project:

- No Build Alternative: No development would take place within the Project limits and no impacts would occur. However, disallowing development of the site, as suggested by this alternative, would not fulfill the primary objectives of the Project and the site would likely be developed in accordance with existing zoning should the Project not move forward. Retention of the Project site in its current condition would not expand employment opportunities to residents of the City. Retaining the site in its current undeveloped condition would not generate the revenue (e.g., property tax) that could augment the City's current revenue stream. Therefore, the No Build Alternative was rejected from further consideration in the EIR.
- Residential Alternative: The Residential Alternative would develop the 71-acre Project site with approximately 355 single-family units based on the City's R5 zone. The R5 zone was utilized as this is the zoning designation of the nearest residential uses to the north along Perris Boulevard and north of the Perris Valley Storm Drain channel. A zone change, General Plan Amendment, and Specific Plan Amendment would be required for this alternative to change the Project site from its existing Business Park/Light Industrial (BP) General Plan designation and Industrial Area Plan (SP208 I) zoning designation to a residential R5 designation. Furthermore, a Specific Plan Amendment would be required to remove the Project site from the underlying Industrial Specific Plan 208. Since the Residential Alternative consists only of residential uses, employment-generating opportunities would not occur aside from temporary construction work, which would be filled predominantly by those already residing in the area. The residential uses would produce demand for public services that would exceed the amount of municipal revenues it would generate. The Project's full potential to utilize the area's close proximity to various freeways and transportation corridors would not be realized as only residential uses would occur under the Residential Alternative. Additionally, the development of the entire 71-acre Project site under this alternative would result in the placement of the residential uses within an area planned for industrial uses which could result in additional adverse impacts such as exposure to air pollutants, noise, and land use incompatibilities. This alternative has been rejected because it would result in greater impacts and would not satisfy the basic City employment generating objectives for development of the Project site.

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- Mixed Commercial/Residential Alternative: The Mixed Commercial/Residential Alternative would develop the 71-acre Project site with approximately 690,000 square feet of Community Commercial uses and 532 multiple-family units. A zone change, General Plan Amendment, and Specific Plan Amendment would be required for this alternative to change the Project site from its existing Business Park/Light Industrial (BP) General Plan designation and SP208 I zoning designation to a residential designation and commercial designation. Additionally, a Specific Plan Amendment would be required to remove the Project site from the underlying Industrial Specific Plan 208. While the commercial component of this Alternative would utilize the Project site's close proximity to nearby transportation corridors, the development of the remainder of the site with residential uses would not provide the varied employment and service uses and revenue associated with the Project. The development of approximately half of the Project site under this alternative with residential uses would result in the placement of the residential uses adjacent to SP208 I industrial/business park uses which could potentially result in additional adverse impacts such as exposure to air pollutants, noise, and land use incompatibilities. The residential component of this alternative would produce demand for public services that would exceed the amount of municipal revenues it would generate, and there would be little to no employment opportunities created. Therefore, the mixed commercial/residential alternative would not meet the Project objectives of providing new employment and revenue generation options in close proximity to local consumers to the same degree as the Project. The employment opportunities and economic benefits derived from the Project are superior to the Mixed Commercial/Residential Alternative. This alternative has been rejected because it would result in greater impacts and would not satisfy the basic City employment generating objectives for development of the Project site.

6. Environmentally Superior Alternative

As explained by Section 6.0 in the DEIR, Alternative 2 (Reduced Intensity Alternative) reduces the severity of Project related air quality impacts. However, long-term air quality impacts, would remain significant after mitigation for this alternative for ROG, NO_x, PM₁₀ and PM_{2.5}. In a similar manner, Alternative 2 would reduce the volume of daily traffic trips when compared to the Project; however, such impacts to state freeway mainline segments and merge/diverge areas would remain significant and unavoidable until freeway improvements are completed by the state. Alternative 2

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would also reduce the quantity of greenhouse gas emission when compared to the Project; however, impacts to Climate Change would remain significant and unavoidable. The remaining environmental issues would ultimately be similar to the Project through adherence to existing standards and mitigation measures. Based on the analysis in Section 6.0 and the summary contained in Table 6.K, Alternative 2, the Reduced Intensity Alternative, is the environmentally superior alternative. The amount of development under this alternative would be reduced when compared to the Project; however, the Alternative 2 would not satisfy several of the Project objectives because it would reduce the level at which it meets the employment generating Project objectives. Because the Reduced Intensity Alternative allows the development of warehouse uses and the provision of new employment opportunities, it meets many of the City's stated Project objectives, while at the same time reduces the impacts associated with the Project. However, because of the lower industrial density, the Alternative fails to meet several key employment generating objectives related to density efficiencies in the same manner as the Project.

E. GROWTH-INDUCING IMPACTS

CEQA requires a discussion of ways in which the Project could be growth inducing. Specifically, CEQA Guidelines Section 1512602(d) states that an EIR must describe the ways in which the Project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment.

Section 5.0 of the DEIR identifies the extent to which the new jobs created by a Project are filled by existing residents is a factor that tends to reduce the growth inducing effect of a Project. Construction of the Project will create short-term construction jobs. Due to the existing high unemployment levels that exist in the City, the potential exists for these short-term positions to be filled by workers who, for the most part, reside in the City or neighboring communities to the Project area. Therefore, construction of the Project will not generate a permanent increase in population within the Project area.

As previously identified, the Project is expected to employ 646 people. These full-time positions are also anticipated to be filled by workers who, for the most part, reside in the Project area due to high unemployment levels that exist in the City. Operations of the Project will not generate a permanent increase in population within the Project area.

The area surrounding the Project site is governed by the City of Moreno Valley General Plan and the area is guided by Specific Plan 208. Specific Plan 208 guides land use within the Project area to ensure that new development and redevelopment is implemented consistent with the land use policies, controls, and standards contained in Specific Plan 208. Any development of remaining undeveloped land adjacent to the Project site would require its own discretionary approvals and is not reliant on the Project. However, development of the Project site may lead to indirect growth in the Specific Plan area by making available the extension of infrastructure such as water, sewer, drainage, etc. This growth has been planned for and is guided by Specific Plan 208.

The Project would occur within an area currently designated for industrial uses. The Project would not require a General Plan Amendment nor does it require a change in the underlying zoning designation. In addition, the Project reflects the City of Moreno Valley's vision for the area and is consistent with Specific Plan 208. Land uses surrounding the Project site would be in conformance with the City's General Plan and Specific Plan 208. Impacts to population and housing are less than significant; see Section 13 Population and Housing of the Initial Study (Appendix A of the DEIR).

The Project would not eliminate a constraint for development of an approved Project within the City of Moreno Valley. There are no projects in the City of Moreno Valley or surrounding cities that have been approved but are conditioned or dependent on additional improvements at the Project site. Specific Plan 208 guides land uses surrounding the Project site to ensure compatibility between existing operations and adjacent surrounding development. Additionally, the Project would not add capacity to urban services or infrastructure that would be utilized by other Project proponents in the surrounding area.

The Project would not result in any significant pressure to redevelop the area around the Project site at a higher density. As previously stated, the development of remaining undeveloped land adjacent to the Project site is independent and not reliant on the Project. Therefore, implementation of the Project would not result in redevelopment of adjacent lands at a higher intensity than already prescribed in the City of Moreno Valley's General Plan and Specific Plan 208.

F. SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

Public Resources Code Section 21100(b)(2)(B) and CEQA Guidelines Sections 15126(c), 15126.2(c), and 15127, require that for certain types or categories of projects, an EIR must address ProLogis Eucalyptus Industrial Park – Facts, Findings, and Statement of Overriding Considerations

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significant irreversible environmental changes that would occur should the Project be implemented. As presented at CEQA Guidelines Section 15127, the topic of Significant Irreversible Environmental Changes needs to be addressed in EIRs prepared in connection with any of the following activities:

- (a) The adoption, amendment, or enactment of a plan, policy, or ordinance of a public agency;
- (b) The adoption by a local agency formation commission of a resolution making determinations; or
- (c) A Project which will be subject to the requirements for preparing of an environmental impact statement pursuant to the requirements of the National Environmental Policy Act of 1969, 42 U.S.C. Sections 4321-4347.

The Project does not trigger any of the conditions cited in Guidelines §15127. Nonetheless, this EIR analysis addresses any significant irreversible environmental changes which would be involved in the proposed action should it be implemented [Guidelines, Sections 15126(e) and 15127]. An impact would fall into this category if:

- The Project would involve a large commitment of nonrenewable resources;
- The primary and secondary impacts of the Project would generally commit future generations of people to similar uses;
- The Project involves uses in which irreversible damage could result from any potential environmental incidents associated with the Project; and/or
- The proposed consumption of resources is not justified (e.g., the Project could waste energy).

Determining whether the Project may result in significant irreversible effects requires a determination of whether key resources would be degraded or destroyed in such a way that there would be little possibility of restoring them. The Project site is generally fallow agricultural land with the site historically used for sod farming operations. However, as identified within the City's General Plan, the City anticipates the eventual conversion of agricultural uses to urban uses and the Project would permanently alter the site by converting predominantly agricultural uses to urban uses. This is a ProLogis Eucalyptus Industrial Park – Facts, Findings, and Statement of Overriding Considerations

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significant irreversible environmental change that would occur as a result of Project implementation. Because no significant mineral resources were identified within the Project limits, no significant impacts related to these issues would result from development of the Project site. Natural resources in the form of construction materials would be utilized in the construction of the Project and energy resources in the form of electricity and natural gas would be used during the long-term operation of the Project; however, their use is justified in supporting the City's planned use of the site and is not expected to negatively impact the availability of these resources.

In addition, this industrial warehouse Project, in concert with the other built or approved industrial warehouse projects, will fundamentally change the character and land use pattern of this portion of the City. Many of the Project-specific impacts are addressed, as outlined above, but the change in the use of the land from agricultural to industrial represents a substantial irreversible change for this area. However, this is an intended change as verified by the City's General Plan land use designations and zoning for the area. (DEIR pgs. 5-2 and 5-3)

VI. STATEMENT OF OVERRIDING CONSIDERATIONS

The Moreno Valley City Council adopts this Statement of Overriding Considerations with respect to the significant unavoidable impacts associated with adoption of the Project as addressed in the EIR, specifically:

1. Aesthetics - Scenic Vistas;
2. Aesthetics - Scenic Resources and Scenic Highways;
3. Aesthetics - Existing Visual Character or Quality of Site and its Surroundings;
4. Aesthetics – Cumulative;
5. Agricultural Impacts - Conversion of State Designated Farmland;
6. Agricultural Impacts - Conversion of Farmland to a Non-Agricultural Use;
7. Agricultural Impacts - Cumulative;
8. Air Quality Impact - Air Quality Management Plan Consistency;
9. Air Quality Impact - Equipment Exhaust from Construction-Related Activities;
10. Air Quality Impact - Architectural Coatings;
11. Air Quality Impact - Long-Term Project-Related Emissions;
12. Air Quality Impact - Project-Related Localized Operational Emissions;
13. Air Quality Impact - Cumulative;
14. Land Use and Planning Impact - Conflict with Applicable Land Use Plans, Policies, or Regulations;
15. Land Use and Planning - Impact Cumulative;
16. Transportation Impact - Existing With Project Conditions (Intersection) Traffic and Level of Service;

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17. Transportation Impact - Opening Year With Project Conditions (Intersection) Traffic and Level of Service;
18. Transportation Impact - Opening Year 2016 Cumulative With Project Conditions (Intersection) Traffic and Level of Service; and
19. Transportation Impact – Cumulative.

The Moreno Valley City Council hereby declares that, pursuant to CEQA Guidelines Section 15093, the City Council has balanced the benefits of the Project against any significant and unavoidable environmental impacts in determining whether to approve the Project. If the benefits of the Project outweigh the unavoidable adverse environmental impacts, those impacts are considered “acceptable.”

The City Council hereby declares that the EIR has identified and discussed significant effects that may occur as a result of the Project. With the implementation of the mitigation measures discussed in the EIR, these impacts can be mitigated to a level of less than significant except for the unavoidable and significant impacts discussed in Section V(C) herein.

The City Council hereby declares that it has made a reasonable and good faith effort to eliminate or substantially mitigate the potential impacts resulting from the Project.

The City Council hereby declares that to the extent any mitigation measures recommended to the City are not incorporated, such mitigation measures are infeasible because they would impose restrictions on the Project that would prohibit the realization of specific economic, social, and other benefits that this City Council finds outweigh the unmitigated impacts.

The City Council further finds that except for the Project, all other alternatives set forth in the EIR are infeasible because they would prohibit the realization of the Project objectives and/or specific economic, social or other benefits that this City Council finds outweigh any environmental benefits of the alternatives or the other alternatives do not substantively reduce the severity of unavoidable and significant impacts.

The City Council hereby declares that, having reduced the adverse significant environmental effects of the Project, to the extent feasible by adopting the proposed mitigation measures, having considered the entire administrative record on the Project and having weighed the benefits of the Project

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against its unavoidable significant impact after mitigation, the City Council has determined that the social, economic and environmental benefits of the Project outweigh the potential unavoidable significant impacts and render those potential significant impacts acceptable based on the following considerations:

- The Project will provide development consistent municipal standards, codes and policies;
- The Project provides development that improves and maximizes economic viability of a vacant site by transitioning the Project site into a productive light industrial use;
- The Project creates additional employment-generating opportunities for the City of Moreno Valley and surrounding communities; and
- The Project provides adequate infrastructure and public amenities, including upgrading and widened streets, signal upgrades and utility improvements.
- The modified plan would allow for future development of a mix of residential uses on 38 acres of land in the southeast portion of the project property, adjacent to the existing residential neighborhood to the southeast, which will also help support existing commercial uses west of the site.

As the CEQA Lead Agency for the proposed action, the City of Moreno Valley has reviewed the Project description and the alternatives presented in the EIR, and fully understands the Project and Project alternatives proposed for development. Further, this Council finds that all potential adverse environmental impacts and all feasible mitigation measures to reduce the impacts from the Project have been identified in the Draft EIR, the Final EIR and public testimony. This Council also finds that a reasonable range of alternatives was considered in the EIR and this document, Section V(E) above, and finds that approval of the Project is appropriate.

This Council has identified economic and social benefits and important policy objectives, Section V above, which result from implementing the Project. The Council has balanced these substantial social and economic benefits against the unavoidable significant adverse effects of the Project. Given the substantial social and economic benefits that will accrue from the Project, this Council finds that the benefits identified herein override the unavoidable environmental effects.

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California Public Resource Code 21002 provides: “In the event specific economic, social and other conditions make infeasible such Project alternatives or such mitigation measures, individual projects can be approved in spite of one or more significant effects thereof.” Section 21002.1(c) provides: “In the event that economic, social, or other conditions make it infeasible to mitigate one or more significant effects of a Project on the environment, the Project may nonetheless be approved or carried out at the discretion of a public agency...” Finally, California Administrative Code, Title 4, 15093 (a) states: “If the benefits of a Project outweigh the unavoidable adverse environmental effects, the adverse environmental effects may be considered „acceptable.□”

The City Council hereby declares that the foregoing benefits provided to the public through approval and implementation of the Project outweighs the identified significant adverse environmental impacts of the Project that cannot be mitigated. The City Council finds that each of the Project benefits outweighs the unavoidable adverse environmental impacts identified in the EIR and, therefore, finds those impacts to be acceptable.

Facts in Support of the Finding (Overriding Considerations). The ProLogis project has four overriding considerations: (1) development consistent with City standards; (2) economic viability; (3) employment generation; and (4) infrastructure improvements.

(1) Consistency with City Goals. The City’s Development Review process will assure the proposed development is consistent with the City’s General Plan, zoning, and Municipal Code upon approval of the requested General Plan Amendment, Zone Change, and other development applications. The analysis in the DEIR indicates the ProLogis project is generally consistent with the following development goals of the City’s General Plan and the requirements of the City zoning code and municipal code for the five environmental issues that were determined to be significant even after implementation of proposed mitigation:

- **DEIR Section 4.1 Aesthetics - Consistency with General Plan Policies.** The project is consistent with Objective 2.5 and Policy 2.5.1 by providing industrial uses near SR-60 and within the FAR limits outlined. The project does not appear to be fully consistent with Policies 2.5.2 and 2.5.3 because it places industrial uses adjacent to lower density residential uses without the typical buffering land uses (e.g., higher density residential or business park). The project is consistent with Policy 2.5.4 as it precludes industrial traffic through residential areas by ProLogis Eucalyptus Industrial Park – Facts, Findings, and Statement of Overriding Considerations

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eliminating Quincy Street south of the new Eucalyptus Avenue road alignment and eliminating the new Encilia Avenue (old Eucalyptus Avenue) west of the Quincy Channel. The project is generally consistent with Objective 2.10 and Policies 2.10.1 through 2.10.5 by providing detailed architectural and landscaping themes for the proposed buildings and grounds, including adjacent to SR-60. The project is consistent with Policies 2.10.7 and 2.10.8 relative to lighting, although the tower accent features at the corners of the buildings may produce new off-site glare. The project appears to be consistent with Policy 2.10.9 as its fences and walls will incorporate landscaping and materials designed to reduce graffiti (see design details in DEIR Appendix K). The project may not be fully consistent with Policy 2.10.11 in terms of buffering for nearby residential uses, although it does comply with the new Municipal Code requirement of a 250-foot buffer between industrial and residential uses. Policies 2.10.12 and 2.10.13 require screening for parking areas and the project is consistent with that policy.

- **DEIR Section 4.1 Aesthetics -Consistency with Municipal Code Requirements.** The previous analysis indicates the project is not consistent with Objective 7.7 and Policies 7.7.4 and 7.7.5 as it does not fully preserve significant views and vistas, including those along SR-60. Signage will be consistent with Municipal Code requirements so it is consistent with Policy 7.7.3. Finally, the project appears to be consistent with the various Municipal Code requirements for the proposed land uses outlined in Section 4.1.2 related to landscaping, setbacks, parking, storage, etc.
- **DEIR Section 4.2 Agriculture – Consistency with General Plan Policies -** The Moreno Valley General Plan policies and zoning designations support agriculture only as an interim use, and no land in the City is designated solely for agricultural use or for agricultural preservation. Based on the recent trends of urban development in the City, development pressures will eventually lead to the conversion of agricultural land in the City to suburban uses.

The City's General Plan recognizes that these conversions will eventually occur, and the Project is a demonstration of that trend. The Project would result in the conversion of Prime Farmland, development of this site and the surrounding area is consistent with the long-term vision of the City as outlined in the General Plan. The Moreno Valley General Plan policies support agriculture as an interim use, and no land in the City is designated for agricultural preservation.

- **DEIR Section 4.3 Air Quality – Consistency with General Plan Policies** – Chapter 9 of the City’s General Plan defines goals and policies related to air quality within the City of Moreno Valley. The specific policies of the General Plan that are relevant to the Project are as follows:
 - **Objective 6.7:** *Reduce mobile and stationary source air pollutant emissions.*
 - **Policy 6.7.1:** *Cooperate with regional efforts to establish and implement regional air quality strategies and tactics.*
 - **Policy 6.7.5:** *Require grading activities to comply with South Coast Air Quality Management District’s Rule 403 regarding the control of fugitive dust.*
 - **Policy 6.7.6:** *Require building construction to comply with the energy conservation requirements of Title 24 of the California Administrative Code.*

The Project site is located in an urbanizing area of the City along SR-60 which accommodates traffic in the area. In addition, the proposed warehouse uses would be within walking distance of existing homes and commercial areas in the local vicinity. The Project will incrementally reduce overall vehicle miles traveled (VMT) in the region by introducing employment into an area (i.e., the City of Moreno Valley) with a low jobs/housing ratio as monitored by the Southern California Association of Governments (SCAG). This reduction in VMT will consequently reduce air pollutant emissions so the project is consistent with City General Plan Objective 6.7 and Policies 6.7.1. Mitigation Measures 4.3.6.2A through 4.3.6.2M to control dust, and Mitigation Measure 4.3.6.5B requires the project to exceed Title 24 energy conservation requirements, so the project is consistent with General Plan Policies 6.7.5 and 6.7.6.

- **DEIR Section 4.8 Land Use and Planning – Consistency with General Plan Policies** – Section 9.2.2 Community Development of the General Plan contains the following goals and objectives:
 - **Goal 2.1:** *A pattern of land uses which organizes future growth, minimizes conflicts between land uses, and which promotes the rational utilization of presently underdeveloped and undeveloped parcels.*
 - **Goal 2.2:** *An organized, well-designed, high quality, and functional balance of urban and rural land uses that will meet the needs of a diverse population, and promote the optimum degree of health, safety, well-being, and beauty for all areas of the community, while maintaining a sound economic base.*

- *Objective 2.1: Balance the provision of urban and rural lands within Moreno Valley by providing adequate land for present and future urban and economic development needs, while retaining the significant natural features and the rural character and lifestyle of the northeastern portion of the community.*
- *Objective 2.5: Promote a mix of industrial uses which provide a sound and diversified economic base and ample employment opportunities for the citizens of Moreno Valley with the establishment of industrial activities that have good access to the regional transportation system, accommodate the personal needs of workers and business visitors; and which meets the service needs of local businesses.*
- *Policy 2.5.1: The primary purpose of areas designated Business Park/Light Industrial is to provide for manufacturing, research and development, warehousing and distribution, as well as office and support commercial activities. The zoning regulations shall identify the particular uses permitted on each parcel of land. Development intensity should not exceed a Floor Area Ratio of 1.00 and the average floor area ratio should be significantly less.*
- *Policy 2.5.2: Locate manufacturing and industrial uses to avoid adverse impacts on surrounding land uses.*
- *Policy 2.5.3: Screen manufacturing and industrial uses where necessary to reduce glare, noise, dust, vibrations and unsightly views.*
- *Policy 2.5.4: Design industrial development to discourage access through residential areas.*

In addition, General Plan Section 9.6.2 Safety Element contains the following applicable objective:

- *Objective 6.6: Promote land use patterns that reduce daily automotive trips and reduce trip distance for work, shopping, school, and recreation.*

The City's adopted General Plan Land Use Map designations for the existing project area largely reflect the existing land use pattern. The northern portion of the Project site is designated Business Park/Light Industrial, while the southern area, south of proposed Eucalyptus Avenue, is designated Residential in the City's General Plan. The primary purpose of areas designated Business Park/Light Industrial is to provide for manufacturing, research and development,

warehousing and distribution, as well as office and support commercial activities.²⁰ The Project is not consistent with the current General Plan and zoning, and includes a General Plan Amendment (and related Zone Change) so the project will be consistent with the General Plan.

General Plan Objective 2.1 and Policy 2.5.1 require a transition of buffer of land uses between residential and industrial uses. In this area, the R5 and R15 zone areas in the southern portion of the site act as a buffer from the BP uses near the freeway and the RA2 residential uses. It should be noted that, while there is an existing transition of land uses from BP to R2 in the vicinity of the project site, it is not the function of either the R-5 or R-15 zones to act as a buffer between non-residential land uses and low density residential uses.

The Project provides light industrial uses close to freeway access that will generate short- and long-term employment for the City while minimizing conflicts with existing residential land uses to the southeast through planned changes in the circulation network, so it is consistent with Land Use Goals 2.1 and 2.2, Objectives 2.1 and 2.5, Policies 2.5.1 through 2.5.4, and Safety Objective 6.6. In addition, the Project is generally consistent with SR-60 East Corridor Study and can accommodate limited expansions of the Moreno Valley Auto Mall if necessary in the next two years.

- Relative to the City's Housing Element, the Project would result in the loss of potential housing units as the General Plan Amendment (GPA) and Zone Change (ZC) request a change to industrial uses. Development of the site as proposed could eliminate as many as 681 housing units (548 reduction with the less intense plan) from the site Those units would have been at a density that is generally accepted as helping to promote housing affordability (15 units per acre) on a regional level. The loss of the (max) potential 548 units (R-15 land) from the Project would reduce the total potential affordable units from 20,894 to 20,346 or still 2.7 times the RHNA number. The Project would not reduce the City's potential pool of affordable housing to below its RHNA number; therefore, it would not create a significant impact related to the City's Housing Element.

²⁰ Moreno Valley General Plan. *Chapter 9 Goals and Objectives. Policy 2.5.1.* Pg. 9-7.
ProLogis Eucalyptus Industrial Park – Facts, Findings, and Statement of Overriding Considerations

- **DEIR Section 4.8 Land Use and Planning – Consistency with the Municipal Code.** Section 9.05, Industrial Districts, of the City Municipal Code requires a minimum 250-foot buffer between residential uses and truck activity areas of industrial uses. The site plan of the Project provides a buffer of almost 400 feet from the closest residence to the southeast, so the project is consistent with this adopted land use buffer requirement.
- **DEIR Section 4.11 Transportation – Consistency with General Plan Policies** – The project is consistent with Community Development Policy 2.2.17 because the proposed amendment to the Circulation Element will prevent industrial traffic from traveling through existing residential areas southeast of the site. The project is also consistent with most of the relevant policies of the Circulation Element, including: providing adequate emergency access (Policy 5.1.1); minimizing traffic conflicts (Policies 5.1.2, 5.5.3, and 5.5.4); providing adequate off-street parking (Policy 5.1.3), ADA and Title 24 consistency (Policy 5.1.5); promoting through access (Policies 5.1.6, 5.2.2, 5.3.1, and Objective 5.5); mitigating project-related traffic impacts (Policy 5.5.8); allow for bicycle, pedestrian, and non-vehicular access options (Objective 5.8 and Policy 5.8.4, Objective 5.10 and Policy 5.10.1, Objective 5.11 and Policies 5.11.1 and 5.11.2); and using safe project design procedures (Policies 5.5.5, 5.5.9, and 5.5.10) plus applicable Municipal Code requirements.

The project is not fully consistent with Objective 5.2 which requires Level of Service C or roadways or Level of Service D on local freeway segments, but will make improvements, pay City Development Impact Fees, and make contributions to the County’s Traffic Uniform Mitigation Fee (TUMF) program to offset project impacts, which is consistent with City Policies 5.3.5, 5.3.6, and 5.3.7).

(2) Economic Viability. ProLogis estimates the project would result in a property tax increase from \$282,058 in 2013 to \$1.4 million at project buildout, representing an increase of \$1.2 million. The property tax increase would be less under the modified plan. Although a fiscal/economic study was not prepared for the ProLogis project, a comprehensive fiscal study was recently prepared by David Taussig and Associates (DTA²¹) for 41 million square feet of logistics warehousing proposed east of the ProLogis

²¹ “Fiscal and Economic Impact Study for the World Logistics Center Specific Plan.” David Taussig and Associates, Inc. January 15, 2013. ProLogis Eucalyptus Industrial Park – Facts, Findings, and Statement of Overriding Considerations

project site. This study indicated that logistics warehousing in Moreno Valley generates a surplus of City revenues versus costs. Since the ProLogis project is also logistics warehousing, it is reasonable to assume similar ratios of revenues and costs as outlined in the DTA study. Based on data in the DTA study, the ProLogis project could be expected to generate a surplus of approximately \$330,000 per year to the City at buildout and less for the modified plan.²² This estimate is supported by data from a similar fiscal study prepared for a recent warehouse project in the City of Perris²³. That study estimated 1.7 million square feet of warehousing would generate an annual surplus of \$216,500 which would equal \$331,000 if a similar cost/revenue ratio was applied to the proposed ProLogis project²⁴.

(3) Employment Generation. ProLogis estimates the project would generate a need for approximately 1,400 temporary construction—related workers²⁵ and approximately 600 permanent full-time employee positions at buildout of the proposed warehousing. The number of permanent full time positions will be less under the modified plan.

(4) Traffic and Infrastructure Improvements. The DEIR²⁶ indicated that the ProLogis project would produce an estimated 4,408 or 37 percent fewer Passenger Car Equivalent or PCE trips per day compared to the site as presently zoned (7,527 trips for Project evaluated in the DEIR compared to 11,935 trips under current zoning, and 5,292 trips with the modified plan). Note the PCE calculation takes into account large trucks in the vehicle mix.

ProLogis estimates the Project would pay approximately \$4.5 million for onsite road improvements including mainly Eucalyptus Avenue as an arterial street. In addition, ProLogis will provide \$9.2 million in Development Impact Fees (DIFs) to the City and other agencies in the following categories:

- * Moreno Valley Unified School District school impact fees
- * Arterial Streets
- * Traffic Signals
- * Interchange Improvements

²² The DTA 2013 study estimated a surplus of \$6 million for 41 million square feet of logistics warehousing in the City, so the ProLogis project (2.25 million square feet) would generate a surplus of approximately \$330,000 using similar data and assumptions.

²³ Andrew Chang and Company, LLC. Stratford Ranch Industrial Development, Fiscal and Economic Impacts, City of Perris. September 2012.

²⁴ \$216,500 for 1.7 million square feet (Stratford Ranch) is equal to \$331,000 for 2.6 million square feet (ProLogis).

²⁵ Estimate of construction-related employees generated by the ProLogis Ontario project, May 2014.

²⁶ ProLogis trip generation on DEIR Table 4.11.E, page 4.11-15, and existing zoning trip generation outlined on Table 6.B, page 6-9.

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- * Fire Facilities
- * Police Facilities
- * City Hall
- * Corporate Yard
- * Maintenance Equipment
- * Transportation Uniform Mitigation Fee (TUMF-separate from DIF)(see below)
- * Multi-Species Habitat Conservation Plan (MSHCP-County)
- * Riverside County Area Drainage Fee
- * Stephen’s Kangaroo Rat Habitat Conservation Plan Fee (SKR HCP)
- * SR-60/Moreno Beach Drive/Redlands Blvd. Improvement Fee
- * Fair Share for DIF and TUMF improvements per project traffic study
- * Santa Ana Watershed Authority (SAWA) mitigation for Quincy Channel impacts
- * Eastern Municipal Water District (various – water, sewer, landscaping, etc.)

The ProLogis project will also make a variety of improvements (e.g., utilities, streets) both onsite and in the surrounding area, and offsite improvements, or contributions to needed roadway and intersection improvements, are shown below as summarized from the project Traffic Impact Assessment²⁷ and as outlined in Mitigation Measures 4.11.6.4A-4.11.6.4F:

Make Improvements or Fully Fund Before Project Opening

- Redlands Boulevard/SR-60 Westbound Ramps – Install traffic signal.
- Redlands Boulevard/Fir Avenue/Eucalyptus Avenue – Install a traffic signal, add a northbound left-turn lane, and add a southbound left-turn lane.
- Moreno Beach Drive/SR-60 Eastbound Ramps – TUMF fee includes interchange.

Make a Fair Share Contribution (Year 2016 Impacts)

- Moreno Beach Drive/SR-60 Eastbound Ramps – TUMF fee contributes to a planned interchange upgrade.
- Moreno Beach Drive/Cottonwood Avenue – DIF fee contributes to the addition of a southbound though lane.

²⁷ LSA Associates, Inc. April 24, 2012 as summarized in the ProLogis Draft EIR Section 4.15, Transportation and Traffic. ProLogis Eucalyptus Industrial Park – Facts, Findings, and Statement of Overriding Considerations

- Moreno Beach Drive/Alessandro Blvd. – DIF fee contributes to the addition of a southbound through lane.
- Redlands Blvd./SR-60 Westbound Ramps – DIF and TUMF fees contribute to installation of a traffic signal and add a northbound through lane.
- Redlands Blvd./SR-60 Eastbound Ramps – TUMF fee contributes to improvement costs.
- Redlands Blvd./Fir Avenue/Eucalyptus Avenue – DIF fee contributes to installation of a traffic signal, adding a westbound right-turn lane, and adding an eastbound left-turn lane. TUMF fee will cover installation of a northbound left-turn lane and a southbound through lane.
- Redlands Blvd./Eucalyptus Avenue – TUMF fee contributes to the addition of a southbound right-turn lane.
- Redlands Blvd./Alessandro Blvd. – TUMF fee contributes to the addition of a southbound left-turn lane.

Make a Fair Share Contribution (Year 2035 Impacts)

- Nason Street/Eucalyptus Avenue – DIF fee will contribute to installation of a northbound right-turn lane and restriping the westbound approach to provide dual left-turn lanes.
- Nason Street/Alessandro Blvd. – DIF fee will contribute to installation of an eastbound through lane, westbound through lane, and overlap phasing for the eastbound right-turn lane.
- Moreno Beach Drive/SR-60 Westbound Ramps – TUMF fee contributes to improvements.
- Moreno Beach Drive/SR-60 Eastbound Ramps – TUMF fee contributes to improvements.
- Moreno Beach Drive/Eucalyptus Avenue – DIF fee contributes to traffic signal and various lane improvements/restriping.
- Moreno Beach Drive/Cottonwood Avenue – DIF fee contributes to addition of a southbound lane.
- Moreno Beach Drive/Alessandro Blvd. – DIF fee contributes to various lane improvements and restriping.
- Redlands Blvd./SR-60 Westbound Ramps – DIF fee contributes to installation of a traffic signal.

- Redlands Blvd./SR-60 Eastbound Ramps – TUMF fee contributes to various interchange improvements at this location.
 - Redlands Blvd./Fir Avenue/Eucalyptus Avenue – DIF and TUMF fees contribute to installation of a traffic signal and various lane improvements.
 - Redlands Blvd./Eucalyptus Avenue – DIF and TUMF fees contribute to installation of a traffic signal and various lane improvements.
 - Redlands Blvd./Alessandro Blvd. - DIF and TUMF fees contribute to installation of a traffic signal and various lane improvements.
- **Make a Fair Share Contribution (General Plan Buildout Impacts)(In addition to 2035)**
 - Nason Street/Eucalyptus Avenue – DIF fee will contribute to installation of a northbound right-turn lane and eastbound right-turn lane.
 - Nason Street/Alessandro Blvd. – DIF fee will contribute to installation of an eastbound left-turn lane and traffic signal improvements,
 - Moreno Beach Drive/Eucalyptus Avenue – DIF fee contributes to various lane improvements/restriping.
 - Moreno Beach Drive/Cottonwood Avenue – DIF fee contributes to addition of a southbound lane.
 - Moreno Beach Drive/Alessandro Blvd. – DIF fee contributes to various lane improvements and restriping.
 - Auto Mall Drive/Eucalyptus Avenue – DIF fee contributes to installation of a traffic signal.
 - Redlands Blvd./Alessandro Blvd. - DIF and TUMF fees contribute to installation of various lane improvements.

If the Encilia Avenue/Quincy Street Connection is Approved, the project will make the following improvements:

- Moreno Beach Drive/Eucalyptus Avenue – DIF fee will contribute to installation of various lane improvements and restriping.
- Redlands Blvd./Fir Avenue/Eucalyptus Avenue – Fair share contribution toward the addition of a southbound right-turn lane.

- Redlands Blvd./Encilia Avenue/Eucalyptus Avenue – DIF and TUMF fees contribute to installation of a traffic signal and various lane improvements.
- Moreno Beach Drive/Encilia Avenue - DIF fee contributes to installation of a traffic signal and various lane improvements.

VII. CERTIFICATION OF THE FINAL ENVIRONMENTAL IMPACT REPORT

The Moreno Valley City Council finds that it has reviewed and considered the FEIR in evaluating the Project, that the FEIR is an accurate and objective statement that fully complies with CEQA and the CEQA Guidelines, and that the FEIR reflects the independent judgment of the City Council.

The City Council declares that no new significant information as defined by CEQA Guidelines Section 15088.5 has been received by the City Council after the circulation of the DEIR that would require recirculation. All of the information added to the FEIR merely clarifies, amplifies or makes insignificant modifications to an already adequate DEIR pursuant to CEQA Guidelines Section 15088.5(b).

The City Council hereby certifies the EIR based on the following findings and conclusions:

A. Findings

1. CEQA Compliance

As the decision-making body for the Project, the City Council has reviewed and considered the information contained in the Findings and supporting documentation. The City Council determines that the Findings contain a complete and accurate reporting of the environmental impacts and mitigation measures associated with the Project as well as complete and accurate reporting of the unavoidable impacts and benefits of the Project as detailed in the Statement of Overriding Considerations. The City Council finds that the EIR was prepared in compliance with CEQA and that the City Council complied with CEQA’s procedural and substantive requirements.

2. Significant Unavoidable Impacts/Statement of Overriding Considerations

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Resolution No. 2014-56
Date Adopted: October 14, 2014

The Project will have significant adverse impacts even following adoption of all feasible mitigation measures which are required by the City Council. The following significant environmental impacts have been identified in the FEIR and will require mitigation but cannot be mitigated to a level of insignificance as set forth in Section V(C) of these Findings:

- *Aesthetics Impacts (Scenic Vistas; Scenic Resources and Scenic Highways; Existing Visual Character or Quality of Site and its Surroundings; and Cumulative Impacts)* as a result of substantial change in visual characteristics of the Project compared to the existing site and the fact that the site was planned for Business Park and Residential uses and no feasible mitigation measures are available.
- *Agricultural Impacts (Conversion of State Designated Farmland; Conversion of Farmland to a Non-Agricultural Use; and Cumulative Impacts)* due to loss of 82.5 of Prime Farmland and Former Agriculture Activities and there is not an established regional mitigation program available.
- *Air Quality Impacts (Air Quality Management Plan Consistency; Equipment Exhaust from Construction-Related Activities; Architectural Coatings; Long-Term Project-Related Emissions; Project-Related Localized Operational Emissions; and Cumulative Impacts;)* due to the size and type of project, the Project would exceed SCAQMD thresholds and available mitigation would not reduce impacts to less than significant levels.
- *Land Use and Planning Impacts (Conflicts with Applicable Land Use Plans, Policies, or Regulations; and Cumulative Impacts)* due to the Project not being consistent with current General Plan land use and zoning designation
- *Transportation Impacts (Existing With Project Conditions (Intersection) Traffic and Level of Service; Opening Year With Project Conditions (Intersection) Traffic and Level of Service; Opening Year Cumulative With Project Conditions (Intersection) Traffic and Level of Service; and Cumulative Impacts.)* due to various mitigation measures being under the jurisdiction of Caltrans and so implementation cannot be guaranteed by the Lead Agency (City).

The City Council has eliminated or substantially reduced environmental impacts where feasible as described in the Findings, and the City Council determines that the remaining unavoidable significant adverse impacts are acceptable due to the reasons set forth in the preceding Statement of Overriding Considerations.

3. Conclusions

- a. All potentially significant environmental impacts from implementation of the Project have been identified in the EIR and, with the implementation of the mitigation measures defined herein and set forth in the MMRP, will be mitigated to a less-than-significant level, except for the impacts identified in Section V(C) above.
- b. Other reasonable alternatives to the Project that could feasibly achieve the basic objectives of the Project have been considered and rejected in favor of the Project.
- c. Environmental, economic, social and other considerations and benefits derived from the development of the Project override and make infeasible any alternatives to the Project or further mitigation measures beyond those incorporated into the Project.

VII. ADOPTION OF MITIGATION MONITORING AND REPORTING PROGRAM

Pursuant to *Public Resources Code* Section 21081.6, the City Council hereby adopts, as conditions of approval of the Project, the Mitigation Monitoring and Reporting Plan (MMRP) set forth in Section 4.0 of the Final EIR. In the event of any inconsistencies between the mitigation measures as set forth herein and the MMRP, the MMRP shall control, except to the extent that a mitigation measure contained herein is inadvertently omitted from the MMRP, in which case such mitigation measure shall be deemed as if it were included in the MMRP.

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4.3 MITIGATION MONITORING AND REPORTING PROGRAM CHECKLIST

Project File Name: Eucalyptus Industrial Park

Applicant:

Prologis

Date:

March 31, 2014

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
4.3 AIR QUALITY						
4.3.6.2A. Prior to the issuance of a grading permit, the project developer shall require by contract specifications that contractors shall place construction equipment staging areas at least 200 feet away from sensitive receptors. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the City.	City of Moreno Valley Engineering and Building and Safety Planning Division	Once prior to Grading and once during grading and construction operations.	Prior to Issuance of Grading Permit	Review of construction documents and on-site inspection		Withhold Grading Permit or Issuance of a Stop Work Order
4.3.6.2B Prior to the issuance of a grading permit, the project developer shall require by contract specifications that contractors shall utilize power sources (e.g., power poles) or clean-fuel (e.g., fuel other than diesel or gasoline) generators where feasible. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the City.	City of Moreno Valley Engineering and Building and Safety Planning Division	Once prior to Grading	Prior to Issuance of Grading Permit	Review of construction documents and on-site inspection		Withhold Grading Permit or Issuance of a Stop Work Order
4.3.6.2C Prior to the issuance of a grading permit, the project developer shall require by contract specifications that contractors shall utilize California Air Resources Board (CARB) Tier III Certified equipment or better during the rough/mass grading phase for the following pieces of equipment: rubber-tired dozers and scrapers. Contract specifications shall be included in the proposed project construction documents,	City of Moreno Valley Engineering and Building and Safety Planning Division	Once prior to Grading	Prior to Issuance of Grading Permit	Review of construction documents and on-site inspection		Withhold Grading Permit

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Item No. E.3

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non- Compliance
<p>which shall be reviewed by the City.</p> <p>Project start to December 31, 2014: All off-road diesel-powered construction equipment greater than 50 horsepower shall meet Tier 3 off-road emission standards. In addition, all construction equipment shall be outfitted with Best Available Control Technology (BACT) devices certified by CARB. Any emission control devices used by the contractor shall achieve emission reductions that are no less than what would be achieved by a Level 3 diesel emission control strategy for a similarly sized engine as defined by CARB regulations.</p> <p>Post January 1, 2015: All off-road diesel-powered construction equipment greater than 50 horsepower shall meet Tier 4 emission standards, where available. In addition, all construction equipment shall be outfitted with Best Available Control Technology (BACT) devices certified by CARB. Any emission control devices used by the contractor shall achieve emission reductions that are no less than what would be achieved by a Level 3 diesel emission control strategy for a similarly sized engine as defined by CARB regulations.</p> <p>A copy of each unit's certified tier specifications, BACT documentation, and CARB or SCAQMD operating permit shall be provided at the time of mobilization of each applicable unit of equipment.</p>						
<p>4.3.6.2D All clearing, grading, earthmoving, or excavation activities shall cease when winds (as instantaneous</p>	<p>City of Moreno Valley Engineering and Building and Safety</p>	<p>Ongoing throughout construction</p>	<p>During grading</p>	<p>Review of construction documents and on-</p>		<p>Issuance of a Stop Work Order</p>

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
gusts) exceed 25 mph per SCAQMD guidelines in order to limit fugitive dust emissions. On-site truck idling shall be prohibited in excess of five minutes.	Planning Division			site inspection		
4.3.6.2E The contractor shall ensure that all disturbed unpaved roads and disturbed areas within the project are watered at least three times daily during dry weather. Watering, with complete coverage of disturbed areas, shall occur at least three times a day, preferably in the mid-morning, afternoon, and after work is done for the day.	City of Moreno Valley Engineering and Building and Safety Planning Division	Ongoing throughout construction	During Construction	On-site inspection		Issuance of a Stop Work Order
4.3.6.2F The contractor shall ensure that traffic speeds on unpaved roads and project site areas are reduced to 15 miles per hour or less to reduce PM ₁₀ and PM _{2.5} fugitive dust haul road emissions. Speed limit signs (15 mph maximum) shall be posted at entry points to the project site, and along any unpaved roads providing access to or within the project site and/or any unpaved designated on-site travel routes.	City of Moreno Valley Engineering and Building and Safety Planning Division	Ongoing throughout construction	During Construction	On-site inspection		Issuance of a Stop Work Order
4.3.6.2G Groundcover shall be replaced, and/or non-toxic soil stabilizers shall be applied (according to manufacturers' specifications) to any inactive construction areas (previously graded areas inactive for ten days or more).	City of Moreno Valley Engineering and Building and Safety Planning Division	Ongoing throughout construction	During Construction	On-site inspection		Issuance of a Stop Work Order
4.3.6.2H The contractor shall minimize pollutant emissions by maintaining equipment engines in good condition and in proper tune according to manufacturer's specifications and by not	City of Moreno Valley Engineering and Building and Safety	Ongoing throughout construction	During Construction	On-site inspection		Issuance of a Stop Work Order

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
allowing construction equipment to be left idling for more than five minutes (per California law).						
4.3.6.2I The contractor shall ensure use of low-sulfur diesel fuel in construction equipment as required by the California Air Resources Board (CARB) (diesel fuel with sulfur content of 15 ppm by weight or less).	City of Moreno Valley Engineering and Building and Safety	Ongoing throughout construction	During Construction	On-site inspection		Issuance of a Stop Work Order
4.3.6.2J. Grading plans, construction specifications and bid documents shall also include the following requirements: <ul style="list-style-type: none"> Off-road construction equipment shall utilize alternative fuels where feasible e.g., biodiesel fuel (a minimum of B20), natural gas (CNG), liquefied natural gas (LNG), propane, except for equipment where use of such fuels would void the equipment warranty; Gravel pads shall be provided at all access points to prevent tracking of mud onto public roads; Install and maintain trackout control devices at all access points where paved and unpaved access or travel routes intersect; The contractor or builder shall designate a person or person(s) to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust off site; The contractor or builder shall post a publicly visible sign with the 	City of Moreno Valley Engineering and Building and Safety Planning Division	Review plans, specifications, and bid documents prior to grading; conduct site inspections during construction operations.	Prior to Issuance of Grading Permit	Review of construction documents and on-site inspection		Withhold Grading Permit or Issuance of a Stop Work Order

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
<p>telephone number and person to contact regarding dust complaints. The contact person shall take corrective action within 24 hours;</p> <ul style="list-style-type: none"> • High-pressure injectors shall be provided on diesel construction equipment if available; • Engine size of construction equipment shall be limited to the minimum practical size; • Substitute gasoline-powered for diesel powered construction equipment where gasoline powered equipment is available; • Use electric construction equipment where it is practical to use such equipment; • Install catalytic converters on gasoline-powered equipment where this type of equipment is available; • Ride-sharing program for the construction crew shall be supported by contractor(s) via incentives or other inducement; • Documentation shall be provided to the City of Moreno Valley indicating that construction workers have been encouraged to carpool or otherwise reduce VMT to the greatest extent practical, including providing information on available park and ride programs; • Lunch vendor services shall be allowed on site during construction to minimize the need for off-site vehicle 						

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
trips; and <ul style="list-style-type: none"> All forklifts used during construction and in subsequent operation of the project shall be electric or natural gas powered. 						
4.3.6.2K. Throughout project construction, a construction relations officer/community liaison, appointed by the Applicant, shall be retained on site. In coordination and cooperation with the City, the construction relations officer/community liaison shall respond to any concerns related to PM ₁₀ (fugitive dust) generation or other construction-related air quality issues within 24 hours.	City of Moreno Valley Engineering and Building and Safety	Ongoing throughout construction	During Construction	On-site inspection		Issuance of a Stop Work Order
4.3.6.2L. All project entrances shall be posted with signs which state: <ul style="list-style-type: none"> Truck drivers shall turn off engines when not in use; Diesel delivery trucks servicing the project shall not idle for more than three (3) minutes; and Telephone numbers of the building facilities manager and CARB, to report violations. These measures shall be enforced by the on-site facilities manager (or equivalent).	City of Moreno Valley Engineering and Building and Safety	Ongoing throughout construction	During Construction	On-site inspection		Issuance of a Stop Work Order
4.3.6.2M. During project grading and construction, the various project contractors shall adhere to the control measures listed in Tables 1.D and 1.E (attached to the MMRP).	City of Moreno Valley Engineering and Building and Safety	Throughout construction	During Construction	On-site inspection		Issuance of a Stop Work Order

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
4.3.6.3A Prior to the issuance of grading permits, the project applicant shall require by contract specifications that all trucks hauling dirt, sand, soil, or other loose materials are to be covered or shall maintain at least 2 feet of freeboard in accordance with the requirements of California Vehicle Code (CVC) Section 23114 (freeboard means vertical space between the top of the load and the top of the trailer).	City of Moreno Valley Engineering and Building and Safety	Throughout construction	During Construction	On-site inspection		Issuance of a Stop Work Order
4.3.6.3B. Prior to the issuance of grading permits, the project applicant shall provide evidence to the City that construction access roads shall be paved at least 100 feet onto the site from the main road.	City of Moreno Valley Engineering and Building and Safety	Throughout construction	Prior to issuance of Grading Permits	On-site inspection		Issuance of a Stop Work Order
4.3.6.3C. Prior to the issuance of grading permits, the project applicant shall require by contract specifications that all streets within the construction site shall be swept once per day if visible soil materials are carried to adjacent streets.	City of Moreno Valley Engineering and Building and Safety Planning Division	One time Review and Approval of Grading Plans Throughout construction	Prior to issuance of Grading Permits During Construction	Review and Approval of Grading Plans On-site inspection		Withhold Grading Permit Issuance of a Stop Work Order
4.3.6.4A. The project applicant shall use "Low-Volatile Organic Compounds" paints, coatings, and solvents with a VOC content lower than required under Rule 1113 (not to exceed 150 grams/liter; 1.25 pounds/gallon). High Pressure Low Volume (HPLV) applications of paints, coatings, and solvents shall be consistent with South Coast Air Quality Management District Rule 1113. Alternatively, the project applicant shall use materials that do not require painting or are pre-painted.	City of Moreno Valley Engineering and Building and Safety Planning Division	Throughout construction	During Construction	On-site inspection		Issuance of a Stop Work Order

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
<p>4.3.6.5B. Prior to issuance of building permits, the project applicant shall provide evidence to the City that energy-efficient and low-emission methods and features of building construction shall be incorporated into the project design. These methods and features may include (but are not limited to) the following:</p> <ul style="list-style-type: none"> ○ Construction of buildings that exceed statewide energy requirements beyond Construction of buildings that exceed statewide energy requirements beyond 10 percent of that identified in Title 24, Part 6 Energy Efficiency Standards: ○ Use of low-emissions water heaters; ○ Use of central water-heating systems; ○ Use of energy-efficient appliances; ○ Use of increased insulation; ○ Use of automated controls for air conditioners; ○ Use of energy-efficient parking lot lighting; and ○ Use of lighting controls and energy-efficient lighting. ● Utilize low-VOC interior and exterior coatings during project repainting. ● Provide on-site improvements such as sidewalks or pedestrian walkways to promote pedestrian activity and reduce the number of vehicle trips. ● Installation of skylights and energy-efficient lighting that exceeds California 	<p>City of Moreno Valley Engineering and Building and Safety and Planning Division</p>	<p>Prior to building and during construction operations.</p>	<p>Prior to Issuance of Building Permit</p>	<p>Review of construction documents and on-site inspection</p>		<p>Withhold Grading Permit or Issuance of a Stop Work Order</p>

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non- Compliance
<p>Title 24 standards where feasible, including electronic dimming ballasts and computer-controlled daylight sensors in the buildings.</p> <ul style="list-style-type: none"> • Shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and building shall be planted at the proposed project site. These strategies will minimize the heat island effect and thereby reduce the amount of air conditioning required. • Strategies to be considered include fans to assist natural ventilation, centralized water and space conditioning systems, high efficiency individual heating and cooling units, and automatic setback thermostats. • Reduction of energy demand associated with potable water conveyance through the following methods: <ul style="list-style-type: none"> ○ Incorporating drought-tolerant plants into the landscaping palette; and ○ Use of water-efficient irrigation techniques. • Energy-efficient low-pressure sodium parking lot lights or equivalent as determined by the City shall be used; • Buildings shall be oriented north-south where feasible; • Implement an on-site circulation plan in parking lots to reduce vehicle queuing; • Develop a trip reduction plan to achieve 1.5 average vehicle ridership (AVR) for businesses with fewer than 250 						

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<p>employees or multi-tenant worksites;</p> <ul style="list-style-type: none"> • Include bicycle parking facilities such as bicycle lockers and racks; • Include showers for bicycling employees use; and • Construct on-site pedestrian facility improvements such as building access that is physically separated from street and parking lot traffic and walk paths. 						
<p>4.3.6.6A Prior to issuance of the first building permit, building and site plan designs shall ensure that the project's energy efficiencies surpass applicable 2008 California Title 24, Part 6 Energy Efficiency Standards by a minimum of 10 percent until January 1, 2014. For building permits issued after that date, new state energy standards require a 20 percent reduction from 2008 Title 24, Part 6 Energy Efficiency Standards. Verification of increased energy efficiencies shall be documented in Title 24 Compliance Reports provided by the Applicant, and reviewed and approved by the City. The following design features shall be used to fulfill this requirement:</p> <ul style="list-style-type: none"> • Buildings shall exceed California Title 24 Energy Efficiency performance standards for water heating and space heating and cooling, as deemed acceptable by the City. • Increase in insulation such that heat transfer and thermal bridging is minimized. • Limit air leakage through the structure or within the heating and 	<p>City of Moreno Valley Building and Safety Planning Division</p>	<p>Prior to Construction (once)</p>	<p>Prior to Issuance of Building Permits</p>	<p>Review of building plans and on-site inspection</p>		<p>Withhold Building Permits</p>

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non- Compliance
<p>cooling distribution system to minimize energy consumption.</p> <ul style="list-style-type: none"> • Incorporate dual-paned or other energy efficient windows. • Incorporate energy efficient space heating and cooling equipment. • Interior and exterior energy efficient lighting which exceeds the California Title 24 Energy Efficiency performance standards shall be installed, as deemed acceptable by the City. Automatic devices to turn off lights when they are not needed shall be implemented. • To the extent that they are compatible with landscaping guidelines established by the City, shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and buildings shall be planted at the project site. • Paint and surface color palette for the project shall emphasize light and off-white colors which reflect heat away from the buildings. • All buildings shall be designed to accommodate renewable energy sources, such as photovoltaic solar electricity systems, appropriate to their architectural design. • To reduce energy demand associated with potable water conveyance, the project shall implement the following: 						

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<ul style="list-style-type: none"> ○ Landscaping palette emphasizing drought-tolerant plants; ○ Use of water-efficient irrigation techniques; and, ○ U.S. EPA Certified WaterSense labeled for equivalent faucets, high-efficiency toilets (HETs), and water-conserving shower heads. • The project shall provide secure, weather-protected, on-site bicycle storage/parking. • The project shall provide on-site showers (one for males and one for females). Lockers for employees shall be provided. • The project will establish a Transportation Management Association (TMA). The TMA will coordinate with other TMAs within the City to encourage and coordinate carpooling among building occupants. The TMA will advertise its services to building occupants, and offer transit and/or other incentives to reduce greenhouse gas (GHG) emissions. A plan will be submitted by the TMA to the City within two months of project completion that outlines the measures implemented by the TMA, as well as contact information. • The project shall provide preferential parking for carpools and vanpools. Locations and configurations of 						

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<p>proposed preferential parking for carpools and vanpools are subject to review and approval by the City. Prior to final site plan approval, preferential parking for carpools and vanpools shall be delineated on the project site plan.</p> <ul style="list-style-type: none"> • The project shall provide at least two electric vehicle charging stations. Locations and configurations of proposed charging stations are subject to review and approval by the City. Prior to issuance of the first building permit, stub outs for charging stations shall be indicated on the project building plan. • Lease/purchase documents shall identify that tenants are encouraged to promote the following: <ul style="list-style-type: none"> ○ Implementation of compressed workweek schedules. ○ SmartWay partnership; ○ Achievement of at least 20 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of consolidated trips carried by SmartWay carriers until it reaches a minimum of 90 percent of all long-haul trips carried by SmartWay 1.0 or greater carriers. ○ Achievement of at least 15 percent per year (as a percentage of previous 						

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<p>percentage, not total trips) increase in percentage of long-haul trips carried by SmartWay carriers until it reaches a minimum of 85 percent of all consolidator trips carried by SmartWay 1.0 or greater carriers.</p> <ul style="list-style-type: none"> ○ Use of fleet vehicles conforming to 2010 air quality standards or better. ○ Installation of catalytic converters on gasoline-powered equipment. ○ Inclusion of electric powered and/or compressed natural gas fueled trucks and/or vehicles in fleets. ○ Establishment and use of carpool/vanpool programs, complemented by parking fees for single-occupancy vehicles. ○ Provision of preferential parking for EV and CNG vehicles. ○ Use of electrical equipment (instead of gasoline-powered equipment) for landscape maintenance. ○ Use of electric (instead of diesel or gasoline-powered) yard trucks. ○ Use of SmartWay 1.25 rated trucks. ○ Each facility operator shall provide regular sweeping of 						

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<p>onsite parking and drive areas.</p> <ul style="list-style-type: none"> ○ Each facility operator shall maintain a log of all trucks entering the facility to ensure that, on average, the daily truck fleet meets the quantities and emissions standards listed in the Draft EIR. This log shall be available for inspection by City staff at any time. ○ Each facility operator shall prohibit all vehicles from idling in excess of five minutes in all onsite areas. ○ Each facility operator shall ensure that onsite staff in charge of keeping the daily log and monitoring for excess idling will be trained and certified in diesel health effects and technologies, such as by requiring attendance at CARB-approved courses. ○ Each facility operator upon occupancy that do not already operate 2007 and newer trucks shall in good faith apply for funding to replace or retrofit their trucks such as Carl Moyer, VIP, Prop 1B or similar funds. Should funds be awarded, the tenant shall be required to accept and use them. 						

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4.4 BIOLOGICAL RESOURCES						
<p>4.4.6.1A. If tree removal or clearing and grubbing activities must take place during the general nesting season (February 1 through August 31), a nesting bird survey shall be conducted within seven (7) days prior to any vegetation disturbance activities. If passerine birds are found to be nesting or there is evidence of nesting behavior inside the impact area, an exclusion buffer, to be determined by the appropriate agency (e.g. the City, County, and/or CDFG), shall be set in place around the nest where no vegetation disturbance will be permitted. For raptor species, such as hawks and owls, this buffer may be as large as 500 feet. A qualified biologist shall closely monitor nests until it is determined that they are no longer active, at which time construction activity in the vicinity of nests may continue.</p>	City of Moreno Valley Planning Division	Prior to grading and periodic site inspections during grading	Prior to Issuance of Grading Permit	<p>Review of Evidence that a qualified biologist has been hired and the pre-construction survey has been completed.</p> <p>Review of a report of the survey findings.</p> <p>Periodic site inspections during construction activities during the nesting season to ensure compliance.</p>		Withhold Grading Permit
<p>4.4.6.1B. Prior to site grading, a pre-construction survey shall be required for the burrowing owl to confirm the presence/absence of this species from the site. The survey shall be conducted by a qualified biologist within 30 days prior to ground disturbance, and in accordance with MSHCP survey requirements, to avoid direct take of burrowing owls. If burrowing owls are determined to occupy the project site or immediate vicinity, the City of Moreno Valley Planning Department shall be notified and avoidance measures as identified in Mitigation Measure 4.4.6.1C, shall be implemented. Implementation of avoidance measures</p>	City of Moreno Valley Planning Division	Once prior to grading	Prior to Issuance of Grading Permit	<p>Review of Evidence that a qualified biologist has been hired and the pre-construction survey has been completed.</p> <p>Review of a report of the survey findings.</p>		Withhold Grading Permit

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
<p>shall be executed pursuant to the MSHCP, the California Fish and Game Code, and the MBTA, and according to the Burrowing Owl Survey Protocol and Mitigation Guidelines (California Burrowing Owl Consortium 1993) and reviewed the City of Moreno Valley, the Riverside Conservation Authority, and/or by the CDFG.</p>						
<p>4.4.6.1C. As recommended in the BUOW Survey and Mitigation Guidelines prepared by the California BUOW Consortium, no disturbance to an occupied burrow shall occur within approximately 160 feet of an occupied burrow during the non-breeding season (September 1 through January 31), or within approximately 250 feet of an occupied burrow during the breeding season (February 1 through August 31). For unavoidable impacts, passive relocation of burrowing owls shall be implemented. Passive relocation shall be conducted by a qualified biologist in accordance with procedures set forth by the MSHCP and California Burrowing Owl Consortium. Passive relocation of occupied burrows supporting a breeding pair of burrowing owls shall be conducted outside of the breeding season pursuant to the California Fish and Game Code and the MBTA.</p>	<p>City of Moreno Valley Planning Division</p>	<p>Prior to grading</p>	<p>Prior to Issuance of Grading Permit</p>	<p>Provide evidence to the City that the passive relocation plan has been approved by CDFG and USFWS.</p>		<p>Withhold Grading Permit</p>
<p>4.4.6.2A. As outlined in the project's Determination of a Biologically Equivalent or Superior Preservation (DBESP) report, the project applicant shall compensate for the temporary and permanent impact on and loss of jurisdictional waters and streambeds by providing a minimum 2:1 off-site replacement of equivalent riverine/riparian habitat prior to project</p>	<p>City of Moreno Valley Planning Division</p>	<p>As outlined in the approved DBESP</p>	<p>Prior to Issuance of Certificate of Occupancy</p>	<p>Demonstrate completion of DBESP implementation measures</p>		<p>Withhold Grading Permit</p>

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non- Compliance
<p>construction. Offsite restoration, enhancement, and/or land purchase mitigation for the drainage impacts will occur at an offsite location through one or more of the following: an USACE approved mitigation bank, through an in lieu fee mitigation program, and/or land purchase and conservation. DFG and USFWS will need to provide concurrence that this mitigation is equivalent or superior to that proposed for impact through their review and acceptance of the DBESP.</p>						
<p>4.4.6.2B. Riparian/riverine resources that are temporarily impacted by project construction shall be returned to their preconstruction contours and hydroseeded, as outlined in the DBESP.</p>	<p>City of Moreno Valley Planning Division</p>	<p>Once, prior to issuance of Certificate of Occupancy</p>	<p>Prior to Issuance of Certificate of Occupancy</p>	<p>Applicant to demonstrate compliance with DBESP</p>		<p>Withhold Certificate of Occupancy</p>
<p>4.4.6.3A. The project applicant shall obtain a Section 404 Nationwide or Individual Permit, as appropriate, from the USACE, a Section 401/Porter-Cologne Water Quality Certification from the RWQCB, and a Section 1602 Streambed Alteration Agreement from the CDFG. Offsite restoration, enhancement, and/or land purchase mitigation of jurisdictional drainage impacts will occur at an off-site location through one or more of the following: an USACE approved mitigation bank, through an in-lieu fee mitigation program, and/or land purchase and conservation.</p>	<p>City of Moreno Valley Planning Division</p>	<p>Once, prior to issuance of Certificate of Occupancy</p>	<p>Prior to Issuance of Certificate of Occupancy</p>	<p>Project applicant to submit to the City a copy of the USACE Section 404 Permit and the Section 1602 Streambed Alteration Agreement from the CDFG</p>		<p>Withhold Certificate of Occupancy</p>

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CULTURAL RESOURCES						
<p>4.5.6.1A Prior to the issuance of a grading permit, the Project Applicant shall provide evidence to the City of Moreno Valley that a Cultural Resources Monitoring Agreement has been secured for qualified Tribal representatives, and that a professional archaeological monitor meeting Secretary of Interior standards has been retained by the Applicant to conduct monitoring of all mass grading and trenching activities and has the authority to temporarily halt and redirect earthmoving activities in the event that suspected archaeological resources are unearthed during Project construction. The Project Archaeologist and Tribal representatives shall attend the pre-grading meeting with the City and contractors to explain and coordinate the requirements of the monitoring program.</p>	<p>City of Moreno Valley Planning Division</p>	<p>Prior to grading</p>	<p>Prior to Issuance of Grading Permit</p>	<p>Provide evidence to the City that a qualified archaeological monitor has been retained to oversee all ground altering activities</p>		<p>Withhold Grading Permit</p>
<p>4.5.6.1B Prior to the issuance of a grading permit, the Applicant shall provide evidence to the City of Moreno Valley that appropriate Native American representative(s), Project Archaeologist, and the Tribal representative(s) shall be allowed to monitor and have received a minimum of 30 days advance notice of all mass grading and trenching activities. During grading and trenching operations, the Tribal representatives and the project archaeological monitor shall observe all mass grading and trenching activities per the Cultural Resources Monitoring Agreement. If the Tribal representatives suspect that an archaeological resource may have been unearthed, the archaeologist, in consultation with the</p>	<p>City of Moreno Valley Planning Division</p>	<p>Prior to grading and throughout ground disturbing activities.</p>	<p>Prior to Issuance of Grading Permit</p>	<p>Provide evidence to the City that a qualified archaeological monitor has been retained to oversee all ground altering activities and that the Soboba, Morongo, and Pechanga Tribes have been notified as to when ground altering activities will occur on site.</p> <p>Tthe</p>		<p>Withhold Grading Permit and/or Issuance of a Stop Work Order</p>

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non- Compliance
tribal representative, shall immediately halt and redirect grading operations in a 100-foot radius around the find to allow identification and evaluation of the suspected resource. In consultation with the appropriate Native American Tribe(s), the archaeological monitor shall evaluate the suspected resource and make a determination of significance pursuant to California Public Resources Code Section 21083.2.				archaeological monitor shall invite one or more Native American monitors to participate in the monitoring program at the expense of the applicant.		
<p>4.5.6.1C If a significant archaeological resource(s) is discovered on the property, ground disturbing activities shall be suspended 100 feet around the resource(s). The archaeological monitor and representatives of the appropriate Native American Tribe(s), the Project Applicant, and the City Planning Division shall confer regarding mitigation of the discovered resource(s). A treatment plan and/or preservation plan shall be prepared and by the archaeological monitor and reviewed by representatives of the appropriate Native American Tribe(s), the Project Applicant, and the City Planning Division and implemented by the archaeologist to protect the identified archaeological resource(s) from damage and destruction. The landowner shall relinquish ownership of all archaeological artifacts that are of Native American origin found on the Project site to the culturally affiliated Native American tribe(s) for proper treatment and disposition. A final report containing the significance and treatment findings shall be prepared by the archaeologist and submitted to the City Planning Division, the appropriate Native American tribe(s),</p>	City of Moreno Valley Planning Division	Throughout ground disturbing activities.	On-site Inspection during construction	<p>If historic resources are found the archaeologist shall provide a recommendation to the City as to how to handle and evaluate the resources.</p> <p>If archaeological resources are found the archaeologist shall notify the applicant, City and local Native American representatives.</p> <p>A written disposition of the mitigation shall be provided to the City by the archaeologist.</p>		Issuance of a Stop Work Order

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<p>and the Eastern Information Center at the University of California, Riverside. All cultural material, excluding sacred, ceremonial, grave goods and human remains, collected during the grading monitoring program and from any previous archaeological studies or excavations on the project site shall be curated, as determined by the treatment plan, according to the current professional repository standards and may include the Pechanga Bands curatorial facility.</p>						
<p>4.5.6.1D Prior to grading permit issuance, the City shall verify that the following note is included on the Grading Plan: "If any suspected archaeological resources are discovered during ground-disturbing activities and the archaeological monitor or Tribal representatives are not present, the construction supervisor is obligated to halt work in a 100-foot radius around the find and call the project archaeologist and the Tribal representatives to the site to assess the significance of the find."</p>	<p>City of Moreno Valley Planning Division</p>	<p>Once prior to issuing permit</p>	<p>Prior to Issuance of Grading Permit.</p>	<p>Verify that plans contain specified language</p>		<p>Withhold Grading Permit.</p>
<p>4.5.6.1E If human remains are encountered, California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the Riverside County Coroner has made the necessary findings as to origin. Further, pursuant to California Public Resources Code Section 5097.98(b), remains shall be left in place and free from disturbance until a final decision as to the treatment and disposition has been made by the Coroner. If the Riverside County Coroner</p>	<p>City of Moreno Valley Planning Division</p>	<p>Ongoing during ground disturbing activities.</p>	<p>On-site Inspection during construction if human remains are discovered.</p>	<p>The contractor and/or archaeologist shall contact the applicant and City if human remains are discovered.</p>		<p>Issuance of a Stop Work Order</p>

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
<p>determines the remains to be Native American, the California Native American Heritage Commission must be contacted within 24 hours. The Native American Heritage Commission must then immediately notify the “most likely descendant(s)” of receiving notification of the discovery. The most likely descendant(s) shall then make recommendations within 48 hours, and engage in consultations concerning the treatment of the remains as provided in Public Resources Code §5097.98.</p>						
<p>4.5.6.2A. Prior to the issuance of grading permits, the project applicant shall submit to and receive approval from the City, a Paleontological Resource Impact Mitigation Program (PRIMP). The PRIMP shall include the provision of a trained paleontological monitor during on-site soil disturbance activities. The monitoring for paleontological resources shall be conducted during the rough-grading phase of the project. In the event that paleontological resources are unearthed or discovered during excavation, Mitigation Measure 4.5.6.2C shall apply. Conversely, if no paleontological resources are unearthed or discovered on site during excavation, no additional action is required.</p>	<p>City of Moreno Valley Planning Division</p>	<p>Prior to grading and on-going during ground disturbing activities.</p>	<p>Prior to Issuance of Grading Permit</p>	<p>Provide evidence to the City that a qualified paleontologist has been retained, and that the paleontologist(s) shall prepare a PRIMP for City approval.</p> <p>A qualified paleontologist(s) shall be retained by the applicant to monitor during rough grading.</p> <p>A report of findings shall be submitted to the City after the finalization of construction.</p>		<p>Withhold Grading Permit/ Issuance of a Stop Work Order</p>

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
<p>4.5.6.2B. The paleontological monitor shall be equipped to rapidly remove any large fossil specimens encountered during excavation. During monitoring, samples of soil shall be collected and processed to recover microvertebrate fossils. Processing shall include wet screen washing and microscopic examination of the residual materials to identify small vertebrate remains.</p>	<p>City of Moreno Valley Planning Division</p>	<p>Prior to grading and on-going during ground disturbing activities.</p>	<p>Prior to Issuance of Grading Permit</p>	<p>A qualified paleontologist(s) shall be retained by the applicant to monitor during rough grading.</p> <p>A report of findings shall be submitted to the City after the finalization of construction.</p>		<p>Withhold Grading Permit/ Issuance of a Stop Work Order</p>
<p>4.5.6.2C. If paleontological resources are unearthed or discovered during excavation of the project site, the monitoring for paleontological resources shall be conducted on a full-time basis for the duration of the rough-grading of the project site. The following recovery processes shall apply:</p> <ul style="list-style-type: none"> • Upon encountering a large deposit of bone, salvage of all bone in the area shall be conducted with additional field staff and in accordance with modern paleontological techniques. • All fossils collected during the project shall be prepared to a reasonable point of identification. Excess sediment or matrix shall be removed from the specimens to reduce the bulk and cost of storage. Itemized catalogs of all material collected and identified shall be provided to the museum repository along with the specimens. • A report documenting the results of the monitoring and salvage activities 	<p>City of Moreno Valley Planning Division</p>	<p>Ongoing during ground disturbing activities.</p>	<p>When paleontological resources are unearthed or discovered</p>	<p>A qualified paleontologist(s) shall be retained by the applicant to monitor full time during the duration of ground disturbing activities.</p> <p>A report of findings shall be submitted to the City after the finalization of construction.</p>		<p>Issuance of a Stop Work Order</p>

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<p>and the significance of the fossils shall be prepared.</p> <ul style="list-style-type: none"> All fossils collected during this work, along with the itemized inventory of these specimens, shall be deposited in a museum repository for permanent curation and storage. 						
<p>4.5.6.2D Prior to grading permit issuance, the City shall verify that the following note is included on the Grading Plan:</p> <p>“If any suspected paleontological resources are discovered during ground-disturbing activities, the construction supervisor is obligated to halt work in a 100-foot radius around the find and call a qualified paleontologist to the site to assess the significance of the find. A qualified paleontologist shall evaluate the suspected resource. If the paleontologist determines that the find is not unique, construction shall be permitted to proceed. However, if the paleontologist determines that further information is needed to evaluate significance, the City of Moreno Valley shall be notified and a treatment plan shall be prepared and implemented in consultation with the City to protect the identified paleontological resource(s) from damage and destruction.”</p>	<p>City of Moreno Valley Planning Division</p>	<p>Once before issuing grading permit.</p>	<p>Prior to Issuance of Grading Permit</p>	<p>Verify plans contain specified language.</p>		<p>Withhold Grading Permit</p>

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HAZARDS AND HAZARDOUS MATERIALS						
4.6.6.1A Prior to issuance of a grading permit for the project, a qualified contractor shall test onsite soils for contamination by agricultural chemicals. If present in concentrations above established actionable levels or thresholds, these materials shall be removed and transported to an appropriate landfill by a licensed contractor. This measure shall be implemented to the satisfaction of the Building Division including written documentation of the disposal of any agricultural chemical residue in conformance with all applicable regulations.	City of Moreno Valley Planning Division	Prior to grading	Prior to Issuance of Grading Permit and receipt of supplemental Phase II soil testing	Applicant shall provide written results of subsequent soil testing for pesticides		Withhold Grading Permit
HYDROLOGY AND WATER QUALITY						
4.7.6.1A. Prior to grading plan approval and the issuance of a grading permit by the City, the project applicant shall provide evidence to the City that a Notice of Intent (NOI) has been filed with the Regional Water Quality Control Board for coverage under the State NPDES General Construction Permit for discharge of storm water associated with construction activities.	City of Moreno Valley Planning Division Building and Safety Engineering	Prior to grading	Prior to Issuance of Grading Permit and review of grading plan documents	Applicant shall provide written evidence that an NOI has been filed with the Regional Water Quality Control Board.		Withhold Grading Permit
4.7.6.1B. Prior to grading plan approval and the issuance of a grading permit by the City, the project applicant shall submit to the State Water Quality Control Board a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP shall include a surface water control plan and erosion control plan citing specific measures to control on-site and off-site erosion during the entire grading and construction	City of Moreno Valley Planning Division Building and Safety Engineering	Prior to grading and onsite inspection during construction	Prior to Issuance of Grading Permit	Review of grading and construction documents and on-site inspection. Applicant shall provide written evidence that a SWPPP has been filed with the Regional Water		Withhold Grading Permit and/or Issuance of Stop Work Order

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<p>period. Additionally, the SWPPP shall identify structural and nonstructural BMPs to control sediment and nonvisible discharges from the site. BMPs to be implemented in the SWPPP may include, but shall not be limited to, the following:</p> <ul style="list-style-type: none"> Sediment discharges from the site may be controlled by the following: gravel bags, silt fences, straw wattles and temporary debris basins (if deemed necessary), and other discharge control devices. The construction and condition of the BMPs will be periodically inspected during construction, and repairs will be made when necessary as required by the SWPPP. No materials of any kind shall be placed in drainage ways. Materials that could contribute non-visible pollutants to storm water must be contained, elevated, and placed in temporary storage containment areas. All loose piles of soil, silt, clay, sand, debris, and other earthen material shall be protected per RWQCB standards to eliminate any discharge from the site. Stockpiles will be surrounded by silt fences. <p>The SWPPP will include inspection forms for routine monitoring of the site during the construction phase to ensure NPDES compliance.</p> <ul style="list-style-type: none"> Additional BMPs and erosion control measures will be documented in the 				Quality Control Board.		

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<p>SWPPP and utilized if necessary.</p> <ul style="list-style-type: none"> The SWPPP will be kept on site for the entire duration of project construction and will also be available to the local RWQCB for inspection at any time. <p>In the event that it is not feasible to implement the above BMPs, the City of Moreno Valley can make a determination that other BMPs will provide equivalent or superior treatment either on or off site.</p>						
<p>4.7.6.1C. Prior to the issuance of grading permits, the project applicant shall provide evidence to the City that the following provisions have been added to construction contracts for the project:</p> <ul style="list-style-type: none"> The Construction Contractor shall be responsible for performing and documenting the application of BMPs identified in the SWPPP. Weekly inspections shall be performed on sediment control measures called for in the SWPPP. Monthly reports shall be maintained by the Contractor and submitted to the City for inspection. In addition, the Contractor will also be required to maintain an inspection log and have the log on site to be reviewed by the City of Moreno Valley and the representatives of the Regional Water Quality Control Board. 	<p>City of Moreno Valley Planning Division</p> <p>Engineering</p>	Once prior to grading	Prior to issuance of Grading Permit	City review and approval of grading plans.		Withhold Grading Permit
<p>4.7.6.2A. Prior to grading plan approval and the issuance of a grading permit by the City, the project applicant shall receive approval from the City of Moreno Valley for a Final Water Quality Management Plan (F-WQMP). The F-</p>	<p>City of Moreno Valley Planning Division</p> <p>Engineering</p>	Once prior to grading	Prior to issuance of Grading Permit	City review and approval of Final Water Quality Management Plan		Withhold Grading Permit

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non- Compliance
<p>WQMP shall specifically identify pollution prevention, site design, source control, and treatment control BMPs that shall be used on site to control predictable pollutant runoff in order to reduce impacts to water quality to the maximum extent practicable. BMPs to be implemented in the F-WQMP may include (but shall not be limited to) the following:</p> <ul style="list-style-type: none"> • Required landscaped areas shall not use decorative concrete or impervious surfaces. • Landscape plans shall incorporate native and drought-tolerant plants, trees, and shrubs. Landscaping shall be maintained weekly and maintenance contractor will properly dispose of all landscape wastes. • Irrigation systems shall be inspected monthly by the landscape contractor to check for over-watering, leaks, or excessive runoff to paved areas. Timers will be used to prevent over-watering. • Signage will be inspected and maintained twice a year for legibility. • Outdoor Loading/Unloading truck docks shall be kept in a clean and orderly condition with weekly inspections, continuous monitoring, and immediate clean up of spills. • Parking area maintenance shall be swept or vacuumed at least quarterly, if there is any trash or debris in between the routine sweeping, it shall be swept or 						

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
<p>vacuumed immediately.</p> <ul style="list-style-type: none"> Trash enclosures will be inspected and maintained weekly or as needed by maintenance contractor. On-site extended detention/sedimentation basins and sand filters will treat all of the site's runoff via vegetated swales and will be maintained and inspected at least twice a year and prior to October 1. Additional BMPs will be documented in the WQMP and utilized if necessary. <p>In the event that it is not feasible to implement the above BMPs, the City of Moreno Valley can make a determination that other BMPs will provide equivalent or superior treatment either on or off site.</p>						
<p>4.7.6.3A. Prior to grading plan approval, the project proponent shall receive approval on a project-specific Final Hydrology Study, with supporting engineering calculations, from the City Engineer. The Final Hydrology Study shall incorporate relevant requirements identified by the City, and/or site-specific geotechnical investigations. A Preliminary Hydrology Study will be required prior to approval of the associated project tentative tract map.</p>	<p>City of Moreno Valley Planning Division</p> <p>Engineering</p>	<p>Once prior to tentative tract map approval</p> <p>Once prior to grading</p>	<p>Prior to tentative tract map approval</p> <p>Prior to issuance of Grading Permit</p>	<p>City review and approval of Preliminary Hydrology Study</p> <p>City review and approval of Final Hydrology Study</p>		<p>Withhold hearing to approve the tentative tract map.</p> <p>Withhold Grading Permit</p>

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
NOISE						
4.9.6.1A. During all project site excavation and grading on site, the project contractor shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards.	City of Moreno Valley Building and Safety Engineering Planning Division	Ongoing during construction	Throughout Construction	Review of construction documents and on-site inspection		Withhold Grading Permit or Stop Work Order
4.9.6.1B. The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest to the project site.	City of Moreno Valley Building and Safety Engineering Planning Division	Ongoing throughout construction /on-site inspection	Throughout Construction	Review of construction documents and on-site inspection		Withhold Grading Permit or Stop Work Order
4.9.6.1C. The construction contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise sources and noise-sensitive receptors nearest to the project site during all project construction.	City of Moreno Valley Building and Safety Engineering Planning Division	Ongoing throughout construction /on-site inspection	Throughout Construction	Review of construction documents and on-site inspection		Withhold Grading Permit or Stop Work Order
4.9.6.1D. During project site construction activities at Building 6 (i.e., closest to existing residences), the construction contractor shall limit all construction-related activities to between the hours of 6:00 a.m. and 8:00 p.m. on weekdays and between the hours of 7:00 a.m. to 8:00 p.m. on weekends and holidays, unless written approval is obtained from the City Building Official or City Engineer.	City of Moreno Valley Building and Safety Engineering Planning Division	Ongoing throughout construction /on-site inspection	Throughout Construction	Review of construction documents and on-site inspection		Withhold Grading Permit or Stop Work Order

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
TRANSPORTATION						
<p>4.11.6.4A. Prior to issuance of a Certificate of Occupancy the project applicant shall construct the following traffic improvements:</p> <ul style="list-style-type: none"> • Redlands Boulevard/SR-60 Westbound Ramps. Install a traffic signal. This improvement is currently approved, and permitted by Caltrans. If not otherwise completed prior to project opening, the required traffic signal shall be constructed by the Applicant prior to issuance of the first Certificate of Occupancy. • Redlands Boulevard/Fir Avenue/Eucalyptus Avenue. If not otherwise completed prior to project opening, prior to issuance of the first Certificate of Occupancy, the Applicant shall construct the following improvements: Install a traffic signal and add a northbound left-turn lane and a southbound left-turn lane. <p>If the improvements are constructed by others prior to the Certificate of Occupancy, the applicant shall pay its fair share towards the improvements through the City's DIF program.</p>	<p>City of Moreno Valley Building and Safety</p> <p>Engineering</p> <p>Planning Division</p>	<p>Prior to Certificate of Occupancy on the building.</p>	<p>Prior to the Issuance of a Certificate of Occupancy</p>	<p>Evidence of the construction of the improvements. If construction has already occurred by others evidence of payment of DIF fees.</p>		<p>Withhold Certificate of Occupancy</p>

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
<p>4.11.6.4B. Prior to issuance of building permits, the project applicant shall pay the fair-share contribution toward the following traffic improvements through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program:</p> <ul style="list-style-type: none"> <p>Moreno Beach Drive/SR-60 Eastbound Ramps. The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF fee would mitigate the significant impact at this location.</p> <p>Redlands Boulevard/SR-60 Westbound Ramps. Install a traffic signal. This improvement is listed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the significant impact at this location.</p> <p>Redlands Boulevard/Fir Avenue/Eucalyptus Avenue. Install a traffic signal. This improvement is listed in the City's DIF program. Add a northbound left-turn lane and a southbound left-turn lane. These improvements are listed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location.</p> 	<p>City of Moreno Valley Building and Safety</p> <p>Engineering</p> <p>Planning Division</p>	<p>Once before construction</p>	<p>Prior to the Issuance of Building Permits</p>	<p>Evidence of Payment of City DIF fees and WRCOG TUMF fees.</p>		<p>Withhold Building Permit</p>

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
<p>4.11.6.4C. Prior to issuance of building permits, the project applicant shall pay the fair-share contribution toward the following traffic improvements through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program:</p> <ul style="list-style-type: none"> • Moreno Beach Drive/SR-60 Eastbound Ramps. The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF fee would mitigate the significant impact at this location. • Moreno Beach Drive/Cottonwood Avenue. Add a southbound through lane. This improvement is listed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the significant impact at this location. • Moreno Beach Drive/Alessandro Boulevard. Add a southbound through lane. This improvement is listed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the significant impact at this location. • Redlands Boulevard/SR-60 Westbound Ramps. Install a traffic signal. This improvement is listed in the City's DIF program. Add a northbound through lane. The 	<p>City of Moreno Valley Building and Safety</p> <p>Engineering</p> <p>Planning Division</p>	<p>Once before construction</p>	<p>Prior to the Issuance of Building Permits</p>	<p>Evidence of Payment of City DIF fees and WRCOG TUMF fees.</p>		<p>Withhold Building Permit</p>

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non- Compliance
<p>Redlands Boulevard/SR-60 Interchange reconstruction would implement the northbound through lane. The interchange reconstruction project is programmed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location.</p> <ul style="list-style-type: none"> <p>Redlands Boulevard/SR-60 Eastbound Ramps. The Redlands Boulevard/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF. Therefore, payment of the TUMF fee would mitigate the significant impact at this location.</p> <p>Redlands Boulevard/Fir Avenue/Eucalyptus Avenue. Install a traffic signal. Add a westbound right-turn lane and provide overlap phasing for the westbound right turns. Add a westbound left-turn lane and an eastbound left-turn lane. These improvements are programmed in the City's DIF program. Add a northbound left-turn lane, a southbound through lane, and a southbound left-turn lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location.</p> <p>Redlands Boulevard/Eucalyptus Avenue. Add a southbound right-turn lane. This improvement is programmed in the TUMF.</p> 						

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
<p>Therefore, payment of the TUMF fees would mitigate the significant impact at this location.</p> <ul style="list-style-type: none"> • Redlands Boulevard/Alessandro Boulevard. Add a southbound left-turn lane. This improvement is programmed in the TUMF. Therefore, payment of the TUMF fees would mitigate the significant impact at this location. 						
<p>4.11.6.4D. Prior to issuance of building permits, the project applicant shall pay the fair-share contribution toward the following traffic improvements through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program. At some locations, the DIF and TUMF fees would not fully mitigate the project's impact. For these locations, additional improvements shall be implemented by the project applicant prior to the issuance of a certificate of occupancy for the project:</p> <ul style="list-style-type: none"> • Nason Street/Eucalyptus Avenue. Add a northbound right turn lane. This improvement is programmed in the City's DIF; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, the project shall contribute a fair share (calculated to be 1.76%) toward restriping the westbound approach to provide dual left-turn lanes. • Nason Street/Alessandro Boulevard. Add an eastbound through lane and a westbound 	<p>City of Moreno Valley Building and Safety Engineering Planning Division</p>	<p>Once before construction and onsite inspection for improvements.</p>	<p>Prior to the Issuance of Building Permits Where improvements must be built by the developer – Prior to a Certificate of Occupancy on the first building.</p>	<p>Evidence of Payment to the City of fair share contribution in addition to payment of DIF, TUMF and build improvements where indicated in the mitigation measure.</p>		<p>Withhold Building Permit and/or Withhold Certificate of Occupancy.</p>

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
<p>through lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, the project shall contribute a fair share (calculated to be 1.4%) toward modification of the traffic signal to provide overlap phasing for the eastbound right-turn lane.</p> <ul style="list-style-type: none"> <p>Moreno Beach Drive/SR-60 Westbound Ramps. The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF fee would mitigate the significant impact at this location.</p> <p>Moreno Beach Drive/SR-60 Eastbound Ramps. The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF fee would mitigate the significant impact at this location.</p> <p>Moreno Beach Drive/Eucalyptus Avenue. Convert the existing eastbound through lane to a left-turn lane and the eastbound right-turn lane to a shared through/right-turn</p> 						

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non- Compliance
<p>lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, the project shall contribute a fair share (calculated to be 8.63%) toward modification of the traffic signal to provide right-turn overlap phasing for the westbound right-turn lane.</p> <ul style="list-style-type: none"> <p>Moreno Beach Drive/Cottonwood Avenue. Add a southbound through lane, This improvement is programmed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the significant impact at this location.</p> <p>Moreno Beach Drive/Alessandro Boulevard. Add 2 southbound through lanes, 2 northbound through lanes, an eastbound through lane, and a westbound through lane. These improvements are programmed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the significant impact at this location.</p> <p>Redlands Boulevard/SR-60 Westbound Ramps. Install a traffic signal. This improvement is programmed in the City's DIF program and will be installed before building occupancy since it was identified as a direct project impact.</p> <p>Redlands Boulevard/SR-60 Eastbound Ramps. The Redlands</p> 						

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
<p>Boulevard/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF. Therefore, payment of the TUMF fee would mitigate the significant impact at this location.</p> <ul style="list-style-type: none"> <p>Redlands Boulevard/Fir Avenue-Eucalyptus Avenue. Install a traffic signal and add a westbound left-turn lane, eastbound through lane, eastbound left-turn lane, and a westbound right-turn lane with overlap phasing. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, add a southbound through lane, southbound left-turn lane, northbound through lane, and northbound left-turn lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location.</p> <p>Redlands Boulevard/Eucalyptus Avenue. Install a traffic signal and add a westbound left-turn lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, add a northbound left-turn lane and a southbound left-turn lane. These improvements are</p> 						

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<p>programmed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location.</p> <ul style="list-style-type: none"> Redlands Boulevard/Alessandro Boulevard. Install a traffic signal. This improvement is programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, add a southbound left-turn lane, a northbound left-turn lane, a westbound left-turn lane, an eastbound left-turn lane, a westbound right-turn lane, and a southbound through lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location. 						
<p>4.11.6.4E. Prior to issuance of building permits, the project applicant shall pay the fair-share contribution toward the following traffic improvements through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program, or through a fair-share contribution to the City of Moreno Valley as noted below:</p> <ul style="list-style-type: none"> Nason Street/Eucalyptus Avenue. Add a northbound right-turn lane and an eastbound right-turn lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. 	<p>City of Moreno Valley Building and Safety</p> <p>Engineering</p> <p>Planning Division</p>	<p>Once before construction</p>	<p>Prior to the Issuance of Building Permits</p>	<p>Evidence of Payment of City DIF fees and WRCOG TUMF fees or fair share contribution</p>		<p>Withhold Building Permit</p>

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non- Compliance
<p>Implementation of the improvements identified for this intersection in Mitigation Measure 4.11.6.4D would also partially mitigate the significant impact at this intersection. In addition, the project shall pay a fair share (calculated to be 1.6%) toward modification of the traffic signal to provide right-turn overlap phasing for the eastbound and northbound right turns.</p> <ul style="list-style-type: none"> <p>Nason Street/Alessandro Boulevard. Add an eastbound through lane and westbound through lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. Implementation of the improvements identified for this intersection in Mitigation Measure 4.11.6.4D would also partially mitigate the significant impact at this intersection. In addition, the project shall pay a fair share (calculated to be 1.35%) toward the addition of an eastbound left-turn lane and modification of the traffic signal to provide overlap phasing for the westbound right-turn lane.</p> <p>Moreno Beach Drive/SR-60 Westbound Ramps. The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase.</p> 						

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<p>Therefore, payment of the TUMF fee would mitigate the significant impact at this location.</p> <ul style="list-style-type: none"> <p>Moreno Beach Drive/SR-60 Eastbound Ramps. The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF fee would mitigate the significant impact at this location.</p> <p>Moreno Beach Drive/Eucalyptus Avenue. Restripe eastbound approach to dual left-turn lanes and add a northbound through lane, a westbound through lane, and a southbound right-turn lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. Implementation of the improvements identified for this intersection in Mitigation Measure 4.11.6.4D would also partially mitigate the significant impact at this intersection. In addition, the project shall pay a fair share (calculated to be 5.17%) toward modification of the traffic signal to provide right-turn overlap phasing for the southbound right-turn lane.</p> <p>Moreno Beach Drive/Cottonwood Avenue. Add a southbound through</p> 						

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<p>lane, a northbound through lane, an eastbound left-turn lane, an eastbound through lane, a westbound through lane, and a westbound left-turn lane. These improvements are programmed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the significant impact at this location.</p> <ul style="list-style-type: none"> <p>Moreno Beach Drive/Alessandro Boulevard. Add 2 southbound through lanes, 2 northbound through lanes, an eastbound through lane, and a westbound through lane. These improvements are programmed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the significant impact at this location.</p> <p>Auto Mall Drive/Eucalyptus Avenue. Install a traffic signal. This improvement is programmed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the significant impact at this location.</p> <p>Redlands Boulevard/SR-60 Westbound Ramps. Install a traffic signal. This improvement is programmed in the City's DIF program and will be installed before building occupancy since it was identified as a direct project impact. Therefore, payment of the DIF fee would mitigate the significant impact at this location.</p> 						

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
<ul style="list-style-type: none"> • Redlands Boulevard/SR-60 Eastbound Ramps. The Redlands Boulevard/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF. Therefore, payment of the TUMF fee would mitigate the significant impact at this location. • Redlands Boulevard/Fir Avenue-Eucalyptus Avenue. Install a traffic signal and add a westbound left-turn lane, eastbound through lane, eastbound left-turn lane, a westbound right-turn lane with overlap phasing, and a southbound right-turn lane with overlap phasing. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, add a southbound through lane, a southbound left-turn lane, a northbound through lane, a northbound left-turn lane, and a northbound right-turn lane. These improvements are programmed in the TUMF. Therefore, payment of the TUMF fee would also partially mitigate the significant impact at this location. In addition, the project shall pay a fair share (calculated to be 10.44%) of the cost of adding a southbound left-turn lane. • Redlands Boulevard/Eucalyptus Avenue. Install a traffic signal and add a westbound left-turn lane. 						

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<p>These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, add a northbound left-turn lane, a northbound through lane, a southbound left-turn lane, and southbound through lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location.</p> <ul style="list-style-type: none"> <p>Redlands Boulevard/Cottonwood Avenue. Add an eastbound through lane and westbound through lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, add a northbound through lane and a southbound through lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location.</p> <p>Redlands Boulevard/Alessandro Boulevard. Install a traffic signal. This improvement is programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, and add a southbound left-turn lane, a northbound left-turn lane, a westbound left-turn lane, an eastbound left-turn lane, a</p> 						

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<p>westbound right-turn lane, a southbound through lane, a westbound through lane, and an eastbound through lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location.</p>						
<p>4.11.6.4F. If the Encilia Avenue and Quincy Street Connection plan is implemented as part of the proposed project, then prior to issuance of building permits, the project applicant shall implement the following improvements, in addition to those identified in Mitigation Measure 4.11.6.4.E, either through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program:</p> <ul style="list-style-type: none"> • Moreno Beach Drive/Eucalyptus Avenue. Restripe the southbound shared through/right-turn lane to a southbound through lane. This improvement is programmed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the impacts of the project at this intersection. • Redlands Boulevard/Fir Avenue-Eucalyptus Avenue. Pay the fair share (calculated to be 10.84%) to add a southbound right-turn lane. • Redlands Boulevard/Encilia Avenue-Eucalyptus Avenue. Install a traffic signal and add a westbound left-turn lane. These improvements are programmed in the City's DIF program. In addition, add a 	<p>City of Moreno Valley Building and Safety</p> <p>Engineering</p> <p>Planning Division</p>	<p>Once before construction</p>	<p>Prior to the Issuance of Building Permits</p>	<p>Evidence of Payment of City DIF fees and WRCOG TUMF fees or fair share contribution.</p>		<p>Withhold Building Permit</p>

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
<p>northbound left-turn lane, northbound through lane, southbound left-turn lane, and a southbound through lane. These improvements are programmed in the TUMF program. Therefore, payment of the DIF and TUMF fees would fully mitigate the impact of the project at this intersection.</p> <ul style="list-style-type: none"> Moreno Beach Drive/Encilia Avenue. Install a traffic signal and add a northbound through lane, southbound left-turn lane, and a southbound through lane. This improvement is programmed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the impacts of the project at this intersection. 						
GREENHOUSE GASES AND GLOBAL CLIMATE CHANGE						
<p>4.13.6.1A. Prior to the issuance of building permits, the project applicant shall provide evidence to the City of Moreno Valley that building features have been incorporated in building plans as required by Title 24 of the California Code of Regulations. These features include but are not limited to the following:</p> <ul style="list-style-type: none"> Exterior windows shall utilize window treatments for efficient energy conservation. Per CALGreen Code requirements, water-efficient fixtures and appliances, including but not limited to low-flow faucets, dual-flush toilets minimizing water consumption by 20 percent from the Building Standards 	<p>City of Moreno Valley Building and Safety Planning Division</p>	<p>Once prior to construction</p>	<p>Prior to issuance of building permits</p>	<p>Review of construction documents and on-site inspection</p>		<p>Withhold Building Permit</p>

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non- Compliance
<p>Code baseline water consumption shall be used.</p> <ul style="list-style-type: none"> Per CALGreen Code requirements, a Commissioning Plan shall be prepared and all building systems (e.g., heating, ventilation, and air-conditioning [HVAC], irrigation systems, lighting, and water heating) shall be commissioned by the Commissioning Authority. Per CALGreen Code, restrict watering methods (e.g., prohibit systems that apply water to non-vegetated surfaces) and control runoff. 						
<p>4.13.6.1B. Prior to the issuance of building permits, the project applicant shall provide evidence to the City of Moreno Valley that the following measures have been incorporated into the design and construction of the project:</p> <ul style="list-style-type: none"> Use of locally produced and/or manufactured building materials for at least 10 percent of the construction materials used for the project. Use of “Green Building Materials,” such as those materials that are resource efficient, and recycled and manufactured in an environmentally friendly way, for at least 10 percent of the project. Limit unnecessary idling of construction equipment. A reduction in equipment idling would reduce fuel 	<p>City of Moreno Valley Building and Safety Planning Division</p>	<p>Once prior to construction Once during on-site inspection</p>	<p>Prior to issuance of building permits</p>	<p>Review of construction documents/building plans and on-site inspection</p>		<p>Withhold Building Permit</p>

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non- Compliance
<p>consumption, and therefore, GHG emissions.</p> <ul style="list-style-type: none"> • Maximize the use of electricity from the power grid by replacing diesel- or gasoline-powered equipment. This would reduce GHG emissions because electricity can be produced more efficiently at centralized power plants. • Design the project building to exceed the California Building Code's (CBC) Title 24 energy standard, including, but not limited to, any combination of the following: <ul style="list-style-type: none"> ○ Increase insulation such that heat transfer and thermal bridging is minimized. ○ Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption. ○ Incorporate ENERGY STAR or better rated windows, space heating and cooling equipment, light fixtures, appliances, or other applicable electrical equipment. • Provide a landscape and development plan for the project that takes advantage of shade, prevailing winds, and landscaping. • Install efficient lighting and lighting control systems. Use daylight as an integral part of the lighting systems in 						

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
<p>buildings.</p> <ul style="list-style-type: none"> • Install reflective roof material (SRI >45) and cool pavements. • Install energy-efficient heating and cooling systems, appliances and equipment, and control systems. • Install solar or light-emitting diodes (LEDs) for outdoor lighting for auto parking areas. 						
<p>4.13.6.1C. Prior to the issuance of occupancy permits, the project applicant shall provide evidence to the City of Moreno Valley that the following measures have been be incorporated into the operation of the project:</p> <ul style="list-style-type: none"> • The project applicant shall use less than 3,900 Global Warming Potential (GWP) hydrofluorocarbon (HCF) refrigerants or natural refrigerants (ammonia, propane, carbon dioxide [CO₂]) for refrigeration and fire suppression equipment. • Provide vegetative or man-made exterior wall shading devices for east-, south-, and west facing windows. • Devise a comprehensive water conservation strategy appropriate for the project and its location. The strategy may include the following, plus other innovative measures that may be appropriate: <ul style="list-style-type: none"> ○ Install drought-tolerant plants for landscaping. 	<p>City of Moreno Valley Building and Safety Planning Division</p>	<p>Once Prior to construction Once during on-site inspection</p>	<p>Prior to issuance of occupancy permit</p>	<p>Review of construction documents and on-site inspection</p>		<p>Withhold Occupancy Permit</p>

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
<ul style="list-style-type: none"> ○ Use reclaimed water for landscape irrigation within the project. Install the infrastructure to deliver and use reclaimed water. ○ Install water-efficient irrigation systems, such as weather-based and soil-moisture-based irrigation controllers and sensors for landscaping according to the California Department of Water Resources Model Efficient Landscape Ordinance. • Provide employee education about reducing waste and available recycling services. 						

RESOLUTION NO. 2014-57

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF MORENO VALLEY, CALIFORNIA, APPROVING A GENERAL PLAN AMENDMENT (PA07-0082) FROM THE R15 LAND USE DESIGNATION TO BUSINESS PARK FOR APPROXIMATELY 33 ACRES FOR DEVELOPMENT OF A 1,529,498 SQUARE FOOT INDUSTRIAL PARK LOCATED WITHIN ASSESSOR'S PARCEL NUMBERS 488-330-011, 488-330-022, 488-330-023, 488-330-024 AND 488-330-032

WHEREAS, the applicant, Prologis, filed Application No. PA07-0082, requesting a General Plan Amendment for approximately 33 acres from the R15 land use designation to Business Park for certain property, as described in the title of this resolution and the attached Exhibit A. A General Plan Amendment is also required for proposed changes to the City's Circulation Element and the Master Plan of Trails; and

WHEREAS, the Planning Commission of the City of Moreno Valley held public hearings on March 13, 2014 and April 24, 2014 to consider the subject application and all of the environmental documentation prepared for the project and recommended City Council approval on April 24, 2014; and

WHEREAS, on June 24, 2014, the City Council of the City of Moreno Valley held a public hearing to consider the subject application and all of the environmental documentation prepared for the project; and

WHEREAS, on June 24, 2014, the City Council continued the public hearing for this project to the July 8, 2014 City Council agenda; and

WHEREAS, on July 8, 2014 the City Council continued the project to the August 26, 2014 City Council agenda at the request of the applicant; and

WHEREAS, on August 26, 2014, the City Council continued the project to the October 14, 2014 City Council agenda at the request of the applicant; and

WHEREAS, on October 14, 2014, the City Council conducted a public hearing to consider the revised project application and all of the environmental documentation prepared for the project; and

WHEREAS, all legal prerequisites to the adoption of this Resolution have occurred; and

WHEREAS, the City Council considered the Final Environmental Impact Report prepared for the project for the purpose of compliance with the California Environmental Quality Act (CEQA). The above application shall not be approved unless the Final Environmental Impact Report (P07-186) is certified and approved; and

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF MORENO VALLEY, CALIFORNIA, DOES HEREBY RESOLVE AS FOLLOWS:

A. This City Council hereby specifically finds that all of the facts set forth above in this Resolution are true and correct.

B. Based upon substantial evidence presented to this City Council during the above-referenced meetings on June 24, 2014, July 8, 2014, August 26, 2014 and October 14, 2014, including written and oral staff reports, and the record from the public hearing, this City Council hereby specifically finds as follows:

1. Conformance with General Plan Policies – The proposed general plan amendment is consistent with the goals, objectives, policies and programs of the General Plan.

FACT: The project proposes a General Plan Amendment for approximately 33 acres from the R15 land use designation to Business Park for development of a 1,529,498 square foot industrial park. Potential impacts to traffic and air quality have been examined through the preparation of a Final Environmental Impact Report. The expansion of the Business Park land use designation as proposed by the General Plan amendment would provide employment opportunities for residents of Moreno Valley with the establishment of industrial activities that have good access to the regional transportation system, and is consistent with the goals, objectives, policies and program of the Community Development Element of the General Plan.

The changes to the City's Circulation Element and Master Plan of Trails have also been reviewed for conformance with the goals, objectives, policies and programs of the Circulation Element and the Parks, Recreation and Open Space Element of the General Plan.

2. Health, Safety and Welfare – The proposed general plan amendment will not be detrimental to the public health, safety or welfare.

FACT: The proposed General Plan Amendment will not adversely affect the public health, safety or general welfare. A Final EIR has been prepared to address the potential environmental impacts of the General Plan Amendment in accordance with the provisions of the California Environmental Quality Act (CEQA). Subject to approval of the Final EIR, the proposed General Plan Amendment will not have a significant affect on public health or be materially injurious to surrounding properties or the environment as a whole.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF MORENO VALLEY, CALIFORNIA, DOES HEREBY APPROVE Resolution No. 2014-57 approving PA07-0082; subject to the revised General Plan Map as attached to the Resolution as Exhibit A.

APPROVED AND ADOPTED this 14th day of October, 2014.

Mayor

ATTEST:

City Clerk

APPROVED AS TO FORM:

City Attorney

Resolution No. 2014-57
Date Adopted: October 14, 2014

RESOLUTION JURAT

STATE OF CALIFORNIA)
COUNTY OF RIVERSIDE) ss.
CITY OF MORENO VALLEY)

I, Jane Halstead, City Clerk of the City of Moreno Valley, California, do hereby certify that Resolution No. 2014-57 was duly and regularly adopted by the City Council of the City of Moreno Valley at a regular meeting thereof held on the 14th day of October, 2014, by the following vote:

AYES:

NOES:

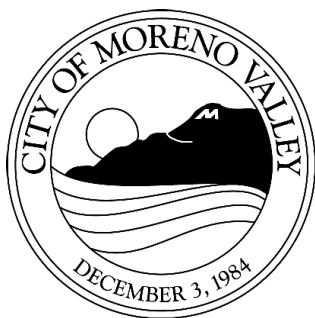
ABSENT:

ABSTAIN:

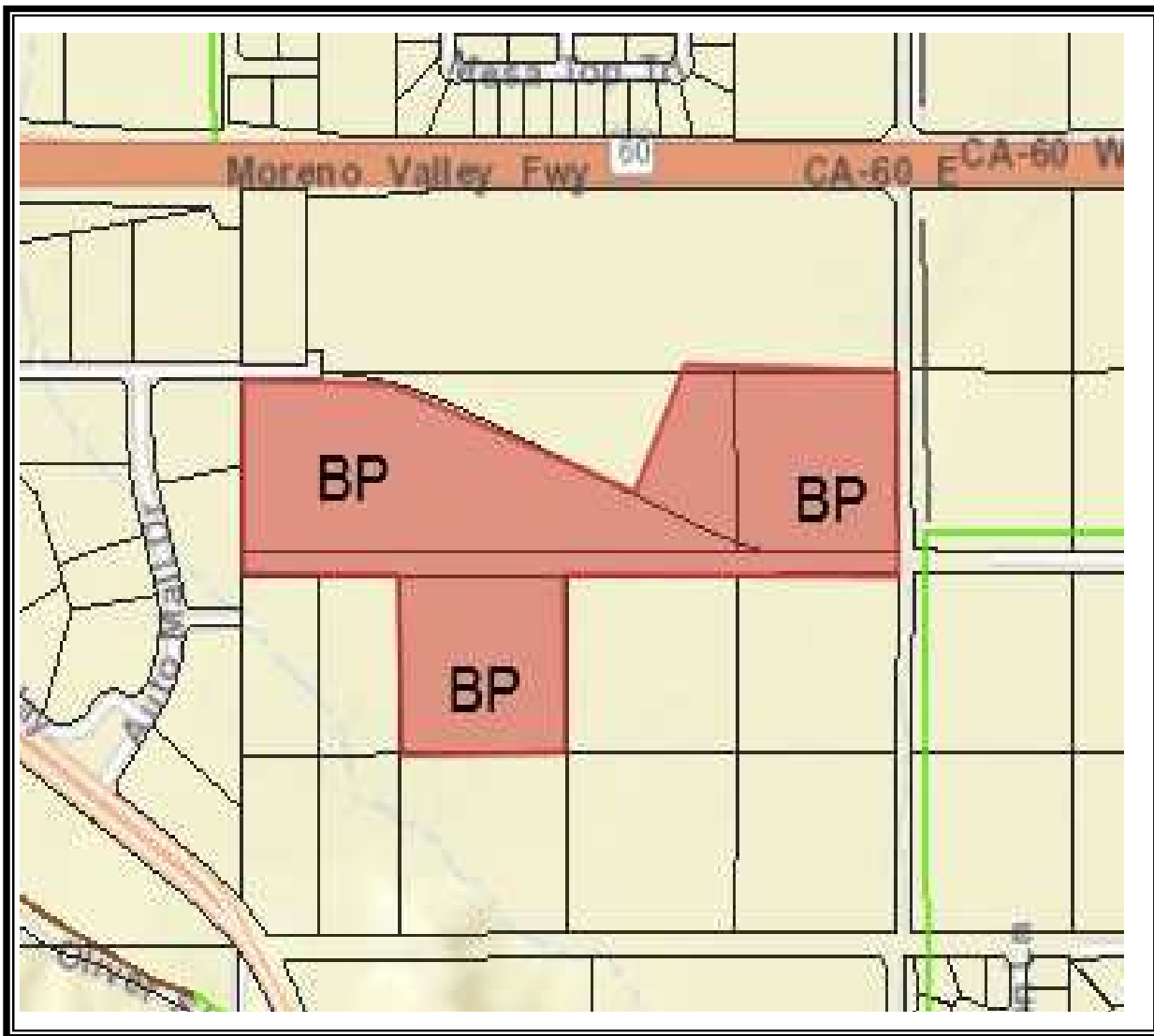
(Council Members, Mayor Pro Tem and Mayor)

CITY CLERK

(SEAL)



GENERAL PLAN AMENDMENT
 Application No. PA07-0082
 APN's: 488-330-011, -022, -023, -024, and -032
 Resolution No. 2014-57



ADOPTED _____

EFFECTIVE _____



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 Resolution No. 2014-57
 Date Adopted: October 14, 2014

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ORDINANCE NO. 883

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF MORENO VALLEY, CALIFORNIA, APPROVING A ZONE CHANGE (PA07-0081) FROM BUSINESS PARK, BUSINESS PARK MIXED-USE, AND R15 TO LIGHT INDUSTRIAL FOR APPROXIMATELY 84 ACRES FOR DEVELOPMENT OF A 1,529,498 SQUARE FOOT INDUSTRIAL PARK LOCATED WITHIN ASSESSOR'S PARCEL NUMBERS 488-330-011, 488-330-022, 488-330-023, 488-330-024, AND 488-330-032

The City Council of the City of Moreno Valley does ordain as follows:

SECTION 1 GENERAL:

1.1 The applicant, Prologis, has filed application PA07-0081, requesting an amendment requesting an Amendment to Pages 61 and 74 of the Official Zoning Atlas, and proposes a Zone Change from existing Business Park, Business Park Mixed-use, and R15 zoning designations to Light Industrial for certain property as described in this ordinance.

1.2 Pursuant to the provisions of the law, a public hearing was held before the City Council on June 24, 2014, for deliberations and decision.

1.3 The matter was continued by the City Council to the July 8, 2014 City Council agenda. On July 8, 2014, the City Council continued the project to the August 26, 2014 City Council agenda at the request of the applicant. On August 26, 2014, the City Council continued the project to the October 14, 2014 City Council agenda at the request of the applicant.

1.4 Pursuant to the provisions of the law, a public hearing was held before the City Council on October 14, 2014, for deliberations and decision.

1.5 The matter was fully discussed, and the public and other agencies presented testimony and documentation.

1.6 An Environmental Impact Report is proposed for the project under California Environmental Quality Act (CEQA) guidelines.

SECTION 2 FINDINGS:

2.1 Based upon substantial evidence presented to this City Council during the above-referenced meetings on June 24, 2014, July 8, 2014, August 26, 2014, and October 14, 2014, including written and oral staff reports, and the record from the public hearing, this City Council hereby specifically finds as follows:

1. Conformance with General Plan Policies – The proposed amendment is consistent with the General Plan, and its goals, objectives, policies and programs.

FACT: The project proposes a change to the Zoning Atlas for properties located within Assessor's Parcel Numbers 488-330-011, -022, -023, -024, and -032 from Business Park, Business Park Mixed-use, and R15 zoning designations to Light Industrial for development of a 1,529,498 square foot industrial park on approximately 84 acres. A Final EIR has been prepared to address the potential environmental impacts of the Zone Change in accordance with the provisions of the California Environmental Quality Act (CEQA). Subject to approval of the General Plan Amendment and Final Environmental Impact Report, the proposed Zone Change is consistent with and does not conflict with the goals, objective, policies or programs of the General Plan.

2. Health, Safety and Welfare – The proposed amendment will not adversely affect the public health, safety or general welfare.

FACT: The proposed Zone Change will not adversely affect the public health, safety or general welfare. A Final EIR has been prepared to address the potential environmental impacts of the Zone Change in accordance with the provisions of the California Environmental Quality Act (CEQA). Subject to approval of the Final EIR, the proposed Zone Change will not have a significant affect on public health or be materially injurious to surrounding properties or the environment as a whole.

3. Conformance with the Zoning Regulations – The proposed pre-zoning is consistent with the purposes and intent of Title 9 of the City of Moreno Valley Municipal Code.

FACT: The Zone Change application has satisfied the City's Municipal Code and other regulations to change the zone. As proposed, the zone change from Business Park, Business Park Mixed-use, and R15 zoning designations to Light Industrial for the 72 acre project site is consistent with the purposes and intent of Title 9.

SECTION 3 AMENDMENT OF THE OFFICIAL ZONING ATLAS:

3.1 The City of Moreno Valley Official Zoning Atlas, as adopted by Ordinance No. 359, on April 14, 1992, of the City of Moreno Valley, and as amended thereafter from time to time by the City Council of the City of Moreno Valley, is further amended by placing in effect the zone or zone classification as shown on the attached map (marked "Exhibit A" and included herein by reference and on file in the office of the City Clerk).

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Ordinance No. 883

Date Adopted: October 28, 2014

SECTION 4 EFFECT OF ENACTMENT:

4.1 Except as specifically provided herein, nothing contained in this ordinance shall be deemed to modify or supersede any prior enactment of the City Council which addresses the same subject addressed herein.

SECTION 5 NOTICE OF ADOPTION:

5.1 Within fifteen days after the date of adoption hereof, the City Clerk shall certify to the adoption of this ordinance and cause it to be posted in three public places within the city.

SECTION 6 EFFECTIVE DATE:

6.1 This ordinance shall take effect thirty days after the date of its adoption.

APPROVED AND ADOPTED this 28th day of October, 2014.

Mayor

ATTEST:

City Clerk

APPROVED AS TO FORM:

City Attorney

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Ordinance No. 883
Date Adopted: October 28, 2014

ORDINANCE JURAT

STATE OF CALIFORNIA)
COUNTY OF RIVERSIDE) ss.
CITY OF MORENO VALLEY)

I, Jane Halstead, City Clerk of the City of Moreno Valley, California, do hereby certify that Ordinance No.883 had its first reading on October 14, 2014 and had its second reading on October 28, 2014, and was duly and regularly adopted by the City Council of the City of Moreno Valley at a regular meeting thereof held on the 28th day of October, 2014, by the following vote:

AYES:

NOES:

ABSENT:

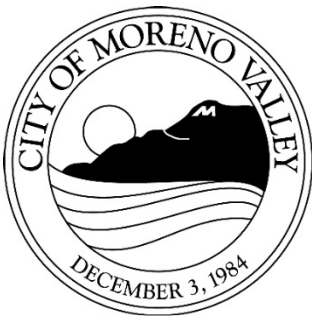
ABSTAIN:

(Council Members, Mayor Pro Tem and Mayor)

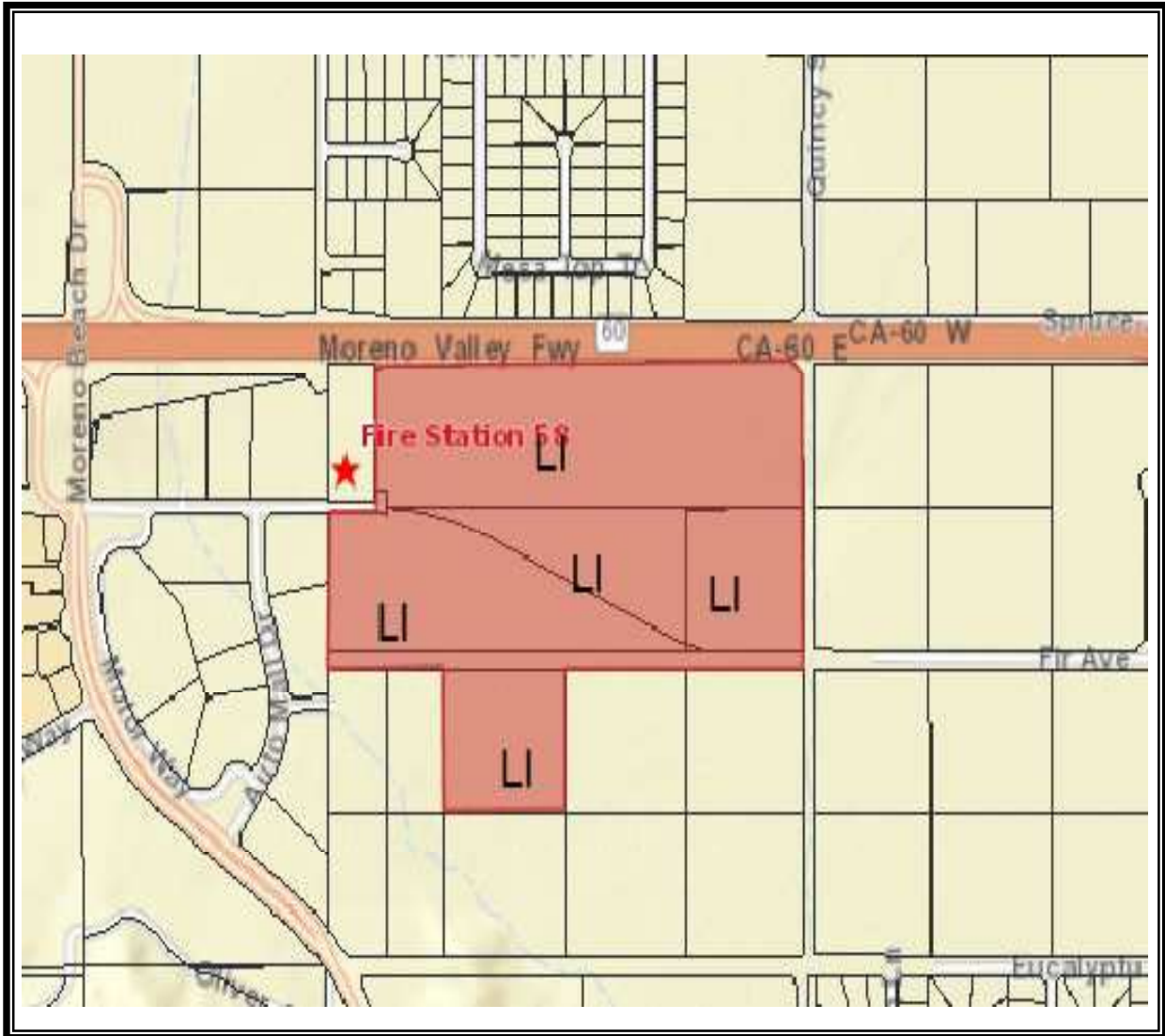
CITY CLERK

(SEAL)

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Ordinance No. 883
Date Adopted: October 28, 2014



ZONE CHANGE
 Application No. PA07-0081
 APN's: 488-330-011, -022, -023, -024, and -032
 Ordinance No. 883



ADOPTED _____

EFFECTIVE _____



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RESOLUTION NO. 2014-58

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF MORENO VALLEY, CALIFORNIA, APPROVING MASTER PLOT PLAN APPLICATION PA07-0083 AND PLOT PLAN APPLICATIONS PA07-0158, PA07-0159, AND PA07-0160 FOR DEVELOPMENT OF THE 1,529,498 SQUARE FOOT PROLOGIS EUCALYPTUS INDUSTRIAL PARK PROJECT WITHIN THE 84 ACRES OF ASSESSOR'S PARCEL NUMBERS 488-330-011, 488-330-022, 488-330-023, 488-330-024, AND 488-330-032

Section 1:

WHEREAS, Prologis, has filed an application for the approval of Master Plot Plan PA07-0083 for development of an industrial park to include a total of 1,529,498 square feet of warehouse distribution space on approximately 72 acres. This application also includes Building #2 on Parcel 2 of TPM 35679 for development of 862,035 square feet on 39.32. Related applications include Plot Plan PA07-0158 for Building #1 on Parcel 1 of TPM 35679 for development of a 168,342 square foot warehouse distribution building on 8.84 acres; Plot Plan PA07-0159 for Building #3 on Parcel 3 of TPM 35679 for development of a 160,106 square foot warehouse distribution building on 8.5 acres; and Plot Plan PA07-0160 for Building #4 on Parcel 4 of TPM 35679 for development of a 339,015 square foot warehouse distribution building on 15.66 acres; as described in the title of this Resolution; and

WHEREAS, the Planning Commission of the City of Moreno Valley held public hearings on March 13, 2014 and April 24, 2014 to consider the subject application and all of the environmental documentation prepared for the project and recommended City Council approval on April 24, 2014; and

WHEREAS, on June 24, 2014, the City Council of the City of Moreno Valley held a public hearing to consider the subject application and all of the environmental documentation prepared for the project; and

WHEREAS, on June 24, 2014, the City Council continued the public hearing for this project to the July 8, 2014 City Council agenda; and

WHEREAS, on July 8, 2014 the City Council continued the project to the August 26, 2014 City Council agenda at the request of the applicant; and

WHEREAS, on August 26, 2014, the City Council continued the project to the October 14, 2014 City Council agenda at the request of the applicant; and

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Resolution No. 2014-58
Date Adopted: October 14, 2014

WHEREAS, on October 14, 2014, the City Council conducted a public hearing to consider the revised project application and all of the environmental documentation prepared for the project; and

WHEREAS, all legal prerequisites to the adoption of this Resolution have occurred; and

WHEREAS, there is hereby imposed on the subject development project certain fees, dedications, reservations and other exactions pursuant to state law and City ordinances; and

WHEREAS, pursuant to Government Code Section 66020(d)(1), NOTICE IS HEREBY GIVEN that this project is subject to certain fees, dedications, reservations and other exactions as provided herein.

NOW, THEREFORE, BE IT RESOLVED, THE CITY COUNCIL OF THE CITY OF MORENO VALLEY, CALIFORNIA, DOES HEREBY RESOLVE AS FOLLOWS:

A. This City Council hereby specifically finds that all of the facts set forth above in this Resolution are true and correct.

B. Based upon substantial evidence presented to this City Council during the above-referenced meetings on June 24, 2014, July 8, 2014, August 26, 2014, and October 14, 2014, including written and oral staff reports, and the record from the public hearing, this City Council hereby specifically finds as follows:

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF MORENO VALLEY, CALIFORNIA, DOES HEREBY RESOLVE AS FOLLOWS:

1. Conformance with General Plan Policies – The proposed use is consistent with the General Plan, and its goals, objectives, policies and programs.

FACT: Subject to approval of the General Plan Amendment (PA07-0082), the proposed applications would be consistent with the General Plan. The General Plan encourages a mix of industrial uses to provide a diversified economic base and ample employment opportunities. Stated policies require the avoidance of adverse impacts on surrounding properties and the screening of industrial uses to reduce glare, noise, dust, vibrations and unsightly views. The project as designed and conditioned would achieve the objectives of the City of Moreno Valley's General Plan. The proposed project is consistent with the General Plan and does not conflict with the goals, objectives, policies, and programs established within the Plan.

2. Conformance with Zoning Regulations – The proposed use complies with all applicable zoning and other regulations.

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Resolution No. 2014-58
Date Adopted: October 14, 2014

FACT: The project site is currently zoned Business Park, Business Park Mixed-Use, R15, R5 and RA-2. The project proposes a Zone Change to LI to allow for buildings larger than 50,000 square feet. Subject to approval of the related General Plan Amendment (PA07-0082) and Zone Change application (PA07-0081) the proposed use will comply with all applicable zoning other regulations. The project is designed in accordance with the provisions of Chapter 9.05 Industrial Districts of the City's Municipal Code.

3. Health, Safety and Welfare – The proposed use will not be detrimental to the public health, safety or welfare or materially injurious to properties or improvements in the vicinity.

FACT: The proposed 1,529,498 square foot warehouse facility as designed and conditioned will not adversely affect the public health, safety or general welfare. The project has been designed consistent with the City's Municipal Code. A Final EIR has been prepared to address the potential environmental impacts of the project in accordance with the provisions of the California Environmental Quality Act (CEQA).

4. Location, Design and Operation – The location, design and operation of the proposed project will be compatible with existing and planned land uses in the vicinity.

FACT: The project is located on the south side of State Route 60 and east of the Moreno Valley Auto Mall. Land uses to the north include the freeway with Business Park and commercial zoned land within the Auto Mall to the west and Light Industrial and RA-2 zoned land to the east. South of the project site on the other side of Eucalyptus Avenue/Future Encilia Avenue is vacant RA-2 zoned land with tract homes in the RA-2 zone across the channel from the project site. The proposed warehouse distribution use is a permitted use in both the BP and LI zones, but the size of the buildings proposed by the project requires a Zone Change to LI for the warehouse facilities over 50,000 square feet. The project as designed and conditioned and subject to approval of the above mentioned Zone Change, is compatible with existing and proposed land uses in the vicinity.

Section 2:

- A. FEES, DEDICATIONS, RESERVATIONS, AND OTHER EXACTIONS

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Resolution No. 2014-58
Date Adopted: October 14, 2014

1. FEES

Impact, mitigation and other fees are due and payable under currently applicable ordinances and resolutions. These fees may include but are not limited to: Development Impact Fee, Transportation Uniform Mitigation Fee (TUMF), Multi-species Habitat Conservation Plan (MSHCP) Mitigation Fee, Stephens Kangaroo Habitat Conservation fee, Underground Utilities in lieu Fee, Area Drainage Plan fee, Bridge and Thoroughfare Mitigation fee (Future) and Traffic Signal Mitigation fee. The final amount of fees payable is dependent upon information provided by the applicant and will be determined at the time the fees become due and payable.

Unless otherwise provided for by this resolution, all impact fees shall be calculated and collected at the time and in the manner provided in Chapter 3.32 of the City of Moreno Valley Municipal Code or as so provided in the applicable ordinances and resolutions. The City expressly reserves the right to amend the fees and the fee calculations consistent with applicable law.

2. DEDICATIONS, RESERVATIONS, AND OTHER EXACTIONS

The adopted Conditions of Approval for PA07-0083 and PA07-0158 through PA07-0160, incorporated herein by reference, may include dedications, reservations, and exactions pursuant to Government Code Section 66020 (d) (1).

3. CITY RIGHT TO MODIFY/ADJUST; PROTEST LIMITATIONS

The City expressly reserves the right to establish, modify or adjust any fee, dedication, reservation or other exaction to the extent permitted and as authorized by law.

Pursuant to Government Code Section 66020(d)(1), NOTICE IS FURTHER GIVEN that the 90 day period to protest the imposition of any impact fee, dedication, reservation, or other exaction described in this resolution begins on the effective date of this resolution and any such protest must be in a manner that complies with Section 66020(a) and failure to timely follow this procedure will bar any subsequent legal action to attack, review, set aside, void or annul imposition.

The right to protest the fees, dedications, reservations, or other exactions does not apply to planning, zoning, grading, or other

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Resolution No. 2014-58
Date Adopted: October 14, 2014

similar application processing fees or service fees in connection with this project and it does not apply to any fees, dedication, reservations, or other exactions of which a notice has been given similar to this, nor does it revive challenges to any fees for which the Statute of Limitations has previously expired.

BE IT FURTHER RESOLVED that the City Council HEREBY APPROVES Resolution No. 2014-58.

APPROVING Master Plot Plan application PA07-0083 and Plot Plan applications PA07-0158, PA07-0159, and PA07-0160, subject to the attached conditions of approval included as Exhibit A.

APPROVED AND ADOPTED this 14th day of October, 2014.

Mayor

ATTEST:

City Clerk

APPROVED AS TO FORM:

City Attorney

5
Resolution No. 2014-58
Date Adopted: October 14, 2014

RESOLUTION JURAT

STATE OF CALIFORNIA)
COUNTY OF RIVERSIDE) ss.
CITY OF MORENO VALLEY)

I, Jane Halstead, City Clerk of the City of Moreno Valley, California, do hereby certify that Resolution No. 2014-58 was duly and regularly adopted by the City Council of the City of Moreno Valley at a regular meeting thereof held on the 14th day of October, 2014, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

(Council Members, Mayor Pro Tem and Mayor)

CITY CLERK

(SEAL)

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Resolution No. 2014-58
Date Adopted: October 14, 2014

**CITY OF MORENO VALLEY
CONDITIONS OF APPROVAL FOR MASTER PLOT PA07-0083 AND
PLOT PLANS PA07-0158, PA07-0159 AND PA07-0160
APN's: 488-330-011, -022, -023, -024, and -032**

**APPROVAL DATE:
EXPIRATION DATE:**

- Planning (P), including School District (S), Post Office (PO), Building (B)**
- Fire Prevention Bureau (F)**
- Public Works Department – Land Development (LD)**
- Public Works Department – Transportation Engineering (TE)**
- Financial and Management Services Dept. – Special Districts (SD)**
- Moreno Valley Utilities**
- Parks & Community Services Department (PCS)**
- Police (PD)**
- Other (Specify or Delete)**

Note: All Special conditions are in bold lettering. All other conditions are standard to all or most development projects.

COMMUNITY & ECONOMIC DEVELOPMENT DEPARTMENT

Planning Division

For questions regarding any Planning condition of approval, please contact the Planning Division at (951) 413-3206.

P1. Approval of Master Plot Plan PA07-0083 and Plot Plans PA07-0158, PA07-0159, and PA07-0160 are subject to approval of General Plan Amendment application PA07-0082 and Zone Change application PA07-0081.

P2. The following plot plan applications have been approved:

- **Master Plot Plan PA07-0083 for development of an industrial park to include a total of 1,529,4989 square feet of warehouse distribution on 72 acres. This application also includes Building #2 on Parcel 2 of**

Timing Mechanisms for Conditions (see abbreviation at beginning of affected condition):

R - Map Recordation	GP - Grading Permits	CO - Certificate of Occupancy or building final
WP - Water Improvement Plans	BP - Building Permits	P - Any permit

Governing Document (see abbreviation at the end of the affected condition):

GP - General Plan	MC - Municipal Code	CEQA - California Environmental Quality Act
Ord - Ordinance	DG - Design Guidelines	Ldscp - Landscape Development Guidelines and Specs
Res - Resolution	UFC - Uniform Fire Code	UBC - Uniform Building Code
	SBM - Subdivision Map Act	

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Resolution No. 2014-58
Date Adopted: October 14, 2014

**PLANNING DIVISION
CONDITIONS OF APPROVAL
PA07-0083, PA07-0158, PA07-0159, AND PA07-0160
PAGE 8 OF 68**

- TPM 35679 for development of 862,035 square feet on 39.32 acres with 311 required employee parking spaces and 135 required truck parking spaces;
- Plot Plan PA07-0158 for Building #1 on Parcel 1 of TPM 35679 for development of a 168,342 square foot warehouse distribution building on 8.84 acres with 100 required employee parking spaces and 21 required truck parking spaces;
 - Plot Plan PA07-0159 for Building #3 on Parcel 3 of TPM 35679 for development of a 160,106 square foot warehouse distribution building on 8.5 acres with 98 required employee parking spaces and 20 required truck parking spaces;
 - Plot Plan PA07-0160 for Building #4 on Parcel 4 of TPM 35679 for development of a 339,015 square foot warehouse distribution building on 15.66 acres with 180 required employee parking spaces and 36 required truck parking spaces;
- P3. Plot Plan applications PA07-0161 and PA07-0162 for Buildings 5 and 6 have been withdrawn.
- P4. (BP) Prior to issuance of buildings permits, a non-build easement that restricts the use of the 250 buffer area within adjacent Parcel 5 of TPM 35679 shall be recorded.
- P5. No building permits shall be issued for the warehouse distribution buildings approved for Plot Plan PA07-0158 (Building 1) and Plot Plan PA07-0159 (Building 3) during the initial 18 months of this approval.
- P6. A mitigation monitoring fee, as provided by City ordinance, shall be paid by the applicant within 30 days of project approval. No City permit or approval shall be issued until such fee is paid. (CEQA)
- P7. The design of all swales and basins that are visible from the public right-of-way shall be integrated with the surrounding landscape areas.
- P8. A double row of citrus trees shall be planted along the sites State Route 60 frontage. Citrus trees shall also be planted along the eastern property line of Parcel 4, and in other areas throughout the industrial park.
- P9. Development of the industrial park is subject to approval of Tentative Parcel Map No. 35679 and the subsequent recordation of this map.

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Resolution No. 2014-58
Date Adopted: October 14, 2014

**PLANNING DIVISION
CONDITIONS OF APPROVAL
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- P10. Bicycle racks shall be provided at a minimum of five (5) percent of the required vehicular parking and shall be located near the office area(s). Eight percent of required parking shall be designated for any combination of low-emitting, fuel efficient and carpool/vanpool vehicles for all new nonresidential development.**
- P11. The gates into truck loading and parking areas that are within view of a public street shall be of solid metal construction or wrought iron with mesh to screen the interior of the loading area.**
- P12. This project shall comply with South Coast Air Quality Management District (SCAQMD) rules related to dust generation (Rule 403) and the use of architectural coatings (Rule 1113).**
- P13. Screening walls of decorative block or concrete tilt-up construction shall be provided to fully screen the truck loading and parking area for from view from Fir/Eucalyptus Avenue and State Route 60.**
- P14. Enhanced landscape shall be provided in the planter areas near each driveway and near the office portions of the facilities.**
- P15. All loudspeakers, bells, gongs, buzzers or other noise attention devices installed on the project site shall be designed to ensure that the noise level at all property lines will be at or below 55 dBA for consistency with the Municipal Code.**
- P16. Loading or unloading activities shall be conducted from the truck bays or designated loading areas only. (MC 9.10.140, CEQA)**
- P17. No outdoor storage is permitted on the project site, except for truck and trailer storage in designated areas within the screened truck courts.**
- P18. If the proposed project requires blasting, it shall be used only as a last resort. In such cases, it shall be approved by the Fire Marshall, and the developer shall comply with the current City ordinance governing blasting. (Ord)**
- P19. (CO) Prior to issuance of a Certificate of Occupancy, the developer shall install a segment of multi-use trail on the north side of Fir Avenue/Eucalyptus Avenue from Quincy Channel to Fire Station #58.**

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General Conditions

- P20. This approval shall expire three years after the approval date of this project unless used or extended as provided for by the City of Moreno Valley Municipal Code; otherwise it shall become null and void and of no effect whatsoever. Use means the beginning of substantial construction contemplated by this approval within the three-year period, which is thereafter pursued to completion, or the beginning of substantial utilization contemplated by this approval. (MC 9.02.230)
- P21. The project shall be developed in accordance with the approved plans on file in the Community & Economic Development Department - Planning Division, the Municipal Code regulations, General Plan, and the conditions contained herein. Prior to any use of the project site or business activity being commenced thereon, all Conditions of Approval shall be completed to the satisfaction of the Planning Official. (MC 9.14.020)
- P22. The developer, or the developer's successor-in-interest, shall be responsible for maintaining any undeveloped portion of the site in a manner that provides for the control of weeds, erosion and dust. (MC 9.02.030)
- P23. A drought tolerant, low water using landscape palette shall be utilized throughout the project to the extent feasible.
- P24. All landscaped areas shall be maintained in a healthy and thriving condition, free from weeds, trash and debris. (MC 9.02.030)
- P25. Any signs indicated on the submitted plans are not included with this approval. Any signs, whether permanent (e.g. wall, monument) or temporary (e.g. banner, flag), proposed for this development shall be designed in conformance with the sign provisions of the Development Code or approved sign program, if applicable, and shall require separate application and approval by the Planning Division. **No signs are permitted in the public right of way.** (MC 9.12)

Prior to Issuance of Grading Permits

- P26. (GP) All site plans, grading plans, landscape and irrigation plans, fence/wall plans, lighting plans and street improvement plans shall be coordinated for consistency with this approval.
- P27. (GP) If potential historic, archaeological, or paleontological resources are uncovered during excavation or construction activities at the project site, work in the affected area will cease immediately and a qualified person (meeting the

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Secretary of the Interior's standards (36CFR61)) shall be consulted by the applicant to evaluate the find, and as appropriate recommend alternative measures to avoid, minimize or mitigate negative effects on the historic, prehistoric, or paleontological resource. Determinations and recommendations by the consultant shall be implemented as deemed appropriate by the Community & Economic Development Director, in consultation with the State Historic Preservation Officer (SHPO) and any and all affected Native American Tribes before any further work commences in the affected area.

If human remains are discovered, **no further disturbance shall occur until the County Coroner has made necessary findings as to origin. If the County Coroner determines that the remains are potentially Native American, the California Native American Heritage Commission shall be contacted within a reasonable timeframe to identify the "most likely descendant." The "most likely descendant" shall then make recommendations, and engage in consultations concerning the treatment of the remains (California Public Resources Code 5097.98). (GP Objective 23.3, CEQA).**

- P28. (GP) Prior to issuance of grading permits, the developer shall pay the applicable Stephens' Kangaroo Rat (SKR) Habitat Conservation Plan mitigation fee. (Ord)
- P29. (GP) Prior to approval of any grading permit, local and master-planned multi-use trail easements shall be shown in accordance with the City's Master Trail Plan.
- P30. (GP) For projects abutting State Highway 60, a sixteen foot reservation for future right-of-way shall be provided.
- P31. (GP) Prior to approval of any grading permits, plans for any security gate system shall be submitted to the Planning Division for review and approval.
- P32. (GP) Prior to issuance of any grading permits, mitigation measures contained in the Mitigation Monitoring Program approved with this project shall be implemented as provided therein.
- P33. (GP) Prior to the issuance of grading permits, the grading plan shall show decorative concrete paving for all driveway ingress/egress locations of the project. Accessible pedestrian pathways interior to the site cannot be painted. If delineation is necessary, then an alternative material is required.
- P34. (GP) Prior to the issuance of a grading permit, all required planter areas, curbs, including twelve-inch concrete step outs, and required parking space striping shall be shown on the precise grading plan.

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- P35. (GP) Prior to the issuance of grading permits, the following burrowing owl survey requirements shall be incorporated into the grading plans in accordance with the Riverside County Multi-species Habitat Conservation Plan: Within 30 days of and prior to disturbance, a burrowing owl focused survey shall be conducted by a qualified biologist using accepted protocols. The survey shall be submitted to the Planning Division for review and approval.**
- P36. (GP) Prior to any physical disturbance of any natural drainage course, or any wetland determined to contain riparian vegetation, the applicant shall obtain a stream bed alteration agreement or permit, or a written waiver of the requirement for such an agreement or permit, from both the California Department of Fish and Game and the U.S. Army Corps of Engineers. Written verification of such a permit or waiver shall be provided to both the Planning Division and the Public Works Department - Land Development Division. (CEQA, State and Federal codes)**
- P37. (GP) Prior to issuance of grading permits, landscape plans (trees, shrubs and groundcover) for basins maintained by an POA or other private entity shall be submitted to the Planning Division for review and approval for the sides and/or slopes. A hydroseed mix with irrigation is acceptable for the bottom of all the basin areas. All detention basins shall include trees, shrubs and groundcover up to the concreted portion of the basin. A solid decorative wall with pilasters, tubular steel fence with pilasters or other fence or wall approved by the Community Development Director is required to secure all water quality and detention basins more than 18 inches in depth.**
- P38. (GP) Prior to issuance of grading permits, the developer shall submit wall/fence plans to the Planning Division for review and approval as follows:**
- A. A maximum 3 foot high decorative wall in lieu of a hedge or berm may be placed in setback areas adjacent to a parking lot facing a public right-of-way.**
 - B. Any proposed retaining walls shall also be decorative in nature, while the combination of retaining and other walls on top shall not exceed the height requirement per the Municipal Code.**
 - C. A 14 foot tall solid wall of decorative block with pilasters and a cap or concrete tilt-up construction shall be provided to screen the trucks, parked trailers and the loading areas and loading docks.**

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- D. A four foot tall three rail fence per Parks and Community Services standards is required adjacent the multi-use trail.**
- E. If fencing is required around basins, then fence shall be wrought iron with pilasters or a four foot three rail fence to match the trail fencing.**

P39. (GP) Prior to approval of any grading permits, water well(s) on the site shall be closed or maintained in accordance with requirements of the Riverside County Environmental Health Department. (CEQA)

Prior to Issuance of Building Permits

- P40. (BP) Prior to issuance of building permits, the Planning Division shall review and approve the location and method of enclosure or screening of transformer cabinets, commercial gas meters and back flow preventers as shown on the final working drawings. Location and screening shall comply with the following criteria: transformer cabinets and commercial gas meters shall not be located within required setbacks and shall be screened from public view either by architectural treatment or landscaping; multiple electrical meters shall be fully enclosed and incorporated into the overall architectural design of the building(s); back-flow preventers shall be screened by landscaping. (GP Objective 43.30, DG)
- P41. (BP) Prior to issuance of building permits, screening details shall be addressed on plans for roof top equipment and trash enclosures submitted for Planning Division review and approval. All equipment shall be completely screened so as not to be visible from public view, and the screening shall be an integral part of the building. For trash enclosures, landscaping shall be included on at least three sides. The trash enclosure, including any roofing, shall be compatible with the architecture for the building(s). (GP Objective 43.6, DG)
- P42. (BP) Prior to issuance of building permits, two copies of a detailed, on-site, computer generated, point-by-point comparison lighting plan, including exterior building, parking lot, and landscaping lighting, shall be submitted to the Planning Division for review and approval. The lighting plan shall be generated on the plot plan and shall be integrated with the final landscape plan. The plan shall indicate the manufacturer's specifications for light fixtures used and shall include style, illumination, location, height and method of shielding. The lighting shall be designed in such a manner so that it does not exceed one-quarter foot-candle minimum maintained lighting measured from within five feet of any property line. The lighting level for all parking lots or structures shall be a minimum coverage of one foot-candle of light with a maximum of eight foot-candles. After the third plan

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check review for lighting plans, an additional plan check fee will apply. (MC 9.08.100, DG)

- P43. (BP) Prior to issuance of building permits, the developer or developer's successor-in-interest shall pay all applicable impact fees, including but not limited to Transportation Uniform Mitigation fees (TUMF), Multi-species Habitat Conservation Plan (MSHCP) mitigation fees, and the City's adopted Development Impact Fees. (Ord)
- P44. (BP) Prior to issuance of building permits, a phasing plan shall be submitted to the Planning Division for approval, if development is proposed to be phased.
- P45. (BP) Prior to issuance of any building permits, final landscaping and irrigation plans shall be submitted for review and approval by the Planning Division. After the third plan check review for landscape plans, an additional plan check fee shall apply. The plans shall be prepared in accordance with the City's Landscape Standards and shall include:
- A. A three (3) foot high decorative wall, solid hedge or berm shall be placed in any setback areas between a public right of way and a parking lot for screening.
 - B. All finger and end planters shall be included at an interval of one per 12 parking stalls, be a minimum 5' x 16', and include additional 12" concrete step-outs and 6" curbing. (MC9.08.230, City's Landscape Standards)
 - C. Diamond planters shall be provided every 3 parking stalls.
 - D. Drought tolerant landscape shall be provided. Sod shall be limited to public gathering areas only and not be included along the perimeter of the project site.
 - E. Street trees shall be provided every 40 feet on center in the right of way. Minimum 24 inch box Eucalyptus Nicholii shall be used for the street trees along the Fir Avenue/Eucalyptus Avenue frontage.
 - F. On-site trees shall be planted at an equivalent of one (1) tree per thirty (30) linear feet of the perimeter of a parking lot and per thirty linear feet of a building dimension for the portions of the building visible from a parking lot or right of way. Trees may be massed for pleasing aesthetic effects.
 - G. The design of all swales and basins that are visible from the public right-of-way shall be integrated with the surrounding landscape areas.
 - H. Minimum container size for required trees planted along the SR-60

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frontage shall be 24 inch box.

- I. Enhanced landscaping shall be included at all driveway and corner locations as well as along Highway 60.**
 - J. The review of all utility boxes, transformers etc. shall be coordinated to provide adequate screening from public view.**
 - K. Landscaping on three sides of any trash enclosure.**
 - L. All site perimeter and parking lot landscape and irrigation shall be installed prior to the release of certificate of any occupancy permits.**
- P46. (BP) Prior to the issuance of building permits, the landscape plans shall include landscape treatment for trash enclosures located outside of a truck court, to include landscape on three sides, and trash enclosures shall include decorative enhancements such as an enclosed roof and other decorative features that are consistent with the architecture of the proposed commercial buildings on the site, subject to the approval of the Community & Economic Development Director.**
- P47. (BP) Prior to the issuance of building permits, all fences and walls required or proposed on site, shall be approved by the Community & Economic Development Director. (MC 9.08.070)
- P48. (BP) Prior to the issuance of building permits, downspouts will be interior to the building, or if exterior, integrated into the architecture of the building to include compatible colors and materials to the satisfaction of the Community & Economic Development Director.
- P49. (BP) Prior to the issuance of building permits the building site plan shall include decorative concrete or paving for all driveway ingress/egress locations for the project.**
- P50. (BP) Prior to issuance of any building permits, mitigation measures contained in the Mitigation Monitoring Program approved with this project shall be implemented as provided therein. (CEQA)**

Prior to Issuance of a Certificate of Occupancy

- P51. (CO) Prior to the issuance of Certificates of Occupancy or building final, all required and proposed fences and walls shall be constructed according to the approved plans on file in the Community & Economic Development Department – Planning Division. (MC 9.080.070).
- P52. (CO) Prior to issuance of Certificate of Occupancy or building final, all required

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landscape and irrigation shall be installed in accordance with the City's Landscape Standards and the approved landscape plans.

- P53. (CO) Prior to issuance of Certificate of Occupancy or building final, all rooftop equipment shall be appropriately screened from Highway 60 or the Eucalyptus/Fir Avenue rights-of-way.**
- P54. (CO) Prior to issuance of any Certificates of Occupancy or building final, mitigation measures contained in the Mitigation Monitoring Program approved with this project shall be implemented as provided therein.**

MITIGATION MEASURES

Air Quality

- P55. 4.3.6.2A.** Prior to the issuance of a grading permit, the project developer shall require by contract specifications that contractors shall place construction equipment staging areas at least 200 feet away from sensitive receptors. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the City.
- P56. 4.3.6.2B** Prior to the issuance of a grading permit, the project developer shall require by contract specifications that contractors shall utilize power sources (e.g., power poles) or clean-fuel (e.g., fuel other than diesel or gasoline) generators where feasible. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the City.
- P57. 4.3.6.2C** Prior to the issuance of a grading permit, the project developer shall require by contract specifications that contractors shall utilize California Air Resources Board (CARB) Tier III Certified equipment or better during the rough/mass grading phase for the following pieces of equipment: rubber-tired dozers and scrapers. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the City. Project start to December 31, 2014: All off-road diesel-powered construction equipment greater than 50 horsepower shall meet Tier 3 off-road emission standards. In addition, all construction equipment shall be outfitted with Best Available Control Technology (BACT) devices certified by CARB. Any emission control devices used by the contractor shall achieve emission reductions that are no less than what would be achieved by a Level 3 diesel emission control strategy for a similarly sized engine as defined by CARB regulations. Post January 1, 2015: All off-road diesel-powered construction equipment greater than 50 horsepower

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shall meet Tier 4 emission standards, where available. In addition, all construction equipment shall be outfitted with Best Available Control Technology (BACT) devices certified by CARB. Any emission control devices used by the contractor shall achieve emission reductions that are no less than what would be achieved by a Level 3 diesel emission control strategy for a similarly sized engine as defined by CARB regulations. A copy of each unit's certified tier specifications, BACT documentation, and CARB or SCAQMD operating permit shall be provided at the time of mobilization of each applicable unit of equipment.

- P58. 4.3.6.2D** All clearing, grading, earthmoving, or excavation activities shall cease when winds (as instantaneous gusts) exceed 25 mph per SCAQMD guidelines in order to limit fugitive dust emissions. On-site truck idling shall be prohibited in excess of five minutes.
- P59. 4.3.6.2E** The contractor shall ensure that all disturbed unpaved roads and disturbed areas within the project are watered at least three times daily during dry weather. Watering, with complete coverage of disturbed areas, shall occur at least three times a day, preferably in the midmorning, afternoon, and after work is done for the day.
- P60. 4.3.6.2F** The contractor shall ensure that traffic speeds on unpaved roads and project site areas are reduced to 15 miles per hour or less to reduce PM10 and PM2.5 fugitive dust haul road emissions. Speed limit signs (15 mph maximum) shall be posted at entry points to the project site, and along any unpaved roads providing access to or within the project site and/or any unpaved designated on-site travel routes.
- P61. 4.3.6.2G** Groundcover shall be replaced, and/or non-toxic soil stabilizers shall be applied (according to manufacturers' specifications) to any inactive construction areas (previously graded areas inactive for ten days or more).
- P62. 4.3.6.2H** The contractor shall minimize pollutant emissions by maintaining equipment engines in good condition and in proper tune according to manufacturer's specifications and by not allowing construction equipment to be left idling for more than five minutes (per California law).
- P63. 4.3.6.2I** The contractor shall ensure use of low-sulfur diesel fuel in construction equipment as required by the California Air Resources Board (CARB) (diesel fuel with sulfur content of 15 ppm by weight or less).
- P64. 4.3.6.2J.** Grading plans, construction specifications and bid documents shall also include the following requirements:

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- Off-road construction equipment shall utilize alternative fuels where feasible e.g., biodiesel fuel (a minimum of B20), natural gas (CNG), liquefied natural gas (LNG), propane, except for equipment where use of such fuels would void the equipment warranty;
- Gravel pads shall be provided at all access points to prevent tracking of mud onto public roads;
- Install and maintain trackout control devices at all access points where paved and unpaved access or travel routes intersect;
- The contractor or builder shall designate a person or person(s) to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust off site;
- The contractor or builder shall post a publicly visible sign with the telephone number and person to contact regarding dust complaints. The contact person shall take corrective action within 24 hours;
- High-pressure injectors shall be provided on diesel construction equipment if available;
- Engine size of construction equipment shall be limited to the minimum practical size;
- Substitute gasoline-powered for diesel powered construction equipment where gasoline powered equipment is available;
- Use electric construction equipment where it is practical to use such equipment;
- Install catalytic converters on gasoline-powered equipment where this type of equipment is available;
- Ride-sharing program for the construction crew shall be supported by contractor(s) via incentives or other inducement;
- Documentation shall be provided to the City of Moreno Valley indicating that construction workers have been encouraged to carpool or otherwise reduce VMT to the greatest extent practical, including providing information on available park and ride programs;
- Lunch vendor services shall be allowed on site during construction to minimize the need for off-site vehicle trips; and
- All forklifts used during construction and in subsequent operation of the project shall be electric or natural gas powered.

P65. 4.3.6.2K. Throughout project construction, a construction relations officer/community liaison, appointed by the Applicant, shall be retained on site. In coordination and cooperation with the City, the construction relations officer/community liaison shall respond to any concerns related to PM10 (fugitive dust) generation or other construction related air quality issues within 24 hours.

P66. 4.3.6.2L. All project entrances shall be posted with signs which state:

- Truck drivers shall turn off engines when not in use;

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- Diesel delivery trucks servicing the project shall not idle for more than three (3) minutes; and
 - Telephone numbers of the building facilities manager and CARB, to report violations. These measures shall be enforced by the on-site facilities manager (or equivalent).
- P67. 4.3.6.2M.** During project grading and construction, the various project contractors shall adhere to the control measures listed in Tables 1.D and 1.E (attached to the MMRP).
- P68. 4.3.6.3A** Prior to the issuance of grading permits, the project applicant shall require by contract specifications that all trucks hauling dirt, sand, soil, or other loose materials are to be covered or shall maintain at least 2 feet of freeboard in accordance with the requirements of California Vehicle Code (CVC) Section 23114 (freeboard means vertical space between the top of the load and the top of the trailer).
- P69. 4.3.6.3B.** Prior to the issuance of grading permits, the project applicant shall provide evidence to the City that construction access roads shall be paved at least 100 feet onto the site from the main road.
- P70. 4.3.6.3C.** Prior to the issuance of grading permits, the project applicant shall require by contract specifications that all streets within the construction site shall be swept once per day if visible soil materials are carried to adjacent streets.
- P71. 4.3.6.4A.** The project applicant shall use“Low-Volatile Organic Compounds” paints, coatings, and solvents with a VOC content lower than required under Rule 1113 (not to exceed 150 grams/liter; 1.25 pounds/gallon). High Pressure Low Volume (HPLV) applications of paints, coatings, and solvents shall be consistent with South Coast Air Quality Management District Rule 1113. Alternatively, the project applicant shall use materials that do not require painting or are pre-painted.
- P72. 4.3.6.5B.** Prior to issuance of building permits, the project applicant shall provide evidence to the City that energy efficient and low-emission methods and features of building construction shall be incorporated into the project design. These methods and features may include (but are not limited to) the following:
- Construction of buildings that exceed statewide energy requirements beyond 10 percent of that identified in Title 24, Part 6 Energy Efficiency Standards;
 - Use of low-emissions water heaters;
 - Use of central water-heating systems;

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- Use of energy-efficient appliances;
- Use of increased insulation;
- Use of automated controls for air conditioners;
- Use of energy-efficient parking lot lighting; and
- Use of lighting controls and energy efficient lighting.
- Utilize low-VOC interior and exterior coatings during project repainting.
- Provide on-site improvements such as sidewalks or pedestrian walkways to promote pedestrian activity and reduce the number of vehicle trips.
- Installation of skylights and energy efficient lighting that exceeds California Title 24 standards where feasible, including electronic dimming ballasts and computer-controlled daylight sensors in the buildings.
- Shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and building shall be planted at the proposed project site. These strategies will minimize the heat island effect and thereby reduce the amount of air conditioning required.
- Strategies to be considered include fans to assist natural ventilation, centralized water and space conditioning systems, high efficiency individual heating and cooling units, and automatic setback thermostats.
- Reduction of energy demand associated with potable water conveyance through the following methods:
 - Incorporating drought-tolerant plants into the landscaping palette; and
 - Use of water-efficient irrigation techniques.
- Energy-efficient low-pressure sodium parking lot lights or equivalent as determined by the City shall be used;
- Buildings shall be oriented north-south where feasible;
- Implement an on-site circulation plan in parking lots to reduce vehicle queuing;
- Develop a trip reduction plan to achieve 1.5 average vehicle ridership (AVR) for businesses with fewer than 250 employees or multi-tenant worksites;
- Include bicycle parking facilities such as bicycle lockers and racks;
- Include showers for bicycling employees use; and
- Construct on-site pedestrian facility improvements such as building access that is physically separated from street and parking lot traffic and walk paths.

P73. 4.3.6.6A Prior to issuance of the first building permit, building and site plan designs shall ensure that the project's energy efficiencies surpass applicable 2008 California Title 24, Part 6 Energy Efficiency Standards by a minimum of 10 percent until January 1, 2014. For building permits issued after that date, new state energy standards require a 20 percent reduction from 2008 Title 24, Part 6 Energy Efficiency Standards. Verification of increased energy efficiencies shall be documented in Title 24 Compliance Reports provided by the Applicant, and reviewed and approved by the City. The following design features shall be used to fulfill this requirement:

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- Buildings shall exceed California Title 24 Energy Efficiency performance standards for water heating and space heating and cooling, as deemed acceptable by the City.
- Increase in insulation such that heat transfer and thermal bridging is minimized.
- Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption.
- Incorporate dual-paned or other energy efficient windows.
- Incorporate energy efficient space heating and cooling equipment.
- Interior and exterior energy efficient lighting which exceeds the California Title 24 Energy Efficiency performance standards shall be installed, as deemed acceptable by the City. Automatic devices to turn off lights when they are not needed shall be implemented.
- To the extent that they are compatible with landscaping guidelines established by the City, shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and buildings shall be planted at the project site.
- Paint and surface color palette for the project shall emphasize light and offwhite colors which reflect heat away from the buildings.
- All buildings shall be designed to accommodate renewable energy sources, such as photovoltaic solar electricity systems, appropriate to their architectural design.
- To reduce energy demand associated with potable water conveyance, the project shall implement the following:
 - Landscaping palette emphasizing drought-tolerant plants;
 - Use of water-efficient irrigation techniques; and,
 - U.S. EPA Certified WaterSense labeled for equivalent faucets, high-efficiency toilets (HETs), and water-conserving shower heads.
- The project shall provide secure, weather-protected, on-site bicycle storage/parking.
- The project shall provide on-site showers (one for males and one for females). Lockers for employees shall be provided.
- The project will establish a Transportation Management Association (TMA). The TMA will coordinate with other TMAs within the City to encourage and coordinate carpooling among building occupants. The TMA will advertise its services to building occupants, and offer transit and/or other incentives to reduce greenhouse gas (GHG) emissions. A plan will be submitted by the TMA to the City within two months of project completion that outlines the measures implemented by the TMA, as well as contact information.
- The project shall provide preferential parking for carpools and vanpools. Locations and configurations of proposed preferential parking for carpools and vanpools are subject to review and approval by the City. Prior to final site plan approval, preferential parking for carpools and vanpools shall be delineated on the project site plan.

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- The project shall provide at least two electric vehicle charging stations. Locations and configurations of proposed charging stations are subject to review and approval by the City. Prior to issuance of the first building permit, stub outs for stations shall be indicated on the project building plan.
- Lease/purchase documents shall identify that tenants are encouraged to promote the following:
 - Implementation of compressed workweek schedules.
 - SmartWay partnership;
 - Achievement of at least 20 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of consolidated trips carried by SmartWay carriers until it reaches a minimum of 90 percent of all long-haul trips carried by SmartWay 1.0 or greater carriers.
 - Achievement of at least 15 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of longhaul trips carried by SmartWay carriers until it reaches a minimum of 85 percent of all consolidator trips carried by SmartWay 1.0 or greater carriers.
 - Use of fleet vehicles conforming to 2010 air quality standards or better.
 - Installation of catalytic converters on gasoline-powered equipment.
 - Inclusion of electric powered and/or compressed natural gas fueled trucks and/or vehicles in fleets.
 - Establishment and use of carpool/vanpool programs, complemented by parking fees for single-occupancy vehicles.
 - Provision of preferential parking for EV and CNG vehicles.
 - Use of electrical equipment (instead of gasoline-powered equipment) for landscape maintenance.
 - Use of electric (instead of diesel or gasoline-powered) yard trucks.
 - Use of SmartWay 1.25 rated trucks.
 - Each facility operator shall provide regular sweeping of onsite parking and drive areas.
 - Each facility operator shall maintain a log of all trucks entering the facility to ensure that, on average, the daily truck fleet meets the quantities and emissions standards listed in the Draft EIR. This log shall be available for inspection by City staff at any time.
 - Each facility operator shall prohibit all vehicles from idling in excess of five minutes in all onsite areas.
 - Each facility operator shall ensure that onsite staff in charge of keeping the daily log and monitoring for excess idling will be trained and certified in diesel health effects and technologies, such as by requiring attendance at CARB-approved courses.
 - Each facility operator upon occupancy that do not already operate 2007 and newer trucks shall in good faith apply for funding to replace or retrofit

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their trucks such as Carl Moyer, VIP, Prop 1B or similar funds. Should funds be awarded, the tenant shall be required to accept and use them.

Biological Resources

- P74. 4.4.6.1A.** If tree removal or clearing and grubbing activities must take place during the general nesting season (February 1 through August 31), a nesting bird survey shall be conducted within seven (7) days prior to any vegetation disturbance activities. If passerine birds are found to be nesting or there is evidence of nesting behavior inside the impact area, an exclusion buffer, to be determined by the appropriate agency (e.g. the City, County, and/or CDFG), shall be set in place around the nest where no vegetation disturbance will be permitted. For raptor species, such as hawks and owls, this buffer may be as large as 500 feet. A qualified biologist shall closely monitor nests until it is determined that they are no longer active, at which time construction activity in the vicinity of nests may continue.
- P75. 4.4.6.1B.** Prior to site grading, a preconstruction survey shall be required for the burrowing owl to confirm the presence/absence of this species from the site. The survey shall be conducted by a qualified biologist within 30 days prior to ground disturbance, and in accordance with MSHCP survey requirements, to avoid direct take of burrowing owls. If burrowing owls are determined to occupy the project site or immediate vicinity, the City of Moreno Valley Planning Department shall be notified and avoidance measures as identified in **Mitigation Measure 4.4.6.1C**, shall be implemented. Implementation of avoidance measures shall be executed pursuant to the MSHCP, the California Fish and Game Code, and the MBTA, and according the Burrowing Owl Survey Protocol and Mitigation Guidelines (California Burrowing Owl Consortium 1993) and reviewed the City of Moreno Valley, the Riverside Conservation Authority, and/or by the CDFG.
- P76. 4.4.6.1C.** As recommended in the BUOW Survey and Mitigation Guidelines prepared by the California BUOW Consortium, no disturbance to an occupied burrow shall occur within approximately 160 feet of an occupied burrow during the non-breeding season (September 1 through January 31), or within approximately 250 feet of an occupied burrow during the breeding season (February 1 through August 31). For unavoidable impacts, passive relocation of burrowing owls shall be implemented. Passive relocation shall be conducted by a qualified biologist in accordance with procedures set forth by the MSHCP and California Burrowing Owl Consortium. Passive relocation of occupied burrows supporting a breeding pair of burrowing owls shall be conducted outside of the breeding season pursuant to the California Fish and Game Code and the MBTA.

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- P77. 4.4.6.2A.** As outlined in the project's Determination of a Biologically Equivalent or Superior Preservation (DBESP) report, the project applicant shall compensate for the temporary and permanent impact on and loss of jurisdictional waters and streambeds by providing a minimum 2:1 off-site replacement of equivalent riverine/riparian habitat prior to project construction. Offsite restoration, enhancement, and/or land purchase mitigation for the drainage impacts will occur at an offsite location through one or more of the following: an USACE approved mitigation bank, through an in lieu fee mitigation program, and/or landpurchase and conservation. DFG and USFWS will need to provide concurrence that this mitigation is equivalent or superior to that proposed for impact through their review and acceptance of the DBESP.
- P78. 4.4.6.2B.** Riparian/riverine resources that are temporarily impacted by project construction shall be returned to their preconstruction contours and hydroseeded, as outlined in the DBESP.
- P79. 4.4.6.3A.** The project applicant shall obtain a Section 404 Nationwide or Individual Permit, as appropriate, from the USACE, a Section 401/Porter-Cologne Water Quality Certification from the RWQCB, and a Section 1602 Streambed Alteration Agreement from the CDFG. Offsite restoration, enhancement, and/or land purchase mitigation of jurisdictional drainage impacts will occur at an off-site location through one or more of the following: an USACE approved mitigation bank, through an in-lieu fee mitigation program, and/or land purchase and conservation.

Cultural Resources

- P80. 4.5.6.1A** Prior to the issuance of a grading permit, the Project Applicant shall provide evidence to the City of Moreno Valley that a Cultural Resources Monitoring Agreement has been secured for qualified Tribal representatives, and that a professional archaeological monitor meeting Secretary of Interior standards has been retained by the Applicant to conduct monitoring of all mass grading and trenching activities and has the authority to temporarily halt and redirect earthmoving activities in the event that suspected archaeological resources are unearthed during Project construction. The Project Archaeologist and Tribal representatives shall attend the pregrading meeting with the City and contractors to explain and coordinate the requirements of the monitoring program.
- P81. 4.5.6.1B** Prior to the issuance of a grading permit, the Applicant shall provide evidence to the City of Moreno Valley that appropriate Native American representative(s), Project Archaeologist, and the Tribal representative(s) shall be allowed to monitor and have received a minimum of 30 days advance notice of

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all mass grading and trenching activities. During grading and trenching operations, the Tribal representatives and the project archaeological monitor shall observe all mass grading and trenching activities per the Cultural Resources Monitoring Agreement. If the Tribal representatives suspect that an archaeological resource may have been unearthed, the archaeologist, in consultation with the tribal representative, shall immediately halt and redirect grading operations in a 100-foot radius around the find to allow identification and evaluation of the suspected resource. In consultation with the appropriate Native American Tribe(s), the archaeological monitor shall evaluate the suspected resource and make a determination of significance pursuant to California Public Resources Code Section 21083.2.

- P82. 4.5.6.1C** If a significant archaeological resource(s) is discovered on the property, ground disturbing activities shall be suspended 100 feet around the resource(s). The archaeological monitor and representatives of the appropriate Native American Tribe(s), the Project Applicant, and the City Planning Division shall confer regarding mitigation of the discovered resource(s). A treatment plan and/or preservation plan shall be prepared and by the archaeological monitor and reviewed by representatives of the appropriate Native American Tribe(s), the Project Applicant, and the City Planning Division and implemented by the archaeologist to protect the identified archaeological resource(s) from damage and destruction. The landowner shall relinquish ownership of all archaeological artifacts that are of Native American origin found on the Project site to the culturally affiliated Native American tribe(s) for proper treatment and disposition. A final report containing the significance and treatment findings shall be prepared by the archaeologist and submitted to the City Planning Division, the appropriate Native American tribe(s), and the Eastern Information Center at the University of California, Riverside. All cultural material, excluding sacred, ceremonial, grave goods and human remains, collected during the grading monitoring program and from any previous archaeological studies or excavations on the project site shall be curated, as determined by the treatment plan, according to the current professional repository standards and may include the Pechanga Bands curatorial facility.
- P83. 4.5.6.1D** Prior to grading permit issuance, the City shall verify that the following note is included on the Grading Plan: "If any suspected archaeological resources are discovered during ground disturbing activities and the archaeological monitor or Tribal representatives are not present, the construction supervisor is obligated to halt work in a 100-foot radius around the find and call the project archaeologist and the Tribal representatives to the site to assess the significance of the find."

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- P84. 4.5.6.1E** If human remains are encountered, California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the Riverside County Coroner has made the necessary findings as to origin. Further, pursuant to California Public Resources Code Section 5097.98(b), remains shall be left in place and free from disturbance until a final decision as to the treatment and disposition has been made by the Coroner. If the Riverside County Coroner determines the remains to be Native American, the California Native American Heritage Commission must be contacted within 24 hours. The Native American Heritage Commission must then immediately notify the “most likely descendant(s)” of receiving notification of the discovery. The most likely descendant(s) shall then make recommendations within 48 hours, and engage in consultations concerning the treatment of the remains as provided in Public Resources Code §5097.98.
- P85. 4.5.6.2A.** Prior to the issuance of grading permits, the project applicant shall submit to and receive approval from the City, a Paleontological Resource Impact Mitigation Program (PRIMP). The PRIMP shall include the provision of a trained paleontological monitor during on-site soil disturbance activities. The monitoring for paleontological resources shall be conducted during the rough-grading phase of the project. In the event that paleontological resources are unearthed or discovered during excavation, **Mitigation Measure 4.5.6.2C** shall apply. Conversely, if no paleontological resources are unearthed or discovered on site during excavation, no additional action is required.
- P86. 4.5.6.2B.** The paleontological monitor shall be equipped to rapidly remove any large fossil specimens encountered during excavation. During monitoring, samples of soil shall be collected and processed to recover microvertebrate fossils. Processing shall include wet screen washing and microscopic examination of the residual materials to identify small vertebrate remains.
- P87. 4.5.6.2C.** If paleontological resources are unearthed or discovered during excavation of the project site, the monitoring for paleontological resources shall be conducted on a full-time basis for the duration of the rough-grading of the project site. The following recovery processes shall apply:
- Upon encountering a large deposit of bone, salvage of all bone in the area shall be conducted with additional field staff and in accordance with modern paleontological techniques.
 - All fossils collected during the project shall be prepared to a reasonable point of identification. Excess sediment or matrix shall be removed from the specimens to reduce the bulk and cost of storage. Itemized catalogs of all material collected and identified shall be provided to the museum repository along with the specimens.

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- A report documenting the results of the monitoring and salvage activities and the significance of the fossils shall be prepared.
- All fossils collected during this work, along with the itemized inventory of these specimens, shall be deposited in a museum repository for permanent curation and storage.

P88. 4.5.6.2D Prior to grading permit issuance, the City shall verify that the following note is included on the Grading Plan: “If any suspected paleontological resources are discovered during ground disturbing activities, the construction supervisor is obligated to halt work in a 100-foot radius around the find and call a qualified paleontologist to the site to assess the significance of the find. A qualified paleontologist shall evaluate the suspected resource. If the paleontologist determines that the find is not unique, construction shall be permitted to proceed. However, if the paleontologist determines that further information is needed to evaluate significance, the City of Moreno Valley shall be notified and a treatment plan shall be prepared and implemented in consultation with the City to protect the identified paleontological resource(s) from damage and destruction.”

Hydrology and Water Quality

P89. 4.7.6.1A. Prior to grading plan approval and the issuance of a grading permit by the City, the project applicant shall provide evidence to the City that a Notice of Intent (NOI) has been filed with the Regional Water Quality Control Board for coverage under the State NPDES General Construction Permit for discharge of storm water associated with construction activities.

P90. 4.7.6.1B. Prior to grading plan approval and the issuance of a grading permit by the City, the project applicant shall submit to the State Water Quality Control Board a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP shall include a surface water control plan and erosion control plan citing specific measures to control on-site and off-site erosion during the entire grading and construction period. Additionally, the SWPPP shall identify structural and nonstructural BMPs to control sediment and nonvisible discharges from the site. BMPs to be implemented in the SWPPP may include, but shall not be limited to, the following:

- Sediment discharges from the site may be controlled by the following: gravel bags, silt fences, straw wattles and temporary debris basins (if deemed necessary), and other discharge control devices. The construction and condition of the BMPs will be periodically inspected during construction, and repairs will be made when necessary as required by the SWPPP.
- No materials of any kind shall be placed in drainage ways.

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- Materials that could contribute nonvisible pollutants to storm water must be contained, elevated, and placed in temporary storage containment areas.
 - All loose piles of soil, silt, clay, sand, debris, and other earthen material shall be protected per RWQCB standards to eliminate any discharge from the site. Stockpiles will be surrounded by silt fences. The SWPPP will include inspection forms for routine monitoring of the site during the construction phase to ensure NPDES compliance.
 - Additional BMPs and erosion control measures will be documented in the SWPPP and utilized if necessary.
 - The SWPPP will be kept on site for the entire duration of project construction and will also be available to the local RWQCB for inspection at any time.
- In the event that it is not feasible to implement the above BMPs, the City of Moreno Valley can make a determination that other BMPs will provide equivalent or superior treatment either on or off site.

P91. 4.7.6.1C. Prior to the issuance of grading permits, the project applicant shall provide evidence to the City that the following provisions have been added to construction contracts for the project:

- The Construction Contractor shall be responsible for performing and documenting the application of BMPs identified in the SWPPP. Weekly inspections shall be performed on sediment control measures called for in the SWPPP. Monthly reports shall be maintained by the Contractor and submitted to the City for inspection. In addition, the Contractor will also be required to maintain an inspection log and have the log on site to be reviewed by the City of Moreno Valley and the representatives of the Regional Water Quality Control Board.

P92. 4.7.6.2A. Prior to grading plan approval and the issuance of a grading permit by the City, the project applicant shall receive approval from the City of Moreno Valley for a Final Water Quality Management Plan (F-WQMP). The FWQMP shall specifically identify pollution prevention, site design, source control, and treatment control BMPs that shall be used on site to control predictable pollutant runoff in order to reduce impacts to water quality to the maximum extent practicable. BMPs to be implemented in the F-WQMP may include (but shall not be limited to) the following:

- Required landscaped areas shall not use decorative concrete or impervious surfaces.
- Landscape plans shall incorporate native and drought-tolerant plants, trees, and shrubs. Landscaping shall be maintained weekly and maintenance contractor will properly dispose of all landscape wastes.
- Irrigation systems shall be inspected monthly by the landscape contractor to check for over-watering, leaks, or excessive runoff to paved areas. Timers will be used to prevent overwatering.

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- Signage will be inspected and maintained twice a year for legibility.
- Outdoor Loading/Unloading truck docks shall be kept in a clean and orderly condition with weekly inspections, continuous monitoring, and immediate cleanup of spills.
- Parking area maintenance shall be swept or vacuumed at least quarterly, if there is any trash or debris in between the routine sweeping, it shall be swept or vacuumed immediately.
- Trash enclosures will be inspected and maintained weekly or as needed by maintenance contractor.
- On-site extended detention/sedimentation basins and sand filters will treat all of the site's runoff via vegetated swales and will be maintained and inspected at least twice a year and prior to October 1.
- Additional BMPs will be documented in the WQMP and utilized if necessary. In the event that it is not feasible to implement the above BMPs, the City of Moreno Valley can make a determination that other BMPs will provide equivalent or superior treatment either on or off site.

P93. 4.7.6.3A. Prior to grading plan approval, the project proponent shall receive approval on a project-specific Final Hydrology Study, with supporting engineering calculations, from the City Engineer. The Final Hydrology Study shall incorporate relevant requirements identified by the City, and/or site-specific geotechnical investigations. A Preliminary Hydrology Study will be required prior to approval of the associated project tentative tract map.

Noise

P94. 4.9.6.1A. During all project site excavation and grading on site, the project contractor shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards.

P95. 4.9.6.1B. The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest to the project site.

P96. 4.9.6.1C. The construction contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise sources and noise-sensitive receptors nearest to the project site during all project construction.

P97. 4.9.6.1D. During project site construction activities at Building 6 (i.e., closest to existing residences), the construction contractor shall limit all construction related activities to between the hours of 6:00 a.m. and 8:00 p.m. on weekdays and

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between the hours of 7:00 a.m. to 8:00 p.m. on weekends and holidays, unless written approval is obtained from the City Building Official or City Engineer.

Transportation

- P98. 4.11.6.4A.** Prior to issuance of a Certificate of Occupancy the project applicant shall construct the following traffic improvements:
- **Redlands Boulevard/SR-60 Westbound Ramps.** Install a traffic signal. This improvement is currently approved, and permitted by Caltrans. If not otherwise completed prior to project opening, the required traffic signal shall be constructed by the Applicant prior to issuance of the first Certificate of Occupancy.
 - **Redlands Boulevard/Fir Avenue/Eucalyptus Avenue.** If not otherwise completed prior to project opening, prior to issuance of the first Certificate of Occupancy, the Applicant shall construct the following improvements: Install a traffic signal and add a northbound left-turn lane and a southbound leftturn lane. If the improvements are constructed by others prior to the Certificate of Occupancy, the applicant shall pay its fair share towards the improvements through the City's DIF program.
- P99. 4.11.6.4B.** Prior to issuance of building permits, the project applicant shall pay the fair-share contribution toward the following traffic improvements through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program:
- **Moreno Beach Drive/SR-60 Eastbound Ramps.** The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF fee would mitigate the significant impact at this location.
 - **Redlands Boulevard/SR-60 Westbound Ramps.** Install a traffic signal. This improvement is listed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the significant impact at this location.
 - **Redlands Boulevard/Fir Avenue/Eucalyptus Avenue.** Install a traffic signal. This improvement is listed in the City's DIF program. Add a northbound left-turn lane and a southbound left-turn lane. These improvements are listed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location.
- P100. 4.11.6.4C.** Prior to issuance of building permits, the project applicant shall pay the fair-share contribution toward the following traffic improvements through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program:

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- **Moreno Beach Drive/SR-60 Eastbound Ramps.** The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF fee would mitigate the significant impact at this location.
- **Moreno Beach Drive/Cottonwood Avenue.** Add a southbound through lane. This improvement is listed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the significant impact at this location.
- **Moreno Beach Drive/Alessandro Boulevard.** Add a southbound through lane. This improvement is listed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the significant impact at this location.
- **Redlands Boulevard/SR-60 Westbound Ramps.** Install a traffic signal. This improvement is listed in the City's DIF program. Add a northbound through lane. The Redlands Boulevard/SR-60 Interchange reconstruction would implement the northbound through lane. The interchange reconstruction project is programmed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location.
- **Redlands Boulevard/SR-60 Eastbound Ramps.** The Redlands Boulevard/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF. Therefore, payment of the TUMF fee would mitigate the significant impact at this location.
- **Redlands Boulevard/Fir Avenue/Eucalyptus Avenue.** Install a traffic signal. Add a westbound right-turn lane and provide overlap phasing for the westbound right turns. Add a westbound left-turn lane and an eastbound left-turn lane. These improvements are programmed in the City's DIF program. Add a northbound left-turn lane, a southbound through lane, and a southbound left-turn lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location.
- **Redlands Boulevard/Eucalyptus Avenue.** Add a southbound right-turn lane. This improvement is programmed in the TUMF. Therefore, payment of the TUMF fees would mitigate the significant impact at this location.
- **Redlands Boulevard/Alessandro Boulevard.** Add a southbound leftturn lane. This improvement is programmed in the TUMF. Therefore, payment of the TUMF fees would mitigate the significant impact at this location.

P101. 4.11.6.4D. Prior to issuance of building permits, the project applicant shall pay the fair-share contribution toward the following traffic improvements through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program. At some locations, the DIF and TUMF fees would not fully mitigate the project's impact. For these locations, additional improvements

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shall be implemented by the project applicant prior to the issuance of a certificate of occupancy for the project:

- **Nason Street/Eucalyptus Avenue.** Add a northbound right turn lane. This improvement is programmed in the City's DIF; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, the project shall contribute a fair share (calculated to be 1.76%) toward restriping the westbound approach to provide dual left-turn lanes.
- **Nason Street/Alessandro Boulevard.** Add an eastbound through lane and a westbound through lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, the project shall contribute a fair share (calculated to be 1.4%) toward modification of the traffic signal to provide overlap phasing for the eastbound right-turn lane.
- **Moreno Beach Drive/SR-60 Westbound Ramps.** The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF fee would mitigate the significant impact at this location.
- **Moreno Beach Drive/SR-60 Eastbound Ramps.** The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF fee would mitigate the significant impact at this location.
- **Moreno Beach Drive/Eucalyptus Avenue.** Convert the existing eastbound through lane to a left-turn lane and the eastbound right-turn lane to a shared through/right-turn lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, the project shall contribute a fair share (calculated to be 8.63%) toward modification of the traffic signal to provide right-turn overlap phasing for the westbound right-turn lane.
- **Moreno Beach Drive/Cottonwood Avenue.** Add a southbound through lane, This improvement is programmed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the significant impact at this location.
- **Moreno Beach Drive/Alessandro Boulevard.** Add 2 southbound through lanes, 2 northbound through lanes, an eastbound through lane, and a westbound through lane. These improvements are programmed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the significant impact at this location.
- **Redlands Boulevard/SR-60 Westbound Ramps.** Install a traffic signal. This improvement is programmed in the City's DIF program and will be installed before building occupancy since it was identified as a direct project impact.

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- **Redlands Boulevard/SR-60 Eastbound Ramps.** The Redlands Boulevard/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF. Therefore, payment of the TUMF fee would mitigate the significant impact at this location.
- **Redlands Boulevard/Fir Avenue- Eucalyptus Avenue.** Install a traffic signal and add a westbound left-turn lane, eastbound through lane, eastbound left-turn lane, and a westbound right-turn lane with overlap phasing. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, add a southbound through lane, southbound left-turn lane, northbound through lane, and northbound left-turn lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location.
- **Redlands Boulevard/Eucalyptus Avenue.** Install a traffic signal and add a westbound left-turn lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, add a northbound leftturn lane and a southbound left-turn lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location.
- **Redlands Boulevard/Alessandro Boulevard.** Install a traffic signal. This improvement is programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, add a southbound left-turn lane, a northbound left-turn lane, a westbound left-turn lane, an eastbound left-turn lane, a westbound right-turn lane, and a southbound through lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location.

P102. 4.11.6.4E. Prior to issuance of building permits, the project applicant shall pay the fair-share contribution toward the following traffic improvements through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program, or through a fair-share contribution to the City of Moreno Valley as noted below:

- **Nason Street/Eucalyptus Avenue.** Add a northbound right-turn lane and an eastbound right-turn lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. Implementation of the improvements identified for this intersection in **Mitigation Measure 4.11.6.4D** would also partially mitigate the significant impact at this intersection. In addition, the project shall pay a fair share (calculated to be 1.6%) toward modification of the traffic

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signal to provide right-turn overlap phasing for the eastbound and northbound right turns.

- **Nason Street/Alessandro Boulevard.** Add an eastbound through lane and westbound through lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. Implementation of the improvements identified for this intersection in **Mitigation Measure 4.11.6.4D** would also partially mitigate the significant impact at this intersection. In addition, the project shall pay a fair share (calculated to be 1.35%) toward the addition of an eastbound left-turn lane and modification of the traffic signal to provide overlap phasing for the westbound right-turn lane.

- **Moreno Beach Drive/SR-60 Westbound Ramps.** The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF fee would mitigate the significant impact at this location.

- **Moreno Beach Drive/SR-60 Eastbound Ramps.** The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF fee would mitigate the significant impact at this location.

- **Moreno Beach Drive/Eucalyptus Avenue.** Restripe eastbound approach to dual left-turn lanes and add a northbound through lane, a westbound through lane, and a southbound right-turn lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. Implementation of the improvements identified for this intersection in **Mitigation Measure 4.11.6.4D** would also partially mitigate the significant impact at this intersection. In addition, the project shall pay a fair share (calculated to be 5.17%) toward modification of the traffic signal to provide right-turn overlap phasing for the southbound right-turn lane.

- **Moreno Beach Drive/Cottonwood Avenue.** Add a southbound through lane, a northbound through lane, an eastbound left-turn lane, an eastbound through lane, a westbound through lane, and a westbound left-turn lane. These improvements are programmed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the significant impact at this location.

- **Moreno Beach Drive/Alessandro Boulevard.** Add 2 southbound through lanes, 2 northbound through lanes, an eastbound through lane, and a westbound through lane. These improvements are programmed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the significant impact at this location.

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- **Auto Mall Drive/Eucalyptus Avenue.** Install a traffic signal. This improvement is programmed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the significant impact at this location.
- **Redlands Boulevard/SR-60 Westbound Ramps.** Install a traffic signal. This improvement is programmed in the City's DIF program and will be installed before building occupancy since it was identified as a direct project impact. Therefore, payment of the DIF fee would mitigate the significant impact at this location.
- **Redlands Boulevard/SR-60 Eastbound Ramps.** The Redlands Boulevard/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF. Therefore, payment of the TUMF fee would mitigate the significant impact at this location.
- **Redlands Boulevard/Fir Avenue-Eucalyptus Avenue.** Install a traffic signal and add a westbound left-turn lane, eastbound through lane, eastbound left-turn lane, a westbound right-turn lane with overlap phasing, and a southbound right-turn lane with overlap phasing. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, add a southbound through lane, a southbound left-turn lane, a northbound through lane, a northbound left-turn lane, and a northbound right-turn lane. These improvements are programmed in the TUMF. Therefore, payment of the TUMF fee would also partially mitigate the significant impact at this location. In addition, the project shall pay a fair share (calculated to be 10.44%) of the cost of adding a southbound left-turn lane.
- **Redlands Boulevard/Eucalyptus Avenue.** Install a traffic signal and add a westbound left-turn lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, add a northbound leftturn lane, a northbound through lane, a southbound left-turn lane, and southbound through lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location.
- **Redlands Boulevard/Cottonwood Avenue.** Add an eastbound through lane and westbound through lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, add a northbound through lane and a southbound through lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location.
- **Redlands Boulevard/Alessandro Boulevard.** Install a traffic signal. This improvement is programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, and add a southbound leftturn lane, a northbound left-turn lane, a

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westbound left-turn lane, an eastbound left-turn lane, a westbound right-turn lane, a southbound through lane, a westbound through lane, and an eastbound through lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location.

P103. 4.11.6.4F. If the Encilia Avenue and Quincy Street Connection plan is implemented as part of the proposed project, then prior to issuance of building permits, the project applicant shall implement the following improvements, in addition to those identified in **Mitigation Measure 4.11.6.4.E**, either through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program:

- **Moreno Beach Drive/Eucalyptus Avenue.** Restripe the southbound shared through/right-turn lane to a southbound through lane. This improvement is programmed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the impacts of the project at this intersection.

- **Redlands Boulevard/Fir Avenue- Eucalyptus Avenue.** Pay the fair share (calculated to be 10.84%) to add a southbound right-turn lane. • **Redlands Boulevard/Encilia Avenue-Eucalyptus Avenue.** Install a traffic signal and add a westbound left-turn lane. These improvements are programmed in the City's DIF program. In addition, add a northbound left-turn lane, northbound through lane, southbound left-turn lane, and a southbound through lane. These improvements are programmed in the TUMF program. Therefore, payment of the DIF and TUMF fees would fully mitigate the impact of the project at this intersection.

- **Moreno Beach Drive/Encilia Avenue.** Install a traffic signal and add a northbound through lane, southbound left-turn lane, and a southbound through lane. This improvement is programmed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the impacts of the project at this intersection.

Greenhouse Gases and Global Climate Change

P104. 4.13.6.1A. Prior to the issuance of building permits, the project applicant shall provide evidence to the City of Moreno Valley that building features have been incorporated in building plans as required by Title 24 of the California Code of Regulations. These features include but are not limited to the following:

- Exterior windows shall utilize window treatments for efficient energy conservation.

- Per CALGreen Code requirements, water-efficient fixtures and appliances, including but not limited to low-flow faucets, dual-flush toilets minimizing water consumption by 20 percent from the Building Standards Code baseline water

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consumption shall be used.

- Per CALGreen Code requirements, a Commissioning Plan shall be prepared and all building systems (e.g., heating, ventilation, and air-conditioning [HVAC], irrigation systems, lighting, and water heating) shall be commissioned by the Commissioning Authority.
- Per CALGreen Code, restrict watering methods (e.g., prohibit systems that apply water to nonvegetated surfaces) and control runoff.

P105. 4.13.6.1B. Prior to the issuance of building permits, the project applicant shall provide evidence to the City of Moreno Valley that the following measures have been incorporated into the design and construction of the project:

- Use of locally produced and/or manufactured building materials for at least 10 percent of the construction materials used for the project.
- Use of “Green Building Materials,” such as those materials that are resource efficient, and recycled and manufactured in an environmentally friendly way, for at least 10 percent of the project.
- Limit unnecessary idling of construction equipment. A reduction in equipment idling would reduce fuel consumption, and therefore, GHG emissions.
- Maximize the use of electricity from the power grid by replacing diesel- or gasoline-powered equipment. This would reduce GHG emissions because electricity can be produced more efficiently at centralized power plants.
- Design the project building to exceed the California Building Code’s (CBC) Title 24 energy standard, including, but not limited to, any combination of the following:
 - Increase insulation such that heat transfer and thermal bridging is minimized.
 - Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption.
 - Incorporate ENERGY STAR or better rated windows, space heating and cooling equipment, light fixtures, appliances, or other applicable electrical equipment.
- Provide a landscape and development plan for the project that takes advantage of shade, prevailing winds, and landscaping.
- Install efficient lighting and lighting control systems. Use daylight as an integral part of the lighting systems in buildings.
- Install reflective roof material (SRI >45) and cool pavements.
- Install energy-efficient heating and cooling systems, appliances and equipment, and control systems.
- Install solar or light-emitting diodes (LEDs) for outdoor lighting for auto parking areas.

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- P106. 4.13.6.1C.** Prior to the issuance of occupancy permits, the project applicant shall provide evidence to the City of Moreno Valley that the following measures have been be incorporated into the operation of the project:
- The project applicant shall use less than 3,900 Global Warming Potential (GWP) hydrofluorocarbon (HCF) refrigerants or natural refrigerants (ammonia, propane, carbon dioxide [CO₂]) for refrigeration and fire suppression equipment.
 - Provide vegetative or man-made exterior wall shading devices for east-, south-, and west facing windows.
 - Devise a comprehensive water conservation strategy appropriate for the project and its location. The strategy may include the following, plus other innovative measures that may be appropriate:
 - Install drought-tolerant plants for landscaping.
 - Use reclaimed water for landscape irrigation within the project. Install the infrastructure to deliver and use reclaimed water.
 - Install water-efficient irrigation systems, such as weather-based and soil-moisture-based irrigation controllers and sensors for landscaping according to the California Department of Water Resources Model Efficient Landscape Ordinance.
 - Provide employee education about reducing waste and available recycling services.

Hazards and Hazardous Materials

- P107. 4.6.6.1A** Prior to issuance of a grading permit for the project, a qualified contractor shall test onsite soils for contamination by agricultural chemicals. If present in concentrations above established actionable levels or thresholds, these materials shall be removed and transported to an appropriate landfill by a licensed contractor. This measure shall be implemented to the satisfaction of the Building Division including written documentation of the disposal of any agricultural chemical residue in conformance with all applicable regulations.

Building and Safety Division

- B1. The above project shall comply with the current California Codes (CBC, CEC, CMC, CPC and Green Building Standards) as well as City ordinances. All new projects shall provide a soils report as well. Plans shall be submitted to the Building Division as a separate submittal. The 2013 Edition of the California Codes are currently in effect.
- B2. Prior to final inspection, all plans will be placed on a CD Rom for reference and verification. Plans will include “as built” plans, revisions and changes. The CD will also include Title 24 energy calculations, structural calculations and all other

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pertinent information. It will be the responsibility of the developer and or the building or property owner(s) to bear all costs required for this process. The CD will be presented to the Building and Safety Division for review prior to final inspection and building occupancy. The CD will become the property of the Moreno Valley Building and Safety Division at that time. In addition, a site plan showing the path of travel from public right of way and building to building access with elevations will be required.

- B3. (BP) Prior to the issuance of a building permit, the applicant shall submit a properly completed "Waste Management Plan" (WMP), as required, to the Compliance Official (Building Official) as a portion of the building or demolition permit process.
- B4. (BP) Prior to the issuance of a building permit, show on the plans that all exterior doors comply with the requirements of CBC 1133B.1.1.1 for accessible path of travel from every exit door, especially in consideration of doors that may be designated as exits due to interior obstructions to path of travel due to racks, equipment and other interior obstruction to the exit path of travel.
- B5. (BP) Prior to the issuance of a building permit, show on the plans that no gutter, drainage feature, swale or other deviation in the flat level surface at the accessible parking spaces exists within and for a minimum four foot extension beyond the outer dimensions of the parking space, loading zone and path of travel.
- B6. (BP) Plans shall be prepared, stamped and signed by a licensed Architect or Registered Civil Engineer for submission for plan check review.
- B7. (BP) Plumbing plans shall be prepared, including isometrics, for required plumbing fixtures based on California Plumbing Code, Chapter 4 and Table 4-1.

SCHOOL DISTRICT

- S1. (BP) Prior to issuance of building permits, the developer shall provide to the Community Development Director a written certification by the affected school district that either: (1) the project has complied with the fee or other exaction levied on the project by the governing board of the district, pursuant to Government Code Section 65996; or (2) the fee or other requirement does not apply to the project.

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UNITED STATES POSTAL SERVICE

PO1. (BP) Prior to the issuance of building permits, the developer shall contact the U.S. Postal Service to determine the appropriate type and location of mailboxes.

FIRE PREVENTION BUREAU

- 1. Hydrant spacing shall be addressed in plan check.**
- 2. The following Standard Conditions shall apply.**

With respect to the conditions of approval, the following fire protection measures shall be provided in accordance with Moreno Valley City Ordinances and/or recognized fire protection standards:

- F1. Final fire and life safety conditions will be addressed when the Fire Prevention Bureau reviews building plans. These conditions will be based on occupancy, use, California Building Code (CBC), California Fire Code (CFC), and related codes, which are in force at the time of building plan submittal.
- F2. The Fire Prevention Bureau is required to set a minimum fire flow for the remodel or construction of all commercial buildings per CFC Appendix B and Table B105.1. The applicant/developer shall provide documentation to show there exists a water system capable of delivering 4000 GPM for 4 hour(s) duration at 20-PSI residual operating pressure. The required fire flow may be adjusted during the approval process to reflect changes in design, construction type, or automatic fire protection measures as approved by the Fire Prevention Bureau. Specific requirements for the project will be determined at time of submittal. (CFC 507.3, Appendix B) .
- F3. Industrial, Commercial, Multi-family, Apartment, Condominium, Townhouse or Mobile Home Parks. A combination of on-site and off-site super fire hydrants (6" x 4" x 2 1/2" x 2 1/2") and super enhanced fire hydrants (6" x 4" x 4" x 2 1/2") shall not be closer than 40 feet and more than 150 feet from any portion of the building as measured along approved emergency vehicular travel ways. The required fire flow shall be available from any adjacent fire hydrant(s) in the system. Where new water mains are extended along streets where hydrants are not needed for protection of structures or similar fire problems, super or enhanced fire hydrants as determined by the fire code official shall be provided at spacing not to exceed 500 feet of frontage for transportation hazards. (CFC 507.5.7 & MVMC 8.36.060 Section K, L)

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- F4. Prior to issuance of Certificate of Occupancy or Building Final, “Blue Reflective Markers” shall be installed to identify fire hydrant locations in accordance with City specifications. (CFC 509.1 and MV City Standard Engineering Plan 422 a, b, c)
- F5. During phased construction, dead end roadways and streets which have not been completed shall have a turn-around capable of accommodating fire apparatus. (CFC 503.1 and 503.2.5)
- F6. If construction is phased, each phase shall provide an approved emergency vehicular access way for fire protection prior to any building construction. (CFC 501.4)
- F7. Prior to issuance of Building Permits, the applicant/developer shall provide the Fire Prevention Bureau with an approved site plan for Fire Lanes and signage. (CFC 501.3)
- F8. Prior to construction and issuance of building permits, all locations where structures are to be built shall have an approved Fire Department emergency vehicular access road (all weather surface) capable of sustaining an imposed load of 80,000 lbs. GVW, based on street standards approved by the Public Works Director and the Fire Prevention Bureau. (CFC 501.4 and MV City Standard Engineering Plan 108d)
- F9. Prior to construction and issuance of Building Permits, fire lanes and fire apparatus access roads shall have an unobstructed width of not less than thirty (30) feet as approved by the Fire Prevention Bureau and an unobstructed vertical clearance of not less the thirteen (13) feet six (6) inches. (CFC 503.2.1 and MVMC 8.36.060[E])
- F10. Prior to construction, all roads, driveways and private roads shall not exceed 12 percent grade. (CFC 503.2.7 and MVMC 8.36.060[G])
- F11. Prior to construction, all locations where structures are to be built shall have an approved Fire Department access based on street standards approved by the Public Works Director and the Fire Prevention Bureau. (CFC 501.4)
- F12. Prior to building construction, dead end roadways and streets which have not been completed shall have a turnaround capable of accommodating fire apparatus. (CFC 503.2.5)

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- F13. The angle of approach and departure for any means of Fire Department access shall not exceed 1 ft drop in 20 ft (0.3 m drop in 6 m), and the design limitations of the fire apparatus of the Fire Department shall be subject to approval by the AHJ. (CFC 503 and MVMC 8.36.060)
- F14. Prior to construction, “private” driveways over 150 feet in length shall have a turn-around as determined by the Fire Prevention Bureau capable of accommodating fire apparatus. Driveway grades shall not exceed 12 percent. (CFC 503 and MVMC 8.36.060, CFC 501.4)
- F15. Prior to issuance of Certificate of Occupancy or Building Final, all commercial buildings shall display street numbers in a prominent location on the street side and rear access locations. The numerals shall be a minimum of six (6) inches in height for buildings and six (6) inches in height for suite identification on a contrasting background. Unobstructed lighting of the address(s) shall be by means approved by the Fire Prevention Bureau and Police Department. In multiple suite centers (strip malls), businesses shall post the name of the business on the rear door(s). (CFC 505.1, MVMC 8.36.060[I])
- F16. Prior to issuance of a Certificate of Occupancy or Building Final, a “Knox Box Rapid Entry System” shall be provided. The Knox-Box shall be installed in an accessible location approved by the Fire Chief. All exterior security emergency access gates shall be electronically operated and be provided with Knox key switches for access by emergency personnel. (CFC 506.1)
- F17. Prior to issuance of Building Permits, the applicant/developer shall participate in the Fire Impact Mitigation Program. (Fee Resolution as adopted by City Council)
- F18. Prior to issuance of Certificate of Occupancy or Building Final, the applicant/developer shall install a fire sprinkler system based on square footage and type of construction, occupancy or use. Fire sprinkler plans shall be submitted to the Fire Prevention Bureau for approval prior to installation. (CFC Chapter 9, MVMC 8.36.100[D])
- F19. Prior to issuance of Certificate of Occupancy or Building Final, the applicant/developer shall install a fire alarm system monitored by an approved Underwriters Laboratory listed central station based on a requirement for monitoring the sprinkler system, occupancy or use. Fire alarm panel shall be accessible from exterior of building in an approved location. Plans shall be submitted to the Fire Prevention Bureau for approval prior to installation. (CFC Chapter 9 and MVMC 8.36.100)

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- F20. Prior to issuance of Building Permits, the applicant/developer shall furnish one copy of the water system plans to the Fire Prevention Bureau for review. Plans shall:
- a) Be signed by a registered civil engineer or a certified fire protection engineer;
 - b) Contain a Fire Prevention Bureau approval signature block; and
 - c) Conform to hydrant type, location, spacing of new and existing hydrants and minimum fire flow required as determined by the Fire Prevention Bureau.

After the local water company signs the plans, the originals shall be presented to the Fire Prevention Bureau for signatures. The required water system, including fire hydrants, shall be installed, made serviceable, and be accepted by the Moreno Valley Fire Department prior to beginning construction. They shall be maintained accessible.

Existing fire hydrants on public streets are allowed to be considered available. Existing fire hydrants on adjacent properties shall not be considered available unless fire apparatus access roads extend between properties and easements are established to prevent obstruction of such roads. (CFC 507, 501.3)

- F21. Complete plans and specifications for fire alarm systems, fire-extinguishing systems (including automatic sprinklers or standpipe systems), clean agent systems (or other special types of automatic fire-extinguishing systems), as well as other fire-protection systems and appurtenances thereto shall be submitted to the Moreno Valley Fire Prevention Bureau for review and approval prior to system installation. Submittals shall be in accordance with CFC Chapter 9 and associated accepted national standards.
- F22. Emergency and Fire Protection Plans shall be provided when required by the Fire Prevention Bureau. (CFC Section 105, MVMC 8.36.100[A])
- F23. Prior to issuance of Certificate of Occupancy or Building Final, the applicant/developer must submit a simple plot plan, a simple floor plan, and other plans as requested, each as an electronic file in .dwg format, to the Fire Prevention Bureau. Alternate file formats may be acceptable with approval by the Fire Chief.
- F24. Approval of the safety precautions required for buildings being constructed, altered or demolished shall be required by the Fire Chief in addition to other approvals required for specific operations or processes associated with such construction, alteration or demolition. (CFC Chapter 33 & CBC Chapter 33)

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- F25. Prior to issuance of Certificate of Occupancy or Building Final, the applicant/developer shall be responsible for obtaining underground and/or above ground tank permits for the storage of combustible liquids, flammable liquids, or any other hazardous materials from both the County of Riverside Community Health Agency Department of Environmental Health and the Fire Prevention Bureau. (CFC 105)
- F26. Prior to issuance of Certificate of Occupancy, approval shall be required from the County of Riverside Community Health Agency (Department of Environmental Health) and Moreno Valley Fire Prevention Bureau to maintain, store, use, handle materials, or conduct processes which produce conditions hazardous to life or property, and to install equipment used in connection with such activities. (CFC 105)
- F27. A permit is required to maintain, store, use or handle materials, or to conduct processes which produce conditions hazardous to life or property, or to install equipment used in connection with such activities. Such permits shall not be construed as authority to violate, cancel or set aside any of the provisions of this code. Such permit shall not take the place of any license required by law. Applications for permits shall be made to the Fire Prevention Bureau in such form and detail as prescribed by the Bureau. Applications for permits shall be accompanied by such plans as required by the Bureau. Permits shall be kept on the premises designated therein at all times and shall be posted in a conspicuous location on the premises or shall be kept on the premises in a location designated by the Fire Chief. Permits shall be subject to inspection at all times by an officer of the fire department or other persons authorized by the Fire Chief in accordance with CFC 105.
- F28. Prior to issuance of Certificate of Occupancy, permits are required to store, dispense, use or handle hazardous material. Each application for a permit shall include a hazardous materials management plan (HMMP). The location of the HMMP shall be posted adjacent to (other) permits when an HMMP is provided. The HMMP shall include a facility site plan designating the following:
- a) Storage and use areas;
 - b) Maximum amount of each material stored or used in each area;
 - c) Range of container sizes;
 - d) Locations of emergency isolation and mitigation valves and devices;
 - e) Product conveying piping containing liquids or gases, other than utility-owned fuel gas lines and low-pressure fuel gas lines;

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- f) On and off positions of valves for valves which are of the self-indicating type;
- g) Storage plan showing the intended storage arrangement, including the location and dimensions of aisles. The plans shall be legible and approximately to scale. Separate distribution systems are allowed to be shown on separate pages; and
- h) Site plan showing all adjacent/neighboring structures and use.

NOTE: Each application for a permit shall include a hazardous materials inventory statement (HMIS).

- F29. Before a Hazardous Materials permit is issued, the Fire Chief shall inspect and approve the receptacles, vehicles, buildings, devices, premises, storage spaces or areas to be used. In instances where laws or regulations are enforceable by departments other than the Fire Prevention Bureau, joint approval shall be obtained from all departments concerned. (CFC 105 Chapter 50)
- F30. Construction or work for which the Fire Prevention Bureau's approval is required shall be subject to inspection by the Fire Chief and such construction or work shall remain accessible and exposed for inspection purposes until approved. (CFC Section 105)
- F31. The Fire Prevention Bureau shall maintain the authority to inspect, as often as necessary, buildings and premises, including such other hazards or appliances designated by the Fire Chief for the purpose of ascertaining and causing to be corrected any conditions which would reasonably tend to cause fire or contribute to its spread, or any violation of the purpose or provisions of this code and of any other law or standard affecting fire safety. (CFC Section 105)
- F32. Permit requirements issued, which designate specific occupancy requirements for a particular dwelling, occupancy, or use, shall remain in effect until such time as amended by the Fire Chief. (CFC Section 105)
- F33. In accordance with the California Fire Code Appendix Chapter 1, where no applicable standards or requirements are set forth in this code, or contained within other laws, codes, regulations, ordinances or bylaws adopted by the jurisdiction, compliance with applicable standards of the National Fire Protection Association or other nationally recognized fire safety standards as are approved shall be deemed as prima facie evidence of compliance with the intent of this code as approved by the Fire Chief. (CFC Section 102.8)

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- F34. Any alterations, demolitions, or change in design, occupancy and use of buildings or site will require plan submittal to the Fire Prevention Bureau with review and approval prior to installation. (CFC 102.3)
- F35. Prior to Certificate of Occupancy all locations where medians are constructed and prohibit vehicular ingress/egress into or away from the site, provisions must be made to construct a median-crossover at all locations determined by the Fire Marshal and the City Engineer. Prior to the construction, design plans will be submitted for review and approval by the City Engineer and all applicable inspections conducted by Land Development Division.
- F36. Prior to construction, all traffic calming designs/devices must be approved by the Fire Marshal and City Engineer.

PUBLIC WORKS DEPARTMENT – LAND DEVELOPMENT DIVISION

The following are the Public Works Department – Land Development Division Conditions of Approval for this project and shall be completed at no cost to any government agency. All questions regarding the intent of the following conditions shall be referred to the Public Works Department – Land Development Division.

General Conditions

- LD1. (G) The developer shall comply with all applicable City ordinances and resolutions including the City's Municipal Code (MC) and if subdividing land, the Government Code (GC) of the State of California, specifically Sections 66410 through 66499.58, said sections also referred to as the Subdivision Map Act (SMA). (MC 9.14.010)
- LD2. (G) If the project involves the subdivision of land, maps may be developed in phases with the approval of the City Engineer. Financial security shall be provided for all improvements associated with each phase of the map. The boundaries of any multiple map increment shall be subject to the approval of the City Engineer. The City Engineer may require the dedication and construction of necessary utilities, streets or other improvements outside the area of any particular map, if the improvements are needed for circulation, parking, access, or for the welfare or safety of the public. (MC 9.14.080, GC 66412 and 66462.5).
- LD3. (G) It is understood that the tentative map correctly shows all existing easements, traveled ways, and drainage courses, and that their omission may require the map or plans associated with this application to be resubmitted for further consideration. (MC 9.14.040)

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- LD4. (G) In the event right-of-way or offsite easements are required to construct offsite improvements necessary for the orderly development of the surrounding area to meet the public health and safety needs, the developer shall make a good faith effort to acquire the needed right-of-way in accordance with the Land Development Division's administrative policy. In the event that the developer is unsuccessful, he shall enter into an agreement with the City to acquire the necessary right-of-way or offsite easements and complete the improvements at such time the City acquires the right-of-way or offsite easements which will permit the improvements to be made. The developer shall be responsible for all costs associated with the right-of-way or easement acquisition. (GC 66462.5)
- LD5. (G) If improvements associated with this project are not initiated within two years of the date of approval of the Public Improvement Agreement, the City Engineer may require that the improvement cost estimate associated with the project be modified to reflect current City construction costs in effect at the time of request for an extension of time for the Public Improvement Agreement or issuance of a permit.
- LD6. (G) The developer shall monitor, supervise and control all construction and construction supportive activities, so as to prevent these activities from causing a public nuisance, including but not limited to, insuring strict adherence to the following:
- (a) Removal of dirt, debris, or other construction material deposited on any public street no later than the end of each working day.
 - (b) Observance of working hours as stipulated on permits issued by the Public Works Department.
 - (c) The construction site shall accommodate the parking of all motor vehicles used by persons working at or providing deliveries to the site.
 - (d) All dust control measures per South Coast Air Quality Management District (SCAQMD) requirements shall be adhered to during the grading operations.

Violation of any condition or restriction or prohibition set forth in these conditions shall subject the owner, applicant, developer or contractor(s) to remedies as noted in the City Municipal Code 8.14.090. In addition, the City Engineer or Building Official may suspend all construction related activities for violation of any condition, restriction or prohibition set forth in these conditions until such time as

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it has been determined that all operations and activities are in conformance with these conditions.

- LD7. (G) The developer shall protect downstream properties from damage caused by alteration of drainage patterns, i.e., concentration or diversion of flow. Protection shall be provided by constructing adequate drainage facilities, including, but not limited to, modifying existing facilities or by securing a drainage easement. (MC 9.14.110)
- LD8. (G) Public drainage easements, when required, shall be a minimum of 25 feet wide and shall be shown on the map and plan, and noted as follows: "Drainage Easement – no structures, obstructions, or encroachments by land fills are allowed." In addition, the grade within the easement area shall not exceed a 3:1 (H:V) slope, unless approved by the City Engineer.
- LD9. (G) A detailed drainage study shall be submitted to the City Engineer for review and approval at the time of any improvement or grading plan submittal. The study shall be prepared by a registered civil engineer and shall include existing and proposed hydrologic conditions. Hydraulic calculations are required for all drainage control devices and storm drain lines. (MC 9.14.110). Prior to approval of the related improvement or grading plans, the developer shall submit the approved drainage study, on compact disk, in (.pdf) digital format to the Land Development Division of the Public Works Department.
- LD10. (G) Prior to final map approval, commencing applicable street improvements, or obtaining the first building permit, the developer shall enter into a Development Impact Fee (DIF) Improvement Credit Agreement to secure credit and reimbursement for the construction of applicable arterial street, traffic signal, and/or interchange improvements. If the developer fails to complete this agreement prior to the timing as specified above, no credits or reimbursements will be given. The applicant shall pay Arterial Streets, Traffic Signals, and Interchange Improvements development impact fees adopted by the City Council by resolution. (Ord. 695 § 1.1 (part), 2005) (MC 3.38.030, .040, .050)
- LD11. (G) The final conditions of approval issued by the Planning Division subsequent to Planning Commission approval shall be photographically or electronically placed on mylar sheets and included in the Grading and Street Improvement plan sets on twenty-four (24) inch by thirty-six (36) inch mylar and submitted with the plans for plan check. These conditions of approval shall become part of these plan sets and the approved plans shall be available in the field during grading and construction.

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Prior to Grading Plan Approval or Grading Permit

- LD12. (GPA) Prior to approval of the grading plans, plans shall be drawn on twenty-four (24) inch by thirty-six (36) inch mylar and signed by a registered civil engineer and other registered/licensed professional as required.
- LD13. (GPA) Prior to approval of grading plans, the developer shall ensure compliance with the City Grading ordinance, these Conditions of Approval and the following criteria:
- (a) The project street and lot grading shall be designed in a manner that perpetuates the existing natural drainage patterns with respect to tributary drainage area and outlet points. Unless otherwise approved by the City Engineer, lot lines shall be located at the top of slopes.
 - (b) Any grading that creates cut or fill slopes adjacent to the street shall provide erosion control, sight distance control, and slope easements as approved by the City Engineer.
 - (c) A grading permit shall be obtained from the Public Works Department Land Development Division prior to commencement of any grading outside of the City maintained road right-of-way.
 - (d) All improvement plans are substantially complete and appropriate clearance and at-risk letters are provided to the City. (MC 9.14.030)
 - (e) The developer shall submit a soils and geologic report to the Public Works Department – Land Development Division. The report shall address the soil's stability and geological conditions of the site.
- LD14. (GPA) Prior to grading plan approval, the developer shall select and implement treatment control best management practices (BMPs) that are medium to highly effective for treating Pollutants of Concern (POC) for the project. Projects where National Pollution Discharge Elimination System (NPDES) mandates water quality treatment control best management practices (BMPs) shall be designed per the City of Moreno Valley guidelines or as approved by the City Engineer.
- LD15. (GPA) Prior to approval of the grading plans for projects that will result in discharges of storm water associated with construction with a soil disturbance of one or more acres of land, the developer shall submit a Notice of Intent (NOI) and obtain a Waste Discharger's Identification number (WDID#) from the State

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Water Quality Control Board (SWQCB). The WDID# shall be noted on the grading plans prior to issuance of the first grading permit.

LD16. (GPA) Prior to the grading plan approval, or issuance of a building permit, if a grading permit is not required, the Developer shall submit two (2) copies of the final project-specific Water Quality Management Plan (WQMP) for review by the City Engineer that :

- (a) Addresses Site Design Best Management Practices (BMPs) such as minimizing impervious areas, maximizing permeability, minimizes directly connected impervious areas to the City's street and storm drain systems, and conserves natural areas;
- (b) Incorporates Source Control BMPs and provides a detailed description of their implementation;
- (c) Incorporates Treatment Control BMPs and provides information regarding design considerations;
- (d) Describes the long-term operation and maintenance requirements for BMPs requiring maintenance; and
- (e) Describes the mechanism for funding the long-term operation and maintenance of the BMPs.

A copy of the final WQMP template can be obtained on the City's Website or by contacting the Land Development Division of the Public Works Department.

LD17. (GPA) Prior to the grading plan approval, or issuance of a building permit, if a grading permit is not required, the Developer shall record a "Stormwater Treatment Device and Control Measure Access and Maintenance Covenant," to provide public notice of the requirement to implement the approved final project-specific WQMP and the maintenance requirements associated with the WQMP.

A boilerplate copy of the "Stormwater Treatment Device and Control Measure Access and Maintenance Covenant," can be obtained by contacting the Land Development Division of the Public Works Department.

LD18. (GPA) Prior to the grading plan approval, or issuance of a building permit, if a grading permit is not required, the Developer shall secure approval of the final project-specific WQMP from the City Engineer. The final project-specific WQMP

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shall be submitted at the same time of grading plan submittal. The approved final WQMP shall be submitted to the Storm Water Program Manager on compact disk(s) in Microsoft Word format prior to grading plan approval.

- LD19. (GPA) Prior to the grading plan approval, or issuance of a building permit as determined by the City Engineer, the approved final project-specific WQMP shall be incorporated by reference or attached to the project's Storm Water Pollution Prevention Plan as the Post-Construction Management Plan.
- LD20. (GPA) Prior to grading plan approval, the developer shall prepare a Storm Water Pollution Prevention Plan (SWPPP) in conformance with the state's Construction Activities Storm Water General Permit. A copy of the current SWPPP shall be kept at the project site and be available for review upon request. The SWPPP shall be submitted to the Storm Water Program Manager on compact disk(s) in Microsoft Word format.
- LD21. (GPA) Prior to the approval of the grading plans, the developer shall pay applicable remaining grading plan check fees.
- LD22. (GP) Prior to issuance of a grading permit, or building permit when a grading permit is not required, for projects that require a project-specific Water Quality Management Plan (WQMP), a project-specific final WQMP (F-WQMP) shall be approved. Upon approval, a WQMP Identification Number is issued by the Storm Water Management Section and shall be noted on the rough grading plans as confirmation that a project-specific F-WQMP approval has been obtained.
- LD23. (GP) Prior to issuance of a grading permit, if the fee has not already been paid prior to map approval or prior to issuance of a building permit if a grading permit is not required, the developer shall pay Area Drainage Plan (ADP) fees. The developer shall provide a receipt to the City showing that ADP fees have been paid to Riverside County Flood Control and Water Conservation District. (MC 9.14.100)
- LD24. (GP) Prior to issuance of a grading permit, security, in the form of a cash deposit (preferable), letter of credit, or performance bond shall be required to be submitted as a guarantee of the completion of the grading required as a condition of approval of the project.
- LD25. (GP) Prior to issuance of a grading permit, the developer shall pay the applicable grading inspection fees.

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Prior to Map Approval or Recordation

- LD26. (MA) Prior to approval of the map, the developer shall submit a copy of the Covenants, Conditions and Restrictions (CC&Rs) to the Land Development Division for review and approval. The CC&Rs shall include, but not be limited to, access easements, reciprocal access, private and/or public utility easements as may be relevant to the project.
- LD27. (MA) Prior to approval of the map, all street dedications shall be irrevocably offered to the public and shall continue in force until the City accepts or abandons such offers, unless otherwise approved by the City Engineer. All dedications shall be free of all encumbrances as approved by the City Engineer.
- LD28. (MA) Prior to approval of the map, security shall be required to be submitted as a guarantee of the completion of the improvements required as a condition of approval of the project. A public improvement agreement will be required to be executed.
- LD29. (MR) Prior to recordation of the map, the developer shall submit the map, on compact disks, in (.dxf) digital format to the Land Development Division of the Public Works Department.

Prior to Improvement Plan Approval or Construction Permit

- LD30. (IPA) Prior to approval of the improvement plans, the improvement plans shall be drawn on twenty-four (24) inch by thirty-six (36) inch mylar and signed by a registered civil engineer and other registered/licensed professional as required.
- LD31. (IPA) Prior to approval of the improvement plans, the developer shall submit clearances from all applicable agencies, and pay all outstanding plan check fees. (MC 9.14.210)
- LD32. (IPA) All public improvement plans prepared and signed by a registered civil engineer in accordance with City standards, policies and requirements shall be approved by the City Engineer in order for the Public Improvement Agreement and accompanying security to be executed.
- LD33. (IPA) Prior to approval of the improvement plans, securities and a public improvement agreement shall be required to be submitted and executed as a guarantee of the completion of the improvements required as a condition of approval of the project.

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- LD34. (IPA) The street improvement plans shall comply with all applicable City standards and the following design standards throughout this project:
- (a) Corner cutbacks in conformance with City Standard 208 shall be shown on the final map or, if no map is to be recorded, offered for dedication by separate instrument.
 - (b) Lot access to major thoroughfares shall be restricted except at intersections and approved entrances and shall be so noted on the final map. (MC 9.14.100)
 - (c) The minimum centerline and flow line grades shall be one percent unless otherwise approved by the City Engineer. (MC 9.14.020)
 - (d) All street intersections shall be at ninety (90) degrees plus or minus five (5) degrees per City Standard No. 706A, or as approved by the City Engineer. (MC 9.14.020)
 - (e) All reverse curves shall include a minimum tangent of one hundred (100) feet in length.
- LD35. (IPA) Prior to approval of the improvement plans, the plans shall be based upon a centerline profile, extending beyond the project boundaries a minimum distance of 300 feet at a grade and alignment approved by the City Engineer. Design plan and profile information shall include the minimum 300 feet beyond the project boundaries.
- LD36. (IPA) Prior to approval of the improvement plans, the plans shall indicate any restrictions on trench repair pavement cuts to reflect the City's moratorium on disturbing newly-constructed pavement less than three years old and recently slurry sealed streets less than one year old. Pavement cuts for trench repairs may be allowed for emergency repairs or as specifically approved in writing by the City Engineer.
- LD37. (IPA) Prior to approval of the improvement plans, the developer shall pothole to determine the exact location of existing underground utilities. The improvement plans shall be designed based on the pothole field investigation results. The developer shall coordinate with all affected utility companies and bear all costs of utility relocations.
- LD38. (IPA) Prior to approval of the improvement plans, all dry and wet utility crossings shall be potholed to determine actual elevations. Any conflicting utilities shall be

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identified and addressed on the plans. The pothole survey data shall be submitted with the street improvement plans for reference purposes.

- LD39. (IPA) Prior to approval of the improvement plans, drainage facilities with sump conditions shall be designed to convey the tributary 100-year storm flows. Secondary emergency escape shall also be provided. (MC 9.14.110)
- LD40. (IPA) Prior to the approval of the improvement plans, the hydrology study shall show that the 10-year storm flow will be contained within the curb and the 100-year storm flow shall be contained within the street right-of-way. In addition, one lane in each direction shall not be used to carry surface flows during any storm event for street sections equal to or larger than a minor arterial. When any of these criteria is exceeded, additional drainage facilities shall be installed. (MC 9.14.110 A.2)
- LD41. (IPA) The project shall be designed to accept and properly convey all off-site drainage flowing onto or through the site. All storm drain design and improvements shall be subject to review and approval of the City Engineer. In the event that the City Engineer permits the use of streets for drainage purposes, the provisions of the Development Code will apply. Should the quantities exceed the street capacity or the use of streets be prohibited for drainage purposes, as in the case where one travel lane in each direction shall not be used for drainage conveyance for emergency vehicle access on streets classified as minor arterials and greater, the developer shall provide adequate facilities as approved by the Public Works Department – Land Development Division. (MC 9.14.110)
- LD42. (CP) All work performed within the City right-of-way requires a construction permit. As determined by the City Engineer, security may be required for work within the right-of-way. Security shall be in the form of a cash deposit or other approved means. The City Engineer may require the execution of a public improvement agreement as a condition of the issuance of the construction permit. All inspection fees shall be paid prior to issuance of construction permit. (MC 9.14.100)
- LD43. (CP) Prior to issuance of a construction permit, all public improvement plans prepared and signed by a registered civil engineer in accordance with City standards, policies and requirements shall be approved by the City Engineer.
- LD44. (CP) Prior to issuance of construction permits, the developer shall submit all improvement plans on compact disks, in (.dxf) digital format to the Land Development Division of the Public Works Department.

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LD45. (CP) Prior to issuance of construction permits, the developer shall pay all applicable inspection fees.

Prior to Building Permit

LD46. (BP) Prior to issuance of a building permit, the map shall be recorded.

LD47. (BP) Prior to issuance of a building permit, all pads shall meet pad elevations per approved plans as noted by the setting of "Blue-top" markers installed by a registered land surveyor or licensed engineer.

Prior to Certificate of Occupancy

LD48. (CO) Prior to issuance of the last certificate of occupancy or building final, the developer shall pay all outstanding fees.

LD49. (CO) Prior to issuance of a certificate of occupancy, this project is subject to requirements under the current permit for storm water activities required as part of the National Pollutant Discharge Elimination System (**NPDES**) as mandated by the Federal Clean Water Act. In compliance with Proposition 218, the developer shall agree to approve the City of Moreno Valley NPDES Regulatory Rate Schedule that is in place at the time of certificate of occupancy issuance. Following are the requirements:

- a. Select one of the following options to meet the financial responsibility to provide storm water utilities services for the required continuous operation, maintenance, monitoring system evaluations and enhancements, remediation and/or replacement, all in accordance with Resolution No. 2002-46.
 - i. Participate in the mail ballot proceeding in compliance with Proposition 218, for the Common Interest, Commercial, Industrial and Quasi-Public Use NPDES Regulatory Rate Schedule and pay all associated costs with the ballot process; or
 - ii. Establish an endowment to cover future City costs as specified in the Common Interest, Commercial, Industrial and Quasi-Public Use NPDES Regulatory Rate Schedule.
- b. Notify the Special Districts Division of the intent to request building permits 90 days prior to their issuance and the financial option selected. The financial option selected shall be in place prior to the issuance of certificate of occupancy. (California Government Code & Municipal Code)

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LD50. (CO) The City of Moreno Valley has an adopted Development Impact Fee (DIF) nexus study. All projects unless otherwise exempted shall be subject to the payment of the DIF prior to issuance of occupancy. The fees are subject to the provisions of the enabling ordinance and the fee schedule in effect at the time of occupancy.

LD51. (CO) The City of Moreno Valley has an adopted area wide Transportation Uniform Mitigation Fee (TUMF). All projects unless otherwise exempted shall be subject to the payment of the TUMF prior to issuance of occupancy. The fees are subject to the provisions of the enabling ordinance and the fee schedule in effect at the time of occupancy.

LD52. (CO) Prior to issuance of a certificate of occupancy or building final, the developer shall construct all public improvements in conformance with applicable City standards, except as noted in the Special Conditions, including but not limited to the following applicable improvements:

- (a) Street improvements including, but not limited to: pavement, base, curb, gutter, cross gutter, spandrel, sidewalks, drive approaches, pedestrian ramps, street lights, signing, striping, landscaping and irrigation, pavement tapers/transitions and traffic control devices as appropriate.
- (b) Storm drain facilities including, but not limited to: storm drain pipe, storm drain laterals, open channels, catch basins and local depressions.
- (c) City-owned utilities.
- (d) Sewer and water systems including, but not limited to: sanitary sewer, potable water and recycled water.
- (e) Under grounding of existing and proposed utility lines less than 115,000 volts.
- (f) Relocation of overhead electrical utility lines including, but not limited to: electrical, cable and telephone.

LD53. (CO) Prior to issuance of a certificate of occupancy or building final, all existing and new utilities adjacent to and on-site shall be placed underground in accordance with City of Moreno Valley ordinances. (MC 9.14.130)

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- LD54. (CO) Prior to issuance of a certificate of occupancy or building final for any Commercial/Industrial facility, whichever occurs first, the owner may have to secure coverage under the State's General Industrial Activities Storm Water Permit as issued by the State Water Resources Control Board.
- LD55. (CO) Prior to issuance of a certificate of occupancy or building final, the applicant shall ensure the following, pursuant to Section XII. I. of the 2010 NPDES Permit:
- (a) Field verification that structural Site Design, Source Control and Treatment Control BMPs are designed, constructed and functional in accordance with the approved Final Water Quality Management Plan (WQMP)
 - (b) Certification of best management practices (BMPs) from a state licensed civil engineer. An original WQMP BMP Certification shall be submitted to the City for review and approval.

Prior to Acceptance of Streets into the City Maintained Road System

- LD56. (AOS) Aggregate slurry, as defined in Section 203-5 of Standard Specifications for Public Works Construction, may be required just prior to the end of the one-year warranty period of the public streets at the discretion of the City Engineer. If slurry is required, the developer/contractor must provide a slurry mix design submittal for City Engineer approval. The latex additive shall be Ultra Pave 70 (for anionic – per project geotechnical report) or Ultra Pave 65 K (for cationic – per project geotechnical report) or an approved equal. The latex shall be added at the emulsion plant after weighing the asphalt and before the addition of mixing water. The latex shall be added at a rate of two to two-and-one-half (2 to 2½) parts to one-hundred (100) parts of emulsion by volume. Any existing striping shall be removed prior to slurry application and replaced per City standards.

SPECIAL CONDITIONS

- LD57. The following project engineering design plans (24"x36" sheet size) shall be submitted for review and approval as well as additional plans deemed necessary by the City during the plan review process. As-Built Plans of these plans are also required:**
- (a) Rough Grading Plan**
 - (b) Precise Grading Plan**
 - (c) Street Improvement Plan**

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- (d) Storm Drain Plan**
- (e) Signing and Striping Plan**
- (f) Traffic Control Plan**
- (g) Final Drainage Study**
- (h) Final Water Quality Management Plan**

LD58. Prior to rough grading plan approval, this project shall demonstrate, via a final drainage study, that the increased runoff resulting from the development of this site is mitigated. During no storm event shall the flow leaving the site in the developed condition be larger than that of the pre-developed condition. The drainage study shall analyze the following events: 1, 3, 6 and 24-hour durations for the 2, 5, 10 and 100-year storm events. The applicant understands that additional detention measures, beyond those shown on the tentative map and preliminary drainage study, may be required.

LD59. Prior to rough and precise grading plan approval, the plans shall clearly show the extents of all existing easements on the property. All building structures shall be constructed outside of existing easements. All on-site and off-site easements shall be shown on the grading plan.

LD60. Prior to rough and precise grading plan approval, the plans shall clearly show that any slope near the public right-of-way has a minimum set-back area at 2% maximum of 2 feet before the start of the top or toe of slope. If the vertical height of the slope exceeds 10 feet, this set-back area shall be 3 feet minimum.

LD61. Prior to precise grading plan approval, the grading plans shall show any proposed trash enclosure as dual bin; one bin for trash and one bin for recyclables. The trash enclosure shall be per City Standard Plan MVGF-660A-0 through MVGF-660F-0.

LD62. Prior to precise grading plan approval, the grading plans shall clearly show that the parking lot conforms to City standards. The parking lot shall be 5% maximum, 1% minimum, 2% maximum at or near any disabled parking stall and travel way. Ramps, curb openings and travel paths shall all conform to current ADA standards as outlined in Department of Justice's

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“ADA Standards for Accessible Design”, Excerpt from 28 CFR Part 36. (www.usdoj.gov) and as approved by the City’s Building and Safety Division.

LD63. Prior to parcel map approval, either reciprocal access easement(s) shall be shown on the map or a separate recorded copy of a reciprocal access agreement between parcels shall be submitted to the City for review and approval.

LD64. Prior to parcel map approval, the map shall show the following:

- (a) A 100-foot right-of-way dedication for the construction of Eucalyptus Avenue.**
- (b) A 60-foot right-of-way dedication for the construction of Street “A”.**
- (c) A 4-foot right-of-way dedication for the future construction of Encilia Street along the south boundary of Parcel 5.**
- (d) An 80-foot street right-of-way vacation for the old alignment of Fir Avenue traversing Parcels 3, 4, and 5.**
- (e) A 40-foot street right-of-way vacation for the old alignment of Fir Avenue traversing and along the south boundary of Parcel 3.**
- (f) A 30-foot street right-of-way vacation for the west half of Quincy Street.**
- (g) A 16-foot right-of-way dedication along the north property line, excepting area already acquired by the City, for the future use by Caltrans.**
- (h) A drainage and access easement dedication to the City at the north boundary line at Quincy Channel for culvert maintenance and also at the north and south ends of proposed culverts at its crossing with Eucalyptus Avenue.**
- (i) A 4-foot minimum pedestrian right-of-way dedication behind any driveway approach per City Standard MVSI-112C-0.**
- (j) A 2-foot and varying width public access easement for the portions of sidewalk which are outside of the public right-of-way, along**

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Eucalyptus Avenue necessary to accommodate curb separated sidewalk.

- (k) A 6-foot wide trail easement on the north side of Eucalyptus Avenue at its proposed bridge culvert crossing over Quincy Channel.**
- (l) A varying width trail easement 8.5-foot wide to 13.5-foot wide on the north side of Eucalyptus Avenue.**
- (m) An 18.5-foot wide multi-purpose trail easement along the west side of Quincy Channel.**
- (n) An easement along the west project boundary between SR-60 and Eucalyptus Avenue for proposed water line improvements required to relocate an existing 12-inch EMWD water line from along the north project boundary to within Eucalyptus Avenue.**
- (o) Corner cutback right-of-way dedications per City Standard MVSI-165-0.**
- (p) Retention of open space lot designated as Lot D on the tentative map to be retained and maintained by the developer.**
- (q) A minimum 25-foot wide public storm drain easement across Parcel 5 along Quincy Channel from Eucalyptus Avenue to the proposed storm drain outlet at Quincy Channel.**
- (r) A minimum 30-foot wide public sewer easement across Parcel 5 along Quincy Channel from Eucalyptus Avenue to Encilia Avenue.**
- (s) A private sewer easement along the west boundary of Parcel 5 from the south Parcel 4 boundary to Encilia Avenue.**

LD65. Prior to parcel map approval, the Developer shall guarantee the construction of the following improvements by entering into a public improvement agreement and posting security. The improvements shall be completed prior to occupancy of the first building or as otherwise determined by the City Engineer.

- (a) Eucalyptus Avenue, Arterial, City Standard MVSI-104A-0 (100-foot RW / 76-foot CC) shall be constructed to full-width, within the project's frontage and 32-foot wide (12-foot lanes and 4-foot**

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shoulders) on center from the east map boundary at Quincy Channel easterly to Redlands Boulevard, including any transitions required at the intersection with Redlands Boulevard. Improvements shall consist of, but not be limited to, pavement, base, curb, gutter, sidewalk, driveway approaches, drainage structures, bridge culvert crossing, culvert structures, rip rap, offsite improvement transition/joins to existing, streetlights, pedestrian ramps, undergrounding of any power poles with overhead utility lines less than 115,000 volts, signing, striping, and dry and wet utilities.

- (b) Street "A", Local Street, City Standard MVSI-107A-0 Modified (60-foot RW / 40-foot CC) shall be constructed full-width within the project's boundaries using a Traffic Index (TI) of 10. Improvements shall consist of, but not be limited to, pavement, base, six-inch curb, gutter, sidewalk, driveway approaches, drainage structures, streetlights, pedestrian ramps, and dry and wet utilities.
- (c) Quincy Channel improvements shall consist of, but not be limited to bridge culvert crossing including headwall, rip rap, access ramp from street to bottom of channel, multi-purpose trail and access road, buried concrete channel side slope, buried concrete channel vertical wall, storm drain outlet structures (headwall and cut-off walls, sewer line crossing beneath the channel.
- (d) Driveway approaches shall be constructed per City Standard No. MVSI-112C-0. The parcel map shall show an additional 4-foot right-of-way dedication behind driveway approaches. No decorative pavers shall be placed within the public right-of-way.
- (e) Relocation of an existing water line along the north property boundary adjacent to State Route 60 to within Eucalyptus Avenue.
- (f) Removal or relocation, as determined by SCE, of existing overhead power lines along the north property boundary adjacent to State Route 60.

LD66. Prior to building permit issuance, the precise grading plan for that building shall be approved by the City and Parcel Map 35679 shall record.

LD67. Prior to building permit issuance, this project shall cause the vacation of all existing easements, especially those easements underneath proposed building footprints. This shall include, but not be limited to, the 12-foot

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wide EMWD access easement, 20-foot wide EMWD water line easement, and easements for utilities and incidental purposes granted to Southern Sierras Power Company. All utilities shall be relocated, as necessary, prior to vacation of easements. All new easements shall be granted prior to utility relocations and vacation of existing easements. All utilities shall be relocated into the proposed public right-of-way or to a location as agreed upon by the developer, the easement holder and the City Engineer, as necessary, prior to vacation of easements. All new easements shall be granted prior to utility relocations and vacation of existing easements and/or street vacations. All utility locations shall be done at no expense to the City.

LD68. Prior to occupancy permit issuance, all overhead utility lines less than 115,000 volts fronting or within the entire project site boundary shall be placed underground per Section 9.14.130C of the City Municipal Code.

LD69. As determined applicable by the City, and in accordance with the County of Riverside – Low Impact Development BMP Design Handbook (BMP Handbook) Appendix A – Infiltration Testing requirements, perform the required number of in-situ infiltration testing within the footprints of the proposed LID BMPs and provide the results in the first submittal of the Final-WQMP. Conceptually, the Engineer’s proposed infiltration feasibility is acceptable for this Preliminary WQMP. Based on the field measured results of the additional infiltration tests, the Applicant acknowledges that infiltration infeasibility may be presented which would require substantially more area than currently shown on the plans to retain the proposed design capture volumes (DCV) as required. Maximum required dedicated LID BMP area shall be in compliance with the County’s WQMP Guidance document’s effective area requirements indicated in Table 2-5, page 41.

LD70. All proposed LID BMP’s shall be designed in accordance with the BMP Handbook. This includes, but is not limited to, forebay design and volumes, and basin landscaping. Tributary areas to all LID BMPs shall be in conformance with the BMP Handbook and/or at the discretion of the City’s Land Development Division.

LD71. Applicant shall supply two sets of original owner certifications, with notarizations, and original RCE certifications, with wet-stamp and seal included as part of the required P-WQMP approval documents. Certifications shall be supplied to the City within 14 days of the date of the P-WQMP approval letter.

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- LD72. The Applicant shall prepare and submit for approval a final, project-specific water quality management plan (F-WQMP) for PA07-0084 Moreno Valley – Eucalyptus. The F-WQMP shall be consistent with the approved P-WQMP and in full conformance with the document; “Water Quality Management Plan, A Guidance Document for the Santa Ana Region of Riverside County,” with an approval date of October 22, 2012 (WQMP Guidance). The F-WQMP shall be submitted and approved prior to application for and issuance of grading permits or building permits. At a minimum, the F-WQMP shall include the following: Site design principles; Source control BMPs; LID BMPs; Operation and Maintenance requirements for BMPs; and sources of funding for BMP implementation.**
- LD73. Overall, the proposed LID BMP concept is accepted as the conceptual LID BMP implementation for the proposed site. The Applicant has proposed to incorporate the use of infiltration basins. Final design details of these basins must be provided in the first submittal of the F-WQMP. The sizes of all LID BMPs are to be determined using the current procedures set forth in the Riverside County Flood Control and Water Conservation District’s Design Handbook for Low Impact Development Best Management Practices. The Applicant acknowledges that more area than currently shown on the plans may be required to treat site runoff as required by the WQMP guidance.**
- LD74. The Applicant shall substantiate all applicable Hydrologic Condition of Concern (HCOC) issues in the first submittal of the F-WQMP.**
- LD75. The Applicant shall, prior to building or grading permit closeout or the issuance of a certificate of occupancy, demonstrate:**
- (a) That all structural BMPs have been constructed and installed in conformance with the approved plans and specifications;**
 - (b) That all structural BMPs described in the F-WQMP have been implemented in accordance with approved plans and specifications;**
 - (c) That the applicant is prepared to implement all non-structural BMPs included in the F-WQMP, conditions of approval, and building/grading permit conditions; and**
 - (d) That an adequate number of copies of the approved F-WQMP are available for the future owners/occupants of the project.**

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PUBLIC WORKS DEPARTMENT – TRANSPORTATION ENGINEERING DIVISION

Based on the information contained in our standard review process we recommend the following conditions of approval be placed on this project:

General Conditions

- TE1. Future Eucalyptus Avenue is classified as an Arterial (100’RW/76’CC) per City Standard Plan No. 104A. Any modifications or improvements undertaken by this project shall be consistent with the City’s standards for this facility. Sidewalk shall be curb separated. The project shall construct pavement improvements from the eastern property boundary to Redlands Boulevard consistent with Land Development conditions.**
- TE2. Future “A” Street is classified as a Modified Local Street (60’RW/40’CC) per City Standard Plan No. 108A. The T.I. shall be per Land Development’s conditions. The southerly terminus of the roadway shall include an end of roadway treatment satisfactory to the City Engineer. The street shall be signed for no parking/no stopping. Any modifications or improvements undertaken by this project shall be consistent with the City’s standards for this facility.**

Prior to Improvement Plan Approval or Construction Permit

- TE3. The driveways less than or equal to 40 feet in width shall conform to Section 9.11.080, and Table 9.11.080-14 of the City’s Development Code - Design Guidelines, and City Standard Plan No. 118C. Driveways wider than 40’ shall be designed as intersections with pedestrian access ramps per City standards.
- TE4. Prior to the final approval of the street improvement plans, a signing and striping plan shall be prepared per City of Moreno Valley Standard Plans - Section 4 for all streets with a cross section of 66’/44’ and wider.
- TE5. Prior to issuance of a construction permit, construction traffic control plans prepared by a qualified, Registered Civil or Traffic engineer shall be required.
- TE6. Sight distance at driveways and on streets shall conform to City Standard Plan No. 125 A, B, and C at the time of preparation of final grading, landscape, and street improvements.

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TE7. Prior to final approval of the street improvement plans, interim and ultimate alignment studies shall be approved by the City Traffic Engineer.

TE8. Prior to the final approval of the street improvement plans, the project applicant shall prepare traffic signal design plans for the following intersections:

- Redlands Boulevard/SR-60 Westbound Ramp
- Redlands Boulevard/Future Eucalyptus Avenue

TE9. Prior to the final approval of the street improvement plans, the project applicant shall design the intersection of Redlands Boulevard and Eucalyptus Avenue to provide the following geometrics:

Northbound: One left turn lane, one through lane
Southbound: One through lane, one right turn lane
Eastbound: One left turn lane, one right turn lane
Westbound: N/A

NOTE: All curb return radii shall be 50 feet.

TE10. Prior to final approval of the street improvement plans, the project applicant shall design the intersection of Redlands Boulevard and SR-60 Westbound Ramp to provide the following geometrics:

Northbound: One left turn lane, one through lane, one right turn lane
Southbound: One left turn lane, one shared through/right turn lane
Eastbound: One shared left turn/through/right turn lane
Westbound: One shared left turn/through/right turn lane

TE11. Prior to issuance of a construction permit, the project applicant shall pay to the City all applicable "Fair Share" impact fees per the findings of the Environmental Impact Report.

PRIOR TO CERTIFICATE OF OCCUPANCY OR BUILDING FINAL

TE12. (CO) Prior to issuance of a certificate of occupancy, all approved signing and striping shall be installed per current City Standards and the approved plans.

TE13. (CO) Each gated entrance from a public street will be provided with the following, or as approved by the City Engineer:

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- A. A storage lane with length sufficient to support the queuing predicted by the traffic study (minimum of 75 feet).
- B. Signing and striping at the gate, including no parking signs.
- C. A separate pedestrian entry, if pedestrian access is necessary.
- D. Presence loop detectors (or another device) within 1 or 2 feet of the gates that ensures that the gates remain open while any vehicle is in the queue.

All of these features must be kept in working order.

TE14. (CO) Prior to issuance of a certificate of occupancy, the project applicant shall construct the intersection/roadway improvements identified in TE8, TE9, and TE10 per the approved plans.

TE15. (CO) Prior to issuance of the final certificate of occupancy, the project applicant shall submit a traffic calming study for Eucalyptus Avenue located between Moreno Beach Drive and the western property boundary (Specific Plan 209) for City review and approval. Any recommendations made in the study shall be implemented by the project applicant to the satisfaction of the City Traffic Engineer prior to issuance of the final certificate of occupancy.

PRIOR TO ACCEPTANCE OF STREETS INTO THE CITY-MAINTAINED ROAD SYSTEM

TE16. Prior to the acceptance of streets into the City-maintained road system, all approved traffic control and signing and striping shall be installed per current City Standards and the approved plans.

FINANCIAL & MANAGEMENT SERVICES DEPARTMENT

Special Districts Division

Note: All Special Conditions, Modified Conditions, or Clarification of Conditions are in bold lettering. All other conditions are standard to all or most development projects.

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Acknowledgement of Conditions

The following items are the Special Districts Division's Conditions of Approval for project **PA07-0083**; this project shall be completed at no cost to any Government Agency. All questions regarding the following Conditions including but not limited to intent, requests for change/modification, variance and/or request for extension of time shall be sought from the Special Districts Division of the Financial & Management Services Department 951.413.3480 or by emailing specialdistricts@moval.org.

General Conditions

- SD1. The parcel(s) associated with this project have been incorporated into the Moreno Valley Community Services District Zone A (Parks & Community Services) and Zone C (Arterial Street Lighting). All assessable parcels therein shall be subject to annual parcel taxes for Zone A and Zone C for operations and capital improvements.
- SD2. Any damage to existing landscape areas maintained by the City of Moreno Valley due to project construction shall be repaired/replaced by the Developer, or Developer's successors in interest, at no cost to the City of Moreno Valley.
- SD3. The ongoing maintenance of any landscaping required to be installed behind the curb on **Eucalyptus Avenue and "B" Street** shall be the responsibility of the property owner.
- SD4. Street Light Authorization forms for all street lights that are conditioned to be installed as part of this project must be submitted to the Special Districts Division for approval, prior to street light installation. The Street Light Authorization form can be obtained from the utility company providing electric service to the project, either Moreno Valley Utility or Southern California Edison.

Prior to Building Permit Issuance

- SD5. (BP) This project has been identified to be included in the formation of a Map Act Area of Benefit Special District for the construction of **major thoroughfares and/or freeway** improvements. The property owner(s) shall participate in such District and pay any special tax, assessment, or fee levied upon the project property for such District. At the time of the public hearing to consider formation of the district, the property owner(s) will not protest the formation, but the property owners(s) will retain the right to object if any eventual assessment is not equitable, that is if the financial burden of the assessment is not reasonably proportionate to the benefit which the affected property obtains from the

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improvements which are to be installed. The Developer must notify the Special Districts Division of intent to request building permits 90 days prior to their issuance to determine whether the development will be subjected to this condition and in compliance with the provisions of Article 13C of the California Constitution. (Street & Highway Code, GP Objective 2.14.2, MC 9.14.100)

- SD6. (BP) This project has been identified to be included in the formation of a Community Facilities District (Mello-Roos) for **Public Safety** services, including but not limited to Police, Fire Protection, Paramedic Services, Park Rangers, and Animal Control services. The property owner(s) shall not protest the formation; however, they retain the right to object to the rate and method of maximum special tax. In compliance with Proposition 218, the property owner shall agree to approve the mail ballot proceeding (special election) for either formation of the CFD or annexation into an existing district. The Developer must notify Special Districts of intent to request building permits 90 days prior to their issuance to allow adequate time to be in compliance with the provisions of Article 13C of the California Constitution. (California Government Code Section 53313 et. seq.)
- SD7. (BP) This project is conditioned to provide a funding source for the capital improvements, energy charges, and maintenance for street lighting. The Developer shall satisfy the condition with one of the options below. The Developer must notify the Special Districts Division of its selected financial option 90 days prior to its intent to request building permits to allow adequate time to be in compliance with the provisions of Article 13C of the California Constitution.
- a. Participate in a ballot proceeding for **street lighting** and pay all associated costs with the ballot process and formation costs, if any. Financing may be structured through a Community Services District zone, Community Facilities District, Landscape and Lighting Maintenance District, or other financing structure as determined by the City; or
 - b. Establish an endowment fund to cover future operation and maintenance costs for the street lights.
 - c. Projects with privately maintained streets, establish a property Owner Association (POA) or Home Owner's Association (HOA) which will be responsible for any and all operation and maintenance costs associated with the street lights installed on private roadways. This does not apply to publicly accepted roadways.

The financial option selected shall be in place prior to the issuance of the first building permit.

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- SD8. (BP) This project is conditioned to provide a funding source for the operation and maintenance of public improvements and/or services associated with new development in that territory. The Developer shall satisfy this condition with one of the options outlined below and shall notify the Special Districts Division of its selection a minimum of 90 days prior to their obtain a building permit to allow adequate time to be in compliance with the provisions of Article 13C of the California Constitution.
- a. Participate in a special election for **maintenance/services** and pay all associated costs with the election process and formation costs, if any. Financing may be structured through a Community Facilities District, Landscape and Lighting Maintenance District, or other financing structure as determined by the City; or
 - b. Establish an endowment fund to cover the future maintenance and/or service costs.

The financial option selected shall be in place prior to the issuance of the certificate of occupancy.

- SD9. *Commercial* (BP) If Land Development, a Division of the Public Works Department, requires this project to supply a funding source necessary to provide for, but not limited to, stormwater utilities services for the monitoring of on-site facilities and performing annual inspections of the affected areas to ensure compliance with state mandated stormwater regulations, a funding source needs to be established. The Developer must notify the Special Districts Division of its selected financial option (see Land Development's related condition) 90 days prior to the City's issuance of a building permit and the financial option selected to fund the continued maintenance to allow adequate time to be in compliance with the provisions of Article 13D of the California Constitution. (California Health and Safety Code Sections 5473 through 5473.8 (Ord. 708 Section 3.1, 2006) & City of Moreno Valley Municipal Code Title 3, Section 3.50.050.)
- SD10. (BP) Prior to the issuance of the first building permit for this project, the Developer shall pay Advanced Energy fees for all applicable Residential and Arterial Street Lights required for this development. Payment shall be made to the City of Moreno Valley and collected by the Land Development Division. Fees are based upon the Advanced Energy fee rate in place at the time of payment, as set forth in the current Listing of City Fees, Charges, and Rates adopted by City Council. The Developer shall provide a copy of the receipt to the Special Districts Division (*specialdistricts@moval.org*). Any change in the project which

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may increase the number of street lights to be installed will require payment of additional Advanced Energy fees at the then current fee.

SD11. (BP) Prior to release of building permit, the Developer, or the Developer's successors or assignees, shall record with the County Recorder's Office a **Covenant of Assessments** for each assessable parcel therein, whereby the Developer covenants the existence of the Moreno Valley Community Services District, its established benefit zones, and that said parcel(s) is (are) liable for payment of annual benefit zone charges and the appropriate National Pollutant Discharge Elimination System (NPDES) maximum regulatory rate schedule when due. A recorded copy of the Covenant of Assessments shall be submitted to the Special Districts Division. A copy of the Covenant of Assessments is available from the City's website at www.moval.org or via email at specialdistricts@moval.org.

PUBLIC WORKS DEPARTMENT

Moreno Valley Utility

Note: All Special Conditions, Modified Conditions, or Clarification of Conditions are in bold lettering. All other conditions are standard to all or most development projects.

Acknowledgement of Conditions

The following items are Moreno Valley Utility's Conditions of Approval for project(s) PA07-0083, PA07-0084, PA07-0158, PA07-0159, and PA07-0160; this project shall be completed at no cost to any Government Agency. All questions regarding Moreno Valley Utility's Conditions including but not limited to, intent, requests for change/modification, variance and/or request for extension of time shall be sought from Moreno Valley Utility (the Electric Utility Division) of the Public Works Department 951.413.3500. The applicant is fully responsible for communicating with Moreno Valley Utility staff regarding their conditions.

PRIOR TO ENERGIZING MVU ELECTRIC UTILITY SYSTEM AND CERTIFICATE OF OCCUPANCY

MVU1. (CO) For single family subdivisions, a three foot easement along each side yard property line shall be shown on the final map and offered for dedication to the City of Moreno Valley for public utility purposes, unless otherwise approved by the City Engineer. If the project is a multi-family development,

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townhome, condominium, or apartment, and it requires the installation of electric distribution facilities within common areas, a perpetual non-exclusive easement shall be provided to Moreno Valley Utility to include all such common areas. All easements shall include the rights of ingress and egress for the purpose of operation, maintenance, facility repair, and meter reading.

For a commercial or industrial project a non-exclusive blanket easement shall be provided to Moreno Valley Utility. In the event a non-exclusive blanket easement cannot be provided, a perpetual non-exclusive specific easement shall be provided to Moreno Valley Utility. All easements shall include the rights of ingress and egress for the purpose of operation, maintenance, facility repair, and meter reading.

- MVU2. **(CO) City of Moreno Valley Municipal Utility Service – Electrical Distribution:** Prior to constructing the MVU Electric Utility System, the developer shall submit a detailed engineering plan showing design, location and schematics for the utility system to be approved by the City Engineer. In accordance with Government Code Section 66462, the Developer **shall** execute an agreement with the City providing for the installation, construction, improvement and dedication of the utility system following recordation of final map and concurrent with trenching operations and other subdivision improvements so long as said agreement incorporates the approved engineering plan and provides financial security to guarantee completion and dedication of the utility system.

The Developer **shall** coordinate and receive approval from the City Engineer to install, construct, improve, and dedicate to the City, or the City’s designee, all utility infrastructure (including but not limited to conduit, equipment, vaults, ducts, wires, switches, conductors, transformers, and “bring-up” facilities including electrical capacity to serve the identified development and other adjoining/abutting/ or benefiting projects as determined by Moreno Valley Utility) – collectively referred to as “utility system” (to and through the development), along with any appurtenant real property easements, as determined by the City Engineer to be necessary for the distribution and /or delivery of any and all “utility services” to each lot and unit within the Tentative Map. For purposes of this condition, “utility services” shall mean electric, cable television, telecommunication (including video, voice, and data) and other similar services designated by the City Engineer. “Utility services” shall not include sewer, water, and natural gas services, which are addressed by other conditions of approval.

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The City, or the City's designee, shall utilize dedicated utility facilities to ensure safe, reliable, sustainable and cost effective delivery of utility services and maintain the integrity of streets and other public infrastructure. Developer shall, at developer's sole expense, install or cause the installation of such interconnection facilities as may be necessary to connect the electrical distribution infrastructure within the project to the Moreno Valley Utility owned and controlled electric distribution system.

- MVU3. This project may be subject to a Reimbursement Agreement. The project may be responsible for a proportionate share of costs associated with electrical distribution infrastructure previously installed that directly benefits the project. Payment shall be required prior to issuance of building permits.
- MVU4. For all new projects, existing Moreno Valley Utility electrical infrastructure shall be preserved in place. The developer will be responsible, at developer expense, for any and all costs associated with the relocation of any of Moreno Valley Utility's underground electrical distribution facilities, as determined by Moreno Valley Utility, which may be in conflict with any developer planned construction on the project site.

PARKS AND COMMUNITY SERVICES DEPARTMENT

Note: All Special Conditions, Modified Conditions, or Clarification of Conditions are in bold lettering. All other conditions are standard to all or most development projects.

Acknowledgement of Conditions

The following items are Parks and Community Services Department Conditions of Approval; this project shall be completed at no cost to any Government Agency. All questions regarding Parks and Community Services Department Conditions including but not limited to, intent, requests for change/modification, variance and/or request for extension of time shall be sought from the Parks and Community Services Department 951.413.3280. The applicant is fully responsible for communicating with the Parks and Community Services Department project manager regarding the conditions.

SPECIFIC CONDITIONS OF APPROVAL

- PCS1.**A multi-use trail shall be located along the west side of Quincy Channel and east side of Quincy Street (or its alignment). Additionally, the trail is to be located over the Quincy Channel, on the south side of Fir Avenue, connecting to the

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Quincy trail. The trail shall be 14' in width, with a 2' stamped colored concrete section between curb and trail. The trail shall be dedicated as an easement to the City from a lettered lot owned by Riverside County Flood Control and Water Conservation District.

PCS2.Parks and Community Services Department – Standard Trail Conditions:

- a. Trail construction shall adhere to: The City's Standard Plans, 'The Greenbook Standard Specifications for Public Works Construction', 'California Code of Regulations Title 24' (where applicable), and the Park and Community Services Specification Guide.
- b. The General Contractor shall be a State of California Class 'A' General Engineering Contractor, per the Business and Professions Code Section 7056, or a combination of State of California Class 'C' licenses for which the work is being performed. Licenses must be current and in good standing, for the duration of the project.
- c. All utility easements shall not interfere with the trail or its fencing. A map of all easements and the corresponding easement rights shall be presented to Parks and Community Services prior to scheduling the Tentative Map for approval.
- d. (R) A restriction shall be placed on lots that are adjacent to the trail, preventing openings or gates accessing the trail. This shall be done through Covenants, Conditions, and Restrictions (CC&R's). A copy of the CC&R's with this/her restriction noted shall be submitted and approved by the Director of Parks and Community Services or his/her designee prior to the recordation of the Final Map.
- e. Trails shall not be shared with any above ground utilities, blocking total width access.
- f. The following plans require Parks and Community Services written approval: Tentative tract/parcel maps; rough grading plans (including all Delta changes); Final Map; precise grading plans; street improvement plans; traffic signal plans; fence and wall plans; landscape plans for areas adjacent to trails; trail improvement plans.
- g. (GP) A detailed rough grading plan with profile for the trail shall be submitted and approved by the Director of Parks and Community Services or his/her designee prior to the issuance of grading permits.
- h. Grading certification and compaction tests are required, prior to any improvements being installed.
- i. A minimum two-foot graded bench is required where trails adjoin landscaped or open space areas.

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- j. (R) Prior to the approval of the Final Map, a detailed map of the trail and areas adjacent to the trail shall be submitted to the Director of Parks and Community Services or his/her designee prior for review and written approval.
- k. (R) All necessary documents to convey to the City and/or the Community Services District any required dedications for parks or open space, as specified on the tentative map or in these Conditions of Approval shall be submitted by the developer to Parks and Community Services, prior to the recordation of the final map.
- l. (R) Prior to recordation of the Final Map, the developer shall post security (bonds) to guarantee construction of the trail to the City's standards. Copies of the bonds shall be provided to Parks and Community Services, prior to the approval of the Final Map.
- m. (BP) Prior to the issuance of the first Building Permit, final improvement plans (mylars and AutoCAD & PDF file on a CD-ROM) shall be reviewed and approved by the Community Development Department – Planning Division; the Public Works Department – Land Development and Transportation Division; Fire Prevention; and Parks and Community Services Department. Landscaped areas adjacent to the park shall be designed to prevent water on the park.
- n. Eight sets of complete trail improvement plans shall be submitted to Parks and Community Services for routing. Adjacent landscaping and walls shall be shown on the plans. Final construction plans and details require wet stamped and signed Mylars, eight sets of bond copies and one Mylar copy from the City signed mylars, the AutoCAD file on CD, and a PDF file on CD. As-builts for the trails have the same requirements as final plan submittals.
- o. All street crossings shall be signed with approved 'STOP' signs, trail signs, and posts. All improved equestrian trail crossings at signalized intersections that are constructed at their ultimate locations shall have high mounted push buttons. These shall be coordinated through the Transportation Division.
- p. CSD Zone 'A' plan check fees shall be paid prior to the second plan check.
- q. CSD Zone 'A' inspection fees shall be paid prior to signing of Mylars.
- r. (BP) The trail shall be surveyed and staked by the developer. The trail shall be inspected and approved by the Director of Parks and Community Services or his/her designee prior to the issuance of any building permits for production units.
- s. Any damage to trails or fencing during construction shall be repaired by the developer and inspected by the Director of Parks and Community Services or his/her designee; prior to the last phase of building permit issuance.
- t. A minimum 38' radius shall be incorporated on all trails where a change of direction occurs (minor or major). Additionally, widening of the trail is necessary in most situations.
- u. Drive approaches shall adhere to City Std. Plan #118C.

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- v. Concrete access areas to trails with decomposed granite surfaces shall be rough finished concrete (typically raked finish). The access shall extend to the main trail flat surface.
- w. (BP) In order to prevent the delay of building permit issuance, any deviation from trail fencing materials or trail surface materials shall be submitted to Director of Parks and Community Services or his/her designee and approved in writing 60-days prior to the commencement of trail construction.
- x. Any unauthorized deviation from the approved plan, specifications, City Standard Plans, or Conditions of Approval may result in the delay of building permit issuance and/or building Finals/ Certificate of Occupancy of the project conditioned for improvements.
- y. Where required, decorative solid-grouted block wall (no precision block, stucco, veneer finishes, PVC, or wood fencing) with a minimum height of 72” on the trailside shall be installed along lots that adjoin the trail. Block walls shall be located solely on private property. If landscaping is to be utilized between the block wall and the trail, a PVC fence shall be installed along the trail separating the landscaping from the trail (where required). All block walls that have public view shall have an anti-graffiti coating per Parks and Community Services specifications. Combination block/tubular steel fences shall only be utilized where approved by Parks and Community Services. Tubular steel shall comply with Parks and Community Services standards. Coating for tubular steel shall be anti-graffiti coating for metal per Parks and Community Services specifications. If alternate products are requested, the requested material(s) shall be presented to the Director of Parks and Community Services or his/her designee for review and approval. Under no circumstances can alternate products be utilized without prior written authorization from the Director of Parks and Community Services or his/her designee.
- z. Any damage to existing landscape or hardscape areas due to project construction shall be repaired/replaced by the developer, or developer’s successors in interest, at no cost to the City or Community Services District.
- aa. All inspections shall be requested two (2) working days in advance from the Parks and Community Services Department at the time of rough and precise grading; fence and gate installation; curb and drainage; flatwork; D.G. installation; graffiti coating; and final inspection.
- bb. (BP) Trail construction in single family developments shall commence prior to 30% of total building permit issuance. Trail completion and acceptance (single family developments) for maintenance shall be completed prior to 70% of total building permit issuance.
- cc. (CO) Trail construction in multi-family or commercial developments shall commence with the rough grading. Trail completion and acceptance for maintenance shall be completed prior to the issuance of 50% of the total

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certificates-of-occupancy (for multi-family and/or commercial developments).

- PCS3.** (R) If Special Districts, a Division of the Public Works Department, requires this project to supply a funding source for the continued maintenance, enhancement, and or retrofit of neighborhood parks, open spaces, linear parks, and/or trails systems, the Developer must notify Special Districts of intent to record the final map 70 days prior to recordation of the final map and the financial option selected to fund the continued maintenance. (California Government Code, GP Chapter 2.7)
- PCS3b.** (BP) If Special Districts, a Division of the Public Works Department, requires this project to supply a funding source for the continued maintenance, enhancement, and or retrofit of neighborhood parks, open spaces, linear parks, and/or trails systems, the Developer must notify Special Districts of intent to request building permits 70 days prior to their issuance and the financial option selected to fund the continued maintenance. (California Government Code, GP Chapter 2.7)
- PCS4.** The parcel(s) associated with this project have been incorporated into the Moreno Valley Community Services Districts Zones A (Parks and Community Services). All assessable parcels therein shall be subject to the annual Zone A charge for operations and capital improvements.
- PCS5.** (R) Prior to recordation of the final map, the developer, or the developer's successors or assignees, shall supply a copy of the recorded Declaration of Covenant and Acknowledgement of Assessments to the Parks and Community Services Department.
- PCS6.** (BP) Prior to release of building permit, the developer, or the developer's successors or assignees shall supply a copy of the recorded Declaration of Covenant and Acknowledgement of Assessments to the Parks and Community Services Department.
- PCS7.** (BP) This project is subject to current Development Impact Fees at time of building permit issuance.
- PCS8.** Any modified or newly created agreements shall be reviewed and approved by the Board of the Moreno Valley Community Services District.

POLICE DEPARTMENT

Note: All Special conditions are in bold lettering. All other conditions are standard

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Date Adopted: October 14, 2014

**PLANNING DIVISION
CONDITIONS OF APPROVAL
PA07-0083, PA07-0158, PA07-0159, AND PA07-0160
PAGE 77 OF 68**

to all or most development projects

Standard Conditions

- PD1. Prior to the start of any construction, temporary security fencing shall be erected. The fencing shall be a minimum of six (6) feet high with locking, gated access and shall remain through the duration of construction. Security fencing is required if there is: construction, unsecured structures, unenclosed storage of materials and/or equipment, and/or the condition of the site constitutes a public hazard as determined by the Public Works Department. If security fencing is required, it shall remain in place until the project is completed or the above conditions no longer exist. (MC 9.08.080)
- PD2. (GP) Prior to the issuance of grading permits, a temporary project identification sign shall be erected on the site in a secure and visible manner. The sign shall be conspicuously posted at the site and remain in place until occupancy of the project. The sign shall include the following:
- a. The name (if applicable) and address of the development.
 - b. The developer's name, address, and a 24-hour emergency telephone number. (MC 9.08.080)
- PD3. (CO) Prior to the issuance of a Certificate of Occupancy, an Emergency Contact Information Form for the project shall be completed at the permit counter of the Community & Economic Development Department - Building Division for routing to the Police Department. (MC 9.08.080)

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RESOLUTION NO. 2014-59

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF MORENO VALLEY, CALIFORNIA, APPROVING TENTATIVE PARCEL MAP 35679 (PA07-0084) FOR DEVELOPMENT OF THE 1,529,498 SQUARE FOOT PROLOGIS EUCALYPTUS INDUSTRIAL PARK PROJECT WITHIN THE 84 ACRES OF ASSESSOR'S PARCEL NUMBERS 488-330-011, 488-330-022, 488-330-023, 488-330-024, AND 488-330-032

Section 1:

WHEREAS, the applicant, Prologis, has filed an application for the approval of PA07-0084 or Tentative Parcel Map No. 35679 to re-configure the existing five parcels located within the project site into five parcels.

WHEREAS, the Planning Commission of the City of Moreno Valley held public hearings on March 13, 2014 and April 24, 2014 to consider the subject application and all of the environmental documentation prepared for the project and recommended City Council approval on April 24, 2014; and

WHEREAS, on June 24, 2014, the City Council of the City of Moreno Valley held a public hearing to consider the subject application and all of the environmental documentation prepared for the project; and

WHEREAS, on June 24, 2014, the City Council continued the public hearing for this project to the July 8, 2014 City Council agenda; and

WHEREAS, on July 8, 2014 the City Council continued the project to the August 26, 2014 City Council agenda at the request of the applicant; and

WHEREAS, on August 26, 2014, the City Council continued the project to the October 14, 2014 City Council agenda at the request of the applicant; and

WHEREAS, on October 14, 2014, the City Council conducted a public hearing to consider the revised project application and all of the environmental documentation prepared for the project; and

WHEREAS, all legal prerequisites to the adoption of this Resolution have occurred; and

WHEREAS, there is hereby imposed on the subject development project certain fees, dedications, reservations and other exactions pursuant to state law and City ordinances; and

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WHEREAS, pursuant to Government Code Section 66020(d)(1), NOTICE IS HEREBY GIVEN that this project is subject to certain fees, dedications, reservations and other exactions as provided herein.

NOW, THEREFORE, BE IT RESOLVED, it is hereby found, determined and resolved by the City Council of the City of Moreno Valley as follows:

A. This City Council hereby specifically finds that all of the facts set forth above in this Resolution are true and correct.

B. Based upon substantial evidence presented to this City Council during the above-referenced meetings on June 24, 2014, July 8, 2014, August 26, 2014, and October 14, 2014, including written and oral staff reports, and the record from the public hearing, this City Council hereby specifically finds as follows:

1. Conformance with General and Specific Plans – That the proposed land division is consistent with applicable general and specific plans.

FACT: The proposed tentative parcel map is consistent with the existing General Plan designations (BP, BPX, R15, R5 and RA-2) of the project site as well as the proposed change to Light Industrial. The proposed parcel map will re-configure the existing five parcels located within the project site into five parcels. The proposed land division is consistent with existing goals, objectives, policies and programs of the general plan.

2. Design Conformance with General and Specific Plans – That the design or improvement of the proposed land division is consistent with applicable general and specific plans.

FACT: The tentative parcel map as designed and conditioned will provide improvements that are consistent with the requirements of the project site's existing General Plan land use designations (BP, BPX, R15, R5 and RA-2) as well as the proposed change to Light Industrial.

3. Physically Suitable for Proposed Development – That the site of the proposed land division is physically suitable for the type of development.

FACT: The project site is comprised of multiple vacant rectangular shaped parcels that are mostly flat with seasonal washes along the sites eastern and southern boundaries. The project is located on the south side of State Route 60 and east of the Moreno Valley Auto Mall. Land uses to the north include the adjacent freeway with Office Commercial, R2 and RA-2 zoned land north of the freeway. Land uses to the east include a mix of Light Industrial and Community Commercial zoned land and RA-2 zoned land with a developed warehouse facility further to the east. Land uses to

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the south include vacant RA-2 zone with developed tract homes across the channel from the project site. Overall, the project site is well suited for the proposed subdivision.

4. Physically Suitable for Proposed Density – That the site of the proposed land division is physically suitable for the proposed density of the development.

FACT: The project site is mostly flat with seasonal washes along the sites eastern and southern boundaries. The parcel map is designed in accordance with the provisions of the City's Municipal Code. The project site is physically suitable for the subdivision.

5. Protection of Fish or Wildlife Habitat – That the design of the proposed land division or the proposed improvements are not likely to cause substantial environmental damage or substantially and unavoidably injure fish or wildlife or their habitat.

FACT: A Final EIR has been prepared in accordance with the provisions of the California Environmental Quality Act (CEQA), concluding that with mitigation and as conditioned and designed, the proposed subdivision would result in less than significant impacts to Fish and Wildlife resources. The project has also been determined to be consistent with the Multiple Species Habitat Conservation Plan (MSHCP).

6. Health, Safety and Welfare – That the design of the proposed land division or the type of improvements are unlikely to cause serious public health problems.

FACT: As conditioned, the proposed parcel map would not cause serious public health problems. The Eastern Municipal Water District will provide water and sewer services to the project site. There are no known hazardous conditions associated with the property, the design of the land division or the type of improvements.

7. Easements – That the design of the land division or the type of improvements will not conflict with easements acquired by the public at large for access through or use of property within the proposed subdivision.

FACT: The tentative parcel map has been designed to accommodate and not conflict with existing easements on the subject site including utility and storm drain easements.

8. Consistent with Applicable City Ordinances – That the proposed land division and the associated design and improvements are consistent with applicable ordinances of the city.

FACT: The tentative parcel map is designed in accordance with the provisions of the City's Municipal Code.

9. Passive or Natural Heating and Cooling – That the design of the land division provides, to the extent feasible, for future passive or natural heating and cooling opportunities in the subdivision.

FACT: The design of this parcel map, to the extent feasible, allows solar access for passive heating and opportunities for placement of shade trees and other vegetation for cooling.

10. Regional Housing – That the effect of the proposed land division on the housing needs of the region were considered and balanced against the public service needs of the residents of Moreno Valley and available fiscal and environmental resources.

FACT: The project does not exceed the planned density, the associated public service demand, or the demand for environmental resources envisioned by the Moreno Valley General Plan. The project will supplement the City's fiscal resources by paying impact fees for public facilities.

Section 2:

FEES, DEDICATIONS, RESERVATIONS, AND OTHER EXACTIONS

1. FEES

Impact, mitigation and other fees are due and payable under currently applicable ordinances and resolutions. These fees may include but are not limited to: Development Impact Fee, Transportation Uniform Mitigation Fee (TUMF), Multi-species Habitat Conservation Plan (MSHCP) Mitigation Fee, Stephens Kangaroo Habitat Conservation fee, Underground Utilities in lieu Fee, Area Drainage Plan fee, Bridge and Thoroughfare Mitigation fee (Future) and Traffic Signal Mitigation fee. The final amount of fees payable is dependent upon information provided by the applicant and will be determined at the time the fees become due and payable.

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Unless otherwise provided for by this resolution, all impact fees shall be calculated and collected at the time and in the manner provided in Chapter 3.32 of the City of Moreno Valley Municipal Code or as so provided in the applicable ordinances and resolutions. The City expressly reserves the right to amend the fees and the fee calculations consistent with applicable law.

2. DEDICATIONS, RESERVATIONS, AND OTHER EXACTIONS

The adopted Conditions of Approval for PA07-0084, incorporated herein by reference, may include dedications, reservations, and exactions pursuant to Government Code Section 66020 (d) (1).

3. CITY RIGHT TO MODIFY/ADJUST; PROTEST LIMITATIONS

The City expressly reserves the right to establish, modify or adjust any fee, dedication, reservation or other exaction to the extent permitted and as authorized by law.

Pursuant to Government Code Section 66020(d)(1), NOTICE IS FURTHER GIVEN that the 90 day period to protest the imposition of any impact fee, dedication, reservation, or other exaction described in this resolution begins on the effective date of this resolution and any such protest must be in a manner that complies with Section 66020(a) and failure to timely follow this procedure will bar any subsequent legal action to attack, review, set aside, void or annul imposition.

The right to protest the fees, dedications, reservations, or other exactions does not apply to planning, zoning, grading, or other similar application processing fees or service fees in connection with this project and it does not apply to any fees, dedication, reservations, or other exactions of which a notice has been given similar to this, nor does it revive challenges to any fees for which the Statute of Limitations has previously expired.

BE IT FURTHER RESOLVED that the City Council HEREBY APPROVES Resolution No. 2014-59.

APPROVING Tentative Parcel Map No. 35679 (PA07-0084), subject to the attached conditions of approval included as Exhibit A.

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Date Adopted: October 14, 2014

APPROVED AND ADOPTED this 14th day of October, 2014.

Mayor

ATTEST:

City Clerk

APPROVED AS TO FORM:

City Attorney

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RESOLUTION JURAT

STATE OF CALIFORNIA)
COUNTY OF RIVERSIDE) ss.
CITY OF MORENO VALLEY)

I, Jane Halstead, City Clerk of the City of Moreno Valley, California, do hereby certify that Resolution No. 2014-59 was duly and regularly adopted by the City Council of the City of Moreno Valley at a regular meeting thereof held on the 14th day of October, 2014, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

(Council Members, Mayor Pro Tem and Mayor)

CITY CLERK

(SEAL)

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**CITY OF MORENO VALLEY
CONDITIONS OF APPROVAL FOR PA07-0084
TENTATIVE PARCEL MAP NO. 35679
APN's: 488-330-011, -022, -023, -024, and -032**

**APPROVAL DATE:
EXPIRATION DATE:**

- Planning (P), including School District (S), Post Office (PO), Building (B)**
- Fire Prevention Bureau (F)**
- Public Works Department – Land Development (LD)**
- Public Works Department – Transportation Engineering (TE)**
- Financial and Management Services Dept. – Special Districts (SD)**
- Moreno Valley Utilities**
- Parks & Community Services Department (PCS)**
- Police (PD)**
- Other (Specify or Delete)**

Note: All Special conditions are in bold lettering. All other conditions are standard to all or most development projects.

COMMUNITY & ECONOMIC DEVELOPMENT DEPARTMENT

Planning Division

- P1. Tentative Parcel Map No. 35679 is approved for the purposes of re-configuring the 122 acres of Assessor's Parcel Numbers 488-330-011, -022, -023, -024, and -032 and creating five parcels.**
- P2. Development within Tentative Parcel Map No. 35679 shall be subject to the requirements of the City's Municipal Code.**
- P3. This approval shall comply with all applicable requirements of the City of Moreno Valley Municipal Code.

Timing Mechanisms for Conditions (see abbreviation at beginning of affected condition):

R - Map Recordation	GP - Grading Permits	CO - Certificate of Occupancy or building final
WP - Water Improvement Plans	BP - Building Permits	P - Any permit

Governing Document (see abbreviation at the end of the affected condition):

GP - General Plan	MC - Municipal Code	CEQA - California Environmental Quality Act
Ord - Ordinance	DG - Design Guidelines	Ldscp - Landscape Development Guidelines and Specs
Res - Resolution	UFC - Uniform Fire Code	UBC - Uniform Building Code
	SBM - Subdivision Map Act	

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**CONDITIONS OF APPROVAL FOR PA07-0084
TENTATIVE PARCEL MAP NO. 35679
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- P4. The site shall be developed in accordance with the approved tentative map on file in the Community & Economic Development Department -Planning Division, the Municipal Code regulations, General Plan, the Moreno Valley Industrial Area Plan and the conditions contained herein. (MC 9.14.020)
- P5. This tentative map shall expire three years after the approval date of this tentative map unless extended as provided by the City of Moreno Valley Municipal Code; otherwise it shall become null and void and of no effect whatsoever in the event the applicant or any successor in interest fails to properly file a final map before the date of expiration. (MC 9.02.230, 9.14.050, 080)
- P6. All undeveloped portions of the site shall be maintained in a manner that provides for the control of weeds, erosion and dust. (MC 9.02.030)
- P7. All landscaped areas shall be maintained in a healthy and thriving condition, free from weeds, trash and debris. (MC 9.02.030)

Prior to Issuance of Grading Permits

- P8. (GP) Prior to issuance of grading permits, the developer shall pay the applicable Stephen's' Kangaroo Rat (SKR) Habitat Conservation Plan mitigation fee. (Ord)
- P9. (GP) All site plans, grading plans, landscape and irrigation plans, fence/wall plans, lighting plans and street improvement plans shall be coordinated for consistency with this approval.
- P10. (GP) If potential historic, archaeological, or paleontological resources are uncovered during excavation or construction activities at the project site, work in the affected area will cease immediately and a qualified person (meeting the Secretary of the Interior's standards (36CFR61)) shall be consulted by the applicant to evaluate the find, and as appropriate recommend alternative measures to avoid, minimize or mitigate negative effects on the historic, prehistoric, or paleontological resource. Determinations and recommendations by the consultant shall be implemented as deemed appropriate by the Community Development Director, in consultation with the State Historic Preservation Officer (SHPO) and any and all affected Native American Tribes before any further work commences in the affected area.

If human remains are discovered, work in the affected area shall cease immediately and the County Coroner shall be notified. If it is determined that the remains are potentially Native American, the California Native American Heritage

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**CONDITIONS OF APPROVAL FOR PA07-0084
TENTATIVE PARCEL MAP NO. 35679
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Commission and any and all affected Native American Indians tribes such as the Morongo Band of Mission Indians or the Pechanga Band of Luiseno Indians shall be notified and appropriate measures provided by State law shall be implemented. (GP Objective 23.3, DG, CEQA).

- P11. (GP) Prior to the issuance of grading permits, final erosion control landscape and irrigation plans for all cut or fill slopes over 3 feet in height shall be submitted to the Planning Division for review and approval for the phase in process. This shall include slopes associated with swales and basins. The plans shall be designed in accordance with the slope erosion plan as required by the City Engineer for that phase. Man-made slopes greater than 10 feet in height shall be "land formed" to conform to the natural terrain and shall be landscaped and stabilized to minimize visual scarring. Graded slopes shall have variations that do not exceed 2:1 (GP Objective 1.5, MC 9.08.080, DG)
- P12. (GP) Prior to the issuance of a precise grading permit, the plan shall show decorative concrete paving for all driveway ingress/egress locations of the project. Accessible pedestrian pathways interior to the site cannot be painted. If delineation is necessary, then an alternative material is required.**
- P13. (GP) Prior to the issuance of a precise grading permit, all required planter areas, curbs, including twelve-inch concrete step outs, and required parking space striping shall be shown on the precise grading plan.**
- P14. (GP) Prior to the issuance of any grading permits, the following burrowing owl survey requirements shall be incorporated into the grading plans in accordance with the Riverside County Multi-Species Habitat Conservation Plan: Within 30 days of and prior to disturbance, a burrowing owl focused survey shall be conducted by a qualified biologist using accepted protocols. The survey shall be submitted to the Planning Division for review and approval.**

Prior to Recordation of Final Map

- P15. (R) Prior to final map recordation, subdivision phasing (including any proposed common open space or improvement phasing, if applicable), shall be subject to the Planning Division approval. Any proposed phasing shall provide for adequate vehicular access to all lots in each phase as determined by the City Transportation Engineer or designee and shall substantially conform to all intent and purpose of the subdivision approval. (MC 9.14.080)

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**CONDITIONS OF APPROVAL FOR PA07-0084
TENTATIVE PARCEL MAP NO. 35679
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Building and Safety Division

- B1. The above project shall comply with the current California Codes (CBC, CEC, CMC, CPC and Green Building Standards) as well as City ordinances. All new projects shall provide a soils report as well. Plans shall be submitted to the Building Division as a separate submittal. The 2013 Edition of the California Codes are currently in effect.
- B2. Prior to final inspection, all plans will be placed on a CD Rom for reference and verification. Plans will include “as built” plans, revisions and changes. The CD will also include Title 24 energy calculations, structural calculations and all other pertinent information. It will be the responsibility of the developer and or the building or property owner(s) to bear all costs required for this process. The CD will be presented to the Building and Safety Division for review prior to final inspection and building occupancy. The CD will become the property of the Moreno Valley Building and Safety Division at that time. In addition, a site plan showing the path of travel from public right of way and building to building access with elevations will be required.
- B3. (BP) Prior to the issuance of a building permit, the applicant shall submit a properly completed “Waste Management Plan” (WMP), as required, to the Compliance Official (Building Official) as a portion of the building or demolition permit process.
- B4. (BP) Prior to the issuance of a building permit, show on the plans that all exterior doors comply with the requirements of CBC 1133B.1.1.1 for accessible path of travel from every exit door, especially in consideration of doors that may be designated as exits due to interior obstructions to path of travel due to racks, equipment and other interior obstruction to the exit path of travel.
- B5. (BP) Prior to the issuance of a building permit, show on the plans that no gutter, drainage feature, swale or other deviation in the flat level surface at the accessible parking spaces exists within and for a minimum four foot extension beyond the outer dimensions of the parking space, loading zone and path of travel.
- B6. (BP) Plans shall be prepared, stamped and signed by a licensed Architect or Registered Civil Engineer for submission for plan check review.
- B7. (BP) Plumbing plans shall be prepared, including isometrics, for required plumbing fixtures based on California Plumbing Code, Chapter 4 and Table 4-1.

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SCHOOL DISTRICT

- S1. (BP) Prior to issuance of building permits, the developer shall provide to the Community Development Director a written certification by the affected school district that either: (1) the project has complied with the fee or other exaction levied on the project by the governing board of the district, pursuant to Government Code Section 65996; or (2) the fee or other requirement does not apply to the project.

UNITED STATES POSTAL SERVICE

- PO1. (BP) Prior to the issuance of building permits, the developer shall contact the U.S. Postal Service to determine the appropriate type and location of mailboxes.

FIRE PREVENTION BUREAU

- 1. Hydrant spacing shall be addressed in plan check.**
- 2. The following Standard Conditions shall apply.**

With respect to the conditions of approval, the following fire protection measures shall be provided in accordance with Moreno Valley City Ordinances and/or recognized fire protection standards:

- F1. Final fire and life safety conditions will be addressed when the Fire Prevention Bureau reviews building plans. These conditions will be based on occupancy, use, California Building Code (CBC), California Fire Code (CFC), and related codes, which are in force at the time of building plan submittal.
- F2. The Fire Prevention Bureau is required to set a minimum fire flow for the remodel or construction of all commercial buildings per CFC Appendix B and Table B105.1. The applicant/developer shall provide documentation to show there exists a water system capable of delivering_4000_ GPM for_4_ hour(s) duration at 20-PSI residual operating pressure. The required fire flow may be adjusted during the approval process to reflect changes in design, construction type, or automatic fire protection measures as approved by the Fire Prevention Bureau. Specific requirements for the project will be determined at time of submittal. (CFC 507.3, Appendix B) .

**CONDITIONS OF APPROVAL FOR PA07-0084
TENTATIVE PARCEL MAP NO. 35679
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- F3. Industrial, Commercial, Multi-family, Apartment, Condominium, Townhouse or Mobile Home Parks. A combination of on-site and off-site super fire hydrants (6" x 4" x 2 1/2" x 2 1/2") and super enhanced fire hydrants (6" x 4" x 4" x 2 1/2") shall not be closer than 40 feet and more than 150 feet from any portion of the building as measured along approved emergency vehicular travel ways. The required fire flow shall be available from any adjacent fire hydrant(s) in the system. Where new water mains are extended along streets where hydrants are not needed for protection of structures or similar fire problems, super or enhanced fire hydrants as determined by the fire code official shall be provided at spacing not to exceed 500 feet of frontage for transportation hazards. (CFC 507.5.7 & MVMC 8.36.060 Section K, L)
- F4. Prior to issuance of Certificate of Occupancy or Building Final, "Blue Reflective Markers" shall be installed to identify fire hydrant locations in accordance with City specifications. (CFC 509.1 and MV City Standard Engineering Plan 422 a, b, c)
- F5. During phased construction, dead end roadways and streets which have not been completed shall have a turn-around capable of accommodating fire apparatus. (CFC 503.1 and 503.2.5)
- F6. If construction is phased, each phase shall provide an approved emergency vehicular access way for fire protection prior to any building construction. (CFC 501.4)
- F7. Prior to issuance of Building Permits, the applicant/developer shall provide the Fire Prevention Bureau with an approved site plan for Fire Lanes and signage. (CFC 501.3)
- F8. Prior to construction and issuance of building permits, all locations where structures are to be built shall have an approved Fire Department emergency vehicular access road (all weather surface) capable of sustaining an imposed load of 80,000 lbs. GVW, based on street standards approved by the Public Works Director and the Fire Prevention Bureau. (CFC 501.4 and MV City Standard Engineering Plan 108d)
- F9. Prior to construction and issuance of Building Permits, fire lanes and fire apparatus access roads shall have an unobstructed width of not less than thirty (30) feet as approved by the Fire Prevention Bureau and an unobstructed vertical clearance of not less than thirteen (13) feet six (6) inches. (CFC 503.2.1 and MVMC 8.36.060[E])

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**CONDITIONS OF APPROVAL FOR PA07-0084
TENTATIVE PARCEL MAP NO. 35679
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- F10. Prior to construction, all roads, driveways and private roads shall not exceed 12 percent grade. (CFC 503.2.7 and MVMC 8.36.060[G])
- F11. Prior to construction, all locations where structures are to be built shall have an approved Fire Department access based on street standards approved by the Public Works Director and the Fire Prevention Bureau. (CFC 501.4)
- F12. Prior to building construction, dead end roadways and streets which have not been completed shall have a turnaround capable of accommodating fire apparatus. (CFC 503.2.5)
- F13. The angle of approach and departure for any means of Fire Department access shall not exceed 1 ft drop in 20 ft (0.3 m drop in 6 m), and the design limitations of the fire apparatus of the Fire Department shall be subject to approval by the AHJ. (CFC 503 and MVMC 8.36.060)
- F14. Prior to construction, "private" driveways over 150 feet in length shall have a turnaround as determined by the Fire Prevention Bureau capable of accommodating fire apparatus. Driveway grades shall not exceed 12 percent. (CFC 503 and MVMC 8.36.060, CFC 501.4)
- F15. Prior to issuance of Certificate of Occupancy or Building Final, all commercial buildings shall display street numbers in a prominent location on the street side and rear access locations. The numerals shall be a minimum of six (6) inches in height for buildings and six (6) inches in height for suite identification on a contrasting background. Unobstructed lighting of the address(s) shall be by means approved by the Fire Prevention Bureau and Police Department. In multiple suite centers (strip malls), businesses shall post the name of the business on the rear door(s). (CFC 505.1, MVMC 8.36.060[I])
- F16. Prior to issuance of a Certificate of Occupancy or Building Final, a "Knox Box Rapid Entry System" shall be provided. The Knox-Box shall be installed in an accessible location approved by the Fire Chief. All exterior security emergency access gates shall be electronically operated and be provided with Knox key switches for access by emergency personnel. (CFC 506.1)
- F17. Prior to issuance of Building Permits, the applicant/developer shall participate in the Fire Impact Mitigation Program. (Fee Resolution as adopted by City Council)
- F18. Prior to issuance of Certificate of Occupancy or Building Final, the applicant/developer shall install a fire sprinkler system based on square footage and type of construction, occupancy or use. Fire sprinkler plans shall be

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**CONDITIONS OF APPROVAL FOR PA07-0084
TENTATIVE PARCEL MAP NO. 35679
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submitted to the Fire Prevention Bureau for approval prior to installation. (CFC Chapter 9, MVMC 8.36.100[D])

- F19. Prior to issuance of Certificate of Occupancy or Building Final, the applicant/developer shall install a fire alarm system monitored by an approved Underwriters Laboratory listed central station based on a requirement for monitoring the sprinkler system, occupancy or use. Fire alarm panel shall be accessible from exterior of building in an approved location. Plans shall be submitted to the Fire Prevention Bureau for approval prior to installation. (CFC Chapter 9 and MVMC 8.36.100)
- F20. Prior to issuance of Building Permits, the applicant/developer shall furnish one copy of the water system plans to the Fire Prevention Bureau for review. Plans shall:
- a) Be signed by a registered civil engineer or a certified fire protection engineer;
 - b) Contain a Fire Prevention Bureau approval signature block; and
 - c) Conform to hydrant type, location, spacing of new and existing hydrants and minimum fire flow required as determined by the Fire Prevention Bureau.

After the local water company signs the plans, the originals shall be presented to the Fire Prevention Bureau for signatures. The required water system, including fire hydrants, shall be installed, made serviceable, and be accepted by the Moreno Valley Fire Department prior to beginning construction. They shall be maintained accessible.

Existing fire hydrants on public streets are allowed to be considered available. Existing fire hydrants on adjacent properties shall not be considered available unless fire apparatus access roads extend between properties and easements are established to prevent obstruction of such roads. (CFC 507, 501.3)

- F21. Complete plans and specifications for fire alarm systems, fire-extinguishing systems (including automatic sprinklers or standpipe systems), clean agent systems (or other special types of automatic fire-extinguishing systems), as well as other fire-protection systems and appurtenances thereto shall be submitted to the Moreno Valley Fire Prevention Bureau for review and approval prior to system installation. Submittals shall be in accordance with CFC Chapter 9 and associated accepted national standards.
- F22. Emergency and Fire Protection Plans shall be provided when required by the Fire Prevention Bureau. (CFC Section 105, MVMC 8.36.100[A])

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**CONDITIONS OF APPROVAL FOR PA07-0084
TENTATIVE PARCEL MAP NO. 35679
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- F23. Prior to issuance of Certificate of Occupancy or Building Final, the applicant/developer must submit a simple plot plan, a simple floor plan, and other plans as requested, each as an electronic file in .dwg format, to the Fire Prevention Bureau. Alternate file formats may be acceptable with approval by the Fire Chief.
- F24. Approval of the safety precautions required for buildings being constructed, altered or demolished shall be required by the Fire Chief in addition to other approvals required for specific operations or processes associated with such construction, alteration or demolition. (CFC Chapter 33 & CBC Chapter 33)
- F25. Prior to issuance of Certificate of Occupancy or Building Final, the applicant/developer shall be responsible for obtaining underground and/or above ground tank permits for the storage of combustible liquids, flammable liquids, or any other hazardous materials from both the County of Riverside Community Health Agency Department of Environmental Health and the Fire Prevention Bureau. (CFC 105)
- F26. Prior to issuance of Certificate of Occupancy, approval shall be required from the County of Riverside Community Health Agency (Department of Environmental Health) and Moreno Valley Fire Prevention Bureau to maintain, store, use, handle materials, or conduct processes which produce conditions hazardous to life or property, and to install equipment used in connection with such activities. (CFC 105)
- F27. A permit is required to maintain, store, use or handle materials, or to conduct processes which produce conditions hazardous to life or property, or to install equipment used in connection with such activities. Such permits shall not be construed as authority to violate, cancel or set aside any of the provisions of this code. Such permit shall not take the place of any license required by law. Applications for permits shall be made to the Fire Prevention Bureau in such form and detail as prescribed by the Bureau. Applications for permits shall be accompanied by such plans as required by the Bureau. Permits shall be kept on the premises designated therein at all times and shall be posted in a conspicuous location on the premises or shall be kept on the premises in a location designated by the Fire Chief. Permits shall be subject to inspection at all times by an officer of the fire department or other persons authorized by the Fire Chief in accordance with CFC 105.
- F28. Prior to issuance of Certificate of Occupancy, permits are required to store, dispense, use or handle hazardous material. Each application for a permit shall

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include a hazardous materials management plan (HMMP). The location of the HMMP shall be posted adjacent to (other) permits when an HMMP is provided. The HMMP shall include a facility site plan designating the following:

- a) Storage and use areas;
- b) Maximum amount of each material stored or used in each area;
- c) Range of container sizes;
- d) Locations of emergency isolation and mitigation valves and devices;
- e) Product conveying piping containing liquids or gases, other than utility-owned fuel gas lines and low-pressure fuel gas lines;
- f) On and off positions of valves for valves which are of the self-indicating type;
- g) Storage plan showing the intended storage arrangement, including the location and dimensions of aisles. The plans shall be legible and approximately to scale. Separate distribution systems are allowed to be shown on separate pages; and
- h) Site plan showing all adjacent/neighboring structures and use.

NOTE: Each application for a permit shall include a hazardous materials inventory statement (HMIS).

- F29. Before a Hazardous Materials permit is issued, the Fire Chief shall inspect and approve the receptacles, vehicles, buildings, devices, premises, storage spaces or areas to be used. In instances where laws or regulations are enforceable by departments other than the Fire Prevention Bureau, joint approval shall be obtained from all departments concerned. (CFC 105 Chapter 50)
- F30. Construction or work for which the Fire Prevention Bureau's approval is required shall be subject to inspection by the Fire Chief and such construction or work shall remain accessible and exposed for inspection purposes until approved. (CFC Section 105)
- F31. The Fire Prevention Bureau shall maintain the authority to inspect, as often as necessary, buildings and premises, including such other hazards or appliances designated by the Fire Chief for the purpose of ascertaining and causing to be corrected any conditions which would reasonably tend to cause fire or contribute to its spread, or any violation of the purpose or provisions of this code and of any other law or standard affecting fire safety. (CFC Section 105)
- F32. Permit requirements issued, which designate specific occupancy requirements for a particular dwelling, occupancy, or use, shall remain in effect until such time as amended by the Fire Chief. (CFC Section 105)

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- F33. In accordance with the California Fire Code Appendix Chapter 1, where no applicable standards or requirements are set forth in this code, or contained within other laws, codes, regulations, ordinances or bylaws adopted by the jurisdiction, compliance with applicable standards of the National Fire Protection Association or other nationally recognized fire safety standards as are approved shall be deemed as prima facie evidence of compliance with the intent of this code as approved by the Fire Chief. (CFC Section 102.8)
- F34. Any alterations, demolitions, or change in design, occupancy and use of buildings or site will require plan submittal to the Fire Prevention Bureau with review and approval prior to installation. (CFC 102.3)
- F35. Prior to Certificate of Occupancy all locations where medians are constructed and prohibit vehicular ingress/egress into or away from the site, provisions must be made to construct a median-crossover at all locations determined by the Fire Marshal and the City Engineer. Prior to the construction, design plans will be submitted for review and approval by the City Engineer and all applicable inspections conducted by Land Development Division.
- F36. Prior to construction, all traffic calming designs/devices must be approved by the Fire Marshal and City Engineer.

PUBLIC WORKS DEPARTMENT – LAND DEVELOPMENT DIVISION

The following are the Public Works Department – Land Development Division Conditions of Approval for this project and shall be completed at no cost to any government agency. All questions regarding the intent of the following conditions shall be referred to the Public Works Department – Land Development Division.

General Conditions

- LD1. (G) The developer shall comply with all applicable City ordinances and resolutions including the City's Municipal Code (MC) and if subdividing land, the Government Code (GC) of the State of California, specifically Sections 66410 through 66499.58, said sections also referred to as the Subdivision Map Act (SMA). (MC 9.14.010)

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- LD2. (G) If the project involves the subdivision of land, maps may be developed in phases with the approval of the City Engineer. Financial security shall be provided for all improvements associated with each phase of the map. The boundaries of any multiple map increment shall be subject to the approval of the City Engineer. The City Engineer may require the dedication and construction of necessary utilities, streets or other improvements outside the area of any particular map, if the improvements are needed for circulation, parking, access, or for the welfare or safety of the public. (MC 9.14.080, GC 66412 and 66462.5).
- LD3. (G) It is understood that the tentative map correctly shows all existing easements, traveled ways, and drainage courses, and that their omission may require the map or plans associated with this application to be resubmitted for further consideration. (MC 9.14.040)
- LD4. (G) In the event right-of-way or offsite easements are required to construct offsite improvements necessary for the orderly development of the surrounding area to meet the public health and safety needs, the developer shall make a good faith effort to acquire the needed right-of-way in accordance with the Land Development Division's administrative policy. In the event that the developer is unsuccessful, he shall enter into an agreement with the City to acquire the necessary right-of-way or offsite easements and complete the improvements at such time the City acquires the right-of-way or offsite easements which will permit the improvements to be made. The developer shall be responsible for all costs associated with the right-of-way or easement acquisition. (GC 66462.5)
- LD5. (G) If improvements associated with this project are not initiated within two years of the date of approval of the Public Improvement Agreement, the City Engineer may require that the improvement cost estimate associated with the project be modified to reflect current City construction costs in effect at the time of request for an extension of time for the Public Improvement Agreement or issuance of a permit.
- LD6. (G) The developer shall monitor, supervise and control all construction and construction supportive activities, so as to prevent these activities from causing a public nuisance, including but not limited to, insuring strict adherence to the following:
- (a) Removal of dirt, debris, or other construction material deposited on any public street no later than the end of each working day.
 - (b) Observance of working hours as stipulated on permits issued by the Public Works Department.

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- (c) The construction site shall accommodate the parking of all motor vehicles used by persons working at or providing deliveries to the site.
- (d) All dust control measures per South Coast Air Quality Management District (SCAQMD) requirements shall be adhered to during the grading operations.

Violation of any condition or restriction or prohibition set forth in these conditions shall subject the owner, applicant, developer or contractor(s) to remedies as noted in the City Municipal Code 8.14.090. In addition, the City Engineer or Building Official may suspend all construction related activities for violation of any condition, restriction or prohibition set forth in these conditions until such time as it has been determined that all operations and activities are in conformance with these conditions.

- LD7. (G) The developer shall protect downstream properties from damage caused by alteration of drainage patterns, i.e., concentration or diversion of flow. Protection shall be provided by constructing adequate drainage facilities, including, but not limited to, modifying existing facilities or by securing a drainage easement. (MC 9.14.110)
- LD8. (G) Public drainage easements, when required, shall be a minimum of 25 feet wide and shall be shown on the map and plan, and noted as follows: "Drainage Easement – no structures, obstructions, or encroachments by land fills are allowed." In addition, the grade within the easement area shall not exceed a 3:1 (H:V) slope, unless approved by the City Engineer.
- LD9. (G) A detailed drainage study shall be submitted to the City Engineer for review and approval at the time of any improvement or grading plan submittal. The study shall be prepared by a registered civil engineer and shall include existing and proposed hydrologic conditions. Hydraulic calculations are required for all drainage control devices and storm drain lines. (MC 9.14.110). Prior to approval of the related improvement or grading plans, the developer shall submit the approved drainage study, on compact disk, in (.pdf) digital format to the Land Development Division of the Public Works Department.
- LD10. (G) Prior to final map approval, commencing applicable street improvements, or obtaining the first building permit, the developer shall enter into a Development Impact Fee (DIF) Improvement Credit Agreement to secure credit and reimbursement for the construction of applicable arterial street, traffic signal, and/or interchange improvements. If the developer fails to complete this

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agreement prior to the timing as specified above, no credits or reimbursements will be given. The applicant shall pay Arterial Streets, Traffic Signals, and Interchange Improvements development impact fees adopted by the City Council by resolution. (Ord. 695 § 1.1 (part), 2005) (MC 3.38.030, .040, .050)

LD11. (G) The final conditions of approval issued by the Planning Division subsequent to Planning Commission approval shall be photographically or electronically placed on mylar sheets and included in the Grading and Street Improvement plan sets on twenty-four (24) inch by thirty-six (36) inch mylar and submitted with the plans for plan check. These conditions of approval shall become part of these plan sets and the approved plans shall be available in the field during grading and construction.

Prior to Grading Plan Approval or Grading Permit

LD12. (GPA) Prior to approval of the grading plans, plans shall be drawn on twenty-four (24) inch by thirty-six (36) inch mylar and signed by a registered civil engineer and other registered/licensed professional as required.

LD13. (GPA) Prior to approval of grading plans, the developer shall ensure compliance with the City Grading ordinance, these Conditions of Approval and the following criteria:

- (a) The project street and lot grading shall be designed in a manner that perpetuates the existing natural drainage patterns with respect to tributary drainage area and outlet points. Unless otherwise approved by the City Engineer, lot lines shall be located at the top of slopes.
- (b) Any grading that creates cut or fill slopes adjacent to the street shall provide erosion control, sight distance control, and slope easements as approved by the City Engineer.
- (c) A grading permit shall be obtained from the Public Works Department Land Development Division prior to commencement of any grading outside of the City maintained road right-of-way.
- (d) All improvement plans are substantially complete and appropriate clearance and at-risk letters are provided to the City. (MC 9.14.030)
- (e) The developer shall submit a soils and geologic report to the Public Works Department – Land Development Division. The report shall address the soil's stability and geological conditions of the site.

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LD14. (GPA) Prior to grading plan approval, the developer shall select and implement treatment control best management practices (BMPs) that are medium to highly effective for treating Pollutants of Concern (POC) for the project. Projects where National Pollution Discharge Elimination System (NPDES) mandates water quality treatment control best management practices (BMPs) shall be designed per the City of Moreno Valley guidelines or as approved by the City Engineer.

LD15. (GPA) Prior to approval of the grading plans for projects that will result in discharges of storm water associated with construction with a soil disturbance of one or more acres of land, the developer shall submit a Notice of Intent (NOI) and obtain a Waste Discharger's Identification number (WDID#) from the State Water Quality Control Board (SWQCB). The WDID# shall be noted on the grading plans prior to issuance of the first grading permit.

LD16. (GPA) Prior to the grading plan approval, or issuance of a building permit, if a grading permit is not required, the Developer shall submit two (2) copies of the final project-specific Water Quality Management Plan (WQMP) for review by the City Engineer that :

- (a) Addresses Site Design Best Management Practices (BMPs) such as minimizing impervious areas, maximizing permeability, minimizes directly connected impervious areas to the City's street and storm drain systems, and conserves natural areas;
- (b) Incorporates Source Control BMPs and provides a detailed description of their implementation;
- (c) Incorporates Treatment Control BMPs and provides information regarding design considerations;
- (d) Describes the long-term operation and maintenance requirements for BMPs requiring maintenance; and
- (e) Describes the mechanism for funding the long-term operation and maintenance of the BMPs.

A copy of the final WQMP template can be obtained on the City's Website or by contacting the Land Development Division of the Public Works Department.

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LD17. (GPA) Prior to the grading plan approval, or issuance of a building permit, if a grading permit is not required, the Developer shall record a "Stormwater Treatment Device and Control Measure Access and Maintenance Covenant," to provide public notice of the requirement to implement the approved final project-specific WQMP and the maintenance requirements associated with the WQMP.

A boilerplate copy of the "Stormwater Treatment Device and Control Measure Access and Maintenance Covenant," can be obtained by contacting the Land Development Division of the Public Works Department.

LD18. (GPA) Prior to the grading plan approval, or issuance of a building permit, if a grading permit is not required, the Developer shall secure approval of the final project-specific WQMP from the City Engineer. The final project-specific WQMP shall be submitted at the same time of grading plan submittal. The approved final WQMP shall be submitted to the Storm Water Program Manager on compact disk(s) in Microsoft Word format prior to grading plan approval.

LD19. (GPA) Prior to the grading plan approval, or issuance of a building permit as determined by the City Engineer, the approved final project-specific WQMP shall be incorporated by reference or attached to the project's Storm Water Pollution Prevention Plan as the Post-Construction Management Plan.

LD20. (GPA) Prior to grading plan approval, the developer shall prepare a Storm Water Pollution Prevention Plan (SWPPP) in conformance with the state's Construction Activities Storm Water General Permit. A copy of the current SWPPP shall be kept at the project site and be available for review upon request. The SWPPP shall be submitted to the Storm Water Program Manager on compact disk(s) in Microsoft Word format.

LD21. (GPA) Prior to the approval of the grading plans, the developer shall pay applicable remaining grading plan check fees.

LD22. (GP) Prior to issuance of a grading permit, or building permit when a grading permit is not required, for projects that require a project-specific Water Quality Management Plan (WQMP), a project-specific final WQMP (F-WQMP) shall be approved. Upon approval, a WQMP Identification Number is issued by the Storm Water Management Section and shall be noted on the rough grading plans as confirmation that a project-specific F-WQMP approval has been obtained.

LD23. (GP) Prior to issuance of a grading permit, if the fee has not already been paid prior to map approval or prior to issuance of a building permit if a grading permit is not required, the developer shall pay Area Drainage Plan (ADP) fees. The

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developer shall provide a receipt to the City showing that ADP fees have been paid to Riverside County Flood Control and Water Conservation District. (MC 9.14.100)

- LD24. (GP) Prior to issuance of a grading permit, security, in the form of a cash deposit (preferable), letter of credit, or performance bond shall be required to be submitted as a guarantee of the completion of the grading required as a condition of approval of the project.
- LD25. (GP) Prior to issuance of a grading permit, the developer shall pay the applicable grading inspection fees.

Prior to Map Approval or Recordation

- LD26. (MA) Prior to approval of the map, the developer shall submit a copy of the Covenants, Conditions and Restrictions (CC&Rs) to the Land Development Division for review and approval. The CC&Rs shall include, but not be limited to, access easements, reciprocal access, private and/or public utility easements as may be relevant to the project.
- LD27. (MA) Prior to approval of the map, all street dedications shall be irrevocably offered to the public and shall continue in force until the City accepts or abandons such offers, unless otherwise approved by the City Engineer. All dedications shall be free of all encumbrances as approved by the City Engineer.
- LD28. (MA) Prior to approval of the map, security shall be required to be submitted as a guarantee of the completion of the improvements required as a condition of approval of the project. A public improvement agreement will be required to be executed.
- LD29. (MR) Prior to recordation of the map, the developer shall submit the map, on compact disks, in (.dxf) digital format to the Land Development Division of the Public Works Department.

Prior to Improvement Plan Approval or Construction Permit

- LD30. (IPA) Prior to approval of the improvement plans, the improvement plans shall be drawn on twenty-four (24) inch by thirty-six (36) inch mylar and signed by a registered civil engineer and other registered/licensed professional as required.

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- LD31. (IPA) Prior to approval of the improvement plans, the developer shall submit clearances from all applicable agencies, and pay all outstanding plan check fees. (MC 9.14.210)
- LD32. (IPA) All public improvement plans prepared and signed by a registered civil engineer in accordance with City standards, policies and requirements shall be approved by the City Engineer in order for the Public Improvement Agreement and accompanying security to be executed.
- LD33. (IPA) Prior to approval of the improvement plans, securities and a public improvement agreement shall be required to be submitted and executed as a guarantee of the completion of the improvements required as a condition of approval of the project.
- LD34. (IPA) The street improvement plans shall comply with all applicable City standards and the following design standards throughout this project:
- (a) Corner cutbacks in conformance with City Standard 208 shall be shown on the final map or, if no map is to be recorded, offered for dedication by separate instrument.
 - (b) Lot access to major thoroughfares shall be restricted except at intersections and approved entrances and shall be so noted on the final map. (MC 9.14.100)
 - (c) The minimum centerline and flow line grades shall be one percent unless otherwise approved by the City Engineer. (MC 9.14.020)
 - (d) All street intersections shall be at ninety (90) degrees plus or minus five (5) degrees per City Standard No. 706A, or as approved by the City Engineer. (MC 9.14.020)
 - (e) All reverse curves shall include a minimum tangent of one hundred (100) feet in length.
- LD35. (IPA) Prior to approval of the improvement plans, the plans shall be based upon a centerline profile, extending beyond the project boundaries a minimum distance of 300 feet at a grade and alignment approved by the City Engineer. Design plan and profile information shall include the minimum 300 feet beyond the project boundaries.

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- LD36. (IPA) Prior to approval of the improvement plans, the plans shall indicate any restrictions on trench repair pavement cuts to reflect the City's moratorium on disturbing newly-constructed pavement less than three years old and recently slurry sealed streets less than one year old. Pavement cuts for trench repairs may be allowed for emergency repairs or as specifically approved in writing by the City Engineer.
- LD37. (IPA) Prior to approval of the improvement plans, the developer shall pothole to determine the exact location of existing underground utilities. The improvement plans shall be designed based on the pothole field investigation results. The developer shall coordinate with all affected utility companies and bear all costs of utility relocations.
- LD38. (IPA) Prior to approval of the improvement plans, all dry and wet utility crossings shall be potholed to determine actual elevations. Any conflicting utilities shall be identified and addressed on the plans. The pothole survey data shall be submitted with the street improvement plans for reference purposes.
- LD39. (IPA) Prior to approval of the improvement plans, drainage facilities with sump conditions shall be designed to convey the tributary 100-year storm flows. Secondary emergency escape shall also be provided. (MC 9.14.110)
- LD40. (IPA) Prior to the approval of the improvement plans, the hydrology study shall show that the 10-year storm flow will be contained within the curb and the 100-year storm flow shall be contained within the street right-of-way. In addition, one lane in each direction shall not be used to carry surface flows during any storm event for street sections equal to or larger than a minor arterial. When any of these criteria is exceeded, additional drainage facilities shall be installed. (MC 9.14.110 A.2)
- LD41. (IPA) The project shall be designed to accept and properly convey all off-site drainage flowing onto or through the site. All storm drain design and improvements shall be subject to review and approval of the City Engineer. In the event that the City Engineer permits the use of streets for drainage purposes, the provisions of the Development Code will apply. Should the quantities exceed the street capacity or the use of streets be prohibited for drainage purposes, as in the case where one travel lane in each direction shall not be used for drainage conveyance for emergency vehicle access on streets classified as minor arterials and greater, the developer shall provide adequate facilities as approved by the Public Works Department – Land Development Division. (MC 9.14.110)

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LD42. (CP) All work performed within the City right-of-way requires a construction permit. As determined by the City Engineer, security may be required for work within the right-of-way. Security shall be in the form of a cash deposit or other approved means. The City Engineer may require the execution of a public improvement agreement as a condition of the issuance of the construction permit. All inspection fees shall be paid prior to issuance of construction permit. (MC 9.14.100)

LD43. (CP) Prior to issuance of a construction permit, all public improvement plans prepared and signed by a registered civil engineer in accordance with City standards, policies and requirements shall be approved by the City Engineer.

LD44. (CP) Prior to issuance of construction permits, the developer shall submit all improvement plans on compact disks, in (.dxf) digital format to the Land Development Division of the Public Works Department.

LD45. (CP) Prior to issuance of construction permits, the developer shall pay all applicable inspection fees.

Prior to Building Permit

LD46. (BP) Prior to issuance of a building permit, the map shall be recorded.

LD47. (BP) Prior to issuance of a building permit, all pads shall meet pad elevations per approved plans as noted by the setting of "Blue-top" markers installed by a registered land surveyor or licensed engineer.

Prior to Certificate of Occupancy

LD48. (CO) Prior to issuance of the last certificate of occupancy or building final, the developer shall pay all outstanding fees.

LD49. (CO) Prior to issuance of a certificate of occupancy, this project is subject to requirements under the current permit for storm water activities required as part of the National Pollutant Discharge Elimination System (**NPDES**) as mandated by the Federal Clean Water Act. In compliance with Proposition 218, the developer shall agree to approve the City of Moreno Valley NPDES Regulatory Rate Schedule that is in place at the time of certificate of occupancy issuance. Following are the requirements:

- a. Select one of the following options to meet the financial responsibility to provide storm water utilities services for the required continuous operation,

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maintenance, monitoring system evaluations and enhancements, remediation and/or replacement, all in accordance with Resolution No. 2002-46.

- i. Participate in the mail ballot proceeding in compliance with Proposition 218, for the Common Interest, Commercial, Industrial and Quasi-Public Use NPDES Regulatory Rate Schedule and pay all associated costs with the ballot process; or
 - ii. Establish an endowment to cover future City costs as specified in the Common Interest, Commercial, Industrial and Quasi-Public Use NPDES Regulatory Rate Schedule.
- b. Notify the Special Districts Division of the intent to request building permits 90 days prior to their issuance and the financial option selected. The financial option selected shall be in place prior to the issuance of certificate of occupancy. (California Government Code & Municipal Code)

LD50. (CO) The City of Moreno Valley has an adopted Development Impact Fee (DIF) nexus study. All projects unless otherwise exempted shall be subject to the payment of the DIF prior to issuance of occupancy. The fees are subject to the provisions of the enabling ordinance and the fee schedule in effect at the time of occupancy.

LD51. (CO) The City of Moreno Valley has an adopted area wide Transportation Uniform Mitigation Fee (TUMF). All projects unless otherwise exempted shall be subject to the payment of the TUMF prior to issuance of occupancy. The fees are subject to the provisions of the enabling ordinance and the fee schedule in effect at the time of occupancy.

LD52. (CO) Prior to issuance of a certificate of occupancy or building final, the developer shall construct all public improvements in conformance with applicable City standards, except as noted in the Special Conditions, including but not limited to the following applicable improvements:

- (a) Street improvements including, but not limited to: pavement, base, curb, gutter, cross gutter, spandrel, sidewalks, drive approaches, pedestrian ramps, street lights, signing, striping, landscaping and irrigation, pavement tapers/transitions and traffic control devices as appropriate.
- (b) Storm drain facilities including, but not limited to: storm drain pipe, storm drain laterals, open channels, catch basins and local depressions.

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- (c) City-owned utilities.
- (d) Sewer and water systems including, but not limited to: sanitary sewer, potable water and recycled water.
- (e) Under grounding of existing and proposed utility lines less than 115,000 volts.
- (f) Relocation of overhead electrical utility lines including, but not limited to: electrical, cable and telephone.

LD53. (CO) Prior to issuance of a certificate of occupancy or building final, all existing and new utilities adjacent to and on-site shall be placed underground in accordance with City of Moreno Valley ordinances. (MC 9.14.130)

LD54. (CO) Prior to issuance of a certificate of occupancy or building final for any Commercial/Industrial facility, whichever occurs first, the owner may have to secure coverage under the State's General Industrial Activities Storm Water Permit as issued by the State Water Resources Control Board.

LD55. (CO) Prior to issuance of a certificate of occupancy or building final, the applicant shall ensure the following, pursuant to Section XII. I. of the 2010 NPDES Permit:

- (a) Field verification that structural Site Design, Source Control and Treatment Control BMPs are designed, constructed and functional in accordance with the approved Final Water Quality Management Plan (WQMP)
- (b) Certification of best management practices (BMPs) from a state licensed civil engineer. An original WQMP BMP Certification shall be submitted to the City for review and approval.

Prior to Acceptance of Streets into the City Maintained Road System

LD56. (AOS) Aggregate slurry, as defined in Section 203-5 of Standard Specifications for Public Works Construction, may be required just prior to the end of the one-year warranty period of the public streets at the discretion of the City Engineer. If slurry is required, the developer/contractor must provide a slurry mix design submittal for City Engineer approval. The latex additive shall be Ultra Pave 70 (for anionic – per project geotechnical report) or Ultra Pave 65 K (for cationic – per project geotechnical report) or an approved equal. The latex shall be added at the emulsion plant after weighing the asphalt and before the addition of mixing water. The latex shall be added at a rate of two to two-and-one-half (2 to 2½)

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parts to one-hundred (100) parts of emulsion by volume. Any existing striping shall be removed prior to slurry application and replaced per City standards.

SPECIAL CONDITIONS

LD57. The following project engineering design plans (24"x36" sheet size) shall be submitted for review and approval as well as additional plans deemed necessary by the City during the plan review process. As-Built Plans of these plans are also required:

- (a) Rough Grading Plan**
- (b) Precise Grading Plan**
- (c) Street Improvement Plan**
- (d) Storm Drain Plan**
- (e) Signing and Striping Plan**
- (f) Traffic Control Plan**
- (g) Final Drainage Study**
- (h) Final Water Quality Management Plan**

LD58. Prior to rough grading plan approval, this project shall demonstrate, via a final drainage study, that the increased runoff resulting from the development of this site is mitigated. During no storm event shall the flow leaving the site in the developed condition be larger than that of the pre-developed condition. The drainage study shall analyze the following events: 1, 3, 6 and 24-hour durations for the 2, 5, 10 and 100-year storm events. The applicant understands that additional detention measures, beyond those shown on the tentative map and preliminary drainage study, may be required.

LD59. Prior to rough and precise grading plan approval, the plans shall clearly show the extents of all existing easements on the property. All building structures shall be constructed outside of existing easements. All on-site and off-site easements shall be shown on the grading plan.

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- LD60.** Prior to rough and precise grading plan approval, the plans shall clearly show that any slope near the public right-of-way has a minimum set-back area at 2% maximum of 2 feet before the start of the top or toe of slope. If the vertical height of the slope exceeds 10 feet, this set-back area shall be 3 feet minimum.
- LD61.** Prior to precise grading plan approval, the grading plans shall show any proposed trash enclosure as dual bin; one bin for trash and one bin for recyclables. The trash enclosure shall be per City Standard Plan MVGF-660A-0 through MVGF-660F-0.
- LD62.** Prior to precise grading plan approval, the grading plans shall clearly show that the parking lot conforms to City standards. The parking lot shall be 5% maximum, 1% minimum, 2% maximum at or near any disabled parking stall and travel way. Ramps, curb openings and travel paths shall all conform to current ADA standards as outlined in Department of Justice's "ADA Standards for Accessible Design", Excerpt from 28 CFR Part 36. (www.usdoj.gov) and as approved by the City's Building and Safety Division.
- LD63.** Prior to parcel map approval, either reciprocal access easement(s) shall be shown on the map or a separate recorded copy of a reciprocal access agreement between parcels shall be submitted to the City for review and approval.
- LD64.** Prior to parcel map approval, the map shall show the following:
- (a)** A 100-foot right-of-way dedication for the construction of Eucalyptus Avenue.
 - (b)** A 60-foot right-of-way dedication for the construction of Street "A".
 - (c)** A 4-foot right-of-way dedication for the future construction of Encilia Street along the south boundary of Parcel 5.
 - (d)** An 80-foot street right-of-way vacation for the old alignment of Fir Avenue traversing Parcels 3, 4, and 5.
 - (e)** A 40-foot street right-of-way vacation for the old alignment of Fir Avenue traversing and along the south boundary of Parcel 3.

- (f) A 30-foot street right-of-way vacation for the west half of Quincy Street.**
- (g) A 16-foot right-of-way dedication along the north property line, excepting area already acquired by the City, for the future use by Caltrans.**
- (h) A drainage and access easement dedication to the City at the north boundary line at Quincy Channel for culvert maintenance and also at the north and south ends of proposed culverts at its crossing with Eucalyptus Avenue.**
- (i) A 4-foot minimum pedestrian right-of-way dedication behind any driveway approach per City Standard MVSI-112C-0.**
- (j) A 2-foot and varying width public access easement for the portions of sidewalk which are outside of the public right-of-way, along Eucalyptus Avenue necessary to accommodate curb separated sidewalk.**
- (k) A 6-foot wide trail easement on the north side of Eucalyptus Avenue at its proposed bridge culvert crossing over Quincy Channel.**
- (l) A varying width trail easement 8.5-foot wide to 13.5-foot wide on the north side of Eucalyptus Avenue.**
- (m) An 18.5-foot wide multi-purpose trail easement along the west side of Quincy Channel.**
- (n) An easement along the west project boundary between SR-60 and Eucalyptus Avenue for proposed water line improvements required to relocate an existing 12-inch EMWD water line from along the north project boundary to within Eucalyptus Avenue.**
- (o) Corner cutback right-of-way dedications per City Standard MVSI-165-0.**
- (p) Retention of open space lot designated as Lot D on the tentative map to be retained and maintained by the developer.**

- (q) A minimum 25-foot wide public storm drain easement across Parcel 5 along Quincy Channel from Eucalyptus Avenue to the proposed storm drain outlet at Quincy Channel.
- (r) A minimum 30-foot wide public sewer easement across Parcel 5 along Quincy Channel from Eucalyptus Avenue to Encilia Avenue.
- (s) A private sewer easement along the west boundary of Parcel 5 from the south Parcel 4 boundary to Encilia Avenue.

LD65. Prior to parcel map approval, the Developer shall guarantee the construction of the following improvements by entering into a public improvement agreement and posting security. The improvements shall be completed prior to occupancy of the first building or as otherwise determined by the City Engineer.

- (a) Eucalyptus Avenue, Arterial, City Standard MVSI-104A-0 (100-foot RW / 76-foot CC) shall be constructed to full-width, within the project's frontage and 32-foot wide (12-foot lanes and 4-foot shoulders) on center from the east map boundary at Quincy Channel easterly to Redlands Boulevard, including any transitions required at the intersection with Redlands Boulevard. Improvements shall consist of, but not be limited to, pavement, base, curb, gutter, sidewalk, driveway approaches, drainage structures, bridge culvert crossing, culvert structures, rip rap, offsite improvement transition/joins to existing, streetlights, pedestrian ramps, undergrounding of any power poles with overhead utility lines less than 115,000 volts, signing, striping, and dry and wet utilities.
- (b) Street "A", Local Street, City Standard MVSI-107A-0 Modified (60-foot RW / 40-foot CC) shall be constructed full-width within the project's boundaries using a Traffic Index (TI) of 10. Improvements shall consist of, but not be limited to, pavement, base, six-inch curb, gutter, sidewalk, driveway approaches, drainage structures, streetlights, pedestrian ramps, and dry and wet utilities.
- (c) Quincy Channel improvements shall consist of, but not be limited to bridge culvert crossing including headwall, rip rap, access ramp from street to bottom of channel, multi-purpose trail and access road, buried concrete channel side slope, buried concrete channel vertical wall, storm drain outlet structures (headwall and cut-off walls, sewer line crossing beneath the channel.

- (d) Driveway approaches shall be constructed per City Standard No. MVSI-112C-0. The parcel map shall show an additional 4-foot right-of-way dedication behind driveway approaches. No decorative pavers shall be placed within the public right-of-way.**
- (e) Relocation of an existing water line along the north property boundary adjacent to State Route 60 to within Eucalyptus Avenue.**
- (f) Removal or relocation, as determined by SCE, of existing overhead power lines along the north property boundary adjacent to State Route 60.**

LD66. Prior to building permit issuance, the precise grading plan for that building shall be approved by the City and Parcel Map 35679 shall record.

LD67. Prior to building permit issuance, this project shall cause the vacation of all existing easements, especially those easements underneath proposed building footprints. This shall include, but not be limited to, the 12-foot wide EMWD access easement, 20-foot wide EMWD water line easement, and easements for utilities and incidental purposes granted to Southern Sierras Power Company. All utilities shall be relocated, as necessary, prior to vacation of easements. All new easements shall be granted prior to utility relocations and vacation of existing easements. All utilities shall be relocated into the proposed public right-of-way or to a location as agreed upon by the developer, the easement holder and the City Engineer, as necessary, prior to vacation of easements. All new easements shall be granted prior to utility relocations and vacation of existing easements and/or street vacations. All utility locations shall be done at no expense to the City.

LD68. Prior to occupancy permit issuance, all overhead utility lines less than 115,000 volts fronting or within the entire project site boundary shall be placed underground per Section 9.14.130C of the City Municipal Code.

LD69. As determined applicable by the City, and in accordance with the County of Riverside – Low Impact Development BMP Design Handbook (BMP Handbook) Appendix A – Infiltration Testing requirements, perform the required number of in-situ infiltration testing within the footprints of the proposed LID BMPs and provide the results in the first submittal of the Final-WQMP. Conceptually, the Engineer’s proposed infiltration feasibility is acceptable for this Preliminary WQMP. Based on the field measured

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results of the additional infiltration tests, the Applicant acknowledges that infiltration infeasibility may be presented which would require substantially more area than currently shown on the plans to retain the proposed design capture volumes (DCV) as required. Maximum required dedicated LID BMP area shall be in compliance with the County's WQMP Guidance document's effective area requirements indicated in Table 2-5, page 41.

LD70. All proposed LID BMP's shall be designed in accordance with the BMP Handbook. This includes, but is not limited to, forebay design and volumes, and basin landscaping. Tributary areas to all LID BMPs shall be in conformance with the BMP Handbook and/or at the discretion of the City's Land Development Division.

LD71. Applicant shall supply two sets of original owner certifications, with notarizations, and original RCE certifications, with wet-stamp and seal included as part of the required P-WQMP approval documents. Certifications shall be supplied to the City within 14 days of the date of the P-WQMP approval letter.

LD72. The Applicant shall prepare and submit for approval a final, project-specific water quality management plan (F-WQMP) for PA07-0084 Moreno Valley – Eucalyptus. The F-WQMP shall be consistent with the approved P-WQMP and in full conformance with the document; "Water Quality Management Plan, A Guidance Document for the Santa Ana Region of Riverside County," with an approval date of October 22, 2012 (WQMP Guidance). The F-WQMP shall be submitted and approved prior to application for and issuance of grading permits or building permits. At a minimum, the F-WQMP shall include the following: Site design principles; Source control BMPs; LID BMPs; Operation and Maintenance requirements for BMPs; and sources of funding for BMP implementation.

LD73. Overall, the proposed LID BMP concept is accepted as the conceptual LID BMP implementation for the proposed site. The Applicant has proposed to incorporate the use of infiltration basins. Final design details of these basins must be provided in the first submittal of the F-WQMP. The sizes of all LID BMPs are to be determined using the current procedures set forth in the Riverside County Flood Control and Water Conservation District's Design Handbook for Low Impact Development Best Management Practices. The Applicant acknowledges that more area than currently shown on the plans may be required to treat site runoff as required by the WQMP guidance.

LD74. The Applicant shall substantiate all applicable Hydrologic Condition of Concern (HCOC) issues in the first submittal of the F-WQMP.

LD75. The Applicant shall, prior to building or grading permit closeout or the issuance of a certificate of occupancy, demonstrate:

- (a) That all structural BMPs have been constructed and installed in conformance with the approved plans and specifications;**
- (b) That all structural BMPs described in the F-WQMP have been implemented in accordance with approved plans and specifications;**
- (c) That the applicant is prepared to implement all non-structural BMPs included in the F-WQMP, conditions of approval, and building/grading permit conditions; and**
- (d) That an adequate number of copies of the approved F-WQMP are available for the future owners/occupants of the project.**

PUBLIC WORKS DEPARTMENT – TRANSPORTATION ENGINEERING DIVISION

Based on the information contained in our standard review process we recommend the following conditions of approval be placed on this project:

General Conditions

TE1. Future Eucalyptus Avenue is classified as an Arterial (100’RW/76’CC) per City Standard Plan No. 104A. Any modifications or improvements undertaken by this project shall be consistent with the City’s standards for this facility. Sidewalk shall be curb separated. The project shall construct pavement improvements from the eastern property boundary to Redlands Boulevard consistent with Land Development conditions.

TE2. Future “A” Street is classified as a Modified Local Street (60’RW/40’CC) per City Standard Plan No. 108A. The T.I. shall be per Land Development’s conditions. The southerly terminus of the roadway shall include an end of roadway treatment satisfactory to the City Engineer. The street shall be signed for no parking/no stopping. Any modifications or improvements undertaken by this project shall be consistent with the City’s standards for this facility.

Prior to Improvement Plan Approval or Construction Permit

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- TE3. The driveways less than or equal to 40 feet in width shall conform to Section 9.11.080, and Table 9.11.080-14 of the City's Development Code - Design Guidelines, and City Standard Plan No. 118C. Driveways wider than 40' shall be designed as intersections with pedestrian access ramps per City standards.
- TE4. Prior to the final approval of the street improvement plans, a signing and striping plan shall be prepared per City of Moreno Valley Standard Plans - Section 4 for all streets with a cross section of 66'/44' and wider.
- TE5. Prior to issuance of a construction permit, construction traffic control plans prepared by a qualified, Registered Civil or Traffic engineer shall be required.
- TE6. Sight distance at driveways and on streets shall conform to City Standard Plan No. 125 A, B, and C at the time of preparation of final grading, landscape, and street improvements.
- TE7. Prior to final approval of the street improvement plans, interim and ultimate alignment studies shall be approved by the City Traffic Engineer.
- TE8. Prior to the final approval of the street improvement plans, the project applicant shall prepare traffic signal design plans for the following intersections:**
- **Redlands Boulevard/SR-60 Westbound Ramp**
 - **Redlands Boulevard/Future Eucalyptus Avenue**
- TE9. Prior to the final approval of the street improvement plans, the project applicant shall design the intersection of Redlands Boulevard and Eucalyptus Avenue to provide the following geometrics:**
- Northbound: One left turn lane, one through lane**
Southbound: One through lane, one right turn lane
Eastbound: One left turn lane, one right turn lane
Westbound: N/A
- NOTE: All curb return radii shall be 50 feet.**
- TE10. Prior to final approval of the street improvement plans, the project applicant shall design the intersection of Redlands Boulevard and SR-60 Westbound Ramp to provide the following geometrics:**

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**Northbound: One left turn lane, one through lane, one right turn lane
Southbound: One left turn lane, one shared through/right turn lane
Eastbound: One shared left turn/through/right turn lane
Westbound: One shared left turn/through/right turn lane**

TE11. Prior to issuance of a construction permit, the project applicant shall pay to the City all applicable "Fair Share" impact fees per the findings of the Environmental Impact Report.

PRIOR TO CERTIFICATE OF OCCUPANCY OR BUILDING FINAL

TE12. (CO) Prior to issuance of a certificate of occupancy, all approved signing and striping shall be installed per current City Standards and the approved plans.

TE13. (CO) Each gated entrance from a public street will be provided with the following, or as approved by the City Engineer:

- A. A storage lane with length sufficient to support the queuing predicted by the traffic study (minimum of 75 feet).**
- B. Signing and striping at the gate, including no parking signs.**
- C. A separate pedestrian entry, if pedestrian access is necessary.**
- D. Presence loop detectors (or another device) within 1 or 2 feet of the gates that ensures that the gates remain open while any vehicle is in the queue.**

All of these features must be kept in working order.

TE14. (CO) Prior to issuance of a certificate of occupancy, the project applicant shall construct the intersection/roadway improvements identified in TE8, TE9, and TE10 per the approved plans.

TE15. (CO) Prior to issuance of the final certificate of occupancy, the project applicant shall submit a traffic calming study for Eucalyptus Avenue located between Moreno Beach Drive and the western property boundary (Specific Plan 209) for City review and approval. Any recommendations made in the study shall be implemented by the project applicant to the satisfaction of the City Traffic Engineer prior to issuance of the final certificate of occupancy.

PRIOR TO ACCEPTANCE OF STREETS INTO THE CITY-MAINTAINED ROAD SYSTEM

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TE16. Prior to the acceptance of streets into the City-maintained road system, all approved traffic control and signing and striping shall be installed per current City Standards and the approved plans.

FINANCIAL & MANAGEMENT SERVICES DEPARTMENT

Special Districts Division

Note: All Special Conditions, Modified Conditions, or Clarification of Conditions are in bold lettering. All other conditions are standard to all or most development projects.

Acknowledgement of Conditions

The following items are the Special Districts Division's Conditions of Approval for project **PA07-0083**; this project shall be completed at no cost to any Government Agency. All questions regarding the following Conditions including but not limited to intent, requests for change/modification, variance and/or request for extension of time shall be sought from the Special Districts Division of the Financial & Management Services Department 951.413.3480 or by emailing specialdistricts@moval.org.

General Conditions

- SD1. The parcel(s) associated with this project have been incorporated into the Moreno Valley Community Services District Zone A (Parks & Community Services) and Zone C (Arterial Street Lighting). All assessable parcels therein shall be subject to annual parcel taxes for Zone A and Zone C for operations and capital improvements.
- SD2. Any damage to existing landscape areas maintained by the City of Moreno Valley due to project construction shall be repaired/replaced by the Developer, or Developer's successors in interest, at no cost to the City of Moreno Valley.
- SD3. The ongoing maintenance of any landscaping required to be installed behind the curb on **Eucalyptus Avenue and "B" Street** shall be the responsibility of the property owner.
- SD4. Street Light Authorization forms for all street lights that are conditioned to be installed as part of this project must be submitted to the Special Districts Division for approval, prior to street light installation. The Street Light Authorization form can be obtained from the utility company providing electric service to the project, either Moreno Valley Utility or Southern California Edison.

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Prior to Building Permit Issuance

- SD5. (BP) This project has been identified to be included in the formation of a Map Act Area of Benefit Special District for the construction of **major thoroughfares and/or freeway** improvements. The property owner(s) shall participate in such District and pay any special tax, assessment, or fee levied upon the project property for such District. At the time of the public hearing to consider formation of the district, the property owner(s) will not protest the formation, but the property owners(s) will retain the right to object if any eventual assessment is not equitable, that is if the financial burden of the assessment is not reasonably proportionate to the benefit which the affected property obtains from the improvements which are to be installed. The Developer must notify the Special Districts Division of intent to request building permits 90 days prior to their issuance to determine whether the development will be subjected to this condition and in compliance with the provisions of Article 13C of the California Constitution. (Street & Highway Code, GP Objective 2.14.2, MC 9.14.100)
- SD6. (BP) This project has been identified to be included in the formation of a Community Facilities District (Mello-Roos) for **Public Safety** services, including but not limited to Police, Fire Protection, Paramedic Services, Park Rangers, and Animal Control services. The property owner(s) shall not protest the formation; however, they retain the right to object to the rate and method of maximum special tax. In compliance with Proposition 218, the property owner shall agree to approve the mail ballot proceeding (special election) for either formation of the CFD or annexation into an existing district. The Developer must notify Special Districts of intent to request building permits 90 days prior to their issuance to allow adequate time to be in compliance with the provisions of Article 13C of the California Constitution. (California Government Code Section 53313 et. seq.)
- SD7. (BP) This project is conditioned to provide a funding source for the capital improvements, energy charges, and maintenance for street lighting. The Developer shall satisfy the condition with one of the options below. The Developer must notify the Special Districts Division of its selected financial option 90 days prior to its intent to request building permits to allow adequate time to be in compliance with the provisions of Article 13C of the California Constitution.
- a. Participate in a ballot proceeding for **street lighting** and pay all associated costs with the ballot process and formation costs, if any. Financing may be structured through a Community Services District zone, Community Facilities District, Landscape and Lighting Maintenance District, or other financing structure as determined by the City; or

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- b. Establish an endowment fund to cover future operation and maintenance costs for the street lights.
- c. Projects with privately maintained streets, establish a property Owner Association (POA) or Home Owner's Association (HOA) which will be responsible for any and all operation and maintenance costs associated with the street lights installed on private roadways. This does not apply to publicly accepted roadways.

The financial option selected shall be in place prior to the issuance of the first building permit.

- SD8. (BP) This project is conditioned to provide a funding source for the operation and maintenance of public improvements and/or services associated with new development in that territory. The Developer shall satisfy this condition with one of the options outlined below and shall notify the Special Districts Division of its selection a minimum of 90 days prior to their obtain a building permit to allow adequate time to be in compliance with the provisions of Article 13C of the California Constitution.
- a. Participate in a special election for **maintenance/services** and pay all associated costs with the election process and formation costs, if any. Financing may be structured through a Community Facilities District, Landscape and Lighting Maintenance District, or other financing structure as determined by the City; or
 - b. Establish an endowment fund to cover the future maintenance and/or service costs.

The financial option selected shall be in place prior to the issuance of the certificate of occupancy.

- SD9. *Commercial* (BP) If Land Development, a Division of the Public Works Department, requires this project to supply a funding source necessary to provide for, but not limited to, stormwater utilities services for the monitoring of on-site facilities and performing annual inspections of the affected areas to ensure compliance with state mandated stormwater regulations, a funding source needs to be established. The Developer must notify the Special Districts Division of its selected financial option (see Land Development's related condition) 90 days prior to the City's issuance of a building permit and the financial option selected to fund the continued maintenance to allow adequate time to be in compliance

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with the provisions of Article 13D of the California Constitution. (California Health and Safety Code Sections 5473 through 5473.8 (Ord. 708 Section 3.1, 2006) & City of Moreno Valley Municipal Code Title 3, Section 3.50.050.)

SD10. (BP) Prior to the issuance of the first building permit for this project, the Developer shall pay Advanced Energy fees for all applicable Residential and Arterial Street Lights required for this development. Payment shall be made to the City of Moreno Valley and collected by the Land Development Division. Fees are based upon the Advanced Energy fee rate in place at the time of payment, as set forth in the current Listing of City Fees, Charges, and Rates adopted by City Council. The Developer shall provide a copy of the receipt to the Special Districts Division (*specialdistricts@moval.org*). Any change in the project which may increase the number of street lights to be installed will require payment of additional Advanced Energy fees at the then current fee.

SD11. (BP) Prior to release of building permit, the Developer, or the Developer's successors or assignees, shall record with the County Recorder's Office a **Covenant of Assessments** for each assessable parcel therein, whereby the Developer covenants the existence of the Moreno Valley Community Services District, its established benefit zones, and that said parcel(s) is (are) liable for payment of annual benefit zone charges and the appropriate National Pollutant Discharge Elimination System (NPDES) maximum regulatory rate schedule when due. A recorded copy of the Covenant of Assessments shall be submitted to the Special Districts Division. A copy of the Covenant of Assessments is available from the City's website at www.moval.org or via email at specialdistricts@moval.org.

PUBLIC WORKS DEPARTMENT

Moreno Valley Utility

Note: All Special Conditions, Modified Conditions, or Clarification of Conditions are in bold lettering. All other conditions are standard to all or most development projects.

Acknowledgement of Conditions

The following items are Moreno Valley Utility's Conditions of Approval for project(s) PA07-0083, PA07-0084, PA07-0158, PA07-0159, and PA07-0160; this project shall be completed at no cost to any Government Agency. All questions regarding Moreno Valley Utility's Conditions including but not limited to, intent, requests for change/modification, variance and/or request for extension of time shall be sought from Moreno Valley Utility (the Electric Utility Division) of the Public Works Department

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951.413.3500. The applicant is fully responsible for communicating with Moreno Valley Utility staff regarding their conditions.

PRIOR TO ENERGIZING MVU ELECTRIC UTILITY SYSTEM AND CERTIFICATE OF OCCUPANCY

MVU1. (CO) For single family subdivisions, a three foot easement along each side yard property line shall be shown on the final map and offered for dedication to the City of Moreno Valley for public utility purposes, unless otherwise approved by the City Engineer. If the project is a multi-family development, townhome, condominium, or apartment, and it requires the installation of electric distribution facilities within common areas, a perpetual non-exclusive easement shall be provided to Moreno Valley Utility to include all such common areas. All easements shall include the rights of ingress and egress for the purpose of operation, maintenance, facility repair, and meter reading.

For a commercial or industrial project a non-exclusive blanket easement shall be provided to Moreno Valley Utility. In the event a non-exclusive blanket easement cannot be provided, a perpetual non-exclusive specific easement shall be provided to Moreno Valley Utility. All easements shall include the rights of ingress and egress for the purpose of operation, maintenance, facility repair, and meter reading.

MVU2. (CO) **City of Moreno Valley Municipal Utility Service – Electrical Distribution:** Prior to constructing the MVU Electric Utility System, the developer shall submit a detailed engineering plan showing design, location and schematics for the utility system to be approved by the City Engineer. In accordance with Government Code Section 66462, the Developer **shall** execute an agreement with the City providing for the installation, construction, improvement and dedication of the utility system following recordation of final map and concurrent with trenching operations and other subdivision improvements so long as said agreement incorporates the approved engineering plan and provides financial security to guarantee completion and dedication of the utility system.

The Developer **shall** coordinate and receive approval from the City Engineer to install, construct, improve, and dedicate to the City, or the City’s designee, all utility infrastructure (including but not limited to conduit, equipment, vaults, ducts, wires, switches, conductors, transformers, and “bring-up” facilities including electrical capacity to serve the identified development and other adjoining/abutting/ or benefiting projects as determined by Moreno Valley Utility) – collectively referred to as “utility system” (to and through the

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development), along with any appurtenant real property easements, as determined by the City Engineer to be necessary for the distribution and /or delivery of any and all “utility services” to each lot and unit within the Tentative Map. For purposes of this condition, “utility services” shall mean electric, cable television, telecommunication (including video, voice, and data) and other similar services designated by the City Engineer. “Utility services” shall not include sewer, water, and natural gas services, which are addressed by other conditions of approval.

The City, or the City’s designee, shall utilize dedicated utility facilities to ensure safe, reliable, sustainable and cost effective delivery of utility services and maintain the integrity of streets and other public infrastructure. Developer shall, at developer’s sole expense, install or cause the installation of such interconnection facilities as may be necessary to connect the electrical distribution infrastructure within the project to the Moreno Valley Utility owned and controlled electric distribution system.

- MVU3. This project may be subject to a Reimbursement Agreement. The project may be responsible for a proportionate share of costs associated with electrical distribution infrastructure previously installed that directly benefits the project. Payment shall be required prior to issuance of building permits.
- MVU4. For all new projects, existing Moreno Valley Utility electrical infrastructure shall be preserved in place. The developer will be responsible, at developer expense, for any and all costs associated with the relocation of any of Moreno Valley Utility’s underground electrical distribution facilities, as determined by Moreno Valley Utility, which may be in conflict with any developer planned construction on the project site.

PARKS AND COMMUNITY SERVICES DEPARTMENT

Note: All Special Conditions, Modified Conditions, or Clarification of Conditions are in bold lettering. All other conditions are standard to all or most development projects.

Acknowledgement of Conditions

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The following items are Parks and Community Services Department Conditions of Approval; this project shall be completed at no cost to any Government Agency. All questions regarding Parks and Community Services Department Conditions including but not limited to, intent, requests for change/modification, variance and/or request for extension of time shall be sought from the Parks and Community Services Department 951.413.3280. The applicant is fully responsible for communicating with the Parks and Community Services Department project manager regarding the conditions.

SPECIFIC CONDITIONS OF APPROVAL

PCS1. A multi-use trail shall be located along the west side of Quincy Channel and east side of Quincy Street (or its alignment). Additionally, the trail is to be located over the Quincy Channel, on the south side of Fir Avenue, connecting to the Quincy trail. The trail shall be 14' in width, with a 2' stamped colored concrete section between curb and trail. The trail shall be dedicated as an easement to the City from a lettered lot owned by Riverside County Flood Control and Water Conservation District.

PCS2. Parks and Community Services Department – Standard Trail Conditions:

- a. Trail construction shall adhere to: The City's Standard Plans, 'The Greenbook Standard Specifications for Public Works Construction', 'California Code of Regulations Title 24' (where applicable), and the Park and Community Services Specification Guide.
- b. The General Contractor shall be a State of California Class 'A' General Engineering Contractor, per the Business and Professions Code Section 7056, or a combination of State of California Class 'C' licenses for which the work is being performed. Licenses must be current and in good standing, for the duration of the project.
- c. All utility easements shall not interfere with the trail or its fencing. A map of all easements and the corresponding easement rights shall be presented to Parks and Community Services prior to scheduling the Tentative Map for approval.
- d. (R) A restriction shall be placed on lots that are adjacent to the trail, preventing openings or gates accessing the trail. This shall be done through Covenants, Conditions, and Restrictions (CC&R's). A copy of the CC&R's with this/her restriction noted shall be submitted and approved by the Director of Parks and Community Services or his/her designee prior to the recordation of the Final Map.
- e. Trails shall not be shared with any above ground utilities, blocking total width access.

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- f. The following plans require Parks and Community Services written approval: Tentative tract/parcel maps; rough grading plans (including all Delta changes); Final Map; precise grading plans; street improvement plans; traffic signal plans; fence and wall plans; landscape plans for areas adjacent to trails; trail improvement plans.
- g. (GP) A detailed rough grading plan with profile for the trail shall be submitted and approved by the Director of Parks and Community Services or his/her designee prior to the issuance of grading permits.
- h. Grading certification and compaction tests are required, prior to any improvements being installed.
- i. A minimum two-foot graded bench is required where trails adjoin landscaped or open space areas.
- j. (R) Prior to the approval of the Final Map, a detailed map of the trail and areas adjacent to the trail shall be submitted to the Director of Parks and Community Services or his/her designee prior for review and written approval.
- k. (R) All necessary documents to convey to the City and/or the Community Services District any required dedications for parks or open space, as specified on the tentative map or in these Conditions of Approval shall be submitted by the developer to Parks and Community Services, prior to the recordation of the final map.
- l. (R) Prior to recordation of the Final Map, the developer shall post security (bonds) to guarantee construction of the trail to the City's standards. Copies of the bonds shall be provided to Parks and Community Services, prior to the approval of the Final Map.
- m. (BP) Prior to the issuance of the first Building Permit, final improvement plans (mylars and AutoCAD & PDF file on a CD-ROM) shall be reviewed and approved by the Community Development Department – Planning Division; the Public Works Department – Land Development and Transportation Division; Fire Prevention; and Parks and Community Services Department. Landscaped areas adjacent to the park shall be designed to prevent water on the park.
- n. Eight sets of complete trail improvement plans shall be submitted to Parks and Community Services for routing. Adjacent landscaping and walls shall be shown on the plans. Final construction plans and details require wet stamped and signed Mylars, eight sets of bond copies and one Mylar copy from the City signed mylars, the AutoCAD file on CD, and a PDF file on CD. As-builts for the trails have the same requirements as final plan submittals.
- o. All street crossings shall be signed with approved 'STOP' signs, trail signs, and posts. All improved equestrian trail crossings at signalized intersections that are constructed at their ultimate locations shall have high mounted push buttons. These shall be coordinated through the Transportation Division.
- p. CSD Zone 'A' plan check fees shall be paid prior to the second plan check.

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Resolution No. 2014-59
Date Adopted: October 14, 2014

**CONDITIONS OF APPROVAL FOR PA07-0084
TENTATIVE PARCEL MAP NO. 35679
PAGE 47 OF 40**

- q. CSD Zone 'A' inspection fees shall be paid prior to signing of Mylars.
- r. (BP) The trail shall be surveyed and staked by the developer. The trail shall be inspected and approved by the Director of Parks and Community Services or his/her designee prior to the issuance of any building permits for production units.
- s. Any damage to trails or fencing during construction shall be repaired by the developer and inspected by the Director of Parks and Community Services or his/her designee; prior to the last phase of building permit issuance.
- t. A minimum 38' radius shall be incorporated on all trails where a change of direction occurs (minor or major). Additionally, widening of the trail is necessary in most situations.
- u. Drive approaches shall adhere to City Std. Plan #118C.
- v. Concrete access areas to trails with decomposed granite surfaces shall be rough finished concrete (typically raked finish). The access shall extend to the main trail flat surface.
- w. (BP) In order to prevent the delay of building permit issuance, any deviation from trail fencing materials or trail surface materials shall be submitted to Director of Parks and Community Services or his/her designee and approved in writing 60-days prior to the commencement of trail construction.
- x. Any unauthorized deviation from the approved plan, specifications, City Standard Plans, or Conditions of Approval may result in the delay of building permit issuance and/or building Finals/ Certificate of Occupancy of the project conditioned for improvements.
- y. Where required, decorative solid-grouted block wall (no precision block, stucco, veneer finishes, PVC, or wood fencing) with a minimum height of 72" on the trailside shall be installed along lots that adjoin the trail. Block walls shall be located solely on private property. If landscaping is to be utilized between the block wall and the trail, a PVC fence shall be installed along the trail separating the landscaping from the trail (where required). All block walls that have public view shall have an anti-graffiti coating per Parks and Community Services specifications. Combination block/tubular steel fences shall only be utilized where approved by Parks and Community Services. Tubular steel shall comply with Parks and Community Services standards. Coating for tubular steel shall be anti-graffiti coating for metal per Parks and Community Services specifications. If alternate products are requested, the requested material(s) shall be presented to the Director of Parks and Community Services or his/her designee for review and approval. Under no circumstances can alternate products be utilized without prior written authorization from the Director of Parks and Community Services or his/her designee.
- z. Any damage to existing landscape or hardscape areas due to project construction shall be repaired/replaced by the developer, or developer's

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Resolution No. 2014-59
Date Adopted: October 14, 2014

**CONDITIONS OF APPROVAL FOR PA07-0084
TENTATIVE PARCEL MAP NO. 35679
PAGE 48 OF 40**

- successors in interest, at no cost to the City or Community Services District.
- aa.** All inspections shall be requested two (2) working days in advance from the Parks and Community Services Department at the time of rough and precise grading; fence and gate installation; curb and drainage; flatwork; D.G. installation; graffiti coating; and final inspection.
 - bb.** (BP) Trail construction in single family developments shall commence prior to 30% of total building permit issuance. Trail completion and acceptance (single family developments) for maintenance shall be completed prior to 70% of total building permit issuance.
 - cc.** (CO) Trail construction in multi-family or commercial developments shall commence with the rough grading. Trail completion and acceptance for maintenance shall be completed prior to the issuance of 50% of the total certificates-of-occupancy (for multi-family and/or commercial developments).
- PCS3.** (R) If Special Districts, a Division of the Public Works Department, requires this project to supply a funding source for the continued maintenance, enhancement, and or retrofit of neighborhood parks, open spaces, linear parks, and/or trails systems, the Developer must notify Special Districts of intent to record the final map 70 days prior to recordation of the final map and the financial option selected to fund the continued maintenance. (California Government Code, GP Chapter 2.7)
- PCS3b.** (BP) If Special Districts, a Division of the Public Works Department, requires this project to supply a funding source for the continued maintenance, enhancement, and or retrofit of neighborhood parks, open spaces, linear parks, and/or trails systems, the Developer must notify Special Districts of intent to request building permits 70 days prior to their issuance and the financial option selected to fund the continued maintenance. (California Government Code, GP Chapter 2.7)
- PCS4.** The parcel(s) associated with this project have been incorporated into the Moreno Valley Community Services Districts Zones A (Parks and Community Services). All assessable parcels therein shall be subject to the annual Zone A charge for operations and capital improvements.
- PCS5.** (R) Prior to recordation of the final map, the developer, or the developer's successors or assignees, shall supply a copy of the recorded Declaration of Covenant and Acknowledgement of Assessments to the Parks and Community Services Department.
- PCS6.** (BP) Prior to release of building permit, the developer, or the developer's successors or assignees shall supply a copy of the recorded Declaration of Covenant and Acknowledgement of Assessments to the Parks and

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Resolution No. 2014-59
Date Adopted: October 14, 2014

**CONDITIONS OF APPROVAL FOR PA07-0084
TENTATIVE PARCEL MAP NO. 35679
PAGE 49 OF 40**

Community Services Department.

- PCS7.** (BP) This project is subject to current Development Impact Fees at time of building permit issuance.
- PCS8.** Any modified or newly created agreements shall be reviewed and approved by the Board of the Moreno Valley Community Services District.

POLICE DEPARTMENT

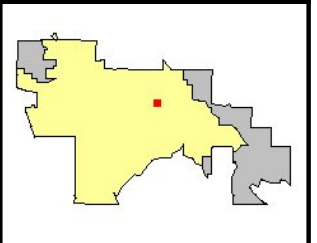
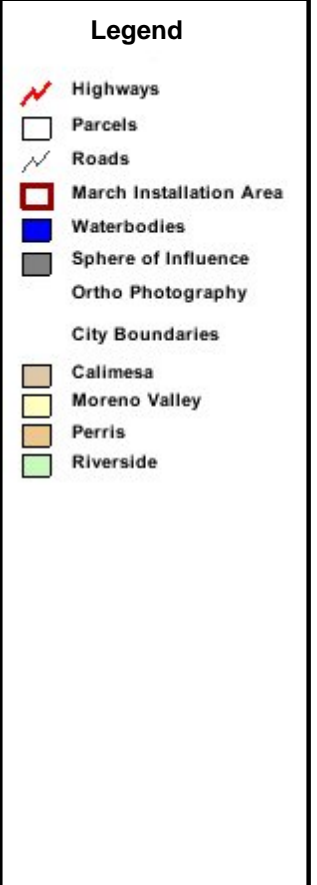
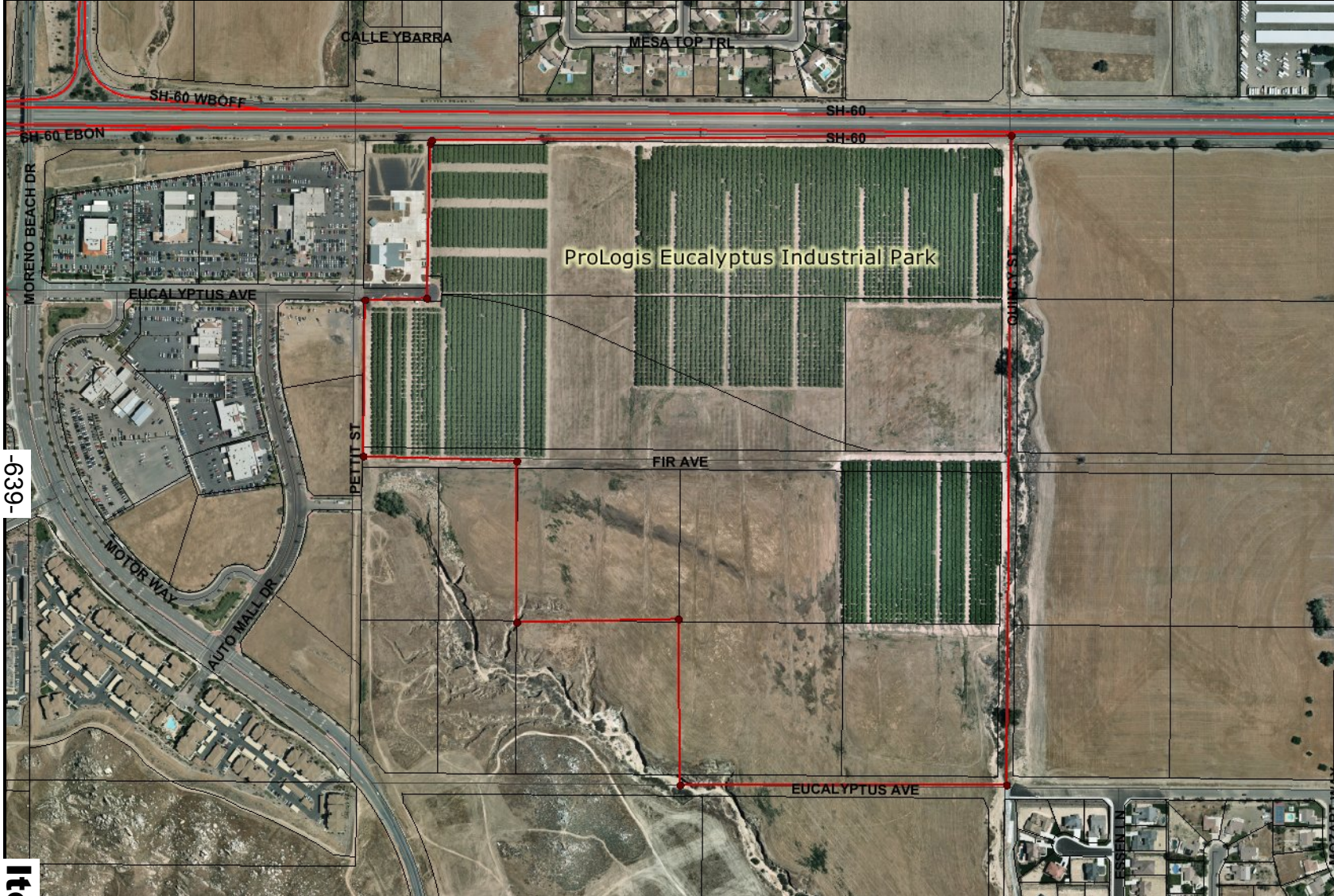
Note: All Special conditions are in bold lettering. All other conditions are standard to all or most development projects

Standard Conditions

- PD1. Prior to the start of any construction, temporary security fencing shall be erected. The fencing shall be a minimum of six (6) feet high with locking, gated access and shall remain through the duration of construction. Security fencing is required if there is: construction, unsecured structures, unenclosed storage of materials and/or equipment, and/or the condition of the site constitutes a public hazard as determined by the Public Works Department. If security fencing is required, it shall remain in place until the project is completed or the above conditions no longer exist. (MC 9.08.080)
- PD2. (GP) Prior to the issuance of grading permits, a temporary project identification sign shall be erected on the site in a secure and visible manner. The sign shall be conspicuously posted at the site and remain in place until occupancy of the project. The sign shall include the following:
- a. The name (if applicable) and address of the development.
 - b. The developer's name, address, and a 24-hour emergency telephone number. (MC 9.08.080)
- PD3. (CO) Prior to the issuance of a Certificate of Occupancy, an Emergency Contact Information Form for the project shall be completed at the permit counter of the Community & Economic Development Department - Building Division for routing to the Police Department. (MC 9.08.080)

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Resolution No. 2014-59
Date Adopted: October 14, 2014

ProLogis Eucalyptus Industrial Park

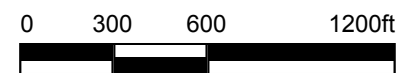


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Item No. E.3

City of Moreno Valley
 177 Frederick Street
 Moreno Valley, CA 92553

DISCLAIMER: The information shown on this map was compiled from the Riverside County GIS and the City of Moreno Valley GIS. The land base and facility information on this is for display purposes only and should not be relied upon without independent verification of its accuracy. Riverside County and City of Moreno Valley will not be held responsible for any claims, losses, or damages resulting from the use of this map.



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PROLOGIS PARK
MORENO VALLEY
EUCALYPTUS

EUCALYPTUS AVENUE
MORENO VALLEY, CALIFORNIA



CASE NUMBER:
PA07-0083

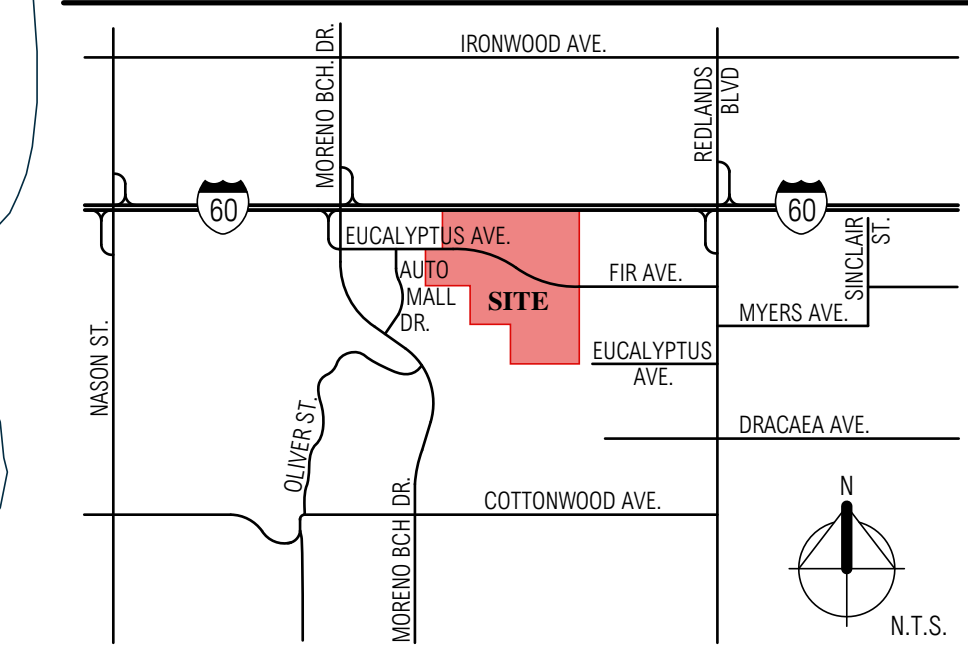


17777 CENTER COURT DR NORTH, STE 100
CERRITOS, CA 90703
PHONE: 562-345-9226
CONTACT: JIM JACHETTA
JJACHETTA@PROLOGIS.COM

KEYNOTES

- EXISTING 30' WIDE RIGHT OF WAY EASEMENT TO BE VACATED PER TENTATIVE PARCEL MAP.
- EXISTING 44' WIDE RIGHT OF WAY EASEMENT PER TENTATIVE PARCEL MAP.
- PROPOSED 14' WIDE MULTIPURPOSE TRAIL & SERVICE ACCESS ROAD.
- NEW BRIDGE CROSSING PER CITY STANDARD PLAN 116. MULTI-PURPOSE TRAIL TO CONTINUE ACROSS BRIDGE.
- WATER QUALITY BASIN LANDSCAPED TO CITY STANDARDS.
- 16' CALTRANS RESERVATION AREA FOR FUTURE DEDICATION TO CALTRANS.
- STAGGERED DOUBLE ROW OF CITRUS TREES ALONG FREEWAY FRONTAGE.
- PAINTED CONCRETE TILT-UP FIRE PUMP HOUSE TO MATCH MAIN BUILDING ARCHITECTURE.
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- PROPOSED 11" WIDE MULTIPURPOSE TRAIL.

VICINITY MAP



OWNER:

PROLOGIS
4041 MACARTHUR BLVD., STE 400
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ARCHITECT:

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FAX: 949-341-0922
E-MAIL: diming@rga-architects.com
CONTACT: DENNIS ROY

UTILITY PURVEYORS:

WATER:
EASTERN MUNICIPAL WATER DISTRICT
T: 800-428-3693

SEWER:
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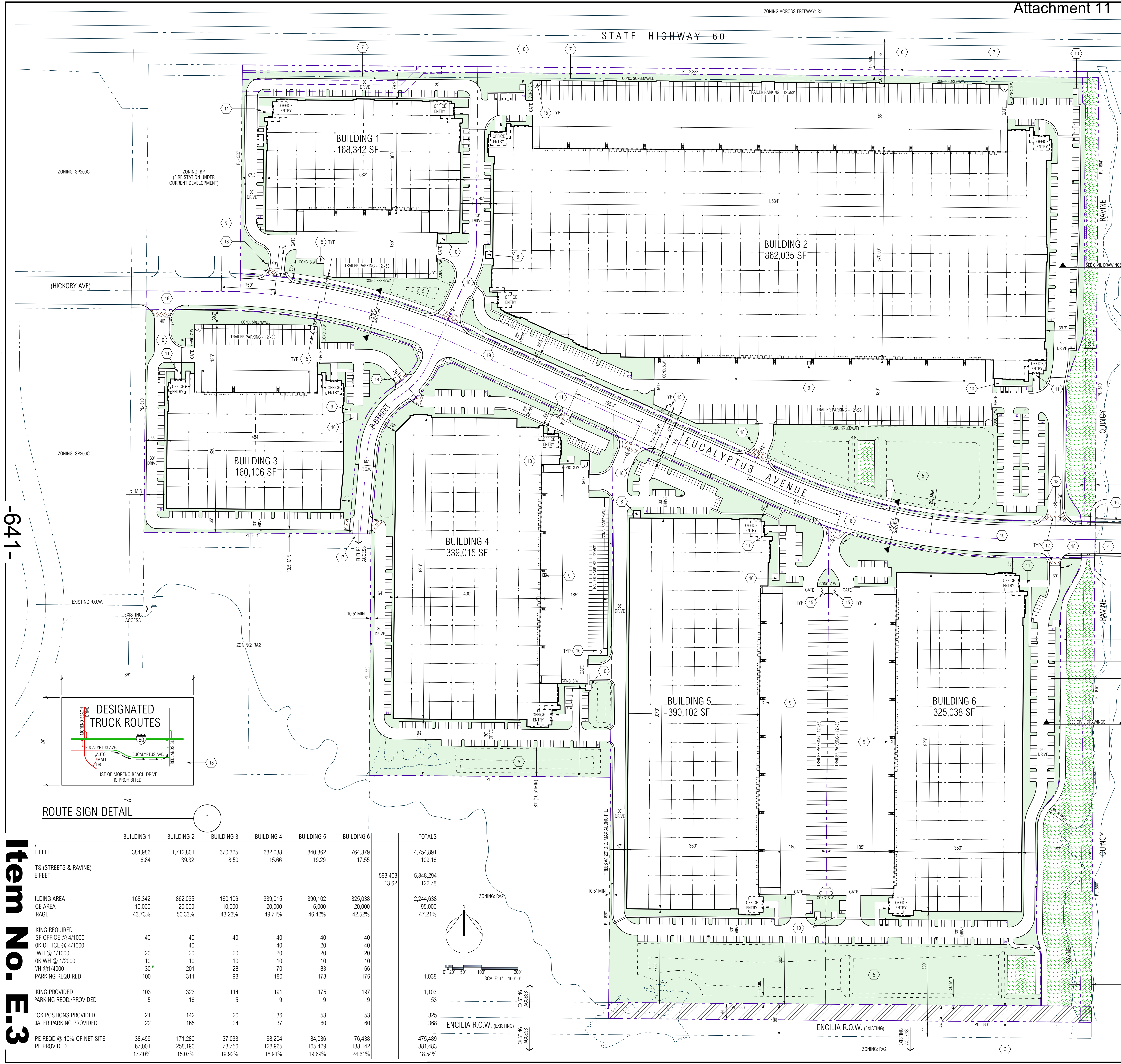
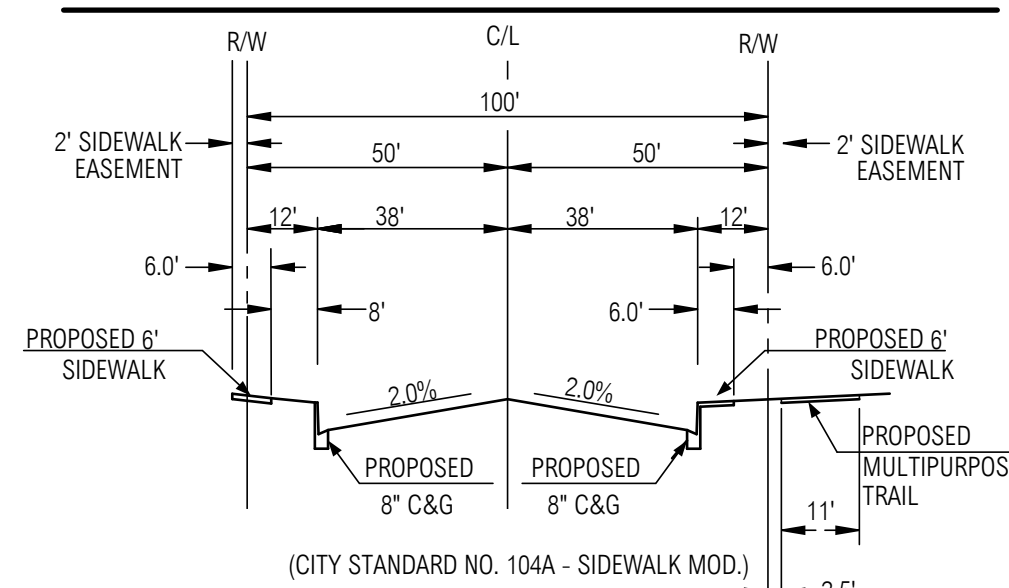
TELEPHONE:
VERIZON
T: 909-748-6640

CABLE:
TIME WARNER COMMUNICATIONS
T: 909-456-3693

GENERAL NOTES:

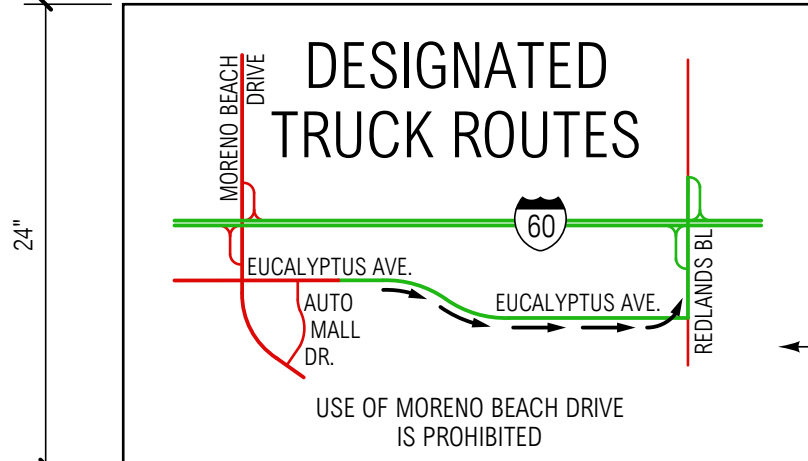
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EUCALYPTUS AVE. SECTION



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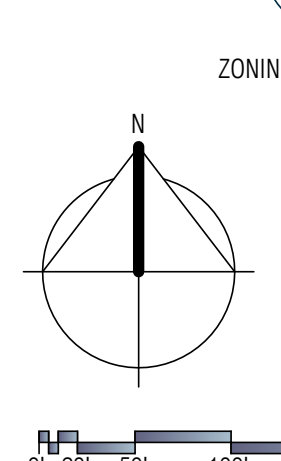
Item No. E.3



ROUTE SIGN DETAIL

1

	BUILDING 1	BUILDING 2	BUILDING 3	BUILDING 4	BUILDING 5	BUILDING 6	TOTALS
FEET	384,986	1,712,801	370,325	682,038	840,362	764,379	4,754,891
TS (STREETS & RAVINE)	8.84	39.32	8.50	15.66	19.29	17.55	109.16
TOTALS							5,348,294
							122.78
UILDING AREA	168,342	862,035	160,106	339,015	390,102	325,038	2,244,638
CE AREA	10,000	20,000	10,000	20,000	15,000	20,000	95,000
RAGE	43.73%	50.33%	43.23%	49.71%	46.42%	42.52%	47.21%
KING REQUIRED							
SF OFFICE @ 4/1000	40	40	40	40	40	40	40
OK OFFICE @ 4/1000	-	40	-	40	20	40	40
WH @ 1/1000	20	20	20	20	20	20	20
OK WH @ 1/2000	10	10	10	10	10	10	10
WH @ 1/4000	30	201	28	70	83	66	66
PARKING REQUIRED	100	311	98	180	173	176	1,038
KING PROVIDED							
PARKING REQ./PROVIDED	103	323	114	191	175	197	1,103
	5	16	5	9	9	9	53
CK POSTIONS PROVIDED	21	142	20	36	53	53	325
JALER PARKING PROVIDED	22	165	24	37	60	60	368
PE REOD @ 10% OF NET SITE	38,499	171,280	37,033	68,204	84,036	76,438	475,499
PE PROVIDED	67,001	258,190	73,756	128,965	165,429	188,142	881,483
	17.40%	15.07%	19.92%	18.91%	19.89%	24.61%	18.54%



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PROLOGIS PARK
MORENO VALLEY
EUCALYPTUS

EUCALYPTUS AVENUE
MORENO VALLEY, CALIFORNIA



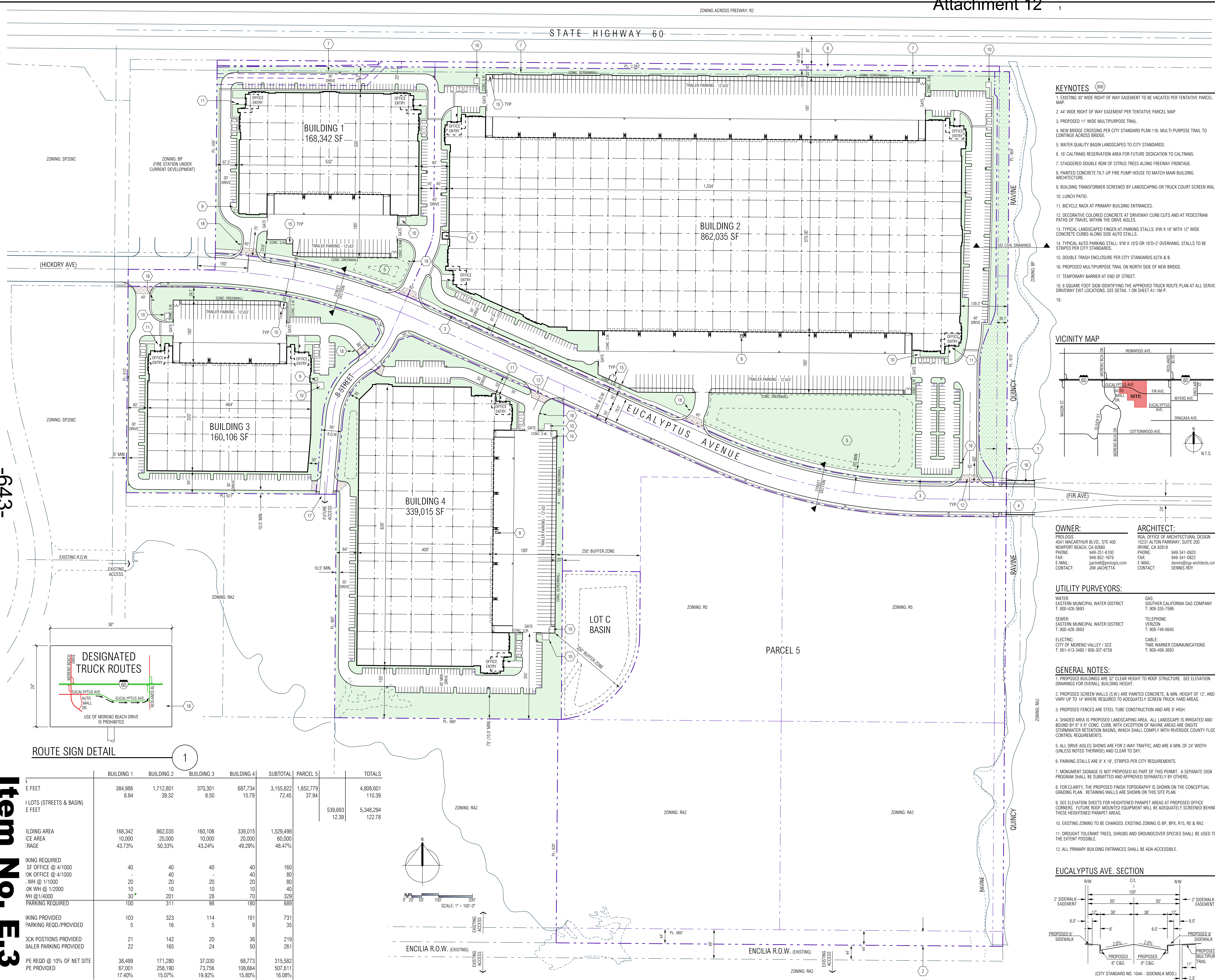
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PA07-0083



17777 CENTER COURT DR NORTH, STE 100
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STATE HIGHWAY 60

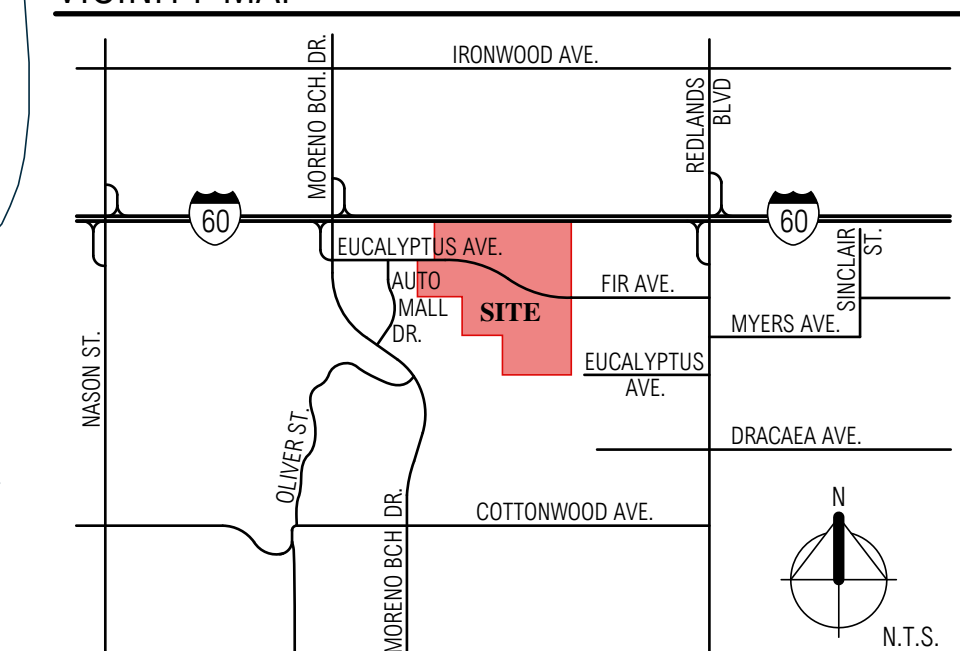
ZONING ACROSS FREEWAY: R2



KEYNOTES

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VICINITY MAP



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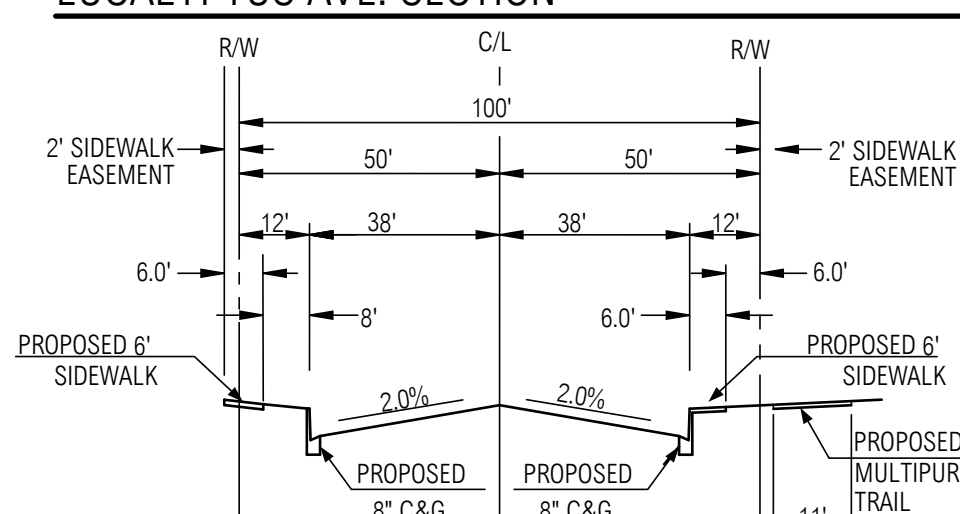
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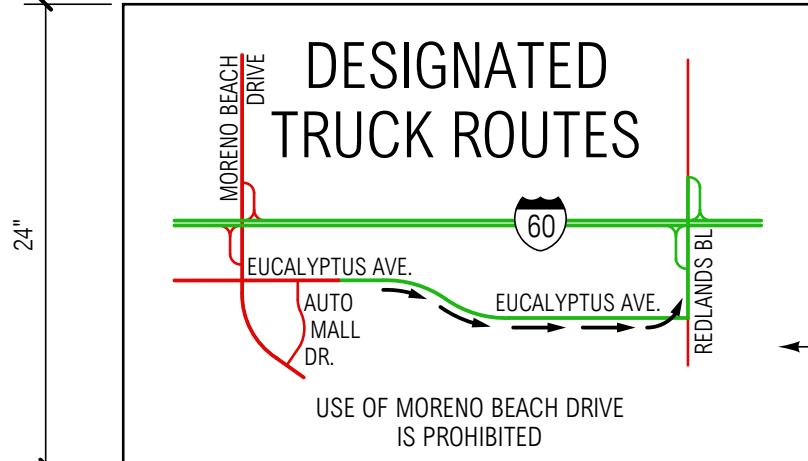
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EUCALYPTUS AVE. SECTION



-643-

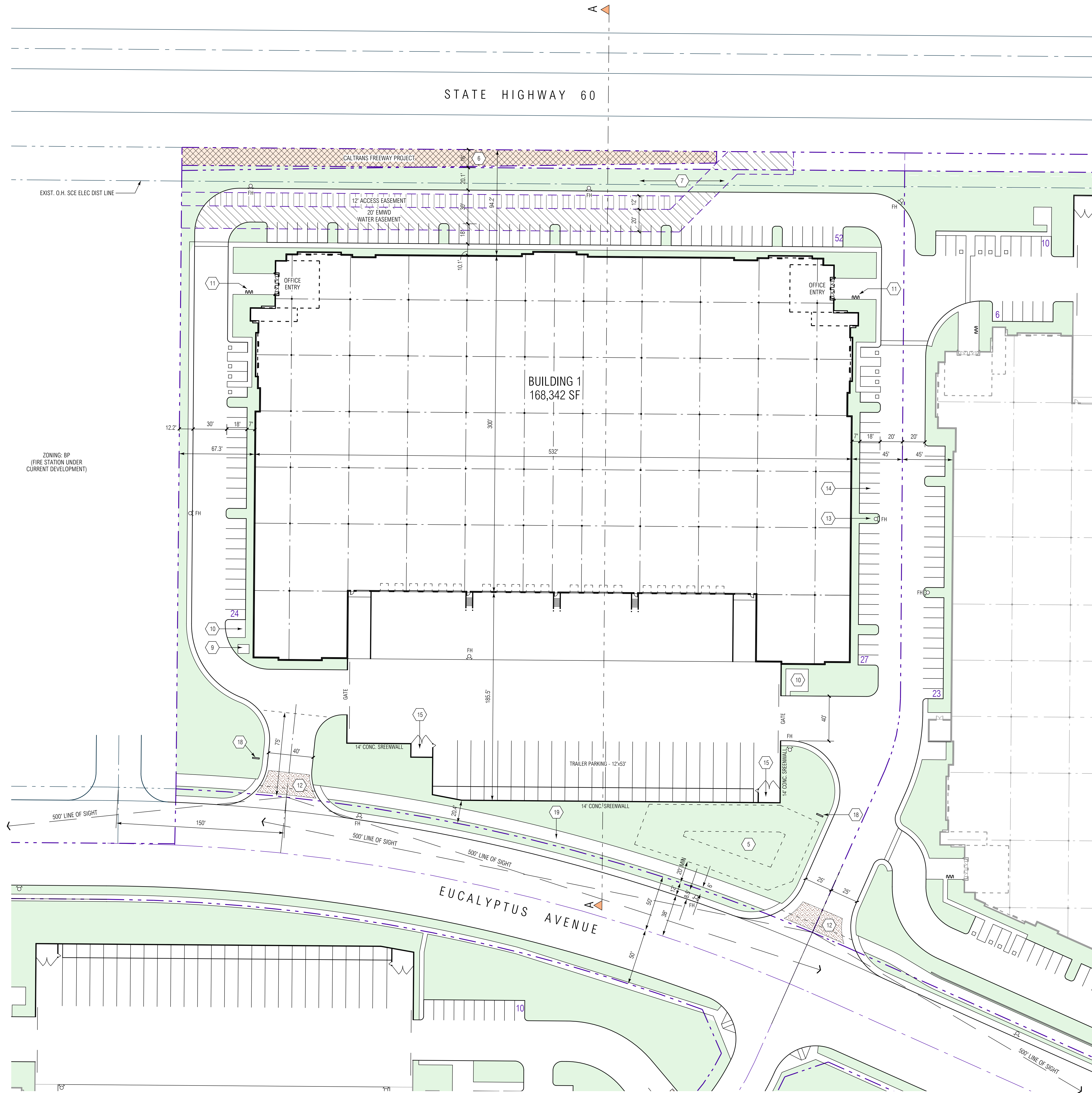


ROUTE SIGN DETAIL

1

	BUILDING 1	BUILDING 2	BUILDING 3	BUILDING 4	SUBTOTAL	PARCEL 5	TOTALS
E FEET	384,986	1,712,801	370,301	687,734	3,155,822	1,652,779	4,808,601
LOTS (STREETS & BASIN)	8.84	39.32	8.50	15.79	72.45	37.94	110.39
E FEET						539,693	5,348,294
						12.39	122.78
BUILDING AREA	168,342	862,035	160,106	339,015	1,529,498		
ICE AREA	10,000	20,000	10,000	20,000	60,000		
IRRIGATED	43.73%	50.33%	43.24%	49.29%	48.47%		
WORKING REQUIRED							
SF OFFICE @ 4/1000	40	40	40	40	160		
OK OFFICE @ 4/1000	-	40	-	40	80		
WH @ 1/1000	20	20	20	20	80		
OK WH @ 1/2000	10	10	10	10	40		
MH @ 1/4000	30	201	28	70	329		
PARKING REQUIRED	100	311	98	180	689		
WORKING PROVIDED							
PARKING RECD./PROVIDED	103	323	114	191	731		
JACK POSTIONS PROVIDED	5	16	5	9	35		
WALKER POSTIONS PROVIDED	21	142	20	36	219		
WALKER PARKING PROVIDED	22	165	24	50	261		
PE RECD @ 10% OF NET SITE	38,499	171,280	37,030	68,773	315,582		
PE PROVIDED	67,001	268,190	73,756	108,664	507,611		
	17.40%	15.07%	19.92%	15.80%	16.08%		

Item No. E.3



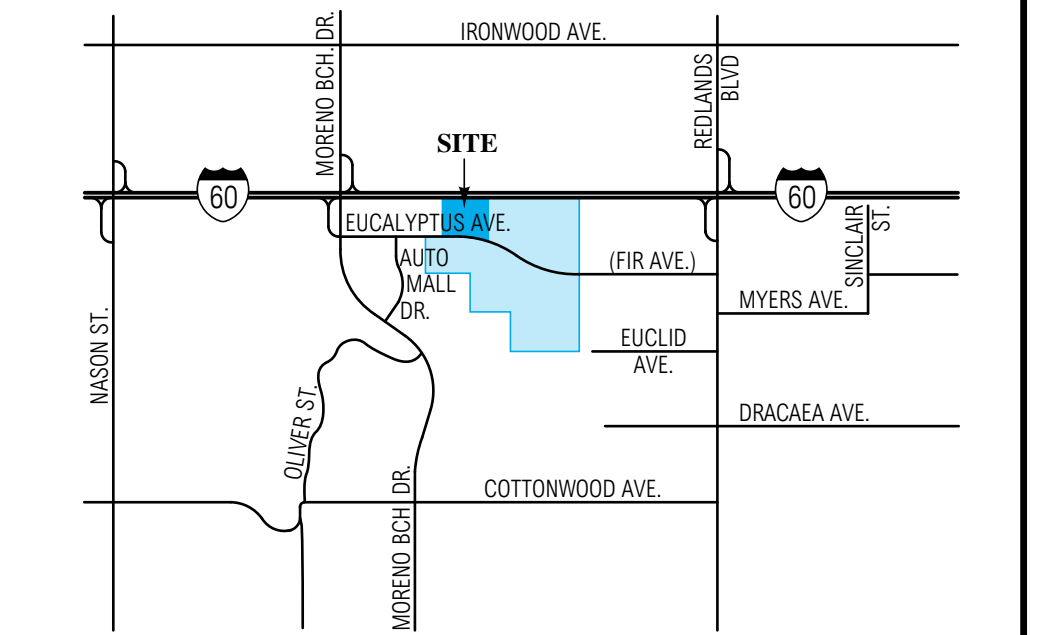
KEYNOTES

1. N/A
2. N/A
3. N/A
4. N/A
5. WATER QUALITY BASIN LANDSCAPED TO CITY STANDARDS.
6. 16' CALTRANS RESERVATION AREA FOR FUTURE DEDICATION TO CALTRANS.
7. STAGGERED DOUBLE ROW OF CITRUS TREES ALONG FREEWAY FRONTAGE.
8. N/A
9. BUILDING TRANSFORMER SCREENED BY LANDSCAPING OR TRUCK COURT SCREEN WALLS.
10. LUNCH PATIO.
11. BICYCLE RACK AT PRIMARY BUILDING ENTRANCES.
12. DECORATIVE COLORED CONCRETE AT DRIVEWAY CURB CUTS AND AT PEDESTRIAN PATHS OF TRAVEL WITHIN THE DRIVE AISLES.
13. TYPICAL LANDSCAPED FINGER AT PARKING STALLS: 9'W X 18' WITH 12" WIDE CONCRETE CURBS ALONG SIDE AUTO STALLS.
14. TYPICAL AUTO PARKING STALL: 9'W X 18'D OR 16'D-2" OVERHANG. STALLS TO BE STRIPED PER CITY STANDARDS.
15. DOUBLE TRASH ENCLOSURE PER CITY STANDARDS 627A & B.
16. N/A
17. N/A
18. 6 SQUARE FOOT SIGN IDENTIFYING THE APPROVED TRUCK ROUTE PLAN AT ALL SERVICE DRIVEWAY EXIT LOCATIONS. SEE DETAIL 1 ON SHEET A1-1M-P
19. PROPOSED 11" WIDE MULTIPURPOSE TRAIL.

PROJECT DATA

	BUILDING 1
SITE AREA	
SQUARE FEET	384,986
ACRES	8.84
OTHER LOTS (STREETS & RAVINE)	
SQUARE FEET	
ACRES	
TOTAL BUILDING AREA	168,342
OFFICE AREA	10,000
NET COVERAGE	43.73%
AUTO PARKING REQUIRED	
10,000 SF OFFICE @ 4/1000	40
10K - 20K OFFICE @ 4/1000	-
0 - 20K WH @ 1/1000	20
20K - 40K WH @ 1/2000	10
40K + WH @ 1/4000	30
TOTAL PARKING REQUIRED	100
AUTO PARKING PROVIDED	103
BICYCLE PARKING REQ./PROVIDED	5
TRUCK DOCK POSITIONS PROVIDED	21
TRUCK TRAILER PARKING PROVIDED	22
LANDSCAPE REED @ 10% OF NET SITE	38,499
LANDSCAPE PROVIDED	67,001
	17.40%

VICINITY MAP:



OWNER:
 PROLOGIS
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 CONTACT: DENNIS ROY

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SEWER:
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ELECTRIC:
 CITY OF MORENO VALLEY / SCE
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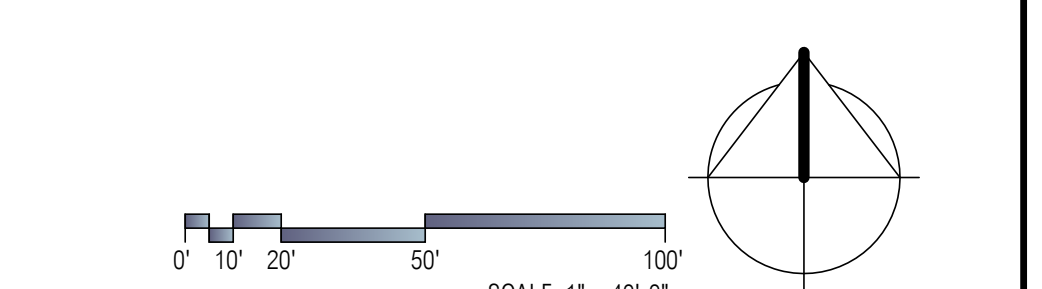
GAS:
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 T: 909-335-7586

TELEPHONE:
 VERIZON
 T: 909-748-6640

CABLE:
 TIME WARNER COMMUNICATIONS
 T: 909-456-3693

GENERAL NOTES:

1. PROPOSED BUILDINGS ARE 32' CLEAR HEIGHT TO ROOF STRUCTURE. SEE ELEVATION DRAWINGS FOR OVERALL BUILDING HEIGHT.
2. PROPOSED SCREEN WALLS (S.W.) ARE PAINTED CONCRETE, & MIN. HEIGHT OF 12', AND VARY UP TO 14' WHERE REQUIRED TO ADEQUATELY SCREEN TRUCK YARD AREAS.
3. PROPOSED FENCES ARE STEEL TUBE CONSTRUCTION AND ARE 6' HIGH.
4. SHADED AREA IS PROPOSED LANDSCAPING AREA. ALL LANDSCAPE IS IRRIGATED AND BOUND BY 6" X 6" CONC. CURBS. WITH EXCEPTION OF RAVINE AREAS ARE ONSITE STORMWATER RETENTION BASINS, WHICH SHALL COMPLY WITH RIVERSIDE COUNTY FLOOD CONTROL REQUIREMENTS.
5. ALL DRIVE AISLES SHOWS ARE FOR 2-WAY TRAFFIC, AND ARE A MIN. OF 24' WIDTH AND CLEAR TO SKY.
6. PARKING STALLS ARE 9' X 18', STRIPED PER CITY REQUIREMENTS.
7. MONUMENT SIGNAGE IS NOT PROPOSED AS PART OF THIS PERMIT. A SEPARATE SIGN PROGRAM SHALL BE SUBMITTED AND APPROVED SEPARATELY BY OTHERS.
8. FOR CLARITY, THE PROPOSED FINISH TOPOGRAPHY IS SHOWN ON THE CONCEPTUAL GRADING PLAN. RETAINING WALLS ARE SHOWN ON THIS SITE PLAN.
9. SEE ELEVATION SHEETS FOR HEIGHTENED PARAPET AREAS AT PROPOSED OFFICE CORNERS. FUTURE ROOF MOUNTED EQUIPMENT WILL BE ADEQUATELY SCREENED BEHIND THESE HEIGHTENED PARAPET AREAS.
10. EXISTING ZONING TO BE CHANGED. EXISTING ZONING IS BP, BFX, R15, R5 & RA2.
11. DROUGHT TOLERANT TREES, SHRUBS AND GROUNDCOVER SPECIES SHALL BE USED TO THE EXTENT POSSIBLE.



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CONSULTANT

PROFESSIONAL SEALS

**PROLOGIS PARK
 MORENO VALLEY
 EUCALYPTUS**

BUILDING 1

**EUCALYPTUS AVENUE
 MORENO VALLEY, CALIFORNIA**

**MORENO VALLEY
 WHERE DREAMS SOAR**

**CASE NUMBER:
 PA07-0083**

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 CERRITOS, CA 90703
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 JJACHETTA@PROLOGIS.COM

MARK	DATE	DESCRIPTION
CD		
BID		
PC		
DD		
SD	05/23/2013	SCHEMATIC DESIGN

RG A PROJECT NO:	07024.00
OWNER PROJECT NO:	00000.00
CAD FILE NAME:	07024-00-A1-1-1-P
DRAWN BY:	CF
CHKD BY:	DR
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SHEET TITLE	SITE PLAN BUILDING 1

CONSULTANT

PROFESSIONAL SEALS

PROLOGIS PARK
MORENO VALLEY
EUCALYPTUS

BUILDING 2

EUCALYPTUS AVENUE
MORENO VALLEY, CALIFORNIA



CASE NUMBER:
PA07-0083



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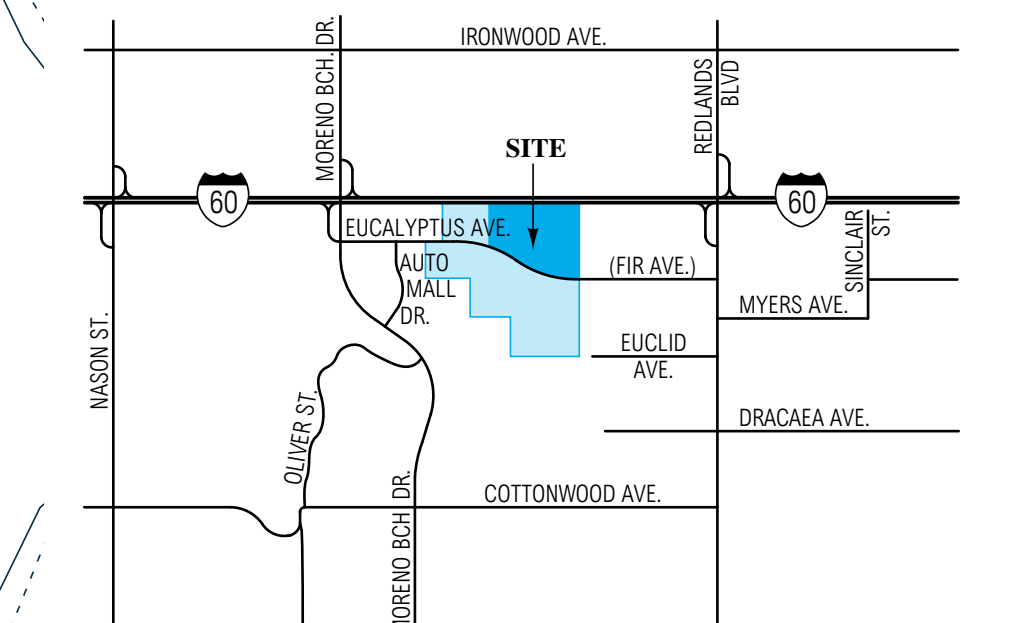
KEYNOTES

- EXISTING 30' WIDE RIGHT OF WAY EASEMENT TO BE VACATED.
- N/A
- N/A
- NEW BRIDGE CROSSING PER CITY STANDARD PLAN 116.
- WATER QUALITY BASIN LANDSCAPED TO CITY STANDARDS.
- 16' CALTRANS RESERVATION AREA FOR FUTURE DEDICATION TO CALTRANS.
- STAGGERED DOUBLE ROW OF CITRUS TREES ALONG FREEWAY FRONTAGE.
- BUILDING TRANSFORMER SCREENED BY LANDSCAPING OR TRUCK COURT SCREEN WALLS.
- LUNCH PATIO.
- BICYCLE RACK AT PRIMARY BUILDING ENTRANCES.
- DECORATIVE COLORED CONCRETE AT DRIVEWAY CURB CUTS.
- TYPICAL LANDSCAPED FINGER AT PARKING STALLS: 9'W X 18' WITH 12" WIDE CONCRETE CURBS ALONG SIDE AUTO STALLS.
- TYPICAL AUTO PARKING STALL: 9'W X 18'D OR 16'D-2" OVERHANG. STALLS TO BE STRIPED PER CITY STANDARDS.
- DOUBLE TRASH ENCLOSURE PER CITY STANDARDS 627A & B.
- N/A
- N/A
- 6 SQUARE FOOT SIGN IDENTIFYING THE APPROVED TRUCK ROUTE PLAN AT ALL SERVICE DRIVEWAY EXIT LOCATIONS. SEE DETAIL 1 ON SHEET A1-1M-P.
- PROPOSED 11" WIDE MULTIPURPOSE TRAIL.

PROJECT DATA

	BUILDING 2
SITE AREA	1,712,801
SQUARE FEET	39.32
ACRES	
OTHER LOTS (STREETS & RAVINE)	
SQUARE FEET	
ACRES	
TOTAL BUILDING AREA	862,035
OFFICE AREA	20,000
NET COVERAGE	50.33%
AUTO PARKING REQUIRED	
10,000 SF OFFICE @ 4/1000	40
10K - 20K WH @ 4/1000	40
0 - 20K WH @ 1/1000	20
20K - 40K WH @ 1/2000	10
40K + WH @ 1/4000	201
TOTAL PARKING REQUIRED	311
AUTO PARKING PROVIDED	323
BICYCLE PARKING RECD./PROVIDED	16
TRUCK DOCK POSTIONS PROVIDED	142
TRUCK TRIALER PARKING PROVIDED	165
LANDSCAPE RECD @ 10% OF NET SITE	171,280
LANDSCAPE PROVIDED	258,190
	15.07%

VICINITY MAP:



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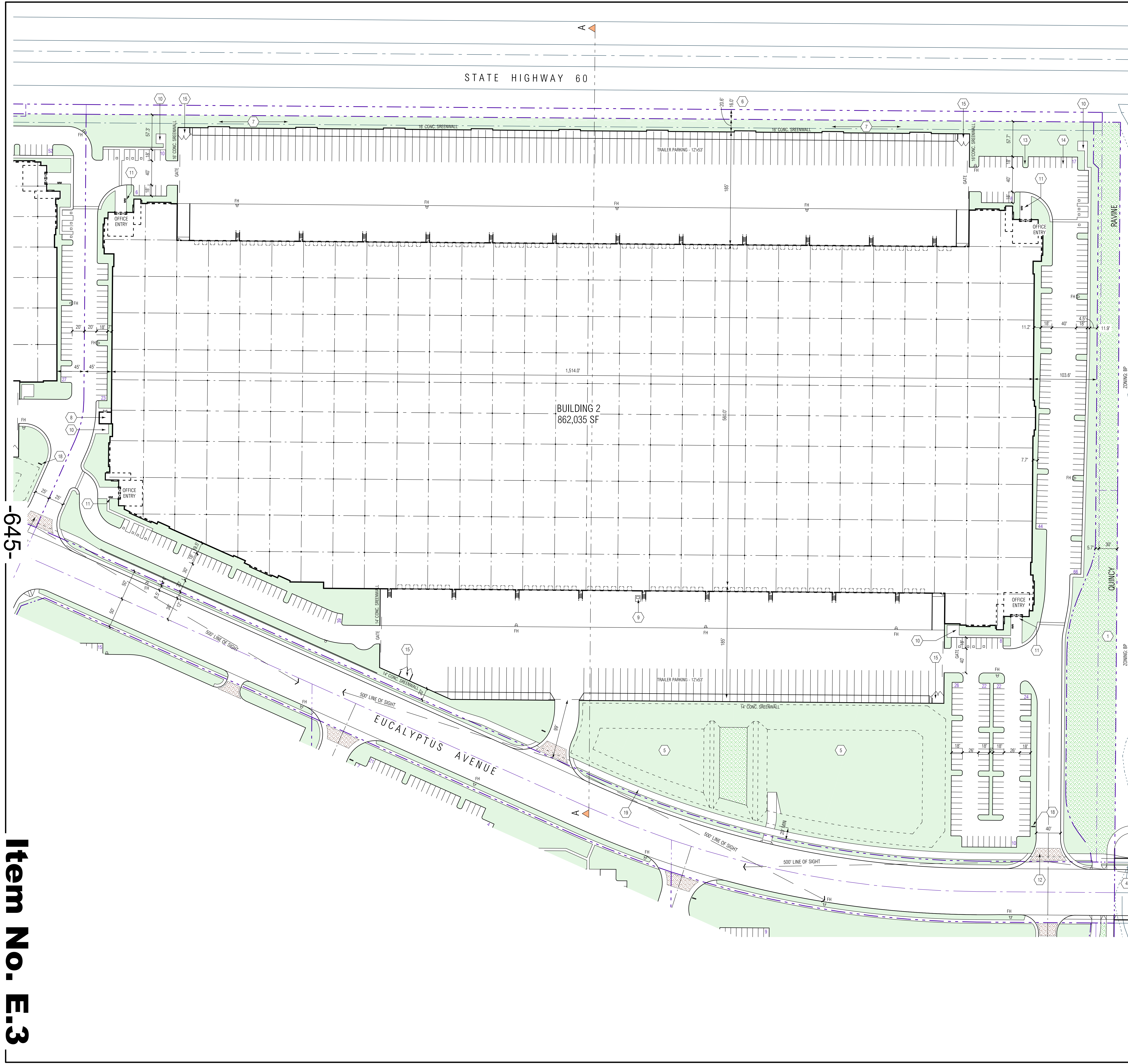
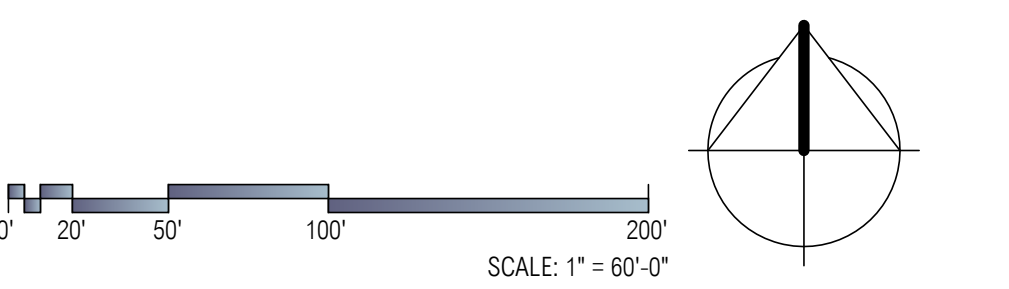
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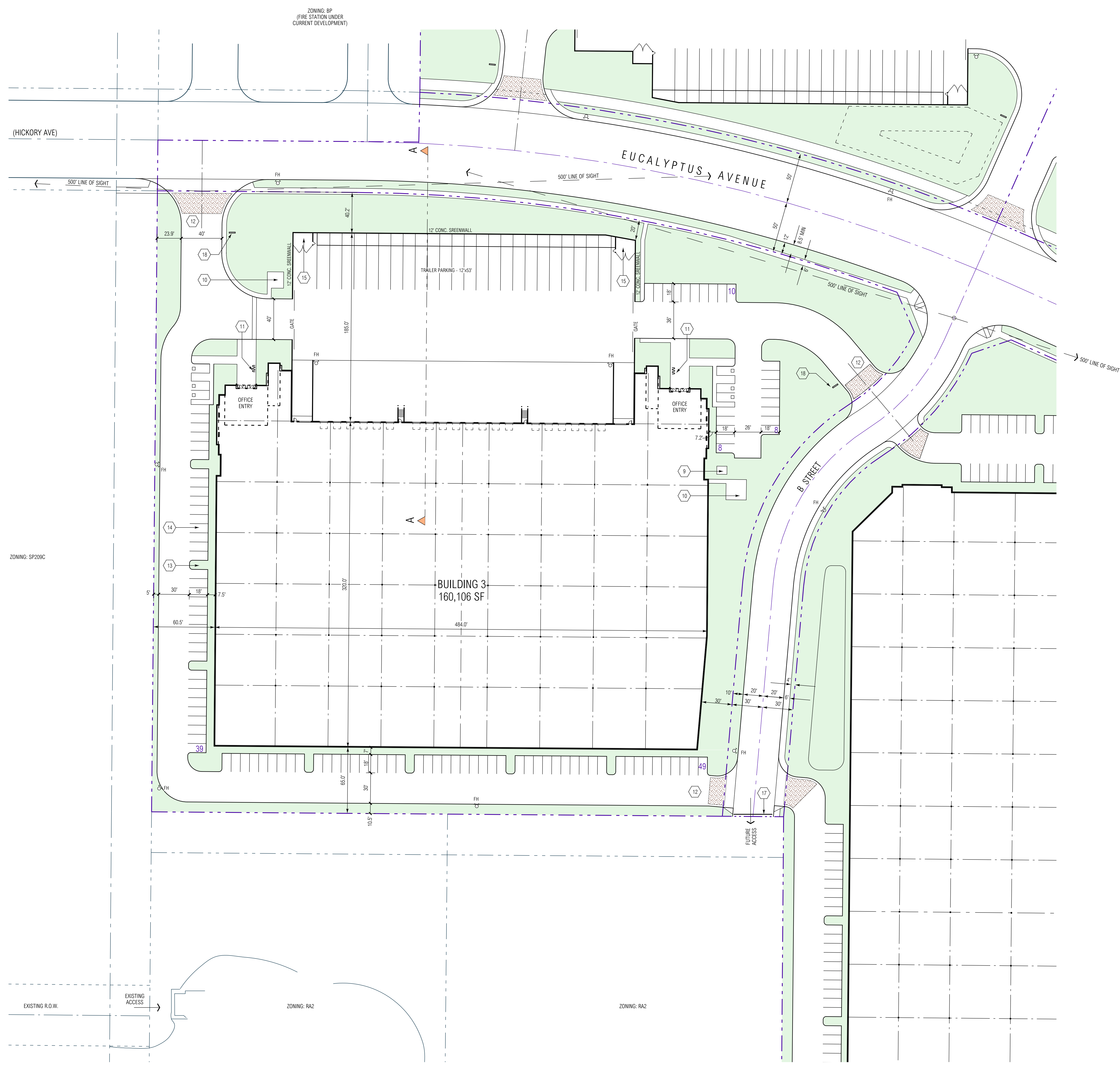
CABLE:
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- GENERAL NOTES:**
- PROPOSED BUILDINGS ARE 32' CLEAR HEIGHT TO ROOF STRUCTURE. SEE ELEVATION DRAWINGS FOR OVERALL BUILDING HEIGHT.
 - PROPOSED SCREEN WALLS (S.W.) ARE PAINTED CONCRETE, & MIN. HEIGHT OF 12', AND VARY UP TO 14' WHERE REQUIRED TO ADEQUATELY SCREEN TRUCK YARD AREAS.
 - PROPOSED FENCES ARE STEEL TUBE CONSTRUCTION AND ARE 6' HIGH.
 - SHADED AREA IS PROPOSED LANDSCAPING AREA. ALL LANDSCAPE IS IRRIGATED AND BOUND BY 6" X 6" CONC. CURBS. WITH EXCEPTION OF RAVINE AREAS ARE ONSITE STORMWATER RETENTION BASINS, WHICH SHALL COMPLY WITH RIVERSIDE COUNTY FLOOD CONTROL REQUIREMENTS.
 - ALL DRIVE ASILES SHOWS ARE FOR 2-WAY TRAFFIC, AND ARE A MIN. OF 26' WIDTH AND CLEAR TO SKY.
 - PARKING STALLS ARE 9' X 18', STRIPED PER CITY REQUIREMENTS.
 - MONUMENT SIGNAGE IS NOT PROPOSED AS PART OF THIS PERMIT. A SEPARATE SIGN PROGRAM SHALL BE SUBMITTED AND APPROVED SEPARATELY BY OTHERS.
 - FOR CLARITY, THE PROPOSED FINISH TOPOGRAPHY IS SHOWN ON THE CONCEPTUAL GRADING PLAN. RETAINING WALLS ARE SHOWN ON THIS SITE PLAN.
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 - EXISTING ZONING TO BE CHANGED. EXISTING ZONING IS BP, BFX, R15, R5 & RA2.
 - DROUGHT TOLERANT TREES, SHRUBS AND GROUNDCOVER SPECIES SHALL BE USED TO THE EXTENT POSSIBLE.



-645-

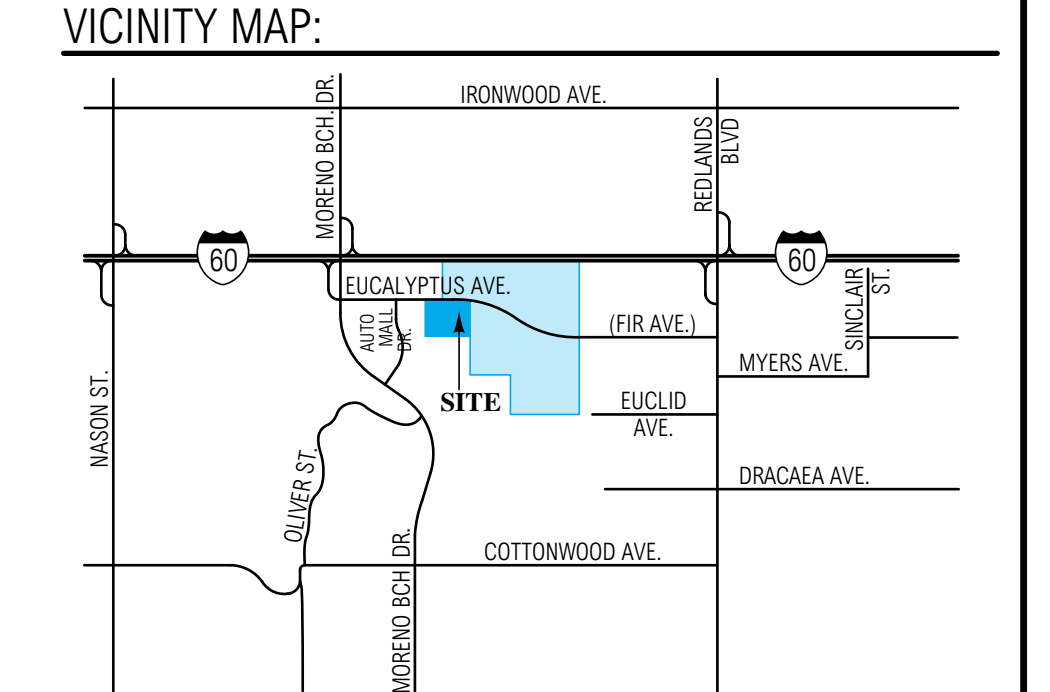
Item No. E.3



- KEYNOTES**
1. N/A
 2. N/A
 3. N/A
 4. N/A
 5. N/A
 6. N/A
 7. N/A
 8. N/A
 9. BUILDING TRANSFORMER SCREENED BY LANDSCAPING OR TRUCK COURT SCREEN WALLS.
 10. LUNCH PATIO.
 11. BICYCLE RACK AT PRIMARY BUILDING ENTRANCES.
 12. DECORATIVE COLORED CONCRETE AT DRIVEWAY CURB CUTS AND AT PEDESTRIAN PATHS OF TRAVEL WITHIN THE DRIVE AISLES.
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 15. DOUBLE TRASH ENCLOSURE PER CITY STANDARDS 627A & B.
 16. N/A
 17. TEMPORARY BARRIER AT END OF STREET.
 18. 6 SQUARE FOOT SIGN IDENTIFYING THE APPROVED TRUCK ROUTE PLAN AT ALL SERVICE DRIVEWAY EXIT LOCATIONS. SEE DETAIL 1 ON SHEET A1-1M-P

PROJECT DATA

	BUILDING 3
SITE AREA	
SQUARE FEET	370,325
ACRES	8.50
OTHER LOTS (STREETS & RAVINE)	
SQUARE FEET	
ACRES	
TOTAL BUILDING AREA	160,106
OFFICE AREA	10,000
NET COVERAGE	43.23%
AUTO PARKING REQUIRED	
10,000 SF OFFICE @ 4/1000	40
10K - 20K OFFICE @ 4/1000	-
0 - 20K WH @ 1/1000	20
20K - 40K WH @ 1/2000	10
40K + WH @ 1/4000	28
TOTAL PARKING REQUIRED	98
AUTO PARKING PROVIDED	114
BICYCLE PARKING REQ./PROVIDED	5
TRUCK DOCK POSITIONS PROVIDED	20
TRUCK TRAILER PARKING PROVIDED	24
LANDSCAPE REED @ 10% OF NET SITE	37,033
LANDSCAPE PROVIDED	73,756
	19.92%



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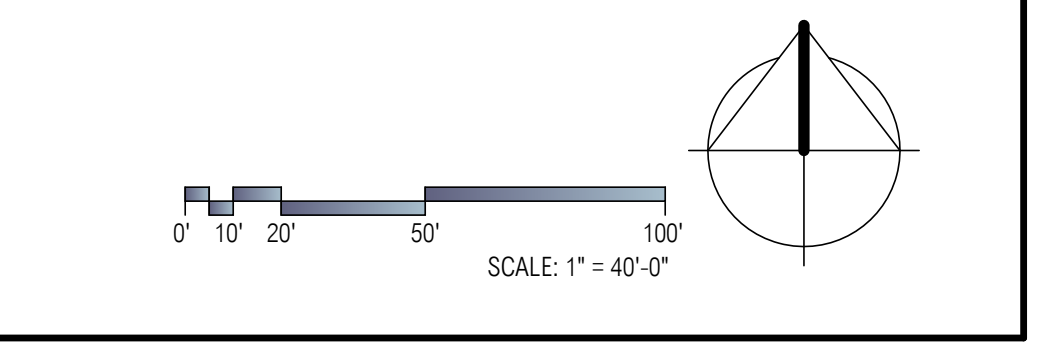
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- GENERAL NOTES:**
1. PROPOSED BUILDINGS ARE 32' CLEAR HEIGHT TO ROOF STRUCTURE. SEE ELEVATION DRAWINGS FOR OVERALL BUILDING HEIGHT.
 2. PROPOSED SCREEN WALLS (S.W.) ARE PAINTED CONCRETE, & MIN. HEIGHT OF 12', AND VARY UP TO 14' WHERE REQUIRED TO ADEQUATELY SCREEN TRUCK YARD AREAS.
 3. PROPOSED FENCES ARE STEEL TUBE CONSTRUCTION AND ARE 6' HIGH.
 4. SHADED AREA IS PROPOSED LANDSCAPING AREA. ALL LANDSCAPE IS IRRIGATED AND BOUND BY 6" X 6" CONC. CURBS, WITH EXCEPTION OF RAVINE AREAS ARE ONSITE STORMWATER RETENTION BASINS, WHICH SHALL COMPLY WITH RIVERSIDE COUNTY FLOOD CONTROL REQUIREMENTS.
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 10. EXISTING ZONING TO BE CHANGED. EXISTING ZONING IS BP, BFX, R15, R5 & RA2.
 11. DROUGHT TOLERANT TREES, SHRUBS AND GROUNDCOVER SPECIES SHALL BE USED TO THE EXTENT POSSIBLE.



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CONSULTANT

PROFESSIONAL SEALS

PROLOGIS PARK
 MORENO VALLEY
 EUCALYPTUS

BUILDING 3

EUCALYPTUS AVENUE
 MORENO VALLEY, CALIFORNIA

MORENO VALLEY
 WHERE DREAMS SOAR

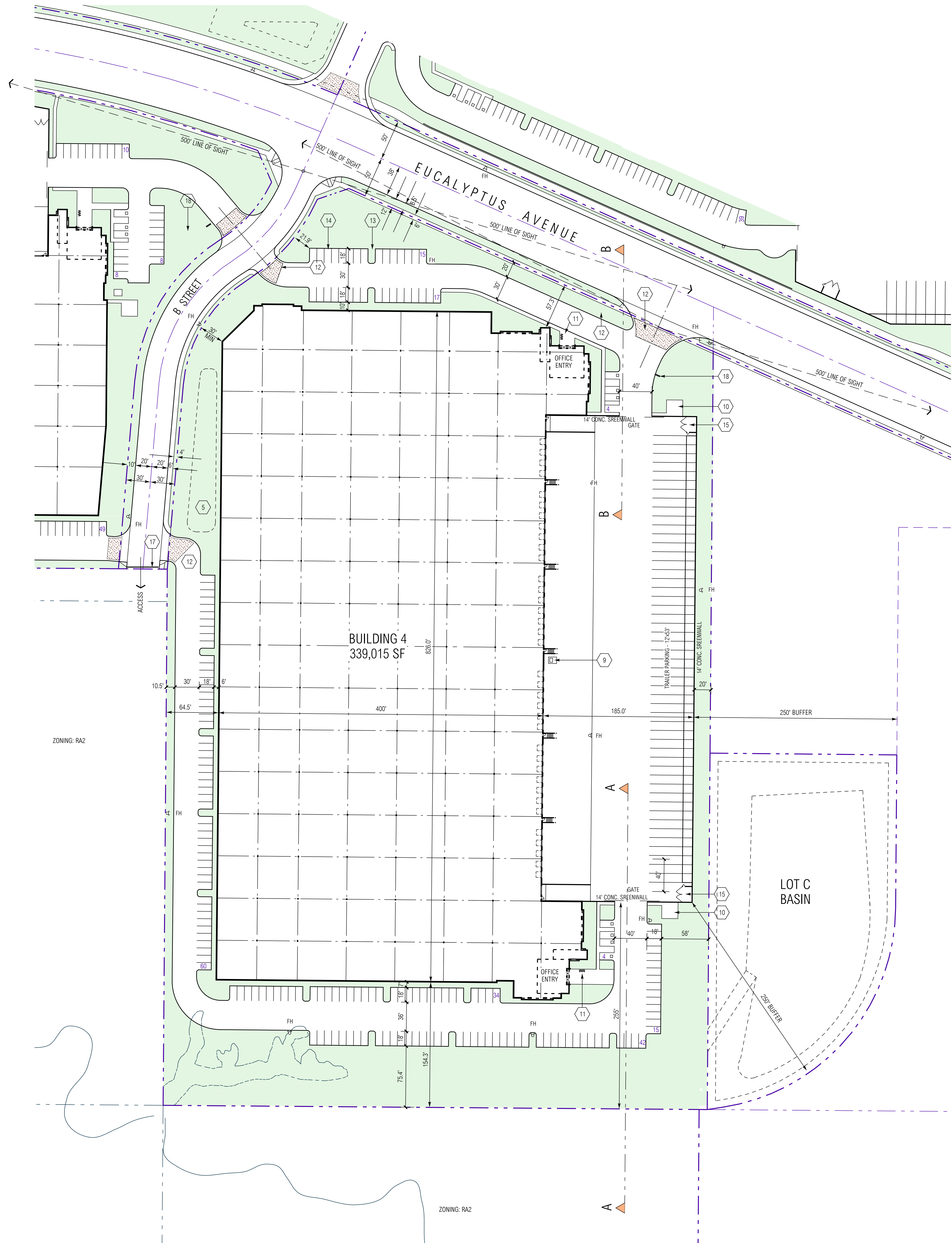
CASE NUMBER:
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 17777 CENTER COURT DR NORTH, STE 100
 CERRITOS, CA 90703
 PHONE: 562-345-9226
 CONTACT: JIM JACHETTA
 JJACHETTA@PROLOGIS.COM

CD		
BID		
PC		
DD		
SD	05/13/2013	SCHEMATIC DESIGN
MARK	DATE	DESCRIPTION

RG A PROJECT NO: 07024.00
 OWNER PROJECT NO: 00000.00
 CAD FILE NAME: 07024-00-A1-1-3-P
 DRAWN BY: CF
 CHKD BY: DR
 COPYRIGHT
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SHEET TITLE
 SITE PLAN
 BUILDING 3



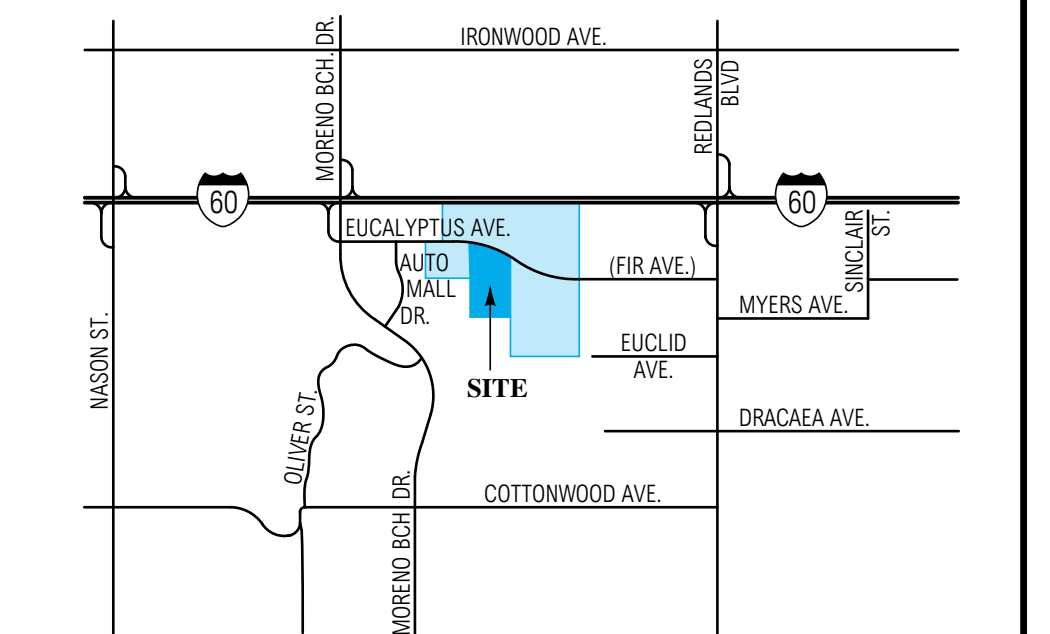
KEYNOTES

1. N/A
2. N/A
3. N/A
4. N/A
5. WATER QUALITY BASIN LANDSCAPED TO CITY STANDARDS.
6. N/A
7. N/A
8. N/A
9. BUILDING TRANSFORMER SCREENED BY LANDSCAPING OR TRUCK COURT SCREEN WALLS.
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15. DOUBLE TRASH ENCLOSURE PER CITY STANDARDS 627A & B.
16. N/A
17. TEMPORARY BARRIER AT END OF STREET.
18. 6 SQUARE FOOT SIGN IDENTIFYING THE APPROVED TRUCK ROUTE PLAN AT ALL SERVICE DRIVEWAY EXIT LOCATIONS. SEE DETAIL 1 ON SHEET A1-1M-P

PROJECT DATA

	BUILDING 4
SITE AREA	
SQUARE FEET	687,734
ACRES	15.79
LETTERED LOTS (STREETS & BASIN)	
SQUARE FEET	
ACRES	
TOTAL BUILDING AREA	339,015
OFFICE AREA	20,000
NET COVERAGE	48.29%
AUTO PARKING REQUIRED	
10,000 SF OFFICE @ 4/1000	40
10K - 20K OFFICE @ 4/1000	40
0 - 20K WH @ 1/1000	20
20K - 40K WH @ 1/2000	10
40K + WH @ 1/4000	70
TOTAL PARKING REQUIRED	180
AUTO PARKING PROVIDED	191
BICYCLE PARKING RECD./PROVIDED	9
TRUCK DOCK POSTIONS PROVIDED	36
TRUCK TRAILER PARKING PROVIDED	50
LANDSCAPE RECD @ 10% OF NET SITE	68,773
LANDSCAPE PROVIDED	108,664
	15.80%

VICINITY MAP:



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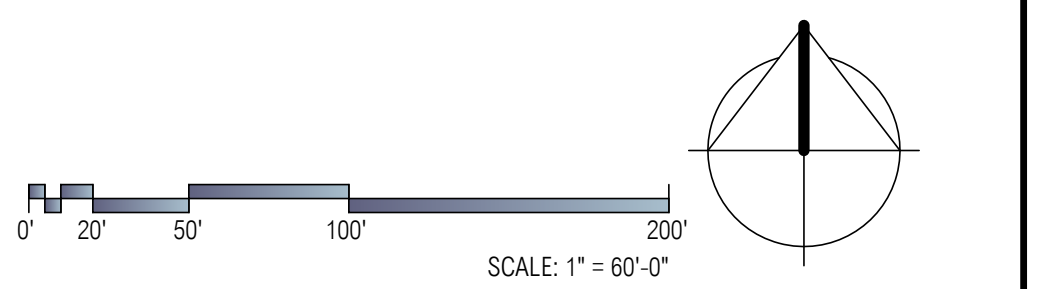
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GENERAL NOTES:

1. PROPOSED BUILDINGS ARE 32' CLEAR HEIGHT TO ROOF STRUCTURE. SEE ELEVATION DRAWINGS FOR OVERALL BUILDING HEIGHT.
2. PROPOSED SCREEN WALLS (S.W.) ARE PAINTED CONCRETE, & MIN. HEIGHT OF 12', AND VARY UP TO 14' WHERE REQUIRED TO ADEQUATELY SCREEN TRUCK YARD AREAS.
3. PROPOSED FENCES ARE STEEL TUBE CONSTRUCTION AND ARE 6' HIGH.
4. SHADED AREA IS PROPOSED LANDSCAPING AREA. ALL LANDSCAPE IS IRRIGATED AND BOUND BY 6" X 6" CONC. CURBS, WITH EXCEPTION OF RAVINE AREAS ARE ONSITE STORMWATER RETENTION BASINS, WHICH SHALL COMPLY WITH RIVERSIDE COUNTY FLOOD CONTROL REQUIREMENTS.
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MORENO VALLEY
 WHERE DREAMS SOAR

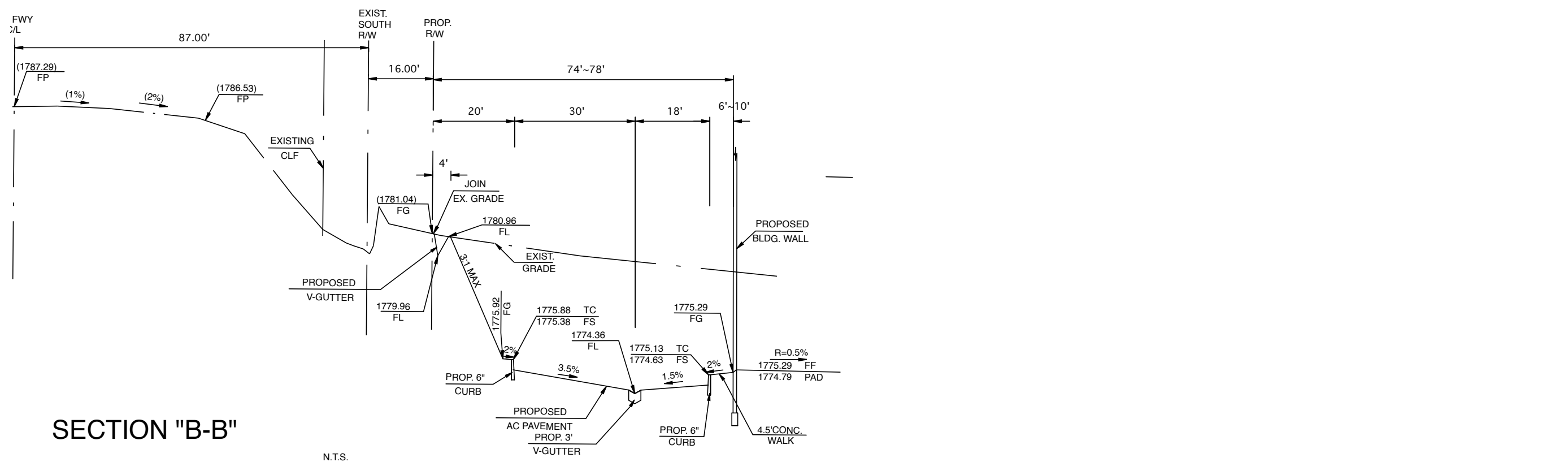
**CASE NUMBER:
 PA07-0083**

PROLOGIS™
 17777 CENTER COURT DR NORTH, STE 100
 CERRITOS, CA 90703
 PHONE: 562-345-9226
 CONTACT: JIM JACHETTA
 JJACHETTA@PROLOGIS.COM

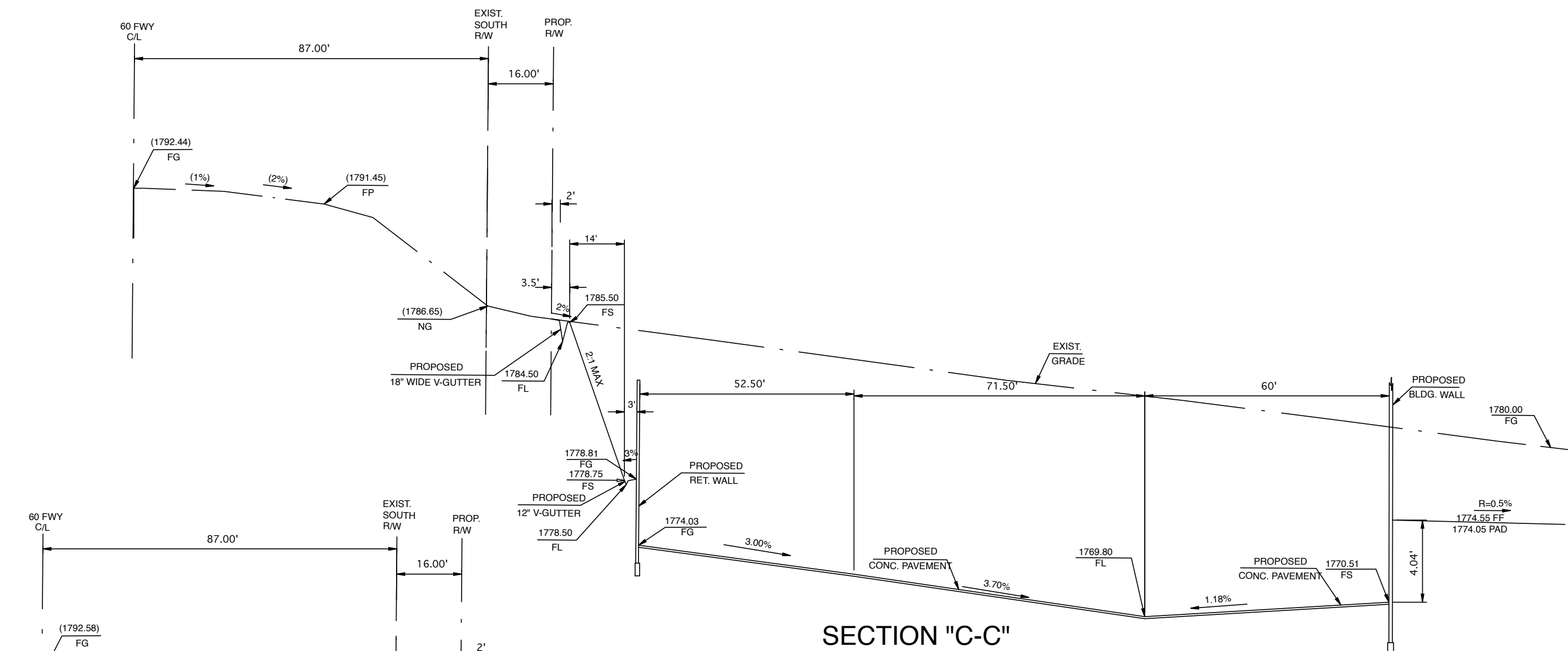
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BID		
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SD	09/18/2014	SCHEMATIC DESIGN

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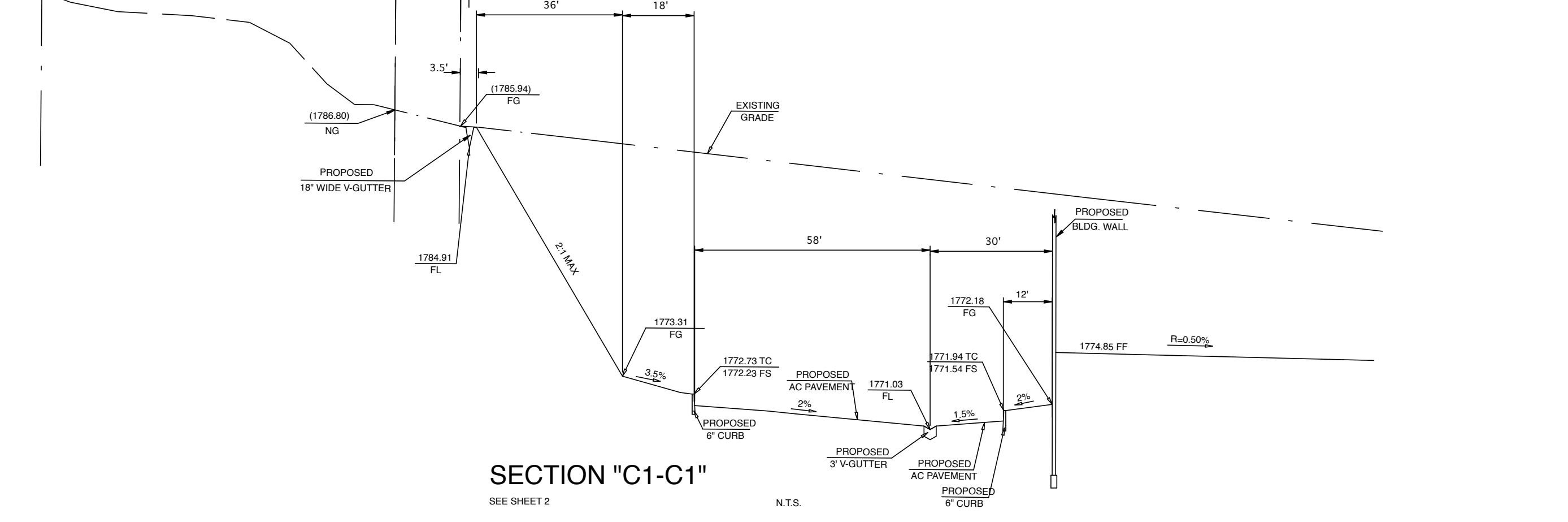
SHEET TITLE
BUILDING 4



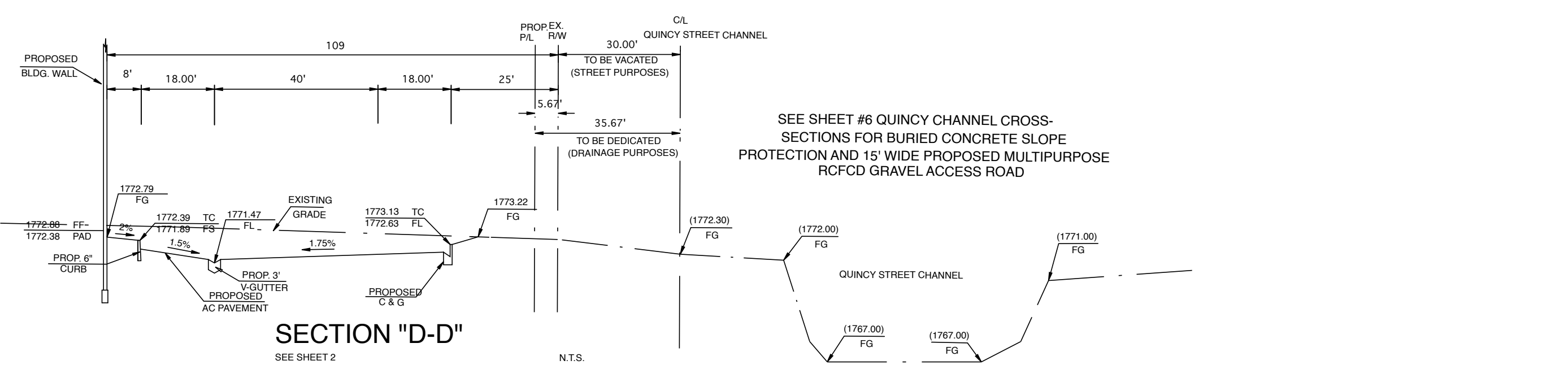
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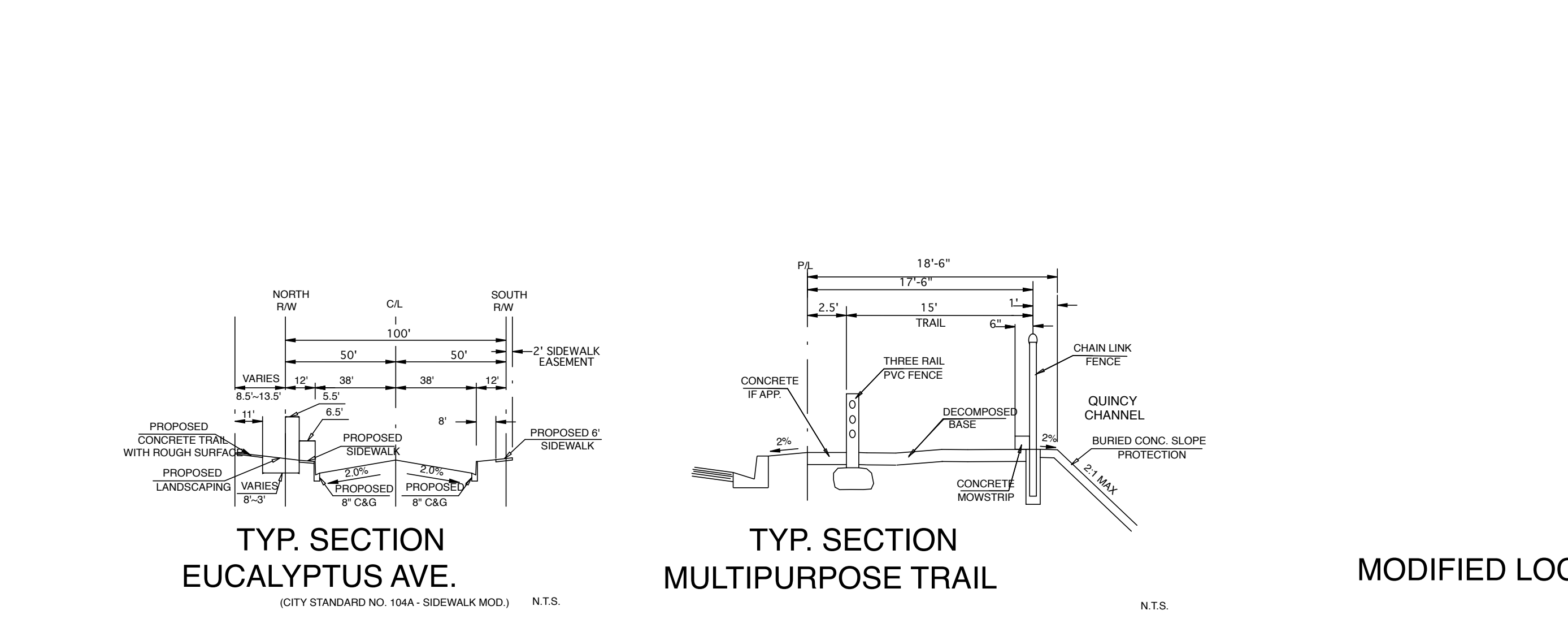
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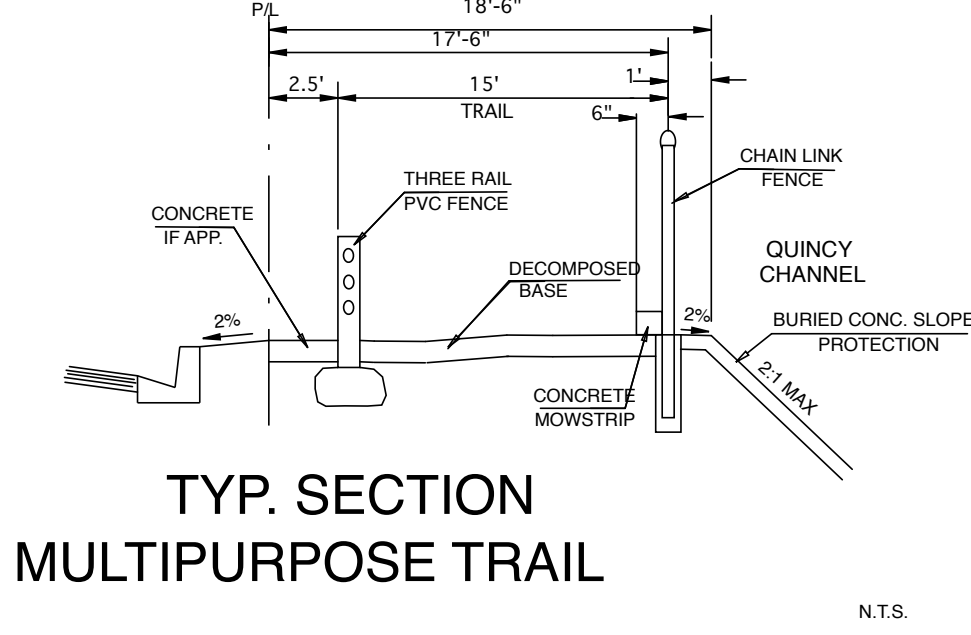
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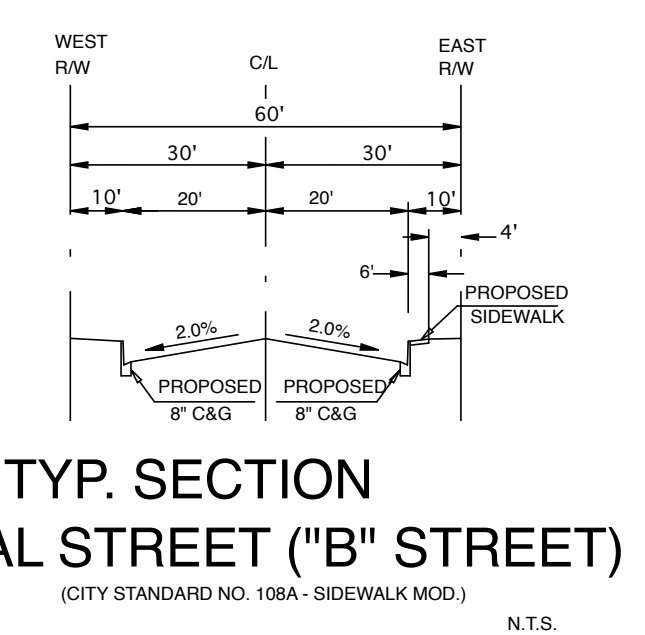
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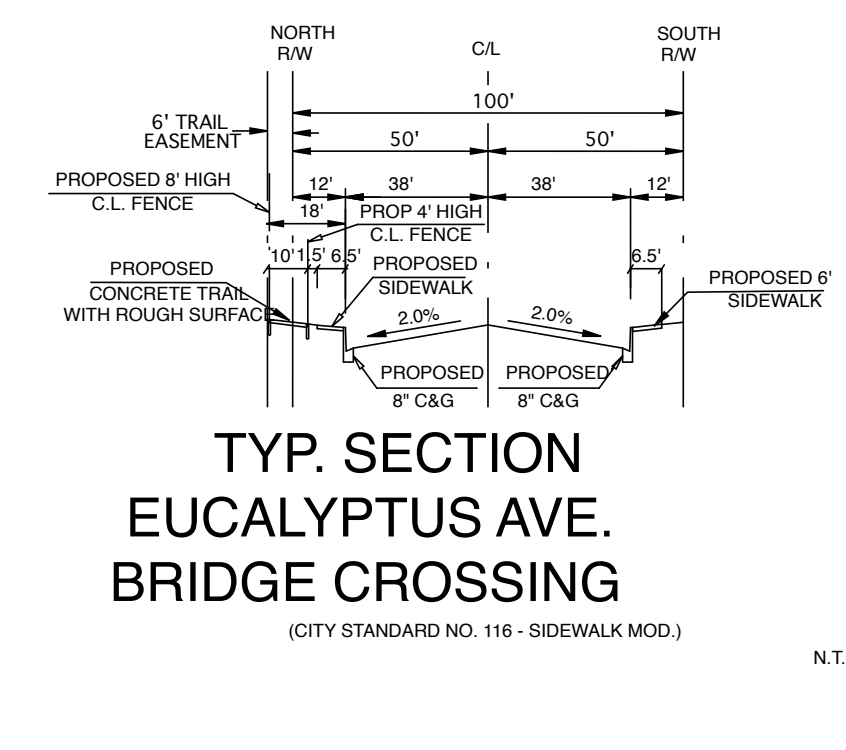
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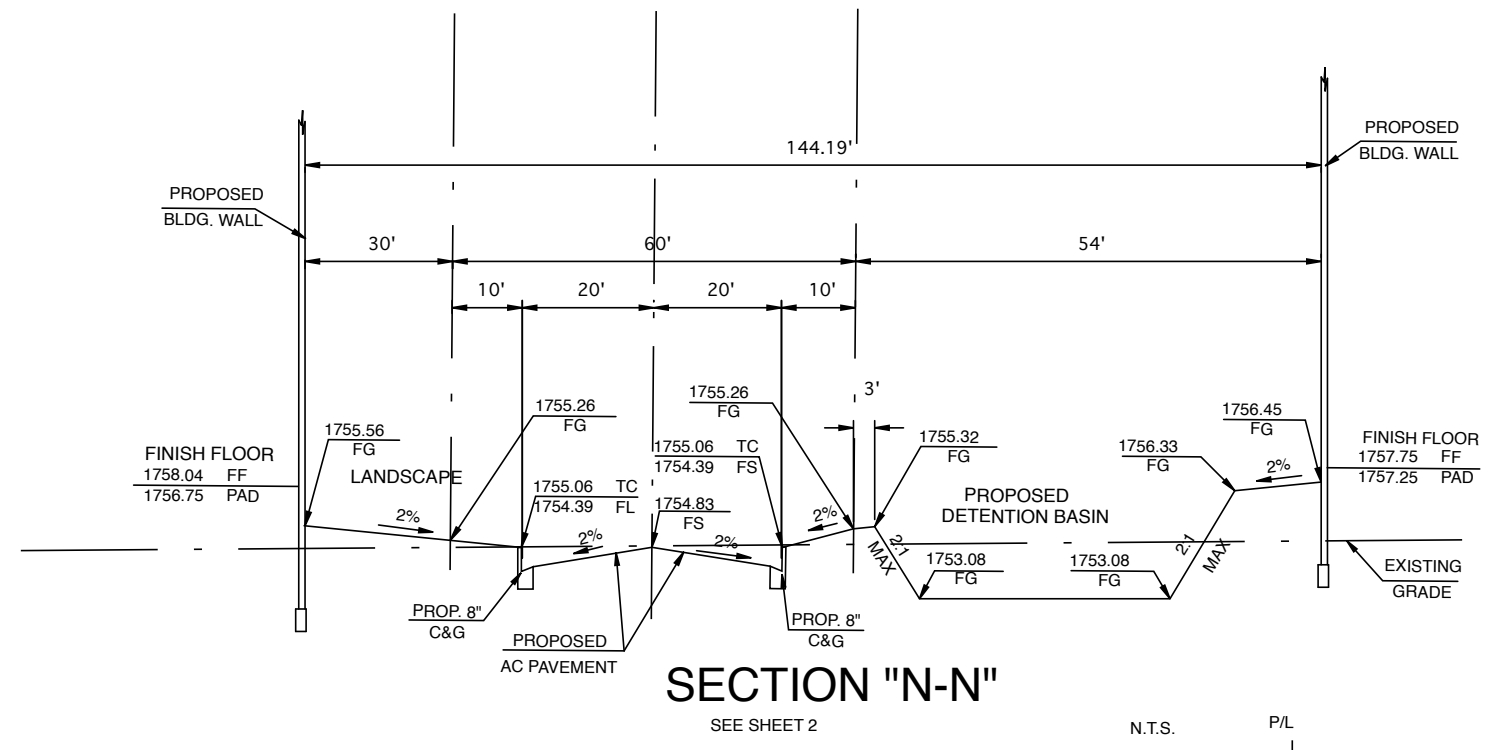
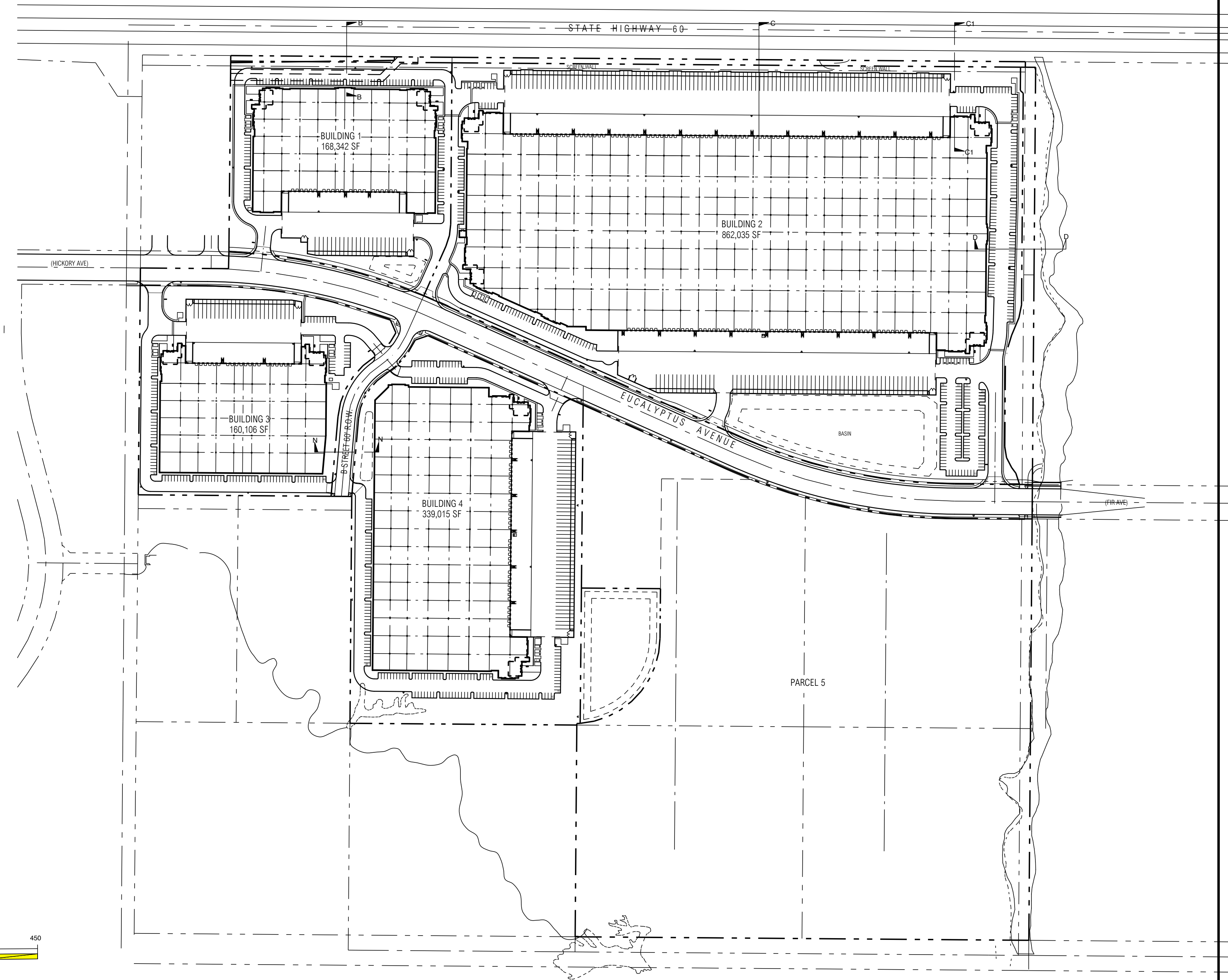
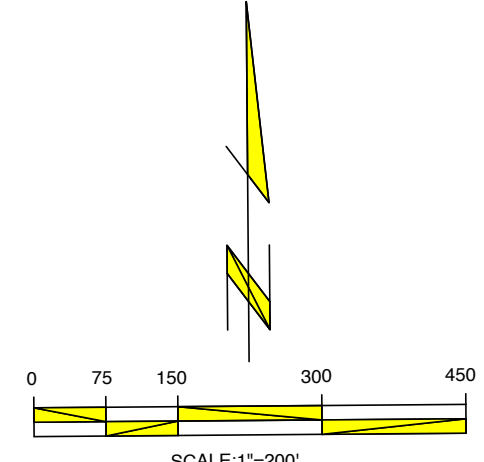
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TYP. SECTION MODIFIED LOCAL STREET ("B" STREET)



TYP. SECTION EUCALYPTUS AVE. BRIDGE CROSSING

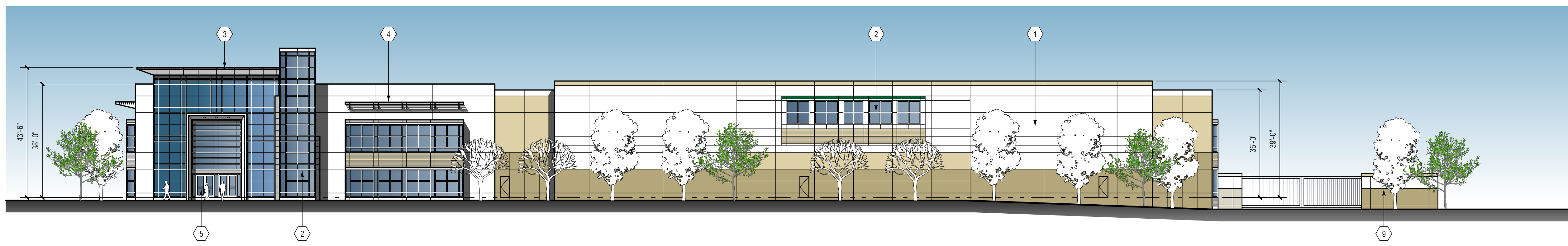


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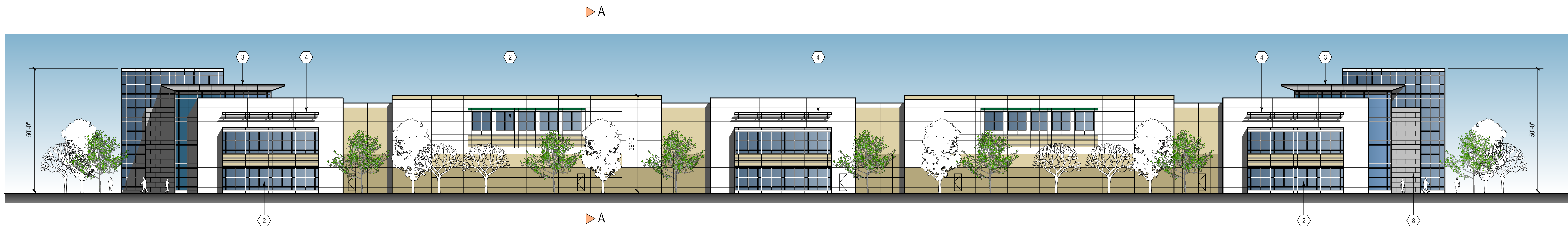


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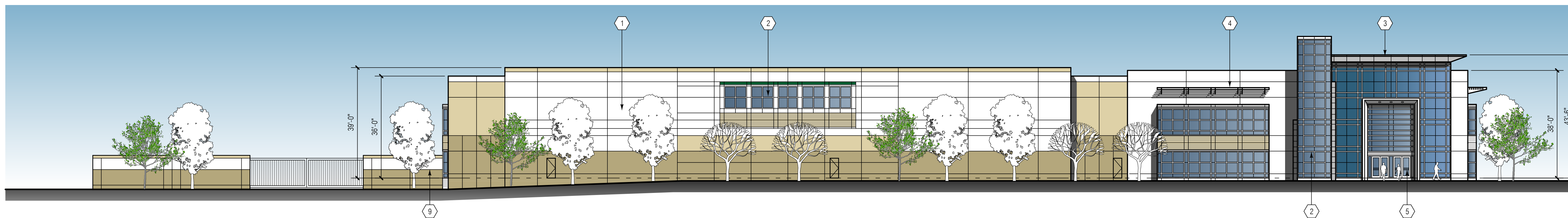
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SHEET TITLE	SITE PLAN SECTIONS



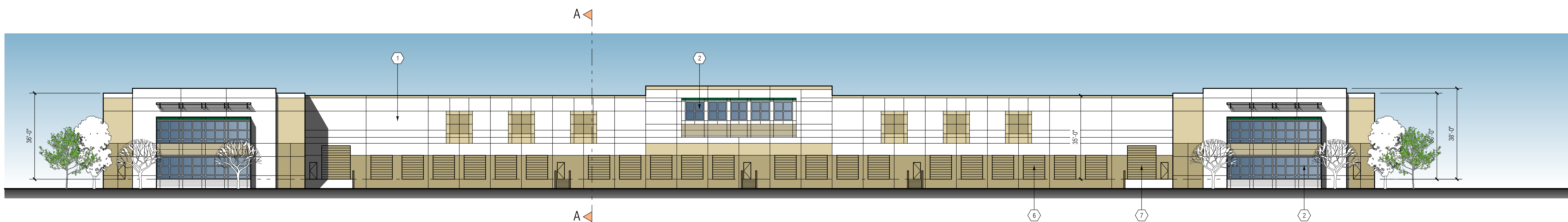
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SCALE: 1" = 20'-0"



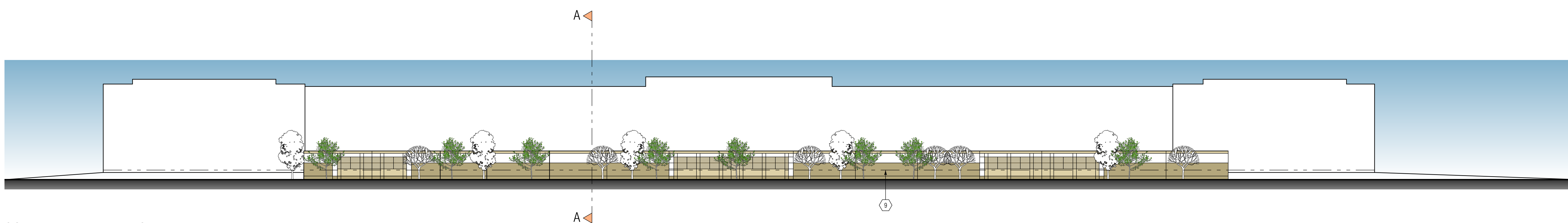
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SCALE: 1" = 20'-0"



EAST ELEVATION
SCALE: 1" = 20'-0"



SOUTH ELEVATION
SCALE: 1" = 20'-0"



SCREENWALL ELEVATION
SCALE: 1" = 20'-0"

KEYNOTES: (10)

1. PAINTED CONCRETE TILT-UP PANELS W/ ACCENT REVEALS AS SHOWN.
2. REFLECTIVE BLUE GLASS IN CLEAR ANODIZED ALUMINUM MULLION SYSTEM.
3. ALUMINUM FINISHED CORNICE OVER ENTRY ELEMENT.
4. METAL SHADING DEVICE OVER UPPER LEVEL WINDOWS.
5. RECESSED ENTRY WITH PRIMARY GLASS ENTRANCE DOORS.
6. PAINTED 9'-0" X 10' DOCK HIGH VERTICAL LIFT METAL TRUCK DOOR ASSEMBLY WITH DOCK BUMPERS. SEE DOOR SCHEDULE.
7. PAINTED 12' X 14' GRADE LEVEL VERTICAL LIFT METAL TRUCK DOOR ASSEMBLY. SEE DOOR SCHEDULE.
8. ACCENT CLADDING MATERIAL AT OFFICE ENTRY ELEMENTS.
9. CONCRETE TILT-UP SCREEN WALL PAINT AND REVEALS AS SHOWN TO MATCH BUILDING.

FINISH SCHEDULE

1. FIELD COLOR - PLD-1 PARIS WHITE - SHERWIN WILLIAMS SW 2088
2. ACCENT COLOR - PLD-2 STONE LION - SHERWIN WILLIAMS SW 7507
3. BASE ACCENT COLOR - PLD-3 TAVERN TAUPE - SHERWIN WILLIAMS SW 7508
4. PROLOGIS ACCENT COLOR - PLD-4 TALL TREE GREEN - AMERTONE 1BL16A
5. VISION GLAZING - SEE KEYNOTE 5 - VISTEON VERSALUX 1/4" BLUE 2000R. SEE KEYNOTES FOR LOCATIONS OF INSULATED UNITS.

-649-

Item No. E.3

RG A

Office of Architectural Design

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CONSULTANT

PROFESSIONAL SEALS

PROLOGIS PARK
MORENO VALLEY
EUCALYPTUS

BUILDING 1

EUCALYPTUS AVENUE
MORENO VALLEY, CALIFORNIA



CASE NUMBER:
PA07-0083



PROLOGIS™

17777 CENTER COURT DR NORTH, STE 100
CERRITOS, CA 90703
PHONE: 562-345-9226
CONTACT: JIM JACHETTA
JJACHETTA@PROLOGIS.COM

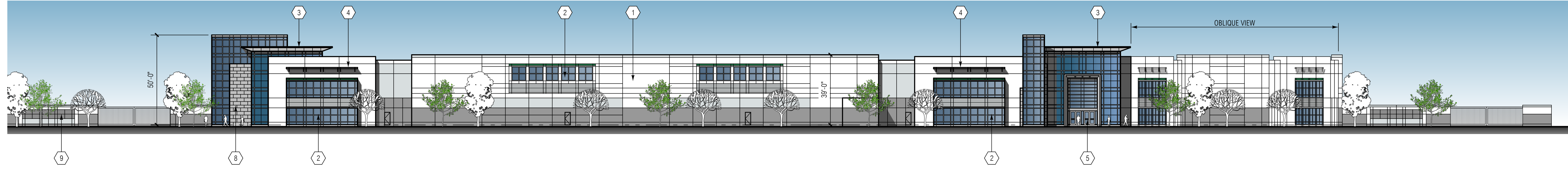
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SD	05/10/2012	SCHEMATIC DESIGN

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SHEET TITLE
ELEVATIONS
BUILDING 1

SHEET: A3-1-1-P

Item No. E.3



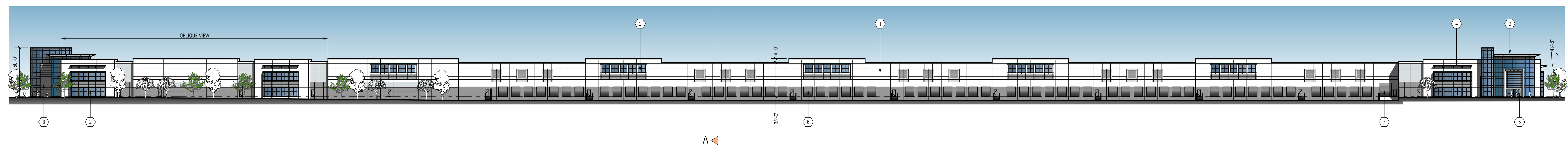
WEST ELEVATION
SCALE: 1" = 30'-0"

- KEYNOTES:** (10)
1. PAINTED CONCRETE TILT-UP PANELS W/ ACCENT REVEALS AS SHOWN.
 2. REFLECTIVE BLUE GLASS IN CLEAR ANODIZED ALUMINUM MULLION SYSTEM.
 3. ALUMINUM FINISHED CORNICE OVER ENTRY ELEMENT.
 4. METAL SHADING DEVICE OVER UPPER LEVEL WINDOWS.
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 7. PAINTED 12' X 14' GRADE LEVEL VERTICAL LIFT METAL TRUCK DOOR ASSEMBLY. SEE DOOR SCHEDULE.
 8. ACCENT CLADDING MATERIAL AT OFFICE ENTRY ELEMENTS.
 9. CONCRETE TILT-UP SCREEN WALL PAINT AND REVEALS AS SHOWN TO MATCH BUILDING.

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**PROLOGIS PARK
MORENO VALLEY
EUCALYPTUS**
BUILDING 2
EUCALYPTUS AVENUE
MORENO VALLEY, CALIFORNIA

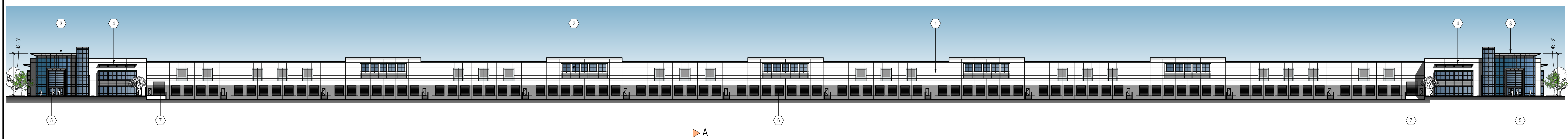
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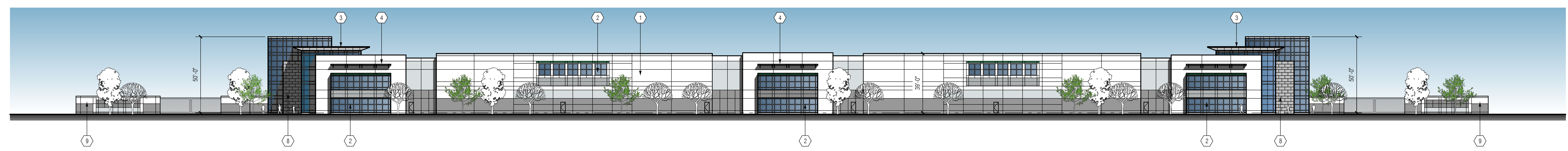
SOUTH ELEVATION
SCALE: 1" = 40'-0"

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- FINISH SCHEDULE**
1. FIELD COLOR - PLD-6 SABLE - SHERWIN WILLIAMS SW 0000
 2. ACCENT COLOR - PLD-7 LIQUORICE TINT - SHERWIN WILLIAMS SW 0000
 3. BASE ACCENT COLOR - PLD-3 JAGUAR - SHERWIN WILLIAMS SW 0000
 4. PROLOGIS ACCENT COLOR - PLD-4 TALL TREE GREEN - AMERTONE 1BL16A
 5. VISION GLAZING - SEE KEYNOTE 5 - VISTEON VERSALUX 1/4" BLUE 2000R. SEE KEYNOTES FOR LOCATIONS OF INSULATED UNITS.



NORTH ELEVATION
SCALE: 1" = 40'-0"



EAST ELEVATION
SCALE: 1" = 30'-0"

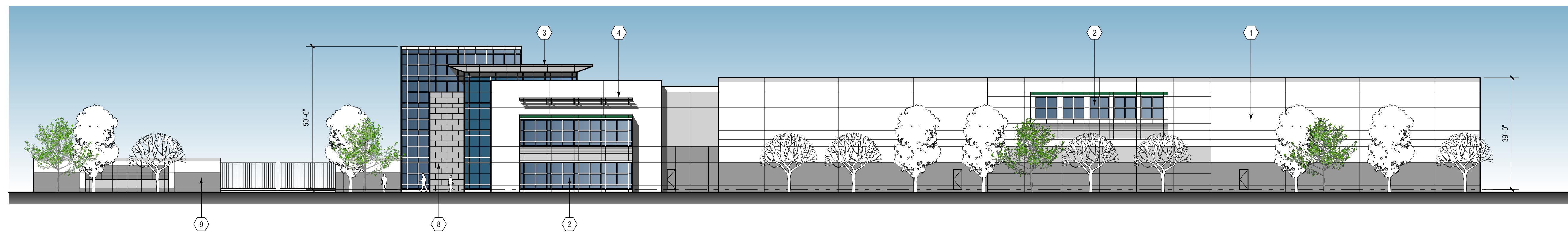
17777 CENTER COURT DR NORTH, STE 100
CERRITOS, CA 90703
PHONE: 562-345-9226
CONTACT: JIM JACHETTA
JJACHETTA@PROLOGIS.COM

DD	DATE	DESCRIPTION
SD	05/10/2012	SCHEMATIC DESIGN
MARK		DESCRIPTION

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SHEET TITLE
ELEVATIONS
BUILDING 2

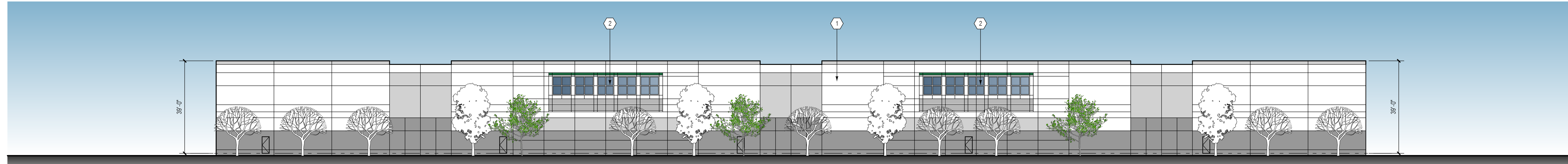
KEYNOTES: (10)

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9. CONCRETE TILT-UP SCREEN WALL PAINT AND REVEALS AS SHOWN TO MATCH BUILDING.



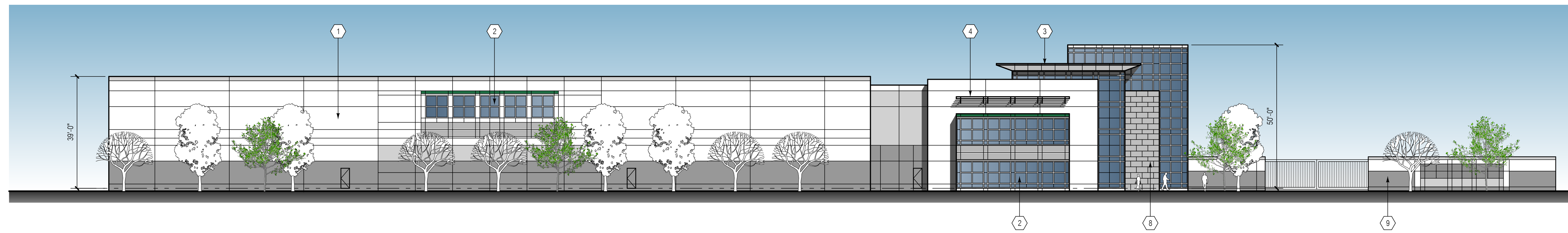
WEST ELEVATION

SCALE: 1" = 20'-0"



SOUTH ELEVATION

SCALE: 1" = 20'-0"

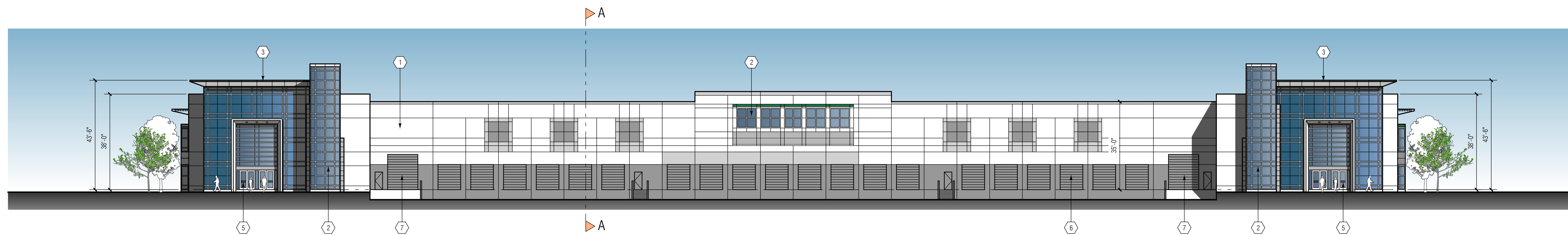


EAST ELEVATION

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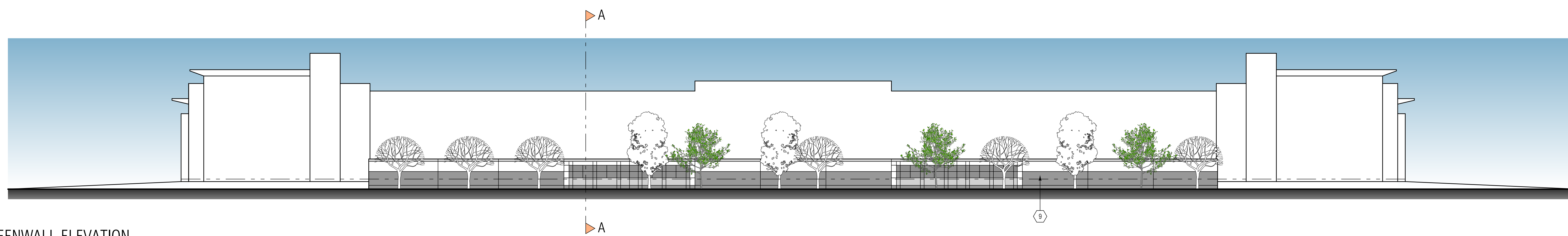
FINISH SCHEDULE

- | | |
|--|----------------------------------------------------------------------------------------------------------------------|
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| | 2. ACCENT COLOR - PLD-7 LIQUORICE TINT - SHERWIN WILLIAMS SW 0000 |
| | 3. BASE ACCENT COLOR - PLD-3 JAGUAR - SHERWIN WILLIAMS SW 0000 |
| | 4. PROLOGIS ACCENT COLOR - PLD-4 - TALL TREE GREEN - AMERTONE 1BL16A |
| | 5. VISION GLAZING - SEE KEYNOTE 5 - VISTEON VERSALUX 1/4" BLUE 2000R. SEE KEYNOTES FOR LOCATIONS OF INSULATED UNITS. |



NORTH ELEVATION

SCALE: 1" = 20'-0"



SCREENWALL ELEVATION

SCALE: 1" = 20'-0"

-651-

Item No. E.3

CONSULTANT

PROFESSIONAL SEALS

**PROLOGIS PARK
MORENO VALLEY
EUCALYPTUS**

BUILDING 3

EUCALYPTUS AVENUE
MORENO VALLEY, CALIFORNIA



CASE NUMBER:
PA07-0083

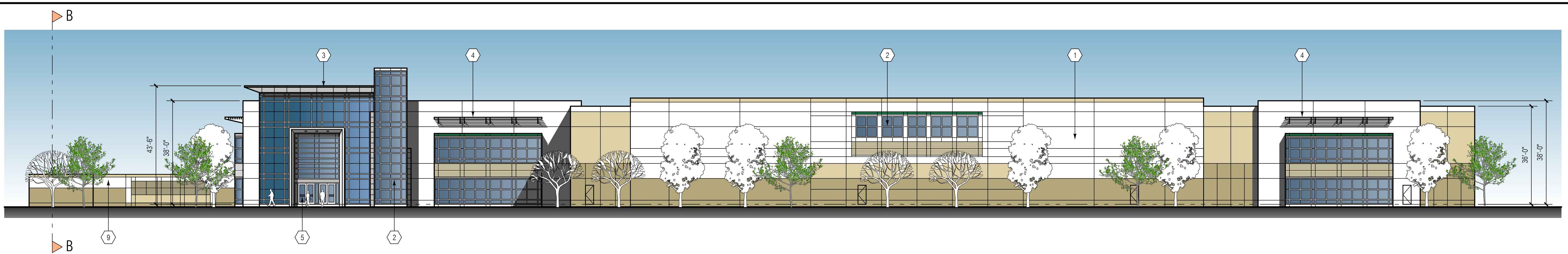


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JJACHETTA@PROLOGIS.COM

MARK	DATE	DESCRIPTION
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SD	05/10/2012	SCHEMATIC DESIGN

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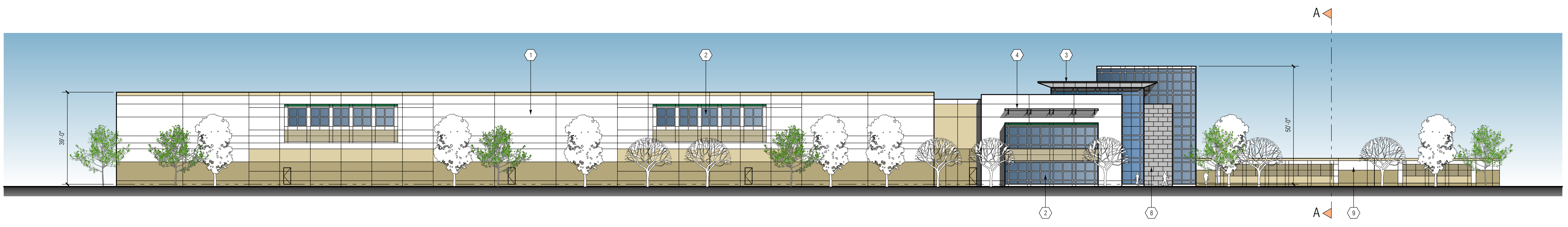
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**ELEVATIONS
BUILDING 3**



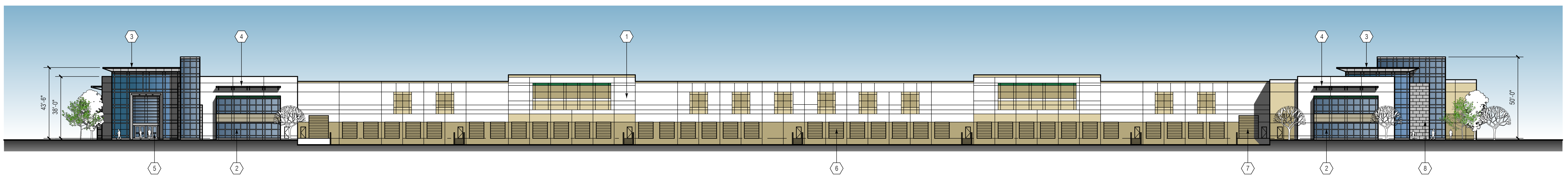
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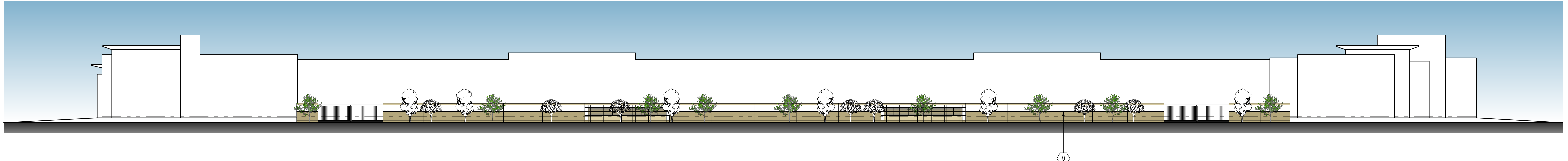
WEST ELEVATION
SCALE: 1" = 30'-0"



SOUTH ELEVATION
SCALE: 1" = 20'-0"



EAST ELEVATION
SCALE: 1" = 30'-0"



SCREENWALL ELEVATION
SCALE: 1" = 30'-0"

- KEYNOTES:** (10)
1. PAINTED CONCRETE TILT-UP PANELS W/ ACCENT REVEALS AS SHOWN.
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 8. ACCENT CLADDING MATERIAL AT OFFICE ENTRY ELEMENTS.
 9. CONCRETE TILT-UP SCREEN WALL PAINT AND REVEALS AS SHOWN TO MATCH BUILDING.

FINISH SCHEDULE

1. FIELD COLOR - PLD-1 PARIS WHITE - SHERWIN WILLIAMS SW 2089
2. ACCENT COLOR - PLD-2 STONE LION - SHERWIN WILLIAMS SW 7507
3. BASE ACCENT COLOR - PLD-3 TAVERN TALUPE - SHERWIN WILLIAMS SW 7508
4. PROLOGIS ACCENT COLOR - PLD-4 TALL TREE GREEN - AMERTONE 1BL16A
5. VISION GLAZING - SEE KEYNOTE 5 - VISTEON VERSALUX 1/4" BLUE 200R. SEE KEYNOTES FOR LOCATIONS OF INSULATED UNITS.

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PROFESSIONAL SEALS

**PROLOGIS PARK
MORENO VALLEY
EUCALYPTUS**

BUILDING 4

EUCALYPTUS AVENUE
MORENO VALLEY, CALIFORNIA

CASE NUMBER:
PA07-0083

PROLOGIS™
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CERRITOS, CA 90703
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CONTACT: JIM JACHETTA
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SD	05/10/2012	SCHEMATIC DESIGN

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SHEET TITLE
ELEVATIONS
BUILDING 4

KEYNOTES: (00)
 9. CONCRETE TILT-UP SCREEN WALL PAINT AND REVEALS AS SHOWN TO MATCH BUILDING.

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**PROLOGIS PARK
 MORENO VALLEY
 EUCALYPTUS**

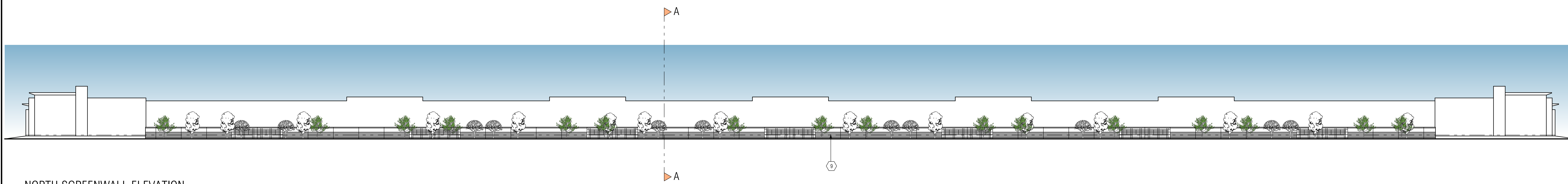
**BUILDING 2
 EUCALYPTUS AVENUE
 MORENO VALLEY, CALIFORNIA**



**CASE NUMBER:
 PA07-0083**

FINISH SCHEDULE

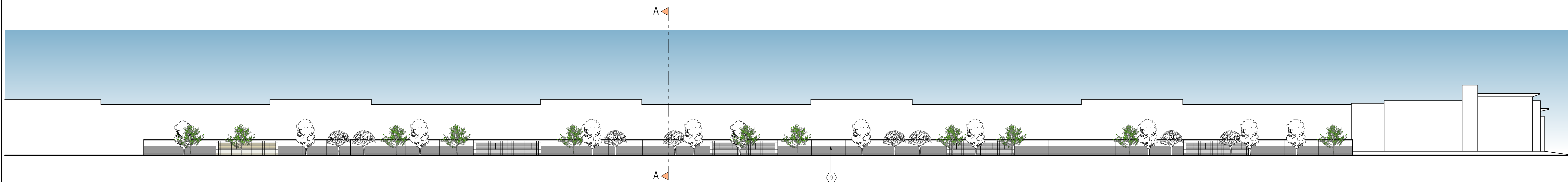
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- 3. BASE ACCENT COLOR - PLD-3 JAGUAR - SHERWIN WILLIAMS SW 0000
- 4. PROLOGIS ACCENT COLOR - PLD-4 TALL TREE GREEN - AMERITONE 1BL16A
- 5. VISION GLAZING - SEE KEYNOTE 5 - VISTEON VERSALUX 1/4" BLUE 2000R. SEE KEYNOTES FOR LOCATIONS OF INSULATED UNITS.



NORTH SCREENWALL ELEVATION

SCALE: 1" = 40'-0"

-653-



SOUTH SCREENWALL ELEVATION

SCALE: 1" = 30'-0"

Item No. E.3



PROLOGIS
 17777 CENTER COURT DR NORTH, STE 100
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MARK		

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SHEET TITLE
**SCREENWALL
 ELEVATIONS
 BUILDING 2**



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Irvine, CA 92618

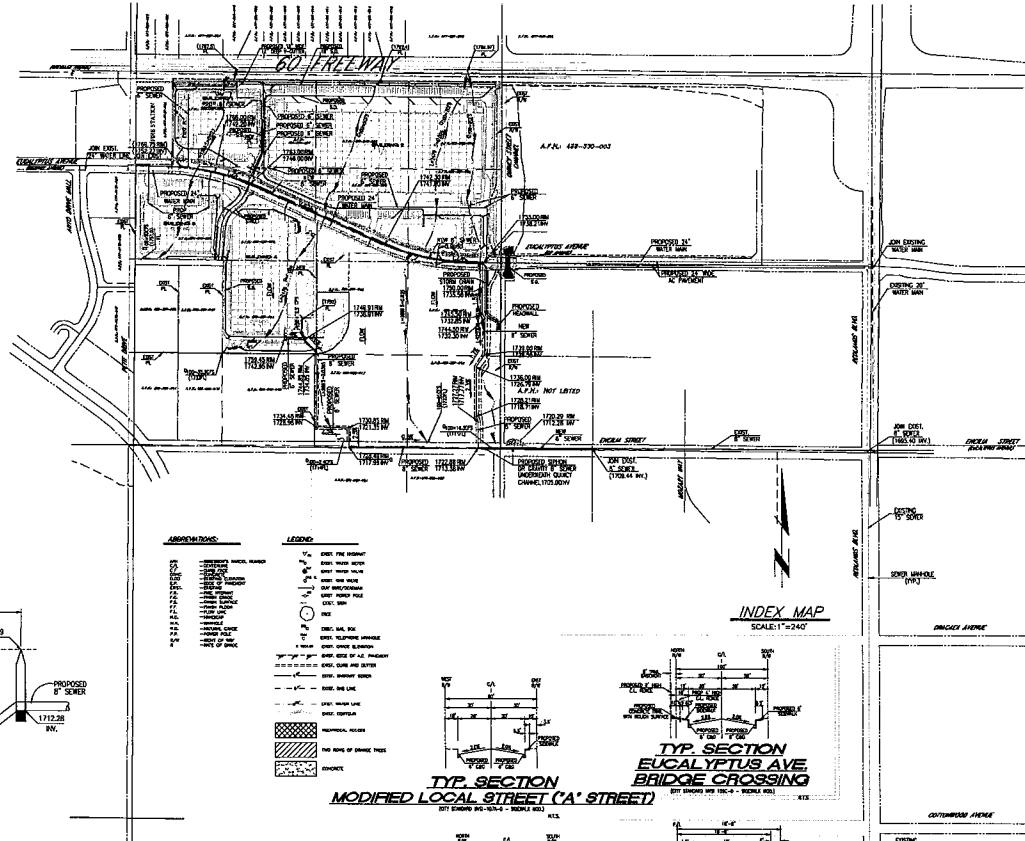
T 949-341-0920
FX 949-341-0922

**PROLOGIS PARK
MORENO VALLEY
EUCALYPTUS**

EUCALYPTUS AVENUE
MORENO VALLEY, CALIFORNIA



CONCEPTUAL GRADING PLAN PROLOGIS PARK MORENO VALLEY EUCALYPTUS



PROJECT INFORMATION
 THE LAND DESCRIBED IN THIS PLAN IS LOCATED AS FOLLOWS:
 A. PARCEL 1: 1/4 SECTION 16, T4S, R12E, S44E, MORENO COUNTY, CALIFORNIA
 B. PARCEL 2: 1/4 SECTION 16, T4S, R12E, S44E, MORENO COUNTY, CALIFORNIA
 C. PARCEL 3: 1/4 SECTION 16, T4S, R12E, S44E, MORENO COUNTY, CALIFORNIA

DATE APPLICABLE
 10/15/2015

SUBJECT PROPERTY
 PROLOGIS PARK MORENO VALLEY EUCALYPTUS

FLOOD ZONE DESIGNATION
 FLOOD ZONE 1 (FLOOD HAZARD AREA)

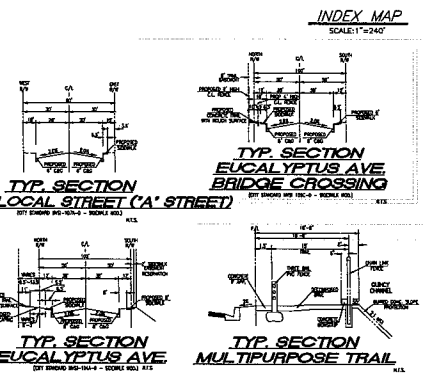
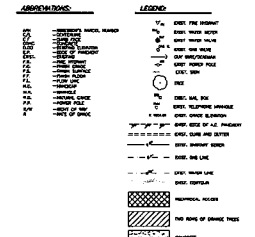
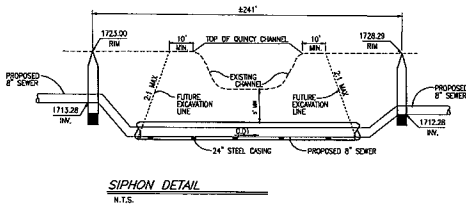
UNDERGROUND UTILITIES
 WATER, SEWER, GAS, TELEPHONE, CABLE, FIBER OPTIC, POWER

PLANNING CASE NO.
 CITY CASE NUMBER PART-0084

LEGAL DESCRIPTION
 PARCEL 1: 1/4 SECTION 16, T4S, R12E, S44E, MORENO COUNTY, CALIFORNIA
 PARCEL 2: 1/4 SECTION 16, T4S, R12E, S44E, MORENO COUNTY, CALIFORNIA
 PARCEL 3: 1/4 SECTION 16, T4S, R12E, S44E, MORENO COUNTY, CALIFORNIA

PLANNING CASE NO.
 CITY CASE NUMBER PART-0084

-655-



EARTHWORK ANALYSIS:

MATERIAL AVAILABLE	MATERIAL REQUIRED
TOTAL EXCAVATION 82,215 C.Y.	FILL 328,841 C.Y.
OVER EXCAVATION 5 C.Y.	IMPORTANCE (1.5%) 10,000 C.Y.
APPROXIMATE IMPORT 181 C.Y.	IMPORTATION SURCHARGE (15%) 8,000 C.Y.
	TOTAL FILL 376,841 C.Y.

SHEET INDEX

1	TITLE SHEET - NOTES, SPECIES, SECTIONS AND CONCEPTUAL UTILITIES
2	CONCEPTUAL GRADING PLAN
3	CONCEPTUAL GRADING PLAN
4	SECTIONS
5	SECTIONS
6	SECTIONS
7	SECTIONS
8	SECTIONS
9	SECTIONS
10	SECTIONS

Item No. E.3

PROLOGIS PARK MORENO VALLEY EUCALYPTUS TENTATIVE PARCEL MAP NO. 008793

PROLOGIS DEVELOPMENT SERVICES, INC.
 10000 W. ORANGE AVENUE, SUITE 100
 MORENO VALLEY, CA 91730
 (951) 251-8100
 FAX (951) 251-0785

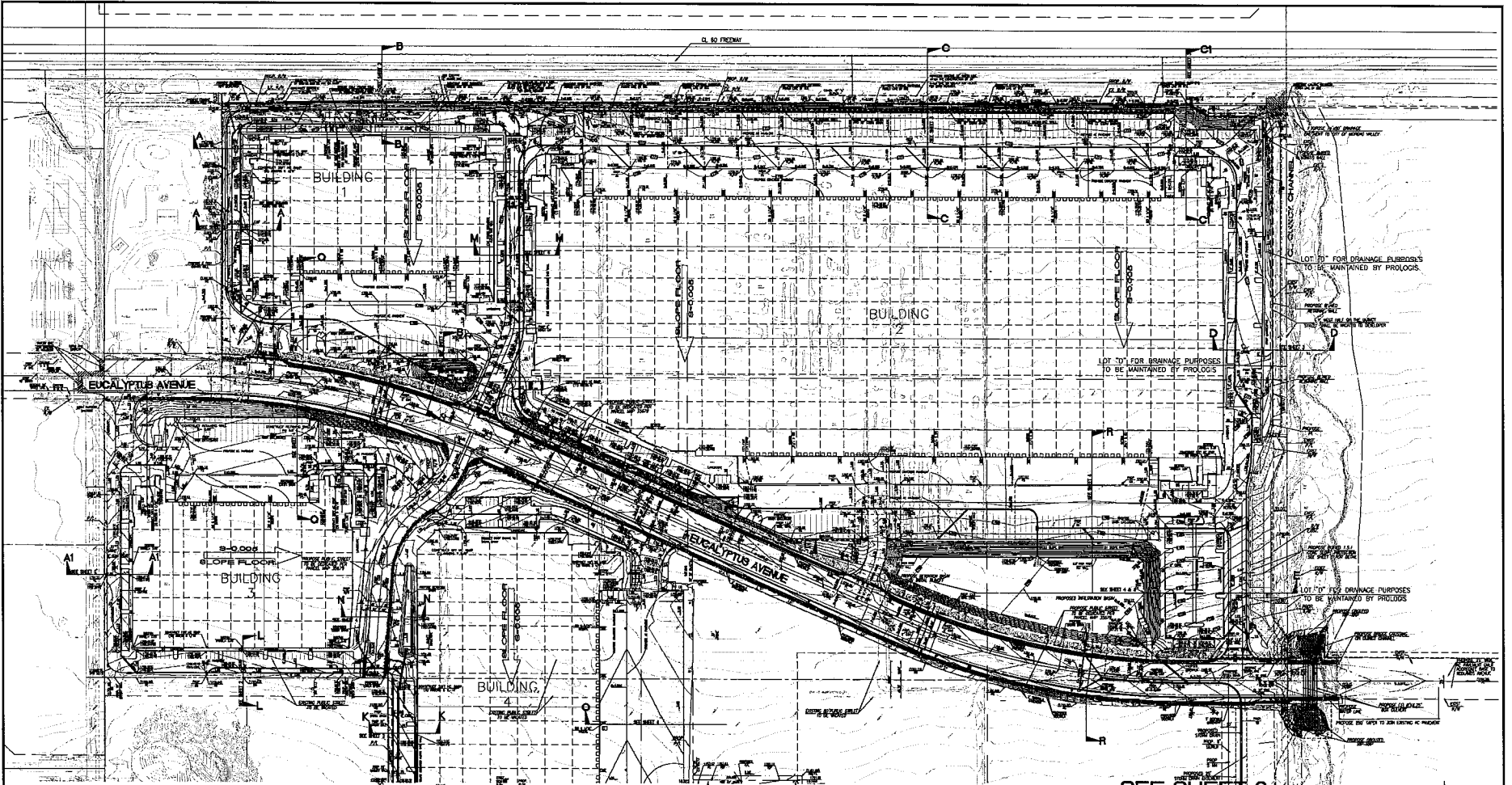
DATE OF PREPARATION: 10/20/15

CITY CASE NUMBER PART-0084

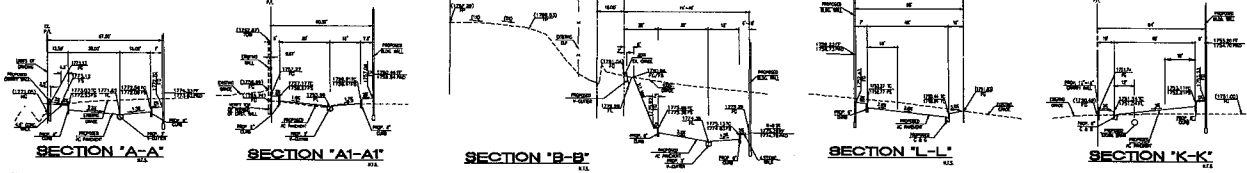
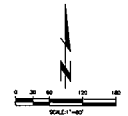
PREPARED BY: Dimes Engineering, Inc.
 10000 W. ORANGE AVENUE, SUITE 100
 MORENO VALLEY, CA 91730
 (951) 251-8100
 FAX (951) 251-0785

SCALE: 1" = 40'

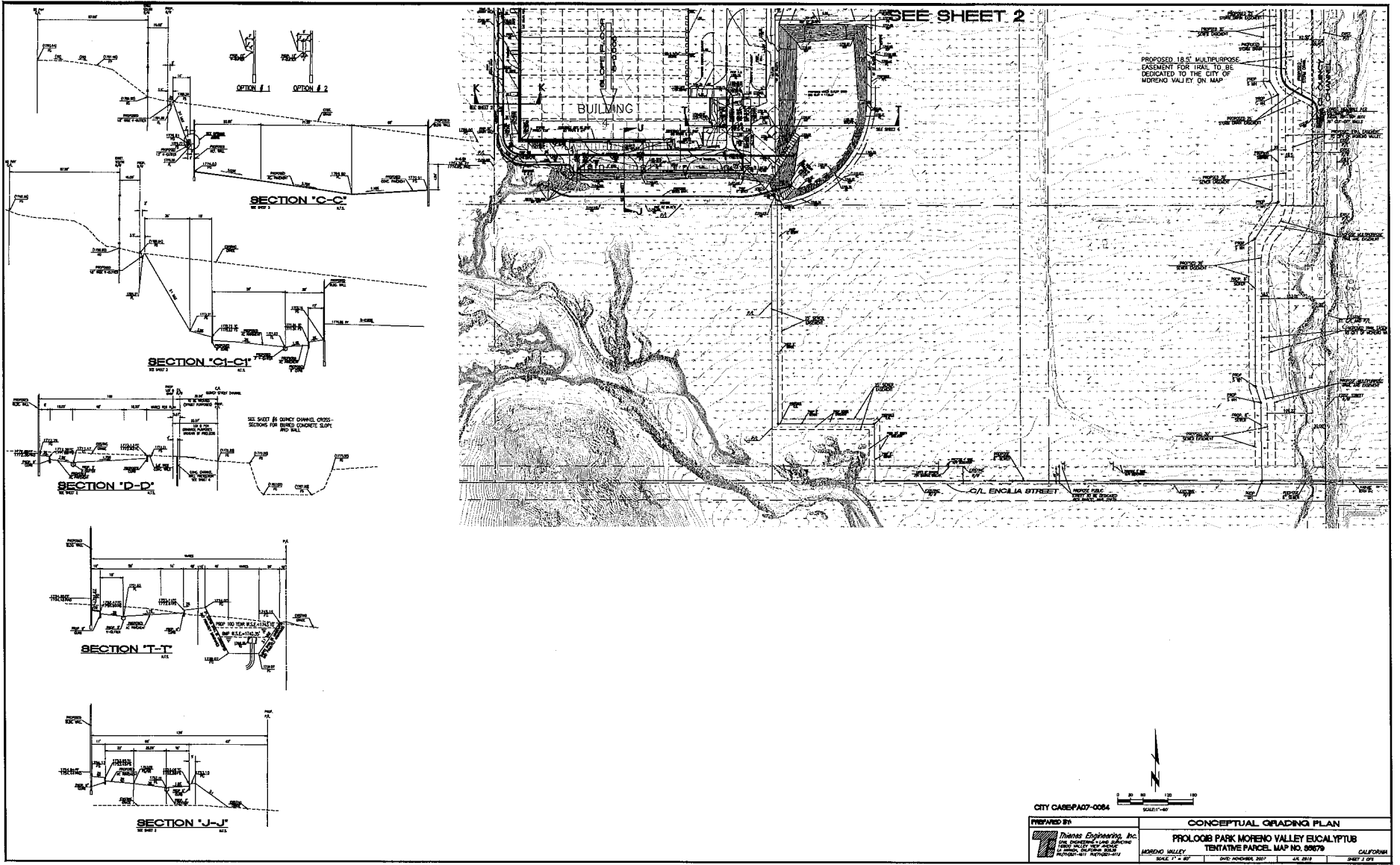
SHEET 1 OF 10

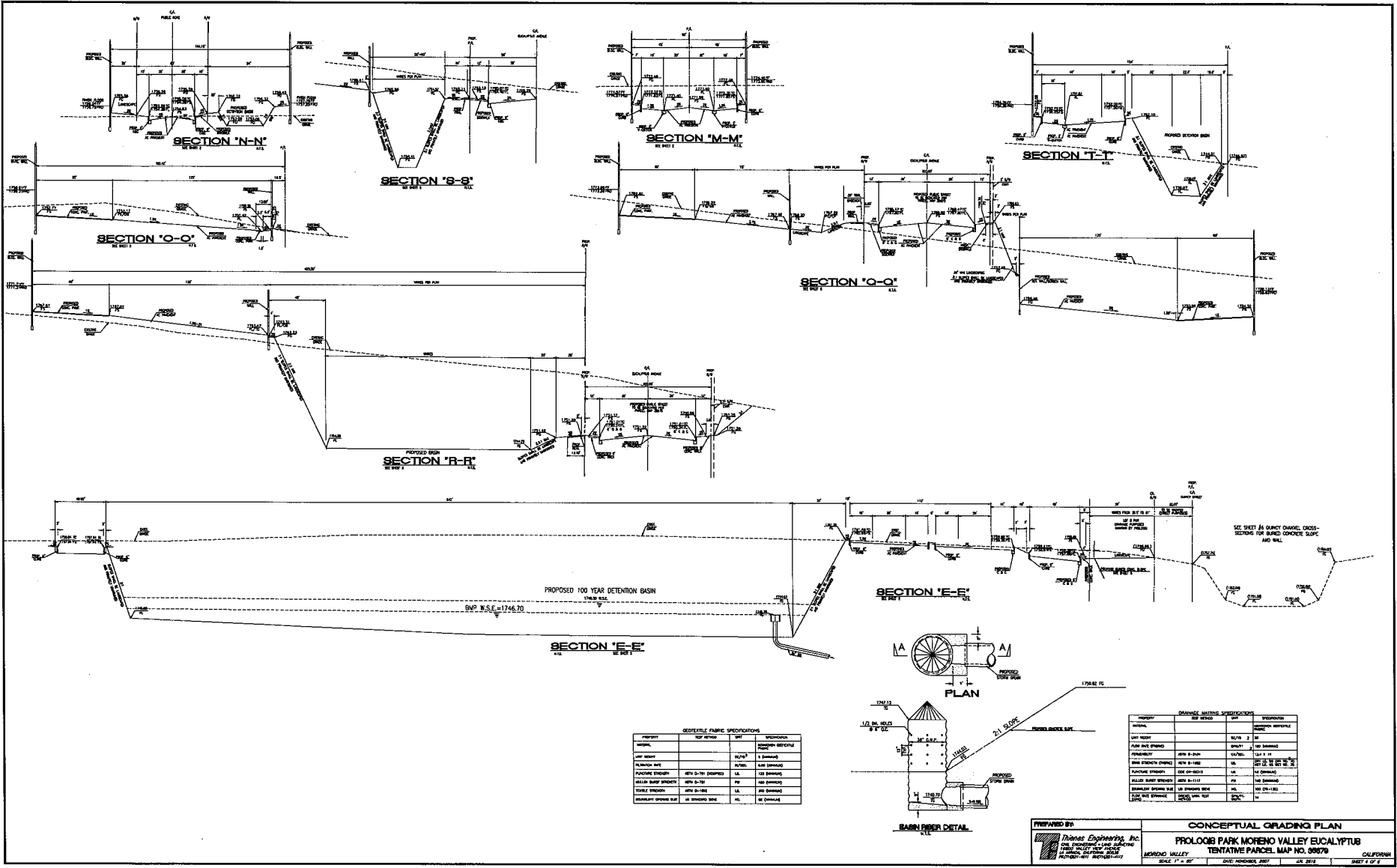


SEE SHEET 3



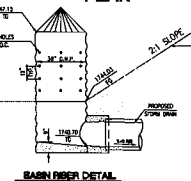
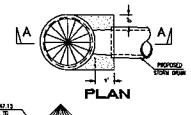
CITY CASE#PA07-0084		CONCEPTUAL GRADING PLAN	
PREPARED BY: Thiess Engineering, Inc. 11000 N. 19th Avenue Suite 100 Denver, CO 80208		PROLOGIS PARK MORENO VALLEY EUCALYPTUS TENTATIVE PARCEL MAP NO. 88079	
MORENO VALLEY	DATE: 11.14.07	DWG. NUMBER: 607	SCALE: 1"=40'
		DATE: 11.14.07	SHEET 7 OF 7





GEOTEXTILE FABRIC SPECIFICATIONS

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	REMARKS
1	NONWOVEN GEOTEXTILE	SQ YD	10,000	FOR BERM
2	NONWOVEN GEOTEXTILE	SQ YD	10,000	FOR BERM
3	NONWOVEN GEOTEXTILE	SQ YD	10,000	FOR BERM
4	NONWOVEN GEOTEXTILE	SQ YD	10,000	FOR BERM
5	NONWOVEN GEOTEXTILE	SQ YD	10,000	FOR BERM
6	NONWOVEN GEOTEXTILE	SQ YD	10,000	FOR BERM
7	NONWOVEN GEOTEXTILE	SQ YD	10,000	FOR BERM
8	NONWOVEN GEOTEXTILE	SQ YD	10,000	FOR BERM
9	NONWOVEN GEOTEXTILE	SQ YD	10,000	FOR BERM
10	NONWOVEN GEOTEXTILE	SQ YD	10,000	FOR BERM



DRAINAGE MATERIAL SPECIFICATIONS

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	REMARKS
1	GRAVEL	CY	100	FOR DRAINAGE
2	GRAVEL	CY	100	FOR DRAINAGE
3	GRAVEL	CY	100	FOR DRAINAGE
4	GRAVEL	CY	100	FOR DRAINAGE
5	GRAVEL	CY	100	FOR DRAINAGE
6	GRAVEL	CY	100	FOR DRAINAGE
7	GRAVEL	CY	100	FOR DRAINAGE
8	GRAVEL	CY	100	FOR DRAINAGE
9	GRAVEL	CY	100	FOR DRAINAGE
10	GRAVEL	CY	100	FOR DRAINAGE

CONCEPTUAL GRADING PLAN

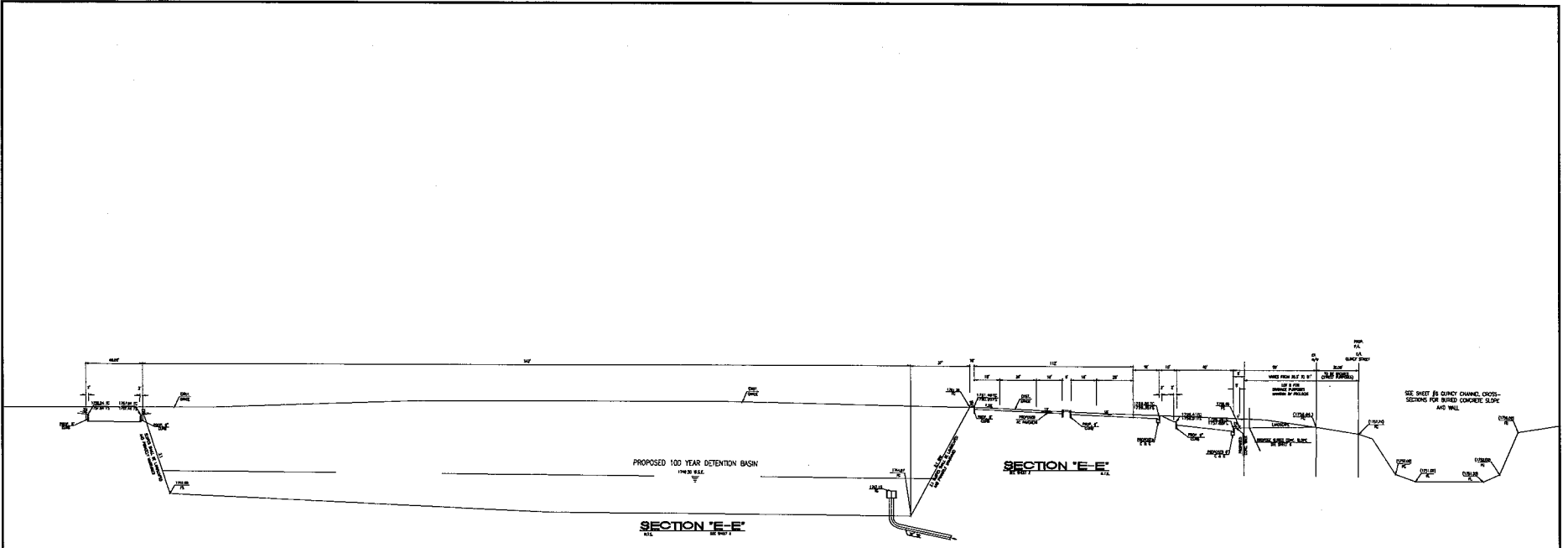
PROLOGUE PARK MORENO VALLEY EUCALYPTUS TENTATIVE PARCEL MAP NO. 98879

PREPARED BY: **Thomas Engineering, Inc.**
 10000 MORENO VALLEY BLVD., SUITE 100
 MORENO VALLEY, CALIFORNIA 91731
 (951) 251-1111

DATE: NOVEMBER 2007

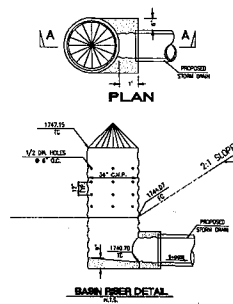
SCALE: 1" = 40'

SHEET 4 OF 4



DETENTION FABRIC SPECIFICATIONS

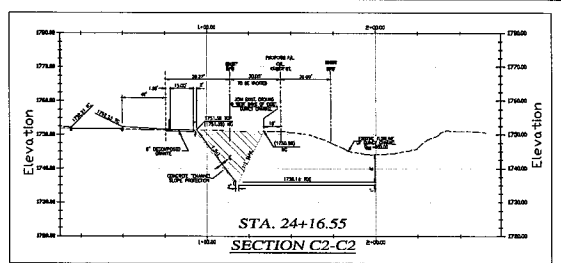
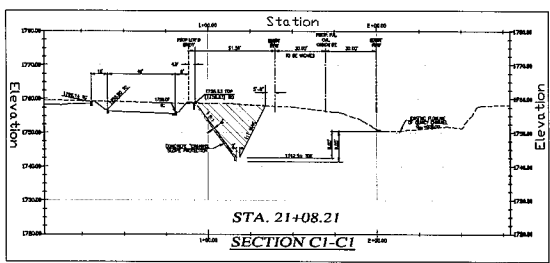
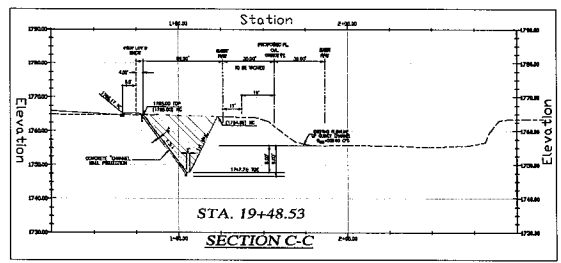
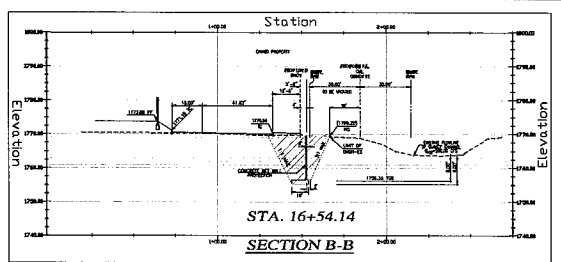
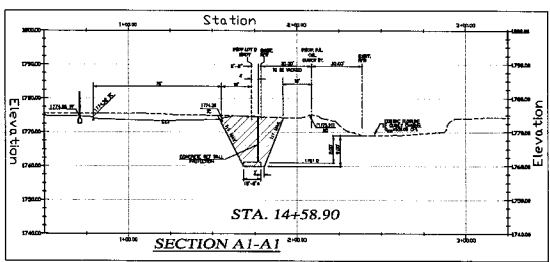
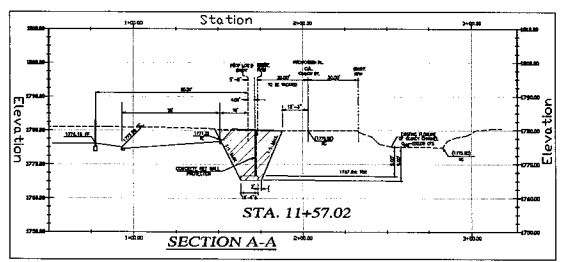
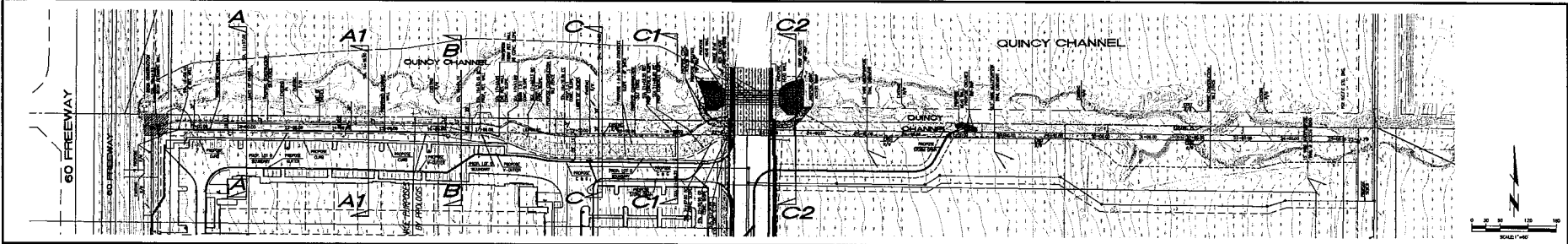
PROPERTY	NEW METHOD	UNIT	PROPOSED
MATERIAL			NONWOVEN POLYPROPYLENE
UNIT WEIGHT		LB/SYD ²	4.0 (MINIMUM)
FILTRATION RATE		IN/SEC	0.005 (MINIMUM)
PERMEABILITY	ASTM D-7091	PERCENT	10 (MINIMUM)
WALLS BUILT UPON	ASTM D-7091	PS	100 (MINIMUM)
FLOORING	ASTM D-7091	LB	100 (MINIMUM)
EXHAUST SYSTEMS	1/2" WOVEN SIDE	IN	20 (MINIMUM)



SPRINKLE MATTING SPECIFICATIONS

PROPERTY	NEW METHOD	UNIT	PROPOSED
MATERIAL			NONWOVEN POLYPROPYLENE
UNIT WEIGHT		LB/SYD ²	2.0
FILTRATION RATE	ASTM D-7091	IN/SEC	0.005 (MINIMUM)
PERMEABILITY	ASTM D-7091	PERCENT	10 (MINIMUM)
WALLS BUILT UPON	ASTM D-7091	PS	100 (MINIMUM)
FLOORING	ASTM D-7091	LB	100 (MINIMUM)
EXHAUST SYSTEMS	1/2" WOVEN SIDE	IN	20 (MINIMUM)

PREPARED BY Thienes Engineering, Inc. 1700 S. BROADWAY, SUITE 200 CALIFORNIA, CA 92505 TEL: (951) 261-1111 FAX: (951) 261-1112	CONCEPTUAL GRADING PLAN	
	PROLOGOS PARK MORENO VALLEY EUCALYPTUS TENTATIVE PARCEL, MAP NO. 08079 MORENO VALLEY, CALIFORNIA SCALE: 1" = 40' DATE: 01/28/2018 SHEET 5 OF 5	



DRAWN BY: [Signature]
 CHECKED BY: [Signature]
 DESIGNED BY: [Signature]
 PROJECT: PROLONG PARK INTERCHANGING ESCALATOR
 LOCATION: [Location]
 DATE: [Date]
 SCALE: [Scale]

SCALE: 1" = 60'

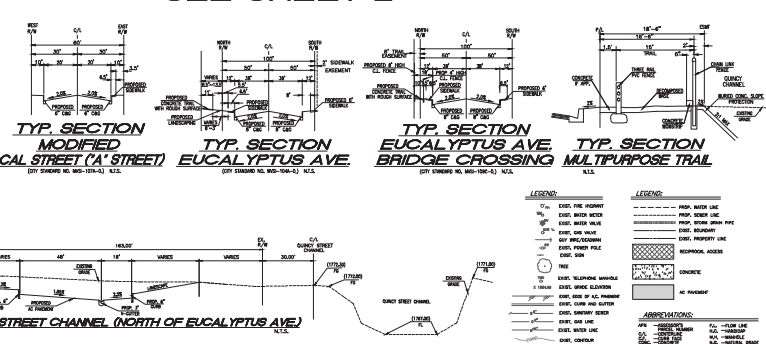
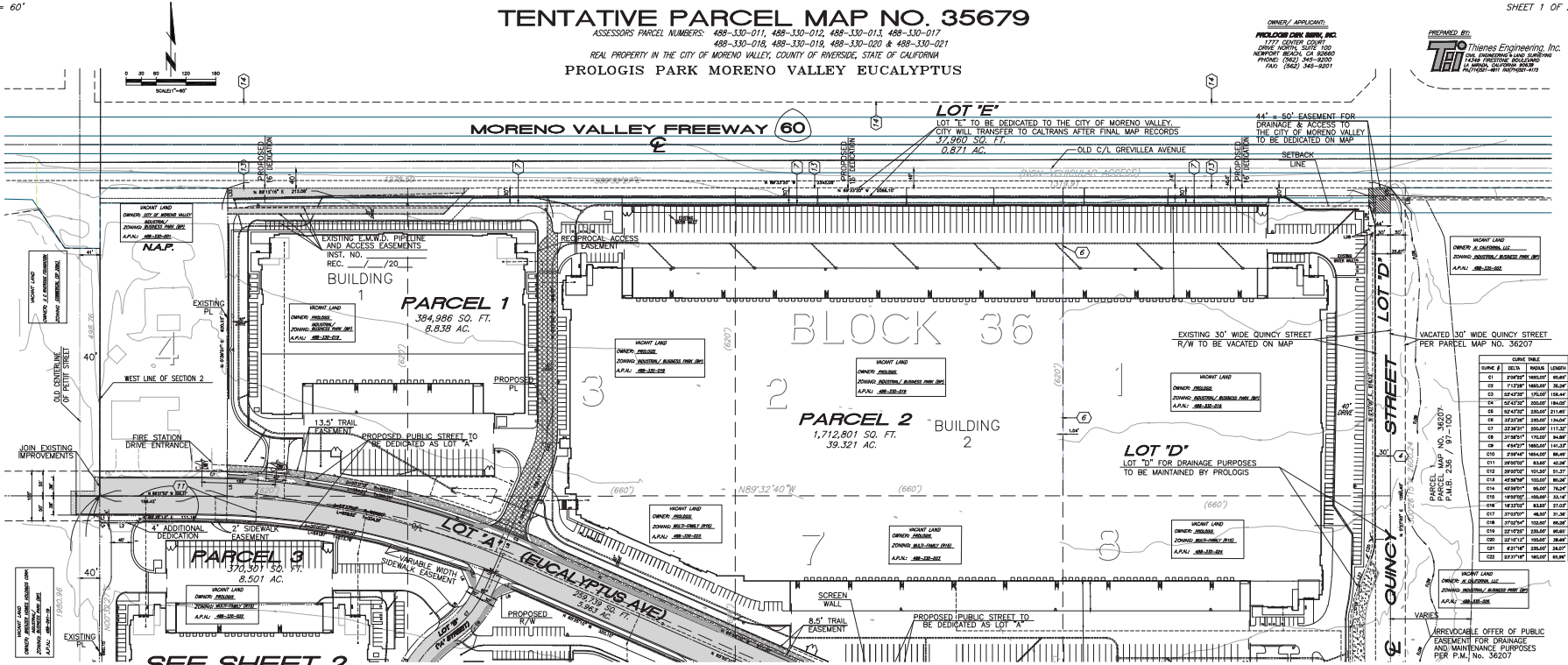
TENTATIVE PARCEL MAP NO. 35679

ASSESSORS PARCEL NUMBERS: 488-330-011, 488-330-012, 488-330-013, 488-330-017, 488-330-018, 488-330-019, 488-330-020 & 488-330-021

REAL PROPERTY IN THE CITY OF MORENO VALLEY, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA

OWNER / APPLICANT: PROLOGIX DRUG SUPPLY, INC. 1717 CENTER COURT, MORENO VALLEY, CA 92553

PREPARED BY: TTI Thienes Engineering, Inc. 1241 PLYMOUTH ROAD, SUITE 100, MORENO VALLEY, CA 92553



LINE TABLE listing lot numbers, bearings, and distances for various lots and easements.

AREA SUMMARY and LEGALIZED LOTS tables. Includes total area of 5,348,294 sq. ft. and 122,380 acres.

EXISTING EASEMENTS and SUBJECT PROPERTIES. Lists various easements and neighboring properties with their parcel numbers.

REMARKS, FLOOD ZONE DESIGNATION, and UNDERGROUND UTILITIES. Includes notes on survey accuracy, flood zones, and utility locations.

Professional stamps for TTI Thienes Engineering, Inc. and a surveyor's seal.

-661-

Item No. E.3

SCALE: 1" = 60'

TENTATIVE PARCEL MAP NO. 35679

ASSESSORS PARCEL NUMBERS: 488-330-011, 488-330-012, 488-330-013, 488-330-017
488-330-018, 488-330-019, 488-330-020 & 488-330-021
REAL PROPERTY IN THE CITY OF MORENO VALLEY, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA
PROLOGIS PARK MORENO VALLEY EUCALYPTUS

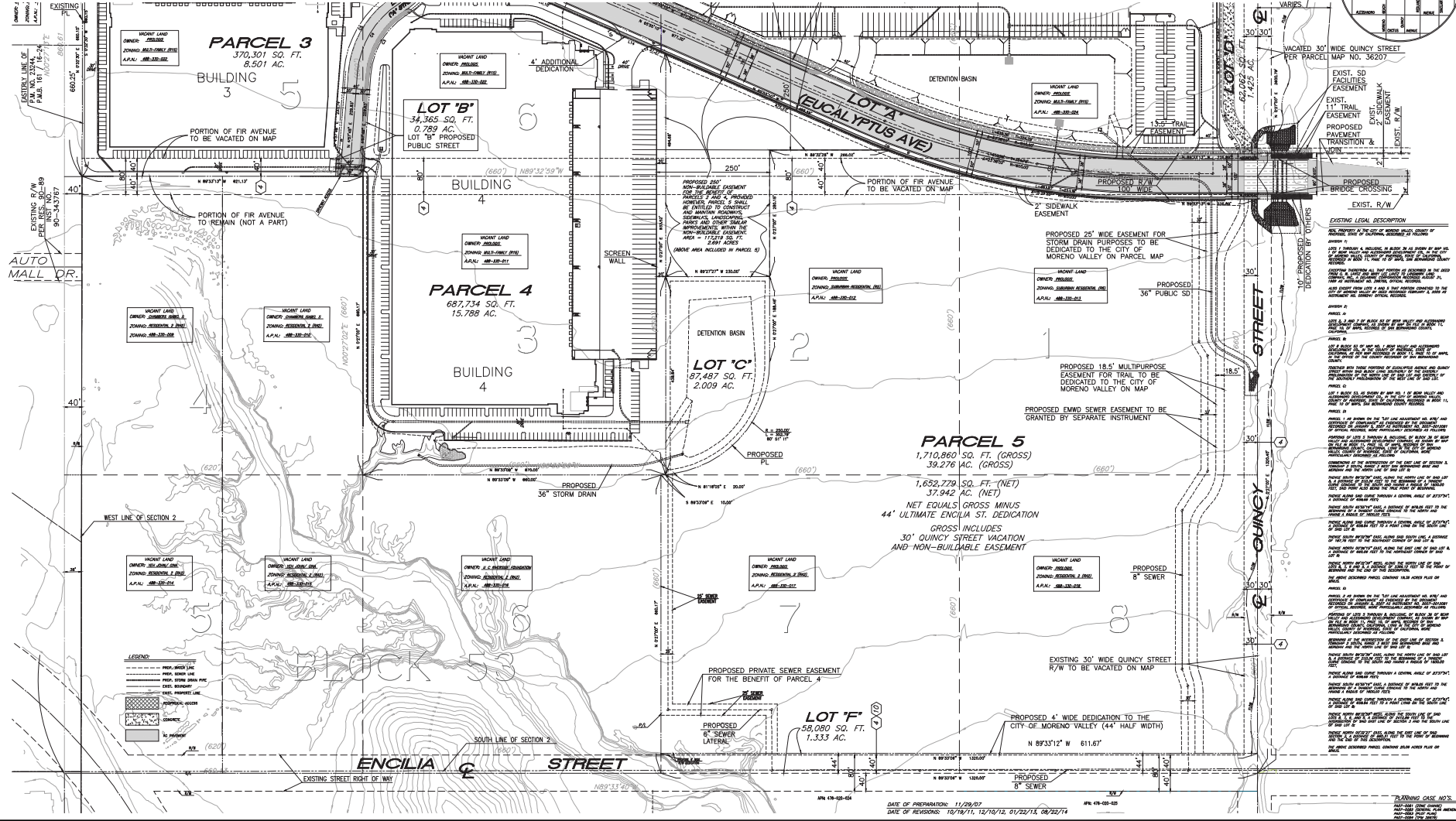
OWNER/APPLICANT:
PROLOGIS DEV. CORP. INC.
1777 CENTER DRIVE
DOWEL NORTH, SUITE 100
NEWPORT BEACH, CA 92660
PHONE: (949) 345-6000
FAX: (949) 345-6001

PREPARED BY:
T&E Thienes Engineering, Inc.
1000 PROGRESS AVENUE, SUITE 100
MIRAMONTE, CALIFORNIA 91761
PHONE: (626) 441-1111



SHEET 2 OF 2

SEE SHEET 1



LEGEND:
--- PROPOSED LINE
--- EXIST. BOUNDARY
--- EXIST. EASEMENT
--- EXIST. RIGHT-OF-WAY
--- EXIST. UTILITY
--- EXIST. FENCE
--- EXIST. WALL
--- EXIST. DRIVE
--- EXIST. SIDEWALK
--- EXIST. TRAIL
--- EXIST. PAVEMENT
--- EXIST. ASPHALT
--- EXIST. CONCRETE
--- EXIST. GRAVEL
--- EXIST. SOIL
--- EXIST. VEGETATION
--- EXIST. WATER

PARCEL 5
1,710,860 SQ. FT. (GROSS)
39.276 AC. (GROSS)
1,632,779 SQ. FT. (NET)
37.942 AC. (NET)
NET EQUALS GROSS MINUS
44' ULTIMATE ENCILIA ST. DEDICATION
GROSS INCLUDES
30' QUINCY STREET VACATION
AND NON-BUILDABLE EASEMENT

IRREVOCABLE OFFER OF PUBLIC EASEMENT FOR DRAINAGE AND MAINTENANCE PURPOSES PER P.M. No. 36207

VACATED 30' WIDE QUINCY STREET PER PARCEL MAP NO. 36207

EXIST. SD FACILITIES PER PARCEL MAP NO. 36207

EXIST. 11' TRAIL EASEMENT PROPOSED PAVEMENT TRANSITION & EASEMENT

EXIST. 15' SIDEWALK EASEMENT PER PARCEL MAP NO. 36207

EXISTING LEGAL DESCRIPTION

PROPOSED 25' WIDE EASEMENT FOR STORM DRAIN PURPOSES TO BE DEDICATED TO THE CITY OF MORENO VALLEY ON PARCEL MAP

PROPOSED 36" PUBLIC SD

PROPOSED 18.5' MULTIPURPOSE EASEMENT FOR TRAIL TO BE DEDICATED TO THE CITY OF MORENO VALLEY ON MAP

PROPOSED 8" SEWER

EXISTING 30' WIDE QUINCY STREET R/W TO BE VACATED ON MAP

PROPOSED 4' WIDE DEDICATION TO THE CITY OF MORENO VALLEY (44' HALF WIDTH)

PROPOSED PRIVATE SEWER EASEMENT FOR THE BENEFIT OF PARCEL 4

PROPOSED SEWER LATERAL

DATE OF PREPARATION: 11/29/07
DATE OF REVISIONS: 10/18/11, 12/10/12, 01/22/13, 08/22/14

DATE: 11/29/07

720-DRAINING CASE NO. 3
APPROVED FOR RECORDING
DATE: 11/29/07



T 510.836.4200
F 510.836.4205

410 12th Street, Suite 250
Oakland, Ca 94607

www.lozeaudrury.com
richard@lozeaudrury.com

Via Electronic Mail and Overnight Delivery

August 31, 2012

Jeff Bradshaw
Associate Planner
City of Moreno Valley, Planning Division
14177 Frederick Street
Post Office Box 88005
Moreno Valley, CA 92553
Email: jeffreyb@moval.org

**RE: Comment on Draft Environmental Impact Report for ProLogis
Eucalyptus Industrial Park (State Clearinghouse No. 2008021002)**

Dear Mr. Bradshaw:

I am writing on behalf of Laborers International Union of North America, Local Union No. 1184 and its members living in Riverside County (collectively "LIUNA Local Union No. 1184" or "LIUNA" or "Commenters") regarding the Draft Environmental Impact Report ("DEIR") prepared for the ProLogis Eucalyptus Industrial Park, State Clearinghouse No. 2008021002 ("Project").

We have reviewed the DEIR with the assistance of:

1. Atmospheric Scientist, Dr. James Clark, Ph.D.
2. Hydrogeologist, Matthew Hagemann, C.Hg., MS.

These experts have prepared written comments that are attached hereto, and which are incorporated in their entirety. The City of Moreno Valley ("City") should respond to the expert comments separately. These experts and our own independent review demonstrate that the DEIR is woefully inadequate and that a new supplemental EIR is required to be prepared and recirculated for public comment. In particular, the EIR suffers from the following significant errors and omissions, among others:

- **SEGMENTATION OF PROJECT:** The DEIR improperly segments the Project by failing to include the infrastructure (e.g., roads, water, and sewer) as part of the Project.
- **LOSS OF FARMLAND:** The DEIR acknowledges that the Project's conversion of Prime Farmland is a significant impact, but the DEIR fails to adequately mitigate for the loss of farmland. The conclusion that mitigation measures are infeasible is unsupported.
- **HAZARDOUS MATERIALS:** The baseline of the physical environmental conditions in the vicinity of the Project is erroneous because the DEIR does not provide any details on the types of pesticides used on the Project site, relies on two outdated Phase I Environmental Site Assessments ("ESAs") that do not cover the entire Project site, and fails to disclose the status of an underground storage tank.
- **GREENHOUSE GAS:** The DEIR fails to provide support for the conclusion that greenhouse gas emissions after mitigation will be less than significant.
- **AIR QUALITY:** The DEIR fails to adequately analyze impacts to air quality because: (1) the DEIR underestimates the potential particulate emissions for the construction phase of the Project, (2) fails to accurately compare construction emissions to daily construction significance thresholds, (3) fails to consider health risks from contaminated dust, (4) fails to properly identify and address the Project's operational air quality impacts, (5) fails to disclose impacts to offsite receptors, and (6) fails to adequately analyze cumulative impacts.

Commenters urge the City to revise the EIR to adequately describe, analyze, and mitigate the Project and its impacts.¹ The revised EIR should be recirculated to allow public review and comment.

I. PROJECT DESCRIPTION

The Project site encompasses 122.8 acres of land located within the City of Moreno Valley, south of and adjacent to SR-60, east of Moreno Valley Auto Mall, and adjacent to and west of the Quincy Channel in Riverside County. (DEIR, p. 3-1). Single-family residential uses are located approximately 50 feet southeast of the southeastern corner of the Project site. (DEIR, p. 3-1). The Assessor's Parcel Numbers ("APNs") for this site are 488-330-011, 488-330-012, 488-330-013, 488-330-017, 488-330-018, 488-330-019, 488-330-022, 488-330-023, 488-330-024, and 488-330-025. (DEIR, p. 3-1).

¹ We reserve the right to supplement these comments at later hearings and proceedings for this Project. See, *Galante Vineyards v. Monterey Water Dist.* (1997) 60 Cal. App. 4th 1109.

The Project would include the construction of a warehouse facility comprising six buildings consisting of a total of approximately 2,244,638 square feet. (DEIR, p. 3-2). The Project site is divided into 2 areas: (1) the northern area (north of future Eucalyptus Avenue) would contain approximately 1,030,377 square feet of warehouse uses divided between two buildings and (2) the southern area (south of the future Eucalyptus Avenue) would consist of approximately 1,214,261 square feet of warehouse uses divided among four separate buildings. (DEIR, p. 3-2). The specific uses/users are not known at this time. (DEIR, p. 3-11).

The Project site currently consists of 57 acres used to grow grapefruit, 36 acres used for hay and alfalfa production, as well as portions that are vacant. (DEIR p. 4.2-1). Approximately 82.5 acres of the Project site is designated as Prime Farmland. (DEIR, p. 4.2-6).

The Project would require significant changes to the General Plan and local zoning ordinances including:

- **General Plan Amendment.** The proposed project includes an amendment to the Land Use Element to change the General Plan designations for a portion of the project site from Residential 15, Residential 5 and Residential 2 to Business Park. (DEIR, p. 1-2). The project also proposes an amendment to the Circulation Element by making changes to the alignment of Encilia Street and the removal of Quincy Street from within the project boundaries. (DEIR, p. 1-2).
- **Change of Zone.** The proposed project includes a change to the project site zoning from Business Park (BP), Business Park Mixed-use (BPX), Residential Agriculture 2 (RA2), Residential 5 (R5), and Residential 15 (R15) to Light Industrial (LI). (DEIR, p. 1-2).
- **Municipal Code Amendment.** The project includes a Municipal Code Amendment to establish a minimum clearance of 250 feet between adjacent residential zoning districts and any truck court or primary truck circulation driveway in lieu of the buffer established by the Business Park zone. (DEIR, p. 1-2).

II. Standing

Members of Local Union No. 1184 live, work, and recreate in the immediate vicinity of the Project site. These members will suffer the impacts of a poorly executed or inadequately mitigated Project, just as would the members of any nearby homeowners association, community group, or environmental group. Hundreds of LIUNA Local Union No. 1184 members live and work in areas that will be affected by traffic, air pollution, and water pollution generated by the Project.

In addition, construction workers will suffer many of the most significant impacts from the Project as currently proposed, such as from air pollution emissions from poorly maintained or controlled construction equipment, possible risks related to hazardous materials on the Project site, and other impacts. Therefore, LIUNA Local Union No. 1184 and its members have a direct interest in ensuring that the Project is adequately analyzed and that its environmental and public health impacts are mitigated to the fullest extent feasible.

III. LEGAL STANDARDS

A. EIR

CEQA requires that an agency analyze the potential environmental impacts of its proposed actions in an environmental impact report (“EIR”) (except in certain limited circumstances). (See, e.g., Pub. Res. Code § 21100). The EIR is the very heart of CEQA. (*Dunn-Edwards v. BAAQMD* (1992) 9 Cal.App.4th 644, 652). “The ‘foremost principle’ in interpreting CEQA is that the Legislature intended the act to be read so as to afford the fullest possible protection to the environment within the reasonable scope of the statutory language.” (*Communities for a Better Environment v. Calif. Resources Agency* (2002) 103 Cal. App. 4th 98, 109).

CEQA has two primary purposes. First, CEQA is designed to inform decision makers and the public about the potential, significant environmental effects of a project. (14 Cal. Code Regs. (“CEQA Guidelines”) § 15002(a)(1)). “Its purpose is to inform the public and its responsible officials of the environmental consequences of their decisions before they are made. Thus, the EIR ‘protects not only the environment but also informed self-government.’” (*Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal. 3d 553, 564). The EIR has been described as “an environmental ‘alarm bell’ whose purpose it is to alert the public and its responsible officials to environmental changes before they have reached ecological points of no return.” (*Berkeley Keep Jets Over the Bay v. Bd. of Port Comm’rs.* (2001) 91 Cal. App. 4th 1344, 1354 (“*Berkeley Jets*”); *County of Inyo v. Yorty* (1973) 32 Cal.App.3d 795, 810).

Second, CEQA requires public agencies to avoid or reduce environmental damage when “feasible” by requiring “environmentally superior” alternatives and all feasible mitigation measures. (CEQA Guidelines § 15002(a)(2) and (3); See also, *Berkeley Jets*, 91 Cal. App. 4th 1344, 1354; *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 564). The EIR serves to provide agencies and the public with information about the environmental impacts of a proposed project and to “identify ways that environmental damage can be avoided or significantly reduced.” (Guidelines §15002(a)(2)). If the project will have a significant effect on the environment, the agency may approve the project only if it finds that it has “eliminated or substantially lessened all significant effects on the environment where feasible” and that

any unavoidable significant effects on the environment are “acceptable due to overriding concerns.” (Pub.Res.Code § 21081; 14 Cal.Code Regs. § 15092(b)(2)(A) & (B)).

While the courts review an EIR using an “abuse of discretion” standard, “the reviewing court is not to ‘uncritically rely on every study or analysis presented by a project proponent in support of its position. A ‘clearly inadequate or unsupported study is entitled to no judicial deference.’” (*Berkeley Jets*, 91 Cal. App. 4th 1344, 1355 (emphasis added), quoting, *Laurel Heights Improvement Assn. v. Regents of University of California*, 47 Cal. 3d 376, 391 409, fn. 12 (1988)). As the court stated in *Berkeley Jets*, 91 Cal. App. 4th at 1355:

A prejudicial abuse of discretion occurs “if the failure to include relevant information precludes informed decisionmaking and informed public participation, thereby thwarting the statutory goals of the EIR process.” (*San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal. App. 4th 713, 722; *Galante Vineyards v. Monterey Peninsula Water Management Dist.* (1997) 60 Cal. App. 4th 1109, 1117; *County of Amador v. El Dorado County Water Agency* (1999) 76 Cal. App. 4th 931, 946).

B. Supplemental EIR

Recirculation of an EIR prior to certification is required “when the new information added to an EIR discloses: (1) a new substantial environmental impact resulting from the project or from a new mitigation measure proposed to be implemented (cf. Guidelines, § 15162, subd. (a)(1), (3)(B)(1)); (2) a substantial increase in the severity of an environmental impact unless mitigation measures are adopted that reduce the impact to a level of insignificance (cf. Guidelines, § 15162, subd. (a)(3)(B)(2)); (3) a feasible project alternative or mitigation measure that clearly would lessen the environmental impacts of the project, but which the project’s proponents decline to adopt (cf. Guidelines, § 15162, subd. (a)(3)(B)(3), (4)); or (4) that the draft EIR was so fundamentally and basically inadequate and conclusory in nature that public comment on the draft was in effect meaningless.” *Laurel Heights Improvement Assn. v. Regents of University of California* (1993) 6 Cal. 4th 1112, 1130, citing *Mountain Lion Coalition v. Fish & Game Comm’n* (1989) 214 Cal.App.3d 1043.

Significant new information requiring recirculation can include:

- (1) A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented.
- (2) A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.

(3) A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the significant environmental impacts of the project, but the project's proponents decline to adopt it.

(4) The draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded.

(14 Cal. Code Regs. § 15088.5(a)).

The DEIR fails to analyze significant environmental impacts pertaining to the Project and to fully consider available mitigation measures to address those impacts. A revised EIR is required to be prepared and recirculated to address these deficiencies.

IV. THE DEIR IMPROPERLY SEGMENTS THE PROJECT

A. Legal Standard

The courts have repeatedly held that “an accurate, stable and finite project description is the *sine qua non* of an informative and legally sufficient [CEQA document].” *County of Inyo v. City of Los Angeles*, 71 Cal.App.3d 185, 193 (1977). Thus, CEQA mandates “that environmental considerations do not become submerged by chopping a large project into many little ones -- each with a minimal potential impact on the environment -- which cumulatively may have disastrous consequences.” *Bozung v. LAFCO*, 13 Cal.3d 263, 283-84 (1975); *City of Santee v. County of San Diego*, 214 Cal.App.3d 1438, 1452 (1989). Before undertaking a project, the lead agency must assess the environmental impacts of all reasonably foreseeable phases of a project and a public agency may not segment a large project into two or more smaller projects in order to mask serious environmental consequences. As the Court of Appeal stated:

The CEQA process is intended to be a careful examination, fully open to the public, of the environmental consequences of a given project, **covering the entire project, from start to finish**...the purpose of CEQA is not to generate paper, but to compel government at all levels to make decisions with environmental consequences in mind.

Natural Resources Defense Council v. City of Los Angeles, 103 Cal.App.4th 268 (2002) (emphasis added).

In *County of Amador v. City of Plymouth*, 149 Cal. App. 4th 1089, 1095 (2007) an Indian tribe intended to build a large gaming development comprised of a hotel, restaurants, and bars, on land located in or adjacent to the city. The Court held that the

construction of public works, including a city road to the casino hotel, constituted a project within the scope of CEQA. *Id.* at 1100. The Court cited to the CEQA Guideline § 15378(a)(1) which states that the following is included in the term “project”: “public works construction and related activities, clearing or grading of land [and] improvements to existing public structures...” *Id.* at 1100.

B. The DEIR Improperly Segments the Project By Failing to Include the Infrastructure as Part of the Project

The DEIR states:

If the proposed project is constructed prior to the West Ridge project, ProLogis will install the infrastructure necessary to serve its project (e.g., roads, water, and sewer) and will be reimbursed by the City from the West Ridge developer at the time that project is constructed. If the West Ridge project is constructed first, ProLogis will contribute an appropriate amount to the City for a reimbursement account to help off-site improvement costs installed by the West Ridge project that serve the ProLogis project. The timing of improvements shall be coordinated by the City in cooperation with ProLogis and the West Ridge.

(DEIR, p. 3-11). Instead of including the roads, water, and sewer lines required to serve the ProLogis Project as part of the Project, the DEIR treats these infrastructure improvements as a separate project included in the cumulative projects list provided in Table 3.C: Cumulative Projects. (DEIR, p. 3-16). The City is improperly chopping the ProLogis Project into different segments, which is prohibited by CEQA because proper analysis of the whole project is thwarted. Like the casino road in *County of Amador v. City of Plymouth*, the roads, water, and sewer lines that will serve the ProLogis Project must be included as part of the Project and properly analyzed as part of the whole Project.

V. THE DEIR FAILS TO ANALYZE AND MITIGATE ALL POTENTIALLY SIGNIFICANT IMPACTS

An EIR must disclose all potentially significant adverse environmental impacts of a project. (Pub. Res. Code § 21100(b)(1); 14 Cal.Code Regs. § 15126(a); *Berkeley Jets*, 91 Cal. App. 4th 1344, 1354). CEQA requires that an EIR must not only identify the impacts, but must also provide “information about how adverse the impacts will be.” (*Santiago County Water Dist. v. County of Orange* (1981) 118 Cal.App.3d 818, 831). The lead agency may deem a particular impact to be insignificant only if it produces rigorous analysis and concrete substantial evidence justifying the finding. (*Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692).

CEQA requires public agencies to avoid or reduce environmental damage when “feasible” by requiring mitigation measures. (CEQA Guidelines § 15002(a)(2) and (3); See also, *Berkeley Jets*, 91 Cal. App. 4th 1344, 1354; *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 564). The EIR serves to provide agencies and the public with information about the environmental impacts of a proposed project and to “identify ways that environmental damage can be avoided or significantly reduced.” (Guidelines §15002(a)(2)). If the project will have a significant effect on the environment, the agency may approve the project only if it finds that it has “eliminated or substantially lessened all significant effects on the environment where feasible” and that any unavoidable significant effects on the environment are “acceptable due to overriding concerns.” (Pub.Res.Code § 21081; 14 Cal.Code Regs. § 15092(b)(2)(A) & (B)).

In general, mitigation measures must be designed to minimize, reduce, or avoid an identified environmental impact or to rectify or compensate for that impact. (CEQA Guidelines § 15370). Where several mitigation measures are available to mitigate an impact, each should be discussed and the basis for selecting a particular measure should be identified. (*Id.* at § 15126.4(a)(1)(B)). A lead agency may not make the required CEQA findings unless the administrative record clearly shows that all uncertainties regarding the mitigation of significant environmental impacts have been resolved.

CEQA requires the lead agency to adopt feasible mitigation measures that will substantially lessen or avoid the Project’s potentially significant environmental impacts (Pub. Res. Code §§ 21002, 21081(a)), and describe those mitigation measures in the CEQA document. (Pub. Res. Code § 21100(b)(3); CEQA Guidelines § 15126.4). A public agency may not rely on mitigation measures of uncertain efficacy or feasibility. (*Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 727 (finding groundwater purchase agreement inadequate mitigation measure because no record evidence existed that replacement water was available)). “Feasible” means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors. (CEQA Guidelines § 15364). To demonstrate economic infeasibility, “evidence must show that the additional costs or lost profitability are sufficiently severe as to render it impractical to proceed with the project.” (*Citizens of Goleta Valley v. Board of Supervisors* (1988) 197 Cal.App.3d 1167, 1181). The EIR must provide evidence and analysis to show project cannot be economically implemented. (*Kings County, supra*, 221 Cal.App.3d at 734-737). This requires not just cost data, but also data showing insufficient income and profitability. (*See Burger v. County of Mendocino* (1975) 45 Cal.App.3d 322, 327 (infeasibility claim unfounded absent data on income and expenditures showing project unprofitable); *San Franciscans Upholding the Downtown Plan v. City and County of San Francisco* (2002) 102 Cal.App.4th 656, 694 (upholding infeasibility finding based on analysis of costs, projected revenues, and investment requirements)). Mitigation measures must be fully enforceable through permit conditions, agreements, or other legally binding instruments. (*Id.* at § 15126.4(a)(2)).

A lead agency may not conclude that an impact is significant and unavoidable without requiring the implementation of all feasible mitigation measures to reduce the impacts of a project to less than significant levels. (CEQA Guidelines §§ 15126.4, 15091).

A. The DEIR Fails to Adequately Mitigate for the Loss of Farmland

1. Preservation Is an Appropriate Mitigation Measure for the Loss of Agricultural Resources

Preservation can be used as a tool to mitigate impacts of urbanizing land and it is encouraged and supported by legislative pronouncements and case law. For example,

[s]ee the following legislative pronouncements to the effect that conversion of agricultural land is of significant concern, and that the preservation of agricultural land is significant goal of the state. Gov. Code, § 51220 (Williamson Act findings that agricultural preservation is valuable and necessary); Civ. Code, § 815 (legislative declaration that preservation of agricultural lands “is among the most important environmental assets of California”); Pub. Resources Code, § 10200 *et seq.* (California Farmland Conservancy Program Act (formerly the Agricultural Land Stewardship Program of 1995), promoting the establishment of agricultural easements as a means to preserve agricultural land); Pub. Resources Code, §§ 21031.1, 21061.2, 21095 (CEQA provisions requiring the Resources Agency to take steps it to ensure that the environmental effects of agricultural land conversion are quantitatively and consistently considered in the environmental review process); Stats. 1993, ch. 812, § 1, subd. (d) (declaring a legislative intent that CEQA should play an important role in the preservation of agricultural lands).

In *Mira Mar [Mobile Community v. City of Oceanside]* (4th Dist. 2004) 119 Cal. App. 4th 477 [14 Cal. Rptr. 3d 176]], the court heard a challenge to the City of Oceanside’s approval of a condominium project on 7.5 acres of private property. The project would cause the loss of about .86 acres of coastal sage scrub, which was identified as a significant impact to a sensitive resource. The EIR required the applicant to mitigate for this loss at a ratio of 3 to 1 (or 2.58 acres of mitigation for .86 acres of lost habitat). In implementing this mitigation measure, the city required the preservation of .65 acres of undisturbed coastal sage scrub, the restoration and preservation of 2.3 acres of disturbed coastal sage scrub, and the creation of .63 acres of new coastal sage scrub on site. Petitioners argued that this mitigation was inadequate because *preservation* of coastal sage scrub does not mitigate for lost habitat, making the measure “illusory and

inadequate.” 119 Cal. App. 4th 477, 495. The Court of Appeal disagreed, citing CEQA Guidelines section 15370, as well as the opinions of various resource agencies, for the proposition that preservation can be a feasible means of reducing or eliminating the impact of lost habitat.

While the *Mira Mar* case deals specifically with biological and habitat resources, the reasoning of this case seems to have more general applicability to mitigation for lost resources, including agricultural resources.

(Guide to CEQA, Michael H. Remy, et. al., eleventh edition, p. 549-550).

2. The DEIR Fails to Adopt Appropriate Mitigation Measures for the Loss of Farmland

Approximately 82.5 acres of the Project site is designated as Prime Farmland. (DEIR, p. 4.2-6). The DEIR states that “[b]ecause Prime Farmland is a finite resource, its conversion to a non-agricultural use is significant.” (DEIR, p. 4.2-6). The DEIR identifies several mitigation measures including mitigation measures discussed in the City General Plan EIR:

- Enrolling productive agricultural land, not presently under contract, under a Williamson Act Contract;
- Providing protection to ongoing agricultural operations from complaints and nuisance complaints from adjacent new development;
- Protecting productive agricultural land subject to conversion through the purchase of or transfer of its development rights;
- Purchasing conservation easements on existing agricultural land to ensure that the land is never converted to urban uses; and
- Donating funds to a regional or statewide program that promotes and implements the use of agricultural land conservation easements.

(DEIR, p. 4.2-7 - 4.2-8). However, the DEIR states that

[t]he potential mitigation measures identified by the City’s General Plan have been deemed infeasible by the property owner under current economic conditions. In addition, supplementary analysis of the project

site and local economic conditions indicates that continued citrus production and/or the raising of row crops would not be economically feasible on the project site (see Appendix L).

(DEIR, p. 4.2-8) (emphasis added).

The conclusion that the mitigation measures are infeasible is completely unsupported. The DEIR states the City General Plan EIR mitigation measure of enrolling productive land under Williamson Act contracts is infeasible because the “contracts are entered into voluntarily by property owners” and these contracts would “result only in temporary contracts at any time after the ten-year contract period ends.” (DEIR, p. 4.2-8). Mitigation measures are designed to minimize significant environmental impacts, not necessarily to eliminate them. (Pub. Res. Code § 21100(b)(3); 14 Cal. Code Regs. § 15126.4(a)(1)). The minimum term for a Williamson Act contract is 10 years, however jurisdictions have the option of making them longer. (*Williamson Act Program - Basic Contract Provisions*, State of California Department of Conservation, available at http://www.conservation.ca.gov/dlrp/lca/basic_contract_provisions/Pages/index.aspx#what is a williamson act contract). Enrolling land into Williamson Act contracts would minimize the environmental impacts of converting Prime Farmland to warehouses.

In evaluating the feasibility of the mitigation measures: (1) purchasing conservation easements and (2) donating funds to a regional or statewide program, the DEIR states

The purchase or transfer of development rights, purchase of conservation easements, or donation of funds to assist in the conservation of agricultural land would need to be implemented to ensure the preservation of agricultural land. As stated previously, the City anticipates the conversion of agricultural land within the City and does not set aside land for permanent preservation. The City expects that the majority of the land within the City will be converted to urban uses, although some agriculture will continue as interim uses, as allowed by the City’s Development Code for all zoning categories.

(DEIR, p. 4.2-8 - 4.2-9). These “reasons” are flawed because the identified mitigation measure was to donate funds to regional or statewide programs that promote and implement the use of agricultural land conservation easements. The “reasons” do not address why donating funds to regional or statewide programs is infeasible.

A supplemental EIR is required to analyze and require implementation of these feasible mitigation measures to reduce the Project’s impacts on agricultural land. The fact that the measures are set forth in the City’s own General Plan itself makes a prima facie case that the measures are feasible and should be implemented. If the City

concludes that the measures are infeasible, then it must provide substantial evidence to demonstrate infeasibility. The EIR must provide evidence and analysis to show project cannot be economically implemented. (*Kings County, supra*, 221 Cal.App.3d at 734-737). This requires not just cost data, but also data showing insufficient income and profitability. (*See Burger v. County of Mendocino* (1975) 45 Cal.App.3d 322, 327 (infeasibility claim unfounded absent data on income and expenditures showing project unprofitable); *San Franciscans Upholding the Downtown Plan v. City and County of San Francisco* (2002) 102 Cal.App.4th 656, 694 (upholding infeasibility finding based on analysis of costs, projected revenues, and investment requirements)). The EIR is devoid of any such evidence and is therefore legally inadequate.

B. The DEIR Fails to Adequately Analyze Hazards and Hazardous Materials and Establishes an Erroneous Baseline

1. CEQA Baseline Standard

Every CEQA document must start from a “baseline” assumption. The CEQA “baseline” is the set of environmental conditions against which to compare a project’s anticipated impacts. *Communities for a Better Environment v. So Coast Air Qual. Mgmt. Dist.* (2010) 48 Cal. 4th 310, 321. Section 15125(a) of the CEQA Guidelines (14 C.C.R., § 15125(a)) states in pertinent part that a lead agency’s environmental review under CEQA:

...must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time [environmental analysis] is commenced, from both a local and regional perspective. This environmental setting will normally constitute the baseline physical conditions by which a Lead Agency determines whether an impact is significant.

(*See, Save Our Peninsula Committee v. County of Monterey* (2001) 87 Cal.App.4th 99, 124-125 (“*Save Our Peninsula*”). As the court of appeal has explained, “the impacts of the project must be measured against the ‘real conditions on the ground,’” and not against hypothetical permitted levels. (*Save Our Peninsula*, 87 Cal.App.4th 99, 121-123). As the court has explained, using such a skewed baseline “mislead(s) the public” and “draws a red herring across the path of public input.” (*San Joaquin Raptor Rescue Center v. County of Merced* (2007) 149 Cal.App.4th 645, 656; *Woodward Park Homeowners v. City of Fresno* (2007) 150 Cal.App.4th 683, 708-711).

2. Residual Pesticides in the Soil May Pose Health Risks to Workers and Nearby Residents

According to the DEIR, 57 acres of the Project site are used to grow grapefruit and 36 acres of the Project site are used for hay and alfalfa production. (DEIR, p. 4.2-1).

The DEIR and supporting documents fail to provide any specific details on the types of pesticides that have been used on the Project site in association with these agricultural operations and therefore the DEIR fails to adequately describe the environmental setting for the Project. According to Mr. Hagemann,

[o]ur review has shown known and potential pesticide use at the Project site as follows:

- Data available online from the California Department of Pesticide Regulation show that 2,4-D, 2-Ethylhexyl Ester was used on the Project site.^{2,3} Occupational exposure to 2,4-D, 2-Ethylhexyl Ester can occur via inhalation or dermal contact and can result in skin irritation, respiratory failure, hyperventilation, and pulmonary enemas.⁴
- Organochlorine pesticides DDE and DDT were detected in soil samples collected at the Project site⁵, indicating past use. Use of organochlorine pesticides in the area is common: review of the Department of Toxic Substances Control's (DTSC) Envirostor database shows that the surrounding lands have been surveyed for organochlorine pesticides, DDE and DDT.⁶ These pesticides can persist in soil for hundreds of years despite being banned in the 1970s.⁷ Exposure to DDT can result in headaches, nausea, and convulsions.⁸ The U.S. EPA identifies DDT and DDE as probable human carcinogens.⁹
- The EPA states that soils at fruit orchards, such as the grapefruit orchard on the Project site, may contain high levels of arsenic from application as a pesticide.¹⁰ Another chemical used on fruit orchards is lead arsenate, a very persistent pesticide.¹¹ Arsenic is a known human carcinogen and even short-term inhalation of arsenic

² http://cdpr.ca.gov/pub/outgoing/calpip/26814174623515_120824104149.html

³ http://cdpr.ca.gov/pub/outgoing/calpip/26814174623515_120824104217.html

⁴ <http://toxnet.nlm.nih.gov/cgi-bin/sis/search/a?dbs+hsdb:@term+@DOCNO+7309>

⁵ Phase I Environmental Site Assessment, 84 acres. Near Intersection of Pittit Street and Highway 60, Moreno Valley, California, p. 9 and Phase I Environmental Site Assessment, 37 acres. Near Intersection of Pittit Street and Highway 60, Moreno Valley, California, p. 8

⁶ http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=60000825 and http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=60000931

⁷ <http://www.atsdr.cdc.gov/toxprofiles/tp35.pdf>, p. 3

⁸ <http://www.epa.gov/ttn/atw/hlthef/dde.html>

⁹ <http://www.atsdr.cdc.gov/toxfaqs/faq.asp?id=80&tid=20>

¹⁰ <http://water.epa.gov/drink/info/well/health.cfm>

¹¹ <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1551991/>

dust can cause gastrointestinal effects¹² while lead is known to cause neurotoxicological effects.¹³

Pesticide use at the Project site was not disclosed in the DEIR and the detection of pesticide residuals in soil were not described in the Hazards and Hazardous Materials section.

Failure to disclose the presence of pesticide residuals in Project site soils may pose significant health risks to construction workers. Construction of the Project requires grading and the disturbance of subsurface soils and removal of citrus groves (DEIR, p. 4.7-21). During earthmoving activities, construction workers will be exposed, via inhalation of dust and dermal contact, to Project site soils which may contain harmful levels of pesticide residuals associated with agricultural activities on the site. To protect worker safety, Project site soils must be sampled for pesticides. Sampling results should be compared to health-protective regulatory screening levels such as U.S. EPA Regional Screening Levels¹⁴ and California Human Health Screening Levels.¹⁵

Soil sampling results should also be evaluated for the protection of nearby residents, located 50 feet from the southern boundary and 200 feet from the northern boundary of the Project site (DEIR, p. 4.3-6). Inhalation of pesticides has been linked to asthma in recent research.^{16,17} A report prepared by the California Department of Health identifies pesticides as an asthma trigger.¹⁸ Offsite receptors, including any children living in the neighboring residences, may be exposed to pesticide residuals via dust generated during Project construction.

Construction activities, such as grading and excavation of soils, may generate dust that contains pesticides in concentrations that are harmful to the health of workers and nearby residents and which may act as an asthma trigger. Project site soils should be sampled and results should be compared to human health screening levels. A revised DEIR should be prepared to disclose the results of sampling and include any necessary mitigation to reduce impacts to the health of construction workers and nearby residents.

¹² <http://www.epa.gov/ttn/atw/hlthef/arsenic.html>

¹³ <http://www.epa.gov/lead/pubs/learn-about-lead.html#effects>

¹⁴ <http://www.epa.gov/region9/superfund/prg/>

¹⁵ <http://www.calepa.ca.gov/brownfields/documents/2005/CHHSLsGuide.pdf>

¹⁶ <http://extension.psu.edu/ipm/resources/urbanphilly/partnerships/handouts/asthma-pests.pdf>

¹⁷ <http://www.ncbi.nlm.nih.gov/pubmed/21368619>

¹⁸ <http://www.cdph.ca.gov/programs/caphi/Documents/AsthmaStrategicPlan.5-5-08.pdf>, p. 22

3. The Phase I Environmental Site Assessments Completed for the Project Site are Outdated and Inadequate

According to Mr. Hagemann,

The DEIR relies on the findings from two Phase I Environmental Site Assessments (ESAs) that were completed in October and November 2003, nearly nine years ago. The Phase I ESAs surveyed 121 acres of the 123-acre Project site. The Applicant purchased the Project site more than five years ago.¹⁹ A Phase I ESA, according to the U.S. EPA, must be conducted within one year of the acquisition of the property and on-site visual inspections must be completed within 180 days prior to acquiring ownership of the property.²⁰

Because the Phase I ESAs are dated and omit two acres of the Project site, they cannot be used to evaluate conditions that are potentially hazardous to construction workers and future site personnel. Therefore, the DEIR's analysis of the Project site based on these Phase I ESAs is inadequate.

Review of Google Earth images shows that the Project site has been used for ongoing agricultural operations since the Phase I ESAs were completed in 2003. Limited pesticide sampling was conducted during the Phase I ESAs (a total of 8 soil samples for a 123-acre Project site) but because the samples were collected nine years ago and because they do not reflect continued agricultural use, the results are reflective of current site conditions.

The Phase I ESAs cover 121 acres of the 123-acre Project site. We have created a map to show the areas of the Project site surveyed by the two 2003 Phase I ESAs and the boundaries for the current Project site (Attachment A). As the map shows, not all areas of the current Project site were included in the 2003 Phase I ESAs' site assessments.

The DEIR fails to establish an adequate environmental setting for the Project site because it relies on Phase I ESAs that are outdated and do not cover the entire Project site. A revised DEIR is required, including a new Phase I ESA, to evaluate the Project site's current environmental conditions.

¹⁹ <http://www.pe.com/local-news/riverside-county/moreno-valley/moreno-valley-headlines-index/20120726-moreno-valley-officials-seek-comments-on-prologis-project.ece>

²⁰ <http://www.epa.gov/brownfields/aai/aicerclafs.pdf>

4. The DEIR Fails to Disclose the Status of an Underground Storage Tank

According to Mr. Hagemann,

A 13,400 gallon underground storage tank (UST), abandoned in the 1950s, was removed from the Project site in 2004 (Appendix F, p. 3/191). The Phase I ESA recommended an additional investigation to be conducted in the area of the former UST (Appendix F, p. 10/191). Accordingly, a permit for removal of the UST was submitted to the Riverside County's Department of Environmental Health in December 2003 and soil samples around the area of the UST were analyzed in 2004. However, the DEIR and supporting documents did not include any documentation that the UST was properly closed by the Riverside County Department of Environmental Health. If the UST removal was not approved, an Underground Storage Tank Closure Application and Permit²¹, per the Riverside County Department of Environmental Health Guidelines,²² must be submitted.

The DEIR fails to establish an adequate baseline because it does not provide the status of a 13,400 gallon UST. A revised DEIR is required to disclose this important information (i.e., whether closure was granted by the Riverside County Department of Environmental Health).

C. The DEIR Fails to Adequately Analyze Greenhouse Gas Emissions

The DEIR states that the Project's operational greenhouse gas (GHG) emissions, before mitigation, are estimated to be 79,000 metric tons of CO₂e/year (MT CO₂e/yr) which exceed the SCAQMD threshold of 10,000 MT CO₂e/yr and are therefore considered significant. (DEIR, p. 4.13-19). The Project's GHG emissions exceed the SCAQMD threshold by nearly eight times. After mitigation, the DEIR states that GHG emissions will be less than significant. (DEIR, p. 4.13-21). This conclusion is completely unsupported. The DEIR fails calculate what the Project's GHG emissions will be after the mitigation measures are implemented. In fact, the DEIR and supporting documents, including a GHG Study (Appendix B), fail to provide any evidence that the proposed mitigation measures will reduce GHG emissions by a factor of eight.

According to Mr. Hagemann,

²¹ http://www.rivcoeh.org/opencms/system/galleries/download/Environmental-Health/HMM/UST_Closure_App.pdf

²² http://www.rivcoeh.org/opencms/system/galleries/download/Environmental-Health/HMM/Closure_by_removal_UST.pdf

A revised DEIR should be prepared to show the efficiency of the Project's proposed mitigation measures in reducing greenhouse gases. If these measures do not account for an eight-fold reduction in the Project's estimated GHG levels, additional mitigation measures (listed below) that are routinely considered in other CEQA projects should be implemented:

- Require preparation of a traffic control plan;
- Demonstrate proper inspection and maintenance of construction equipment;
- Implement a carpool program for construction workers;
- Employ a construction site manager to verify that engines are properly maintained and keep a maintenance log;
- Configure construction parking to minimize traffic interference;
- Consolidate truck deliveries when possible;
- Provide dedicated turn lanes for movement of construction trucks and equipment on and off site;
- Suspend use of all construction equipment operations during second stage smog alerts;
- Establish a staging zone for trucks that are waiting to load or unload material at the work zone in a location where diesel emissions from the trucks will have minimum impact on abutters and the general public;
- Locate construction equipment away from sensitive receptors such as fresh air intakes to buildings, air conditioners and operable windows;
- Require all diesel trucks used by construction contractor(s) at the site, or for on-road hauling of construction material, to be post-1996 models; Diesel portable generators less than 50 hp shall not be allowed at the construction site;
- Use of hybrid and fuel efficient construction equipment and support vehicles (e.g., pick-up trucks);
- Use of grid electricity for smaller equipment such as saws, pumps, and welders;²³
- Reduction in vehicle miles travelled in construction crew commutes through trip carpooling, trip reduction, providing bus service for crews from work sites to carpool parking areas, and in providing incentives to carpool; and
- Use of a Heavy-Duty Off-Road Vehicle Plan to ensure compliances with construction mitigation measures (e.g., hourly meters on equipment, documenting the serial number, horsepower,

²³ <http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf>, p.

manufacture age, fuel, etc. of all onsite equipment and daily logging of the operating hours of the equipment).²⁴

A supplemental EIR should be prepared that calculates the Project's GHG emissions after implementation of all feasible mitigation measures. The supplemental EIR should analyze all mitigation measures set forth in the GHG Guidance Document published by the California Attorney General, Addressing Climate Change at the Project Level (see attached exhibit, also available at http://ag.ca.gov/globalwarming/pdf/GW_mitigation_measures.pdf). If GHG impacts remain significant after implementation of all feasible mitigation measures, then the EIR must acknowledge that the impacts are significant and unavoidable, and the City must adopt a statement of overriding considerations.

D. The DEIR Fails to Adequately Analyze Impacts to Air Quality

1. The DEIR Underestimates the Potential Particulate Emissions for the Construction Phase of the Project

Computer modeling (e.g., the California Air Resource Board's ("CARB's") Urban Emission ("URBEMIS") and the California Emissions Estimator Model ("CalEEMod")) is used to estimate emissions of criteria pollutants during construction and operational phases of projects. The South Coast Air Quality Management District ("SCAQMD") permits the use of the outputs from both the URBEMIS and CalEEMOD in air quality analyses. According to Dr. Clark, there are significant differences between these two models that "must be highlighted in the DEIR." In pertinent part, Dr. Clark states:

The changes in the method used to estimate construction impacts from the proposed project by using the CalEEMod model instead of the URBEMIS model include:

- Failure to account for wind-blown fugitive dust²⁵. According to the July, 2011 CalEEMod Technical Paper, wind-blown fugitive dust is not calculated in CalEEMod. For sites as large as the proposed project site, this can result in significant quantities of particulate matter being released.
- SCAQMD's surveys of construction sites were limited to sites of 35 acres or less. For projects larger than 35 acres the data was extrapolated by increasing the number of construction days but not increasing the number of construction equipment pieces used on a

²⁴ Ibid., p. 431

²⁵ CalEEMod. Technical Paper: Methodology Reasoning and Policy Development of the California Emission Estimator Model. July, 2011. Pg 4.

given day. The impact is to reduce the construction PM estimates for the site as compared to URBEMIS²⁶.

- The acreage to be based upon Walker's Building Estimator's Reference Book. Grading in URBEMIS is based upon 25% of total project acreage in one day. The impact of this change is to decrease PM emissions from grading in the CalEEMod²⁷.

A revised DEIR should be prepared to highlight the differences between the two models so that the potential impacts are adequately analyzed.

2. The DEIR Fails to Accurately Compare Construction Emissions to Daily Construction Significant Thresholds

According to Dr. Clark, the CalEEMod results were not presented properly. The model shows CEQA significance levels were exceeded as well as South Coast Air Quality Management District Localized Significance Thresholds were exceeded. In pertinent part, Dr. Clark states:

Unlike the operational emissions from most projects, which are typically more or less continuous, emissions from construction sites are highly variable depending on the type of construction that is being performed. For example, grading results in large quantities of fugitive dust and combustion emissions from diesel-powered equipment. Short-term emissions during the various construction phases can be considerable and may result in degradation of local and regional air quality and severe health effects.

To determine whether short-term emissions may result in degradation of local and regional air quality and severe health effects, it is common practice for lead agencies to compare project emissions to quantitative significance thresholds developed by local air districts as a screening tool for CEQA review. Thresholds of significance for construction emissions are typically expressed on a short-term basis, *i.e.* daily or hourly basis to adequately capture impacts due to the high variability of emissions during different construction stages.

Table 1 presents a summary of short-term emissions thresholds developed by SCAQMD and other air districts for assessing impacts on air quality from construction projects.

²⁶ CalEEMod. Technical Paper: Methodology Reasoning and Policy Development of the California Emission Estimator Model. July, 2011. Pg 5.

²⁷ CalEEMod. Technical Paper: Methodology Reasoning and Policy Development of the California Emission Estimator Model. July, 2011. Pg 5.

**Table 1:
 CEQA significance thresholds for construction emissions from various air districts**

Air district construction thresholds*	NOx (lbs/day)	ROG (lbs/day)	PM₁₀ (lbs/day)	DPM (lbs/day)	PM_{2.5} (lbs/day)	CO (lbs/day)
SCAQMD	100	75	150		55	550
BAAQMD	54	54	82		54	
EDCAPCD	82	82				
SLOCAPCD				7		
MBUAPCD			82			550
FRAQMD	25	25	80			
SMAQMD	85					
YSAQMD	82	82	150			

SCAQMD = South Coast Air Quality Management District, CEAQ Handbook, 1993;
 BAAQMD = Bay Area Air Quality Management District, CEQA Guidelines 2009;
 EDCAPCD = El Dorado County Air Pollution Control District, CEQA Guide, February 2002;
 SLOCAPCD = San Louis Obispo County Air Pollution Control District, CEQA Air Quality Handbook, December 2009.
 MBUAPCD = Monterey Bay Unified Air Pollution Control District, CEQA Air Quality Guidelines, June 2004,
 FRAQMD = Feather River Air Quality Management District,
http://www.fraqmd.org/CEQA_Thresholds.htm;
 SMAQMD Sacramento Metropolitan Air Quality Management District, Guide to Air Quality Assessment, July 2004;
 YSAQMD, Yolo-Solano Air Quality Management District, Air Quality Handbook, Guidelines for Determining Air Quality Thresholds of Significance and Mitigation Measures for Proposed Development Projects that Generate Emissions from Motor Vehicles, revised 2002

A review of the CalEEMod analysis for the project shows that the mitigated construction emissions of ROG and PM_{2.5} exhaust (a surrogate for diesel particulate emissions) are in excess of the CEQA significance thresholds listed above. During Year 2013, ROG and PM_{2.5} exhaust emissions are estimated to be 368.03 lbs/day and 7.95 lbs/day, respectively.

In addition to the Significant Thresholds above, SCAQMD recommends the use of Localized Significance Thresholds (LSTs) to determine potential impacts to receptors near projects. According to the Air Quality Analysis prepared by the proponent, Table I of the Air Quality Analysis shows that the emissions of the pollutants on the peak day of construction are below the SCAQMD LST. In this table the proponent uses the emission estimates from the grading phase of the construction. The proponent inaccurately asserts that the emission levels will be below the LST values.

**Table 2:
 Construction LST Impacts from Air Quality Analysis**

Emission Sources	Pollutant Emissions, lbs/day			
	NOx	CO	PM ₁₀	PM _{2.5}
On-Site (grading) Emissions	104	55	8.4	6.3
LST Threshold	270	1,577	13	8
Significant Emissions?	No	No	No	No

A review of the CalEEMod analysis shows that the highest emission values are not associated with the grading phase. In Section 2.0 Emission Summary of the CalEEMod analysis presented in the Air Quality Analysis the construction impacts are listed as:

**Table 3:
 Construction LST Impacts from CalEEMod Output**

Emission Sources	Pollutant Emissions, lbs/day			
	NOx	CO	PM ₁₀	PM _{2.5}
Mitigated Construction Emissions	139.84	166.77	29.2	8.28
LST Threshold	270	1,577	13	8
Significant Emissions?	No	No	Yes	Yes

The Proponent's analysis of air quality impacts clearly fails to accurately describe the impacts of the emissions on the receptors closest to the project site. Based on my expert opinion, applicable significance thresholds, and the CalEEMod analysis performed by the proponent, I conclude that the Project will have significant adverse impacts from construction air emissions of fugitive dust, ROG, and diesel emissions. The lead agency must re-evaluate the construction emissions and incorporate a phased approach to estimate the true impacts of construction activities on air quality, and propose all feasible mitigation measures to reduce these significant emissions, in a RDEIR.

3. The DEIR Fails to Consider Health Risks From Contaminated Dust

According to Dr. Clark:

Residual contaminants in soils at the site may be entrained in dust generated during construction activities. The release of residual contamination is a potentially significant impact, given the past use of the site for agricultural production. According to the California Department of Toxic Substances Control August 2002 Interim Guidance for Sampling Agricultural Fields for School Sites (known sensitive receptors), “the most commonly detected pesticides have been DDT and its derivatives DDD and DDE, toxaphene, dieldrin, and aldrin. Of these pesticides, toxaphene has been the major pesticide driving unacceptable levels of risk requiring remediation by soil removal.” Given the volume of soils to be graded at each of the sites it is imperative to understand whether particulate matter generated at the sites will pose a potential health risk to sensitive receptors in the vicinity of each site.

According to DTSC, “the guidance is applicable to agricultural land that is currently under cultivation with row, fiber or food crops, orchards, or pasture. It is also applicable to fallow and former agricultural land that is no longer in production and has not been disturbed beyond normal disking and plowing practices. Each field of the same crop is assumed to have been watered, fertilized, and treated with agricultural chemicals to the same degree across the field. Because of this homogeneous application, contaminant levels are expected to be similar at any given location within the field.”

There is no indication of a sampling and analysis plan in the DEIR, or the Project documents provided by the lead agency, a serious deficiency in the documents. Prior to issuing a DEIR for the project, the Proponent should be required to complete a sampling and analysis plan to confirm or rule out the possibility of the presence of residual contaminants at the site. Identifying residual pesticides or other contaminants in soils at the site prior to construction activities will provide an opportunity for the Proponent to remove/mitigate the potential exposure of sensitive receptors within the vicinity of the sites. In the absence of any sampling or analysis, and given the past use of the Project site, I conclude that there is at least a fair argument that the Project may have significant impacts related to residual contaminants at the site.

4. The DEIR Fails to Properly Identify and Address the Project's Operational Air Quality Impacts

The DEIR states, without any evidentiary support, that the project's emissions of criteria pollutants will not result in a considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard. According to Dr. Clark,

During the operational phase of the project the project will have the potential to generate significant quantities of criteria pollutants (NO_x, SO_x, Ozone precursors, PM). According to Table 3-1 of the most recent BAAQMD CEQA guidance, a construction of a 259,000 square foot light industrial or warehouse operation will typically violate NO_x construction thresholds and GHG operational thresholds. The proposed Project's 2,000,000 square feet plus of warehouse and manufacturing buildings are nearly 8 times the size of the screening threshold, ensuring a violation of local air quality thresholds. I therefore conclude that the Project will have significant NO_x and GHG emissions during Project operations.

The air quality impacts from the traffic associated with a 2,000,000 square foot facility are significant. Typically the impacts are quantified by the number of vehicle trips per day. In the case of the proposed project, the primary concern will be the number of truck trips per day. A truck trip is one round trip (one trip segment to a site and one trip segment away from a site).

According to one source, Bluffstone and Ouderkirk²⁸, a 500,000 square feet facility on 50 acres, will on average have 350 truck trips per day (or 700 trip segments) associated with its development. This figure is proportionate to estimates for an AMB Property Corporation center in Redlands (1,000 truck trips for a 1.3 million square feet structure); Wal-Mart distribution centers in Pueblo, Colorado (700 truck trips per day for an 880,000 square feet facility), Connecticut, and Delaware (both 1,000 truck trips per day for 1.2 million square feet structures); and a grocery distribution center in New York (Boas, 2002; Gasiewski, 2004; Hernandez, 2005; Pueblo Chieftain, 2004; Sholl, 2004).

Estimates from other sources indicate approximately 1 truck per 1,000 square feet of the building, which means that the proposed project would require 1,000 trucks per day (or 1,000 trip segments per day) for the warehouse segment of the Project. The number of truck trips could be

²⁸Bluffstone and Ouderkirk. 2007. Warehouses, trucks, and [PM.sub.2.5]: human health and logistics industry growth in the eastern Inland Empire. Contemporary Economic Policy 25(1):

higher at a new, more efficient facility where more inventory is moved per day. Without proper modeling of the emissions from these additional vehicles the impacts on the environment and the citizens of Moreno Valley is unknown. It is clear that the size of the Project will have significant NOx and GHG emissions during Project operations.

A proper cumulative impact analysis is vital for an environmental analysis because the full environmental impact of a proposed project cannot be gauged in a vacuum. One of the most important environmental lessons that has been learned is that the environmental damage often occurs incrementally from a variety of small sources with which they interact. The increase in PM in the region, even for short periods of time, will only exacerbate the already serious air quality issues in the region.

5. The DEIR Fails to Disclose Impacts to Offsite Receptors

The Project is located in the South Coast Air Basin and Riverside County,²⁹ both of which are designated non-attainment for PM10 and ozone. (DEIR, p. 4.3-6). According to Mr. Hagemann,

[s]ignificant emissions of PM10 and ozone and contributing factors such as NOx and ROG will lead to a worsening of regional air quality. The Project's estimates of construction emissions need to be properly disclosed and mitigated to ensure that the Project has a less than significant impact on regional air quality.

Estimates and impacts of project's construction and operational emissions
Project construction and operation will result in significant emissions of ROG, NOx, and PM10 even after mitigation (DEIR, pp. 4.3-29, 4.3-34).

Construction emissions

The DEIR estimates that the Project's construction emissions of NOx and ROG will be significant as they exceed the SCAQMD thresholds of 100 lbs/day and 75 lbs/day, respectively (DEIR, p. 4.3-23) and identifies mitigation measures to reduce the Project's emissions (DEIR, pp. 4.3-23 – 4.3-29). Even with mitigation, the Project's emissions of NOx and ROG will still exceed SCAQMD thresholds and therefore are considered significant (DEIR, p. 4.3-29).

Operational emissions

The DEIR estimates that the Project's emissions of ROG, NOx, and PM10 from operational activities will be significant as they exceed the SCAQMD

²⁹ <http://www.epa.gov/oaqps001/greenbk/ancl.html>

thresholds of 55 lbs/day, 55 lbs/day, and 150 lbs/day, respectively (DEIR, p. 4.3-33). The DEIR proposes mitigation measures to reduce the Project's emissions (DEIR, pp. 4.3-33 – 4.3-34) but, even with mitigation, the Project's emissions will still exceed SCAQMD thresholds and therefore are considered significant (DEIR, p. 4.3-34).

Gaseous particles such as NOx can react in the atmosphere to form PM10.^{30,31} Because Riverside County and the South Coast Air Basin are both designated non-attainment for PM10, significant emissions of NOx can lead to a further degradation of regional air quality. NOx emissions can also react to produce ground-level ozone.³² Exposure to NOx emissions and its products (ozone and PM10) can lead to the airway inflammation and can cause or exacerbate conditions such as emphysema and bronchitis.³³

ROG can react to form ozone and contributes to smog formation.^{34,35} Exposure to ozone can result in coughing, throat irritation, and chest pain, burning, and discomfort.³⁶ Smog exposure can lead to sneezing, nausea, coughing, headaches, and chest constriction.³⁷ A study published in the New England Journal of Medicine concluded that the risk of dying from respiratory diseases is three times higher in areas of concentrated ozone.³⁸

Exposure to PM10 can cause bronchitis, increase the number and severity of asthma attacks, damage to lung tissue, and even premature death.³⁹ Research identifies that dust from construction is a major contributor to PM10 and that PM10 exposure is associated with asthma.⁴⁰ Inhalation of PM10 can exacerbate asthma especially in children who are susceptible to higher risks from PM10 exposure.⁴¹

³⁰ <http://www.fhwa.dot.gov/resourcecenter/teams/airquality/brochure/particulatebrochure.pdf>

³¹ <http://www.epa.gov/captrade/documents/power.pdf>

³² *Ibid.*

³³ <http://www.epa.gov/air/nitrogenoxides/health.html>

³⁴ <http://www.arb.ca.gov/research/health/fs/fs2/fs2.htm>

³⁵ <http://www.arb.ca.gov/html/gloss.htm#smog>

³⁶ <http://www.epa.gov/o3healthtraining/population.html>

³⁷ <http://are.berkeley.edu/courses/EEP101/spring03/AllThatSmog/extern.html>

³⁸ <http://www.nytimes.com/gwire/2009/03/12/12greenwire-study-links-smog-exposure-to-premature-death-10098.html>

³⁹ <http://www.epa.gov/airtrends/aqtrnd95/pm10.html> and <http://www.arb.ca.gov/html/brochure/pm10.htm>

⁴⁰ http://scerpfiles.org/cont_mgt/doc_files/EH-01-2.pdf

⁴¹ <http://www.co.imperial.ca.us/airpollution/attainment%20plans/final%20ic%202009%20pm10%20sip%20document.pdf>

The Project will have significant emissions of ROG, NO_x, and PM₁₀. Because Riverside County and the South Coast Air Basin are designated non-attainment areas for ozone and PM₁₀, Project construction and operation will further degrade regional air quality. Exposure to ROG, NO_x, and PM₁₀ has adverse health effects and can impact offsite receptors, especially children in the nearby residences – a significant and undisclosed public health impact that the DEIR does not consider.

A revised DEIR should be prepared to disclose impacts to offsite receptors from Project construction and operation. Additional mitigation measures must be implemented to ensure that Project emissions of ROG, NO_x, and PM₁₀ are reduced to the maximum extent feasible.

6. The DEIR Fails to Adequately Analyze Cumulative Impacts

1. Legal Standard

An EIR must discuss significant cumulative impacts. CEQA Guidelines section 15130(a). This requirement flows from CEQA section 21083, which requires a finding that a project may have a significant effect on the environment if “the possible effects of a project are individually limited but cumulatively considerable... ‘Cumulatively considerable’ means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.” “Cumulative impacts” are defined as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.” CEQA Guidelines section 15355(a). “[I]ndividual effects may be changes resulting from a single project or a number of separate projects.” (CEQA Guidelines section 15355(a)).

“The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.” (*Communities for a Better Environment v. Cal. Resources Agency* (“*CBE v. CRA*”), (2002) 103 Cal.App.4th 98, 117). A legally adequate cumulative impacts analysis views a particular project over time and in conjunction with other related past, present, and reasonably foreseeable probable future projects whose impacts might compound or interrelate with those of the project at hand. “Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.” (CEQA Guidelines § 15355(b)).

As the court stated in *CBE v. CRA*, 103 Cal. App. 4th at 114:

Cumulative impact analysis is necessary because the full environmental impact of a proposed project cannot be gauged in a vacuum. One of the most important environmental lessons that has been learned is that environmental damage often occurs incrementally from a variety of small sources. These sources appear insignificant when considered individually, but assume threatening dimensions when considered collectively with other sources with which they interact.

(Citations omitted).

In *Kings County Farm Bureau v. City of Hanford*, 221 Cal.App.3d at 718, the court concluded that an EIR inadequately considered an air pollution (ozone) cumulative impact. The court said: "The EIR concludes the project's contributions to ozone levels in the area would be immeasurable and, therefore, insignificant because the [cogeneration] plant would emit relatively minor amounts of [ozone] precursors compared to the total volume of [ozone] precursors emitted in Kings County. The EIR's analysis uses the magnitude of the current ozone problem in the air basin in order to trivialize the project's impact." The court concluded: "[t]he relevant question to be addressed in the EIR is not the relative amount of precursors emitted by the project when compared with preexisting emissions, but whether any additional amount of precursor emissions should be considered significant in light of the serious nature of the ozone problems in this air basin."⁴² The *Kings County* case was reaffirmed in *CBE v. CRA*, 103 Cal.App.4th at 116, where the court rejected cases with a narrower construction of "cumulative impacts."

Similarly, in *Friends of Eel River v. Sonoma County Water Agency*, (2003) 108 Cal. App. 4th 859, the court held that the EIR for a project that would divert water from the Eel River had to consider the cumulative impacts of the project together with other past, present and reasonably foreseeable future projects that also divert water from the same river system. The court held that the EIR even had to disclose and analyze projects that were merely proposed, but not yet approved. The court stated, CEQA requires "the Agency to consider 'past, present, and probable future projects producing related or cumulative impacts . . .'" (Guidelines, § 15130, subd. (b)(1)(A)). The Agency must interpret this requirement in such a way as to 'afford the fullest possible protection of the environment.'" (*Id.*, at 867, 869). The court held that the failure of the EIR to

⁴² *Los Angeles Unified v. City of Los Angeles*, 58 Cal.App.4th at 1024-1026 found an EIR inadequate for concluding that a project's additional increase in noise level of another 2.8 to 3.3 dBA was insignificant given that the existing noise level of 72 dBA already exceeded the regulatory recommended maximum of 70 dBA. The court concluded that this "ratio theory" trivialized the project's noise impact by focusing on individual inputs rather than their collective significance. The relevant issue was not the relative amount of traffic noise resulting from the project when compared to existing traffic noise, but whether any additional amount of traffic noise should be considered significant given the nature of the existing traffic noise problem.

analyze the impacts of the project together with other proposed projects rendered the document invalid. “The absence of this analysis makes the EIR an inadequate informational document.” (*Id.*, at 872).

The Court in *Citizens to Preserve the Ojai v. Bd. of Supervisors*, 176 Cal.App.3d 421 (1985), held that an EIR prepared to consider the expansion and modification of an oil refinery was inadequate because it failed to consider the cumulative air quality impacts of other oil refining and extraction activities combined with the project. The court held that the EIR’s use of an Air District Air Emissions Inventory did not constitute an adequate cumulative impacts analysis. The court ordered the agency to prepare a new EIR analyzing the combined impacts of the proposed refinery expansion together with the other oil extraction projects.

2. The DEIR Fails to Adequately Analyze Cumulative Construction Impacts

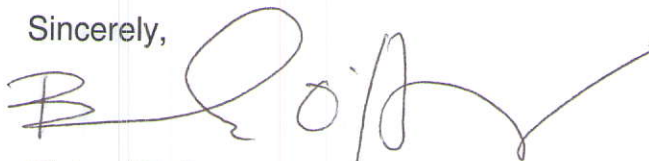
As part of its cumulative impact analysis, the DEIR identifies 13 proposed projects encompassing approximately 7.3 million square feet of space within five miles of the Project site (DEIR, p. 3-16). However, the DEIR does not identify the construction schedule of these projects except to state that “a number of individual projects may be under construction simultaneously with the proposed project.” (DEIR, p. 4.3-37). The WestRidge Commerce Center Project (which will be built adjacent to the proposed Project) is scheduled to be constructed in 2012, a schedule similar to the proposed Project. According to Mr. Hagemann,

[s]imultaneous construction of these projects, along with other potential projects, is likely to result in PM10, NOx, and ROG emissions that will have a cumulatively significant impact. The construction timetables of all projects within the vicinity of the Project site should be identified. Any cumulatively significant emissions should be disclosed and impacts to workers and nearby residents should be addressed in a revised DEIR.

VI. CONCLUSION

For the foregoing reasons, LIUNA Local Union No. 1184 urge the City to continue the matter for future consideration pending completion of a supplemental EIR addressing the Project's significant impacts and mitigation measures. Thank you for your attention to these comments. Please include this letter and all attachments hereto in the record of proceedings for this project.

Sincerely,

A handwritten signature in black ink, appearing to read "Richard T. Drury". The signature is fluid and cursive, with a large initial "R" and a long horizontal stroke.

Richard T. Drury
Christina M. Caro
Brooke C. O'Hanley
Lozeau Drury LLP
Attorneys for LIUNA Local Union No. 1184

Exhibit

Addressing Climate Change at the Project Level California Attorney General's Office

Addressing Climate Change at the Project Level California Attorney General's Office



Under the California Environmental Quality Act (CEQA), local agencies have a very important role to play in California's fight against global warming – one of the most serious environmental effects facing the State today. Local agencies can lead by example in undertaking their own projects, insuring that sustainability is considered at the earliest stages. Moreover, they can help shape private development. Where a project as proposed will have significant global warming related effects, local agencies can require feasible changes or alternatives, and impose enforceable, verifiable, feasible mitigation to substantially lessen those effects. By the sum of their actions and decisions, local agencies will help to move the State away from “business as usual” and toward a low-carbon future.

Included in this document are various measures that may reduce the global warming related impacts at the individual project level. (For more information on actions that local governments can take at the program and general plan level, please visit the Attorney General's webpage, “CEQA, Global Warming, and General Plans” at <http://ag.ca.gov/globalwarming/ceqa/generalplans.php>.)

As appropriate, the measures can be included as design features of a project, required as changes to the project, or imposed as mitigation (whether undertaken directly by the project proponent or funded by mitigation fees). The measures set forth in this package are examples; the list is not intended to be exhaustive. Moreover, the measures cited may not be appropriate for every project. The decision of whether to approve a project – as proposed or with required changes or mitigation – is for the local agency, exercising its informed judgment in compliance with the law and balancing a variety of public objectives.

Mitigation Measures by Category

Energy Efficiency

Incorporate green building practices and design elements.	The California Department of Housing and Community Development's Green Building & Sustainability Resources handbook provides extensive links to green building resources. The handbook is available at http://www.hcd.ca.gov/hpd/green_build.pdf . The American Institute of Architects (AIA) has compiled fifty readily available strategies for reducing fossil fuel use in buildings by fifty percent. AIA “50 to 50” plan is presented in both guidebook and wiki format at http://wiki.aia.org/Wiki%20Pages/Home.aspx .
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<p>Meet recognized green building and energy efficiency benchmarks.</p>	<p>For example, an ENERGY STAR-qualified building uses less energy, is less expensive to operate, and causes fewer greenhouse gas emissions than comparable, conventional buildings. http://www.energystar.gov/index.cfm?c=business.bus_index.</p> <p>California has over 1600 ENERGY STAR-qualified school, commercial and industrial buildings. View U.S. EPA's list of Energy Star non-residential buildings at http://www.energystar.gov/index.cfm?fuseaction=labeled_buildings_locator. Los Angeles and San Francisco top the list of U.S. cities with the most ENERGY STAR non-residential buildings. http://www.energystar.gov/ia/business/downloads/2008_Top_25_cities_chart.pdf.</p> <p>Qualified ENERGY STAR homes must surpass the state's Title 24 energy efficiency building code by at least 15%. Los Angeles, Sacramento, San Diego, and San Francisco-Oakland are among the top 20 markets for ENERGY STAR homes nationwide. http://www.energystar.gov/ia/new_homes/mil_homes/top_20_markets.html. Builders of ENERGY STAR homes can be more competitive in a tight market by providing a higher quality, more desirable product. See http://www.energystar.gov/ia/partners/manuf_res/Horton.pdf.</p> <p>There are a variety of private and non-profit green building certification programs in use in the U.S. See U.S. EPA's Green Building / Frequently Asked Questions website, http://www.epa.gov/greenbuilding/pubs/faqs.htm.</p> <p>Public-Private Partnership for Advancing Housing Technology maintains a list of national and state Green Building Certification Programs for housing. See http://www.pathnet.org/sp.asp?id=20978. These include the national Leadership in Energy and Environmental Design (LEED) program, and, at the state level, Build it Green's GreenPoint Rated system and the California Green Builder program.</p> <p>Other organizations may provide other relevant benchmarks.</p>
<p>Install energy efficient lighting (e.g., light emitting diodes (LEDs)), heating and cooling systems, appliances, equipment, and control systems.</p>	<p>Information about ENERGY STAR-certified products in over 60 categories is available at http://www.energystar.gov/index.cfm?fuseaction=find_a_product.</p> <p>The California Energy Commission maintains a database of all appliances meeting either federal efficiency standards or, where there are no federal efficiency standards, California's appliance efficiency standards. See http://www.appliances.energy.ca.gov/.</p> <p>The Electronic Product Environmental Assessment Tool (EPEAT) ranks computer products based on a set of environmental criteria, including energy efficiency. See http://www.epeat.net/AboutEPEAT.aspx.</p> <p>The nonprofit American Council for an Energy Efficient Economy maintains an Online Guide to Energy Efficient Commercial Equipment, available at http://www.aceee.org/ogeece/ch1_index.htm.</p> <p>Utilities offer many incentives for efficient appliances, lighting, heating and cooling. To search for available residential and commercial incentives, visit Flex Your Power's website at http://www.fypower.org/.</p>

<p>Use passive solar design, e.g., orient buildings and incorporate landscaping to maximize passive solar heating during cool seasons, minimize solar heat gain during hot seasons, and enhance natural ventilation. Design buildings to take advantage of sunlight.</p>	<p>See U.S. Department of Energy, Passive Solar Design (website) http://www.energysavers.gov/your_home/designing_remodeling/index.cfm/mytopic=10250.</p> <p>See also California Energy Commission, Consumer Energy Center, Passive Solar Design (website) http://www.consumerenergycenter.org/home/construction/solardesign/index.html.</p> <p>Lawrence Berkeley National Laboratories' Building Technologies Department is working to develop innovative building construction and design techniques. Information and publications on energy efficient buildings, including lighting, windows, and daylighting strategies, are available at the Department's website at http://btech.lbl.gov.</p>
<p>Install light colored "cool" roofs and cool pavements.</p>	<p>A white or light colored roof can reduce surface temperatures by up to 100 degrees Fahrenheit, which also reduces the heat transferred into the building below. This can reduce the building's cooling costs, save energy and reduce associated greenhouse gas emissions, and extend the life of the roof. Cool roofs can also reduce the temperature of surrounding areas, which can improve local air quality. See California Energy Commission, Consumer Energy Center, Cool Roofs (webpage) at http://www.consumerenergycenter.org/coolroof/.</p> <p>See also Lawrence Berkeley National Laboratories, Heat Island Group (webpage) at http://eetd.lbl.gov/HeatIsland/.</p>
<p>Install efficient lighting, (including LEDs) for traffic, street and other outdoor lighting.</p>	<p>LED lighting is substantially more energy efficient than conventional lighting and can save money. See http://www.energy.ca.gov/efficiency/partnership/case_studies/TechAsstCity.pdf (noting that installing LED traffic signals saved the City of Westlake about \$34,000 per year).</p> <p>As of 2005, only about a quarter of California's cities and counties were using 100% LEDs in traffic signals. See California Energy Commission (CEC), Light Emitting Diode Traffic Signal Survey (2005) at p. 15, available at http://www.energy.ca.gov/2005publications/CEC_400_2005_003/CEC_400_2005_003.PDF.</p> <p>The California Energy Commission's Energy Partnership Program can help local governments take advantage of energy saving technology, including, but not limited to, LED traffic signals. See http://www.energy.ca.gov/efficiency/partnership/.</p>
<p>Reduce unnecessary outdoor lighting.</p>	<p>See California Energy Commission, Reduction of Outdoor Lighting (webpage) at http://www.energy.ca.gov/efficiency/lighting/outdoor_reduction.html.</p>

<p>Use automatic covers, efficient pumps and motors, and solar heating for pools and spas.</p>	<p>During the summer, a traditional backyard California pool can use enough energy to power an entire home for three months. Efficiency measures can substantially reduce this waste of energy and money. See California Energy Commission, Consumer Energy Center, Pools and Spas (webpage) at http://www.consumerenergycenter.org/home/outside/pools_spas.html.</p> <p>See also Sacramento Municipal Utilities District, Pool and Spa Efficiency Program (webpage) at http://www.smud.org/en/residential/saving-energy/Pages/poolspa.aspx.</p>
<p>Provide education on energy efficiency to residents, customers and/or tenants.</p>	<p>Many cities and counties provide energy efficiency education. See, for example, the City of Stockton's Energy Efficiency website at http://www.stocktongov.com/energysaving/index.cfm. See also "Green County San Bernardino," http://www.greencountysb.com at pp. 4-6.</p> <p>Businesses and development projects may also provide education. For example, a homeowners' association (HOA) could provide information to residents on energy-efficient mortgages and energy saving measures. See The Villas of Calvera Hills, Easy Energy Saving Tips to Help Save Electricity at http://www.thevillashoa.org/green/energy/. An HOA might also consider providing energy audits to its residents on a regular basis.</p>

Renewable Energy and Energy Storage

<p>Meet "reach" goals for building energy efficiency and renewable energy use.</p>	<p>A "zero net energy" building combines building energy efficiency and renewable energy generation so that, on an annual basis, any purchases of electricity or natural gas are offset by clean, renewable energy generation, either on-site or nearby. Both the California Energy Commission (CEC) and the California Public Utilities Commission (CPUC) have stated that residential buildings should be zero net energy by 2020, and commercial buildings by 2030. See CEC, 2009 Integrated Energy Policy Report (Dec. 2009) at p. 226, available at http://www.energy.ca.gov/2009publications/CEC-100-2009-003/CEC-100-2009-003-CMF.PDF; CPUC, Long Term Energy Efficiency Strategic Plan (Sept. 2008), available at http://www.cpuc.ca.gov/PUC/blueprint/Energy+Efficiency/eesp/.</p>
<p>Install solar, wind, and geothermal power systems and solar hot water heaters.</p>	<p>The California Public Utilities Commission (CPUC) approved the California Solar Initiative on January 12, 2006. The initiative creates a \$3.3 billion, ten-year program to install solar panels on one million roofs in the State. Visit the one-stop GoSolar website at http://www.gosolarcalifornia.org/. As mitigation, a developer could, for example, agree to participate in the New Solar Homes program. See http://www.gosolarcalifornia.org/builders/index.html.</p> <p>The CPUC is in the process of establishing a program to provide solar water heating incentives under the California Solar Initiative. For more information, visit the CPUC's website at http://www.cpuc.ca.gov/puc/energy/solar/swh.htm.</p> <p>To search for available residential and commercial renewable energy incentives, visit Flex Your Power's website at http://www.fypower.org/.</p>

<p>Install solar panels on unused roof and ground space and over carports and parking areas.</p>	<p>In 2008 Southern California Edison (SCE) launched the nation's largest installation of photovoltaic power generation modules. The utility plans to cover 65 million square feet of unused commercial rooftops with 250 megawatts of solar technology – generating enough energy to meet the needs of approximately 162,000 homes. Learn more about SCE's Solar Rooftop Program at http://www.sce.com/solarleadership/solar-rooftop-program/general-faq.htm.</p> <p>In 2009, Walmart announced its commitment to expand the company's solar power program in California. The company plans to add solar panels on 10 to 20 additional Walmart facilities in the near term. These new systems will be in addition to the 18 solar arrays currently installed at Walmart facilities in California. See http://walmartstores.com/FactsNews/NewsRoom/9091.aspx.</p> <p>Alameda County has installed two solar tracking carports, each generating 250 kilowatts. By 2005, the County had installed eight photovoltaic systems totaling over 2.3 megawatts. The County is able to meet 6 percent of its electricity needs through solar power. See http://www.acgov.org/gsa/Alameda%20County%20-%20Solar%20Case%20Study.pdf.</p> <p>In 2007, California State University, Fresno installed a 1.1-megawatt photovoltaic (PV)-paneled parking installation. The University expects to save more than \$13 million in avoided utility costs over the project's 30-year lifespan. http://www.fresnostatenews.com/2007/11/solarwrapup2.htm.</p>
<p>Where solar systems cannot feasibly be incorporated into the project at the outset, build "solar ready" structures.</p>	<p>U.S. Department of Energy, A Homebuilder's Guide to Going Solar (brochure) (2008), available at http://www.eere.energy.gov/solar/pdfs/43076.pdf.</p>
<p>Incorporate wind and solar energy systems into agricultural projects where appropriate.</p>	<p>Wind energy can be a valuable crop for farmers and ranchers. Wind turbines can generate energy to be used on-site, reducing electricity bills, or they can yield lease revenues (as much as \$4000 per turbine per year). Wind turbines generally are compatible with rural land uses, since crops can be grown and livestock can be grazed up to the base of the turbine. See National Renewable Energy Laboratory, Wind Powering America Fact Sheet Series, Wind Energy Benefits, available at http://www.nrel.gov/docs/fy05osti/37602.pdf.</p> <p>Solar PV is not just for urban rooftops. For example, the Scott Brothers' dairy in San Jacinto, California, has installed a 55-kilowatt solar array on its commodity barn, with plans to do more in the coming years. See http://www.dairyherd.com/directories.asp?pgID=724&ed_id=8409 (additional California examples are included in article.)</p>

<p>Include energy storage where appropriate to optimize renewable energy generation systems and avoid peak energy use.</p>	<p>See National Renewable Energy Laboratory, Energy Storage Basics (webpage) at http://www.nrel.gov/learning/eds_energy_storage.html.</p> <p>California Energy Storage Alliance (webpage) at http://storagealliance.org/about.html.</p> <p>Storage is not just for large, utility scale projects, but can be part of smaller industrial, commercial and residential projects. For example, Ice Storage Air Conditioning (ISAC) systems, designed for residential and nonresidential buildings, produce ice at night and use it during peak periods for cooling. See California Energy Commission, Staff Report, Ice Storage Air Conditioners, Compliance Options Application (May 2006), available at http://www.energy.ca.gov/2006publications/CEC-400-2006-006/CEC-400-2006-006-SF.PDF.</p>
<p>Use on-site generated biogas, including methane, in appropriate applications.</p>	<p>At the Hilarides Dairy in Lindsay, California, an anaerobic-lagoon digester processes the run-off of nearly 10,000 cows, generating 226,000 cubic feet of biogas per day and enough fuel to run two heavy duty trucks. This has reduced the dairy's diesel consumption by 650 gallons a day, saving the dairy money and improving local air quality. See http://www.arb.ca.gov/newsrel/nr021109b.htm; see also Public Interest Energy Research Program, Dairy Power Production Program, Dairy Methane Digester System, 90-Day Evaluation Report, Eden Vale Dairy (Dec. 2006) at http://www.energy.ca.gov/2006publications/CEC_500_2006_083/CEC_500_2006_083.PDF.</p> <p>Landfill gas is a current and potential source of substantial energy in California. See Tom Frankiewicz, Program Manager, U.S. EPA Landfill Methane Outreach Program, Landfill Gas Energy Potential in California, available at http://www.energy.ca.gov/2009_energy/policy/documents/2009-04-21_workshop/presentations/05-SCS_Engineers_Presentation.pdf.</p> <p>There are many current and emerging technologies for converting landfill methane that would otherwise be released as a greenhouse gas into clean energy. See California Integrated Waste Management Board, Emerging Technologies, Landfill Gas-to-Energy (webpage) at http://www.ciwmb.ca.gov/LEACentral/TechServices/EmergingTech/default.htm.</p>

<p>Use combined heat and power (CHP) in appropriate applications.</p>	<p>Many commercial, industrial, and campus-type facilities (such as hospitals, universities and prisons) use fuel to produce steam and heat for their own operations and processes. Unless captured, much of this heat is wasted. CHP captures waste heat and re-uses it, e.g., for residential or commercial space heating or to generate electricity. See U.S. EPA, Catalog of CHP Technologies at http://www.epa.gov/chp/documents/catalog_of_%20chp_tech_entire.pdf and California Energy Commission, Distributed Energy Resource Guide, Combined Heat and Power (webpage) at http://www.energy.ca.gov/distgen/equipment/chp/chp.html.</p> <p>The average efficiency of fossil-fueled power plants in the United States is 33 percent. By using waste heat recovery technology, CHP systems typically achieve total system efficiencies of 60 to 80 percent. CHP can also substantially reduce emissions of carbon dioxide. http://www.epa.gov/chp/basic/efficiency.html.</p> <p>Currently, CHP in California has a capacity of over 9 million kilowatts. See list of California CHP facilities at http://www.eea-inc.com/chpdata/States/CA.html.</p> <p>The Waste Heat and Carbon Emissions Reduction Act (Assembly Bill 1613 (2007), amended by Assembly Bill 2791 (2008)) is designed to encourage the development of new CHP systems in California with a generating capacity of not more than 20 megawatts. Among other things, the Act requires the California Public Utilities Commission to establish (1) a standard tariff allowing CHP generators to sell electricity for delivery to the grid and (2) a "pay as you save" pilot program requiring electricity corporations to finance the installation of qualifying CHP systems by nonprofit and government entities. For more information, see http://www.energy.ca.gov/wasteheat/.</p>
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Water Conservation and Efficiency

<p>Incorporate water-reducing features into building and landscape design.</p>	<p>According to the California Energy Commission, water-related energy use – which includes conveyance, storage, treatment, distribution, wastewater collection, treatment, and discharge – consumes about 19 percent of the State's electricity, 30 percent of its natural gas, and 88 billion gallons of diesel fuel every year. See http://www.energy.ca.gov/2007publications/CEC_999_2007_008/CEC_999_2007_008.PDF. Reducing water use and improving water efficiency can help reduce energy use and greenhouse gas emissions.</p>
<p>Create water-efficient landscapes.</p>	<p>The California Department of Water Resources' updated Model Water Efficient Landscape Ordinance (Sept. 2009) is available at http://www.water.ca.gov/wateruseefficiency/landscapeordinance/technical.cfm.</p> <p>A landscape can be designed from the beginning to use little or no water, and to generate little or no waste. See California Integrated Waste Management Board, Xeriscaping (webpage) at http://www.ciwmb.ca.gov/organics/Xeriscaping/.</p>

<p>Install water-efficient irrigation systems and devices, such as soil moisture-based irrigation controls and use water-efficient irrigation methods.</p>	<p>U.S. Department of Energy, Best Management Practice: Water-Efficient Irrigation (webpage) at http://www1.eere.energy.gov/femp/program/waterefficiency_bmp5.html.</p> <p>California Department of Water Resources, Landscape Water Use Efficiency (webpage) at http://www.water.ca.gov/wateruseefficiency/landscape/.</p> <p>Pacific Institute, More with Less: Agricultural Water Conservation and Efficiency in California (2008), available at http://www.pacinst.org/reports/more_with_less_delta/index.htm.</p>
<p>Make effective use of graywater. (Graywater is untreated household waste water from bathtubs, showers, bathroom wash basins, and water from clothes washing machines. Graywater to be used for landscape irrigation.)</p>	<p>California Building Standards Commission, 2008 California Green Building Standards Code, Section 604, pp. 31-32, available at http://www.documents.dgs.ca.gov/bsc/2009/part11_2008_calgreen_code.pdf.</p> <p>California Department of Water Resources, Dual Plumbing Code (webpage) at http://www.water.ca.gov/recycling/DualPlumbingCode/.</p> <p>See also Ahwahnee Water Principles, Principle 6, at http://www.lgc.org/ahwahnee/h2o_principles.html. The Ahwahnee Water Principles have been adopted by City of Willits, Town of Windsor, Menlo Park, Morgan Hill, Palo Alto, Petaluma, Port Hueneme, Richmond, Rohnert Park, Rolling Hills Estates, San Luis Obispo, Santa Paula, Santa Rosa, City of Sunnyvale, City of Ukiah, Ventura, Marin County, Marin Municipal Water District, and Ventura County.</p>
<p>Implement low-impact development practices that maintain the existing hydrology of the site to manage storm water and protect the environment.</p>	<p>Retaining storm water runoff on-site can drastically reduce the need for energy-intensive imported water at the site. See U.S. EPA, Low Impact Development (webpage) at http://www.epa.gov/nps/lid/.</p> <p>Office of Environmental Health Hazard Assessment and the California Water and Land Use Partnership, Low Impact Development at http://www.coastal.ca.gov/nps/lid-factsheet.pdf.</p>
<p>Devise a comprehensive water conservation strategy appropriate for the project and location.</p>	<p>The strategy may include many of the specific items listed above, plus other innovative measures that are appropriate to the specific project.</p>
<p>Design buildings to be water-efficient. Install water-efficient fixtures and appliances.</p>	<p>Department of General Services, Best Practices Manual, Water-Efficient Fixtures and Appliances (website) at http://www.green.ca.gov/EPP/building/SaveH2O.htm.</p> <p>Many ENERGY STAR products have achieved their certification because of water efficiency. See California Energy Commission's database, available at http://www.appliances.energy.ca.gov/.</p>

<p>Offset water demand from new projects so that there is no net increase in water use.</p>	<p>For example, the City of Lompoc has a policy requiring new development to offset new water demand with savings from existing water users. See http://www.cityoflompoc.com/utilities/pdf/2005_uwmp_final.pdf at p. 29.</p>
<p>Provide education about water conservation and available programs and incentives.</p>	<p>See, for example, the City of Santa Cruz, Water Conservation Office at http://www.ci.santa-cruz.ca.us/index.aspx?page=395; Santa Clara Valley Water District, Water Conservation at http://www.valleywater.org/conservation/index.shtm; and Metropolitan Water District and the Family of Southern California Water Agencies, Be Water Wise at http://www.bewaterwise.com. Private projects may provide or fund similar education.</p>

Solid Waste Measures

<p>Reuse and recycle construction and demolition waste (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard).</p>	<p>Construction and demolition materials account for almost 22 percent of the waste stream in California. Reusing and recycling these materials not only conserves natural resources and energy, but can also save money. For a list of best practices and other resources, see California Integrated Waste Management Board, Construction and Demolition Debris Recycling (webpage) at http://www.ciwmb.ca.gov/condemo/.</p>
<p>Integrate reuse and recycling into residential industrial, institutional and commercial projects.</p>	<p>Tips on developing a successful recycling program, and opportunities for cost-effective recycling, are available on the California Integrated Waste Management Board's Zero Waste California website. See http://zerowaste.ca.gov/.</p> <p>The Institute for Local Government's Waste Reduction & Recycling webpage contains examples of "best practices" for reducing greenhouse gas emissions, organized around waste reduction and recycling goals and additional examples and resources. See http://www.ca-ilg.org/wastereduction.</p>
<p>Provide easy and convenient recycling opportunities for residents, the public, and tenant businesses.</p>	<p>Tips on developing a successful recycling program, and opportunities for cost effective recycling, are available on the California Integrated Waste Management Board's Zero Waste California website. See http://zerowaste.ca.gov/.</p>
<p>Provide education and publicity about reducing waste and available recycling services.</p>	<p>Many cities and counties provide information on waste reduction and recycling. See, for example, the Butte County Guide to Recycling at http://www.recyclebutte.net.</p> <p>The California Integrated Waste Management Board's website contains numerous publications on recycling and waste reduction that may be helpful in devising an education project. See http://www.ciwmb.ca.gov/Publications/default.asp?cat=13. Private projects may also provide waste and recycling education directly, or fund education.</p>

Land Use Measures

<p>Ensure consistency with “smart growth” principles – mixed-use, infill, and higher density projects that provide alternatives to individual vehicle travel and promote the efficient delivery of services and goods.</p>	<p>U.S. EPA maintains an extensive Smart Growth webpage with links to examples, literature and technical assistance, and financial resources. See http://www.epa.gov/smartgrowth/index.htm.</p> <p>The National Oceanic and Atmospheric Administration’s webpage provides smart growth recommendations for communities located near water. See Coastal & Waterfront Smart Growth (webpage) at http://coastalsmartgrowth.noaa.gov/. The webpage includes case studies from California.</p> <p>The California Energy Commission has recognized the important role that land use can play in meeting our greenhouse gas and energy efficiency goals. The agency’s website, Smart Growth & Land Use Planning, contains useful information and links to relevant studies, reports, and other resources. See http://www.energy.ca.gov/landuse/.</p> <p>The Metropolitan Transportation Commission’s webpage, Smart Growth / Transportation for Livable Communities, includes resources that may be useful to communities in the San Francisco Bay Area and beyond. See http://www.mtc.ca.gov/planning/smart_growth/.</p> <p>The Sacramento Area Council of Governments (SACOG) has published examples of smart growth in action in its region. See Examples from the Sacramento Region of the Seven Principles of Smart Growth / Better Ways to Grow, available at http://www.sacog.org/regionalfunding/betterways.pdf.</p>
<p>Meet recognized “smart growth” benchmarks.</p>	<p>For example, the LEED for Neighborhood Development (LEED-ND) rating system integrates the principles of smart growth, urbanism and green building into the first national system for neighborhood design. LEED-ND is a collaboration among the U.S. Green Building Council, Congress for the New Urbanism, and the Natural Resources Defense Council. For more information, see http://www.usgbc.org/DisplayPage.aspx?CMSPageID=148.</p>
<p>Educate the public about the many benefits of well-designed, higher density development.</p>	<p>See, for example, U.S. EPA, Growing Smarter, Living Healthier: A Guide to Smart Growth and Active Aging (webpage), discussing how compact, walkable communities can provide benefits to seniors. See http://www.epa.gov/aging/bhc/guide/index.html.</p> <p>U.S. EPA, Environmental Benefits of Smart Growth (webpage) at http://www.epa.gov/dced/topics/eb.htm (noting local air and water quality improvements).</p> <p>Centers for Disease Control and Prevention (CDC), Designing and Building Healthy Places (webpage), at http://www.cdc.gov/healthyplaces/. The CDC’s website discusses the links between walkable communities and public health and includes numerous links to educational materials.</p> <p>California Department of Housing and Community Development, Myths and Facts About Affordable and High Density Housing (2002), available at http://www.hcd.ca.gov/hpd/mythsnfacts.pdf.</p>

<p>Incorporate public transit into the project's design.</p>	<p>Federal Transit Administration, Transit-Oriented Development (TOD) (webpage) at http://www.fta.dot.gov/planning/planning_environment_6932.html (describing the benefits of TOD as “social, environmental, and fiscal.”)</p> <p>California Department of Transportation (Caltrans), Statewide Transit-Oriented Development Study: Factors for Success in California (2002), available at http://transitorienteddevelopment.dot.ca.gov/miscellaneous/StatewideTOD.htm</p> <p>Caltrans, California Transit-Oriented Development Searchable Database (includes detailed information on numerous TODs), available at http://transitorienteddevelopment.dot.ca.gov/miscellaneous/NewHome.jsp.</p> <p>California Department of Housing and Community Development, Transit Oriented Development (TOD) Resources (Aug. 2009), available at http://www.hcd.ca.gov/hpd/tod.pdf.</p>
<p>Preserve and create open space and parks. Preserve existing trees, and plant replacement trees at a set ratio.</p>	<p>U.S. EPA, Smart Growth and Open Space Conservation (webpage) at http://www.epa.gov/dced/openspace.htm.</p>
<p>Develop “brownfields” and other underused or defunct properties near existing public transportation and jobs.</p>	<p>U.S. EPA, Smart Growth and Brownfields (webpage) at http://www.epa.gov/dced/brownfields.htm.</p> <p>For example, as set forth in the Local Government Commission’s case study, the Town of Hercules, California reclaimed a 426-acre brownfield site, transforming it into a transit-friendly, walkable neighborhood. See http://www.lgc.org/freepub/docs/community_design/fact_sheets/er_case_studies.pdf.</p> <p>For financial resources that can assist in brownfield development, see Center for Creative Land Recycling, Financial Resources for California Brownfields (July 2008), available at http://www.cclr.org/media/publications/8-Financial_Resources_2008.pdf.</p>
<p>Include pedestrian and bicycle facilities within projects and ensure that existing non-motorized routes are maintained and enhanced.</p>	<p>See U.S. Department of Transportation, Federal Highway Administration, Bicycle and Pedestrian Program (webpage) at http://www.fhwa.dot.gov/environment/bikeped/.</p> <p>Caltrans, Pedestrian and Bicycle Facilities in California / A Technical Reference and Technology Transfer Synthesis for Caltrans Planners and Engineers (July 2005), available at http://www.dot.ca.gov/hq/traffops/survey/pedestrian/TR_MAY0405.pdf. This reference includes standard and innovative practices for pedestrian facilities and traffic calming.</p>

Transportation and Motor Vehicles

<p>Meet an identified transportation-related benchmark.</p>	<p>A logical benchmark might be related to vehicles miles traveled (VMT), e.g., average VMT per capita, per household, or per employee. As the California Energy Commission has noted, VMT by California residents increased “a rate of more than 3 percent a year between 1975 and 2004, markedly faster than the population growth rate over the same period, which was less than 2 percent. This increase in VMT correlates to an increase in petroleum use and GHG production and has led to the transportation sector being responsible for 41 percent of the state’s GHG emissions in 2004.” CEC, <i>The Role of Land Use in Meeting California’s Energy and Climate Change Goals</i> (Aug. 2007) at p. 9, available at http://www.energy.ca.gov/2007publications/CEC-600-2007-008/CEC-600-2007-008-SF.PDF.</p> <p>Even with regulations designed to increase vehicle efficiency and lower the carbon content of fuel, “reduced VMT growth will be required to meet GHG reductions goals.” <i>Id.</i> at p. 18.</p>
<p>Adopt a comprehensive parking policy that discourages private vehicle use and encourages the use of alternative transportation.</p>	<p>For example, reduce parking for private vehicles while increasing options for alternative transportation; eliminate minimum parking requirements for new buildings; “unbundle” parking (require that parking is paid for separately and is not included in rent for residential or commercial space); and set appropriate pricing for parking.</p> <p>See U.S. EPA, <i>Parking Spaces / Community Places, Finding the Balance Through Smart Growth Solutions</i> (Jan. 2006), available at http://www.epa.gov/dced/pdf/EPAParkingSpaces06.pdf.</p> <p>Reforming Parking Policies to Support Smart Growth, Metropolitan Transportation Commission (June 2007) at http://www.mtc.ca.gov/planning/smart_growth/parking_seminar/ToolboxHandbook.pdf.</p> <p>See also the City of Ventura’s Downtown Parking and Mobility Plan, available at http://www.cityofventura.net/community_development/resources/mobility_parking_plan.pdf, and Ventura’s Downtown Parking Management Program, available at http://www.ci.ventura.ca.us/depts/comm_dev/downtownplan/chapters.asp.</p>
<p>Build or fund a major transit stop within or near the development.</p>	<p>“Major transit stop’ means a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.” (Pub. Res. Code, § 21064.3.)</p> <p>Transit Oriented Development (TOD) is a moderate to higher density development located within an easy walk of a major transit stop. http://transitorienteddevelopment.dot.ca.gov/miscellaneous/NewWhatisTOD.htm.</p> <p>By building or funding a major transit stop, an otherwise ordinary development can become a TOD.</p>

<p>Provide public transit incentives such as free or low-cost monthly transit passes to employees, or free ride areas to residents and customers.</p>	<p>See U.S. Department of Transportation and U.S. EPA, Commuter Choice Primer / An Employer's Guide to Implementing Effective Commuter Choice Programs, available at http://www.its.dot.gov/JPODOCS/REPTS_PR/13669.html.</p> <p>The Emery Go Round shuttle is a private transportation service funded by commercial property owners in the citywide transportation business improvement district. The shuttle links a local shopping district to a Bay Area Rapid Transit stop. See http://www.emerygoround.com/.</p> <p>Seattle, Washington maintains a public transportation "ride free" zone in its downtown from 6:00 a.m. to 7:00 p.m. daily. See http://transit.metrokc.gov/tops/accessible/paccessible_map.html#fare.</p>
<p>Promote "least polluting" ways to connect people and goods to their destinations.</p>	<p>Promoting "least polluting" methods of moving people and goods is part of a larger, integrated "sustainable streets" strategy now being explored at U.C. Davis's Sustainable Transportation Center. Resources and links are available at the Center's website, http://stc.ucdavis.edu/outreach/ssp.php.</p>
<p>Incorporate bicycle lanes, routes and facilities into street systems, new subdivisions, and large developments.</p>	<p>Bicycling can have a profound impact on transportation choices and air pollution reduction. The City of Davis has the highest rate of bicycling in the nation. Among its 64,000 residents, 17 percent travel to work by bicycle and 41 percent consider the bicycle their primary mode of transportation. See Air Resources Board, Bicycle Awareness Program, Bicycle Fact Sheet, available at http://www.arb.ca.gov/planning/tsaq/bicycle/factsht.htm.</p> <p>For recommendations on best practices, see the many resources listed at the U.S. Department of Transportation, Federal Highway Administration's Bicycle and Pedestrian website at http://www.fhwa.dot.gov/environment/bikeped/publications.htm.</p> <p>See also Caltrans Division of Research and Innovation, Designing Highway Facilities To Encourage Walking, Biking and Transit (Preliminary Investigation) (March 2009), available at http://www.dot.ca.gov/research/researchreports/preliminary_investigations/docs/pi-design_for_walking_%20biking_and_transit%20final.pdf.</p>
<p>Require amenities for non-motorized transportation, such as secure and convenient bicycle parking.</p>	<p>According to local and national surveys of potential bicycle commuters, secure bicycle parking and workplace changing facilities are important complements to safe and convenient routes of travel. See Air Resources Board, Bicycle Awareness Program, Bicycle Fact Sheet, available at http://www.arb.ca.gov/planning/tsaq/bicycle/factsht.htm.</p>

<p>Ensure that the project enhances, and does not disrupt or create barriers to, non-motorized transportation.</p>	<p>See, e.g., U.S. EPA's list of transit-related "smart growth" publications at http://www.epa.gov/dced/publications.htm#air, including Pedestrian and Transit-Friendly Design: A Primer for Smart Growth (1999), available at www.epa.gov/dced/pdf/ptfd_primer.pdf.</p> <p>See also Toolkit for Improving Walkability in Alameda County, available at http://www.acta2002.com/ped_toolkit/ped_toolkit_print.pdf.</p> <p>Pursuant to the California Complete Streets Act of 2008 (AB 1358, Gov. Code, §§ 65040.2 and 65302), commencing January 1, 2011, upon any substantive revision of the circulation element of the general plan, a city or county will be required to modify the circulation element to plan for a balanced, multimodal transportation network that meets the needs of all users.</p>
<p>Connect parks and open space through shared pedestrian/bike paths and trails to encourage walking and bicycling. Create bicycle lanes and walking paths directed to the location of schools, parks and other destination points.</p>	<p>Walk Score ranks the "walkability" of neighborhoods in the largest 40 U.S. cities, including seven California cities. Scores are based on the distance to nearby amenities. Explore Walk Score at http://www.walkscore.com/.</p> <p>In many markets, homes in walkable neighborhoods are worth more than similar properties where walking is more difficult. See Hoak, <i>Walk appeal / Homes in walkable neighborhoods sell for more: study</i>, Wall Street Journal (Aug. 18, 2009), available at http://www.marketwatch.com/story/homes-in-walkable-neighborhoods-sell-for-more-2009-08-18.</p> <p>By creating walkable neighborhoods with more transportation choices, Californians could save \$31 million and cut greenhouse gas emissions by 34 percent, according to a study released by Transform, a coalition of unions and nonprofits. See <i>Windfall for All / How Connected, Convenient Neighborhoods Can Protect Our Climate and Safeguard California's Economy</i> (Nov. 2009), available at http://transformca.org/windfall-for-all#download-report.</p>
<p>Work with the school districts to improve pedestrian and bike access to schools and to restore or expand school bus service using lower-emitting vehicles.</p>	<p>In some communities, twenty to twenty-five percent of morning traffic is due to parents driving their children to school. Increased traffic congestion around schools in turn prompts even more parents to drive their children to school. Programs to create safe routes to schools can break this harmful cycle. See California Department of Public Health, <i>Safe Routes to School</i> (webpage) and associated links at http://www.cdph.ca.gov/HealthInfo/injviosaf/Pages/SafeRoutestoSchool.aspx.</p> <p>See also U.S. EPA, <i>Smart Growth and Schools</i> (webpage), available at http://www.epa.gov/dced/schools.htm.</p> <p>California Center for Physical Activity, <i>California Walk to School</i> (website) at http://www.cawalktoschool.com</p> <p>Regular school bus service (using lower-emitting buses) for children who cannot bike or walk to school could substantially reduce private vehicle congestion and air pollution around schools. See Air Resources Board, <i>Lower Emissions School Bus Program</i> (webpage) at http://www.arb.ca.gov/msprog/schoolbus/schoolbus.htm.</p>

<p>Institute teleconferencing, telecommute and/or flexible work hour programs to reduce unnecessary employee transportation.</p>	<p>There are numerous sites on the web with resources for employers seeking to establish telework or flexible work programs. These include U.S. EPA's Mobility Management Strategies: Commuter Programs website at http://www.epa.gov/otaq/stateresources/rellinks/mms_commprograms.htm; and Telework, the federal government's telework website, at http://www.telework.gov/.</p> <p>Through a continuing FlexWork Implementation Program, the Traffic Solutions division of the Santa Barbara County Association of Governments sponsors flexwork consulting, training and implementation services to a limited number of Santa Barbara County organizations that want to create or expand flexwork programs for the benefit of their organizations, employees and the community. See http://www.flexworks.com/read_more_about_the_fSBp.html. Other local government entities provide similar services.</p>
<p>Provide information on alternative transportation options for consumers, residents, tenants and employees to reduce transportation-related emissions.</p>	<p>Many types of projects may provide opportunities for delivering more tailored transportation information. For example, a homeowner's association could provide information on its website, or an employer might create a Transportation Coordinator position as part of a larger Employee Commute Reduction Program. See, e.g., South Coast Air Quality Management District, Transportation Coordinator training, at http://www.aqmd.gov/trans/training.html.</p>
<p>Educate consumers, residents, tenants and the public about options for reducing motor vehicle-related greenhouse gas emissions. Include information on trip reduction; trip linking; vehicle performance and efficiency (e.g., keeping tires inflated); and low or zero-emission vehicles.</p>	<p>See, for example U.S. EPA, SmartWay Transport Partnership: Innovative Carrier Strategies (webpage) at http://www.epa.gov/smartway/transport/what-smartway/carrier-strategies.htm. This webpage includes recommendations for actions that truck and rail fleets can take to make ground freight more efficient and cleaner.</p> <p>The Air Resources Board's Drive Clean website is a resource for car buyers to find clean and efficient vehicles. The web site is designed to educate Californians that pollution levels range greatly between vehicles. See http://www.driveclean.ca.gov/.</p> <p>The Oregon Department of Transportation and other public and private partners launched the Drive Less/Save More campaign. The comprehensive website contains fact sheets and educational materials to help people drive more efficiently. See http://www.driveless.savemore.com/.</p>
<p>Purchase, or create incentives for purchasing, low or zero-emission vehicles.</p>	<p>See Air Resources Board, Low-Emission Vehicle Program (webpage) at http://www.arb.ca.gov/msprog/levprog/levprog.htm.</p> <p>Air Resource Board, Zero Emission Vehicle Program (webpage) at http://www.arb.ca.gov/msprog/zevprog/zevprog.htm.</p> <p>All new cars sold in California are now required to display an Environmental Performance (EP) Label, which scores a vehicle's global warming and smog emissions from 1 (dirtiest) to 10 (cleanest). To search and compare vehicle EP Labels, visit www.DriveClean.ca.gov.</p>

<p>Create a ride sharing program. Promote existing ride sharing programs e.g., by designating a certain percentage of parking spaces for ride sharing vehicles, designating adequate passenger loading and unloading for ride sharing vehicles, and providing a web site or message board for coordinating rides.</p>	<p>For example, the 511 Regional Rideshare Program is operated by the Metropolitan Transportation Commission (MTC) and is funded by grants from the Federal Highway Administration, U.S. Department of Transportation, the Metropolitan Transportation Commission, the Bay Area Air Quality Management District and county congestion management agencies. For more information, see http://rideshare.511.org/.</p> <p>As another example, San Bernardino Associated Governments works directly with large and small employers, as well as providing support to commuters who wish to share rides or use alternative forms of transportation. See http://www.sanbag.ca.gov/commuter/rideshare.html.</p> <p>Valleyrides.com is a ridesharing resource available to anyone commuting to and from Fresno and Tulare Counties and surrounding communities. See http://www.valleyrides.com/. There are many other similar websites throughout the state.</p>
<p>Create or accommodate car sharing programs, e.g., provide parking spaces for car share vehicles at convenient locations accessible by public transportation.</p>	<p>There are many existing car sharing companies in California. These include City CarShare (San Francisco Bay Area), see http://www.citycarshare.org/; and Zipcar, see http://www.zipcar.com/. Car sharing programs are being successfully used on many California campuses.</p>
<p>Provide a vanpool for employees.</p>	<p>Many local Transportation Management Agencies can assist in forming vanpools. See, for example, Sacramento Transportation Management Association, Check out Vanpooling (webpage) at http://www.sacramento-tma.org/vanpool.html.</p>
<p>Create local "light vehicle" networks, such as neighborhood electric vehicle systems.</p>	<p>See California Energy Commission, Consumer Energy Center, Urban Options - Neighborhood Electric Vehicles (NEVs) (webpage) at http://www.consumerenergycenter.org/transportation/urban_options/nev.html.</p> <p>The City of Lincoln has an innovative NEV program. See http://www.lincolnev.com/index.html.</p>
<p>Enforce and follow limits idling time for commercial vehicles, including delivery and construction vehicles.</p>	<p>Under existing law, diesel-fueled motor vehicles with a gross vehicle weight rating greater than 10,000 pounds are prohibited from idling for more than 5 minutes at any location. The minimum penalty for an idling violation is now \$300 per violation. See http://www.arb.ca.gov/enf/complaints/idling_cv.htm.</p>
<p>Provide the necessary facilities and infrastructure to encourage the use of low or zero-emission vehicles.</p>	<p>For a list of existing alternative fuel stations in California, visit http://www.cleancarmaps.com/.</p> <p>See, e.g., Baker, <i>Charging-station network built along 101</i>, S.F. Chron. (9/23/09), available at http://articles.sfgate.com/2009-09-23/news/17207424_1_recharging-solar-array-tesla-motors.</p>

Agriculture and Forestry (additional strategies noted above)

<p>Require best management practices in agriculture and animal operations to reduce emissions, conserve energy and water, and utilize alternative energy sources, including biogas, wind and solar.</p>	<p>Air Resources Board (ARB), Economic Sectors Portal, Agriculture (webpage) at http://www.arb.ca.gov/cc/ghgsectors/ghgsectors.htm. ARB's webpage includes information on emissions from manure management, nitrogen fertilizer, agricultural offroad equipment, and agricultural engines.</p> <p>"A full 90% of an agricultural business' electricity bill is likely associated with water use. In addition, the 8 million acres in California devoted to crops consume 80% of the total water pumped in the state." See Flex Your Power, Agricultural Sector (webpage) at http://www.fypower.org/agri/.</p> <p>Flex Your Power, Best Practice Guide / Food and Beverage Growers and Processors, available at http://www.fypower.org/bpg/index.html?b=food_and_bev.</p> <p>Antle et al., Pew Center on Global Climate Change, Agriculture's Role in Greenhouse Gas Mitigation (2006), available at http://www.pewclimate.org/docUploads/Agriculture's%20Role%20in%20GHG%20Mitigation.pdf.</p>
<p>Preserve forested areas, agricultural lands, wildlife habitat and corridors, wetlands, watersheds, groundwater recharge areas and other open space that provide carbon sequestration benefits.</p>	<p>"There are three general means by which agricultural and forestry practices can reduce greenhouse gases: (1) avoiding emissions by maintaining existing carbon storage in trees and soils; (2) increasing carbon storage by, e.g., tree planting, conversion from conventional to conservation tillage practices on agricultural lands; (3) substituting bio-based fuels and products for fossil fuels, such as coal and oil, and energy-intensive products that generate greater quantities of CO₂ when used." U.S. EPA, Carbon Sequestration in Agriculture and Forestry, Frequently Asked Questions (webpage) at http://www.epa.gov/sequestration/faq.html.</p> <p>Air Resources Board, Economic Sectors Portal, Forestry (webpage) at http://www.arb.ca.gov/cc/ghgsectors/ghgsectors.htm.</p>
<p>Protect existing trees and encourage the planting of new trees. Adopt a tree protection and replacement ordinance.</p>	<p>Tree preservation and planting is not just for rural areas of the state; suburban and urban forests can also serve as carbon sinks. See Cal Fire, Urban and Community Forestry (webpage) at http://www.fire.ca.gov/resource_mgt/resource_mgt_urbanforestry.php.</p>

Off-Site Mitigation

If, after analyzing and requiring all reasonable and feasible on-site mitigation measures for avoiding or reducing greenhouse gas-related impacts, the lead agency determines that additional mitigation is required, the agency may consider additional off-site mitigation. The project proponent could, for example, fund off-site mitigation projects that will reduce carbon emissions, conduct an audit of its other existing operations and agree to retrofit, or purchase verifiable carbon "credits" from another entity that will undertake mitigation.

The topic of off-site mitigation can be complicated. A full discussion is outside the scope of this summary document. Issues that the lead agency should consider include:

- The location of the off-site mitigation. (If the off-site mitigation is far from the project, any additional, non-climate related co-benefits of the mitigation may be lost to the local community.)
- Whether the emissions reductions from off-site mitigation can be quantified and verified. (The California Registry has developed a number of protocols for calculating, reporting and verifying greenhouse gas emissions. Currently, industry-specific protocols are available for the cement sector, power/utility sector, forest sector and local government operations. For more information, visit the California Registry's website at <http://www.climateregistry.org/>.)
- Whether the mitigation ratio should be greater than 1:1 to reflect any uncertainty about the effectiveness of the off-site mitigation.

Offsite mitigation measures that could be funded through mitigation fees include, but are not limited to, the following:

- Energy efficiency audits of existing buildings.
- Energy efficiency upgrades to existing buildings not otherwise required by law, including heating, ventilation, air conditioning, lighting, water heating equipment, insulation and weatherization (perhaps targeted to specific communities, such as low-income or senior residents).
- Programs to encourage the purchase and use of energy efficient vehicles, appliances, equipment and lighting.
- Programs that create incentives to replace or retire polluting vehicles and engines.
- Programs to expand the use of renewable energy and energy storage.
- Preservation and/or enhancement of existing natural areas (e.g., forested areas, agricultural lands, wildlife habitat and corridors, wetlands, watersheds, and groundwater recharge areas) that provide carbon sequestration benefits.
- Improvement and expansion of public transit and low- and zero-carbon transportation alternatives.

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August 30, 2012

Brooke O'Hanley
Lozeau | Drury LLP
410 12th Street, Suite 250
Oakland, CA 94607

Subject: Comments on the Prologis Eucalyptus Industrial Park Project, Riverside County, California

Dear Ms. O'Hanley:

We have reviewed the July 2012 Draft Environmental Impact Report (DEIR) for Prologis Eucalyptus Industrial Park Project ("Project"). The Project would construct six buildings encompassing approximately 2.3 million square feet (or 53 acres) of warehouse space. The Project site would be located on a 123-acre lot in the eastern portion of the City of Moreno Valley in Riverside County, California.

We have reviewed the DEIR for issues associated with hazards and hazardous materials, greenhouse gases, air quality, and cumulative impacts. Project construction will result in potentially significant impacts to construction workers and nearby residents that are not adequately disclosed in the DEIR. A revised DEIR needs to be prepared to fully disclose, evaluate, and mitigate these impacts.

Hazards and Hazardous Materials:

Construction workers and nearby residents may be at risk during construction from failure to disclose baseline soil conditions at the Project site.

Residual pesticides in soil may pose health risks to workers and nearby residents

Currently, 57 acres of the Project site are used to grow grapefruit and 36 acres of the Project site are used for hay and alfalfa production (DEIR, p. 4.2-1). The DEIR and supporting documents do not provide any specific details on the types of pesticides that have been used on the Project site in association with

these agricultural operations. Our review has shown known and potential pesticide use at the Project site as follows:

- Data available online from the California Department of Pesticide Regulation show that 2,4-D, 2-Ethylhexyl Ester was used on the Project site.^{1,2} Occupational exposure to 2,4-D, 2-Ethylhexyl Ester can occur via inhalation or dermal contact and can result in skin irritation, respiratory failure, hyperventilation, and pulmonary enemas.³
- Organochlorine pesticides DDE and DDT were detected in soil samples collected at the Project site⁴, indicating past use. Use of organochlorine pesticides in the area is common: review of the Department of Toxic Substances Control's (DTSC) Envirostor database shows that the surrounding lands have been surveyed for organochlorine pesticides, DDE and DDT.⁵ These pesticides can persist in soil for hundreds of years despite being banned in the 1970s.⁶ Exposure to DDT can result in headaches, nausea, and convulsions.⁷ The U.S. EPA identifies DDT and DDE as probable human carcinogens.⁸
- The EPA states that soils at fruit orchards, such as the grapefruit orchard on the Project site, may contain high levels of arsenic from application as a pesticide.⁹ Another chemical used on fruit orchards is lead arsenate, a very persistent pesticide.¹⁰ Arsenic is a known human carcinogen and even short-term inhalation of arsenic dust can cause gastrointestinal effects¹¹ while lead is known to cause neurotoxicological effects.¹²

Pesticide use at the Project site was not disclosed in the DEIR and the detection of pesticide residuals in soil were not described in the Hazards and Hazardous Materials section.

Failure to disclose the presence of pesticide residuals in Project site soils may pose significant health risks to construction workers. Construction of the Project requires grading and the disturbance of subsurface soils and removal of citrus groves (DEIR, p. 4.7-21). During earthmoving activities, construction workers will be exposed, via inhalation of dust and dermal contact, to Project site soils which may contain harmful levels of pesticide residuals associated with agricultural activities on the site. To protect worker safety, Project site soils must be sampled for pesticides. Sampling results should be

¹ http://cdpr.ca.gov/pub/outgoing/calpip/26814174623515_120824104149.html

² http://cdpr.ca.gov/pub/outgoing/calpip/26814174623515_120824104217.html

³ <http://toxnet.nlm.nih.gov/cgi-bin/sis/search/a?dbs+hsdb:@term+@DOCNO+7309>

⁴ Phase I Environmental Site Assessment, 84 acres. Near Intersection of Pittit Street and Highway 60, Moreno Valley, California, p. 9 and Phase I Environmental Site Assessment, 37 acres. Near Intersection of Pittit Street and Highway 60, Moreno Valley, California, p. 8

⁵ http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=60000825 and

http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=60000931

⁶ <http://www.atsdr.cdc.gov/toxprofiles/tp35.pdf>, p. 3

⁷ <http://www.epa.gov/ttn/atw/hlthef/dde.html>

⁸ <http://www.atsdr.cdc.gov/toxfaqs/tf.asp?id=80&tid=20>

⁹ <http://water.epa.gov/drink/info/well/health.cfm>

¹⁰ <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1551991/>

¹¹ <http://www.epa.gov/ttn/atw/hlthef/arsenic.html>

¹² <http://www.epa.gov/lead/pubs/learn-about-lead.html#effects>

compared to health-protective regulatory screening levels such as U.S. EPA Regional Screening Levels¹³ and California Human Health Screening Levels.¹⁴

Soil sampling results should also be evaluated for the protection of nearby residents, located 50 feet from the southern boundary and 200 feet from the northern boundary of the Project site (DEIR, p. 4.3-6). Inhalation of pesticides has been linked to asthma in recent research.^{15,16} A report prepared by the California Department of Health identifies pesticides as an asthma trigger.¹⁷ Offsite receptors, including any children living in the neighboring residences, may be exposed to pesticide residuals via dust generated during Project construction.

Construction activities, such as grading and excavation of soils, may generate dust that contains pesticides in concentrations that are harmful to the health of workers and nearby residents and which may act as an asthma trigger. Project site soils should be sampled and results should be compared to human health screening levels. A revised DEIR should be prepared to disclose the results of sampling and include any necessary mitigation to reduce impacts to the health of construction workers and nearby residents.

Phase I ESAs completed for the Project site are outdated and inadequate

The DEIR relies on the findings from two Phase I Environmental Site Assessments (ESAs) that were completed in October and November 2003, nearly nine years ago. The Phase I ESAs surveyed 121 acres of the 123-acre Project site. The Applicant purchased the Project site more than five years ago.¹⁸ A Phase I ESA, according to the U.S. EPA, must be conducted within one year of the acquisition of the property and on-site visual inspections must be completed within 180 days prior to acquiring ownership of the property.¹⁹

Because the Phase I ESAs are dated and omit two acres of the Project site, they cannot be used to evaluate conditions that are potentially hazardous to construction workers and future site personnel. Therefore, the DEIR's analysis of the Project site based on these Phase I ESAs is inadequate.

Review of Google Earth images shows that the Project site has been used for ongoing agricultural operations since the Phase I ESAs were completed in 2003. Limited pesticide sampling was conducted during the Phase I ESAs (a total of 8 soil samples for a 123-acre Project site) but because the samples were collected nine years ago and because they do not reflect continued agricultural use, the results are reflective of current site conditions.

¹³ <http://www.epa.gov/region9/superfund/prg/>

¹⁴ <http://www.calepa.ca.gov/brownfields/documents/2005/CHHSLsGuide.pdf>

¹⁵ <http://extension.psu.edu/ipm/resources/urbanphilly/partnerships/handouts/asthma-pests.pdf>

¹⁶ <http://www.ncbi.nlm.nih.gov/pubmed/21368619>

¹⁷ <http://www.cdph.ca.gov/programs/caphi/Documents/AsthmaStrategicPlan.5-5-08.pdf>, p. 22

¹⁸ <http://www.pe.com/local-news/riverside-county/moreno-valley/moreno-valley-headlines-index/20120726-moreno-valley-officials-seek-comments-on-prologis-project.ece>

¹⁹ <http://www.epa.gov/brownfields/aai/aaicerclafs.pdf>

The Phase I ESAs cover 121 acres of the 123-acre Project site. We have created a map to show the areas of the Project site surveyed by the two 2003 Phase I ESAs and the boundaries for the current Project site (Attachment A). As the map shows, not all areas of the current Project site were included in the 2003 Phase I ESAs' site assessments.

The Phase I ESAs are outdated and do not cover the entire Project site; therefore, they cannot be used to define baseline conditions for the DEIR's Hazards and Hazardous Materials section. A revised DEIR should be prepared to include a new Phase I ESA that evaluates current Project site conditions.

Status of an underground storage tank is uncertain

A 13,400 gallon underground storage tank (UST), abandoned in the 1950s, was removed from the Project site in 2004 (Appendix F, p. 3/191). The Phase I ESA recommended an additional investigation to be conducted in the area of the former UST (Appendix F, p. 10/191). Accordingly, a permit for removal of the UST was submitted to the Riverside County's Department of Environmental Health in December 2003 and soil samples around the area of the UST were analyzed in 2004. However, the DEIR and supporting documents did not include any documentation that that the UST was properly closed by the Riverside County Department of Environmental Health. If the UST removal was not approved, an Underground Storage Tank Closure Application and Permit²⁰, per the Riverside County Department of Environmental Health Guidelines,²¹ must be submitted. A revised DEIR should be prepared to disclose whether closure was granted by the Riverside County Department of Environmental Health.

Greenhouse Gas Emissions:

The Project's operational greenhouse gas (GHG) emissions, before mitigation, are estimated to be 79,000 metric tons of CO₂e/year (MT CO₂e/yr) which exceed the SCAQMD threshold of 10,000 MT CO₂e/yr and are therefore considered significant (DEIR, p. 4.13-19). After mitigation, the DEIR states that GHG emissions will be less than significant (DEIR, p. 4.13-21). However, the DEIR does not calculate what the Project's GHG emissions will be after the mitigation measures are implemented.

The Project's GHG emissions exceed the SCAQMD threshold by nearly eight times. The DEIR and its supporting documents, including a Greenhouse Gas Study attached as Appendix B, do not provide any evidence that the proposed mitigation measures will reduce GHG emissions by a factor of eight.

A revised DEIR should be prepared to show the efficiency of the Project's proposed mitigation measures in reducing greenhouse gases. If these measures do not account for an eight-fold reduction in the Project's estimated GHG levels, additional mitigation measures (listed below) that are routinely considered in other CEQA projects should be implemented:

- Require preparation of a traffic control plan;

²⁰ http://www.rivcoeh.org/opencms/system/galleries/download/Environmental-Health/HMM/UST_Closure_App.pdf

²¹ http://www.rivcoeh.org/opencms/system/galleries/download/Environmental-Health/HMM/Closure_by_removal_UST.pdf

- Demonstrate proper inspection and maintenance of construction equipment;
- Implement a carpool program for construction workers;
- Employ a construction site manager to verify that engines are properly maintained and keep a maintenance log;
- Configure construction parking to minimize traffic interference;
- Consolidate truck deliveries when possible;
- Provide dedicated turn lanes for movement of construction trucks and equipment on and off site;
- Suspend use of all construction equipment operations during second stage smog alerts;
- Establish a staging zone for trucks that are waiting to load or unload material at the work zone in a location where diesel emissions from the trucks will have minimum impact on abutters and the general public;
- Locate construction equipment away from sensitive receptors such as fresh air intakes to buildings, air conditioners and operable windows;
- Require all diesel trucks used by construction contractor(s) at the site, or for on-road hauling of construction material, to be post-1996 models; Diesel portable generators less than 50 hp shall not be allowed at the construction site;
- Use of hybrid and fuel efficient construction equipment and support vehicles (e.g., pick-up trucks);
- Use of grid electricity for smaller equipment such as saws, pumps, and welders;²²
- Reduction in vehicle miles travelled in construction crew commutes through trip carpooling, trip reduction, providing bus service for crews from work sites to carpool parking areas, and in providing incentives to carpool; and
- Use of a Heavy-Duty Off-Road Vehicle Plan to ensure compliances with construction mitigation measures (e.g., hourly meters on equipment, documenting the serial number, horsepower, manufacture age, fuel, etc. of all onsite equipment and daily logging of the operating hours of the equipment).²³

Air Quality:

The Project is located in the South Coast Air Basin and Riverside County²⁴, both of which are designated non-attainment for PM10 and ozone (DEIR, p. 4.3-6). Significant emissions of PM10 and ozone and contributing factors such as NOx and ROG will lead to a worsening of regional air quality. The Project's estimates of construction emissions need to be properly disclosed and mitigated to ensure that the Project has a less than significant impact on regional air quality.

Estimates and impacts of project's construction and operational emissions

²² <http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf>, p. 47

²³ Ibid., p. 431

²⁴ <http://www.epa.gov/oagps001/greenbk/ancl.html>

Project construction and operation will result in significant emissions of ROG, NOx, and PM10 even after mitigation (DEIR, pp. 4.3-29, 4.3-34).

Construction emissions

The DEIR estimates that the Project's construction emissions of NOx and ROG will be significant as they exceed the SCAQMD thresholds of 100 lbs/day and 75 lbs/day, respectively (DEIR, p. 4.3-23) and identifies mitigation measures to reduce the Project's emissions (DEIR, pp. 4.3-23 – 4.3-29). Even with mitigation, the Project's emissions of NOx and ROG will still exceed SCAQMD thresholds and therefore are considered significant (DEIR, p. 4.3-29).

Operational emissions

The DEIR estimates that the Project's emissions of ROG, NOx, and PM10 from operational activities will be significant as they exceed the SCAQMD thresholds of 55 lbs/day, 55 lbs/day, and 150 lbs/day, respectively (DEIR, p. 4.3-33). The DEIR proposes mitigation measures to reduce the Project's emissions (DEIR, pp. 4.3-33 – 4.3-34) but, even with mitigation, the Project's emissions will still exceed SCAQMD thresholds and therefore are considered significant (DEIR, p. 4.3-34).

Gaseous particles such as NOx can react in the atmosphere to form PM10.^{25,26} Because Riverside County and the South Coast Air Basin are both designated non-attainment for PM10, significant emissions of NOx can lead to a further degradation of regional air quality. NOx emissions can also react to produce ground-level ozone.²⁷ Exposure to NOx emissions and its products (ozone and PM10) can lead to the airway inflammation and can cause or exacerbate conditions such as emphysema and bronchitis.²⁸

ROG can react to form ozone and contributes to smog formation.^{29,30} Exposure to ozone can result in coughing, throat irritation, and chest pain, burning, and discomfort.³¹ Smog exposure can lead to sneezing, nausea, coughing, headaches, and chest constriction.³² A study published in the New England Journal of Medicine concluded that the risk of dying from respiratory diseases is three times higher in areas of concentrated ozone.³³

Exposure to PM10 can cause bronchitis, increase the number and severity of asthma attacks, damage to lung tissue, and even premature death.³⁴ Research identifies that dust from construction is a major

²⁵ <http://www.fhwa.dot.gov/resourcecenter/teams/airquality/brochure/particulatebrochure.pdf>

²⁶ <http://www.epa.gov/captrade/documents/power.pdf>

²⁷ *Ibid.*

²⁸ <http://www.epa.gov/air/nitrogenoxides/health.html>

²⁹ <http://www.arb.ca.gov/research/health/fs/fs2/fs2.htm>

³⁰ <http://www.arb.ca.gov/html/gloss.htm#smog>

³¹ <http://www.epa.gov/o3healthtraining/population.html>

³² <http://are.berkeley.edu/courses/EEP101/spring03/AllThatSmog/extern.html>

³³ <http://www.nytimes.com/gwire/2009/03/12/12greenwire-study-links-smog-exposure-to-premature-death-10098.html>

³⁴ <http://www.epa.gov/airtrends/aqtrnd95/pm10.html> and <http://www.arb.ca.gov/html/brochure/pm10.htm>

contributor to PM10 and that PM10 exposure is associated with asthma.³⁵ Inhalation of PM10 can exacerbate asthma especially in children who are susceptible to higher risks from PM10 exposure.³⁶

The Project will have significant emissions of ROG, NOx, and PM10. Because Riverside County and the South Coast Air Basin are designated non-attainment areas for ozone and PM10, Project construction and operation will further degrade regional air quality. Exposure to ROG, NOx, and PM10 has adverse health effects and can impact offsite receptors, especially children in the nearby residences – a significant and undisclosed public health impact that the DEIR does not consider.

A revised DEIR should be prepared to disclose impacts to offsite receptors from Project construction and operation. Additional mitigation measures must be implemented to ensure that Project emissions of ROG, NOx, and PM10 are reduced to the maximum extent feasible.

Cumulative Impacts:

The DEIR identifies 13 proposed projects encompassing approximately 7.3 million square feet of space within five miles of the Project site (DEIR, p. 3-16). The DEIR does not identify the construction schedule of these projects except to state that “a number of individual projects may be under construction simultaneously with the proposed project” (DEIR, p. 4.3-37). The WestRidge Commerce Center Project (which will be built adjacent to the proposed Project) is scheduled to be constructed in 2012, a schedule similar to the proposed Project. Simultaneous construction of these projects, along with other potential projects, is likely to result in PM10, NOx, and ROG emissions that will have a cumulatively significant impact.

The construction timetables of all projects within the vicinity of the Project site should be identified. Any cumulatively significant emissions should be disclosed and impacts to workers and nearby residents should be addressed in a revised DEIR.

Sincerely,



Uma Bhandaram



Matt Hagemann, P.G., C.Hg.

³⁵ http://scerpfiles.org/cont_mgt/doc_files/EH-01-2.pdf

³⁶ <http://www.co.imperial.ca.us/airpollution/attainment%20plans/final%20ic%202009%20pm10%20sip%20document.pdf>



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**Geologic and Hydrogeologic Characterization
Industrial Stormwater Compliance
CEQA Review
Investigation and Remediation Strategies
Litigation Support and Testifying Expert**

Education:

M.S. Degree, Geology, California State University Los Angeles, Los Angeles, CA, 1984.
B.A. Degree, Geology, Humboldt State University, Arcata, CA, 1982.

Professional Certification:

California Professional Geologist
California Certified Hydrogeologist
Qualified SWPPP Developer and Practitioner

Professional Experience:

Matt has 25 years of experience in environmental policy, assessment and remediation. He spent nine years with the U.S. EPA in the RCRA and Superfund programs and served as EPA's Senior Science Policy Advisor in the Western Regional Office where he identified emerging threats to groundwater from perchlorate and MTBE. While with EPA, Matt also served as a Senior Hydrogeologist in the oversight of the assessment of seven major military facilities undergoing base closure. He led numerous enforcement actions under provisions of the Resource Conservation and Recovery Act (RCRA) while also working with permit holders to improve hydrogeologic characterization and water quality monitoring.

Matt has worked closely with U.S. EPA legal counsel and the technical staff of several states in the application and enforcement of RCRA, Safe Drinking Water Act and Clean Water Act regulations. Matt has trained the technical staff in the States of California, Hawaii, Nevada, Arizona and the Territory of Guam in the conduct of investigations, groundwater fundamentals, and sampling techniques.

Positions Matt has held include:

- Founding Partner, Soil/Water/Air Protection Enterprise (SWAPE) (2003 – present);
- Geology Instructor, Golden West College, 2010 – present;
- Senior Environmental Analyst, Komex H2O Science, Inc (2000 -- 2003);

- Executive Director, Orange Coast Watch (2001 – 2004);
- Senior Science Policy Advisor and Hydrogeologist, U.S. Environmental Protection Agency (1989–1998);
- Hydrogeologist, National Park Service, Water Resources Division (1998 – 2000);
- Adjunct Faculty Member, San Francisco State University, Department of Geosciences (1993 – 1998);
- Instructor, College of Marin, Department of Science (1990 – 1995);
- Geologist, U.S. Forest Service (1986 – 1998); and
- Geologist, Dames & Moore (1984 – 1986).

Partner, SWAPE:

With SWAPE, Matt’s responsibilities have included:

- Lead analyst and testifying expert in the review of numerous environmental impact reports under CEQA that identify significant issues with regard to hazardous waste, water resources, water quality, air quality, greenhouse gas emissions and geologic hazards.
- Stormwater analysis, sampling and best management practice evaluation at industrial facilities.
- Lead analyst and testifying expert in the review of environmental issues in license applications for large solar power plants before the California Energy Commission.
- Technical assistance and litigation support for vapor intrusion concerns.
- Manager of a project to evaluate numerous formerly used military sites in the western U.S.
- Manager of a comprehensive evaluation of potential sources of perchlorate contamination in Southern California drinking water wells.
- Manager and designated expert for litigation support under provisions of Proposition 65 in the review of releases of gasoline to sources drinking water at major refineries and hundreds of gas stations throughout California.
- Expert witness on two cases involving MTBE litigation.
- Expert witness and litigation support on the impact of air toxins and hazards at a school.
- Expert witness in litigation at a former plywood plant.

With Komex H2O Science Inc., Matt’s duties included the following:

- Senior author of a report on the extent of perchlorate contamination that was used in testimony by the former U.S. EPA Administrator and General Counsel.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of MTBE use, research, and regulation.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of perchlorate use, research, and regulation.
- Senior researcher in a study that estimates nationwide costs for MTBE remediation and drinking water treatment, results of which were published in newspapers nationwide and in testimony against provisions of an energy bill that would limit liability for oil companies.
- Research to support litigation to restore drinking water supplies that have been contaminated by MTBE in California and New York.
- Expert witness testimony in a case of oil production-related contamination in Mississippi.
- Lead author for a multi-volume remedial investigation report for an operating school in Los Angeles that met strict regulatory requirements and rigorous deadlines.
- Development of strategic approaches for cleanup of contaminated sites in consultation with clients and regulators.

Executive Director:

As Executive Director with Orange Coast Watch, Matt led efforts to restore water quality at Orange County beaches from multiple sources of contamination including urban runoff and the discharge of wastewater. In reporting to a Board of Directors that included representatives from leading Orange County universities and businesses, Matt prepared issue papers in the areas of treatment and disinfection of wastewater and control of the discharge of grease to sewer systems. Matt actively participated in the development of countywide water quality permits for the control of urban runoff and permits for the discharge of wastewater. Matt worked with other nonprofits to protect and restore water quality, including Surfrider, Natural Resources Defense Council and Orange County CoastKeeper as well as with business institutions including the Orange County Business Council.

Hydrogeology:

As a Senior Hydrogeologist with the U.S. Environmental Protection Agency, Matt led investigations to characterize and cleanup closing military bases, including Mare Island Naval Shipyard, Hunters Point Naval Shipyard, Treasure Island Naval Station, Alameda Naval Station, Moffett Field, Mather Army Airfield, and Sacramento Army Depot. Specific activities were as follows:

- Led efforts to model groundwater flow and contaminant transport, ensured adequacy of monitoring networks, and assessed cleanup alternatives for contaminated sediment, soil, and groundwater.
- Initiated a regional program for evaluation of groundwater sampling practices and laboratory analysis at military bases.
- Identified emerging issues, wrote technical guidance, and assisted in policy and regulation development through work on four national U.S. EPA workgroups, including the Superfund Groundwater Technical Forum and the Federal Facilities Forum.

At the request of the State of Hawaii, Matt developed a methodology to determine the vulnerability of groundwater to contamination on the islands of Maui and Oahu. He used analytical models and a GIS to show zones of vulnerability, and the results were adopted and published by the State of Hawaii and County of Maui.

As a hydrogeologist with the EPA Groundwater Protection Section, Matt worked with provisions of the Safe Drinking Water Act and NEPA to prevent drinking water contamination. Specific activities included the following:

- Received an EPA Bronze Medal for his contribution to the development of national guidance for the protection of drinking water.
- Managed the Sole Source Aquifer Program and protected the drinking water of two communities through designation under the Safe Drinking Water Act. He prepared geologic reports, conducted public hearings, and responded to public comments from residents who were very concerned about the impact of designation.

- Reviewed a number of Environmental Impact Statements for planned major developments, including large hazardous and solid waste disposal facilities, mine reclamation, and water transfer.

Matt served as a hydrogeologist with the RCRA Hazardous Waste program. Duties were as follows:

- Supervised the hydrogeologic investigation of hazardous waste sites to determine compliance with Subtitle C requirements.
- Reviewed and wrote "part B" permits for the disposal of hazardous waste.
- Conducted RCRA Corrective Action investigations of waste sites and led inspections that formed the basis for significant enforcement actions that were developed in close coordination with U.S. EPA legal counsel.
- Wrote contract specifications and supervised contractor's investigations of waste sites.

With the National Park Service, Matt directed service-wide investigations of contaminant sources to prevent degradation of water quality, including the following tasks:

- Applied pertinent laws and regulations including CERCLA, RCRA, NEPA, NRDA, and the Clean Water Act to control military, mining, and landfill contaminants.
- Conducted watershed-scale investigations of contaminants at parks, including Yellowstone and Olympic National Park.
- Identified high-levels of perchlorate in soil adjacent to a national park in New Mexico and advised park superintendent on appropriate response actions under CERCLA.
- Served as a Park Service representative on the Interagency Perchlorate Steering Committee, a national workgroup.
- Developed a program to conduct environmental compliance audits of all National Parks while serving on a national workgroup.
- Co-authored two papers on the potential for water contamination from the operation of personal watercraft and snowmobiles, these papers serving as the basis for the development of nation-wide policy on the use of these vehicles in National Parks.
- Contributed to the Federal Multi-Agency Source Water Agreement under the Clean Water Action Plan.

Policy:

Served senior management as the Senior Science Policy Advisor with the U.S. Environmental Protection Agency, Region 9. Activities included the following:

- Advised the Regional Administrator and senior management on emerging issues such as the potential for the gasoline additive MTBE and ammonium perchlorate to contaminate drinking water supplies.
- Shaped EPA's national response to these threats by serving on workgroups and by contributing to guidance, including the Office of Research and Development publication, Oxygenates in Water: Critical Information and Research Needs.
- Improved the technical training of EPA's scientific and engineering staff.
- Earned an EPA Bronze Medal for representing the region's 300 scientists and engineers in negotiations with the Administrator and senior management to better integrate scientific principles into the policy-making process.
- Established national protocol for the peer review of scientific documents.

Geology:

With the U.S. Forest Service, Matt led investigations to determine hillslope stability of areas proposed for timber harvest in the central Oregon Coast Range. Specific activities were as follows:

- Mapped geology in the field, and used aerial photographic interpretation and mathematical models to determine slope stability.
- Coordinated his research with community members who were concerned with natural resource protection.
- Characterized the geology of an aquifer that serves as the sole source of drinking water for the city of Medford, Oregon.

As a consultant with Dames and Moore, Matt led geologic investigations of two contaminated sites (later listed on the Superfund NPL) in the Portland, Oregon, area and a large hazardous waste site in eastern Oregon. Duties included the following:

- Supervised year-long effort for soil and groundwater sampling.
- Conducted aquifer tests.
- Investigated active faults beneath sites proposed for hazardous waste disposal.

Teaching:

From 1990 to 1998, Matt taught at least one course per semester at the community college and university levels:

- At San Francisco State University, held an adjunct faculty position and taught courses in environmental geology, oceanography (lab and lecture), hydrogeology, and groundwater contamination.
- Served as a committee member for graduate and undergraduate students.
- Taught courses in environmental geology and oceanography at the College of Marin.

Matt currently teaches Physical Geology (lecture and lab) to students at Golden West College in Huntington Beach, California.

Invited Testimony, Reports, Papers and Presentations:

Hagemann, M.F., 2008. Disclosure of Hazardous Waste Issues under CEQA. Presentation to the Public Environmental Law Conference, Eugene, Oregon.

Hagemann, M.F., 2008. Disclosure of Hazardous Waste Issues under CEQA. Invited presentation to U.S. EPA Region 9, San Francisco, California.

Hagemann, M.F., 2005. Use of Electronic Databases in Environmental Regulation, Policy Making and Public Participation. Brownfields 2005, Denver, Colorado.

Hagemann, M.F., 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Nevada and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Las Vegas, NV (served on conference organizing committee).

Hagemann, M.F., 2004. Invited testimony to a California Senate committee hearing on air toxins at schools in Southern California, Los Angeles.

Brown, A., Farrow, J., Gray, A. and **Hagemann, M.**, 2004. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to the Ground Water and Environmental Law Conference, National Groundwater Association.

Hagemann, M.F., 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Arizona and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Phoenix, AZ (served on conference organizing committee).

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in the Southwestern U.S. Invited presentation to a special committee meeting of the National Academy of Sciences, Irvine, CA.

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a tribal EPA meeting, Pechanga, CA.

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a meeting of tribal representatives, Parker, AZ.

Hagemann, M.F., 2003. Impact of Perchlorate on the Colorado River and Associated Drinking Water Supplies. Invited presentation to the Inter-Tribal Meeting, Torres Martinez Tribe.

Hagemann, M.F., 2003. The Emergence of Perchlorate as a Widespread Drinking Water Contaminant. Invited presentation to the U.S. EPA Region 9.

Hagemann, M.F., 2003. A Deductive Approach to the Assessment of Perchlorate Contamination. Invited presentation to the California Assembly Natural Resources Committee.

Hagemann, M.F., 2003. Perchlorate: A Cold War Legacy in Drinking Water. Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. From Tank to Tap: A Chronology of MTBE in Groundwater. Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. A Chronology of MTBE in Groundwater and an Estimate of Costs to Address Impacts to Groundwater. Presentation to the annual meeting of the Society of Environmental Journalists.

Hagemann, M.F., 2002. An Estimate of the Cost to Address MTBE Contamination in Groundwater (and Who Will Pay). Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to a meeting of the U.S. EPA and State Underground Storage Tank Program managers.

Hagemann, M.F., 2001. From Tank to Tap: A Chronology of MTBE in Groundwater. Unpublished report.

Hagemann, M.F., 2001. Estimated Cleanup Cost for MTBE in Groundwater Used as Drinking Water. Unpublished report.

Hagemann, M.F., 2001. Estimated Costs to Address MTBE Releases from Leaking Underground Storage Tanks. Unpublished report.

Hagemann, M.F., and VanMouwerik, M., 1999. Potential Water Quality Concerns Related to Snowmobile Usage. Water Resources Division, National Park Service, Technical Report.

VanMouwerik, M. and **Hagemann, M.F.** 1999, Water Quality Concerns Related to Personal Watercraft Usage. Water Resources Division, National Park Service, Technical Report.

Hagemann, M.F., 1999, Is Dilution the Solution to Pollution in National Parks? The George Wright Society Biannual Meeting, Asheville, North Carolina.

Hagemann, M.F., 1997, The Potential for MTBE to Contaminate Groundwater. U.S. EPA Superfund Groundwater Technical Forum Annual Meeting, Las Vegas, Nevada.

Hagemann, M.F., and Gill, M., 1996, Impediments to Intrinsic Remediation, Moffett Field Naval Air Station, Conference on Intrinsic Remediation of Chlorinated Hydrocarbons, Salt Lake City.

Hagemann, M.F., Fukunaga, G.L., 1996, The Vulnerability of Groundwater to Anthropogenic Contaminants on the Island of Maui, Hawaii. Hawaii Water Works Association Annual Meeting, Maui, October 1996.

Hagemann, M. F., Fukanaga, G. L., 1996, Ranking Groundwater Vulnerability in Central Oahu, Hawaii. Proceedings, Geographic Information Systems in Environmental Resources Management, Air and Waste Management Association Publication VIP-61.

Hagemann, M.F., 1994. Groundwater Characterization and Cleanup at Closing Military Bases in California. Proceedings, California Groundwater Resources Association Meeting.

Hagemann, M.F. and Sabol, M.A., 1993. Role of the U.S. EPA in the High Plains States Groundwater Recharge Demonstration Program. Proceedings, Sixth Biennial Symposium on the Artificial Recharge of Groundwater.

Hagemann, M.F., 1993. U.S. EPA Policy on the Technical Impracticability of the Cleanup of DNAPL-contaminated Groundwater. California Groundwater Resources Association Meeting.

Hagemann, M.F., 1992. Dense Nonaqueous Phase Liquid Contamination of Groundwater: An Ounce of Prevention... Proceedings, Association of Engineering Geologists Annual Meeting, v. 35.

Other Experience:

Selected as subject matter expert for the California Professional Geologist licensing examination, 2009-2011.

ATTACHMENT A

Item No. E.3

-728-

Spruce Ave

60

Moreno Valley Fwy

Area surveyed by the October and November 2003 Phase I ESAs

Area of Project site not surveyed by the October and November 2003 Phase I ESAs

Auto Mall Dr

Survey

© 2012 Google

Google earth
Eucalyptus Ave

Imagery Date: 3/9/2011 1996

11 S 484483.95 m E 3755025.28 m N elev 1757 ft

Eye alt 6294 ft

Selected References

Query returned the following data:

There are 4 records returned.

YEAR	DATE	COUNTY NAME	COMTRS	SITE NAME	PRODUCT NAME	POUNDS PRODUCT APPLIED	CHEMICAL NAME	POUNDS CHEMICAL APPLIED	AMOUNT TREATED	UNIT TREATED	AERIAL GROUND INDICATOR
2010	20-MAR-10	RIVERSIDE	33S03S03W02	WHEAT, GENERAL	NUFARM WEEDONE LV6 EC BROADLEAF HERBICIDE	56.4474	2,4-D, 2-ETHYLHEXYL ESTER	48.8834484	72	A	A
2010	20-MAR-10	RIVERSIDE	33S03S03W02	WHEAT, GENERAL	NUFARM WEEDONE LV6 EC BROADLEAF HERBICIDE	38.2196	2,4-D, 2-ETHYLHEXYL ESTER	33.0981736	65	A	A
2010	18-MAR-10	RIVERSIDE	33S03S03W02	WHEAT, GENERAL	NUFARM WEEDONE LV6 EC BROADLEAF HERBICIDE	104.6629	2,4-D, 2-ETHYLHEXYL ESTER	90.6380714	133	A	G
2010	20-MAR-10	RIVERSIDE	33S03S03W02	WHEAT, GENERAL	NUFARM WEEDONE LV6 EC BROADLEAF HERBICIDE	29.3997	2,4-D, 2-ETHYLHEXYL ESTER	25.4601402	37	A	A

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Query returned the following data:

There are 1 records returned.

YEAR	DATE	COUNTY NAME	COMTRS	SITE NAME	PRODUCT NAME	POUNDS PRODUCT APPLIED	CHEMICAL NAME	POUNDS CHEMICAL APPLIED	AMOUNT TREATED	UNIT TREATED	AERIAL GROUND INDICATOR
2008	01-MAR-08	RIVERSIDE	33S03S03W02	WHEAT, GENERAL	NUFARM WEEDONE LV6 EC BROADLEAF HERBICIDE	76.4392	2,4-D, 2-ETHYLHEXYL ESTER	66.1963472	65	A	G

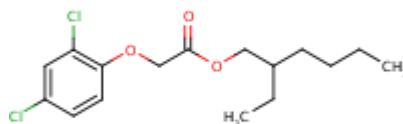
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[SIS Home](#)[About Us](#)[Site Map & Search](#)[Contact Us](#)**HSDB**[▶ Env. Health & Toxicology](#) [▶ TOXNET](#) [▶ HSDB](#)

2,4-D 2-ETHYLHEXYL ESTER

CASRN: 1928-43-4



For more information, search the NLM [HSDB](#) database.

Human Health Effects:

Probable Routes of Human Exposure:

Occupational exposure to 2,4-D, 2-ethylhexyl ester may occur through inhalation and dermal contact with this compound at workplaces where 2,4-D, 2-ethylhexyl ester is produced or used. (SRC)

PEER REVIEWED

Emergency Medical Treatment:

Emergency Medical Treatment:

EMT Copyright Disclaimer:

Portions of the POISINDEX(R) and MEDITEXT(R) database have been provided here for general reference. THE COMPLETE POISINDEX(R) DATABASE OR MEDITEXT(R) DATABASE SHOULD BE CONSULTED FOR ASSISTANCE IN THE DIAGNOSIS OR TREATMENT OF SPECIFIC CASES. The use of the POISINDEX(R) and MEDITEXT(R) databases is at your sole risk. The POISINDEX(R) and MEDITEXT(R) databases are provided "AS IS" and "as available" for use, without warranties of any kind, either expressed or implied. Micromedex makes no representation or warranty as to the accuracy, reliability, timeliness, usefulness or completeness of any of the information contained in the POISINDEX(R) and MEDITEXT(R) databases. ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR USE ARE HEREBY EXCLUDED. Micromedex does not assume any responsibility or risk for your use of the POISINDEX(R) or MEDITEXT(R) databases. Copyright 1974-2012 Thomson MICROMEDEX. All Rights Reserved. Any duplication, replication, "downloading," sale, redistribution or other use for commercial purposes is a violation of Micromedex' rights and is strictly prohibited.

The following Overview, *** CHLOROPHENOXY COMPOUNDS *** , is relevant for this

HSDB record chemical.

Life Support:

- o This overview assumes that basic life support measures have been instituted.

Clinical Effects:

0.2.1 SUMMARY OF EXPOSURE

0.2.1.1 ACUTE EXPOSURE

A) WITH POISONING/EXPOSURE

- 1) ACUTE INGESTION - Miosis, coma, fever, hypotension, emesis, tachycardia, bradycardia, ECG abnormalities, muscle rigidity, possible respiratory failure, pulmonary edema, and rhabdomyolysis may occur. Deaths have resulted from cardiorespiratory arrest.
 - a) Concentrated formulations of 2,4-D-esters may contain petroleum solvents, contributing to the overall toxicity. Please refer to the HYDROCARBONS management for further information.
- 2) PATHOPHYSIOLOGY - These agents are primarily irritants, but one case of degenerative brain cell changes and CNS toxicity has been reported.

0.2.3 VITAL SIGNS

0.2.3.1 ACUTE EXPOSURE

A) WITH POISONING/EXPOSURE

- 1) Fever of sudden but delayed onset may occur following ingestion.

0.2.4 HEENT

0.2.4.1 ACUTE EXPOSURE

A) WITH POISONING/EXPOSURE

- 1) Eye, nose, and mouth irritation are possible with direct contact.

0.2.5 CARDIOVASCULAR

0.2.5.1 ACUTE EXPOSURE

A) WITH POISONING/EXPOSURE

- 1) Tachycardia, bradycardia, ECG abnormalities, asystole, other dysrhythmias, and hypotension have been reported with overdose. Deaths have resulted from cardiorespiratory arrest.

0.2.6 RESPIRATORY

0.2.6.1 ACUTE EXPOSURE

A) WITH POISONING/EXPOSURE

- 1) Ingestion of large amounts may cause bradypnea, respiratory failure, hyperventilation, or pulmonary edema.

0.2.7 NEUROLOGIC

0.2.7.1 ACUTE EXPOSURE

A) WITH POISONING/EXPOSURE

- 1) LOW DOSE EXPOSURES - Vertigo, headache, malaise, and paresthesias may occur depending on the specific compound involved.
- 2) HIGH DOSE EXPOSURES - Muscle twitching, spasms, profound weakness, polyneuritis, and unconsciousness may occur depending on the specific compound involved.
- 3) IDIOSYNCRATIC REACTIONS - Peripheral neuropathies

0.2.8 GASTROINTESTINAL

0.2.8.1 ACUTE EXPOSURE

A) WITH POISONING/EXPOSURE

- 1) Nausea, vomiting, and diarrhea have been reported. Necrosis of the gastrointestinal mucosa has been reported.

- 0.2.9 HEPATIC
 - 0.2.9.1 ACUTE EXPOSURE
 - A) WITH POISONING/EXPOSURE
 - 1) Elevated LDH, AST (SGOT), and ALT (SGPT) have been reported.
- 0.2.10 GENITOURINARY
 - 0.2.10.1 ACUTE EXPOSURE
 - A) WITH POISONING/EXPOSURE
 - 1) Albuminuria and porphyria may occur; renal failure due to rhabdomyolysis is also possible.
- 0.2.12 FLUID-ELECTROLYTE
 - 0.2.12.1 ACUTE EXPOSURE
 - A) WITH POISONING/EXPOSURE
 - 1) Ingestion of 2,4-D has produced hypocalcemia, hyperkalemia, and hypophosphatemia.
- 0.2.13 HEMATOLOGIC
 - 0.2.13.1 ACUTE EXPOSURE
 - A) WITH POISONING/EXPOSURE
 - 1) Thrombocytopenia is the primary hematologic effect. Leukopenia has also been reported.
- 0.2.14 DERMATOLOGIC
 - 0.2.14.1 ACUTE EXPOSURE
 - A) WITH POISONING/EXPOSURE
 - 1) Direct contact may cause skin irritation. Chlorodioxin contamination of products may produce chloracne with heavy exposure.
- 0.2.15 MUSCULOSKELETAL
 - 0.2.15.1 ACUTE EXPOSURE
 - A) WITH POISONING/EXPOSURE
 - 1) Muscle cramps, muscle rigidity, elevated creatine kinase, and rhabdomyolysis were reported after ingestion of MCP. EMG abnormalities, elevated creatine kinase, and proximal muscle weakness have been described following 2,4-D ester exposure.
- 0.2.16 ENDOCRINE
 - 0.2.16.1 ACUTE EXPOSURE
 - A) WITH POISONING/EXPOSURE
 - 1) Hypoglycemia has been reported in cases of acute 2,4-D poisoning. Animal studies showed decreased T3 and T4 levels, but this effect has not been reported in humans.
- 0.2.20 REPRODUCTIVE HAZARDS
 - A) 2,4-D and 2,4,5-T have caused adverse reproductive effects in experimental animals. Allegations of human birth defects due to these compounds have not been confirmed.
- 0.2.21 CARCINOGENICITY
 - 0.2.21.1 IARC CATEGORY
 - A) IARC Carcinogenicity Ratings for CAS94-75-7 (IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, 2006; IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, 2007; IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, 2010; IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, 2010a; IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, 2008; IARC, 2004):
 - 1) Not Listed
 - B) IARC Carcinogenicity Ratings for CAS93-76-5 (IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, 2006; IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, 2007; IARC Working

Group on the Evaluation of Carcinogenic Risks to Humans, 2010; IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, 2010a; IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, 2008; IARC, 2004):

1) Not Listed

C) IARC Carcinogenicity Ratings for CAS94-74-6 (IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, 2006; IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, 2007; IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, 2010; IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, 2010a; IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, 2008; IARC, 2004):

1) Not Listed

D) IARC Carcinogenicity Ratings for CAS93-65-2 (IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, 2006; IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, 2007; IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, 2010; IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, 2010a; IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, 2008; IARC, 2004):

1) Not Listed

0.2.21.2 HUMAN OVERVIEW

A) Human studies show conflicting results. Some studies have suggested a relationship between chlorophenoxy herbicides and both soft tissue sarcoma and non-Hodgkin's lymphoma, while others have not.

0.2.21.3 ANIMAL OVERVIEW

A) Animal studies are limited, but have generally been negative.

0.2.22 GENOTOXICITY

- A) The chlorophenoxy herbicides have produced mixed negative and positive responses in various genotoxicity test systems. A recent review found no evidence of genotoxic or mutagenic potential in vitro and in vivo for 2,4-D.
- B) One study was conducted to determine whether or not New Zealand Vietnam War veterans showed evidence of genetic disturbances arising as a consequence of their now confirmed exposure to chlorophenoxy herbicides. During 1965 to 1971, more than 76 million liters of phenoxylic herbicides were sprayed over parts of Southern Vietnam and Laos. A sample group of 24 New Zealand Vietnam War veterans and 23 control volunteers were compared using a sister chromatid exchange (SCE) analysis. The results showed a significant difference between the mean of the experimental group and the mean of the control group (11.05 vs 8.18; $p < 0.001$). The experimental group also had an extremely elevated proportion of cells with high SCE frequencies (HFCs) above the 95th percentile compared to the controls (11% and 0.07%, respectively) (Rowland et al, 2007).

Laboratory:

- A) These herbicides can be measured in the urine, but the values are not clinically useful. Plasma levels also appear to be poorly correlated with clinical effects.

- B) Erythrocyte cholinesterase is not affected by these herbicides.
- C) Obtain baseline CBC, platelet count, serum electrolytes, and renal/hepatic function tests. Monitor LDH, AST (SGOT), ALT (SGPT), alkaline phosphatase, CPK, arterial pH, and bicarbonate.
- D) Monitor urine for pH, protein, RBC's, myoglobin, and urinary output.
- E) Monitor the patient for at least 6 to 12 hours as there is a potential for delayed onset of symptoms.

Treatment Overview:

0.4.2 ORAL EXPOSURE

- A) Treat ingestions of greater than 40 mg/kg with gastric decontamination if within 4 hours of ingestion.
- B) ACTIVATED CHARCOAL: Administer charcoal as a slurry (240 mL water/30 g charcoal). Usual dose: 25 to 100 g in adults/adolescents, 25 to 50 g in children (1 to 12 years), and 1 g/kg in infants less than 1 year old.
- C) URINARY ALKALINIZATION: May enhance elimination. Should be considered with severe poisoning.
- D) VENTRICULAR DYSRHYTHMIAS/SUMMARY: Institute continuous cardiac monitoring, obtain an ECG, and administer oxygen. Evaluate for hypoxia, acidosis, and electrolyte disorders. Lidocaine and amiodarone are generally first line agents for stable monomorphic ventricular tachycardia, particularly in patients with underlying impaired cardiac function. Amiodarone should be used with caution if a substance that prolongs the QT interval and/or causes torsades de pointes is involved in the overdose. Unstable rhythms require immediate cardioversion.
- E) LIDOCAINE: ADULT: LOADING DOSE: 1 to 1.5 mg/kg IV push; for refractory VT/VF may give an additional bolus of 0.5 to 0.75 mg/kg over 3 to 5 min. Do not exceed 3 mg/kg or 200 to 300 mg over one hour. INFUSION: Once circulation restored begin infusion of 1 to 4 mg/min. PEDIATRIC: LOADING DOSE: 1 mg/kg; INFUSION: 20 to 50 mcg/kg/min. Monitor ECG continuously.

0.4.3 INHALATION EXPOSURE

- A) INHALATION: Move patient to fresh air. Monitor for respiratory distress. If cough or difficulty breathing develops, evaluate for respiratory tract irritation, bronchitis, or pneumonitis. Administer oxygen and assist ventilation as required. Treat bronchospasm with inhaled beta2 agonist and oral or parenteral corticosteroids.
- B) ACUTE LUNG INJURY: Maintain ventilation and oxygenation and evaluate with frequent arterial blood gas or pulse oximetry monitoring. Early use of PEEP and mechanical ventilation may be needed.

0.4.4 EYE EXPOSURE

- A) DECONTAMINATION: Irrigate exposed eyes with copious amounts of room temperature water for at least 15 minutes. If irritation, pain, swelling, lacrimation, or photophobia persist, the patient should be seen in a health care facility.

0.4.5 DERMAL EXPOSURE

- A) OVERVIEW
 - 1) DECONTAMINATION: Remove contaminated clothing and jewelry. Wash the skin, including hair and nails, vigorously; do repeated soap washings. Discard

contaminated clothing.

- 2) Treat dermal irritation or burns with standard topical therapy. Patients developing dermal hypersensitivity reactions may require treatment with systemic or topical corticosteroids or antihistamines.

Range of Toxicity:

- A) Limited data are available.
- B) Fatalities have been seen following ingestion of 80 mg/kg.
- C) Intravenous injection of 28 mg/kg of 2,4-D was tolerated; 50 mg/kg produced toxicity.

[Rumack BH POISINDEX(R) Information System Micromedex, Inc., Englewood, CO, 2012; CCIS Volume 154, edition expires Nov, 2012. Hall AH & Rumack BH (Eds): TOMES(R) Information System Micromedex, Inc., Englewood, CO, 2012; CCIS Volume 154, edition expires Nov, 2012.] **PEER REVIEWED**

Antidote and Emergency Treatment:

Skin decontamination: Flush contaminating chemicals from eyes with copious amounts of water for 10 to 15 minutes. If irritation persists, an ophthalmological examination should be performed. /Chlorophenoxy Herbicides/

[U.S. Environmental Protection Agency/Office of Prevention, Pesticides, and Toxic Substances. Reigart, J.R., Roberts, J.R. Recognition and Management of Pesticide Poisonings. 5th ed. 1999. EPA Document No. EPA 735-R-98-003, and available in electronic format at: <http://www.epa.gov/pesticides/safety/healthcare> p. 97] **PEER REVIEWED**

Ingestions of these herbicides are likely to be followed by vomiting and diarrhea due to the irritant properties. ... Activated charcoal is probably effective in limiting irritant effects and reducing absorption of most or all of these herbicides.

Aluminum hydroxide antacids may be useful in neutralizing the irritant actions of these acidic agents. Sorbitol should be given to induce catharsis if bowel sounds are present and if spontaneous diarrhea has not already commenced.

Dehydration and electrolyte disturbances may be severe enough to require intravenous fluids. There are no specific antidotes for poisoning by these herbicides. /Other Herbicides/

[U.S. Environmental Protection Agency/Office of Prevention, Pesticides, and Toxic Substances. Reigart, J.R., Roberts, J.R. Recognition and Management of Pesticide Poisonings. 5th ed. 1999. EPA Document No. EPA 735-R-98-003, and available in electronic format at: <http://www.epa.gov/pesticides/safety/healthcare> p. 123] **PEER REVIEWED**

Administer intravenous fluids to accelerate excretion of the chlorophenoxy compound, and to limit concentration of the toxicant in the kidney. A urine flow of 4-6 mL/minute is desirable. Intravenous saline/dextrose has sufficed to rescue comatose patients who drank 2,4-D and mecoprop several hours before hospital admission. CAUTION: Monitor urine protein, cells. BUN, serum creatine, serum electrolytes, and fluid intake/output carefully to insure that renal function remains unimpaired and that fluid overload does not occur. /Chlorophenoxy Herbicides/

[U.S. Environmental Protection Agency/Office of Prevention, Pesticides, and Toxic Substances. Reigart, J.R., Roberts, J.R. Recognition and Management of Pesticide Poisonings. 5th ed. 1999. EPA Document No. EPA 735-R-98-003, and available in electronic format at: <http://www.epa.gov/pesticides/safety/healthcare> p. 97] **PEER REVIEWED**

Forced alkaline diuresis has been used successfully in management of suicidal ingestions of chlorophenoxy compounds, especially when initiated early. Alkalinizing the urine by including sodium bicarbonate ... in the intravenous solution accelerates excretion of 2,4-D dramatically and mecoprop excretion substantially. Urine pH should be maintained between 7.6 and 8.8. Include potassium chloride to offset increased potassium losses. ... It is crucial to monitor serum electrolytes carefully, especially potassium and calcium. There may possibly be some hazard to the kidneys when urine concentrations of toxicant are very high, so the integrity of renal function and fluid balance should be monitored carefully as the chlorophenoxy compound is excreted. Renal failure has occurred in patients with severe intoxication during alkaline diuresis. /Chlorophenoxy Herbicides/

[U.S. Environmental Protection Agency/Office of Prevention, Pesticides, and Toxic Substances. Reigart, J.R., Roberts, J.R. Recognition and Management of Pesticide Poisonings. 5th ed. 1999. EPA Document No. EPA 735-R-98-003, and available in electronic format at: <http://www.epa.gov/pesticides/safety/healthcare> p. 97] **PEER REVIEWED**

Hemodialysis is not likely to be of significant benefit in poisonings by chlorophenoxy compounds. It has been used in four patients who survived intoxication. However, given the highly protein-bound nature of these herbicides and lack of any other evidence, hemodialysis is not recommended. /Chlorophenoxy Herbicides/

[U.S. Environmental Protection Agency/Office of Prevention, Pesticides, and Toxic Substances. Reigart, J.R., Roberts, J.R. Recognition and Management of Pesticide Poisonings. 5th ed. 1999. EPA Document No. EPA 735-R-98-003, and available in electronic format at: <http://www.epa.gov/pesticides/safety/healthcare> p. 97] **PEER REVIEWED**

Animal Toxicity Studies:

Non-Human Toxicity Excerpts:

/LABORATORY ANIMALS: Acute Exposure/ English pointer dogs dosed po with encapsulated 2,4-dichlorophenoxyacetic acid (2,4-D) at 1.3, 8.8, 43.7, 175 or 220 mg/kg body weight failed to exhibit abnormalities in hematologic, serum biochemical, urinalysis, or electrocardiographic parameters. At the 3 lowest doses, no changes were noted in electro-encephalograms (EEGs). In the dog given 175 mg/kg, at 24 h postdosing mild sedation was accompanied by excessive slowing in the EEG with loss of low voltage fast activity. In the dog given 220 mg/kg, nonspecific alterations in the EEG suggestive of irritation and mild seizure activity was detected 7 hr, but the EEG returned to normal by 24 hr. /2,4-D/

[Arnold EK et al; Vet Hum Toxicol 33 (5): 446-9 (1991)] **PEER REVIEWED** [PubMed Abstract](#)

/LABORATORY ANIMALS: Acute Exposure/ The acute toxicity of 2,4-dichlorophenoxyacetic acid (2,4-D), a herbicide, was studied in chicks dosed with 100, 300, 500, or 600 mg 2,4-D/kg BW, by the oral route. Clinical, laboratory, and histopathological methods were used as indicators of toxicity. After acute exposure, the herbicide decreased motor activity and induced muscular weakness and motor incoordination; decreased weight gain; increased serum creatine kinase (CK) and alkaline phosphatase (AP) activities and serum uric acid (UA), creatinine (CR), and total proteins (TP) levels; and did not change serum aspartate aminotransferase (AST) or alanine aminotransferase (ALT) activities. These changes were time- and dose-dependent and reversible. The LD50 (lethal dose 50%) calculated for oral 2,4-D in chicks was 420 mg/kg BW (385 to 483). Chromatographic analysis of the serum of the intoxicated chicks showed the presence of the herbicide; the amount found was dose- and time-dependent, increasing from 2 to 8 hr after exposure and decreasing afterwards. Histopathological post-mortem studies conducted on intoxicated chicks showed hepatic (vacuolar degeneration of the hepatocytes), renal (tubular nephrosis), and intestinal (hemorrhagic) lesions. /2,4-D/

[Morgulis MS, et al; Poult Sci 77 (4): 509-515 (1998)] **PEER REVIEWED** [PubMed Abstract](#)

/LABORATORY ANIMALS: Subchronic or Prechronic Exposure/ Forms of 2,4-dichlorophenoxyacetic acid (collectively known as 2,4-D) are herbicides used to control a wide variety of broadleaf and woody plants. Subchronic toxicity studies in rats were conducted on three forms of 2,4-D: the parent form, 2,4-D acid; 2,4-D dimethylamine salt (DMA); and 2,4-D 2-ethylhexyl ester (2-EHE). Doses in the subchronic studies (on an acid equivalent basis) were 0, 1, 15, 100, and 300 mg/kg/day. Major treatment related findings in the three studies included decreases in red cell mass, decreases in T3 and T4 levels, decreases in ovary and testes weights, increases in liver, kidney, and thyroid weights, and cataracts and retinal degeneration (high-dose females). These data demonstrated the comparable toxicities of 2,4-D acid, DMA, and 2-EHE and support a subchronic no-observed-effect level of 15 mg/kg/day for all three forms.

[Charles JM, et al; Fundam Appl Toxicol 33 (2): 161-165 (1996)] **PEER REVIEWED** [PubMed Abstract](#)

/LABORATORY ANIMALS: Subchronic or Prechronic Exposure/ The influence of sublethal doses of 2,4-dichlorophenoxyacetic acid (2,4-D) on serum T3 & T4 concns in Hsd Cpb: Wistar rats of both sexes was studied. The trial was performed on 24 males & females respectively, each divided into three groups of 8 animals (control, groups 1 & 2). Aqueous soln of the compound (11 mg/kg bw--group 1 & 110 mg/kg bw--group 2) or clean tap water (control group) was used. Aliquots of 2.4 mL/kg bw were administered with a stomach tube from the 1st-10th day of the experiment. Three days before the first treatment & on the 6th & 13th day of the experiment the serum T3 & T4 concns were determined by commercial radioimmunoassay kits (Byk-Sangtec Diagnostica), validated for rats. A significant decr of serum T4 (P<0.01) & T3 (P<0.001) was determined in males of groups 1 & 2 during the experiment. On the 6th day of experiment serum T4 & T3 values were significantly lower (P<0.001 & 0.01 respectively) in group 2 than in the controls & group 1 of both males & females. During the whole experiment serum T4 levels were lower in females than in males (P<0.05). /2,4-D/

[Kobal S, et al; Pflugers Arch 440 (5 Suppl): R171-172 (2000)] **PEER REVIEWED**

/LABORATORY ANIMALS: Chronic Exposure or Carcinogenicity/ Groups of 25 male & 25 female 3 wk old Osborne-Mendel rats were fed for 2 yrs on diets containing 0, 5, 25, 125, 625 or 1250 mg/kg of diet 2,4-D. 2,4-D was 96.7% pure & contained no detectable levels of 2,7-dichloro- or 2,3,7,8-tetrachlorodibenzo-p-dioxin Numbers of male & female rats with malignant tumors were 6 in controls & 8, 7, 7, 8 & 14 in the treated groups, respectively. Tumors were randomly distributed & were also found in aging rats of this strain. ... A statistical increase (p< 0.05) in number of treated rats with malignant tumors over controls were found only in males receiving ... 1250 mg/kg. /2,4-D/

[IARC. Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man. Geneva: World Health Organization, International Agency for Research on Cancer, 1972-PRESENT. (Multivolume work). Available at: <http://monographs.iarc.fr/index.php> p. V15 117 (1977)] **PEER REVIEWED**

/LABORATORY ANIMALS: Chronic Exposure or Carcinogenicity/ 6xC3H/Anf) F1 mice & 18 male & 18 female (C57BL/6xAKR)F1 mice received commercial 2,4-D (90%, mp 136-140 deg C) according to the following dose schedule: 46.4 mg/kg body wt in 0.5% gelatin by stomach tube at 7 days of age & the same amount (not adjusted for incr body wt) daily up to 28 days of age; subsequently, the mice were given 149 mg/kg of diet /feed/. ... The experiment was terminated when the mice were about 78 weeks of age ... Tumor incidences were compared with those observed among groups of ... control mice, which had been untreated or had received gelatin only: the incidences were not significantly greater (p> 0.05) when any group or combination of groups were considered. Similar results were obtained in groups of mice given 2,4-D isopropyl, butyl, or isooctyl esters (99%, 99%, and 97% pure) at doses of 46.6 mg/kg body wt from 7-28 days of age and, subsequently 111, 149, & 130 mg/kg of diet /feed/ respectively up to 78 weeks of age. /2,4-D/

[IARC. Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man. Geneva: World Health Organization, International Agency for Research on Cancer, 1972-PRESENT. (Multivolume work). Available at: <http://monographs.iarc.fr/index.php> p. V15 117 (1977)] **PEER REVIEWED**

/LABORATORY ANIMALS: Developmental or Reproductive Toxicity/ When 2,4-D was administered at a concentrations of 500 mg/kg of diet during entire pregnancy of a sow, anorexia was noted; newborn piglets were underdeveloped & apathetic & 10/15 died within 24 hr. Continued feeding of 50 mg/kg of diet to survivors until ... 8 months of age caused growth depression, persistent anemia, & moderate degenerative changes of liver & kidneys. /2,4-D/
 [IARC. Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man. Geneva: World Health Organization, International Agency for Research on Cancer, 1972-PRESENT. (Multivolume work). Available at: <http://monographs.iarc.fr/index.php> p. V15 123 (1977)]
 PEER REVIEWED

/LABORATORY ANIMALS: Developmental or Reproductive Toxicity/ The reproductive toxicity of 2,4-D has been studied at dietary doses of 0, 5, 20, and 80 mg/kg/day in a two generation reproductive study in Fischer 344 rats. The parental Fo group was treated with 2,4-D for 15 weeks prior to mating. No adverse effects on fertility were observed in the 5 and 20 mg/kg daily dose groups, although reduced pup weights were noted in the 20 mg/kg F2a litters. A daily NOAEL of 5 mg/kg for reproductive toxicity was established from this study. In addition to this reproduction study, recent subchronic and chronic studies in rats, mice and dogs produced no evidence of treatment related histopathological changes in the testes at any of the dose levels ... /2,4-D/
 [Bingham, E.; Cochrssen, B.; Powell, C.H.; Patty's Toxicology Volumes 1-9 5th ed. John Wiley & Sons. New York, N.Y. (2001)., p. V4 493]
 PEER REVIEWED

/LABORATORY ANIMALS: Developmental or Reproductive Toxicity/ The cytogenetic effect of 2,4-dichlorophenoxy acetic acid (2,4-D) & its metabolite 2,4-dichlorophenol (2,4-DCP) was studied in bone-marrow, germ cells & sperm head abnormalities in the treated mice. Swiss mice were treated orally by gavage with 2,4-D at 1.7, 3.3 and 33 mg kg(-1)BW (1/200, 1/100 and 1/10 of LD(50)). 2,4-DCP was intraperitoneally (i.p.) injected at 36, 72 and 180 mg kg(-1)BW (1/10, 1/5, 1/2 of LD(50)). A significant increase in the percentage of chromosome aberrations in bone-marrow and spermatocyte cells was observed after oral administration of 2,4-D at 3.3 mg kg(-1)BW for three and five consecutive days. This percentage increased and reached 10.8+/-0.87 (P<0.01) in bone-marrow and 9.8+/-0.45 (P<0.01) in spermatocyte cells after oral administration of 2,4-D at 33 mg kg(-1)BW for 24 hr. This percentage was, however, lower than that induced in bone-marrow and spermatocyte cells by mitomycin C (positive control). 2,4-D induced a dose-dependent increase in the percentage of sperm head abnormalities. The genotoxic effect of 2,4-DCP is weaker than that of 2,4-D, as indicated by the lower percentage of the induced chromosome aberrations (in bone-marrow and spermatocyte cells) and sperm head abnormalities. /2,4-D/
 [Amer SM, Aly FA; Mutat Res 25; 494 (1-2): 1-12 (2001)] **PEER REVIEWED**

/LABORATORY ANIMALS: Neurotoxicity/ The acute effects of 2,4-dichlorophenoxyacetic acid (2,4-D) administered orally to female mongrel dogs in doses of 25, 50, 75, 100 or 125 mg/kg were investigated by means of neurological examinations, electromyography and motor nerve conduction velocity tests carried out at various times following treatment. On day one after treatment with 125 mg/kg, one of four dogs was lethargic but recovered by day three. Also on day one, myotonic dimpling was evident in one dog each in the groups treated with 50, 100, 125 mg/kg. Dogs treated with more than 50 mg/kg had generalized myotonic discharges which increased according to the dose and were resolved by day 14 but not day seven. Treatment failed to affect motor nerve conduction velocity. Pathologic changes in teased nerve fibers involved occasional fiber degeneration, paranodal demyelination and intercalated internodes. Transverse semi-thin sections showed mild focal fiber degeneration and eventual medial plantar nerve depletion in five dogs treated with 25, 100 and 125 mg/kg and in lateral plantar nerve of two dogs treated with 125 mg/kg and one control. A single exposure to sublethal oral doses of 2,4-D is not associated with evidence of polyneuropathy. /2,4-D/
 [Steiss JE et al; J Neurol Sci 78 (3): 295-301 (1987)] **PEER REVIEWED** [PubMed Abstract](#)

/LABORATORY ANIMALS: Neurotoxicity/ Forms of 2,4-dichlorophenoxyacetic acid ... are herbicides used to control a wide variety of broadleaf and woody plants. Single-dose acute and 1-year chronic neurotoxicity screening studies in male and female Fischer 344 rats (10/sex/dose) were conducted on 2,4-D according to the U.S. EPA 1991 guidelines. The studies emphasized a Functional Observational Battery (which included grip performance and hindlimb splay tests), automated motor activity testing, and comprehensive neurohistopathology of perfused tissues. Dosages were up to 250 mg/kg by gavage for the single-dose study, and up to 150 mg/kg/day in the diet for 52 weeks in the repeated-dose study. In the acute study, gavage with 250 mg/kg test material caused slight transient gait and coordination changes and clearly decreased motor activity at the time of maximal effect on the day of treatment (day 1). Mild locomotor effects occurred in one mid-dose rat (75 mg/kg), on Day 1 only. No gait, coordination, or motor activity effects were noted by day 8. In the chronic study, the only finding of neurotoxicologic significance was retinal degeneration in females in the high-dose group (150 mg/kg/day). Body weights of both sexes were slightly less than controls in the mid-dose group, and 10% less than controls in the high-dose group. /2,4-D/
 [Mattsson JL, et al; Fundam Appl Toxicol 40 (1): 111-119 (1997)] **PEER REVIEWED** [PubMed Abstract](#)

/GENOTOXICITY/ 2,4-D, 2-Ethylhexyl ester, 98.0% purity, at concentrations of 0 (DMSO), 0.501, 1.00, 2.50, 5.00, 10.0, or 25.0 ug/mL, was assayed with primary rat hepatocytes. The treatment period was 19 hours. 2,4-D, 2-Ethylhexyl ester, did not induce unscheduled DNA synthesis.
 [California Environmental Protection Agency/Department of Pesticide Regulation; Toxicology Data Review Summaries. Available from: <http://www.cdpr.ca.gov/docs/toxsums/toxsumlist.htm> on 2,4-D as of February 1, 2005.] **PEER REVIEWED**

/GENOTOXICITY/ 2,4-D, 2-Ethylhexyl Ester [grouped with 2,4-D free acid as of 7/23/91], purity of 98.0%, at

concentrations of 0 (DMSO), 333, 667, 1000, 3330, 6670, or 10000 ug/plate without and with metabolic activation (Aroclor 1254-induced rat liver) was assayed with Salmonella typhimurium strains TA98, TA100, TA1535, TA1537 and TA1538. Incubation period was for 48 hours. 2,4-D,-2-Ethylhexyl Ester did not increase the number of revertants in either the initial or repeat assay.

[California Environmental Protection Agency/Department of Pesticide Regulation; Toxicology Data Review Summaries. Available from: <http://www.cdpr.ca.gov/docs/toxsums/toxsumlist.htm> on 2,4-D as of February 1, 2005.] **PEER REVIEWED**

/GENOTOXICITY/ 2,4-D, 2-Ethylhexyl Ester, purity 98.0%, LOT # 04KF54479, was administered as a single dose by gavage at 0 (corn oil), 50, 167, or 500 mg/kg to 5 ICR mice/sex/group. Bone marrow was harvested at 24, 48, and 72 hours after dosing. Polychromatic erythrocytes were scored for micronuclei and the PCE/NCE ratio determined. One thousand PCE's were scored per animal. The test substance did not induce a significant increase in micronuclei in bone marrow polychromatic erythrocytes.

[California Environmental Protection Agency/Department of Pesticide Regulation; Toxicology Data Review Summaries. Available from: <http://www.cdpr.ca.gov/docs/toxsums/toxsumlist.htm> on 2,4-D as of February 1, 2005.] **PEER REVIEWED**

/GENOTOXICITY/ Using the Curly-Lobe-Plum method in Drosophila melanogaster, this herbicide, manifested a significant mutagenic effect: frequency of the lethal recessive mutations was 6 times higher in the group of flies treated with the herbicide than in the untreated, control group.

[Coman N et al; Studia Universitatis Babes-Bolyai Biologia 37 (1): 65-70 (1992)] **PEER REVIEWED**

/OTHER TOXICITY INFORMATION/ The effects of daily dosing with the 2-ethyl hexyl ester of 2,4-D and its components at 250 mg/kg on blood urea nitrogen and plasma Mg:Ca ratios in cattle and sheep are tabulated. The formulation of the herbicide (emulsifiable concentrate or technical grade) showed no difference in the effects. Treatment with the compound resulted in a decrease in plasma Ca and an increase in plasma Mg significantly changing the ratio in the plasma of two sheep and a yearling heifer that died. In some cases, there was a 50% ratio decrease. Increased blood urea nitrogen (in one case increased from 4 to 40 mg/100 mL) was noted in the herbicide-treated animals. Kidney damage and swollen blood-engorged thyroids were commonly noted during the postmortem examinations.

[Hunt LM et al; Bull Environ Contam Toxicol 5 (1): 54-60 (1970)] **PEER REVIEWED**

Ecotoxicity Excerpts:

/AQUATIC SPECIES/ In studies conducted according to the guidelines of the US Environmental Protection Agency, 2,4-D acid and ethylhexyl ester had no effect on the early life stages, embryo hatch, larval weight, or larval length of the fathead minnow (*Pimephales promelas*) at concentrations of 12.6-102 mg/L for up to 32 days (acid). The 32-day NOEC for the acid was 63.4 mg/L, comparable to the 33-day NOEC for the diethanolamine salt of 29.1 mg/L. The ethylhexyl ester was more toxic, with a 32-day NOEC of 0.12 mg/L...

[FAO/WHO; Pesticide Residues in Food: Toxicological and Environmental Evaluations: 2,4-Dichlorophenoxyacetic acid (2,4-D), salts and esters (1997). Available from, as of February 1, 2005: <http://www.inchem.org/documents/jmpr/jmpmono/v097pr16.htm> **PEER REVIEWED**

/AQUATIC SPECIES/ The esters of 2,4-D are clearly more toxic to invertebrate species such as the tidewater silverside (*Menidia beryllina*), Atlantic silverside (*Menidia menidia*), grass shrimp (*Palaemonetes pugio*), pink shrimp (*Panaeus duorarum*), and Dungeness crab (*Cancer magister*) than is the dimethylamine salt or the acid. The same is true for formulated 2-ethylhexyl ester.

[FAO/WHO; Pesticide Residues in Food: Toxicological and Environmental Evaluations: 2,4-Dichlorophenoxyacetic acid (2,4-D), salts and esters (1997). Available from, as of February 2, 2005: <http://www.inchem.org/documents/jmpr/jmpmono/v097pr16.htm> **PEER REVIEWED**

Non-Human Toxicity Values:

LD50 Rat (male) oral 982 mg/kg

[European Chemicals Bureau; IUCLID Dataset, 2-ethylhexyl 2,4-dichlorophenoxyacetate (1928-43-4) (2000 CD-ROM edition). Available from, as of January 13, 2005: <http://esis.jrc.ec.europa.eu/> **PEER REVIEWED**

LD50 Rat (female) oral 864 mg/kg

[European Chemicals Bureau; IUCLID Dataset, 2-ethylhexyl 2,4-dichlorophenoxyacetate (1928-43-4) (2000 CD-ROM edition). Available from, as of January 13, 2005: <http://esis.jrc.ec.europa.eu/> **PEER REVIEWED**

LD50 Mouse oral 673 mg/kg

[European Chemicals Bureau; IUCLID Dataset, 2-ethylhexyl 2,4-dichlorophenoxyacetate (1928-43-4) (2000 CD-ROM edition). Available from, as of January 13, 2005: <http://esis.jrc.ec.europa.eu/> **PEER REVIEWED**

LD50 Rat oral 896 mg/kg

[Tomlin CDS, ed. 2,4-D-2-ethylhexyl (1928-43-4). In: The e-Pesticide Manual, 13th Edition Version 3.0 (2003-04). Surrey UK, British Crop Protection Council.] **PEER REVIEWED**

LD50 Rabbit dermal >2000 mg/kg

[Tomlin CDS, ed. 2,4-D-2-ethylhexyl (1928-43-4). In: The e-Pesticide Manual, 13th Edition Version 3.0 (2003-04). Surrey UK, British Crop Protection Council.] **PEER REVIEWED**

LC50 Rat inhalation >5.4 mg/L air/4 hr

[Tomlin CDS, ed. 2,4-D-2-ethylhexyl (1928-43-4). In: The e-Pesticide Manual, 13th Edition Version 3.0 (2003-04). Surrey UK, British

Crop Protection Council.] **PEER REVIEWED**

Ecotoxicity Values:LD50 *Anas platyrhynchos* (Mallard duck, juvenile) oral 663 mg/kg/14 days[USEPA, Office of Pesticide Programs; Pesticide Ecotoxicity Database (2000) on 2,4-D, 2-Ethylhexyl ester (1928-43-4). Available from, as of January 26, 2005: http://cfpub.epa.gov/ecotox/quick_query.htm **PEER REVIEWED**LD50 *Anas platyrhynchos* (Mallard duck, 14 day old) oral >4640 mg/kg/8 days[USEPA, Office of Pesticide Programs; Pesticide Ecotoxicity Database (2000) on 2,4-D, 2-Ethylhexyl ester (1928-43-4). Available from, as of January 26, 2005: http://cfpub.epa.gov/ecotox/quick_query.htm **PEER REVIEWED**LC50 *Anas platyrhynchos* (Mallard duck, juvenile) dietary >5620 ppm/8 days[USEPA, Office of Pesticide Programs; Pesticide Ecotoxicity Database (2000) on 2,4-D, 2-Ethylhexyl ester (1928-43-4). Available from, as of January 26, 2005: http://cfpub.epa.gov/ecotox/quick_query.htm **PEER REVIEWED**LC50 *Colinus virginianus* (Northern bobwhite, juvenile) dietary 7187 ppm/8 days[USEPA, Office of Pesticide Programs; Pesticide Ecotoxicity Database (2000) on 2,4-D, 2-Ethylhexyl ester (1928-43-4). Available from, as of January 26, 2005: http://cfpub.epa.gov/ecotox/quick_query.htm **PEER REVIEWED**EC50 *Anabaena flosaquae* (Blue-green algae; population abundance) >0.32 ppm/5 days; static /formulated product/[USEPA, Office of Pesticide Programs; Pesticide Ecotoxicity Database (2000) on 2,4-D, 2-Ethylhexyl ester (1928-43-4). Available from, as of January 26, 2005: http://cfpub.epa.gov/ecotox/quick_query.htm **PEER REVIEWED**EC50 *Selenastrum capricornutum* (Green algae; population abundance) >30.0 ppm/5 days; static /formulated product/[USEPA, Office of Pesticide Programs; Pesticide Ecotoxicity Database (2000) on 2,4-D, 2-Ethylhexyl ester (1928-43-4). Available from, as of January 26, 2005: http://cfpub.epa.gov/ecotox/quick_query.htm **PEER REVIEWED**EC50 *Crassostrea virginica* (American oyster; intoxication immobilization) >3.0 ppb/96 hr; flow-through /formulated product/[USEPA, Office of Pesticide Programs; Pesticide Ecotoxicity Database (2000) on 2,4-D, 2-Ethylhexyl ester (1928-43-4). Available from, as of January 26, 2005: http://cfpub.epa.gov/ecotox/quick_query.htm **PEER REVIEWED**LC50 *Gammarus fasciatus* (Scud) 2400 ppb/96 hr (95% confidence interval: 1900-3000 ppb); static /formulated product/[USEPA, Office of Pesticide Programs; Pesticide Ecotoxicity Database (2000) on 2,4-D, 2-Ethylhexyl ester (1928-43-4). Available from, as of January 26, 2005: http://cfpub.epa.gov/ecotox/quick_query.htm **PEER REVIEWED**LC50 *Oncorhynchus Mykiss* (Rainbow trout) 7.2 mg/L/96 hr; flow-through[European Chemicals Bureau; IUCLID Dataset, 2-ethylhexyl 2,4-dichlorophenoxyacetate (1928-43-4) (2000 CD-ROM edition). Available from, as of January 13, 2005: <http://esis.jrc.ec.europa.eu/> **PEER REVIEWED**EC50 *Navicula pelliculosa* (algae) 4.1 mg/L 5 days endpoint: growth rate; NOEC = 0.1875[European Chemicals Bureau; IUCLID Dataset, 2-ethylhexyl 2,4-dichlorophenoxyacetate (1928-43-4) (2000 CD-ROM edition). Available from, as of January 13, 2005: <http://esis.jrc.ec.europa.eu/> **PEER REVIEWED**EC50 *Skeletonema costatum* (Algae; growth inhibition) 0.23 mg/L/5 days; static /from table/[FAO/WHO; Pesticide Residues in Food: Toxicological and Environmental Evaluations: 2,4-Dichlorophenoxyacetic acid (2,4-D), salts and esters (1997). Available from, as of February 1, 2005: <http://www.inchem.org/documents/jmpr/jmpmono/v097pr16.htm> **PEER REVIEWED**LD50 Honeybee (*Apis mellifera*) oral or contact >100 mg/bee/72 hr[FAO/WHO; Pesticide Residues in Food: Toxicological and Environmental Evaluations: 2,4-Dichlorophenoxyacetic acid (2,4-D), salts and esters (1997). Available from, as of February 2, 2005: <http://www.inchem.org/documents/jmpr/jmpmono/v097pr16.htm> **PEER REVIEWED****Metabolism/Pharmacokinetics:****Metabolism/Metabolites:**

The pharmacokinetics of the 2-ethylhexyl ester of 2,4-D were investigated following a single oral administration of 130 mg/kg body weight dose to both male and female Fischer 344 rats. Blood samples were drawn from 24 rats per sex in serial groups of 3 at intervals of 0.25, 0.5, 1, 2, 4, 8, 24, and 72 hours post dosing and urine was collected from the 72 hours group at 12 hour intervals. The most significant finding from this evaluation was the absence of any 2-ethylhexyl ester of 2,4-D in either the blood or urine for either sex evaluated (limit of quantification 10 ppb). Conversely 2,4-D acid was detected in both blood and urine. The present data indicate that the 2-ethylhexyl ester of 2,4-D is converted very rapidly to 2,4-D acid, and that the acid is then excreted into the urine. A similarity exists in interval excretion data with that seen in previous investigations with 2,4-D acid. Indications are that the 2,4-D acid is probably derived via the hydrolysis of the 2-ethylhexyl ester moiety and is eliminated from the body in the same manner as the orally administered 2,4-D acid. It is therefore anticipated from these results that the 2-ethylhexyl ester of 2,4-D should be toxicologically comparable to 2,4-D acid itself.

[European Chemicals Bureau; IUCLID Dataset, 2-ethylhexyl 2,4-dichlorophenoxyacetate (1928-43-4) (2000 CD-ROM edition). Available from, as of January 13, 2005: <http://esis.jrc.ec.europa.eu/> **PEER REVIEWED**

2,4-D 2-ethylhexyl ester is hydrolysed to 2,4-D by esterase enzymes present in the gut wall, in blood plasma, in liver cells and in skin. Any 2,4-D /ethylhexyl ester/ absorbed orally or dermally is hydrolysed to 2,4-D, the acid ionic form. [European Chemicals Bureau; IUCLID Dataset, 2-ethylhexyl 2,4-dichlorophenoxyacetate (1928-43-4) (2000 CD-ROM edition). Available from, as of January 13, 2005: <http://esis.jrc.ec.europa.eu/> **PEER REVIEWED**

Absorption, Distribution & Excretion:

A maximum 2,4-D concentration in serum of 1075 ppm was detected 5 hr after /English pointer dogs were given a/ po dose of 220 mg/kg. A maximum 2,4-D, concentration in urine of 1792 ppm was detected 2 hr after a po dose of 175 mg/kg, while 25 hr after that dose kidney tissue contained 271 ppm. /2,4-D/ [Arnold EK et al; Vet Hum Toxicol 33 (5): 446-9 (1991)] **PEER REVIEWED** [PubMed Abstract](#)

Pharmacology:

Environmental Fate & Exposure:

Environmental Fate/Exposure Summary:

2,4-D, 2-ethylhexyl ester's production may result in its release to the environment through various waste streams; its use as a herbicide will result in its direct release to the environment. If released to air, a vapor pressure of 3.59×10^{-4} mm Hg at 25 deg C indicates 2,4-D, 2-ethylhexyl ester will exist solely as a vapor in the ambient atmosphere. Vapor-phase 2,4-D, 2-ethylhexyl ester will be degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 27 hours. If released to soil, 2,4-D, 2-ethylhexyl ester is expected to have no mobility based upon an estimated Koc of 33,000. Volatilization from moist soil surfaces is expected to be an important fate process based upon a Henry's Law constant of 1.8×10^{-5} atm-cu m/mole. If released into water, 2,4-D, 2-ethylhexyl ester is expected to adsorb to suspended solids and sediment based upon the estimated Koc. 2,4-D, 2-ethylhexyl ester is expected to hydrolyze and form the parent compound 2,4-D acid. The estimated hydrolysis half-lives of this reaction are 35 and 3.5 days at pH values of 7 and 8, respectively. Field studies have resulted in half-lives of 1 to 51 days when applied as a spray and 4-16 days when applied in granule form. These results are similar to those found in the parent compound, 2,4-D acid. Volatilization from water surfaces is expected to be an important fate process based upon this compound's Henry's Law constant. Estimated volatilization half-lives for a model river and model lake are 94 hours and 821 hours, respectively. However, volatilization from water surfaces is expected to be attenuated by adsorption to suspended solids and sediment in the water column. The estimated volatilization half-life from a model pond is 51 months if adsorption is considered. An estimated BCF of 5,600 suggests the potential for bioconcentration in aquatic organisms is very high. Occupational exposure to 2,4-D, 2-ethylhexyl ester may occur through inhalation and dermal contact with this compound at workplaces where 2,4-D, 2-ethylhexyl ester is produced or used. (SRC)

PEER REVIEWED

Probable Routes of Human Exposure:

Occupational exposure to 2,4-D, 2-ethylhexyl ester may occur through inhalation and dermal contact with this compound at workplaces where 2,4-D, 2-ethylhexyl ester is produced or used. (SRC)

PEER REVIEWED

Artificial Pollution Sources:

2,4-D, 2-ethylhexyl ester production may result in its release to the environment through various waste streams; its use as a herbicide(1) will result in its direct release to the environment(SRC).

[(1) Tomlin CDS, ed; The e-Pesticide Manual. 2,4-D-2-ethylhexyl. 13th ed. PC CD-ROM, Version 3.0, 2003-04. Surrey, UK: British Crop Protection Council (2003)] **PEER REVIEWED**

Environmental Fate:

TERRESTRIAL FATE: Based on a classification scheme(1), an estimated Koc value of 33,000(SRC), determined from a log Kow of 5.78(2) and a regression-derived equation(3), indicates that 2,4-D, 2-ethylhexyl ester is expected to be immobile in soil(SRC). Volatilization of 2,4-D, 2-ethylhexyl ester from moist soil surfaces is expected to be an important fate process(SRC) given a Henry's Law constant of 1.8×10^{-5} atm-cu m/mole(2). However, adsorption to soil is expected to attenuate volatilization(SRC). 2,4-D, 2-ethylhexyl ester is not expected to volatilize from dry soil surfaces(SRC) based upon a vapor pressure of 3.59×10^{-4} mm Hg(2). Field studies have resulted in half-lives of 1 to 51 days when applied as a spray and 4-16 days when applied in granulate form(3).

[(1) Swann RL et al; Res Rev 85: 17-28 (1983) (2) Tomlin CDS, ed; The e-Pesticide Manual. 2,4-D-2-ethylhexyl. 13th ed. PC CD-ROM, Version 3.0, 2003-04. Surrey, UK: British Crop Protection Council (2003) (3) Wilson RD et al; Environ Tox Chem 16: 1239-1246 (1997)] **PEER REVIEWED**

AQUATIC FATE: Based on a classification scheme(1), an estimated Koc value of 33,000(SRC), determined from a log Kow of 5.78(2) and a regression-derived equation(3), indicates that 2,4-D, 2-ethylhexyl ester is expected to adsorb to suspended solids and sediment(SRC). Volatilization from water surfaces is expected(3) based upon a Henry's Law constant of 1.8×10^{-5} atm-cu m/mole(2). Using this Henry's Law constant and an estimation method(3), volatilization half-lives for a model river and model lake are 94 hours and 820 hours, respectively(SRC). However, volatilization from water surfaces is expected to be attenuated by adsorption to suspended solids and sediment in the water column(SRC). The estimated volatilization half-life from a model pond is 51 months if adsorption is considered(4). According to a classification scheme(5), an estimated BCF of 5,600(SRC), from its log Kow(2) and a regression-derived equation(6), suggests the potential for bioconcentration in aquatic organisms is very high(SRC). Hydrolysis of 2,4-D, 2-ethylhexyl ester is expected to yield the parent compound 2,4-D acid(SRC). A base-catalyzed second-order hydrolysis rate constant of 2.3 L/mole-sec(SRC) was estimated using a structure estimation method(7); this corresponds to half-lives of 35 and 3.5 days at pH values of 7 and 8, respectively(7). Biodegradation data were not available(SRC, 2005).

[(1) Swann RL et al; Res Rev 85: 17-28 (1983) (2) Tomlin CDS, ed; The e-Pesticide Manual. 2,4-D-2-ethylhexyl. 13th ed. PC CD-ROM, Version 3.0, 2003-04. Surrey, UK: British Crop Protection Council (2003) (3) Lyman WJ et al; Handbook of Chemical Property Estimation Methods. Washington, DC: Amer Chem Soc pp. 4-9, 15-1 to 15-29 (1990) (4) US EPA; EXAMS II Computer Simulation (1987) (5) Franke C et al; Chemosphere 29: 1501-14 (1994) (6) Meylan WM et al; Environ Toxicol Chem 18: 664-72 (1999) (7) Mill T et al; Environmental Fate and Exposure Studies Development of a PC-SAR for Hydrolysis: Esters, Alkyl Halides and Epoxides. EPA Contract No. 68-02-4254. Menlo Park, CA: SRI International (1987)] **PEER REVIEWED**

ATMOSPHERIC FATE: According to a model of gas/particle partitioning of semivolatile organic compounds in the atmosphere(1), 2,4-D, 2-ethylhexyl ester, which has a vapor pressure of 3.59×10^{-4} mm Hg at 25 deg C(2) is expected to exist solely as a vapor in the ambient atmosphere. Vapor-phase 2,4-D, 2-ethylhexyl ester is degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals(SRC); the half-life for this reaction in air is estimated to be 27 hrs(SRC), calculated from its rate constant of 15×10^{-12} cu cm/molecule-sec at 25 deg C(SRC) that was derived using a structure estimation method(3). 2,4-D, 2-ethylhexyl has been reported to be stable to light(2).

[(1) Bidleman TF; Environ Sci Technol 22: 361-367 (1988) (2) Tomlin CDS, ed; The e-Pesticide Manual. 2,4-D-2-ethylhexyl. 13th ed. PC CD-ROM, Version 3.0, 2003-04. Surrey, UK: British Crop Protection Council (2003) (3) Meylan WM, Howard PH; Chemosphere 26: 2293-99 (1993)] **PEER REVIEWED**

Environmental Abiotic Degradation:

The rate constant for the vapor-phase reaction of 2,4-D, 2-ethylhexyl ester with photochemically-produced hydroxyl radicals has been estimated 15×10^{-12} cu cm/molecule-sec at 25 deg C(SRC) using a structure estimation method(1). This corresponds to an atmospheric half-life of about 27 hours at an atmospheric concentration of 5×10^5 hydroxyl radicals per cu cm(1). Hydrolysis of 2,4-D, 2-ethylhexyl ester is expected to yield the parent compound 2,4-D acid(SRC). A base-catalyzed second-order hydrolysis rate constant of 2.3 L/mole-sec(SRC) was estimated using a structure estimation method(2); this corresponds to half-lives of 35 and 3.5 days at pH values of 7 and 8, respectively(2). 2,4-D, 2-ethylhexyl has been reported to be stable to light(3).

[(1) Meylan WM, Howard PH; Chemosphere 26: 2293-99 (1993) (2) Mill T et al; Environmental Fate and Exposure Studies Development of a PC-SAR for Hydrolysis: Esters, Alkyl Halides and Epoxides. EPA Contract No. 68-02-4254. Menlo Park, CA: SRI International (1987) (3) Tomlin CDS, ed; The e-Pesticide Manual. 2,4-D-2-ethylhexyl. 13th ed. PC CD-ROM, Version 3.0, 2003-04. Surrey, UK: British Crop Protection Council (2003)] **PEER REVIEWED**

Environmental Bioconcentration:

An estimated BCF of 5,600 was calculated for 2,4-D, 2-ethylhexyl ester(SRC), using a log Kow of 5.78(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is very high(SRC), provided the compound is not altered physically or chemically once released into the environment(SRP).

[(1) Tomlin CDS, ed; The e-Pesticide Manual. 2,4-D-2-ethylhexyl. 13th ed. PC CD-ROM, Version 3.0, 2003-04. Surrey, UK: British Crop Protection Council (2003) (2) Meylan WM et al; Environ Toxicol Chem 18: 664-72 (1999) (3) Franke C et al; Chemosphere 29: 1501-14 (1994)] **PEER REVIEWED**

Soil Adsorption/Mobility:

The Koc of 2,4-D, 2-ethylhexyl ester is estimated as 33,000(SRC), using a log Kow of 5.78(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that 2,4-D, 2-ethylhexyl ester is expected to be immobile in soil.

[(1) Tomlin CDS, ed; The e-Pesticide Manual. 2,4-D-2-ethylhexyl. 13th ed. PC CD-ROM, Version 3.0, 2003-04. Surrey, UK: British Crop Protection Council (2003) (2) Lyman WJ et al; Handbook of Chemical Property Estimation Methods. Washington, DC: Amer Chem Soc pp. 4-9 (1990) (3) Swann RL et al; Res Rev 85: 17-28 (1983)] **PEER REVIEWED**

Volatilization from Water/Soil:

The Henry's Law constant for 2,4-D, 2-ethylhexyl ester is 1.8×10^{-5} atm-cu m/mole(1). This Henry's Law constant indicates that 2,4-D, 2-ethylhexyl ester is expected to volatilize from water surfaces(2). Based on this Henry's Law constant, the volatilization half-life from a model river (1 m deep, flowing 1 m/sec, wind velocity of 3 m/sec)(2) is estimated as 94.4 hours(SRC). The volatilization half-life from a model lake (1 m deep, flowing 0.05 m/sec, wind velocity of 0.5 m/sec)(2) is

estimated as 34.2 days(SRC). However, volatilization from water surfaces is expected to be attenuated by adsorption to suspended solids and sediment in the water column. The estimated volatilization half-life from a model pond is 51 months when adsorption is considered(3). Volatilization of 2,4-D, 2-ethylhexyl ester from moist soil surfaces is expected to be an important fate process(SRC) given a Henry's Law constant of 1.8×10^{-5} atm-cu m/mole(1). However, adsorption to soil is expected to attenuate volatilization(SRC). 2,4-D, 2-ethylhexyl ester is not expected to volatilize from dry soil surfaces(SRC) based upon its vapor pressure of 3.59×10^{-4} mm Hg(1).

[(1) Tomlin CDS, ed; The e-Pesticide Manual. 2,4-D-2-ethylhexyl. 13th ed. PC CD-ROM, Version 3.0, 2003-04. Surrey, UK: British Crop Protection Council (2003) (2) Lyman WJ et al; Handbook of Chemical Property Estimation Methods. Washington, DC: Amer Chem Soc pp. 15-1 to 15-29 (1990) (3) US EPA; EXAMS II Computer Simulation (1987)] **PEER REVIEWED**

Environmental Standards & Regulations:

FIFRA Requirements:

Tolerances are established for residues of 2,4-D at: barley, grain; blueberry; corn, forage; corn, fresh, sweet, kernel plus cob with husk removed; corn, grain; corn, stover; cranberry; fruit, stone; grapes; grass hay; grasses, pasture; grasses, rangeland; millet, forage; millet, grain; millet, straw; nut; oat, forage; oat, grain; pistachio; rice, grain; rice, straw; rye, forage; rye, grain; sorghum, forage; sorghum, grain; sorghum, grain, stover; sugarcane, cane; sugarcane, forage; wheat, forage; and wheat, grain. (Residues on all the above may result from application of 2,4-D in acid form, or in the form of one or more of the following esters: amyl (pentyl), butoxyethoxypropyl, butoxyethyl, butoxypolyethylene glycol butyl ether, butoxypropyl, butyl, dipropylene glycol isobutyl ether, ethoxyethoxyethyl, ethoxyethoxypropyl, ethyl, ethoxypropyl, isobutyl, isooctyl (including, but not limited to, 2-ethylhexyl, 2-ethyl-4-methylpentyl, and 2-octyl), isopropyl, methyl, polyethylene glycol 200, polypropoxybutyl, polypropylene glycol, propylene glycol, propylene glycol butyl ether, propylene glycol isobutyl ether, tetrahydrofurfuryl, and tripropylene glycol isobutyl ether.)

[40 CFR 180.142(a)(2); U.S. National Archives and Records Administration's Electronic Code of Federal Regulations. Available from, as of February 1, 2005: <http://www.gpoaccess.gov/ecfr> **PEER REVIEWED**

As the federal pesticide law FIFRA directs, EPA is conducting a comprehensive review of older pesticides to consider their health and environmental effects and make decisions about their future use. Under this pesticide reregistration program, EPA examines health and safety data for pesticide active ingredients initially registered before November 1, 1984, and determines whether they are eligible for reregistration. In addition, all pesticides must meet the new safety standard of the Food Quality Protection Act of 1996. Isooctyl(2-ethylhexyl) 2,4-dichlorophenoxyacetate is found on List A, which contains most food use pesticides and consists of the 194 chemical cases (or 350 individual active ingredients) for which EPA issued registration standards prior to FIFRA '88. Case No: 0073; Pesticide type: fungicide, herbicide (growth regulator); Registration Standard Date: 9/1/88 PB89-102396; Case Status: OPP is reviewing data from the pesticide's producers regarding its human health and/or environmental effects, or OPP is determining the pesticide's eligibility for reregistration and developing the RED document.; Active ingredient (AI): isooctyl(2-ethylhexyl) 2,4-dichlorophenoxyacetate; Data Call-in (DCI) Date(s): 3/25/94; AI Status: The producers of the pesticide have made commitments to conduct the studies and pay the fees required for reregistration, and are meeting those commitments in a timely manner. /RED scheduled for May 2005/

[United States Environmental Protection Agency/ Prevention, Pesticides and Toxic Substances; Status of Pesticides in Registration, Reregistration, and Special Review. (1998) EPA 738-R-98-002, p. 71] **PEER REVIEWED**

Allowable Tolerances:

Tolerances are established for residues of 2,4-D at: barley, grain: 0.5 ppm; blueberry: 0.1 ppm; corn, forage: 20 ppm; corn, fresh, sweet, kernel plus cob with husk removed: 0.5 ppm; corn, grain: 0.5 ppm; corn, stover: 20 ppm; cranberry: 0.5 ppm; fruit, stone: 0.2 ppm; grapes: 0.5 ppm; grass hay: 300 ppm; grasses, pasture: 1,000 ppm; grasses, rangeland: 1,000 ppm; millet, forage: 20 ppm; millet, grain: 0.5 ppm; millet, straw: 20 ppm; nut: 0.2 ppm; oat, forage: 20 ppm; oat, grain: 0.5 ppm; pistachio: 0.2 ppm; rice, grain: 0.1 ppm; rice, straw: 20 ppm; rye, forage: 20 ppm; rye, grain: 0.5 ppm; sorghum, forage: 20 ppm; sorghum, grain: 0.5 ppm; sorghum, grain, stover: 20 ppm; sugarcane, cane: 2 ppm; sugarcane, forage: 20 ppm; wheat, forage: 20 ppm; and wheat, grain: 0.5 ppm. (Residues on all the above may result from application of 2,4-D in acid form, or in the form of one or more of the following esters: amyl (pentyl), butoxyethoxypropyl, butoxyethyl, butoxypolyethylene glycol butyl ether, butoxypropyl, butyl, dipropylene glycol isobutyl ether, ethoxyethoxyethyl, ethoxyethoxypropyl, ethyl, ethoxypropyl, isobutyl, isooctyl (including, but not limited to, 2-ethylhexyl, 2-ethyl-4-methylpentyl, and 2-octyl), isopropyl, methyl, polyethylene glycol 200, polypropoxybutyl, polypropylene glycol, propylene glycol, propylene glycol butyl ether, propylene glycol isobutyl ether, tetrahydrofurfuryl, and tripropylene glycol isobutyl ether.)

[40 CFR 180.142(a)(2); U.S. National Archives and Records Administration's Electronic Code of Federal Regulations. Available from, as of February 1, 2005: <http://www.gpoaccess.gov/ecfr> **PEER REVIEWED**

Chemical/Physical Properties:

Molecular Formula:

C16-H22-Cl2-O3

[National Library of Medicine, SIS; ChemIDplus Record for 2,4-D-2-ethylhexyl (1928-43-4). Available from, as of March 2, 2005:
<http://chem.sis.nlm.nih.gov/chemidplus/direct.jsp?regno=1928-43-4> **PEER REVIEWED**

Molecular Weight:

333.28

[Lewis, R.J. Sax's Dangerous Properties of Industrial Materials. 10th ed. Volumes 1-3 New York, NY: John Wiley & Sons Inc., 1999., p. V2: 1103] **PEER REVIEWED**

Color/Form:

Golden yellow, non viscous liquid

[Tomlin CDS, ed; The e-Pesticide Manual. 2,4-D-2-ethylhexyl. 13th ed. PC CD-ROM, Version 3.0, 2003-04. Surrey, UK: British Crop Protection Council (2003)] **PEER REVIEWED**

Odor:

Sweet slightly pungent odor

[Tomlin CDS, ed; The e-Pesticide Manual. 2,4-D-2-ethylhexyl. 13th ed. PC CD-ROM, Version 3.0, 2003-04. Surrey, UK: British Crop Protection Council (2003)] **PEER REVIEWED**

Boiling Point:

>300 deg C (decomp)

[Tomlin CDS, ed; The e-Pesticide Manual. 2,4-D-2-ethylhexyl. 13th ed. PC CD-ROM, Version 3.0, 2003-04. Surrey, UK: British Crop Protection Council (2003)] **PEER REVIEWED**

Melting Point:

<-37 deg C

[Tomlin CDS, ed; The e-Pesticide Manual. 2,4-D-2-ethylhexyl. 13th ed. PC CD-ROM, Version 3.0, 2003-04. Surrey, UK: British Crop Protection Council (2003)] **PEER REVIEWED**

Density/Specific Gravity:

1.148 at 20 deg C

[Tomlin CDS, ed; The e-Pesticide Manual. 2,4-D-2-ethylhexyl. 13th ed. PC CD-ROM, Version 3.0, 2003-04. Surrey, UK: British Crop Protection Council (2003)] **PEER REVIEWED**

Octanol/Water Partition Coefficient:

log Kow = 5.78 at 25 deg C

[Tomlin CDS, ed; The e-Pesticide Manual. 2,4-D-2-ethylhexyl. 13th ed. PC CD-ROM, Version 3.0, 2003-04. Surrey, UK: British Crop Protection Council (2003)] **PEER REVIEWED**

Solubilities:

In water, 0.086 mg/L at 25 deg C

[Tomlin CDS, ed; The e-Pesticide Manual. 2,4-D-2-ethylhexyl. 13th ed. PC CD-ROM, Version 3.0, 2003-04. Surrey, UK: British Crop Protection Council (2003)] **PEER REVIEWED**

Vapor Pressure:47.9 mPa /3.59X10⁻⁴ mm Hg/ at 25 deg C (Calculated)

[Tomlin CDS, ed; The e-Pesticide Manual. 2,4-D-2-ethylhexyl. 13th ed. PC CD-ROM, Version 3.0, 2003-04. Surrey, UK: British Crop Protection Council (2003)] **PEER REVIEWED**

Other Chemical/Physical Properties:

In water, 0.0324 mg/L

[Ahrens, W.H. Herbicide Handbook of the Weed Science Society of America. 7th ed. Champaign, IL: Weed Science Society of America, 1994., p. 79] **PEER REVIEWED**

Henry's Law constant = 1.8 Pa cu m/mol (1.8X10⁻⁵ atm-cu m/mol)

[Tomlin CDS, ed; The e-Pesticide Manual. 2,4-D-2-ethylhexyl. 13th ed. PC CD-ROM, Version 3.0, 2003-04. Surrey, UK: British Crop Protection Council (2003)] **PEER REVIEWED**

Hydroxyl radical reaction rate constant = 15X10⁻¹² cu cm/molec-sec at 25 deg C /Estimated/

[US EPA; Estimation Programs Interface (EPI). ver. 3.11. U.S. EPA version for Windows. Washington, DC: U.S. EPA (2003). Available from,

as of Dec 15, 2004: <http://www.epa.gov/oppt/exposure/pubs/episutedl.htm> **PEER REVIEWED**

Chemical Safety & Handling:

Flash Point:

171 deg C (Cleveland open cup)

[Tomlin CDS, ed. 2,4-D-2-ethylhexyl (1928-43-4). In: The e-Pesticide Manual, 13th Edition Version 3.0 (2003-04). Surrey UK, British Crop Protection Council.] **PEER REVIEWED**

Stability/Shelf Life:

Hydrolysis DT50 <1 hr. Stable to light, DT50 >100 days. Stable at 54 deg C.

[Tomlin CDS, ed. 2,4-D-2-ethylhexyl (1928-43-4). In: The e-Pesticide Manual, 13th Edition Version 3.0 (2003-04). Surrey UK, British Crop Protection Council.] **PEER REVIEWED**

Disposal Methods:

SRP: The most favorable course of action is to use an alternative chemical product with less inherent propensity for occupational exposure or environmental contamination. Recycle any unused portion of the material for its approved use or return it to the manufacturer or supplier. Ultimate disposal of the chemical must consider: the material's impact on air quality; potential migration in soil or water; effects on animal, aquatic, and plant life; and conformance with environmental and public health regulations.

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Occupational Exposure Standards:

Manufacturing/Use Information:

Major Uses:

For 2,4-D, 2-ethylhexyl ester (USEPA/OPP Pesticide Code: 030063) ACTIVE products with label matches. /SRP: Registered for use in the U.S. but approved pesticide uses may change periodically and so federal, state and local authorities must be consulted for currently approved uses./

[U.S. Environmental Protection Agency/Office of Pesticide Program's Chemical Ingredients Database on 2,4-D, 2-Ethylhexyl Ester (1928-43-4). Available from, as of February 1, 2005: <http://ppis.ceris.purdue.edu/htbin/epachem.com> **PEER REVIEWED**

Manufacturers:

Dow Agrosciences LLC, 9330 Zionsville Rd., Indianapolis, IN 46268, (317) 337-3000; Production site: Midland, MI 48667 /2,4-D and esters and salts/

[SRI Consulting. 2004 Directory of Chemical Producers. SRI International, Menlo Park, CA 2004., p. 766] **PEER REVIEWED**

Nufarm, Inc., 1333 Burr Ridge Pkwy., Suite 125A, Burr Ridge, IL 60521-0866, (800) 345-3330; Production site: Burr Ridge, IL 60521-0866 /2,4-D and esters and salts/

[SRI Consulting. 2004 Directory of Chemical Producers. SRI International, Menlo Park, CA 2004., p. 766] **PEER REVIEWED**

Riverdale (a Nufarm Co.), 1333 Burr Ridge Pkwy., Suite 125A, Burr Ridge, IL 60521-0866, (800) 345-3330; Production site: Chicago Heights, IL 60411 /2,4-D and esters and salts/

[SRI Consulting. 2004 Directory of Chemical Producers. SRI International, Menlo Park, CA 2004., p. 766] **PEER REVIEWED**

AgriLiance LLC, 64089 St. Paul, MN 55164-0089, 712-234-2853 /Registrant/

[US EPA; USEPA/OPP Pesticide Related Database Queries. Chemical Ingredient Database on 2,4-D, 2-ethylhexyl ester. (1928-43-4). Available from, as of Dec 22, 2004: <http://ppis.ceris.purdue.edu/htbin/epachem.com> **PEER REVIEWED**

AgSCO, 13458, Grand Forks, ND 58208-3458, 701-775-532 /Registrant/

[US EPA; USEPA/OPP Pesticide Related Database Queries. Chemical Ingredient Database on 2,4-D, 2-ethylhexyl ester. (1928-43-4). Available from, as of Dec 22, 2004: <http://ppis.ceris.purdue.edu/htbin/epachem.com> **PEER REVIEWED**

Albaugh Inc., 2127, Valdosta, GA 31604-2127, 229-244-3288 /Registrant/

[US EPA; USEPA/OPP Pesticide Related Database Queries. Chemical Ingredient Database on 2,4-D, 2-ethylhexyl ester. (1928-43-4). Available from, as of Dec 22, 2004: <http://ppis.ceris.purdue.edu/htbin/epachem.com> **PEER REVIEWED**

AMREP Inc., 990 Industrial Dr., Marietta, GA 30062, 770-422-2071 /Registrant/

[US EPA; USEPA/OPP Pesticide Related Database Queries. Chemical Ingredient Database on 2,4-D, 2-ethylhexyl ester. (1928-43-4). Available from, as of Dec 22, 2004: <http://ppis.ceris.purdue.edu/htbin/epachem.com> **PEER REVIEWED**

AMVAC Chemical Corp., 4695 Macarthur Court, Suite 1250, Newport Beach, CA 92660-1706, 949-260-1212; Athea Laboratories Inc., 240014. Milwaukee, WI 53224, 800-743-6417 /Registrant/

[US EPA; USEPA/OPP Pesticide Related Database Queries. Chemical Ingredient Database on 2,4-D, 2-ethylhexyl ester. (1928-43-4). Available from, as of Dec 22, 2004: <http://ppis.ceris.purdue.edu/htbin/epachem.com> **PEER REVIEWED**

Atanor S.A., 2127 Valdosta, GA 31604-2127 229-244-3288 /Registrant/

[US EPA; USEPA/OPP Pesticide Related Database Queries. Chemical Ingredient Database on 2,4-D, 2-ethylhexyl ester. (1928-43-4). Available from, as of Dec 22, 2004: <http://ppis.ceris.purdue.edu/htbin/epachem.com> **PEER REVIEWED**

Bayer Cropscience LP, 2 T.W. Alexander Drive, Research Triangle Park, NC 27709, 919-549-2365 /Registrant/

[US EPA; USEPA/OPP Pesticide Related Database Queries. Chemical Ingredient Database on 2,4-D, 2-ethylhexyl ester. (1928-43-4). Available from, as of Dec 22, 2004: <http://ppis.ceris.purdue.edu/htbin/epachem.com> **PEER REVIEWED**

Helena Chemical Co., 225 Schilling Blvd., Suite 300, Collierville, TN 38017 901-752-4410 /Registrant/

[US EPA; USEPA/OPP Pesticide Related Database Queries. Chemical Ingredient Database on 2,4-D, 2-ethylhexyl ester. (1928-43-4). Available from, as of Dec 22, 2004: <http://ppis.ceris.purdue.edu/htbin/epachem.com> **PEER REVIEWED**

Hill Manufacturing Corp., 1500 Jonesboro Rd., SE Atlanta, GA 30315 /Registrant/

[US EPA; USEPA/OPP Pesticide Related Database Queries. Chemical Ingredient Database on 2,4-D, 2-ethylhexyl ester. (1928-43-4). Available from, as of Dec 22, 2004: <http://ppis.ceris.purdue.edu/htbin/epachem.com> **PEER REVIEWED**

Loveland Products Inc., 1286, Greeley, CO 80632, 970-347-1470 /Registrant/

[US EPA; USEPA/OPP Pesticide Related Database Queries. Chemical Ingredient Database on 2,4-D, 2-ethylhexyl ester. (1928-43-4). Available from, as of Dec 22, 2004: <http://ppis.ceris.purdue.edu/htbin/epachem.com> **PEER REVIEWED**

Lubar Chemical Co., 208 Iron North, Kansas City, MO 64116, 816-472-5515 /Registrant/

[US EPA; USEPA/OPP Pesticide Related Database Queries. Chemical Ingredient Database on 2,4-D, 2-ethylhexyl ester. (1928-43-4). Available from, as of Dec 22, 2004: <http://ppis.ceris.purdue.edu/htbin/epachem.com> **PEER REVIEWED**

Micro-Flo Co., LLC, 530 Oak Court Dr., Memphis TN 38117 901-432-5000 /Registrant/

[US EPA; USEPA/OPP Pesticide Related Database Queries. Chemical Ingredient Database on 2,4-D, 2-ethylhexyl ester. (1928-43-4). Available from, as of Dec 22, 2004: <http://ppis.ceris.purdue.edu/htbin/epachem.com> **PEER REVIEWED**

Nufarm Limited, 2300 Frederick Ave., Suite 208, St. Joseph, MO 64504, 816-676-9000 /Registrant/

[US EPA; USEPA/OPP Pesticide Related Database Queries. Chemical Ingredient Database on 2,4-D, 2-ethylhexyl ester. (1928-43-4). Available from, as of Dec 22, 2004: <http://ppis.ceris.purdue.edu/htbin/epachem.com> **PEER REVIEWED**

PBI/Gordon Corp., 014090, 1217 West 12th St., Kansas City, MO 64101-0090, 816-460-6292. /Registrant/

[US EPA; USEPA/OPP Pesticide Related Database Queries. Chemical Ingredient Database on 2,4-D, 2-ethylhexyl ester. (1928-43-4). Available from, as of Dec 22, 2004: <http://ppis.ceris.purdue.edu/htbin/epachem.com> **PEER REVIEWED**

Rockland Chemical Corp., 71 Carolyn Blvd., Farmingdale, NY 11735, 978-887-1424 /Registrant/

[US EPA; USEPA/OPP Pesticide Related Database Queries. Chemical Ingredient Database on 2,4-D, 2-ethylhexyl ester. (1928-43-4). Available from, as of Dec 22, 2004: <http://ppis.ceris.purdue.edu/htbin/epachem.com> **PEER REVIEWED**

Universal Cooperatives Inc., 1300 Corporate Center Curve, Eagan, MN 55121, 651-239-1128 /Registrant/

[US EPA; USEPA/OPP Pesticide Related Database Queries. Chemical Ingredient Database on 2,4-D, 2-ethylhexyl ester. (1928-43-4). Available from, as of Dec 22, 2004: <http://ppis.ceris.purdue.edu/htbin/epachem.com> **PEER REVIEWED**

Value Gardens Supply, 585, St. Joseph, MO 64502, 540-864-8100 /Registrant/

[US EPA; USEPA/OPP Pesticide Related Database Queries. Chemical Ingredient Database on 2,4-D, 2-ethylhexyl ester. (1928-43-4). Available from, as of Dec 22, 2004: <http://ppis.ceris.purdue.edu/htbin/epachem.com> **PEER REVIEWED**

Voluntary Purchasing Group Inc., 1806 Auburn Dr., Carrollton, TX 75007-1451, 972-939-8390 /Registrant/

[US EPA; USEPA/OPP Pesticide Related Database Queries. Chemical Ingredient Database on 2,4-D, 2-ethylhexyl ester. (1928-43-4). Available from, as of Dec 22, 2004: <http://ppis.ceris.purdue.edu/htbin/epachem.com> **PEER REVIEWED**

Formulations/Preparations:

Selected products: 'Esteron 6E'; 'Esteron 99C'; 'Lentemul'; ... 'Barrage'; 'Brush-Rhap'; 'Fivestar'; 'Low Vol 4 Ester'; 'Salvo'; 'Weed Rhap LV-4D'; 'Weedone LV4'; 'Weed-Rhap'. Mixtures: 'Adrenalin' (+ imazamox); 'B-4' (+bromoxynil heptanoate+ bromoxynil octanoate); 'Broadsword' (+dicamba+ triclopyr-butotyl) (dicamba as butotyl ester); 'Oasis' (+imazapic); 'Shotgun' (+atrazine); 'Tiller' (+fenoxaprop-P-ethyl+ MCPA-2-ethylhexyl); 'Weedone 638 Solventless' (+2,4-D).

[Tomlin CDS, ed. 2,4-D-2-ethylhexyl (1928-43-4). In: The e-Pesticide Manual, 13th Edition Version 3.0 (2003-04). Surrey UK, British Crop Protection Council.] **PEER REVIEWED**

Laboratory Methods:

Analytic Laboratory Methods:

Method: 8321A: Procedure: high performance liquid chromatography coupled with either thermospray-mass spectrometry and/or ultraviolet detection; Analyte: 2,4-D, ethylhexyl ester; Matrix: wastewater, ground water, and soil/sediment matrices; Detection Limit: 1.2 ng.

[[U.S. Environmental Protection Agency. Solid Waste Test Methods SW-846 with Update III. CD-ROM (ISO 9660, V381SW8). Solutions Software Corp (1998)]] **PEER REVIEWED**

Special References:**Synonyms and Identifiers:****Related HSDB Records:**

[202 \[2,4-D\] \(hydrolysis product\)](#)

Synonyms:

USEPA/OPP Pesticide Code: 030063

PEER REVIEWED

Isooctyl(2-ethylhexyl) 2,4-dichlorophenoxyacetate

PEER REVIEWED

2,4-D, 2-Ethylhexyl

PEER REVIEWED

2-Ethylhexyl (2,4-dichlorophenoxy)acetate

PEER REVIEWED

Acetic acid, (2,4-dichlorophenoxy)-, 2-ethylhexyl ester

PEER REVIEWED

(2,4-Dichlorophenoxy)acetic acid 2-ethylhexyl ester

PEER REVIEWED

Formulations/Preparations:

Selected products: 'Esteron 6E'; 'Esteron 99C'; 'Lentemul'; ...'Barrage'; 'Brush-Rhap'; 'Fivestar'; 'Low Vol 4 Ester'; 'Salvo'; 'Weed Rhap LV-4D'; 'Weedone LV4'; 'Weed-Rhap'. Mixtures: 'Adrenalin' (+ imazamox); 'B-4' (+bromoxynil heptanoate+ bromoxynil octanoate); 'Broadsword' (+dicamba+ triclopyr-butotyl) (dicamba as butotyl ester); 'Oasis' (+imazapic); 'Shotgun' (+atrazine); 'Tiller' (+fenoxaprop-P-ethyl+ MCPA-2-ethylhexyl); 'Weedone 638 Solventless' (+2,4-D).

[Tomlin CDS, ed. 2,4-D-2-ethylhexyl (1928-43-4). In: The e-Pesticide Manual, 13th Edition Version 3.0 (2003-04). Surrey UK, British Crop Protection Council.] **PEER REVIEWED**

Administrative Information:

Hazardous Substances Databank Number: 7309

Last Revision Date: 20051114

Last Review Date: Reviewed by SRP on 5/5/2005

Update History:

Field Update on 2012-04-07, 1 fields added/edited/deleted

Field Update on 2012-04-07, 1 fields added/edited/deleted

Field Update on 2012-04-07, 1 fields added/edited/deleted

Field Update on 2012-04-07, 1 fields added/edited/deleted

Complete Update on 2005-11-14, 36 fields added/edited/deleted

Created 20041213

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DEPARTMENT OF TOXIC SUBSTANCES CONTROL
ENVIROSTOR

MOUNTAIN VIEW MIDDLE SCHOOL EXPANSION (60000825)

[SIGN UP FOR EMAIL ALERTS](#)

13130 MORRISON AVENUE
 MORENO VALLEY, CA 92555
 RIVERSIDE COUNTY
SITE TYPE: SCHOOL

SUPERVISOR:

SHAHIR HADDAD

OFFICE:

SOUTHERN CALIFORNIA SCHOOLS & BROWNFIELDS OUTREACH

SCHOOL DISTRICT:

MORENO VALLEY UNIFIED SCHOOL DISTRICT

Site Information

CLEANUP STATUS

NO FURTHER ACTION AS OF 6/16/2008

SITE TYPE: SCHOOL

SCHOOL DISTRICT:

MORENO VALLEY UNIFIED SCHOOL DISTRICT

NATIONAL PRIORITIES LIST: NO

ENVIROSTOR ID:

60000825

ACRES: 0.42 ACRES

SITE CODE:

404779

APN: NONE SPECIFIED

SPECIAL PROGRAM:

CLEANUP OVERSIGHT AGENCIES:

FUNDING:

SCHOOL DISTRICT

DTSC - SITE CLEANUP PROGRAM - **LEAD**

ASSEMBLY DISTRICT:

61

SENATE DISTRICT:

31

Regulatory Profile

PAST USE(S) THAT CAUSED CONTAMINATION

AGRICULTURAL - ROW CROPS, SCHOOL - MIDDLE

POTENTIAL CONTAMINANTS OF CONCERN

ARSENIC

[ORGANOCHLORINE PESTICIDES \(8081 OCPS\)](#)

POTENTIAL MEDIA AFFECTED

SOIL

Site History

The Site comprises approximately 0.42-acres within the existing Mountain View Middle School property. The Site has been historically used for agricultural purposes from approximately 1938 to 1980. The school was constructed in 1980. Surrounding properties consist of Valley View High School to the east, and residential to the north, south, and west. To evaluate the impact from historical operations, the site was investigated for arsenic and organochlorine pesticides. DTSC concurred with the conclusion in the PEA that no further action is necessary for the Site.

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DEPARTMENT OF TOXIC SUBSTANCES CONTROL
ENVIROSTOR

PROPOSED HIGH SCHOOL (60000931)

[SIGN UP FOR EMAIL ALERTS](#)

IRONWOOD / QUINCY	SUPERVISOR:	SHAHIR HADDAD
MORENO VALLEY, CA 92555	OFFICE:	SOUTHERN CALIFORNIA SCHOOLS & BROWNFIELDS OUTREACH
RIVERSIDE COUNTY	SCHOOL DISTRICT:	MORENO VALLEY UNIFIED SCHOOL DISTRICT
SITE TYPE: SCHOOL		

Site Information

CLEANUP STATUS

NO FURTHER ACTION AS OF 10/23/2008

SITE TYPE: SCHOOL	SCHOOL DISTRICT:	MORENO VALLEY UNIFIED SCHOOL DISTRICT
NATIONAL PRIORITIES LIST: NO	ENVIROSTOR ID:	60000931
ACRES: 56 ACRES	SITE CODE:	404806
APN: NONE SPECIFIED	SPECIAL PROGRAM:	
CLEANUP OVERSIGHT AGENCIES:	FUNDING:	SCHOOL DISTRICT
DTSC - SITE CLEANUP PROGRAM - LEAD	ASSEMBLY DISTRICT:	61
	SENATE DISTRICT:	31

Regulatory Profile

PAST USE(S) THAT CAUSED CONTAMINATION

AGRICULTURAL - ROW CROPS

POTENTIAL CONTAMINANTS OF CONCERN

ARSENIC

[ORGANOCHLORINE PESTICIDES \(8081 OCPS\)](#)

POTENTIAL MEDIA AFFECTED

SOIL

Site History

The Site is approximately 55.6-acres and has historically been used for agricultural purposes since 1938. Surrounding properties consist of vacant land to the north, residential properties to the east, residential and agricultural properties to the west (across Quincy Wash), and residential and agricultural properties to the south (across Ironwood Avenue). To evaluate the impact from historical operations, the site was investigated for arsenic, copper and organochlorine pesticides. The PEA concludes that no further action is necessary for the Site. DTSC concurred with a No Further Action determination.

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**TOXICOLOGICAL PROFILE FOR
DDT, DDE, and DDD**

**U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Agency for Toxic Substances and Disease Registry**

September 2002

1. PUBLIC HEALTH STATEMENT

Large amounts of DDT were released into the air and on soil or water when it was sprayed on crops and forests to control insects. DDT was also sprayed in the environment to control mosquitos. Although the use of DDT is no longer permitted in the United States, DDT may be released into the atmosphere in other countries where it is still manufactured and used, including Mexico. DDT, DDE and DDD may also enter the air when they evaporate from contaminated water and soil. DDT, DDE, and DDD in the air will then be deposited on land or surface water. This cycle of evaporation and deposition may be repeated many times. As a result, DDT, DDE, and DDD can be carried long distances in the atmosphere. These chemicals have been found in bogs, snow, and animals in the Arctic and Antarctic regions, far from where they were ever used. Some DDT may have entered the soil from waste sites. DDT, DDE, and DDD may occur in the atmosphere as a vapor or be attached to solids in air. Vapor phase DDT, DDE, and DDD may break down in the atmosphere due to reactions caused by the sun. The half-life of these chemicals in the atmosphere as vapors (the time it takes for one-half of the chemical to turn into something else) has been calculated to be approximately 1.5–3 days. However, in reality, this half-life estimate is too short to account for the ability of DDT, DDE, and DDD to be carried long distances in the atmosphere.

DDT, DDE, and DDD last in the soil for a very long time, potentially for hundreds of years. Most DDT breaks down slowly into DDE and DDD, generally by the action of microorganisms. These chemicals may also evaporate into the air and be deposited in other places. They stick strongly to soil, and therefore generally remain in the surface layers of soil. Some soil particles with attached DDT, DDE, or DDD may get into rivers and lakes in runoff. Only a very small amount, if any, will seep into the ground and get into groundwater. The length of time that DDT will last in soil depends on many factors including temperature, type of soil, and whether the soil is wet. DDT lasts for a much shorter time in the tropics where the chemical evaporates faster and where microorganisms degrade it faster. DDT disappears faster when the soil is flooded or wet than when it is dry. DDT disappears faster when it initially enters the soil. Later on, evaporation slows down and some DDT moves into spaces in the soil that are so small that microorganisms cannot reach the DDT to break it down efficiently. In tropical areas, Σ DDT may disappear in much less than a year. In temperate areas, half of the Σ DDT initially present

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Technology Transfer Network

[Air Toxics Web Site](#) [EPA Home](#) [Air & Radiation](#) [TTN Web - Technology Transfer Network](#) [Air Toxics Web site](#) [DDE](#)

http://www.epa.gov/ttn/atw/hlthef/dde.html
Last updated on Tuesday, November 06, 2007

DDE

(A)

DDE (1,1-DICHLORO-2,2-BIS(p-CHLOROPHENYL) ETHYLENE)

72-55-9

Hazard Summary-Created in April 1992; Revised in January 2000

1,1-Dichloro-2,2-bis(p-chlorophenyl) ethylene (DDE) is a breakdown product of DDT, which was used in the past as an insecticide. No information is available on the acute (short-term) or chronic (long-term) effects of DDE. Acute, oral exposure to high doses of DDT in humans results in central nervous system (CNS) effects, such as headaches, nausea, and convulsions. The only effect noted in epidemiologic studies of workers exposed to DDT and other pesticides was an increase in activity of liver enzymes. Animal studies have reported effects on the liver, immune system, and CNS from chronic oral exposure to DDT. Human studies are inconclusive regarding DDE and cancer. Animal studies have reported an increased incidence of liver tumors in mice and hamsters, and thyroid tumors in female rats from oral exposure to DDE. EPA has classified DDE as a Group B2, probable human carcinogen.

Please Note: The main source of information for this fact sheet is the Agency for Toxic Substances and Disease Registry's (ATSDR's) [Toxicological Profile for 4,4-DDT, 4,4-DDE, and 4,4-DDD](#) and EPA's [Integrated Risk Information System](#) (IRIS), which contains information on the carcinogenic effects of DDE including the unit cancer risk for oral exposure.

Uses

- DDT was extensively used in the past for the control of malaria, typhus, and other insect-transmitted diseases. It was banned for use in the United States in 1972, except in the case of a public health emergency. (1)
- DDE is a breakdown product of DDT and has no uses. (1)

Sources and Potential Exposure

- DDE is found in the environment as a result of the breakdown of DDT, an insecticide. (1)
- Human exposure to DDE appears to be primarily through food; in the United States in 1981, consumption of DDE in foods was estimated to be 0.001 parts per million per day (ppm/d). However, the levels of DDE in foods have been decreasing and are expected to continue to decrease. (1)
- Levels of DDE in air and water samples are very low. (1)
- DDE has been listed as a pollutant of concern to EPA's [Great Waters Program](#) due to its persistence in the environment, potential to bioaccumulate, and toxicity to humans and the environment (2).

Assessing Personal Exposure

- DDE can be detected in fat, blood, urine, semen, and breast milk. (1)

Health Hazard Information

Acute Effects:

- No studies are available on the acute effects of DDE in humans. (1)
- Acute oral exposure to high doses of DDT in humans results in CNS effects, such as headaches, nausea, and convulsions. (1)
- Case reports in humans have noted that doses as high as 285 milligrams DDT per kilogram body weight per day (mg/kg/d) have been ingested accidentally with no fatal results. (1)
- Tests involving acute exposure of rats, guinea pigs, and rabbits have shown DDT to have moderate acute toxicity from oral exposure. (3)

Chronic Effects (Noncancer):

- The only effect noted in epidemiologic studies of workers exposed to DDT and other pesticides was an increase in activity of liver enzymes. No adverse effects on the blood, liver, heart, or CNS were noted. (1)
- Animal studies have reported effects on the liver, immune system, and CNS from chronic oral administration of DDT. (1,4,9)
- EPA has not established a Reference Concentration (RfC) or a Reference Dose (RfD) for DDE. (5)
- EPA has established an RfD of 0.0005 milligrams per kilogram body weight per day (mg/kg/d) for DDT based on liver effects in rats. The RfD is an estimate (with uncertainty spanning perhaps an order of magnitude) of a continuous ingestion exposure to the human population (including sensitive subgroups), that is likely to be without appreciable risk of deleterious noncancer effects during a lifetime. It is not a direct estimator of risk but rather a reference point to gauge the potential effects. At exposures increasingly greater than the RfD, the potential for adverse health effects increases. Lifetime exposure above the RfD does not imply that an adverse health effect would necessarily occur. (5)

Reproductive/Developmental Effects:

- No information is available on the reproductive or developmental effects of DDT or DDE in humans via inhalation exposure. (1)
- No studies are available on the developmental effects in humans after oral exposure to DDT or DDE. However, DDT and DDE have been found in human blood, placental tissue, and umbilical cord blood. (1)
- Epidemiologic studies did not find an association between DDT maternal blood levels and miscarriages or premature rupture of fetal membranes in humans. (1)
- Oral animal studies have reported reproductive effects, such as reduced fertility, adverse effects on spermatogenesis, and decreased testicular and ovarian weights from DDT exposure. Developmental effects, such as embryotoxicity and fetotoxicity, but not teratogenicity (birth defects) have also been observed in oral animal studies. (1)
- DDT has been shown to elicit estrogenic activity in rats after oral exposure (1).

Cancer Risk:

- Studies of workers exposed to DDT have yielded conflicting results. Three studies reported that tissue levels of DDT and DDE were higher in cancer victims than in those dying of other diseases. In other studies, no such relationship was seen. (5,9)
- Animal studies have reported an increased incidence of liver tumors in mice and hamsters and thyroid tumors in female rats from oral exposure to DDE. (5)
- EPA has classified DDE as a Group B2, probable human carcinogen. (5)
- EPA uses mathematical models, based on animal studies to estimate the probability of a person developing cancer from ingesting water containing a specified concentration of a chemical. EPA has calculated an oral cancer slope factor of $0.34 \text{ (mg/kg/d)}^{-1}$ and a unit risk estimate of $9.7 \times 10^{-6} \text{ (}\mu\text{g/L)}^{-1}$. EPA estimates that, if an individual were to continuously ingest water containing an average of DDE at $0.1 \text{ }\mu\text{g/L}$ over his or her entire lifetime, that person would theoretically have no more than a one-in-a-million increased chance of developing cancer as a direct result of ingesting water containing this chemical. Similarly, EPA estimates that ingesting water containing $1.0 \text{ }\mu\text{g/L}$ would result in not greater than a one-in-a-hundred-thousand increased chance of developing cancer, and water containing $10.0 \text{ }\mu\text{g/L}$ would result in not greater than a one-in-ten thousand increased chance of developing cancer. For a detailed discussion of confidence in the potency estimates, please see IRIS. (5)

Physical Properties

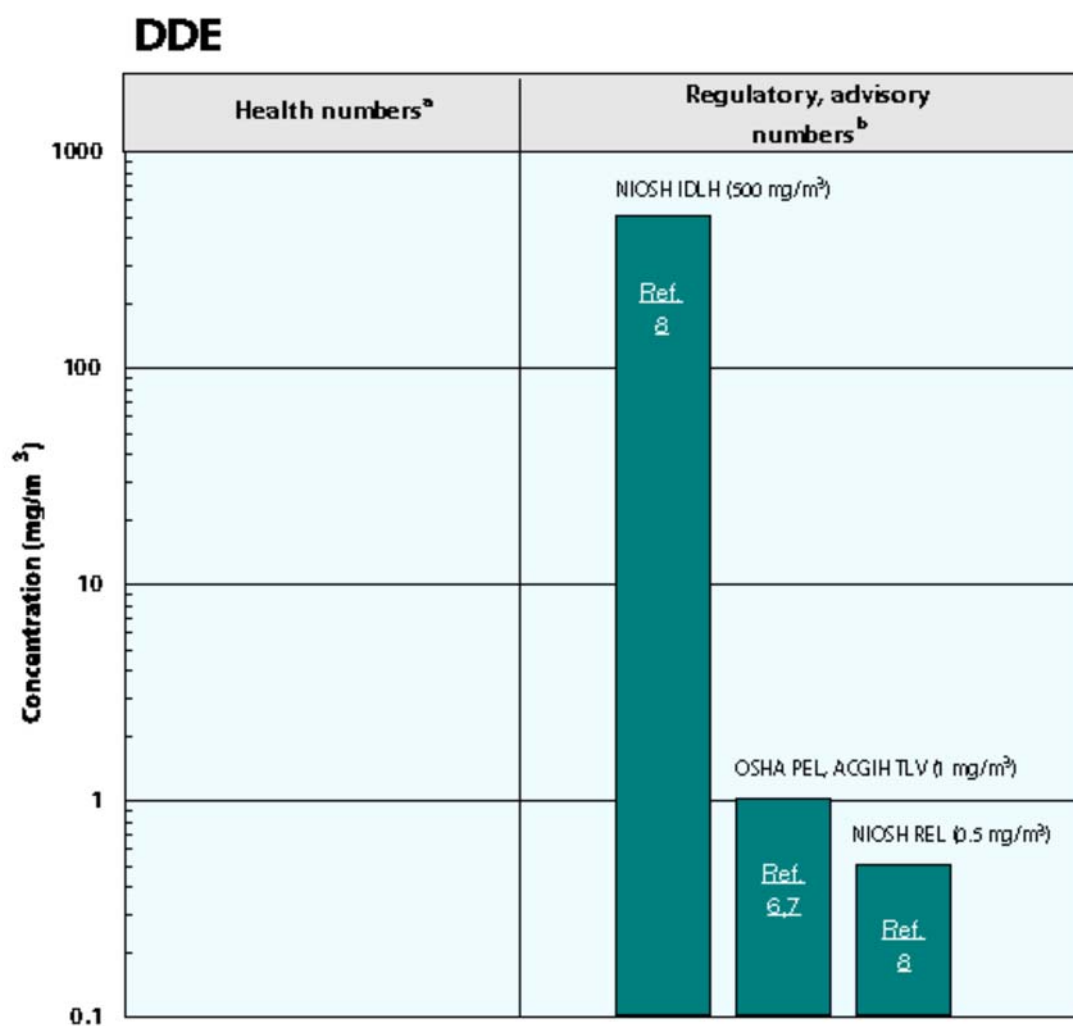
- DDE is also known as 1,1-dichloro-2,2-bis(p-chlorophenyl) ethylene and *p,p*-dichlorodiphenyldichloroethylene.

- DDE is a white crystalline solid. (1)
- The odor threshold for DDE is not available. (1)
- The chemical formula for DDE is $C_{14}H_8Cl_4$, and the molecular weight is 318.03 g/mol. (1)
- The vapor pressure for DDE is 6.5×10^{-6} torr at 20 °C, and it has a log octanol/water partition coefficient ($\log K_{ow}$) of 7.0. (1)

Conversion Factors:

To convert concentrations in air (at 25 °C) from ppm to mg/m^3 : $mg/m^3 = (ppm) \times (\text{molecular weight of the compound}) / (24.45)$. For DDE: 1 ppm = 13.0 mg/m^3 ; for DDT: 1 ppm = 14.5 mg/m^3 .

Health Data from Inhalation Exposure*



ACGIH TLV--American Conference of Governmental and Industrial Hygienists' threshold limit value expressed as a time-weighted average; the concentration of a substance to which most workers can be exposed without adverse effects.

NIOSH IDLH--National Institute of Occupational Safety and Health's immediately dangerous to life or health limit; NIOSH recommended exposure limit to ensure that a worker can escape from an exposure condition that is likely to cause death or immediate or delayed permanent adverse health effects or prevent escape from the environment.

NIOSH REL--NIOSH's recommended exposure limit; NIOSH-recommended exposure limit for an 8- or 10-h time-weighted-average exposure and/or ceiling.

OSHA PEL--Occupational Safety and Health Administration's permissible exposure limit expressed as a time-weighted average; the concentration of a substance to which most workers can be exposed without adverse effect averaged over a normal 8-h workday or a 40-h workweek.

* All health and regulatory numbers are for DDT.

The health and regulatory values cited in this fact sheet were obtained in December 1999.

^a Health numbers are toxicological numbers from animal testing or risk assessment values developed by EPA.

^b Regulatory numbers are values that have been incorporated in Government regulations, while advisory numbers are nonregulatory values provided by the Government or other groups as advice. OSHA numbers are regulatory, whereas NIOSH and ACGIH numbers are advisory.

References

1. Agency for Toxic Substances and Disease Registry (ATSDR). *Toxicological Profile for 4,4-DDT, 4,4-DDE, and 4,4-DDD*. Public Health Service, U.S. Department of Health and Human Services, Atlanta, GA. 1994.
2. U.S. Environmental Protection Agency. *Deposition of Air Pollutants to the Great Waters*. EPA-453/R-93-055. First Report to Congress. Office of Air Quality Planning and Standards, Research Triangle Park, NC. 1994.
3. U.S. Department of Health and Human Services. Registry of Toxic Effects of Chemical Substances (RTECS, online database). National Toxicology Information Program, National Library of Medicine, Bethesda, MD. 1993.
4. U.S. Department of Health and Human Services. Hazardous Substances Data Bank ([HSDB, online database](#)). National Toxicology Information Program, National Library of Medicine, Bethesda, MD. 1993.
5. U.S. Environmental Protection Agency. *Integrated Risk Information System (IRIS) on p,p-Dichlorodiphenyldichloroethylene*. National Center for Environmental Assessment, Office of Research and Development, Washington, DC. 1999.
6. Occupational Safety and Health Administration (OSHA). Occupational Safety and Health Standards, Toxic and Hazardous Substances. *Code of Federal Regulations*. 29 CFR 1910.1000. 1998.
7. American Conference of Governmental Industrial Hygienists (ACGIH). *1999 TLVs and BEIs. Threshold Limit Values for Chemical Substances and Physical Agents. Biological Exposure Indices*. Cincinnati, OH. 1999.
8. National Institute for Occupational Safety and Health (NIOSH). *Pocket Guide to Chemical Hazards*. U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention. Cincinnati, OH. 1997.
9. U.S. Environmental Protection Agency. *Integrated Risk Information System (IRIS) on p,p-Dichlorodiphenyltrichloroethane*. National Center for Environmental Assessment, Office of Research and Development, Washington, DC. 1999.

A. This fact sheet focuses on the health effects of DDE. However, since DDE is a breakdown product of DDT, in those cases where no information is available on DDE and there is information on DDT, the information on DDT is presented.

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Agency for Toxic Substances & Disease Registry

ToxFAQs™ for DDT, DDE, and DDD

([DDT, DDE y DDD \(/es/toxfaqs/es_tfacts35.html\)](/es/toxfaqs/es_tfacts35.html))

September 2002

CAS#: DDT 50-29-3; DDE 72-55-9; DDD 72-54-8

 (</tfacts35.pdf>) **PDF Version, 55 KB** (</tfacts35.pdf>)

This fact sheet answers the most frequently asked health questions about DDT, DDE, and DDD. For more information, you may call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. This information is important because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

Highlights

Exposure to DDT, DDE, and DDD occurs mostly from eating foods containing small amounts of these compounds, particularly meat, fish and poultry. High levels of DDT can affect the nervous system causing excitability, tremors and seizures. In women, DDE can cause a reduction in the duration of lactation and an increased chance of having a premature baby. DDT, DDE, and DDD have been found in at least 441 of the 1,613 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What are DDT, DDE, and DDD?

DDT (dichlorodiphenyltrichloroethane) is a pesticide once widely used to control insects in agriculture and insects that carry diseases such as malaria. DDT is a white, crystalline solid with no odor or taste. Its use in the U.S. was banned in 1972 because of damage to wildlife, but is still used in some countries.

DDE (dichlorodiphenyldichloroethylene) and DDD (dichlorodiphenyldichloroethane) are chemicals similar to DDT that contaminate commercial DDT preparations. DDE has no commercial use. DDD was also used to kill pests, but its use has also been banned. One form of DDD has been used medically to treat cancer of the adrenal gland.

What happens to DDT, DDE, and DDD when they enter the environment?

- DDT entered the environment when it was used as a pesticide; it still enters the environment due to current use in other countries.
- DDE enters the environment as contaminant or breakdown product of DDT; DDD also enters the environment as a breakdown product of DDT.
- DDT, DDE, and DDD in air are rapidly broken down by sunlight. Half of what's in air breaks down within 2 days.
- They stick strongly to soil; most DDT in soil is broken down slowly to DDE and DDD by microorganisms; half the DDT in soil will break down in 2-15 years, depending on the type of soil.
- Only a small amount will go through the soil into groundwater; they do not dissolve easily in

water.

- DDT, and especially DDE, build up in plants and in fatty tissues of fish, birds, and other animals.
-

How might I be exposed to DDT, DDE, and DDD?

- Eating contaminated foods, such as root and leafy vegetable, fatty meat, fish, and poultry, but levels are very low.
 - Eating contaminated imported foods from countries that still allow the use of DDT to control pests.
 - Breathing contaminated air or drinking contaminated water near waste sites and landfills that may contain higher levels of these chemicals.
 - Infants fed on breast milk from mothers who have been exposed.
 - Breathing or swallowing soil particles near waste sites or landfills that contain these chemicals.
-

How can DDT, DDE, and DDD affect my health?

DDT affects the nervous system. People who accidentally swallowed large amounts of DDT became excitable and had tremors and seizures. These effects went away after the exposure stopped. No effects were seen in people who took small daily doses of DDT by capsule for 18 months.

A study in humans showed that women who had high amounts of a form of DDE in their breast milk were unable to breast feed their babies for as long as women who had little DDE in the breast milk. Another study in humans showed that women who had high amounts of DDE in breast milk had an increased chance of having premature babies.

In animals, short-term exposure to large amounts of DDT in food affected the nervous system, while long-term exposure to smaller amounts affected the liver. Also in animals, short-term oral exposure to small amounts of DDT or its breakdown products may also have harmful effects on reproduction.

How likely are DDT, DDE, and DDD to cause cancer?

Studies in DDT-exposed workers did not show increases in cancer. Studies in animals given DDT with the food have shown that DDT can cause liver cancer.

The Department of Health and Human Services (DHHS) determined that DDT may reasonable be anticipated to be a human carcinogen. The International Agency for Research on Cancer (IARC) determined that DDT may possibly cause cancer in humans. The EPA determined that DDT, DDE, and DDD are probable human carcinogens.

How can DDT, DDE, and DDD affect children?

There are no studies on the health effects of children exposed to DDT, DDE, or DDD. We can assume that children exposed to large amounts of DDT will have health effects similar to the effects seen in adults. However, we do not know whether children differ from adults in their susceptibility to these substances.

There is no evidence that DDT, DDE, or DDD cause birth defects in people. A study showed that teenage boys whose mothers had higher DDE amounts in the blood when they were pregnant were taller than those whose mothers had lower DDE levels. However, a different study found the opposite in preteen girls. The reason for the discrepancy between these studies is unknown.

Studies in rats have shown that DDT and DDE can mimic the action of natural hormones and in this way affect the development of the reproductive and nervous systems. Puberty was delayed in male

rats given high amounts of DDE as juveniles. This could possibly happen in humans. A study in mice showed that exposure to DDT during the first weeks of life may cause neurobehavioral problems later in life.

How can families reduce the risk of exposure to DDT, DDE, and DDD?

- Most families will be exposed to DDT by eating food or drinking liquids contaminated with small amounts of DDT.
 - Cooking will reduce the amount of DDT in fish.
 - Washing fruit and vegetables will remove most DDT from their surface.
 - Follow health advisories that tell you about consumption of fish and wildlife caught in contaminated areas.
-

Is there a medical test to show whether I've been exposed to DDT, DDE, and DDD?

Laboratory tests can detect DDT, DDE, and DDD in fat, blood, urine, semen, and breast milk. These tests may show low, moderate, or excessive exposure to these compounds, but cannot tell the exact amount you were exposed to, or whether you will experience adverse effects. These tests are not routinely available at the doctor's office because they require special equipment.

Has the federal government made recommendations to protect human health?

The Occupational Safety and Health Administration (OSHA) sets a limit of 1 milligram of DDT per cubic meter of air (1 mg/m³) in the workplace for an 8-hour shift, 40-hour workweek.

The Food and Drug Administration (FDA) has set limits for DDT, DDE, and DDD in foodstuff at or above which the agency will take legal action to remove the products from the market.

References

Agency for Toxic Substances and Disease Registry (ATSDR). 2002. Toxicological Profile for DDT, DDE, and DDD (/ToxProfiles/TP.asp?id=81&tid=20). *Update*. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

Where can I get more information?

If you have questions or concerns, please contact your community or state health or environmental quality department or:

For more information, contact:

Agency for Toxic Substances and Disease Registry
Division of Toxicology and Environmental Medicine
1600 Clifton Road NE, Mailstop F-62
Atlanta, GA 30333
Phone: 1-800-CDC-INFO · 888-232-6348 (TTY)
Fax: 1-770-488-4178
Email: cdcinfo@cdc.gov (<mailto:cdcinfo@cdc.gov>)

ATSDR can also tell you the location of occupational and environmental health clinics. These clinics specialize in recognizing, evaluating, and treating illnesses resulting from exposure to hazardous

substances.

Information line and technical assistance:

Phone: 888-422-8737

FAX: (770)-488-4178

To order toxicological profiles, contact:

National Technical Information Service

5285 Port Royal Road

Springfield, VA 22161

Phone: 800-553-6847 or 703-605-6000

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Agency for Toxic Substances and Disease Registry, 4770 Buford Hwy NE, Atlanta, GA
30341

Contact CDC: 800-232-4636 / TTY: 888-232-6348



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Water: Private Wells

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Human Health

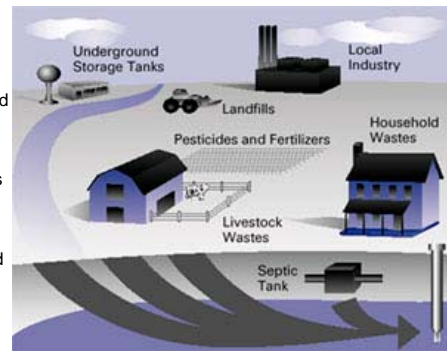
The first step to protect your health and the health of your family is learning about what may pollute your source of drinking water. Potential contamination may occur naturally, or as a result of human activity.

What are Some Naturally Occurring Sources of Pollution?

- **Microorganisms:** Bacteria, viruses, parasites and other microorganisms are sometimes found in water. Shallow wells — those with water close to ground level — are at most risk. Runoff, or water flowing over the land surface, may pick up these pollutants from wildlife and soils. This is often the case after flooding. Some of these organisms can cause a variety of illnesses. Symptoms include nausea and diarrhea. These can occur shortly after drinking contaminated water. The effects could be short-term yet severe (similar to food poisoning) or might recur frequently or develop slowly over a long time.
- **Radionuclides:** Radionuclides are radioactive elements such as uranium and radium. They may be present in underlying rock and ground water
- **Radon:** Radon is a gas that is a natural product of the breakdown of uranium in the soil — can also pose a threat. Radon is most dangerous when inhaled and contributes to lung cancer. Although soil is the primary source, using household water containing Radon contributes to elevated indoor Radon levels. Radon is less dangerous when consumed in water, but remains a risk to health.
- **Nitrates and Nitrites:** Although high nitrate levels are usually due to human activities (see below), they may be found naturally in ground water. They come from the breakdown of nitrogen compounds in the soil. Flowing ground water picks them up from the soil. Drinking large amounts of nitrates and nitrites is particularly threatening to infants (for example, when mixed in formula).
- **Heavy Metals:** Underground rocks and soils may contain arsenic, cadmium, chromium, lead, and selenium. However, these contaminants are not often found in household wells at dangerous levels from natural sources.
- **Fluoride:** Fluoride is helpful in dental health, so many water systems add small amounts to drinking water. However, excessive consumption of naturally occurring fluoride can damage bone tissue. High levels of fluoride occur naturally in some areas. It may discolor teeth, but this is not a health risk.

What Human Activities Can Pollute Ground Water?

- **Bacteria and Nitrates:** These pollutants are found in human and animal wastes. Septic tanks can cause bacterial and nitrate pollution. So can large numbers of farm animals. Both septic systems and animal manures must be carefully managed to prevent pollution. Sanitary landfills and garbage dumps are also sources. Children and some adults are at extra risk when exposed to water-borne bacteria. These include the elderly and people whose immune systems are weak due to AIDS or treatments for cancer. Fertilizers can add to nitrate problems. Nitrates cause a health threat in very young infants called “blue baby” syndrome. This condition disrupts oxygen flow in the blood.
- **Concentrated Animal Feeding Operations (CAFOs):** The number of CAFOs, often called “factory farms,” is growing. On these farms thousands of animals are raised in a small space. The large amounts of animal wastes/manures from these farms can threaten water supplies. Strict and careful manure management is needed to prevent pathogen and nutrient problems. Salts from high levels of manures can also pollute ground water.
- **Heavy Metals:** Activities such as mining and construction can release large amounts of heavy metals into nearby ground water sources. Some older fruit orchards may contain high levels of arsenic, once used as a pesticide. At high levels, these metals pose a health risk.
- **Fertilizers and Pesticides:** Farmers use fertilizers and pesticides to promote growth and reduce insect damage. These products are also used on golf courses and suburban lawns and gardens. The chemicals in these products may end up in ground water. Such pollution depends on the types and amounts of chemicals used and how they are applied. Local environmental conditions (soil types, seasonal snow and rainfall) also affect this pollution. Many fertilizers contain forms of nitrogen that can break down into harmful nitrates. This could add to other sources of nitrates mentioned above. Some underground agricultural drainage systems collect fertilizers and pesticides. This polluted water can pose problems to ground water and local streams and rivers. In addition, chemicals used to treat buildings and homes for termites or other pests may also pose a threat. Again, the possibility of problems depends on the amount and kind of chemicals. The types of soil and the amount of water moving through the soil also play a role.
- **Industrial Products and Wastes:** Many harmful chemicals are used widely in local business and industry. These can become drinking water pollutants if not well managed. The most common sources of such problems are:
 - **Local Businesses:** These include nearby factories, industrial plants, and even small businesses such as gas stations and dry cleaners. All handle a variety of hazardous chemicals that need careful management. Spills and improper disposal of these chemicals or of industrial wastes can threaten ground water supplies.
 - **Leaking Underground Tanks & Piping:** Petroleum products, chemicals, and wastes stored in underground storage tanks and pipes may end up in the ground water. Tanks and piping leak if they are constructed or installed improperly. Steel tanks and piping corrode with age. Tanks are often found on farms. The possibility of leaking tanks is great on old, abandoned farm sites. Farm tanks are exempt from the EPA rules for petroleum and chemical tanks.
 - **Landfills and Waste Dumps:** Modern landfills are designed to contain any leaking liquids. But floods can carry them over the barriers. Older dumpsites may have a wide variety of pollutants that can seep into ground water.
- **Household Wastes:** Improper disposal of many common products can pollute ground water. These include cleaning solvents, used motor oil, paints, and paint thinners. Even soaps and detergents can harm drinking water. These are often a problem from faulty septic tanks and septic leaching fields.
- **Lead & Copper:** Household plumbing materials are the most common source of lead and copper in home drinking water. Corrosive water may cause metals in pipes or soldered joints to leach into your tap water. Your water’s acidity or alkalinity (often measured as pH) greatly affects corrosion. Temperature and mineral content also affect how corrosive it is. They are often used in pipes, solder, or plumbing fixtures. Lead can cause serious damage to the brain, kidneys, nervous system, and red blood cells. The age of plumbing materials — in particular, copper pipes soldered with lead — is also important. Even in relatively low amounts these metals can be harmful. EPA rules under the Safe Drinking Water Act limit lead in drinking water to 15 parts per billion. Since 1988 the Act only allows “lead free” pipe, solder, and flux



Septic tanks are designed to have a “leach field” around them — an area where wastewater flows out of the tank. This wastewater can also move into the ground water.

in drinking water systems. The law covers both new installations and repairs of plumbing.

○ For more information on avoiding lead in drinking water, visit the EPA's [Lead in Drinking Water web site](#).

- **Water Treatment Chemicals:** Improper handling or storage of water-well treatment chemicals (disinfectants, corrosion inhibitors, etc.) close to your well can cause problems.
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The Apple Bites Back: Claiming Old Orchards for Residential Development

[Ernie Hood](#)

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As the U.S. population continues to grow, increasing demand for housing and related community resources means more land is being converted from agricultural uses to residential applications. According to the revised 1997 National Resources Inventory conducted by the USDA Natural Resources Conservation Service, more than 6 million acres of American farmland were converted to developed uses between 1992 and 1997. That is an annual conversion rate of roughly 1.2 million acres per year—a 51% increase over the average annual rate reported for the preceding decade.

Naturally, many of these areas were routinely treated with pesticides and other chemicals during their agricultural lifetimes. Although this legacy has been problematic in a wide variety of land conversion scenarios, one in particular seems to have attracted the attention and concern of environmental officials and property buyers in several states across the country: the residential development of historic orchard properties. In state after state, these old orchards (which most often produced apples, but also peaches, cherries, pears, and other tree crops) are metamorphosing into highly desirable subdivisions—desirable, that is, until it emerges that the soil beneath the feet of the proud new residents may be contaminated with lead and arsenic. These toxic by-products are left from the days before DDT and before organophosphates, when arsenical pesticides, particularly lead arsenate (LA), were the treatment of choice to prevent the ravages of insect damage.

They Loved LA

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LA was introduced in 1892 in Massachusetts for use against the gypsy moth. Two other arsenical pesticides (copper acetoarsenite, known as “Paris green,” and calcium arsenate) also were in use, although LA largely replaced them in the 1930s due to lower cost, greater efficacy, and lower phytotoxicity. Even though arsenic residue was recognized as a problem as early as 1919, LA was the most widely used pesticide in the nation—recommended by the USDA and applied to millions of acres of crops—until the late 1940s, when DDT (considered at the time to be safer and more effective) became available. LA continued to be used in some locations into the 1970s, and was ultimately banned in 1988.

LA was perhaps most commonly applied in apple orchards, due to its excellent control of the codling moth, a major apple pest. Today, apple orchard properties that were in production during the heyday of LA use are the focal point of environmental concerns; given the nature of the pests peculiar to orchard crops, growers tended to apply the chemicals frequently and in high concentrations, often over many years. “In some cases, they dusted the apple trees or peach trees every week, whereas most field crops may have had one or two applications during the growing season,” says Kevin Schick, a bureau chief with the Site Remediation and Waste Management Program in the New Jersey Department of Environmental Protection.

LA and the other arsenical pesticides were designed to be persistent, and it is that persistence that is causing environmental contamination problems decades after their use ended. “These chemicals have just tremendously long half-lives in the ground,” says North Carolina state toxicologist Ken Rudo. “They bind very tightly to the soil.”

Once LA reached the soil through over-spray, spillage, rainfall wash-off, or simply fallen fruit and leaves, the lead arsenate underwent hydrolysis, separating into lead and arsenic bound to organic particles in the soil. The lead, being poorly soluble, was immobilized, typically within the top 12 to 18 inches of topsoil. The fate of the arsenic was similar, but a bit more complicated. “Arsenic, as arsenate, even though somewhat sparingly soluble, *is* soluble, and it will move in water,” says Washington State University soil scientist Frank Peryea. “I’ve seen some sites where almost all of the arsenic is still in the topsoil, in the tillage zone, and I’ve seen sites where I’ve measured arsenic movement as deep as a meter or so.”

Carl Renshaw, a hydrogeologist at Dartmouth College, published a study in the January/February 2006 issue of the *Journal of Environmental Quality* showing that arsenate in the soil can be remobilized by being disturbed. He compared two fields in the same historic New Hampshire orchard. One field had never been disturbed, whereas the other had been tilled and replanted in the early 1990s. “What we found was that in the field that had been replanted, there was somewhat less arsenic on it than in the undisturbed field,” he says.

Given the assumption of virtually identical application rates over the years, the discrepancy apparently arose from a portion of the arsenic in the disturbed field having been mobilized and removed by surface water. Renshaw found arsenic in the sediment of a nearby stream in amounts that very closely matched the arsenic missing from the tilled field.

“The implication from our study,” says Renshaw, “is that if you’re not really careful about erosion, you’re going to end up sending a lot of arsenic down into the stream channel.” To date, researchers have seen no evidence of direct health effects in humans, animals, or plants exposed to this stream-bound arsenic. However, more study is needed to fully understand the ramifications—if any—of the mobilization.

How Dangerous?

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The potential danger posed to human health by lead and arsenic contamination in historic orchards is a complex issue, fraught with scientific uncertainties and competing interests. Arsenic is a known human carcinogen. Exposure to lead, especially prenatally and in childhood, can lead to neurological damage. There is no doubt that excessive exposure to either substance can adversely impact health, but in this case any risks are almost exclusively long-term—virtually no instances of acute adverse health effects have been documented in people living on historic orchard properties.

Regulatory agencies such as the EPA and state health and environmental departments determine allowable levels of chemicals in soils and water based upon formulas that take into account criteria such as toxicity, exposure, and naturally occurring background concentrations of the chemicals. For carcinogens such as arsenic, the calculations are based upon the amount of a chemical that is predicted to result in 1 additional cancer case occurring in 1 million people exposed over their lifetimes. But there is some flexibility in the standards based on local conditions and

practical considerations. In New Jersey, for example, where background arsenic concentrations are often high, the criterion for residential soil cleanup is set at 20 ppm—50 times the EPA's level of 0.4 ppm.

In historic orchard properties, cleanup action is often triggered when a so-called "hot spot" is discovered—typically an area where the pesticides had been mixed and loaded or stored, and where repeated spills or disposal of excess materials may have occurred. The contaminant concentrations in those hot spots can be significantly higher than in the tree crop areas. But locating hot spots after many decades can be very difficult.

The ATSDR is often called in to analyze the health risks at contaminated historic orchard properties. "We look at the contaminants, the concentrations, the pathway, how long [residents] are exposed to it—all of the different aspects of an exposure," says Robert Safay, an environmental health scientist with the agency. "For example, when you're looking at lead contamination in the soil, you're primarily concerned about young children playing out in the soil."

In all but the most extreme cases, the health risks of living atop contaminated historic orchard soil are ultimately characterized as very low and manageable. Exposure is the critical element. "The real issue here is direct contact—you want to limit the direct contact," says Lori Bowman, director of the Agrichemical Management Bureau in the Wisconsin Department of Agriculture, Trade, and Consumer Protection. As Safay explains, there must be a completed exposure pathway for there to be even the potential for health effects. Ultimately, the amount of risk depends on the level of contamination and the use of the land.

For the most part, residents are advised to limit their direct exposure to the soil if it's unremediated and to take simple measures such as wearing gardening gloves and wiping their feet before entering the house. Peryea says there is little risk from eating plants grown in this type of soil, but advises that home gardeners rinse off produce before bringing it into the home, then wash it again with a detergent and scrub brush to remove any remaining soil particles, paying particular attention to rough vegetables like broccoli and leafy vegetables like lettuce, which can trap and retain dust. He also advises paring root and tuber crops such as potatoes, carrots, and radishes, and not composting the peelings or other unused plant parts.

The risks involved may be modest and long-term in most cases, but low risk is not the same as no risk, and regulatory agencies across the country are finding themselves in a thorny situation as more and more contaminated historic orchard properties are developed. They are caught between their duty to protect public health and the environment, and the fact that the risks presented by most of these properties pale in comparison to those associated with other, more acute contamination sites, such as lands near smelters or toxic waste dumps. Naturally, budgets are limited, and priorities must be set. Yet the orchard situation cannot be ignored, and several states have been wrestling with how to deal with this issue for several years.

The sheer scope of the phenomenon adds another layer to the challenge of how to most effectively deal with it. "The magnitude of the problem is just staggering," says Peryea. Millions of acres across the nation are involved. In the state of Washington alone, Peryea says, some 188,000 acres are affected. In Wisconsin, 50,000 acres may be affected, and in New Jersey, up to 5% of the state's acreage is estimated to be impacted by the historical use of arsenical pesticides. Both New Jersey and Washington have had multistakeholder task forces examine the problem and issue recommendations and guidelines.

Wisconsin is likely to convene a similar task force later in 2006, according to Bowman. "We want to develop a protective, economical, and practical strategy to address potential residues of lead and arsenic in soils related to historic orchard use," she says. "The charge of the task force would be to evaluate the health and environmental impacts, and [also evaluate] what kind of alternatives and strategies we could put into place to limit exposure and to educate and provide outreach to homeowners and developers as to what types of precautions can be taken at these orchard sites to mitigate any risk."

What Can, Should, or Must Be Done

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Because contamination can be spread over large areas, remediation measures vary widely, depending upon the level of contamination, the current or intended use of the property, and state or local regulations. Each method has its advantages and its drawbacks, and each site has its own unique circumstances that will often dictate how, when, and even if the situation will be dealt with.

Excavation is the quickest and most thorough remediation method. This involves scraping up the contaminated topsoil, hauling it away to an approved landfill, and replacing it with clean dirt. Realistically, says Peryea, removal is the only way to eliminate risk, "but it's very expensive." Such total remediation can cost \$1 million per acre or more. And it's a huge undertaking. Peryea does the math for 1 acre: "If you have contamination down to three feet, you're looking at getting rid of three acre-feet of soil—that's twelve million pounds of soil."

Capping, which involves simply putting a 12- to 18-inch layer of clean soil over the contaminated soil, has been used in some locations. However, this requires enormous amounts of clean dirt. Further, capping cannot be considered a permanent solution—plants will grow on the soil caps, their roots will penetrate the contaminated soil, and the vegetation will eventually redistribute the lead and arsenic to the clean soil. Also, it is common for the soil caps to be disturbed by construction activities.

Soil blending is another alternative, and one that is growing in popularity, particularly when contaminant concentrations are only minimally in excess of actionable levels. This involves bringing clean soil to a site and mixing it with the existing topsoil, with the intent of reducing concentrations below levels that require health-protective actions. Although relatively effective, blending can be a hit-or-miss operation. The main reason is that operators can't always achieve 100% blending, and it very much matters where the subsequent samples are taken—even a few inches can make a difference. Sometimes it is necessary to repeat the procedure, which, of course, drives up costs. Also, disturbing the soil in this way could actually mobilize the arsenic, as Renshaw's research showed. Regardless of its shortcomings, however, blending is an option many states have chosen in recent years.

In some instances, a simple solution can be adequate. "What seems to do a good job of reducing exposure in areas where people aren't digging in the soil is just to keep turf on it, or keep it vegetated somehow," says Peryea. At some sites, simply moving the contaminated soil to another location on the site and capping it—for example, by burying it under a roadway—has been acceptable, although this option requires that a deed notice be executed, so that all of the records of the sampling and disposal of the contamination become part of the property's permanent title record.

Thus far, other remediation methods have proven to be ineffective, impractical, or counterproductive on these sites. Researchers such as David Butcher, a professor of analytical chemistry at Western Carolina University in Cullowhee, North Carolina, have explored the possibility of phytoremediation of these properties, in which plants are used to suck the contaminants out of the soil, after which the contaminated biomass is destroyed. But this method, though effective in certain remediation situations, doesn't appear to hold much promise in lead- and arsenic-contaminated orchard soils. Phytoremediation is quite slow, potentially taking decades or longer to effectively remove contaminants.

Butcher also was unable to discover a method of removing the lead from the soil without the addition of other chemicals (such as EDTA) to release the tightly bound element.

One way to release the lead is by adding phosphorus to the soil, but this also mobilizes the arsenic. "That creates an even bigger problem," Peryea says. "If you get the arsenic moving, and it moves down into the ground-water, cleanup becomes much more difficult than trying to keep it in the topsoil."

According to Peryea, you can scratch microbial volatilization as well. In that method, native soil microorganisms are stimulated to volatilize arsenic. The gaseous arsenic can then be trapped. But for this method to be effective, soils must be kept quite wet. Many of the historic orchard properties are well-drained, sloping sites, where it would be difficult to keep the soil adequately flooded. Plus, of course, as Peryea points out, "if you are evolving arsenic off your soil, and it flows down and contaminates your neighbor's property, that's going to create some problems."

Cleanup and real estate disclosure issues are usually handled at the state and local levels, where approaches vary considerably. As public awareness of the potential contamination of historic orchards increases in the affected areas, state agencies are fielding more and more calls from concerned property owners or prospective buyers. Chuck Warzecha, a risk assessor with the Wisconsin Department of Health and Family Services, fields 10 to 15 such calls a year. He tries to give concerned citizens a balanced message. "My first statement is that it's not a real scary issue and doesn't have to be a big problem on their property," he says. "It's something that now that they know about it, it's worth doing something about, but they shouldn't be concerned that past exposure is going to be a real serious issue for their families."

If callers haven't had their soil tested yet, Warzecha recommends that they do so. Then he advises them on how to manage the problem if there is one. If contamination hot spots are identified, cleanup may be required under Wisconsin's Agricultural Chemical Cleanup Program. In such cases the property owner would pay a 25% deductible, with the rest of the costs covered by the state, according to Bowman.

In Washington, the Model Toxics Control Act requires the reporting, study, and cleanup of sites where hazardous substances are above state-set cleanup levels. In residential developments, the state is working to increase awareness of the potential for contamination on historic orchard lands, particularly among developers. The goal is to get developers to incorporate that consideration at the outset of projects, when there are opportunities to deal with problems more easily than could be done once housing is in place. As in other states, several departments are involved in providing consultation, health assessment, and technical assistance on a case-by-case basis.

Washington has also chosen to be proactive in its cleanup efforts at sites where children are especially likely to be affected. "We have elected to focus on schools, child care facilities, and parks where groups of young children might be present, trying to take steps to reduce exposures for kids," says Dave Bradley, a toxicologist and risk assessor with the Toxics Cleanup Program in the Washington State Department of Ecology. "We've focused on a handful of counties, and have further focused on schools, trying to integrate with existing community processes such as school construction, and then trying to prioritize how we use either our authority or funds out of the state Superfund to actually perform some of the cleanup actions."

In New Jersey, the recommendations and guidelines put forth in the 1999 report of the Historic Pesticide Contamination Task Force set the agenda. Schick, whose department handles historic orchard contamination cases, says there's no excuse for ignorance on the part of New Jersey developers at this point, and it should be a standard element of their due diligence.

"It's common knowledge, the guidance is out there, it already involved the real estate agents, the bankers, the insurers, the farm bureau," Schick says. "It's been out there long enough that anyone making any kind of investment in developing farmland should have known about it, and they will be held at fault for not coming to the department or cleaning prior to development."

Paradise Lost, Paradise Regained?

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Today, Barber Orchard, a 500-acre subdivision located a few miles west of Waynesville, North Carolina, is "not a place where it looks like there are any problems," says Butcher. "It's not a place like where there's been a lot of mining and it looks like a moonscape. It looks beautiful up there." It may look beautiful, but that doesn't change the fact that Barber Orchard has had a troubled history.

Barber Orchard was a commercial apple orchard from 1903 until the mid-1980s, when the operation went bankrupt and the land was parceled off for development. In 1999, a pregnant resident heard rumors of birth defects from neighbors and friends in the area. She contacted Rudo, who, with the county health department, initiated an extensive investigation that included soil and water sampling and a series of public meetings with residents. In late 1999 through mid-2000, the federal EPA conducted a \$4 million emergency removal of a foot of topsoil from 28 residents' yards.

Reflecting the tremendous variation in contamination typical of historic orchard sites, the EPA found only trace amounts of lead and arsenic in some sampling locations, but several others were well in excess of the agency's cleanup goals of 40 ppm arsenic and 400 ppm lead. Samples came in as high as 400 ppm arsenic and 1,200 ppm lead. The highest levels were detected at spots where trees were still located, or had been cultivated in the past, reflecting the cumulative impact of long years of pesticide applications.

In 2001, the site was placed on the National Priorities List under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), an unusual step for a historic orchard. "CERCLA authority is hobbled when it comes to normal use of pesticides," says James Bateson, branch head of the Superfund Site Evaluation and Removal Branch of the North Carolina Department of Environment and Natural Resources. "In cases where [a pesticide has] been spilled or dumped in large quantities or misused, that's when CERCLA can have some authority. At Barber Orchard, the case was made that there was enough spillage associated with the way they handled things up there that it wasn't normal application of pesticide."

"The way they handled things" was by distributing the pesticides through a unique underground high-pressure piping system, with aboveground nozzles at the tree sites where sprayers were hooked up. The system left pesticide hot spots at several locations throughout the orchard property. "If there was spillage at a particular location above-ground where that particular distribution pipe was located, or if there was a fracture in the pipe, or a joint in the pipe that got a crack or leak in it, then we may have contamination locally at that one particular site, or along the connections along the way," explains Haywood County Health Department director Carmine Rocco. According to Bateson, the EPA has in fact found several places where pesticides had leaked into the soil because of poor maintenance of the piping system.

In 2004 the EPA issued a record of decision (a document specifying how the agency planned to clean up the site) for the orchard's soil, calling for much more removal of contaminated dirt, mainly from vacant lots on the property. "What we're doing right now is waiting

for funding to implement the cleanup for soil," says Jon Bornholm, the EPA's project manager for the Barber Orchard site. That phase of the cleanup, which should take less than a year, is projected to cost \$20 million, and there's no telling when the funds will be released by the EPA for it to take place.

The EPA is expected to render a record of decision for dealing with groundwater contamination on the site before the end of 2006. Bornholm expects that the agency will opt for "monitored natural attenuation"—in other words, let Mother Nature take care of the problem, and hope that contaminant concentrations will decrease over time through natural processes such as biodegradation and dispersion. He guesses that could take 30 to 50 years, with the EPA monitoring the situation continually. Residents have been advised to filter their well water since the problem was uncovered, and city water is now available to the site, although not all of the current homeowners have elected to hook up to the service.

Since the problem arose, the ATSDR has also been involved at Barber Orchard, evaluating the health situation. In April 2002, the agency released its official public health assessment for the site, which concluded that "current exposures to site contaminants are not likely to result in adverse health effects. . . . The exposure pathways for lead and arsenic were disrupted within a relatively short time frame, so past exposures are not likely to lead to health effects at this time."

Meanwhile, Barber Orchard's tax values have increased, and buying and selling of homes in the subdivision has not been hurt by the site's Superfund status. "The heat of the moment has passed, and I think we've gotten over the panic mode," says Ellis Morris, president of the Haywood County Board of Realtors. "Initially, people were tentative about buying in to that particular neighborhood, but that's been resolved, there's a comfort level now, and the real estate there is keeping pace with all of the other areas of Haywood County in terms of days on the market and selling price."

David Miller would agree with that assessment. He and his wife retired to Barber Orchard from Florida in 1997, and his 1.4-acre lot was one of the properties cleaned up by the EPA. He is unconcerned about the contamination at the site and thinks the whole situation has been overblown. "I haven't changed the way I live," he says. "I work in the garden just about every day, I've planted a vegetable garden and eaten the vegetables, I've planted some fruit and eaten the fruit. So it has not affected me or my wife in any way."

So it appears that Barber Orchard was paradise lost for a time, but is now paradise regained. Now, however, some neighbors just down the road may be facing a similar situation. In May 2006 residents of the Tan Woods and Orchard Estates subdivisions, built on what was once Francis Orchard, were notified that soil samples from a vacant lot at the site had tested positive for lead, arsenic, and other pesticides—a mix similar to that found at Barber Orchard. And like Barber Orchard, Francis Orchard was equipped with an underground pesticide piping system.

It's still early in the process, and the results of more thorough sampling and testing are not yet available, so it's too soon to predict whether Francis Orchard may eventually become a Superfund site. But this time around, according to Bateson, both residents and involved officials can benefit from the Barber Orchard experience. At Francis Orchard, he says, "the residents are well schooled after seeing what's gone on at Barber Orchard, and of course the county and state people have been around the block now too."

Questions Remain

Go to:

Despite the large scale scope of the problem, it appears that living on a historic orchard property contaminated by lead and arsenic does not constitute an immediate threat to human health. So it is still an open question whether it's really necessary to spend huge amounts of money, often from tax dollars, to ameliorate these sites.

Peryea thinks that what is needed is a solid epidemiologic study to document whether there really is a problem with people living on these arsenical pesticide-contaminated soils. "If that sort of study was done," he says, "and it was to show that there's no problem, or that the problem is controllable by setting up some sort of engineering controls or behavioral controls, like they do with urban lead nowadays, that would probably take care of a lot of the problem. The response—rather than trying to force a cleanup that would probably be wildly impractical, very expensive, and potentially ruin property values—would be that people would change their behavior a bit and end up minimizing the risk."

Online Resources

Go to:

New Jersey, Washington, and Wisconsin offer detailed advice to residents, developers, and other interested parties about what to do if they suspect or know their land is contaminated. Wisconsin has posted a variety of publications (http://www.datcp.state.wi.us/arm/agriculture/pestfert/pesticides/accp/lead_arsen_resources.jsp), including tips for safe gardening in lead- and arsenic-contaminated soil. Washington provides a comprehensive toolbox of resources stemming from its Area-Wide Soil Contamination Project, a task force that addressed not only historical orchard contamination, but also lead and arsenic contamination over widespread areas of the state from smelters and leaded gasoline combustion; see http://www.ecy.wa.gov/programs/tcp/area_wide/area_wide_hp.html. New Jersey offers the report of the Historic Pesticide Contamination Task Force (<http://www.state.nj.us/dep/special/hpctf/index.html>) and i-MapNJ, an environmental mapping tool that lets residents obtain detailed contamination information for specific locations (<http://www.state.nj.us/dep/gis/depsplash.htm>).



You spray, you pay?

A blooming problem?

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Technology Transfer Network

[Air Toxics Web Site](#) | [EPA Web Site & Radiation](#) | [TTN Web - Technology Transfer Network](#) | [Air Toxics Web site](#) | [Arsenic Compounds](#)

http://www.epa.gov/ttn/atw/hlthef/arsenic.html

Last updated on Tuesday, November 06, 2007

Arsenic Compounds

ARSENIC COMPOUNDS^(A)

107-02-8

Hazard Summary-Created in April 1992; Revised in January 2000

Arsenic, a naturally occurring element, is found throughout the environment; for most people, food is the major source of exposure. Acute (short-term) high-level inhalation exposure to arsenic dust or fumes has resulted in gastrointestinal effects (nausea, diarrhea, abdominal pain); central and peripheral nervous system disorders have occurred in workers acutely exposed to inorganic arsenic. Chronic (long-term) inhalation exposure to inorganic arsenic in humans is associated with irritation of the skin and mucous membranes. Chronic oral exposure has resulted in gastrointestinal effects, anemia, peripheral neuropathy, skin lesions, hyperpigmentation, and liver or kidney damage in humans. Inorganic arsenic exposure in humans, by the inhalation route, has been shown to be strongly associated with lung cancer, while ingestion of inorganic arsenic in humans has been linked to a form of skin cancer and also to bladder, liver, and lung cancer. EPA has classified inorganic arsenic as a Group A, human carcinogen.

Arsine is a gas consisting of arsenic and hydrogen. It is extremely toxic to humans, with headaches, vomiting, and abdominal pains occurring within a few hours of exposure. EPA has not classified arsine for carcinogenicity.

Please Note: The main sources of information for this fact sheet are EPA's [Integrated Risk Information System](#) (IRIS), which contains information on inhalation chronic toxicity and the [RfC](#) for arsine, oral chronic toxicity and the [RfD](#) for inorganic arsenic, and the carcinogenic effects of inorganic arsenic including the unit cancer risk for inhalation exposure, and the Agency for Toxic Substances and Disease Registry's (ATSDR's) [Toxicological Profile for Arsenic](#).

Uses

- The major use for inorganic arsenic is in wood preservation; arsine is used in the microelectronics industry and in semiconductor manufacture. (2)
- Until the 1940s, inorganic arsenic solutions were widely used in the treatment of various diseases, such as syphilis and psoriasis. Inorganic arsenic is still used as an antiparasitic agent in veterinary medicine and in homeopathic and folk remedies in the United States and other countries. (2)

Sources and Potential Exposure

- Inorganic arsenic is found throughout the environment; it is released into the air by volcanoes, the weathering of arsenic-containing minerals and ores, and by commercial or industrial processes. (1,2)
- For most people, food is the largest source of arsenic exposure (about 25 to 50 micrograms per day [$\mu\text{g}/\text{d}$]), with lower amounts coming from drinking water and air. Among foods, some of the highest levels are found in fish and shellfish; however, this arsenic exists primarily as organic compounds, which are essentially nontoxic. (1)

- Elevated levels of inorganic arsenic may be present in soil, either from natural mineral deposits or contamination from human activities, which may lead to dermal or ingestion exposure. (1)
- Workers in metal smelters and nearby residents may be exposed to above-average inorganic arsenic levels from arsenic released into the air. (1)
- Other sources of inorganic arsenic exposure include burning plywood treated with an arsenic wood preservative or dermal contact with wood treated with arsenic. (2)
- Most arsenic poisoning incidents in industry have involved the production of arsine, a short-lived, extremely toxic gas. (3)

Assessing Personal Exposure

- Measurement of inorganic arsenic in the urine is the best way to determine recent exposure (within the last 1 to 2 days), while measuring inorganic arsenic in hair or fingernails may be used to detect high-level exposures that occurred over the past 6-12 months. (1)

Health Hazard Information

Acute Effects:

Inorganic Arsenic

- Acute inhalation exposure of workers to high levels of arsenic dusts or fumes has resulted in gastrointestinal effects (nausea, diarrhea, abdominal pain), while acute exposure of workers to inorganic arsenic has also resulted in central and peripheral nervous system disorders. (1)
- Acute oral exposure to inorganic arsenic, at doses of approximately 600 micrograms per kilogram body weight per day ($\mu\text{g}/\text{kg}/\text{d}$) or higher in humans, has resulted in death. Oral exposure to lower levels of inorganic arsenic has resulted in effects on the gastrointestinal tract (nausea, vomiting), central nervous system (CNS) (headaches, weakness, delirium), cardiovascular system (hypotension, shock), liver, kidney, and blood (anemia, leukopenia). (1,2)
- Acute animal tests in rats and mice have shown inorganic arsenic to have moderate to high acute toxicity. (5)

Arsine

- Acute inhalation exposure to arsine by humans has resulted in death; it has been reported that a half-hour exposure to 25 to 50 parts per million (ppm) can be lethal. (4)
- The major effects from acute arsine exposure in humans include headaches, vomiting, abdominal pains, hemolytic anemia, hemoglobinuria, and jaundice; these effects can lead to kidney failure. (4,8)
- Arsine has been shown to have extreme acute toxicity from acute animal tests. (5)

Chronic Effects (Noncancer):

Inorganic arsenic

- Chronic inhalation exposure to inorganic arsenic in humans is associated with irritation of the skin and mucous membranes (dermatitis, conjunctivitis, pharyngitis, and rhinitis). (1,2)
- Chronic oral exposure to inorganic arsenic in humans has resulted in gastrointestinal effects, anemia, peripheral neuropathy, skin lesions, hyperpigmentation, gangrene of the extremities, vascular lesions, and liver or kidney damage. (1,2)
- No chronic inhalation exposure studies have been performed in animals for any inorganic arsenic compound. (1)
- Some studies have suggested that inorganic arsenic is an essential dietary nutrient in goats, chicks, and rats. However, no comparable data are available for humans. EPA has concluded that essentiality, although not rigorously established, is plausible. (1,6)
- EPA has not established a Reference Concentration (RfC) for inorganic arsenic. (6)

- The California Environmental Protection Agency (CalEPA) has established a chronic inhalation reference level of 0.00003 milligrams per cubic meter (mg/m³) based on developmental effects in mice. The CalEPA reference exposure level is a concentration at or below which adverse health effects are not likely to occur. It is not a direct estimator of risk, but rather a reference point to gauge the potential effects. At lifetime exposures increasingly greater than the reference exposure level, the potential for adverse health effects increases. (7)
- The Reference Dose (RfD) for inorganic arsenic is 0.0003 milligrams per kilogram body weight per day (mg/kg/d) based on hyperpigmentation, keratosis, and possible vascular complications in humans. The RfD is an estimate (with uncertainty spanning perhaps an order of magnitude) of a daily oral exposure to the human population (including sensitive subgroups) that is likely to be without appreciable risk of deleterious noncancer effects during a lifetime. (6)
- EPA has medium confidence in the study on which the RfD for inorganic arsenic was based because, although an extremely large number of people were included in the assessment (>40,000), the doses were not well characterized and other contaminants were present. The supporting human toxicity database, while extensive, is somewhat flawed and, consequently, EPA has assigned medium confidence to the RfD. (6)

Arsine

- No information is available on the chronic effects of arsine in humans.
- The RfC for arsine is 0.00005 mg/m³ based on increased hemolysis, abnormal red blood cell morphology, and increased spleen weight in rats, mice, and hamsters. (4)
- EPA has medium confidence in the RfC based on: (1) high confidence in the studies on which the RfC for arsine was based because the sample sizes were adequate, statistical significance was reported, concentration dose-response relationships were documented, three species were investigated, and both a no-observed-adverse-effect level (NOAEL) and a lowest-observed-adverse-effect level (LOAEL) were identified, and (2) medium confidence in the database because while there were three inhalation animal studies and a developmental/reproductive study, there were no data available on human exposure. (4)

Reproductive/Developmental Effects:

Inorganic arsenic

- Several studies have suggested that women who work in, or live near, metal smelters may have higher than normal spontaneous abortion rates, and their children may exhibit lower than normal birthweights. However, these studies are limited because they were designed to evaluate the effects of smelter pollutants in general, and are not specific for inorganic arsenic. (1)
- Ingested inorganic arsenic can cross the placenta in humans, exposing the fetus to the chemical. (2)
- Oral animal studies have reported inorganic arsenic at very high doses to be fetotoxic and to cause birth defects. (1)

Arsine

- Human studies have indicated higher than expected spontaneous abortion rates in women in the microelectronics industry who were exposed to arsine. However, these studies have several limitations, including small sample size and exposure to other chemicals in addition to arsine. (4)

Cancer Risk:

Inorganic arsenic

- Human, inhalation studies have reported inorganic arsenic exposure to be strongly associated with lung cancer. (1,2,6)
- Ingestion of inorganic arsenic in humans has been associated with an increased risk of nonmelanoma skin cancer and also to an increased risk of bladder, liver, and lung cancer. (1,6)

- Animal studies have not associated inorganic arsenic exposure via the oral route with cancer, and no cancer inhalation studies have been performed in animals for inorganic arsenic. (1)
- EPA has classified inorganic arsenic as a Group A, human carcinogen. (6)
- EPA used a mathematical model, using data from an occupational study of arsenic-exposed copper smelter workers, to estimate the probability of a person developing cancer from continuously breathing air containing a specified concentration of inorganic arsenic. EPA calculated an inhalation unit risk estimate of $4.3 \times 10^{-3}(\mu\text{g}/\text{m}^3)^{-1}$. EPA estimates that, if an individual were to continuously breathe air containing inorganic arsenic at an average of $0.0002 \mu\text{g}/\text{m}^3$ ($2 \times 10^{-7} \text{mg}/\text{m}^3$) over his or her entire lifetime, that person would theoretically have no more than a one-in-a-million increased chance of developing cancer as a direct result of breathing air containing this chemical. Similarly, EPA estimates that continuously breathing air containing $0.002 \mu\text{g}/\text{m}^3$ ($2 \times 10^{-6} \text{mg}/\text{m}^3$) would result in not greater than a one-in-a-hundred thousand increased chance of developing cancer, and air containing $0.02 \mu\text{g}/\text{m}^3$ ($2 \times 10^{-5} \text{mg}/\text{m}^3$) would result in not greater than a one-in-ten thousand increased chance of developing cancer. For a detailed discussion of confidence in the potency estimates, please see IRIS. (6)
- EPA has calculated an oral cancer slope factor of $1.5 (\text{mg}/\text{kg}/\text{d})^{-1}$ for inorganic arsenic. (6)

Arsine

- No cancer inhalation studies in humans or animals are available for arsine. (1)
- EPA has not classified arsine for carcinogenicity. (4)

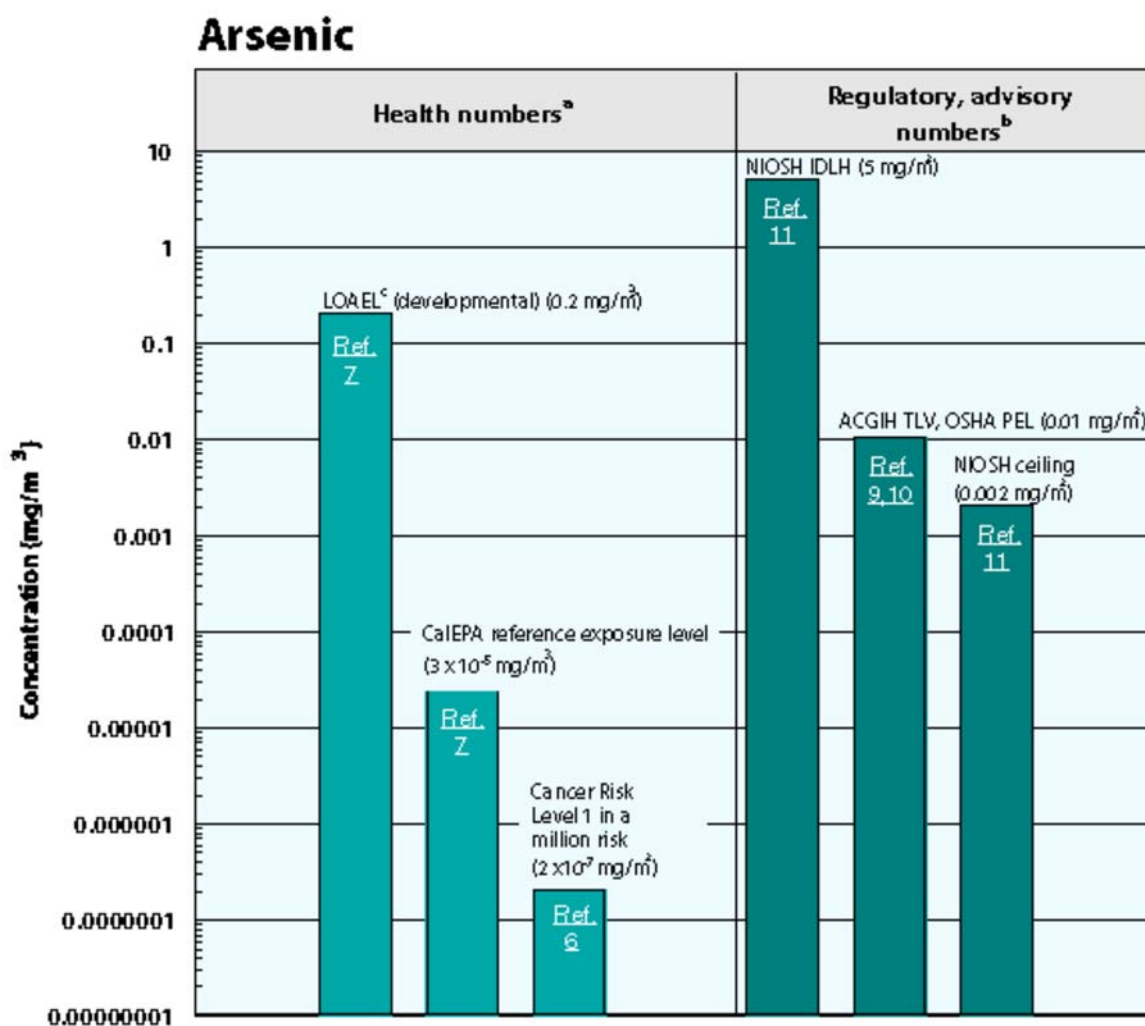
Physical Properties

- Inorganic arsenic is a naturally occurring element in the earth's crust. (1)
- Pure inorganic arsenic is a gray-colored metal, but inorganic arsenic is usually found combined with other elements such as oxygen, chlorine, and sulfur. (1)
- The chemical symbol for inorganic arsenic is As, and it has an atomic weight of 74.92 g/mol. (3)
- The chemical formula for arsine is AsH_3 , and it has a molecular weight of 77.95 g/mol. (8)
- Arsine is a colorless gas with a disagreeable garlic odor. (8)
- Arsenic combined with elements such as oxygen, chlorine, and sulfur forms inorganic arsenic; inorganic arsenic compounds include arsenic pentoxide, arsenic trioxide, and arsenic acid. Arsenic combined with carbon and hydrogen forms organic arsenic; organic arsenic compounds include arsanilic acid, arsenobetaine, and dimethylarsinic acid. (1)

Conversion Factors (only for the gaseous form):

To convert concentrations in air (at 25°C) from ppm to mg/m^3 : $\text{mg}/\text{m}^3 = (\text{ppm}) \times (\text{molecular weight of the compound})/(24.45)$. For inorganic arsenic: $1 \text{ ppm} = 3.06 \text{ mg}/\text{m}^3$. For arsine: $1 \text{ ppm} = 3.19 \text{ mg}/\text{m}^3$. To convert concentrations in air from $\mu\text{g}/\text{m}^3$ to mg/m^3 : $\text{mg}/\text{m}^3 = (\mu\text{g}/\text{m}^3) \times (1 \text{ mg}/1,000 \mu\text{g})$.

Health Data from Inhalation Exposure (Inorganic Arsenic)



ACGIH TLV--American Conference of Governmental and Industrial Hygienists' threshold limit value expressed as a time-weighted average; the concentration of a substance to which most workers can be exposed without adverse effects.

NIOSH IDLH--National Institute of Occupational Safety and Health's immediately dangerous to life or health concentration; NIOSH recommended exposure limit to ensure that a worker can escape from an exposure condition that is likely to cause death or immediate or delayed permanent adverse health effects or prevent escape from the environment.

NIOSH REL ceiling value--NIOSH's recommended exposure limit ceiling; the concentration that should not be exceeded at any time.

OSHA PEL--Occupational Safety and Health Administration's permissible exposure limit expressed as a time-weighted average; the concentration of a substance to which most workers can be exposed without adverse effect averaged over a normal 8-h workday or a 40-h workweek.

The health and regulatory values cited in this factsheet were obtained in December 1999.

^a Health numbers are toxicological numbers from animal testing or risk assessment values developed by EPA.

^b Regulatory numbers are values that have been incorporated in Government regulations, while advisory numbers are nonregulatory values provided by the Government or other groups as advice. OSHA numbers are regulatory, whereas NIOSH and ACGIH numbers are advisory.

^cThe LOAEL is from the critical study used as the basis for the CalEPA chronic reference exposure level.

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A. * This fact sheet addresses the toxicity of the inorganic arsenic compounds as well as the toxicity of the gaseous arsenic trihydride: arsine.

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Lead

Learn about Lead

- [What is lead?](#)
- [Where is lead found?](#)
- [How can people be exposed to lead?](#)
- [Possible adverse health effects of exposures to lead](#)
- [Lead exposure data](#)

What is Lead?

Lead is a highly toxic metal and it is all around us. Lead was used for many years in paints and other products found in and around our homes. Lead-based paint and lead contaminated dust are the main sources of exposure for lead in U.S. children. Lead-based paints were banned for use in housing in 1978. There is a good chance that any home, building, school or day care center built before 1978 contains some lead paint.

One million children are affected by lead poisoning, but when you know what to look for and what to do, lead poisoning is entirely preventable.

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Where is Lead Found?

The most common source of lead is from paint in homes and buildings built before 1978. Lead also can be emitted into the air from industrial sources and leaded aviation gasoline, and lead can enter drinking water through plumbing materials.

It is also used in the production of batteries, ammunition, metal products (solder and pipes), and devices to shield X-rays. Because of health concerns, lead from paints and ceramic products, caulking, and pipe solder has been dramatically reduced in recent years. The use of lead as an additive to automobile gasoline was banned in 1996 in the United States.

Lead is also a naturally occurring element. Natural levels of lead in soil range between 50 parts per million (ppm) and 400 ppm. Mining, smelting, and refining activities have resulted in substantial increases in lead levels in the environment, especially near mining and smelting sites. For example, near some types of industrial and municipal facilities, and adjacent to highways ([Chaney et al., 1984](#); [Schacklette et al., 1984](#)) soil lead concentrations have been reported to be more than 11,000 ppm ([National Research Council, 1980](#)).

Read more about where lead can be found:

- [At home](#)
- [At schools and childcare facilities](#)
- [In products](#)
- [In drinking water](#)
- [In outdoor air](#)
- [In soil](#)

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How Can People Be Exposed to Lead?

Children

Lead is dangerous to children because babies and young children often put their hands and other objects that can have lead dust on them in their mouths. Also, children's growing bodies absorb more lead than adult bodies do, and their brains and nervous systems are more sensitive to the damaging effects of lead.

Children living at or below the poverty line who live in older housing are at greatest risk. Children of some racial and ethnic groups, and those living in older housing, are disproportionately affected by lead.

[Learn more about sources of lead exposure.](#)

Pregnant Women

Pregnant women can be exposed to lead by spending time in areas where lead-based paints are deteriorating into lead dust that they then breathe in. Likewise, eating and drinking from dishes or glasses that contain lead water, or using certain [folk remedies](#) to which lead is intentionally added can cause exposures to lead. In addition, working in a job or engaging in [hobbies](#) where lead is used, such as making stained glass, can increase exposure.

Adults

Adults are also susceptible to lead exposure. This may be from:

- Breathing in lead dust, especially during renovation or repair work that disturbs painted surfaces in older homes and buildings.
- Putting their hands or other objects covered with lead dust in their mouths.
- Eating or drinking contaminated food or water or using certain folk remedies.

- Working in a job or engaging in [hobbies](#) where lead is used.

[Learn more about sources of lead exposure.](#)

Lower Your Chances of Exposure to Lead

Simple steps like keeping your home clean and feeding your family a well-balanced diet will go a long way in preventing lead poisoning. You can lower the chances of exposure to lead in your home, both now and in the future, by taking these steps:

- Use only cold water to prepare food and drinks.
- Flush all water outlets used for drinking or food preparation.
- Clean debris out of all outlet screens or aerators on faucets on a regular basis.
- Keep your home clean and dust-free.
- Wipe up any paint chips or visible dust with a wet sponge or rag. Clean dust around areas where there is friction and dust can be generated, such as doors, windows, and drawers.
- Wash children's hands, bottles, pacifiers and toys often.
- Teach children to wipe and remove their shoes and wash hands after playing outdoors.
- Ensure that your family members eat well-balanced meals. Lead interferes with some of the body's basic functions. Our bodies can't tell the difference between lead and calcium, which is a mineral that strengthens bones. Children with healthy diets absorb less lead.
- Make sure your contractor is [Lead Safe Certified](#).

Determine if your family is at risk for lead poisoning with the [Lead Poisoning Home Checklist \(PDF\)](#) (1 pg, 47K, [About PDF](#)).

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Possible Adverse Health Effects of Exposures to Lead

Lead exposure affects the nervous system and can cause a range of health effects, from behavioral problems and learning disabilities, to seizures and death. Children six years old and younger are most at risk.

Children

If not detected early, children with high levels of lead in their bodies can suffer from:

- Damage to the brain and nervous system
- Behavior and learning problems, such as hyperactivity
- Slowed growth
- Hearing problems
- Headaches
- Anemia
- In rare cases of acute lead poisoning from ingestion of lead, seizures, coma and even death.

Pregnant Women

Lead can accumulate in our bodies over time, where it is stored in bones along with calcium. During pregnancy, lead is released from bones as maternal calcium is used to help form the bones of the fetus. This is particularly true if a woman does not have enough dietary calcium. Lead can also be easily circulated from the mother's blood stream through the placenta to the fetus. Mothers with high levels of lead in their bodies can expose their developing fetuses, resulting in serious and developmental problems including:

- Miscarriages,
- Premature births or low birth weight,
- Brain damage, decreased mental abilities and learning difficulties, and/or
- Reduced growth in young children.

Find out more about lead's effects on pregnancy:

- [March of Dimes Healthy Pregnancy](#) [EXIT Disclaimer](#)
- [Effects of Workplace Hazards on Female Reproductive Health](#), National Institute for Occupational Safety and Health.

Adults

Lead is also harmful to adults. Adults can suffer from:

- Hearing and vision impairment,
- Reproductive problems (in both men and women),
- High blood pressure and hypertension,
- Nerve disorders,
- Memory and concentration problems,
- Poor muscle coordination, and
- Muscle and joint pain.

[Read more on the health effects of lead at the Agency for Toxic Substances and Disease Registry \(ATSDR\).](#)

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Lead Exposure Data

The Centers for Disease Control's National Center for Health Statistics monitors blood lead levels in the United States.

[National Center for Health Statistics](#)

[Get information on the number of children with elevated blood lead levels, and number and percentage of children tested for lead in your area.](#)

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Last updated on Thursday, May 17, 2012

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IRIS; P = PPRTV; A = ATSDR; C = Cal EPA; X = PPRTV Appendix; H = HEAST; J = New Jersey; Y = New York; O = EPA Office of Water; E = Environmental Criteria and Assessment Office; S = see user guide Section 5; L = see user guide on lead; M = mutagen; V = volatile; F = See FAQ; c = cancer; * = where n SL < 100x c SL; ** = where n SL < 10x c SL; n = noncancer; m = Concentration may exceed ceiling limit (See User Guide); s = Concentration may exceed Csat (See User Guide); SSL values are based on DAF=1

Table with columns for Toxicity and Chemical-specific Information, Contaminant, Screening Levels, and Protection of Ground Water SSLs. The table lists various contaminants such as Alar, Acetophenone, Acrylonitrile, and many others, along with their respective screening levels and safety factors.

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**Use of California Human
Health Screening Levels
(CHHSLs) in Evaluation of
Contaminated Properties**

January 2005



California Environmental Protection Agency

DISCLAIMER

Use of California Human Health Screening Levels in Evaluation of Contaminated Properties has been prepared by the California Environmental Protection Agency (Cal/EPA). This document is not intended to establish policy or regulation. The Human Health Screening Levels presented here are not to serve as: 1) a stand-alone decision making tool, 2) a substitute for guidance for the preparation of baseline human health risk assessments, 3) a rule to determine if a waste is hazardous under the state or federal regulations, 4) a rule to determine when the release of hazardous chemicals must be reported to the overseeing regulatory agency, 5) set of final cleanup or action levels to be applied at contaminated sites or 6) a guarantee that an oversight regulatory agency will determine that a project is adequately studied or agree with the conclusions of the site investigation and risk assessment report.

The information presented in this document is not final Cal/EPA action. Cal/EPA may update this information as needed without public notice. This document is not intended, nor can it be relied upon, to create any rights enforceable by any party in litigation in the State of California. Staff in overseeing regulatory agencies may decide to follow the information provided herein or act at a variance with the information, based on an analysis of site-specific circumstances.

The CHHSLs should NOT be used to determine when impacts at a site should be reported to a regulatory agency. The list of CHHSLs is also not a comprehensive list of all potential chemicals of concern that may be found at a property. All releases of hazardous substances to the environment should be reported to the appropriate regulatory agency in accordance with governing regulations. Staff overseeing work at a specific site should be contacted prior to use of the information in this document to ensure that the document is applicable to the site and that the user has the most up-to-date version available.

This document is not copyrighted. Copies may be freely made and distributed. However, reference to or use of the screening levels presented in this document without adequate review of the accompanying narrative could result in misinterpretation and misuse of the information.

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- 2-2. EXAMPLE FOCUSED CONCEPTUAL SITE MODEL OF HUMAN HEALTH CONCERNS IDENTIFIED AT A SITE WHERE HAZARDOUS CHEMICALS WERE RELEASED TO SOIL AND GROUNDWATER.

- 4-1. SUGGESTED REFERENCES FOR EVALUATION OF ENVIRONMENTAL CONCERNS NOT CURRENTLY ADDRESSED BY THE CAL/EPA CHHSLs.

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APPENDICES

- 1 HUMAN-EXPOSURE-BASED SCREENING NUMBERS DEVELOPED TO AID ESTIMATION OF CLEANUP COSTS FOR CONTAMINATED SOIL, NOVEMBER 2004, JANUARY 2005 REVISION

Overview

What are the CHHSLs?

The California Human Health Screening Levels (CHHSLs or “Chisels”) are concentrations of 54 hazardous chemicals in soil or soil gas that the California Environmental Protection Agency (Cal/EPA) considers to be below thresholds of concern for risks to human health. The CHHSLs were developed by the Office of Environmental Health Hazard Assessment (OEHHA) on behalf of Cal/EPA, and are contained in their report entitled “Human-Exposure-Based Screening Numbers Developed to Aid Estimation of Cleanup Costs for Contaminated Soil” (Appendix 1). The thresholds of concern used to develop the CHHSLs are an excess lifetime cancer risk of one-in-a-million (10^{-6}) and a hazard quotient of 1.0 for noncancer health effects. The CHHSLs were developed using standard exposure assumptions and chemical toxicity values published by the U.S. Environmental Protection Agency (USEPA) and Cal/EPA.

How can the CHHSLs help facilitate restoration of contaminated properties?

The CHHSLs can be used to screen sites for potential human health concerns where releases of hazardous chemicals to soils have occurred. Under most circumstances, and within the limitations described in this document, the presence of a chemical in soil, soil gas or indoor air at concentrations below the corresponding CHHSLs can be assumed to not pose a significant health risk to people who may live (residential CHHSLs) or work (commercial/industrial CHHSLs) at the site. As discussed below, however, evaluation of other potential environmental concerns must also be addressed.

The presence of a chemical at concentrations in excess of a CHHSL does not indicate that adverse impacts to human health are occurring or will occur but suggests that further evaluation of potential human health concerns is warranted. Residential CHHSLs may be used in conjunction with the human health screening evaluation described in the Department of Toxic Substances Control (DTSC) Preliminary Endangerment Assessment (PEA) Guidance Manual to assist the risk manager in deciding whether further site characterization, risk assessment, or remediation is necessary (Cal/EPA 1994b). Further evaluation may include additional sampling at the site, consideration of ambient levels in the environment, or a reassessment of the assumptions used to calculate the CHHSLs

or PEA estimates. This stepwise approach expedites judgments about the degree of effort that may be necessary to remediate contaminated properties and restore the properties to productive use.

How do the CHHSLs differ from cleanup standards?

The CHHSLs presented in the lookup tables are NOT regulatory "cleanup standards". Use of the CHHSLs and this document is voluntary on the part of those who choose to use them. At sites where cleanup of contaminated soils to levels at or below the CHHSLs would be costly, the time and effort to develop more site-specific cleanup may be desired. At sites where the extent of contaminated soil is limited or the timeframe available to carry out cleanup actions is very short, use of the CHHSLs as final soil cleanup standards may be cost-beneficial. However, this would require the concurrence of both the responsible party and the overseeing regulatory agency and can only be done after a full evaluation of site conditions and other potential environmental concerns. Regulatory agencies cannot be compelled to use the CHHSLs as final cleanup standards for a contaminated property.

If contaminant concentrations are below the CHHSLs am I finished?

As discussed above, the CHHSLs cannot be used as a stand-alone tool for final cleanup and closure decisions. In addition, using only the CHHSLs may not be protective of groundwater resources or address other potential environmental concerns. Therefore, a thorough investigation of site conditions must also be performed to ensure that: 1) all potential human exposure pathways and exposure scenarios at the site are fully accounted for; 2) groundwater resources are protected; 3) terrestrial and aquatic habitats are protected, including the erosion of contaminated soils and subsequent runoff into a nearby wetland, stream or other aquatic habitat; and 4) that nuisance (e.g., odors and staining) and gross contamination concerns are addressed. These and other issues related to environmental contamination that are identified at the site must be evaluated separately. If a formal regulatory decision or determination is desired, additional assessment or cleanup of contaminated soils to address these concerns may ultimately be required.

How should the CHHSLs be integrated into the DTSC PEA process?

The human health screening evaluation presented in the DTSC Preliminary Endangerment Assessment (PEA) document is intended to provide a preliminary evaluation of potential risk and hazard to human health. The PEA process uses models and exposure assumptions similar to those used to develop the residential CHHSLs but does not provide actual risk-based screening levels based on these models. The PEA screening evaluation assumes that the land use of the site will be residential, regardless of the current use and zoning for the site. Therefore, residential CHHSLs for specific chemicals may be utilized in a PEA. Chemicals that do not have CHHSLs should be evaluated using the DTSC PEA methodology for their potential to pose human health risks. Chemicals found at a site should be evaluated separately for other potential environmental concerns, using the PEA guidance and other references as appropriate. The user should consult DTSC for additional information about use of the CHHSLs in the PEA process.

How are the CHHSLs related to the USEPA Preliminary Remediation Goals (PRGs) and to the San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels (ESLs)?

The soil and soil gas CHHSLs are modeled after the USEPA Region IX "Preliminary Remediation Goals (PRGs)" for these media (<http://www.epa.gov/region09/waste/sfund/prg/index.htm>). The primary difference between the CHHSLs and the PRGs is the use of Cal/EPA-specific "toxicity factors" (estimates of a chemical's toxicity to humans) in development of the CHHSLs, when available, rather than toxicity factors published by the USEPA. For volatile chemicals, soil gas CHHSLs were developed to evaluate the potential intrusion of subsurface vapors (soil gas) into buildings and subsequent impacts to indoor air quality.

The San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) Environmental Screening Levels (ESLs) are a compilation of screening levels for not only risk to human health but also a number of other environmental concerns. The ESLs are intended for use only at sites overseen by that agency. These ESLs may be found at the SFRWQCB web site at <http://www.waterboards.ca.gov/sanfranciscobay/esl.htm>. The SFBRWQCB refers to the comprehensive evaluation of all potential environmental concerns as an "Environmental Risk Assessment," as opposed to a more focused "Human Health Risk Assessment" reflected in development of the CHHSLs and this

document in general. The soil, soil gas and indoor air ESLs and CHHSLs for human health concerns were developed using similar methodology and are essentially identical. In addition, the SFBRWQCB document provides soil screening levels for leaching of contaminants into groundwater, toxicity to flora and fauna and nuisance or gross contamination concerns. These concerns are not addressed by the CHHSLs and must be evaluated separately.

Because many different sets of screening levels are now available, the overseeing regulatory agency should be consulted before using any screening levels in a human health screening evaluation. The regulatory agency may have specific recommendations with respect to which screening levels it prefers to use at sites under their jurisdiction.

If I am in the jurisdiction of the San Francisco Bay Regional Water Quality Control Board, can I continue to use that office's Environmental Screening Levels (ESLs) document?

At sites in the jurisdiction of and overseen by the SFBRWQCB, the reader should consult the SFBRWQCB regarding continued use of the ESLs versus use of the CHHSLs.

How often are the CHHSLs updated?

The CHHSLs will be updated as needed to incorporate new toxicity information of referenced chemicals as well as new information regarding the exposure or potential exposure of humans to potentially hazardous chemicals in soils. CHHSLs for additional chemicals will also be included as they become available.

Who can I contact for more information?

Refer to the CHHSL link posted on the Cal/EPA website (www.calepa.ca.gov) for further information and local contacts. The document will also be posted on the OEHHA web site (www.oehha.ca.gov), the DTSC web site (www.dtsc.ca.gov), the SWRCB web site (www.waterboards.ca.gov) and at the SFBRWQCB web site (www.waterboards.ca.gov/sanfranciscobay/), as well as other Regional Boards' web sites.

1 Introduction

1.1 Purpose and Development

The California Human Health Screening Levels (CHHSLs) were developed as a tool to assist in the evaluation of contaminated sites for potential adverse threats to human health. Residential and commercial/industrial land use screening levels for soil, soil gas and indoor air are provided in Tables 1 and 2. The screening levels in Table 1 pertain to direct exposure of humans to contaminants in soil via incidental soil ingestion, dermal contact and inhalation of vapors or dust in outdoor air. The soil gas and indoor air screening levels in Table 2 pertain to the emission of volatile chemicals from contaminated soil or groundwater and their potential intrusion into overlying buildings.

Preparation of the CHHSLs by the California Environmental Protection Agency (Cal/EPA) was required under the California Land Environmental Restoration and Reuse Act of 2001 (CLERRA 2001). CLERRA also required that a guidance document be prepared to explain how the CHHSLs may be used in California to aid in making judgments about the degree of effort (or costs) that might be necessary to remediate contaminated properties, facilitate the restoration and revitalization of contaminated properties, and assist local-level remediation programs in making more efficient and effective decisions.

Appendix 1 is the Office of Environmental Health Hazard Assessment's (OEHHA) report entitled "Human-Exposure-Based Screening Numbers Developed to Aid Estimation of Cleanup Costs for Contaminated Soil" which contains the CHHSLs, and describes the approach used to develop the human-health-risk-based screening levels, the comments received regarding the draft document and OEHHA's response to those comments. The approach reflected in OEHHA's report is based on the USEPA *Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part A)* (USEPA 1989) and is essentially equivalent to the approach used by USEPA Region IX in developing their *Preliminary Remediation Goals* (USEPA 2004), the San Francisco Bay Area Regional Water Quality Control Board (SFRWQCB) in developing their Environmental Screening Levels for human health (SFRWQCB 2003), and the Department of Toxic Substances Control (DTSC) in their Preliminary Endangerment Assessment (PEA) guidance (Cal/EPA 1994b).

Soil and soil gas data collected at a site can be directly compared to CHHSLs for each chemical of concern. Under most circumstances, and within the limitations described, the presence of a chemical in soil or soil gas at concentrations below the corresponding CHHSLs can be assumed to not pose a significant health risk to people who may live or work at the site. The presence of a chemical at concentrations in excess of a CHHSL does not necessarily indicate that adverse impacts to human health are occurring but indicates that a potential for adverse risk may exist and that additional evaluation is warranted.

Residential CHHSLs are appropriate for other types of sensitive property use, including hospitals, day care centers and schools. In order to assess the maximum, future beneficial use of a property, data collected at commercial or industrial sites should be compared to both residential and commercial sets of screening levels. A formal restriction to the deed may be required for sites that meet requirements for commercial/industrial use but not residential use. Regulatory agency oversight would be needed in this circumstance.

The scope of the CHHSLs is limited to human health concerns. For this reason, the CHHSLs cannot be used as a stand-alone tool to determine the extent of remedial actions needed at sites with contaminated soils. Depending on site conditions and the chemicals present, additional cleanup of contaminated soils may be required to protect groundwater resources, prevent toxicity to flora and fauna, address uptake in edible plants, and address nuisance and aesthetic concerns posed by odors and staining. A brief summary of these concerns and a list of references for evaluating these issues are provided at the end of the text.

1.2 Tiered Approach to Environmental Risk Assessments

Human health risk assessments for regulatory purposes are usually carried out using a step-wise or “tiered” approach. Comparison of site data to residential soil or soil gas CHHSLs (e.g., in a screening health risk evaluation performed using the DTSC PEA guidance) usually represents “Tier 1”. If multiple chemicals with similar health effects are present at a site then “forward mode,” cumulative health risks may also need to be calculated and compared to target Tier 1 goals before an evaluation of potential human health concerns can be completed (refer to Section 2.8).

If the results of the Tier 1 assessment indicate that further evaluation of human health risks is warranted, site-specific exposure assumptions, target risks, etc., can

be substituted for default parameter values used to develop the Tier 1 CHHSLs and alternative screening levels developed under a Tier 2 assessment. This assessment can be incorporated into the guidelines presented in the DTSC PEA document. Prior to modifying the Tier 1 default assumptions, concurrence from the appropriate regulatory agency should be obtained. Site data can then be compared to the revised screening levels. This provides an intermediate but still relatively rapid and cost-effective option for preparing more site-specific screening or cleanup levels. Cumulative health risks or hazards should also be presented under a Tier 2 assessment, as described in Section 2.8.

If exposure pathways of concern and conditions at the site do not match those taken into account by the CHHSL framework or PEA methodology, a Tier 3, baseline human health and ecological risk assessment should be performed. In a baseline human health and ecological risk assessment, alternative models and site-specific assumptions are used to quantify the risk/hazard posed to human and/or ecological receptors by the impacted media in the “forward” mode. After a baseline health risk assessment is accepted by the regulatory agency, the assessment may be used in the “backward” model to develop site-specific screening or cleanup levels. An understanding of the methodologies used to develop the CHHSLs is important to ensure consistency between all tiers of assessments and to expedite their preparation and review.

1.3 Chemicals Not Listed In CHHSL Lookup Tables

The lookup tables list 54 chemicals, including many that are commonly found at sites where releases of hazardous chemicals have occurred. Cal/EPA will incorporate CHHSLs for additional chemicals in future updates of this document as needed and practical. Prior to that time, the PEA methodology should be used to evaluate those chemicals for which CHHSLs do not exist. Toxicity factors published by Cal/EPA should be utilized in the PEA when available, unless otherwise instructed by the overseeing regulatory agency.

1.4 Limitations

The CHHSLs presented in this document are NOT regulatory "cleanup standards." Use of the CHHSLs as final cleanup levels to address human health concerns should be discussed with the overseeing regulatory agency and evaluated in terms of the cost/benefit of developing more site-specific cleanup levels through a risk assessment.

The CHHSLs presented in this document are NOT adequate to evaluate ALL environmental conditions at ALL contaminated sites. Other environmental concerns posed by the presence of contamination at a site may include:

- Leaching of contaminants from soil to groundwater and subsequent impacts to groundwater quality;
- Intrusion of subsurface vapors into basements or buildings with substandard ventilation systems and subsequent impacts to indoor air;
- Uptake of contaminants in edible fruit and vegetables and subsequent intake by humans;
- Exposure of children and teachers at school sites;
- Toxicity to terrestrial flora and fauna;
- Gross contamination, including nuisance (odors, etc.) and aesthetic concerns.

A summary of potential environmental concerns that may also be relevant at a site for a particular chemical is also provided in Table 1.

The CHHSLs specifically do not address contamination in groundwater, surface water or sediment or the erosion of contaminated soils and subsequent runoff into a nearby wetland, stream or other aquatic habitat. Contamination identified in these media or that may threaten these media must be considered separately. References for evaluation of contaminants in these media are provided in Chapter 4.

The soil gas CHHSLs for the intrusion of vapors into buildings may not be adequately conservative for estimating impacts to indoor air in poorly ventilated basements or buildings with substandard ventilation systems in general. Additional guidance on this subject is provided in Section 2.5.2.

The CHHSLs for direct-exposure to soils concerns are calculated assuming that specific exposure pathways are complete for the human receptor: incidental soil ingestion, dermal absorption of chemicals in soil, and inhalation of vapors or particulate matter in ambient (outdoor) air. For volatile chemicals, the soil gas CHHSLs are calculated assuming that the exposure pathway of inhalation of

indoor air contaminated with vapors intruding from the subsurface is complete. If these pathways are not congruent with site conditions, the CHHSLs should not be used. The PEA guidance should then be followed.

The CHHSLs for inorganic chemicals (metals) are based on human health risks. However, metals are naturally occurring in the soil. Therefore, metals concentrations should be compared to local background levels as discussed in Section 2.7.

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2 CHHSL Lookup Tables

2.1 Organization of Lookup Tables

CHHSLs for soil, soil gas and indoor air are presented in Tables 1 and 2. Soil CHHSLs address the potential direct exposure of residents and workers to contaminants in soil. Indoor air and soil gas screening levels address the potential intrusion of subsurface vapors into buildings and subsequent impacts to indoor air quality (and resulting potential exposure of residents and workers in those buildings).

Separate CHHSLs are presented for residential and commercial/industrial land uses. A summary of models and exposure assumptions used for each land use is in Appendix 1. The category "Residential Land Use" applies to sites where unrestricted land use is desired. This includes use for residences, hospitals, day-care centers and other sensitive purposes (Cal/EPA 2002). Residential CHHSLs incorporate conservative assumptions regarding the long-term, frequent exposure of children and adults to contaminated soils in a residential setting. In contrast, "Commercial/Industrial Use Only" assumes that only working age adults will be present at the site on a regular basis. Exposure assumptions incorporated into these CHHSLs are less conservative than assumptions used in the residential land-use scenario.

In a DTSC PEA, the land use of the site under a Tier 1 assessment is assumed to be residential, regardless of the current use and zoning for the site. Other regulatory agencies may evaluate land use with respect to the current and foreseeable future use of the site in question. Reference to adopted General Plan zoning maps and local redevelopment plans is an integral part of this evaluation.

If chemicals at a site exceed residential CHHSLs but are below CHHSLs for commercial/industrial land-use, restrictions on the use of affected property will likely be necessary (refer to Section 2.10). The need for such restrictions should be weighed against the cost-benefit of remediating the property to meet the CHHSLs for unrestricted land use.

Although schools may also be a sensitive land use, proposed school sites must be evaluated using the OEHHA Guidance for Assessing Exposures and Health Risks at Existing and Proposed School Sites (Cal/EPA 2004a) rather than the CHHSLs. Refer to Section 2.9 for a discussion of school-specific risk evaluations. Use of

the lookup tables for sites with other land uses (e.g., agriculture, parkland, etc.) should be discussed with and approved by the overseeing regulatory agency.

2.2 Developing a Conceptual Site Model

The primary condition for use of CHHSLs is that exposure pathways of concern and conditions at the site match those taken into account in the development of the CHHSLs. Thus, it is always necessary to develop a conceptual site model (CSM) to identify likely contaminant source areas, exposure pathways, and potential receptors to determine the applicability of CHHSLs at the site and the need for additional information. The conceptual site model summarizes information about site conditions in a schematic presentation in terms of: 1) primary sources (e.g., leaking tanks); 2) secondary sources (e.g., contaminated soil); 3) contaminant transport mechanisms (e.g., volatilization and intrusion into buildings); 4) contaminated exposure media (e.g., indoor air); and 5) potentially complete exposure pathways.

The CSM can be used to provide a rationale for additional site investigation, as a basis for a more detailed CSM, and/or to select screening levels or cleanup levels for specific environmental concerns. An example model is shown in Figure 2-1. The example model represents a hypothetical release of petroleum-based fuels and pesticides to soil and groundwater at a large housing redevelopment project with open spaces accessible to residents (direct exposure), enclosed buildings (vapor intrusion), wetlands (ecotoxicity) and communal garden areas where fruits and vegetables are grown (uptake in edible plants). Potential environmental concerns at the hypothetical site are identified by a check mark in the appropriate column. In addition, xylene and other compounds in petroleum often cause odor and aesthetic concerns (nuisances). Cleanup to address these and other gross contamination concerns may be required even after all other potential concerns have been adequately addressed.

If completed exposure pathways at a site match those pathways considered in the development of the CHHSLs, the appropriate soil and soil gas data can be directly compared to the CHHSLs to determine if the magnitude of exposure may pose a potential threat to human health. If the exposure pathways at a site do not match those pathways used in the development of the CHHSLs, these screening levels may not be used, and a site-specific human health risk evaluation should be performed.

Other potential environmental concerns must be evaluated separately, either through use of a comparable set of screening levels or through a more detailed, site-specific environmental risk assessment. Additional information regarding the preparation of conceptual site models is provided in the DTSC *Preliminary Endangerment Assessment Manual* (Cal/EPA 1994b), the USEPA Region IX *Preliminary Remediation Goals* document (USEPA 2004), the USEPA *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA*, Interim Final Document (USEPA 1988) and the Region 2 Environmental Screening Levels document (SFBRWQCB 2003).

2.3 Using the Lookup Tables

A step-by-step approach for using the CHHSLs is summarized below.

Step 1 – Check for CHHSL Updates and Applicability

Check with the overseeing regulatory agency to determine if the CHHSLs can be applied to the subject site. Ensure that the most up-to-date CHHSLs are being used.

Step 2 - Prepare a Conceptual Site Model

The purpose of the conceptual site model is to present information about site conditions and potential impacts to receptors. All potential environmental concerns at the site (e.g., contaminant sources, pathways, exposure routes and receptors) should be clearly identified in a conceptual site model (Section 2.2 and Chapter 4). Identification of these concerns helps to provide the rationale for the type and location for site sampling. The level of detail required in a conceptual site model will vary from site to site. The presentation and scope of the model should be discussed with the overseeing regulatory agency. The conceptual site model should be continually updated as additional data for the site is obtained.

Step 3 – Collect Data

An environmental risk assessment is based on the results of a thorough site investigation, where all chemicals of potential concern have been identified. The scope and type of site investigation will vary depending on the site specific history and the nature of the actual or suspected chemical release. Sampling objectives should be defined in advance of field activities. For example, the objective may be to document whether a release has occurred; to identify hot spots that may require an expedited removal action; to provide sufficient data to determine whether site remediation is necessary; or to evaluate whether site conditions would be consistent with proposed or potential land uses.

Steps 4 - Determine the Desired Land Use

Screening levels for residential land use are generally appropriate for other sensitive uses of the property (e.g., day-care centers, hospitals, etc.). If preparing a DTSC PEA, residential land use CHHSLs should be used. **For evaluation of commercial/industrial properties, it is highly recommended that site data be compared to CHHSLs for both unrestricted/residential and commercial/industrial land use.** Commercial/industrial CHHSLs should be used only under the oversight of a regulatory agency, as that agency will likely require a land use covenant that restricts use of the property to these purposes.

Steps 5 - Select CHHSLs

Based on the actual or proposed land use, select the appropriate soil and/or soil gas CHHSLs. Replace CHHSLs with naturally occurring, background concentrations of chemicals of concern (e.g., arsenic) or laboratory method reporting levels if appropriate (see Sections 2.6 and 2.7).

Step 6 - Compare Site Data To CHHSLs; calculate cumulative risks as necessary

Compare site data to CHHSLs to identify areas where concentrations of contaminants pose potential human health concerns. For sites where sample data are limited and/or if preparing a DTSC PEA, compare the maximum-detected concentrations of chemicals of concern to the CHHSLs.

For sites where an adequate number of data points are available, statistical methods can be used to estimate site-specific exposure point concentrations. The exposure point concentration is the lesser of the maximum-detected concentration and the 95% upper confidence limit (UCL) of the arithmetic mean of sample data (Cal/EPA 1996a). The USEPA guidance document *Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites* recommends evaluating the distribution of the data and choosing the best UCL estimate for the data set (USEPA 2002). Guidance for the estimation of exposure point concentrations, use of “non-detect” data, and other issues is also provided in the Cal/EPA documents *Preliminary Endangerment Assessment Guidance Manual* (Cal/EPA 1994b), *Supplemental Guidance For Human Health Multimedia Risk Assessments of Hazardous Waste Sites and Permitted Facilities* (Cal/EPA 1996a), among other sources. As discussed in these documents, sample data collected outside of impacted areas should generally not be included in estimation of exposure point concentrations.

For residential land use scenarios, soil sample data should be averaged over no more than a 1,000 ft² area (assumed area of a typical, urban area back yard and footprint area of typical residence). For commercial/industrial properties, soil sample data can be averaged within affected areas of open spaces.

Use the maximum soil gas concentration over an area of the footprint of existing or assumed future buildings to compensate for potentially isolated rooms within a building and the uncertainties in soil gas collection.

If multiple chemicals with similar health effects are present at a site, the cumulative excess cancer risk and/or noncancer hazard index should be calculated before final consideration of the site for closure. This will be of particular concern at sites where residual concentrations of chemicals with similar noncancer health effects may approach CHHSLs following the proposed, final cleanup of contaminated soil. Calculation of cumulative risks and hazard indices is discussed in Section 2.8. The need to include calculation of cumulative health risks in final closure reports should be discussed with the overseeing regulatory agency.

Steps 7 - Evaluate the Need for Additional Investigation or Actions to Address Human Health Concerns

Based on a comparison of available site data to the CHHSLs, the objectives identified in Step 3 should be evaluated. For example, comparison to CHHSLs may show that a site does not pose an unacceptable health risk to residential users, or it may show that additional investigation is warranted. Summarize the results of this evaluation in the Tier 1 Human Health Risk Assessment report (or preliminary endangerment assessment), and include recommendations for additional investigations or remediation as needed. Decisions for or against additional actions should always be made in coordination with the overseeing regulatory agency.

Step 8 - Evaluate Other Potential Environmental Concerns

The soil CHHSLs presented in Table 1 are limited to human health concerns associated with direct exposure to contaminated soil. In many instances, the presence of a potential hazardous chemical in soil may pose other environmental concerns that outweigh the risk to human health through direct exposure (see Sections 1.4 and 2.2, Chapter 4 and Table 1). The purpose of the Conceptual Site Model (Step 2) is to assist the user in identifying these concerns early in the process. For example, many metals and pesticides are significantly more toxic to flora and fauna than they are to humans (e.g., copper and nickel). Chemicals that easily leach from soils (e.g., MTBE) may pose a threat to shallow groundwater

resources even though direct exposure to the soils does not pose a significant health risk. Since the CHHSLs do not address impacts to groundwater, surface water or sediment, these and other potential environmental concerns should be addressed as part of a comprehensive environmental risk assessment.

2.4 Screening For Soil Direct-Exposure Concerns

The soil screening levels presented in Table 1 address potential exposure of humans to contaminants in soil through incidental soil ingestion, dermal absorption and inhalation of dust or vapors in outdoor air. These soil screening levels are given in milligrams (mg) of chemical per kilogram (kg) of dry soil. Therefore, the analytical laboratory must be instructed to report their results accordingly. Models and assumptions used to develop the soil CHHSLs are summarized in Appendix 1. The CHHSLs represent a combination of standard assumptions regarding exposure of residents and workers to contaminants in soil and outdoor air and toxicity factors for each of the specific chemicals listed. CHHSLs for chemicals that are known or suspected carcinogens were calculated using a target excess lifetime cancer risk of one-in-one-million (10^{-6}). A target hazard quotient of 1.0 was used to calculate CHHSLs for noncancer health effects.

The presence of a chemical in soil at concentrations below its corresponding CHHSL can be assumed to not pose a significant health risk to people who may live or work at the site. Since sites usually have multiple contaminants, the cumulative, or total risk and hazards posed by all the hazardous chemicals a site should also be estimated using the approach described in Section 2.8.

Residential and commercial/industrial soil CHHSLs are applicable to soils that are at the ground surface or could be brought to the ground surface at some time in the future, with subsequent potential exposure by human receptors. A depth of more than three meters (approximately 10 feet) is generally used to delineate "deep" soils that are likely to remain isolated in the subsurface versus "shallow" soils that may be exposed during future redevelopment activities (Cal/EPA 1996a). Exposure of workers to deeper soils could still occur during periodic construction and utility maintenance work. Even if deep soil contamination does not present a human health risk, the overseeing regulatory agency may require preparation of a formal land-use covenant in order to allow such contamination to remain on site.

2.4.1 Evaluating Lead

In Table 1, the Commercial/Industrial Soil CHHSL for lead is listed as 3,500 mg/kg. This number was calculated using the methods described in Appendix 1. It should be noted, however, that this screening number is above the Total Threshold Limit Concentration for lead (1,000 mg/kg) as defined in Title 22 of the California Code of Regulations. It is also above the USEPA Region IX Preliminary Remediation Goal (PRG) of 800 mg/kg for commercial land use.

OEHHA is evaluating the method it used to derive its health-based screening number for a commercial/industrial scenario. Until this evaluation is complete, the commercial/industrial Soil CHHSL for lead in Table 1 should be considered an interim value, and the overseeing regulatory agency should be consulted on the appropriate screening number to be used at a site under investigation.

2.5 Screening of Volatile Organic Chemicals

2.5.1 Soil Screening Levels for Direct Exposure Concerns

Screening levels for direct exposure to volatile organic compounds (VOCs) in soil were not developed by OEHHA and are not included in this edition of the CHHSLs document. Direct-exposure models such as those used by USEPA Region IX do not take into account the total amount (mass) of a volatile chemical that might be present at a site (refer to Appendix 2). This is important, since the direct-exposure models assume a continuous off-gassing of vapors throughout a 30-year exposure period. In addition, the models assume exposure both via inhalation of vapors emitted to outdoor air and via incidental ingestion of volatile chemicals in soil. These assumptions may be overly conservative for highly volatile chemicals that are not expected to remain at significant concentrations in the soil over time following off-gassing to the outdoor air.

Bulk soil screening levels (i.e. concentrations measured in soil) for volatile chemicals are not presented in this document. The restricted size of soil samples limits the ability to use soil data to evaluate vapor intrusion concerns except at sites with very minor releases. At sites where significant releases of volatile chemicals have occurred, the collection of soil gas data in conjunction with bulk soil data is strongly recommended. For sites characterized by only minor releases of volatile chemicals and limited impacts to soil (e.g., minor spills around the fill ports of underground storage tanks), cleanup of soils to meet direct-exposure

concerns should generally be adequate to address vapor intrusion concerns (see also Table 1).

2.5.2 Soil Gas Screening Levels for Vapor Intrusion Concerns

The indoor air and soil gas screening levels presented in Table 2 address the potential emission of volatile chemicals from contaminated soil or groundwater and subsequent intrusion into the indoor air of overlying buildings. A full discussion of the development of the soil gas screening levels, and the models and assumptions used, is discussed in Appendix 1.

The soil gas CHHSLs for the intrusion of vapors into buildings were developed assuming that buildings have a “slab on grade” construction. The screening levels are also considered to be adequately conservative for buildings with crawl space or underground parking construction. These reflect the most common type of building designs in California. The soil gas screening levels may not be adequately conservative for estimating impacts to indoor air in structures with basements, however, or buildings with substandard ventilation systems in general. Field data suggest that attenuation of vapors in such scenarios may be an order of magnitude below that expected in rooms or buildings with normal ventilation systems. Therefore, at sites where significant vapor intrusion concerns may exist, the collection and evaluation of samples from both basement areas and overlying living spaces may be warranted.

Additional information on subsurface vapor intrusion into buildings is provided the USEPA document *User’s Guide for the Johnson and Ettinger (1991) Model for Subsurface Vapor Intrusion into Buildings* (USEPA 2003) and in the following section.

2.5.3 Evaluating Vapor Intrusion Concerns

If the concentration of a volatile chemical in soil gas at a site exceeds its CHHSL, the exposure pathway of soil vapor intrusion into indoor air should be further evaluated using the Cal/EPA *Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air* (Cal/EPA 2004b). The investigation of this pathway can be complex. The identification of sources of indoor air contaminants is often complicated by the presence of the same or similar chemicals products found and used in many households and industrial buildings (e.g., aerosol sprays, dry-cleaned clothing, cleaners, and tobacco smoke). Elevated levels of the same chemicals in ambient, outdoor air also pose a

problem. Plumes of groundwater contaminated with volatile chemicals can also serve as the source of volatile chemicals found in soil gas and extend over significant areas. If there is strong evidence that the intrusion of vapors into buildings may exceed levels of potential concern, the collection and analysis of indoor air samples may be necessary. The inevitable effect of indoor air studies on the personal lives of residents and building workers will further require that risk issues be carefully communicated.

Guidance on the collection of soil gas and indoor air samples is provided in the following documents, among other sources:

- *Soil Gas Advisory* (January 2003): Department of Toxic Substances Control and Los Angeles Regional Water Quality Control Board; http://www.dtsc.ca.gov/policyAndProcedures/SiteCleanup/SMBR_ADV_activesoilgasinvst.pdf.
- *Indoor Air Sampling And Evaluation Guide* (2002): Massachusetts Department of Environmental Protection, Office of Research and Standards, WSC Policy #02-430; <http://www.state.ma.us/dep/bwsc/finalpol.htm>.

Properly collected indoor air sample data may be compared to the indoor air screening levels. Averaging of indoor air data within a single building may not be appropriate beyond the specific room being tested. Screening levels for indoor air (Table 2) are based on standard exposure models for long-term inhalation of contaminants in air at a target excess cancer risk of 10^{-6} and a target hazard quotient of 1.0. The indoor air CHHSLs do not account for potential cumulative effects posed by the presence of multiple contaminants in air (see Section 2.8).

2.6 Substitution of Laboratory Reporting Limits for CHHSLs

The overseeing regulatory agency should review and agree to the analytical methods used to quantify chemicals in soil samples to make sure that the methods are sensitive enough to detect low concentrations of chemicals of potential concern. The attainment of detection limits that are at or below the screening levels should be part of the Data Quality Objectives. If all agreed-upon methods have been used, the overseeing regulatory agency may allow the use of the method reporting limit in place of the screening level in cases where a CHHSL for a specific chemical is less than its laboratory method reporting limit. Potential

examples include the soil direct-exposure CHHSL for dioxin (e.g., 0.0000046 mg/kg for residential exposure).

2.7 Substitution of Naturally Occurring Concentrations for CHHSLs

Naturally occurring background concentrations of arsenic, beryllium, cadmium, chromium and other metals in soils may exceed their respective soil CHHSLs. Cal/EPA generally does not require cleanup of soil to below background levels. This issue is frequently encountered with arsenic. Natural background concentrations of arsenic in California are often well above the health-based, direct-exposure goals in soil of 0.07 mg/kg for residential land use and 0.24 mg/kg for commercial/industrial land use (e.g., Bradford et. al, 1996; LBNL 2002). Background concentration of arsenic or other metals of potential concern at a site should be determined from analysis of site-specific samples in uncontaminated areas using guidance published by Cal/EPA and/or reference to published data for nearby sites (Cal/EPA 1997). However, background data for nearby sites may only be used as a surrogate for uncontaminated site data if those data are obtained from soil of the same lithology as that found on-site.

2.8 Cumulative Risks at Sites with Multiple Contaminants

Risks posed by exposure to multiple chemicals with similar health affects are considered to be additive or "cumulative." For example, the total excess lifetime risk of cancer posed by the presence of several carcinogenic chemicals in all exposure media is the sum of the risk posed by each individual chemical. The same is true for chemicals that cause noncarcinogenic health effects.

A stepwise approach for screening of sites with multiple contaminants is suggested (after USEPA 2004):

Step 1: Identify potential chemicals of concern.

Step 2: Record CHHSLs for each chemical separated by media type (soil, soil gas and/or indoor air). Include CHHSLs for both cancer and noncancer effects, if available (refer to Appendix 1). If CHHSLs are not available for specific chemicals, evaluate those chemicals using the approaches discussed in Appendix 1 and in the PEA manual.

Step 3: Calculate cumulative cancer risk estimates by taking the assumed exposure point concentration for each chemical (maximum or approved 95% UCL) and divide by the respective CHHSL concentration designated for cancer evaluation. Multiply the ratio by 10^{-6} (the target risk used to develop the CHHSLs) to calculate the estimated cancer risk for that specific chemical for a reasonable maximum exposure (RME).

$$Risk = \left[\left(\frac{conc_x}{CHHSL_x} \right) + \left(\frac{conc_y}{CHHSL_y} \right) + \left(\frac{conc_z}{CHHSL_z} \right) \right] \times 10E - 06$$

For multiple chemicals, simply add the risks for individual chemicals or sum individual ratios and multiply the total by a factor of 10^{-6} :

Step 4: Calculate cumulative noncancer hazard estimates by taking the assumed exposure point concentration for each chemical (maximum or approved 95% UCL) and divide by the respective CHHSL concentration designated for noncancer effects. This generates an individual Hazard Quotient for that chemical. Calculate a cumulative Hazard Index by adding the individual Hazard Quotients. A Hazard Index of one or less is generally considered “safe”. A ratio that is greater than one suggests that further evaluation is necessary. (Note that carcinogens may have CHHSLs for both cancer effects as well as noncancer effects. Refer to Appendix 1).

For more information, refer to the USEPA Preliminary Remediation Goals

$$HazardIndex = \left[\left(\frac{conc_x}{CHHSL_x} \right) + \left(\frac{conc_y}{CHHSL_y} \right) + \left(\frac{conc_z}{CHHSL_z} \right) \right]$$

document (USEPA 2002). OEHHA has also developed a spread sheet tool for calculating cumulative risk. This spread sheet is available on Cal/EPA’s, DTSC’s, the State Board’s and OEHHA’s web pages.

2.9 Evaluation of School Sites

DTSC’s Schools Property Evaluation and Cleanup Division is the lead agency for the environmental assessment of potential contamination at new, expanding, or existing schools. Since January 2000, school districts have been required to conduct an environmental assessment under the oversight and approval of DTSC prior to the construction of new schools. By law, DTSC uses specific guidance and protocols for school projects. Because of this, the CHHSLs may not be applicable for these sites. Contact DTSC for further information and direction for

the evaluation of potential contamination on school properties and the application of the CHHSLs.

2.10 Use of CHHSLs as Cleanup Levels and Land Use Restrictions

As stated earlier in this guidance, these CHHSLs are not stand-alone decision making tools, a set of final cleanup or action levels to be applied at contaminated sites or a guarantee that an oversight regulatory agency will determine that a project is adequately studied or agree with the conclusions of the site investigation and risk assessment report. Cleanup decisions are at the discretion of the overseeing regulatory agency and can only be made after a full evaluation of site conditions and potential human health and environmental concerns.

While regulatory agencies cannot be compelled to use the CHHSLs as final cleanup standards for a contaminated property, there may be circumstances where the residential CHHSLs would be sufficiently protective and considered as appropriate cleanup levels with the following caveats.

- The overseeing regulatory agency has determined that the site has been adequately characterized and agrees that the use of CHHSLs is appropriate.
- The potentially complete exposure pathways at the site match the exposure pathways used to develop the CHHSLs and no additional completed exposure pathways or receptors were identified.
- All other environmental concerns have been addressed to the satisfaction of the overseeing regulatory agency (refer to Section 1.4 and Table 1).

In a similar manner, there may be circumstances where the Commercial/Industrial CHHSLs would be sufficiently protective and considered as appropriate cleanup goals under regulatory agency oversight. Their use at a site in this context must also be coupled with the understanding that such a use of these CHHSLs may be subject to existing regulations and land-use covenants. In addition, the following should also be considered:

- **Concentrations of chemicals in soils left in place at a commercial/industrial site should always be compared to both commercial/industrial AND residential CHHSLs.** If the soils meet

CHHSLs for residential land use after cleanup then this should be clearly stated in the site closure report. This point may prove important should the site unexpectedly become desirable for other uses in the future (e.g., residential, day care, health care, etc.).

- Sites cleaned up to commercial CHHSLs only are not suitable for unrestricted land use without further evaluation. The appropriate regulatory agency should be consulted to determine actions necessary to remove land-use restrictions.

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3 Conditions Warranting Site Specific Human Health Risk Assessments

3.1 Site Considerations

Use of the CHHSLs is optional and a standard human health risk assessment may be undertaken for any site. Site conditions may prevent the full use of the CHHSLs and require preparation of a more site-specific, health risk evaluation or baseline risk assessment (refer to Section 1.2). Examples of site conditions that may warrant site-specific or detailed human health risk assessment include:

- Sites that have a high public profile and need a detailed, fully documented human health risk assessment for public review;
- Sites where multiple contaminants with similar health effects are present and cumulative health risks (or hazards) must be calculated;
- Sites with contaminants for which CHHSLs have not been developed.
- Sites where alternative target risk levels or chemical-specific toxicity factors may be acceptable to the regulatory agency (Appendix 1);
- Sites where direct-exposure concerns for residents and workers may not need to be considered (Section 2.4);
- Sites where site conditions may be engineered to eliminate or reduce specific exposure pathways;
- Sites where field observations or site conditions indicate that the CHHSLs may not be adequately protective or may be excessively conservative.

Additional considerations should be evaluated on a site-by-site basis and discussed with the overseeing regulatory agency.

3.2 Tier 2 Human Health Risk Assessments

3.2.1 Purpose

The Tier 1 CHHSLs were developed with default or generic assumptions that are not specific to any particular site condition. If site soil concentrations exceed CHHSLs, site-specific exposure assumptions may be used in the standard risk models described in Appendix 1 or the PEA guidance to estimate risk and/or develop site-specific CHHSLs. Using alternative exposure assumptions in these standard risk models could reduce the time and cost incurred by both the regulated business and the overseeing responsible party in finalizing the risk assessment. Modifications to the default assumptions must be described and justified in the text of the report, presented with the revised set of screening or cleanup levels, and agreed to beforehand with the regulatory agency.

3.2.2 Examples of Site-Specific Adjustments

Potential site-specific modifications include:

- Use of alternative target risk levels, and/or alternative exposure assumptions;
- Elimination of direct-exposure concerns through imposition of institutional controls;
- Inclusion of potential exposure of construction and trench workers to contaminated soil not likely to be exposed at the ground surface in the future (e.g., capped soils or soils isolated at depth);
- Consideration of method reporting limits or natural background or ambient concentrations of a chemical in place of the CHHSL.

After incorporating site-specific parameter values into the Tier 1 direct-exposure models, alternative human-health-based screening levels can be calculated and re-compared to site data.

3.3 Tier 3 (Baseline) Human Health Risk Assessments

3.3.1 Purpose

In a site-specific baseline human health risk assessment, alternative models and assumptions are used and fully justified to develop a detailed, comprehensive

human health risk assessment. Portions of the models and assumptions used to develop the CHHSLs may still be retained for some components of the risk assessment. Any baseline human health risk assessment should be carried out under the oversight of the regulatory agency.

Detailed guidance on the preparation of and information for use in site-specific baseline environmental risk assessments is provided in the following references:

Human Health Risk Assessment:

- *Risk Assessment Guidance for Superfund. Volume I, Human Health Evaluation Manual (Part A)* (USEPA 1989a);
- *Soil Screening Guidance: Technical Background Document* (USEPA 1996);
- *CalTOX, A Multimedia Total Exposure Model For Hazardous-Waste Sites* (Cal/EPA 1994a);
- *Preliminary Endangerment Assessment Guidance Manual* (Cal/EPA 1994b);
- *Supplemental Guidance For Human Health Multimedia Risk Assessments of Hazardous Waste Sites and Permitted Facilities* (Cal/EPA 1996a);
- *Exposure Factors Handbook* (USEPA 1997a); and
- *Assessing the Significance of Subsurface Contaminant Vapor Migration to Enclosed Spaces* (Johnson et. al, 1998).

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4 Evaluation of Other Potential Environmental Concerns

The importance of identifying all environmental concerns at sites where releases of hazardous chemicals have occurred is discussed in Sections 1.4 and 2.2. The CHHSLs provided in Tables 1 and 2 specifically address risks to human health posed by exposure to contaminated soil and indoor air. At sites affected by highly toxic but relatively immobile chemicals (e.g., PCBs, DDT, arsenic, etc.), cleanup of contaminated soils to address human health concerns will generally be sufficient to address other potential environmental concerns provided that sensitive ecological habitats are not threatened. In other cases or for other chemicals, additional environmental concerns may still be present even after impacted soils have been remediated to levels sufficient to address risks to human health. This could include leaching of contaminants from soil and subsequent impacts on groundwater resources, toxicity to terrestrial biota, uptake of contaminants in edible fruits or vegetables and nuisance or gross contamination concerns.

A summary of other environmental concerns potentially posed by contaminants in soil is incorporated into Table 1. This summary compares the CHHSLs to the SFBRWQCB's ESLs for leaching, ecotoxicity and nuisance concerns. The ESLs can be found at <http://www.waterboards.ca.gov/sanfranciscobay/esl.htm>.

For example, the residential CHHSL for endrin in soil (21 mg/kg) is much higher than the corresponding ESL for ecotoxicity concerns (0.06 mg/kg). This means that ecotoxicity concerns may outweigh human health concerns at sites where potentially sensitive habitats are present (designated by an "X" in the Table 1). This is not surprising, since endrin, a pesticide, was specifically formulated to be highly toxic to terrestrial biota.

Additional evaluation should be carried out at sites where the basic conceptual site model indicates that the presence of contaminated soils may pose other environmental concerns or where potential impacts to groundwater, surface water or sediment are identified. It is beyond the scope of this document to present guidance on the proper evaluation of these additional concerns. However, useful references are provided in Figure 4-1. Additional risk assessment guidance should be consulted as needed.

5 References

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- USEPA, 1988, *Superfund Exposure Assessment Manual*: U.S. Environmental Protection Agency, Office of Emergency and Remedial Response, Publication EPA/540/1-88/001.
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FIGURES

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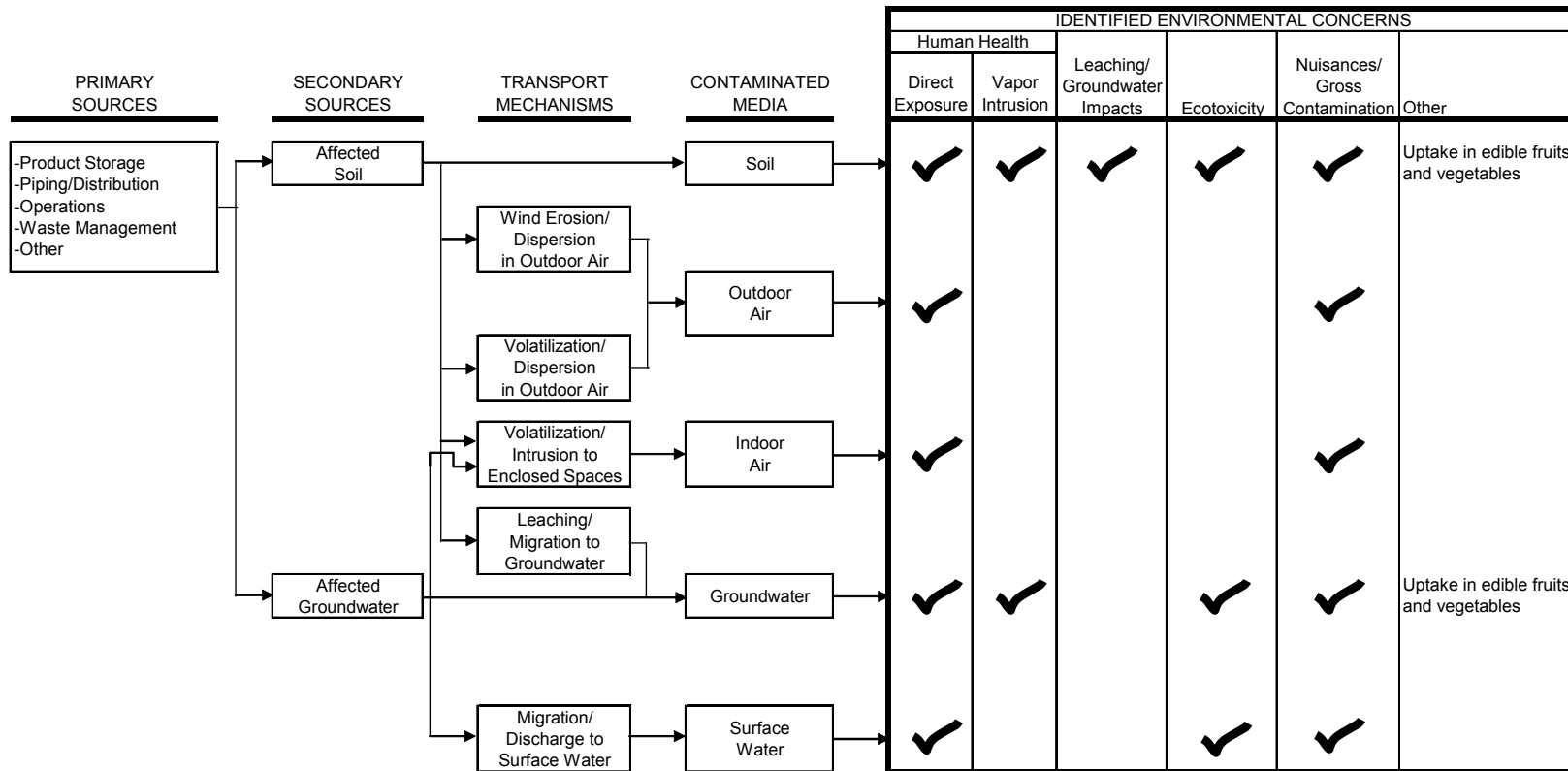


Figure 2-1. Example conceptual site model depicting environmental concerns identified at a site where hazardous chemicals were released to soil and groundwater. See Section 2.2.

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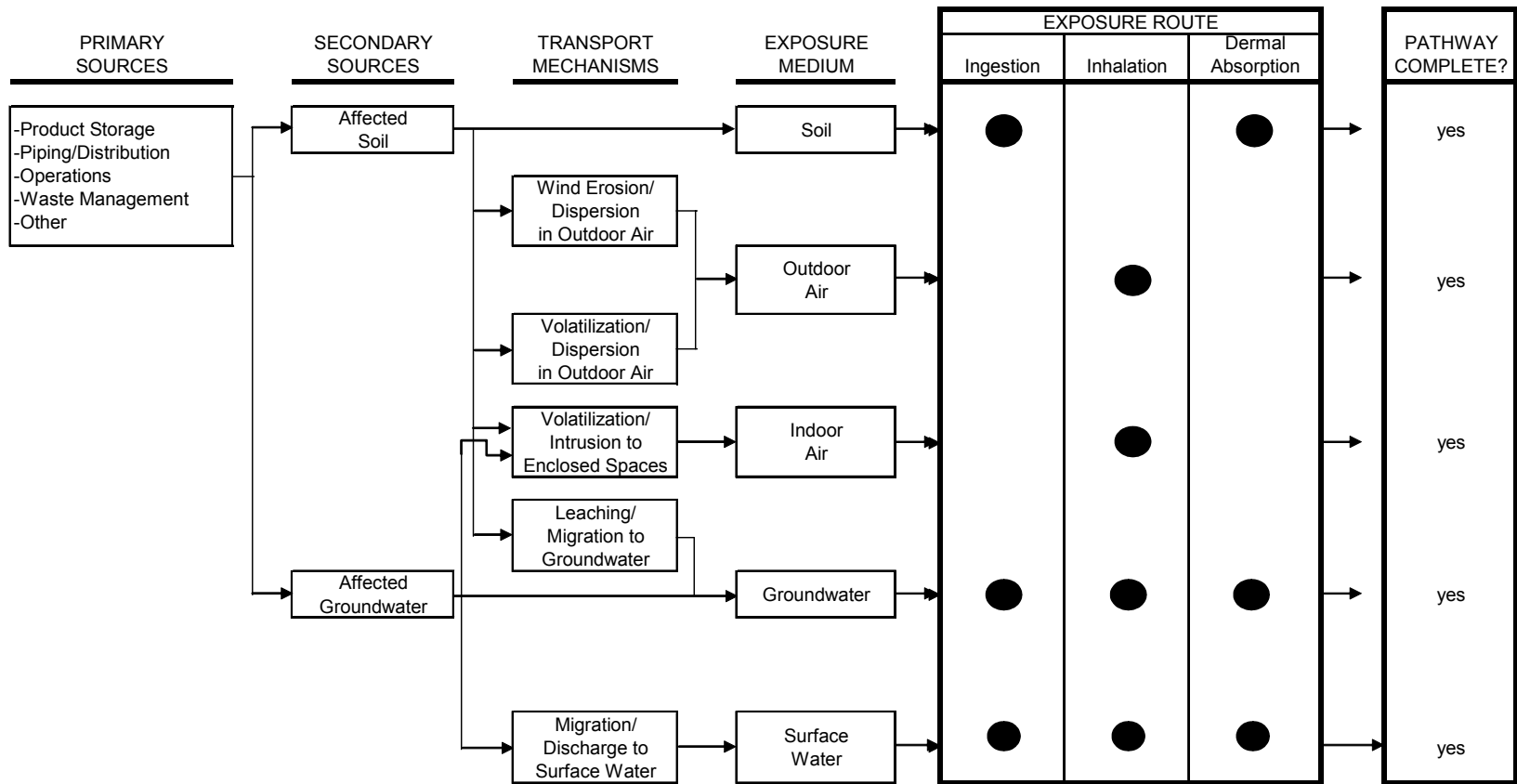


Figure 2-2. Example focused conceptual site model of human health concerns identified at a site where hazardous chemicals were released to soil and groundwater. See Section 2.2.

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Environmental Concern	Reference/Website
Leaching and migration of contaminants to groundwater	USEPA Soil Screening Guidance (USEPA 1996): http://www.epa.gov/superfund/resources/soil/index.htm SFBRWQCB ESL Document (SFBRWQCB 2003): http://www.waterboards.ca.gov/sanfranciscobay/esl.htm USEPA Synthetic Precipitation Leaching Procedure (USEPA 1994): http://www.epa.gov/epaoswer/hazwaste/test/main.htm Commonly Used Models: SESOIL, VLEACH
Ecotoxicity	USEPA Ecological Soil Screening Guidance (USEPA 1996): http://www.epa.gov/superfund/programs/risk/ecorisk/ecossl.htm Risk Assessment Guidance for Superfund: Volume II Environmental Evaluation Manual (USEPA 1989b); Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments (USEPA 1997b) Guidance for Ecological Risk Assessments at Hazardous Waste Sites and Permitted Facilities (CalEPA 1996a,b) Ontario MOEE Rational for the Development and Application of Generic Soil, Groundwater and Sediment Criteria for Use at Contaminated Sites in Ontario (MOEE 1996): http://www.ene.gov.on.ca/ SFBRWQCB ESL Document (SFBRWQCB 2003): http://www.waterboards.ca.gov/sanfranciscobay/esl.htm NOAA Sediment Screening Table (NOAA 1999): http://response.restoration.noaa.gov/cpr/sediment/squirt/squirt.html
Ingestion via plant uptake	USEPA Soil Screening Guidance (USEPA 1996): http://www.epa.gov/superfund/resources/soil/index.htm USEPA Fertilizer Risk Assessment (USEPA 1999): http://www.epa.gov/epaoswer/hazwaste/recycle/fertiliz/risk/ CalEPA CALTOX model (CalEPA 1994a): http://www.dtsc.ca.gov/ Massachusetts DEP Guidance for Disposal Site Risk Characterization (MADEP 1995): http://www.state.ma.us/dep/ors/orspubs.htm
Nuisance/Gross Contamination	Massachusetts DEP Background Documentation for the Development of the MCP Numerical Standards (MADEP 1994): http://www.state.ma.us/dep/ors/orspubs.htm SFBRWQCB ESL Document (SFBRWQCB 2003): http://www.waterboards.ca.gov/sanfranciscobay/esl.htm

Figure 4-1. Suggested references for evaluation of environmental concerns not currently addressed by the CalEPA CHHSLs.

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**TABLE 1: California Human Health Screening Levels for
Soil and Comparison to Other Potential
Environmental Concerns**

Notes:

Always compare soil data for commercial/industrial sites to residential CHHSLs and evaluate need for formal land-use restrictions (see Section 2.10).

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Table 1. California Human Health Screening Levels for Soil And Comparison To Other Potential Environmental Concerns

Chemical	¹ Soil Human Health Screening Levels (mg/kg of dry soil)		² Other Potential Environmental Concerns Posed By Contaminated Soil			
	Residential Land Use	Commercial/Industrial Land Use Only	³ Leaching	⁴ Ecotoxicity	⁵ Nuisance/Aesthetic Concerns	⁶ Other
Organic Acidic Chemicals						
2,4-D	6.9E+02	7.7E+03	X	X	o	
2,4,5-T	5.5E+02	6.1E+03	X	X	o	
Pentachlorophenol	4.4E+00	1.3E+01	X	X	o	
Organic Neutral Chemicals						
Aldrin	3.3E-02	1.3E-01	o	X	o	
Benzo(a)pyrene	3.8E-02	1.3E-01	o	X	o	TPH
Chlordane	4.3E-01	1.7E+00	o	X	o	
DDD	2.3E+00	9.0E+00	o	X	o	
DDE	1.6E+00	6.3E+00	o	X	o	
DDT	1.6E+00	6.3E+00	o	X	o	
Dieldrin	3.5E-02	1.3E-01	X	X	o	
1,4 Dioxane	1.8E+01	6.4E+01	X	o	o	
Dioxin (2,3,7,8-TCDD)	4.6E-06	1.9E-05	o	o	o	
Endrin	2.1E+01	2.3E+02	X	X	o	
Heptachlor	1.3E-01	5.2E-01	X	X	o	
Lindane	5.0E-01	2.0E+00	X	X	o	
Kepone	3.5E-02	1.3E-01	X	o	o	
Methoxychlor	3.4E+02	3.8E+03	o	X	o	
Mirex	3.1E-02	1.2E-01	X	X	o	
PCBs	8.9E-02	3.0E-01	o	X	o	
Toxaphene	4.6E-01	1.8E+00	X	X	o	

Table 1. California Human Health Screening Levels for Soil And Comparison To Other Potential Environmental Concerns

Chemical	¹ Soil Human Health Screening Levels (mg/kg of dry soil)		² Other Potential Environmental Concerns Posed By Contaminated Soil			
	Residential Land Use	Commercial/Industrial Land Use Only	³ Leaching	⁴ Ecotoxicity	⁵ Nuisance/Aesthetic Concerns	⁶ Other
Inorganic Chemicals						
Antimony and compounds	3.0E+01	3.8E+02	site specific	o	o	
Arsenic	7.0E-02	2.4E-01	site specific	X	o	Ambient background
Barium and compounds	5.2E+03	6.3E+04	site specific	X	o	Construction workers
Beryllium and compounds	1.5E+02	1.7E+03	site specific	X	o	
Beryllium oxide ⁷	9.1E-02	4.1E-01	o	o	o	Construction workers
Beryllium sulfate ⁷	2.1E-04	9.5E-04	o	o	o	
Cadmium and compounds	1.7E+00	7.5E+00	site specific	X	o	Ambient background
Chromium III	1.0E+05	1.0E+05	site specific	X	X	
Chromium VI	1.7E+01	3.7E+01	site specific	X	o	Construction workers
Cobalt	6.6E+02	3.2E+03	site specific	X	o	Construction workers
Copper and compounds	3.0E+03	3.8E+04	site specific	X	X	
Fluoride	4.6E+03	5.7E+04	site specific	o	o	
Lead and lead compounds	1.5E+02	3.5E+03 ⁹	site specific	X	o	Uptake in fruits and vegetables
Lead acetate ⁷	2.3E+00	1.0E+01	X	o	o	
Mercury and compounds	1.8E+01	1.8E+02	site specific	X	o	
Molybdenum	3.8E+02	4.8E+03	site specific	X	X	
Nickel and compounds	1.6E+03	1.6E+04	site specific	X	X	Construction workers
Nickel subsulfide ⁷	3.8E-01	1.1E+04	site specific	o	o	
Perchlorate ⁸	pp ⁸	pp ⁸	X	o	o	
Selenium	3.8E+02	4.8E+03	site specific	X	X	
Silver and compounds	3.8E+02	4.8E+03	site specific	X	X	
Thallium and compounds	5.0E+00	6.3E+01	site specific	o	o	Ambient background
Vanadium and compounds	5.3E+02	6.7E+03	site specific	X	X	

Table 1. California Human Health Screening Levels for Soil And Comparison To Other Potential Environmental Concerns

Chemical	¹ Soil Human Health Screening Levels (mg/kg of dry soil)		² Other Potential Environmental Concerns Posed By Contaminated Soil			
	Residential Land Use	Commercial/Industrial Land Use Only	³ Leaching	⁴ Ecotoxicity	⁵ Nuisance/Aesthetic Concerns	⁶ Other
Zinc	2.3E+04	1.0E+05	site specific	X	X	
Notes: <ol style="list-style-type: none"> Direct-exposure screening levels address human exposure to chemicals in soil via incidental ingestion, dermal absorption and inhalation of vapors and particulates emitted to outdoor air (refer to Appendix 1). Assumes impacted soil is situated at or near the ground surface or could be at some time in the future. Volatile chemicals not included at this time (refer to Section 2.5). "Residential Land Use" screening levels generally considered appropriate for other sensitive uses (e.g., day-care centers, hospitals, etc.). Commercial/industrial properties should be evaluated using both residential and commercial/industrial CHHSLs. A deed restriction that prohibits use of the property for sensitive purposes may be required at sites that are evaluated and/or remediated under a commercial/industrial land use scenario only. Carcinogens: CHHSLs based on target cancer risk of 10⁻⁶. Cal/EPA cancer slope factors used when available. Noncarcinogens: CHHSLs based on target hazard quotient of 1.0. Calculation of cumulative risk may be required at sites where multiple contaminants with similar health effects are present (see Section 2.8). Residential and C/I soil CHHSLs for arsenic below background for most sites in California (0.07 mg/kg and 0.24 mg/kg, respectively - see Appendix 1). Use identified or anticipated background as screening level (see Section 2.7). Environmental concerns in addition to direct exposure that may need to be considered in evaluation of contaminated soil. Based on a comparison of soil CHHSLs to soil screening levels for noted concerns compiled by the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB 2003). The need to address other environmental concerns must be evaluated separately in coordination with the lead regulatory agency (See Sections 1.4, 2.2 and Chapter 4). "X": Noted concern may outweigh direct-exposure risks at many sites and drive decisions for cleanup actions. "o": Potential concern but generally will be addressed if cleanup of contaminated soils to meet direct-exposure CHHSLs is carried out. "site specific": Potential concern, but evaluation as to whether this factor is a potential concern must be done on a site specific basis. Leaching of chemicals from soil and subsequent impacts to groundwater. Soil ESLs consider of impacts to drinking water resources, re-emission of volatile chemicals from groundwater into overlying buildings and discharges of contaminated groundwater to surface water. Leaching of metals from soil should be evaluated on a site-specific basis, depending on the potential mobility of the metal species present. Laboratory-based leaching studies are generally preferred over model-derived screening levels. Toxicity to terrestrial flora and fauna. Need to consider ecotoxicity concerns generally determined on a site-by-site basis. Nuisance and gross contamination concerns address odors and aesthetic concerns as well as general resource degradation and presence of potentially mobile free product. Other pertinent environmental concerns and considerations as determined on a site-specific basis. Health risk to construction workers may outweigh risk to residents or commercial/industrial workers for chemicals that are carcinogenic due to increased exposure to airborne dust particles and incidental ingestion of soil. Uptake of chemicals in edible fruits and vegetables from soil may need to be considered in some cases for noted chemicals. These metal salts are significantly (greater than 10-fold) more toxic than the values for the metals in general. If it is known that this chemical was used at the site, the screening number for this chemical should be used instead of the screening number for the metal and its compounds. Calculation of a screening number for the chemical has been postponed (pp) until the toxicity criterion currently being developed by OEHHA is published as a final document. This screening number is above the Total Threshold Limit Concentration for lead of 1000 mg/kg, as defined in Title 22, California Code of Regulations. It is also above the US EPA Region IX PRG of 800 mg/kg. 						

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TABLE 2: California Human Health Screening Levels for Indoor Air and Soil Gas

Notes:

Always compare soil data for commercial/industrial sites to residential CHHSLs and evaluate need for formal land-use restrictions (see Section 2.10).

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Table 2. California Human Health Screening Levels for Indoor Air and Soil Gas

Chemical	¹ Indoor Air Human Health Screening Levels (µg/m ³)		² Shallow Soil Gas Human Health Screening Levels (Vapor Intrusion) (µg/m ³)	
	Residential Land Use	Commercial/Industrial Land Use Only	Residential Land Use	Commercial/Industrial Land Use Only
Benzene	8.40 E-02	1.41 E-01	3.62 E+01	1.22 E+02
Carbon Tetrachloride	5.79 E-02	9.73 E-02	2.51 E+01	8.46 E+01
1,2-Dichloroethane	1.16 E-01	1.95 E-01	4.96 E+01	1.67 E+02
<i>cis</i> -1,2-Dichloroethylene	3.65 E+01	5.11 E+01	1.59 E+04	4.44 E+04
<i>trans</i> -1,2-Dichloroethylene	7.30 E+01	1.02 E+02	3.19 E+04	8.87 E+04
Ethylbenzene	Postponed ³	Postponed ³	Postponed ³	Postponed ³
Mercury, elemental	9.40 E-02	1.31 E-01	4.45 E+01	1.25 E+02
Methyl tert-Butyl Ether	9.35 E+00	1.57 E+01	4.00 E+03	1.34 E+04
Naphthalene	7.20 E-02	1.20 E-01	3.19 E+01	1.06 E+02
Tetrachloroethylene	4.12 E-01	6.93 E-01	1.80 E+02	6.03 E+02
Tetraethyl Lead	3.65 E-04	5.11 E-04	2.06 E-01	5.78 E-01
Toluene	3.13 E+02	4.38 E+02	1.35 E+05	3.78 E+05
1,1,1-Trichloroethane	2.29 E+03	3.21 E+03	9.91 E+05	2.79 E+06
Trichloroethylene	1.22 E+00	2.04 E+00	5.28 E+02	1.77 E+03
Vinyl Chloride	3.11 E-02	5.24 E-02	1.33 E+01	4.48 E+01
<i>m</i> -Xylene	7.30 E+02	1.02 E+03	3.19 E+05	8.87 E+05
<i>o</i> -Xylene	7.30 E+02	1.02 E+03	3.15 E+05 ⁴	8.79 E+05 ⁴
<i>p</i> -Xylene	7.30 E+02	1.02 E+03	3.17 E+05	8.87 E+05

Reference: Appendix 1, OEHHA Target Indoor Air Concentrations and Soil-Gas Screening Numbers for Existing Buildings under Residential and Industrial/Commercial land uses.

Notes:

- "Residential Land Use" screening levels generally considered adequate for other sensitive uses (e.g., day-care centers, hospitals, etc.). Commercial/industrial properties should be evaluated using both residential and commercial/industrial CHHSLs. A deed restriction that prohibits use of the property for sensitive purposes may be required at sites that are evaluated and/or remediated under a commercial/industrial land use scenario only. Calculation of cumulative risk may be required at sites where multiple contaminants with similar health effects are present. Carcinogens: CHHSLs based on target cancer risk of 10⁻⁶. Cal/EPA cancer slope factors used when available. Noncarcinogens: CHHSLs based on target hazard quotient of 1.0.
- Soil Gas: Screening levels based on soil gas data collected <1.5 meters (five feet) below a building foundation or the ground surface. Intended for evaluation of potential vapor intrusion into buildings and subsequent impacts to indoor-air. Soil gas data should be collected and evaluated at all sites with significant areas of VOC-impacted soil. Screening levels also apply to sites that overlie plumes of VOC-impacted groundwater.
- Calculation of a screening number for the chemical has been postponed (pp) until the toxicity criterion currently being developed by OEHHA is published as a final document.
- Representative Screening Numbers for mixed xylenes. The representative value for mixed xylenes is based on the calculated lowest one amongst the three isomers.

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**Appendix 1: Human-Exposure-Based Screening
Numbers Developed To Aid Estimation of
Cleanup Costs for Contaminated Soil**

OEHHA (November 2004)

(Revised January 2005)

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**APPENDIX 2: Comparison of CHHSLs to Existing
Screening Levels and Standards**

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Comparison of CHHSLs to Existing Screening Levels and Standards

The U.S. Environmental Protection Agency Region IX office in San Francisco publishes "Preliminary Remediation Goals (PRGs)" for soil, drinking water and ambient air with a focus on risks to human health (USEPA 2004). The San Francisco Bay Area Regional Water Quality Control Board (SFBRWQCB) publishes Environmental Screening Levels (ESLs) for soil, groundwater, surface water and air that provide screening levels for other common environmental concerns as well (SFBRWQCB 2003).

Methods used by the USEPA and the SFBRWQCB to assess potential human exposure to contaminants in soil and air are very similar. The resulting screening levels are therefore almost identical. Similarities and differences between the CHHSLs and these suites of screening levels are summarized below. In addition, federal and state agencies publish screening levels or regulatory standards for hazardous waste that are sometimes confused with environmental screening levels. The applicability of these criteria to contaminated sites is also briefly described.

USEPA Region IX PRGs

The USEPA Region IX "Preliminary Remediation Goals" or "PRGs" address the direct exposure of residents and commercial workers to contaminants found in soil, drinking water and air (USEPA 2004). These PRGs may be found at <http://www.epa.gov/region09/waste/sfund/prg/index.htm>. Equations and assumptions used to develop the PRGs are consistent with the human health risk assessment guidance prepared by Cal/EPA, including the CalTOX model (Cal/EPA 1994a) and the *Preliminary Endangerment Assessment Guidance Manual* (Cal/EPA 1994b) and *Supplemental Guidance for Human Health Multimedia Risk Assessments of Hazardous Waste Sites and Permitted Facilities* (Cal/EPA 1996a).

The USEPA approach for developing the PRGs was adopted to develop the CHHSLs with minor modifications. The CHHSLs are an adjustment of soil and ambient air PRGs by using Cal/EPA-specific toxicity factors. For the majority of the chemicals listed, Cal/EPA toxicity factors are slightly more stringent or equal to those used by the USEPA to develop the PRGs. Some CHHSLs are significantly more restrictive.

A detailed discussion of the USEPA Region IX PRGs models is provided in Appendix 1. As discussed in the USEPA Region IX document, the PRGs are intended to address human direct-exposure with impacted soil and "...do not consider impact to groundwater or address ecological concerns" and cannot be used

as a stand-alone tool for the evaluation of contaminated sites (USEPA 2004). The same is true for the CHHSLs.

USEPA Soil Screening Levels

The USEPA Office of Emergency and Remedial Response document *Soil Screening Guidance: Technical Background Document* presents methodologies and related soil screening levels for evaluation of direct-exposure concerns, leaching of contaminants from soil and subsequent impacts to groundwater, uptake of contaminants into plants and the intrusion of volatile chemicals into buildings (USEPA 1996). Although subsequent guidance documents on specific topics have since been prepared by USEPA and other agencies (USEPA PRGs, USEPA vapor intrusion guidance document, etc.), the Soil Screening Guidance nonetheless provides a valuable resource for evaluation of these environmental concerns.

Soil screening levels for direct exposure concerns are based on USEPA toxicity factors and similar exposure models used to develop the USEPA Region IX PRGs and the Cal/EPA CHHSLs. Screening levels are presented for specific pathways (e.g., ingestion, inhalation of outdoor air, etc.), rather than for combined exposure routes as now presented in the PRGs and the CHHSLs. Dermal absorption was not considered in calculation of the direct-exposure screening levels. This pathway was included in calculation of the PRGs and CHHSLs, however. The ultimate difference in screening levels is in most cases minimal.

Soil screening levels for leaching concerns are based on a simplistic contaminant equilibrium partitioning model. The model uses USEPA maximum contaminant levels (MCLs) for drinking water as target groundwater impact goals. Generic dilution factors of “1” and “20” are presented for mixing of leachate in groundwater and subsequent dilution of contaminant concentrations. The leaching based soil screening levels are presented in the USEPA Region IX PRG document.

The Soil Screening Guidance model does not take into account fate and transport of leachate in the vadose zone and can be excessively conservative for highly volatile or highly sorptive chemicals or for use at sites where groundwater is greater than ten meters or more below the base of contaminated soil. The document also presents leaching based screening levels for inorganic (contaminants, primarily metals). Leaching of metals from soil is highly dependent on the actual species of the metal present and site-specific soil factors. Laboratory-based studies are generally preferable over model-based approaches for evaluation of leaching of metals and other inorganic chemicals from soil.

The uptake of contaminants in edible plants is briefly discussed in the Soil Screening Guidance document. Screening levels are presented for a limited number of inorganic contaminants. The report concludes that uptake of contaminants into plants may be of particular concern for arsenic and cadmium. With the exception of these compounds, the report notes that inorganic contaminants in soil are likely to be toxic to the plants themselves at levels far lower than would be of concern for uptake and consumption of the plants by humans. (DTSC also considers the uptake of lead in edible plants. Refer to Table 1 of the main document).

A brief discussion of the Johnson and Ettinger model for vapor intrusion from contaminated soils into buildings is provided in the Soil Screening Guidance document. Soil screening levels for this concern are not presented, however, due to concerns that the soil model significantly overestimates potential impacts to indoor air. The document instead recommends that soil gas data be used to evaluate this concern, although screening levels are likewise not provided. Soil gas CHHSLs presented in Table 2 of this document reflect more up-to-date USEPA methods for evaluation of vapor intrusion concerns (see Appendix 1). The USEPA is currently developing additional guidance on this subject.

SFBRWQCB Environmental Screening Levels (ESLs)

The SFBRWQCB ESLs are a compilation of screening levels specific for use at sites overseen by that agency in the San Francisco bay area for a number of different environmental concerns, including risk to human health. The July 2003 edition (updated February 2004) of the SFBRWQCB ESLs includes screening levels for the following exposure pathways and/or environmental concerns:

Soil:

- Protection of human health
- Direct/indirect exposure to impacted soil (ingestion, dermal absorption, inhalation of vapors and dust in outdoor air);
- Emission of subsurface vapors to building interiors;
- Protection of groundwater quality (leaching of chemicals from soil);
- Protection of terrestrial (nonhuman) biota;
- Protection against nuisance concerns (odors, etc.) and general resource degradation;

Indoor Air:

- Protection of human health;

Shallow Soil Gas:

- Emission of subsurface vapors to building indoor air.

Similar ESLs are also provided for the environmental media of groundwater and surface water. In the ESL document, soil screening levels for individual environmental concerns are compared and the lowest of these levels (i.e., the concentration of the chemical at which all other environmental concerns would likewise be addressed) is presented in the ESL summary lookup tables.

By comparison, the CHHSLs reflect a subset of the screening levels considered in the ESL document specific to human health concerns. CHHSLs were developed for the follow concerns only:

Soil:

- Direct/indirect exposure to impacted soil (nonvolatile chemicals only - ingestion, dermal absorption, inhalation of vapors and dust in outdoor air);

Indoor Air:

- Protection of human health;

Shallow Soil Gas:

- Emission of subsurface vapors to building indoor air.

For comparative purposes, the most current ESLs may be found at <http://www.waterboards.ca.gov/sanfranciscobay/esl.htm>. The soil direct exposure CHHSLs and ESLs for nonvolatile chemicals and soil gas CHHSLs and ESLs for volatile chemicals are essentially identical. Soil and indoor air ESLs for human health concerns were developed by incorporating Cal/EPA toxicity factors into the USEPA PRG models for direct exposure to contaminated soil and USEPA models for the intrusion of soil gas into buildings. Since this mimics the approach used to develop the CHHSLs, the resulting screening levels are very similar.

The primary difference is the assumption in the ESL soil and indoor air screening levels for human health that up to five chemicals with similar noncancer health effects may be present at a given site. This allows potential cumulative health risks to be conservatively taken into account at most sites without requiring that the screening levels be adjusted on a site-by-site basis (see Section 2.8). This was done by simply dividing the initial screening level based on a hazard quotient of 1.0 by a factor of five (adjusting the target Hazard Quotient to 0.2). Future editions of the ESL document will directly incorporate the Cal/EPA CHHSLs for soil and indoor air as part of that document, again adjusted to address cumulative risk concerns at a Tier 1 level.

Hazardous Waste Regulations

California Total Threshold Limit Concentrations (TTLC) criteria for solids and Soluble Threshold Limit Concentration (STLC) are used to determine whether a waste is a hazardous waste (Title 22, California Code of Regulations, section 66261.24(a)(2)(A) and (B)). If a waste is determined to be a hazardous waste, specific regulations and statutes regarding the management, storage, transportation and disposal must be met.

In most cases, TTLC values exceed the most conservative environmental screening levels presented in this document. In the case of Endrin and DDT/DDE/DDD, however, the TTLC is somewhat lower than the screening levels for human health concerns. The TTLC for combined DDT/DDE/DDD is 1.0 mg/kg while the residential, direct-exposure soil screening for each compound ranges from 1.6 mg/kg to 2.3 mg/kg, for a sum of 5.5 mg/kg (see Table 1).

In practice, the extent of soil contaminated above 1.0 mg/kg versus 5.5 mg/kg total DDT/DDE/DDD may not be significant in the field following cleanup to the risk-based CHHSLs. However, it may be prudent to use TTLCs as final cleanup values for residential sites where the TTLC is less than cleanup values that were based on actual risk to human health and the environment. This may help to avoid potential future problems with soil management and disposal.

TSCA Cleanup Levels for PCBs

The treatment, storage and disposal of polychlorinated biphenyls (PCBs) are regulated under the federal Toxics Substance Control Act (TSCA), as described in 40 CFR Part 761 (revised 7/1/99), which is administered by the USEPA Toxics Section. If PCBs are found at a site, the regulation should be consulted to determine its applicability and to ensure that the appropriate notifications are provided to and approvals are obtained from USEPA (refer also to *Guidance on remedial Actions for Superfund Sites with PCB Contamination*, USEPA 1990). To obtain more information regarding regulations and guidance, the USEPA's PCB web page can be accessed at: <http://www.epa.gov/opptintr/pcb/>

Within each USEPA Region, the Regional Administrator has designated Regional PCB Coordinators to oversee the development of PCB efforts. The staff of the Region IX PCB Program is available to members of the regulated community and others who have questions concerning the manufacture, processing, distribution in commerce, use, cleanup, storage and disposal of PCBs and PCB articles. The Region IX PCB web page can be accessed at: <http://www.epa.gov/region09/toxic/pcb/index.html>

USEPA Region IX staff can be contacted at:

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The Pennsylvania Integrated Pest Management Program /
Philadelphia School & Community IPM Partnership

Asthma, Pests, and Pesticides

Asthma

Asthma is a long-term condition causing inflammation of the lung's airways. Symptoms of asthma include wheezing, coughing, feeling of tightness in the chest, difficulty breathing, and itching neck, throat and ears. While the causes of asthma are not fully understood, a combination of genetic susceptibility and environmental factors are involved. Although we cannot control our genetic make-up, we *can* help prevent asthma attacks by paying attention to the environmental conditions that irritate lungs and set off an attack.

Why be Concerned?

Approximately 20 million Americans have asthma and it is the most common chronic childhood disease – afflicting over 6 million children nationally and over 100,000 children in Southeastern Pennsylvania. In Philadelphia, the asthma rates among school-aged children are more than twice the rates for Pennsylvania and the nation as a whole. Asthma is the leading cause of school absences. Parents, in turn, must miss work to stay home with their sick children. In Philadelphia, 16,000 children visit emergency rooms each year. African-American and Hispanic/Latino children have asthma rates 2-3 times that of white children. A bad asthma attack can be fatal.

Asthma Triggers

Asthma attacks are usually started by exposure to certain substances called *triggers*. Triggers are either allergens or lung irritants. Airborne allergens are substances such as pollen, animal dander, cigarette smoke, aerosols, or mold that cause an allergic reaction. Chemical lung irritants include pesticides, perfumes, air fresheners and household and industrial cleaning products. Repeated exposure to allergens or irritants, such as cockroach and/or mouse allergens, can “sensitize” people - making them more likely to experience allergic reactions. Awareness of asthma triggers can help you take steps to reduce them, and thereby preventing asthma symptoms or attacks.

Pests Trigger Asthma

Pests are unwanted creatures that invade our homes. Once they have gotten inside, some of these pests, notably, mice, rats and cockroaches, can contribute to an asthma attack. In fact, research is going on to determine whether or not these pests can actually cause asthma to develop.

The **single major factor** contributing to asthma in urban-dwelling children in the Northeastern US has been found to be **exposure to cockroach allergens**. Cockroaches shed skins, leave behind feces, and when cockroaches are dead, their bodies turn into dust – all things that can trigger an asthma attack. To make matters worse, when pesticide sprays or “bug bombs” are used to combat roaches, they can also irritate lungs and potentially cause an attack. Rodents, such as

rats and mice, can trigger asthma as well. These rodents shed dead skin cells and produce waste products that can trigger attacks if someone with asthma breathes them in.

Pesticides and Human Health

Pesticides are substances designed to kill, control or repel pests, including insects, rodents, weeds, and molds. The US Environmental Protection Agency lists pesticides as one of four environmental pollutants that may influence the induction and exacerbation of asthma symptoms. Pesticides do this by irritating the lungs as they are breathed in. In laboratory tests with animals, commonly used pesticides have been linked to cancer, birth defects, reproductive disorders, and neurological, kidney and liver damage. To be safe, it is important to limit children's exposures to toxins of all kinds, including pesticides.

What Can You Do to Safely Control Pests?

Integrated Pest Management (IPM) is an approach to pest control that focuses on *eliminating the root causes of pest problems* and *using the safest, most effective methods available* to get rid of active infestations. IPM prevents pest by using a combination of physical and chemical methods. Because **IPM focuses on prevention**, it is more effective than reactive, spray-based approach to pest control and reduces the need to use pesticides.

Pest Prevention

These methods are at the heart of an IPM program:

- **Keeping watch:** Certain areas of the house are more susceptible to pests such as the kitchen, basement or bathroom. Small sticky traps or glue boards can be used in these areas as an “early warning” system. The goal is to quickly find any pests and how they are getting in, *before* they become a big problem.
- **Prevent pest access:** Caulk the cracks and crevices pests may use to move or hide in. For larger holes, use stainless steel or copper mesh to plug the holes, and then use a silicone caulk to seal it. Pay special attention to areas where pipes and wires come in through the wall. Make sure to use window screens and that they are in good repair.
- **Prevent harborage:** Reduce clutter – get rid of the things you do not need such as old clothes, newspapers, magazines and cardboard boxes where pests can easily hide.
- **Prevent food sources:** Store food in plastic or glass containers with tight-fitting lids to prevent pests from eating it. Keep dirty dishes in soapy water so that pests cannot eat the scraps. Clean thoroughly, with particular attention to the floor under the refrigerator, stove/oven and other places where food crumbs and spills may be collecting. Remove and store pet foods in pest-proof containers at night. Use a trash can with a tight-fitting lid and empty regularly.
- **Prevent water sources:** Fix any water leaks, wipe up spills and remove pet's water dishes at night.

Physical Controls

Sticky traps for insects and snap-traps for rodents are safe and good tools for catching the occasional invader. Be sure they are placed correctly for maximum benefit. Roaches and rodents run along the wall in concealed spaces, so make sure the traps are flush with the wall. Snap traps should snap toward the wall.

Chemical Controls: Less-Risky Pesticides

After using all of the above methods, you may need to consider using a pesticide. Try to select products that limit human exposures to the product. Aerosols, liquid sprays, mothballs or “bug bombs” all pose *more* risk of chemical exposure and cause lung irritation. Instead, look for pesticides in tamper-resistant bait stations or a “gel” formula. Boric acid dust can be used, if *carefully* puffed gently and in small amounts behind wall voids and socket covers to eliminate insects hiding behind these areas. Avoid spreading any kind of pesticidal dust in and around the rooms of the home.

Safety First!

ALWAYS read the entire label on any pesticide product before you buy and use them in your home. Ask yourself: does this product control the pest I have? Can I use this product without exposing myself and/or my family to the pesticide? If pesticides are stored in the home, store in a **locked** cabinet at least 4 feet up and out of the reach of children.

NEVER buy pesticides in unmarked containers or that do not have an EPA registration number on the container. These products are **illegal** and potentially very dangerous to your family.

Eliminating pests *safely* will help reduce the number one asthma trigger in the home!

For more information and assistance, contact:

www.paipm.org

The Pennsylvania Integrated Pest Management Program

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Philadelphia School & Community IPM Partnership

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Curr Opin Allergy Clin Immunol. 2011 Apr;11(2):90-6.

Pesticides and asthma.

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Abstract

PURPOSE OF REVIEW: Several clinical and epidemiological studies have reported an association between exposure to pesticides, bronchial hyper-reactivity and asthma symptoms. This article reviews the mechanistic evidence lending support to the concept that either acute or chronic low-level inhalation of pesticides may trigger asthma attacks, exacerbate asthma or increase the risk of developing asthma.

RECENT FINDINGS: Pesticide aerosols or gases, like other respiratory irritants, can lead to asthma through interaction with functional irritant receptors in the airway and promoting neurogenic inflammation. Cross-talk between airway nerves and inflammatory cells helps to maintain chronic inflammation that eventually damages the bronchial epithelium. Certain organophosphorus insecticides cause airway hyper-reactivity via a common mechanism of disrupting negative feedback control of cholinergic regulation in the lungs. These pesticides may interact synergistically with allergen sensitization rendering individuals more susceptible for developing asthma.

SUMMARY: Many pesticides are sensitizers or irritants capable of directly damaging the bronchial mucosa, thus making the airway very sensitive to allergens or other stimuli. However, most pesticides are weakly immunogenic so that their potential to sensitize airways in exposed populations is limited. Pesticides may increase the risk of developing asthma, exacerbate a previous asthmatic condition or even trigger asthma attacks by increasing bronchial hyper-responsiveness.

PMID: 21368619 [PubMed - indexed for MEDLINE]

Publication Types, MeSH Terms, Substances

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Strategic Plan for Asthma in California

2008–2012



February 2008



- d. Asthma management strategies that lead to a reduction in asthma morbidity and mortality.
 - e. Identification, translation, and implementation of evidence-based best practices in health care service delivery, at the levels of the individual practitioner, group practice and insurance plan.
- 2.4.2. CDPH will convene an asthma research symposium every two years to summarize recent important research findings, to assess their implications and to address current interests, and research questions as suggested by stakeholders. The symposium will provide an opportunity to track etiologic research and foster communication among researchers to increase the chances of crosscutting research (Figure 5. Possible Research Areas for Future Research Symposia).

Sample Performance Indicator

An asthma research symposium is convened every two years starting in 2008.

2.5. Policy regarding asthma in California will be informed by analysis and interpretation of data.

- 2.5.1. The determination of priority data to be collected will be guided by both availability and the need for developing and evaluating specific policies and interventions.
- 2.5.2. Data analysis, reports, and key findings will be disseminated to policy makers, health care providers, employers, community based organizations and the public.
- 2.5.3. Data will be identified, analyzed, and interpreted to support policy development for goals 1–5 of this *Plan*.
- 2.5.4. When data is limited or unavailable, expert opinion and the best available evidence will be used to assess policy proposals and to guide policy development.


Sample Performance Indicator

Data is considered in policy decisions and policy is considered in setting data priorities.

Figure 4. Potential Indoor and Outdoor Research Areas

- Research related to air pollution (e.g., traffic and industrial facilities); link data from the Air Resources Board and the Air Quality Management Districts.
- Research on the pathways, drift patterns, and exposure levels of second hand smoke and the health effects associated with this trigger in multi-unit housing settings.
- Research on the connections between global warming, air pollution, and asthma.
- Research on specific asthma triggers, sensitizers, and irritants such as cleaning chemicals, pesticides, pollens, landscaping practices, and fragrances.

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 Submit letter of interest, resume, and 3 references to: HRManager@icls.org
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MORENO VALLEY: Officials seek comments on ProLogis project

BY LORA HINES
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Published: 26 July 2012 07:45 PM

Public comments are being accepted on a draft environmental impact

A Text Size  

report for a proposed 2.2 million square-foot warehouse project in Moreno Valley that officials began discussing about five years ago.

City planning officials recently released the report for the proposed ProLogis Eucalyptus Industrial Park Project, which would consist of six warehouses south of Highway 60 and east of the Moreno Valley Auto Mall. Residents, state and local agencies and community and environmental groups have until Sept. 4 to submit comments on the report.

ProLogis, a San Francisco-based international warehouse developer, bought more than 125 acres in the 28000 block of Eucalyptus Avenue more than five years ago. Almost all of it will be used for the project, which will require amendments to the city's general plan and zoning requirements.

When it was initially proposed, ProLogis officials estimated the project could cost as much as \$150 million to develop and would create between 1,000 and 1,500 jobs. No one from the corporation could be reached Thursday, July 26, to offer a cost or job update or comment on the project.

According to the draft environmental impact report, the poor economy in 2008 stalled the project. ProLogis recently decided to pursue the process, the report states.

City planning official John Terell said there is nothing unusual about the project or its potential impacts that have delayed it.

In March 2008, city planning officials received 25 responses from state and local agencies, residents and environmental groups about concerns with the proposed project, including increased traffic, pollution and its proximity to schools.

The report states the project could affect areas such as air and water quality, animal habitat, Native American prehistoric sites, drainage and traffic.

Resident Marti Orth was among those who submitted comment about the proposed project in 2008. She said she is as opposed to it now as she was then, but she believes her opinion will have little effect on the City Council, which will decide whether to approve the project later this year.

"I think it's a forgone conclusion," said Orth, a resident of more than 40 years. "First, decisions are made. Then they ask for opinions."

Moreno Valley Headlines

[MORENO VALLEY: Prison time, payback for Sutton](#)

[MORENO VALLEY: Home invasion slaying has four defendants](#)

[MORENO VALLEY: Proposed Harbor Freight project moves forward](#)

[MORENO VALLEY: City spending nearly \\$2 million for surveillance cameras](#)

Today's Poll [What's this?](#)

Beaumont is reducing the number of cats residents are allowed to have at home without getting a cattery license, from nine to four. How many cats do you have at home?

- Zero
- One
- Two
- 3-4
- 5-9
- 10 or more
- No comment

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Photos



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[Rain cells hit inland counties](#)



NORCO: Mounted Posse/Professional Rodeo




ANAHEIM: Harvest Crusades

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 Published: Friday, August 31, 2012
 Category: News & Politics




Rains block Moreno Valley road
 Published: Thursday, August 30, 2012
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Star scores
 Published: Thursday, August 30, 2012
 Category: Education



CRIME BLOTTER: \$10,000 reward offered in shooting death of Ashanti Hassan
 Published: Thursday, August 30, 2012
 Category: News & Politics



Community College Students Fighting for Classes
 Published: Thursday, August 30, 2012
 Category: News & Politics

On Wednesday, July 25, city manager Henry Garcia told hundreds of Inland area officials and business owners that warehouse development and health care will be Moreno Valley's job growth focus areas because they have the most potential to employ the city's primarily blue-collar workforce.

Orth said residents have little reason to believe that the proposed project will bring as many jobs as officials claimed because the Skechers warehouse didn't.

"I don't know why (ProLogis) would be any better," she said.


Skechers had employed about 1,000 people in five smaller warehouses in Ontario before consolidating and moving to Moreno Valley. Moreno Valley officials and project supporters promised that Skechers warehouse would bring more than 1,000 jobs. It employs about 600 people.

City officials have said they expect the number of employees to increase as the economy improves.

Comments about the ProLogis project are to be sent to associate city planner Jeff Bradshaw, Moreno Valley Planning Division, 14177 Frederick St., Moreno Valley 92553 or send e-mail to jeffreyb@moval.org.

Comments

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EPA Brownfields Grants, CERCLA Liability, and All Appropriate Inquiries



To be eligible for an EPA brownfields grant to address contamination at brownfields properties, eligible entities must demonstrate that they are not liable under CERCLA for the contamination at the site. Accordingly, eligible entities who may be considered “potentially responsible parties” under CERCLA must demonstrate they meet one of the liability protections or defenses set forth in CERCLA by establishing that they are (1) an innocent landowner, (2) a contiguous property owner, (3) a bona fide prospective purchaser, or (4) a government entity that acquired the property involuntarily through bankruptcy, tax delinquency, or abandonment, or by exercising its power of eminent domain.

To claim protection from liability as an innocent landowner, contiguous property owner, or bona fide prospective purchaser, property owners, including state and local governments, must conduct all appropriate inquiries prior to acquiring the property.

What is CERCLA?

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), also known as “Superfund,” was established to address abandoned hazardous waste sites. Among other things, CERCLA establishes a liability scheme for determining who can be held accountable for releases of hazardous substances. CERCLA also establishes the authority for EPA’s Brownfields Program and sets forth which entities and properties are eligible for brownfields grants.

Can state and local governments be found liable for contamination at brownfields?

Yes. Under CERCLA, persons (including state and local governments) can be liable by virtue of property ownership, or by virtue of their actions with respect to a particular site. For sites from which there is a release or threatened release of hazardous substances, the categories of “potentially responsible parties” include any person or party who:

- Currently owns or operates the property, or owned or operated the property at the time of disposal of hazardous substances;
- Arranged for hazardous substances to be disposed of or transported to the site for disposal; or
- Transported hazardous substances to the site.

Applicants should note that CERCLA employs a “strict liability” scheme—that means it is without regard to fault. Accordingly, a person who owns a property from which there is a release of hazardous substances can be held liable just by virtue of ownership.

If I am applying for a brownfields grant, do I have to worry about CERCLA liability?

Yes. Brownfields grantees are prohibited from using grant money to pay response costs at a brownfield site for which the grantee is potentially liable under CERCLA.

Therefore, all brownfields grantees who may be potentially liable at the site for which they are seeking funds must demonstrate that they are not liable for the contamination that will be addressed by the grant, subgrant, or loan. Applicants who own or operate the property for which they are seeking funding, or who may have owned or operated the property at the time of disposal of hazardous substances, must demonstrate they fall within one of the liability protections.

Cleanup grant applicants in particular should take note of this prohibition. Because cleanup grantees are required to own a site to receive brownfields funding—and because owners of contaminated property are liable under CERCLA—cleanup grant applicants **must** demonstrate they meet one of the liability protections described above. Some grant applicants who do not own the property for which they are seeking funding, or who are not seeking site-specific grant funds, may not fall within one of the categories of “potentially responsible parties,” and thus may not have to demonstrate they meet a liability protection.

Please contact your Regional Brownfields representative if you are not sure whether you will need to demonstrate a liability protection to be eligible for a grant.

Who may be protected from liability under CERCLA?

The CERCLA statute provides protection from liability for certain parties, provided they comply with specific criteria outlined in the statute. Parties provided protection from CERCLA liability include:

- Innocent landowners (CERCLA §101(35)(A))
- Contiguous property owners (CERCLA §107(q))
- Bona fide prospective purchasers (CERCLA §§101(40) and 107(r))
- Units of state or local government that acquire ownership or control involuntarily through bankruptcy, tax delinquency, or abandonment (CERCLA §101(20)(D))

Government entities that acquire property by eminent domain (CERCLA §101(35)(A)(ii))

- Not be affiliated with any liable party through any familial relationship or any contractual, corporate or financial relationship (other than a relationship created by the instrument by which title to the property is conveyed or financed).

NOTE: Property acquisition includes properties acquired by gifts and zero price transactions.

How can a state or local government demonstrate that it is not liable for contamination at a brownfield?

All state and local governments that may be potentially liable at a site for which they are applying for funding (including site-specific assessment grants, cleanup grants, or subgrants or loans from revolving loan funds), **must** demonstrate that they qualify for one of the CERCLA liability protections. All non-profit entities applying for brownfields cleanup grants also must make this demonstration.



Eastern Manufacturer Brewer, Maine, prior to cleanup (above) and after (right)



What are the conditions for attaining liability protection under CERCLA?

To be eligible for liability protection under CERCLA as an innocent landowner, contiguous property owner or bona fide prospective purchaser, prospective property owners must:

- Conduct All Appropriate Inquiries in compliance with 40 CFR Part 312, prior to acquiring the property;
- Comply with all Continuing Obligations after acquiring the property. (CERCLA §§101(40)(C – G) and §§107(q)(A) (iii – viii)); and

To demonstrate that it qualifies as an innocent landowner, contiguous landowner, or bona fide prospective purchaser, the applicant must:

- Conduct All Appropriate Inquiries prior to acquiring the property, **and**
- Comply with all Continuing Obligations after acquiring the property.

State and local governments that acquired a property involuntarily through bankruptcy, tax delinquency, or abandonment, or by exercising their power of eminent domain, do not have

to conduct all appropriate inquiries prior to acquiring the property, but must exercise “due care” after acquiring the property (CERCLA §101(35)(A) and §§107(b)(3)(a – b)). [Note: One threshold criteria for applicants seeking cleanup grant funding is that a Phase I must be conducted prior to application submission. Accordingly, although state and local governments that acquired property involuntarily are not required to conduct all appropriate inquiries for purposes of establishing a liability protection, they may have to conduct all appropriate inquiries anyway to be eligible for a cleanup grant.]

What is “All Appropriate Inquiries”?

“All Appropriate Inquiries,” or AAI is the process of conducting due diligence or a Phase I Environmental Site Assessment to determine prior uses and ownership of a property and assess conditions at the property that may be indicative of releases or threatened releases of hazardous substances at, on, in, or to the property.

The standards and practices established as comprising “All Appropriate Inquiries” are set forth in regulations promulgated at 40 CFR Part 312.

EPA recognizes two ASTM International Standards as compliant with the AAI requirements: ASTM E1527-05 “Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process” and E2247-08 “Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process for Forestland or Rural Property.”

When must All Appropriate Inquiries be conducted?

- All Appropriate Inquiries must be conducted or updated within one year **prior to acquiring ownership of a property.**
- Certain aspects or provisions of All Appropriate Inquiries (i.e., interviews of current and past owners, the review

of government records, the on-site visual inspection, and searches for environmental cleanup liens) must be conducted or updated **within 180 days prior to acquiring ownership of a property.**

Who can perform All Appropriate Inquiries?

The individual who supervises or oversees the conduct of the AAI investigation and signs the final report required in the AAI regulation must meet the definition of an “Environmental Professional” provided in the AAI Final Rule (40 CFR §312.10).

A person that does not qualify as an “Environmental Professional” as defined in 40 CFR §312.10, may assist in the conduct of the investigation if he or she is under the responsible charge of a person meeting the definition.

What are “Continuing Obligations?”

After acquiring a property, to maintain the liability protections, landowners must comply with “continuing obligations” during their property ownership. The continuing obligations include:

1. Provide all legally required notices with respect to the discovery or release of a hazardous substance;
2. Exercise appropriate care with respect to the hazardous substances by taking reasonable steps to stop or prevent continuing or threatened future releases and exposures, and prevent or limit human and environmental exposure to previous releases;
3. Provide full cooperation, assistance, and access to persons authorized to conduct response actions or natural resource restoration;
4. Comply with land use restrictions and not impede the effectiveness of institutional controls; and
5. Comply with information requests and subpoenas.

Where can I get additional information?

For general information, see the EPA Brownfields website at: www.epa.gov/brownfields

For more information on the AAI requirements, see: <http://www.epa.gov/brownfields/regneg.htm>

For more information on continuing obligations, see:

<http://www.epa.gov/compliance/resources/policies/cleanup/superfund/common-elem-guide.pdf>

Contact Patricia Overmeyer at: Overmeyer.patricia@epa.gov

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**COUNTY OF RIVERSIDE COMMUNITY HEALTH AGENCY
DEPARTMENT OF ENVIRONMENTAL HEALTH**

**Underground Storage Tank Closure
Application and Permit**

A permit will be issued for closure or abandonment in place of UST when a work plan is submitted. In addition to this permit, all applicable permits required by the local fire department, building department, and the Air Quality Management District must be obtained and should be available for review at the closure site. **A WORK PLAN MUST BE SUBMITTED TO OBTAIN A PERMIT.** All tank closures must, at a minimum, comply with the California Underground Storage Tank Regulations and the appropriate section of the California Health and Safety Code.

FACILITY NUMBER

PLAN CHECK NUMBER

NAME OF FACILITY	ADDRESS OF FACILITY	CITY	ZIP	PHONE NUMBER
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NAME OF OWNER/OPERATOR	ADDRESS OWNER/OPERATOR	CITY	ZIP	PHONE NUMBER
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NAME OF CONTRACTOR/APPLICANT	ADDRESS CONTRACTOR/APPLICANT	CITY	ZIP	PHONE NUMBER
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CONTRACTOR'S LICENSE TYPE AND NUMBER (Including Hazardous Materials Certification)

ANSWER THE FOLLOWING QUESTIONS DESCRIBING THE TANK(S) TO BE CLOSED OR ABANDONED. IF YOU HAVE MORE THAN FOUR (4) TANKS, PROVIDE INFORMATION ON AN ADDITIONAL FORM.

TANK INFORMATION:	TANK 1	TANK 2	TANK 3	TANK 4
SINGLE/DOUBLE WALLED TANK/AGE				
SIZE OF TANK/TANK MATERIAL				
SUBSTANCE STORED/ SUSPECTED OF LEAKING				

CIRCLE THE METHOD OF CLOSURE: **REMOVAL** **ABANDONMENT IN PLACE** **TEMPORARY CLOSURE**

UNDERGROUND TANK CLOSURE INSPECTIONS MUST BE SCHEDULED AT LEAST FIVE (5) BUSINESS DAYS IN ADVANCE.

RIVERSIDE (951) 358-5055

INDIO (760) 863-8976

HEMET (951) 766-6524

CONTRACTOR/APPLICANT SIGNATURE: _____ DATE: _____

PERMIT APPROVED BY (**Ensure Workplan is Attached**) : _____ DATE: _____

Please Make Your Check Payable To The County Of Riverside

AMOUNT ATTACHED \$ _____ TRANSACTION/OCR NO. _____ CHECK NO. _____

WORK PLAN SUBMITTED _____

****THIS PERMIT FOR CLOSURE IS VALID FOR 90 DAYS FROM THE DATE OF ISSUE.**

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HAZARDOUS MATERIALS MANAGEMENT DIVISION

UNDERGROUND STORAGE TANK GUIDELINES TO CLOSURE BY REMOVAL

NOTE: This Division strongly urges applicants to contact the local Fire Department Jurisdiction prior to the removal of any Underground Storage Tank (UST) as local fire restrictions may be more stringent.

A. General Information

1. A completed permit application must be submitted to the Division. Permit fees for UST closure are required.
2. The State Contractors License Board requires contractors who install or remove USTs and piping to have the **Hazardous Substance Certification** and one of the following licenses: General Engineering "A"; Limited Specialty C-61/D-40 for UST's and pipelines; Pipeline Contractor C-34 for pipelines only; or General Building "B" (limited).
3. It is the responsibility of the UST owner or duly authorized representative, to notify other governmental agencies that may have applicable permit requirements. This includes, but is not limited to, the following: Local Fire Agency; Local Building Department; and Air Quality Management District (AQMD).
4. Between cessation of use/storage and the actual closure, monitoring shall be continued as required by the operating permit.
5. The permitted (i.e. UST owner, contractor) shall be responsible for site safety.

B. Closure Requirements

1. A completed UST closure application and four (4) copies of a UST removal work plan must be submitted and applicable closure fees paid. A closure permit, valid for ninety (90) days, will be issued upon **RECEIPT** of the work plan. If closure is not completed within ninety (90) day, the closure permit shall expire. Additional fees will be assessed for a new closure permit.
2. A UST closure inspection must be scheduled with the Division at least **FIVE (5) WORKING DAYS IN ADVANCE** of the proposed closure.
3. All liquids, solids, and sludge shall be removed and handled according to the provisions of Chapter 6.5, Division 20 of the Health and Safety Code and Title 22, Chapter 32, Section 67383.1 of the California Code of Regulations. The UST shall be properly cleaned, which usually requires the pressure washing/rinsing of the UST and removal of the contents via a vacuum type pump system that is designed to safely handle flammable liquids. The Division can provide a list of licensed hazardous waste haulers/tank rinsing companies.
4. Flammable vapors must be purged from the UST and the UST must be inerted to prevent an explosion or fire. The Division must verify LEL is < 10% prior to the inerting of the UST with 22.2 lbs. of dry ice per 1,000 gallons of UST capacity. The UST must then promptly be removed and transported to its final destination accompanied by the UST Closure Certification Form. The local fire and AQMD regulations may be more restrictive.

Corona 2275 S Main St Suite 204 (951) 273-9143 Fax (951) 520-8319	Hemet 800 S. Sanderson (951) 766-6524 Fax (951) 791-1778	Indio 47-950 Arabia St Suite A (760) 863-8976 Fax (760) 863-8303	Riverside 4065 County Cir (951) 358-5055 Fax (951) 358-5017
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Department Web Site – www.rivcoeh.org

CLOSURE BY REMOVAL GUIDELINES (page 2 of 3)

5. All associated piping must be removed. Product or residue spillage must be prevented.
6. Proper UST disposal documentation, in accordance with the requirements of Chapter 6.5, Division 20 of the Health and Safety Code, shall be provided to the Division.
7. Applicant must demonstrate to the satisfaction of the Division whether or not an unauthorized release has occurred. Demonstration will be based upon results of soil/water samples obtained during UST closure activities.
8. The sample analysis must be performed by a California state certified laboratory. The sample analysis, along with the Division Sample Receipt form and a chain of custody must be received by the Division within thirty (30) days.
9. Soil samples shall be taken below the UST/piping system at the time of UST removal. At a minimum, samples are required 2' (feet) and 6' (feet) below the fill end of the tank, with a separate 2' sample taken at the opposite end of the tank. A separate sample for each 20 lineal feet of piping and at each dispenser shall be taken. (It is strongly recommended that 6' samples be taken at each piping and dispenser sampling location.) Division personnel may require additional sampling.
10. The soil samples shall be analyzed for all constituents of the previously stored hazardous substances and their breakdown constituents or transformation products according to the Table titled "Laboratory Analysis for Samples Collected at UST Sites".
11. The Division will evaluate all sample results and determine if any further corrective action is required.
12. The detection limit, in accordance with the table titled "Laboratory Analysis for Samples Collected at UST Sites", shall be reported to the Division in accordance with Article 5 of the California Underground Storage Tank Regulations, Title 23, Division 3, Chapter 16, California Code of Regulations.

C. Work Plan Guidelines

1. A work plan must be submitted (with permit application) to the Division prior to UST removal.
2. The work plan should include the following information:
 - A. Site Description: the physical address along with a site plot plan.
 - B. On-Site Security: indicate who will be on site (what agencies, contractors, etc.), and how site security will be maintained.
 - C. Contacts: Indicate the responsible party's name and phone number, contractor's name and phone number.
 - D. Treatment of USTs prior to removal—indicate the following:
 - 1) How the USTs will be cleaned. Indicate name and credential of certified UST cleaner, as well as final destination of rinsate.
 - 2) How you will inert the UST. Indicate the quantity of dry ice to be used, and that it will not be placed into the UST until the Division representative is on site.
 - 3) If the USTs are to be saw cut. If so, this needs to be detailed.
 - 4) Destination of UST—indicate where the USTs are going and how they will be transported. All openings in the UST shall be plugged, except for a 1/8" inch vent hole.
 - 5) Air/vapor monitoring—type of monitoring equipment to be used and date of last calibration.

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CLOSURE BY REMOVAL GUIDELINES (page 3 of 3)

- E. Depth to groundwater: region specific. If tank is in ground water, indicate safety precautions that will be taken.
- F. Equipment to be used on site:
 - 1) Heavy equipment: indicate the type of equipment to be used to physically remove the USTs from the excavation. Ensure the equipment is rated to handle the weight of the UST.
 - 2) Sampling: indicate the type of equipment to be used to gather the soil/water samples. Ensure equipment is able to reach at least 6' below the bottom of the UST, piping, and dispensers. Indicate the type of container that will be used to hold the samples. Demonstrate how contamination of samples is to be avoided. Provide the name of the California certified lab that will be analyzing the samples. Indicate when the samples will be analyzed and how you will hold the samples in the interim. Ensure a chain of custody accompanies the samples to the lab.
- G. Excavation status: indicate the disposition of the excavation upon removal of the tank (i.e. open and fenced, backfilled with new and excavated soil, etc.)
- H. Safety—indicate the following:
 - 1) The type of personal protective equipment to be required for all persons on site.
 - 2) The safety items that will be available on site (fire extinguisher, first aid, etc.).
 - 3) The nearest emergency medical facility to be used in the event of an accident or emergency.
 - 4) That all tools to be used to clean the exterior of the tank will be non-sparking. Give examples and be specific.
 - 5) Whether shoring is necessary/required.
 - 6) The person who will be responsible for safety (Safety Officer).
 - 7) The presence of any overhead hazards (electrical lines, etc.). Indicate how the hazard will be addressed/mitigated.
 - 8) The presence of any underground hazards (gas pipes, sewer lines, water mains, etc.) and how the hazard will be addressed/mitigated.

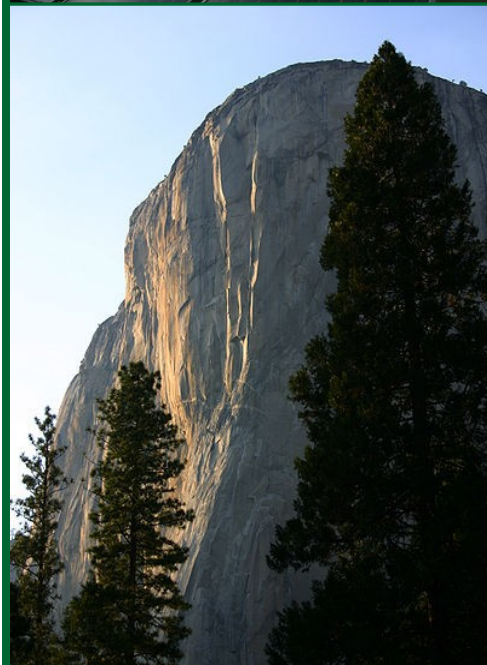
NOTE: THIS DOCUMENT IS FOR GUIDANCE ONLY AND IS NOT INTENDED TO SUPERSEDE ANY SAFETY OR OTHER LEGAL REQUIREMENTS. OWNER / CONTRACTOR RETAINS ALL RESPONSIBILITY ASSOCIATED WITH ACTIVITIES SURROUNDING THE SAFE AND LEGAL REMOVAL OF THE TANK(S).

Revised 8/06

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Quantifying Greenhouse Gas Mitigation Measures

A Resource for Local Government
to Assess Emission Reductions from
Greenhouse Gas Mitigation Measures



August, 2010

Quantifying Greenhouse Gas Mitigation Measures

**A Resource for Local Government to Assess
Emission Reductions from Greenhouse Gas
Mitigation Measures**

August, 2010

**California Air Pollution Control Officers
Association**

with

**Northeast States for
Coordinated Air Use Management**

**National Association of
Clean Air Agencies**

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the land types. A third way to increase sequestration is by planting new trees on either developed or undeveloped land.

The increase in carbon sequestration capacity is determined by calculating the total sequestration capacity of converted land, new vegetated land and trees; and then subtracting the combined capacity of vegetated land or trees that are removed. Carbon sequestration capacities for different land types (e.g. cropland, forest land) and for different tree species classes are available from IPCC guidelines, and summarized in Table E-2, in Appendix E.

Construction Equipment

Construction equipment typically uses diesel fuel and releases emissions based on the amount of fuel combusted and emission factor of the equipment. Emissions can be reduced by using equipment that emits fewer pollutants for the same amount of work.



This is typically equipment powered through grid electricity or hybrid technology. The exclusive use of grid electricity eliminates the diesel emissions at the site but would increase indirect electricity emissions. However, grid-based emissions are typically small compared to the emissions from the diesel-fueled equipment (depending on the source of grid power). Hybrid-powered equipment would decrease but not completely eliminate fuel use. The electricity for hybrid equipment is self-generated unless the equipment has plug-in capability, so it would not increase grid-based electrical generation and the associated emissions there.

The emissions reductions in this category are determined by finding the difference between the estimated mitigation emissions and the baseline emissions for construction equipment. Emissions for the mitigated scenario may consist of direct emissions from combustion fuel use, and/or indirect emissions from grid electricity. These would be calculated using resources described previously, such as the OFFROAD database and literature-based methodologies and values.

Transportation

Transportation emissions can be reduced by improving the emissions profile of the vehicle fleet that travels the roads, or by reducing the vehicle miles traveled by the fleet. The majority of the measures quantified for this report focus on the reduction of VMT. This can be accomplished by optimizing the location and types of land uses in the project and its immediate vicinity, and by site enhancements to roads, and to bike and pedestrian networks to encourage the use of alternative modes of transportation. Mode shifts are also encouraged by implementing parking policies, transit system improvements, and trip reduction coordination or incentive programs.

Construction

MP# TR-6.2, EE-1

C-4

Construction Equipment

8.1.4 Institute a Heavy-Duty Off-Road Vehicle Plan

Range of Effectiveness:

Not applicable on its own. This measure ensures compliances with other mitigation measures.

Measure Description:

The Project Applicant should provide a detailed plan that discusses a construction vehicle inventory tracking system to ensure compliances with construction mitigation measures. The system should include strategies such as requiring hour meters on equipment, documenting the serial number, horsepower, manufacture age, fuel, etc. of all onsite equipment and daily logging of the operating hours of the equipment.

Measure Applicability:

- This measure ensures compliances with other mitigation measures.
- Construction vehicles.

Preferred Literature:

None

Alternative Literature:

None

Literature References:

None

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Green Book

You are here: [EPA Home](#) [Green Book](#) Currently Designated Nonattainment Areas for All Criteria Pollutants

http://www.epa.gov/oaqps001/greenbk/ancl.html
Last updated on Friday, July 20, 2012

Currently Designated Nonattainment Areas for All Criteria Pollutants

As of July 20, 2012

Listed by State, County then Pollutant

[View Notes](#)

State, County, Pollutant, * Part County NAA, NAA Area Name - Classification Standard

ALABAMA

Jackson Co

PM-2.5 1997 * Chattanooga, AL-TN-GA - (Nonattainment)

Jefferson Co

PM-2.5 1997 Birmingham, AL - (Nonattainment)

PM-2.5 2006 Birmingham, AL - (Nonattainment)

Pike Co

Lead 2008 * Troy, AL - (Nonattainment)

Shelby Co

PM-2.5 1997 Birmingham, AL - (Nonattainment)

PM-2.5 2006 Birmingham, AL - (Nonattainment)

Walker Co

PM-2.5 1997 * Birmingham, AL - (Nonattainment)

PM-2.5 2006 * Birmingham, AL - (Nonattainment)

State, County, Pollutant, * Part County NAA, NAA Area Name - Classification Standard

ALASKA

Anchorage Municipality

PM-10 * Eagle River, AK - (Moderate)

Fairbanks North Star Borough

PM-2.5 2006 * Fairbanks, AK - (Nonattainment)

Juneau City and Borough

PM-10 * Juneau, AK - (Moderate)

State, County, Pollutant, * Part County NAA, NAA Area Name - Classification Standard

ARIZONA

Cochise Co

PM-10 * Paul Spur/Douglas (Cochise County), AZ - (Moderate)

Gila Co

PM-10 * Hayden AZ - (Moderate)

PM-10 * Miami, AZ - (Moderate)

Maricopa Co

8-Hr Ozone 1997 * Phoenix-Mesa, AZ - (Marginal)

PM-10 * Phoenix, AZ - (Serious)

<i>8-Hr Ozone</i> 2008	* Phoenix-Mesa, AZ - (Marginal)
Pima Co	
<i>PM-10</i>	* Ajo (Pima County), AZ - (Moderate)
<i>PM-10</i>	* Rillito, AZ - (Moderate)
Pinal Co	
<i>8-Hr Ozone</i> 1997	* Phoenix-Mesa, AZ - (Marginal)
<i>PM-10</i>	* Hayden AZ - (Moderate)
<i>PM-10</i>	* Phoenix, AZ - (Serious)
<i>PM-10</i>	* West Pinal, AZ - (Moderate)
<i>PM-2.5 2006</i>	* West Central Pinal, AZ - (Nonattainment)
<i>SO2</i>	* Hayden (Pinal County), AZ - (Primary)
<i>8-Hr Ozone</i> 2008	* Phoenix-Mesa, AZ - (Marginal)
Santa Cruz Co	
<i>PM-10</i>	* Nogales, AZ - (Moderate)
<i>PM-2.5 2006</i>	* Nogales, AZ - (Nonattainment)
Yuma Co	
<i>PM-10</i>	* Yuma, AZ - (Moderate)

State, County, Pollutant, * Part County NAA, NAA Area Name - Classification Standard

ARKANSAS

Crittenden Co	
<i>8-Hr Ozone</i> 2008	Memphis, TN-MS-AR - (Marginal)

State, County, Pollutant, * Part County NAA, NAA Area Name - Classification Standard

CALIFORNIA

Alameda Co	
<i>8-Hr Ozone</i> 1997	San Francisco Bay Area, CA - (Marginal)
<i>PM-2.5 2006</i>	San Francisco Bay Area, CA - (Nonattainment)
<i>8-Hr Ozone</i> 2008	San Francisco Bay Area, CA - (Marginal)
Amador Co	
<i>8-Hr Ozone</i> 1997	Amador and Calaveras Cos (Central Mtn), CA - (Moderate)
Areas of Indian Country	
<i>8-Hr Ozone</i> 2008	Morongo Band of Mission Indians - (Serious)
<i>8-Hr Ozone</i> 2008	Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation - (Moderate)
Butte Co	
<i>8-Hr Ozone</i> 1997	Chico, CA - (Marginal)
<i>PM-2.5 2006</i>	* Chico, CA - (Nonattainment)
<i>8-Hr Ozone</i> 2008	Chico (Butte County), CA - (Marginal)
Calaveras Co	
<i>8-Hr Ozone</i> 1997	Amador and Calaveras Cos (Central Mtn), CA - (Moderate)

<i>8-Hr Ozone</i> 2008	Calaveras County, CA - (Marginal)
Contra Costa Co	
<i>8-Hr Ozone</i> 1997	San Francisco Bay Area, CA - (Marginal)
<i>PM-2.5</i> 2006	San Francisco Bay Area, CA - (Nonattainment)
<i>8-Hr Ozone</i> 2008	San Francisco Bay Area, CA - (Marginal)
El Dorado Co	
<i>8-Hr Ozone</i> 1997	* Sacramento Metro, CA - (Severe 15)
<i>PM-2.5</i> 2006	* Sacramento, CA - (Nonattainment)
<i>8-Hr Ozone</i> 2008	* Sacramento Metro, CA - (Severe 15)
Fresno Co	
<i>8-Hr Ozone</i> 1997	San Joaquin Valley, CA - (Extreme)
<i>PM-2.5</i> 1997	San Joaquin Valley, CA - (Nonattainment)
<i>PM-2.5</i> 2006	San Joaquin Valley, CA - (Nonattainment)
<i>8-Hr Ozone</i> 2008	San Joaquin Valley, CA - (Extreme)
Imperial Co	
<i>8-Hr Ozone</i> 1997	Imperial Co, CA - (Moderate)
<i>PM-10</i>	* Imperial Valley, CA - (Serious)
<i>PM-2.5</i> 2006	* Imperial Co, CA - (Nonattainment)
<i>8-Hr Ozone</i> 2008	Imperial County, CA - (Marginal)
Inyo Co	
<i>PM-10</i>	* Owens Valley, CA - (Serious)
Kern Co	
<i>8-Hr Ozone</i> 1997	* Kern Co (Eastern Kern), CA - (Moderate)
<i>8-Hr Ozone</i> 1997	* San Joaquin Valley, CA - (Extreme)
<i>PM-10</i>	* East Kern Co, CA - (Serious)
<i>PM-2.5</i> 1997	* San Joaquin Valley, CA - (Nonattainment)
<i>PM-2.5</i> 2006	* San Joaquin Valley, CA - (Nonattainment)
<i>8-Hr Ozone</i> 2008	* Kern Co (Eastern Kern), CA - (Marginal)
<i>8-Hr Ozone</i> 2008	* San Joaquin Valley, CA - (Extreme)
Kings Co	
<i>8-Hr Ozone</i> 1997	San Joaquin Valley, CA - (Extreme)
<i>PM-2.5</i> 1997	San Joaquin Valley, CA - (Nonattainment)
<i>PM-2.5</i> 2006	San Joaquin Valley, CA - (Nonattainment)
<i>8-Hr Ozone</i> 2008	San Joaquin Valley, CA - (Extreme)
Los Angeles Co	
<i>8-Hr Ozone</i> 1997	* Los Angeles South Coast Air Basin, CA - (Extreme)
<i>8-Hr Ozone</i> 1997	* Los Angeles-San Bernardino Cos. (W Mojave Desert), CA - (Severe 15)

<i>Lead 2008</i>	* Los Angeles County-South Coast Air Basin, CA - (Nonattainment)
<i>PM-10</i>	* Los Angeles South Coast Air Basin, CA - (Serious)
<i>PM-2.5 1997</i>	* Los Angeles-South Coast Air Basin, CA - (Nonattainment)
<i>PM-2.5 2006</i>	* Los Angeles-South Coast Air Basin, CA - (Nonattainment)
<i>8-Hr Ozone 2008</i>	* Los Angeles-San Bernardino Counties (West Mojave Desert), CA - (Severe 15)
<i>8-Hr Ozone 2008</i>	* Los Angeles-South Coast Air Basin, CA - (Extreme)
Madera Co	
<i>8-Hr Ozone 1997</i>	San Joaquin Valley, CA - (Extreme)
<i>PM-2.5 1997</i>	San Joaquin Valley, CA - (Nonattainment)
<i>PM-2.5 2006</i>	San Joaquin Valley, CA - (Nonattainment)
<i>8-Hr Ozone 2008</i>	San Joaquin Valley, CA - (Extreme)
Marin Co	
<i>8-Hr Ozone 1997</i>	San Francisco Bay Area, CA - (Marginal)
<i>PM-2.5 2006</i>	San Francisco Bay Area, CA - (Nonattainment)
<i>8-Hr Ozone 2008</i>	San Francisco Bay Area, CA - (Marginal)
Mariposa Co	
<i>8-Hr Ozone 1997</i>	Mariposa and Tuolumne Cos (Southern Mtn), CA - (Moderate)
<i>8-Hr Ozone 2008</i>	Mariposa County, CA - (Marginal)
Merced Co	
<i>8-Hr Ozone 1997</i>	San Joaquin Valley, CA - (Extreme)
<i>PM-2.5 1997</i>	San Joaquin Valley, CA - (Nonattainment)
<i>PM-2.5 2006</i>	San Joaquin Valley, CA - (Nonattainment)
<i>8-Hr Ozone 2008</i>	San Joaquin Valley, CA - (Extreme)
Mono Co	
<i>PM-10</i>	* Mammoth Lake, CA - (Moderate)
<i>PM-10</i>	* Mono Basin, CA - (Moderate)
Napa Co	
<i>8-Hr Ozone 1997</i>	San Francisco Bay Area, CA - (Marginal)
<i>PM-2.5 2006</i>	San Francisco Bay Area, CA - (Nonattainment)
<i>8-Hr Ozone 2008</i>	San Francisco Bay Area, CA - (Marginal)
Nevada Co	
<i>8-Hr Ozone 1997</i>	* Nevada Co. (Western Part), CA - (Moderate)
<i>8-Hr Ozone 2008</i>	* Nevada Co. (Western Part), CA - (Marginal)
Orange Co	
<i>8-Hr Ozone 1997</i>	Los Angeles South Coast Air Basin, CA - (Extreme)
<i>PM-10</i>	Los Angeles South Coast Air Basin, CA - (Serious)
<i>PM-2.5 1997</i>	Los Angeles-South Coast Air Basin, CA - (Nonattainment)
<i>PM-2.5 2006</i>	Los Angeles-South Coast Air Basin, CA - (Nonattainment)

<i>8-Hr Ozone</i> 2008	Los Angeles-South Coast Air Basin, CA - (Extreme)
Placer Co	
<i>8-Hr Ozone</i> 1997	* Sacramento Metro, CA - (Severe 15)
<i>PM-2.5</i> 2006	* Sacramento, CA - (Nonattainment)
<i>8-Hr Ozone</i> 2008	* Sacramento Metro, CA - (Severe 15)
Riverside Co	
<i>8-Hr Ozone</i> 1997	* Los Angeles South Coast Air Basin, CA - (Extreme)
<i>8-Hr Ozone</i> 1997	* Riverside Co, (Coachella Valley), CA - (Severe 15)
<i>PM-10</i>	* Coachella Valley, CA - (Serious)
<i>PM-10</i>	* Los Angeles South Coast Air Basin, CA - (Serious)
<i>PM-2.5</i> 1997	* Los Angeles-South Coast Air Basin, CA - (Nonattainment)
<i>PM-2.5</i> 2006	* Los Angeles-South Coast Air Basin, CA - (Nonattainment)
<i>8-Hr Ozone</i> 2008	* Los Angeles-South Coast Air Basin, CA - (Extreme)
<i>8-Hr Ozone</i> 2008	* Riverside Co, (Coachella Valley), CA - (Severe 15)
Sacramento Co	
<i>8-Hr Ozone</i> 1997	Sacramento Metro, CA - (Severe 15)
<i>PM-10</i>	Sacramento Co, CA - (Moderate)
<i>PM-2.5</i> 2006	Sacramento, CA - (Nonattainment)
<i>8-Hr Ozone</i> 2008	Sacramento Metro, CA - (Severe 15)
San Bernardino Co	
<i>8-Hr Ozone</i> 1997	* Los Angeles South Coast Air Basin, CA - (Extreme)
<i>8-Hr Ozone</i> 1997	* Los Angeles-San Bernardino Cos. (W Mojave Desert), CA - (Severe 15)
<i>PM-10</i>	* Los Angeles South Coast Air Basin, CA - (Serious)
<i>PM-10</i>	* San Bernardino Co, CA - (Moderate)
<i>PM-10</i>	* Trona, CA - (Moderate)
<i>PM-2.5</i> 1997	* Los Angeles-South Coast Air Basin, CA - (Nonattainment)
<i>PM-2.5</i> 2006	* Los Angeles-South Coast Air Basin, CA - (Nonattainment)
<i>8-Hr Ozone</i> 2008	* Los Angeles-San Bernardino Counties (West Mojave Desert), CA - (Severe 15)
<i>8-Hr Ozone</i> 2008	* Los Angeles-South Coast Air Basin, CA - (Extreme)
San Diego Co	
<i>8-Hr Ozone</i> 1997	* San Diego, CA - (Moderate)
<i>8-Hr Ozone</i> 2008	San Diego County, CA - (Marginal)
San Francisco Co	
<i>8-Hr Ozone</i> 1997	San Francisco Bay Area, CA - (Marginal)
<i>PM-2.5</i> 2006	San Francisco Bay Area, CA - (Nonattainment)
<i>8-Hr Ozone</i> 2008	San Francisco Bay Area, CA - (Marginal)
San Joaquin Co	

<i>8-Hr Ozone</i> 1997	San Joaquin Valley, CA - (Extreme)
<i>PM-2.5</i> 1997	San Joaquin Valley, CA - (Nonattainment)
<i>PM-2.5</i> 2006	San Joaquin Valley, CA - (Nonattainment)
<i>8-Hr Ozone</i> 2008	San Joaquin Valley, CA - (Extreme)
San Luis Obispo Co	
<i>8-Hr Ozone</i> 2008	* San Luis Obispo (Eastern San Luis Obispo), CA - (Marginal)
San Mateo Co	
<i>8-Hr Ozone</i> 1997	San Francisco Bay Area, CA - (Marginal)
<i>PM-2.5</i> 2006	San Francisco Bay Area, CA - (Nonattainment)
<i>8-Hr Ozone</i> 2008	San Francisco Bay Area, CA - (Marginal)
Santa Clara Co	
<i>8-Hr Ozone</i> 1997	San Francisco Bay Area, CA - (Marginal)
<i>PM-2.5</i> 2006	San Francisco Bay Area, CA - (Nonattainment)
<i>8-Hr Ozone</i> 2008	San Francisco Bay Area, CA - (Marginal)
Solano Co	
<i>8-Hr Ozone</i> 1997	* Sacramento Metro, CA - (Severe 15)
<i>8-Hr Ozone</i> 1997	* San Francisco Bay Area, CA - (Marginal)
<i>PM-2.5</i> 2006	* Sacramento, CA - (Nonattainment)
<i>PM-2.5</i> 2006	* San Francisco Bay Area, CA - (Nonattainment)
<i>8-Hr Ozone</i> 2008	* Sacramento Metro, CA - (Severe 15)
<i>8-Hr Ozone</i> 2008	* San Francisco Bay Area, CA - (Marginal)
Sonoma Co	
<i>8-Hr Ozone</i> 1997	* San Francisco Bay Area, CA - (Marginal)
<i>PM-2.5</i> 2006	* San Francisco Bay Area, CA - (Nonattainment)
<i>8-Hr Ozone</i> 2008	* San Francisco Bay Area, CA - (Marginal)
Stanislaus Co	
<i>8-Hr Ozone</i> 1997	San Joaquin Valley, CA - (Extreme)
<i>PM-2.5</i> 1997	San Joaquin Valley, CA - (Nonattainment)
<i>PM-2.5</i> 2006	San Joaquin Valley, CA - (Nonattainment)
<i>8-Hr Ozone</i> 2008	San Joaquin Valley, CA - (Extreme)
Sutter Co	
<i>8-Hr Ozone</i> 1997	* Sacramento Metro, CA - (Severe 15)
<i>8-Hr Ozone</i> 1997	* Sutter Co (Sutter Buttes), CA - (Marginal)
<i>PM-2.5</i> 2006	Yuba City-Marysville, CA - (Nonattainment)
<i>8-Hr Ozone</i> 2008	* Sacramento Metro, CA - (Severe 15)
Tehama Co	

<i>8-Hr Ozone</i> 2008	* Tuscan Buttes, CA - (Marginal)
Tulare Co	
<i>8-Hr Ozone</i> 1997	San Joaquin Valley, CA - (Extreme)
<i>PM-2.5</i> 1997	San Joaquin Valley, CA - (Nonattainment)
<i>PM-2.5</i> 2006	San Joaquin Valley, CA - (Nonattainment)
<i>8-Hr Ozone</i> 2008	San Joaquin Valley, CA - (Extreme)
Tuolumne Co	
<i>8-Hr Ozone</i> 1997	Mariposa and Tuolumne Cos (Southern Mtn), CA - (Moderate)
Ventura Co	
<i>8-Hr Ozone</i> 1997	* Ventura Co, CA - (Serious)
<i>8-Hr Ozone</i> 2008	* Ventura County, CA - (Serious)
Yolo Co	
<i>8-Hr Ozone</i> 1997	Sacramento Metro, CA - (Severe 15)
<i>PM-2.5</i> 2006	* Sacramento, CA - (Nonattainment)
<i>8-Hr Ozone</i> 2008	Sacramento Metro, CA - (Severe 15)
Yuba Co	
<i>PM-2.5</i> 2006	* Yuba City-Marysville, CA - (Nonattainment)

State, County, Pollutant, * Part County NAA, NAA Area Name - Classification Standard

COLORADO

Adams Co	
<i>8-Hr Ozone</i> 1997	Denver-Boulder-Greeley-Ft Collins-Loveland, CO - (Marginal)
<i>8-Hr Ozone</i> 2008	Denver-Boulder-Greeley-Ft. Collins-Loveland, CO - (Marginal)
Arapahoe Co	
<i>8-Hr Ozone</i> 1997	Denver-Boulder-Greeley-Ft Collins-Loveland, CO - (Marginal)
<i>8-Hr Ozone</i> 2008	Denver-Boulder-Greeley-Ft. Collins-Loveland, CO - (Marginal)
Boulder Co	
<i>8-Hr Ozone</i> 1997	Denver-Boulder-Greeley-Ft Collins-Loveland, CO - (Marginal)
<i>8-Hr Ozone</i> 2008	Denver-Boulder-Greeley-Ft. Collins-Loveland, CO - (Marginal)
Broomfield Co	
<i>8-Hr Ozone</i> 1997	Denver-Boulder-Greeley-Ft Collins-Loveland, CO - (Marginal)
<i>8-Hr Ozone</i> 2008	Denver-Boulder-Greeley-Ft. Collins-Loveland, CO - (Marginal)
Denver Co	
<i>8-Hr Ozone</i> 1997	Denver-Boulder-Greeley-Ft Collins-Loveland, CO - (Marginal)
<i>8-Hr Ozone</i> 2008	Denver-Boulder-Greeley-Ft. Collins-Loveland, CO - (Marginal)
Douglas Co	

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Effects of Emissions from Power Generation

Power generation is a significant source of pollutants that can impair human health and the environment, including sulfur dioxide (SO₂), nitrogen oxide (NO_x), and mercury. The Clean Air Act has been successful in reducing these emissions, but power generation still contributes approximately 70% of SO₂, 20% of NO_x, and 40% of mercury emissions into the environment. These emissions from power generation contribute to a range of human health and environmental problems, and interstate and long range transport of emissions continue to play significant roles in these problems. Cap and trade programs benefit human health and the environment and address transport by significantly reducing emissions over large geographic areas.

When emitted into the atmosphere, SO₂ and NO_x react with water and other compounds to form various acidic compounds, fine particles, and ozone. These pollutants can remain in the air for days or even years. Prevailing winds can transport them hundreds of miles, often across state and national borders. The pollutants then fall to the earth in either a wet form (rain, snow, and fog) or a dry form (gases and particles). Impacts include impaired air quality; damage to public health; degradation of visibility; acidification of lakes and streams; harm to sensitive forest and coastal ecosystems; and accelerated decay of materials, paints, and cultural artifacts such as buildings, statues, and sculptures nationwide.

Mercury, a product of coal-burning, can be deposited locally or it can be transported through the atmosphere for days to years before being deposited into water bodies. Once mercury reaches lakes, rivers and oceans, it can be transformed into methylmercury and bioaccumulate in the food chain. This results in predatory fish and fish-eating birds and mammals accumulating mercury concentrations millions of times higher than what is found in the water or air.

How Do Power Plant Emissions Impact Human Health?

SO₂ and NO_x emissions form fine particles in the atmosphere. Particulate matter is the term used for a mixture of solid particles and liquid droplets found in the air; fine particles (PM_{2.5}) are smaller than 2.5 microns (millionths of a meter) in diameter. Power plants emit particles directly into the air, but their major contribution to particulate matter air pollution is emissions of SO₂ and NO_x, which are converted into

sulfate and nitrate particles in the atmosphere. These particles make up a large proportion of the fine particle pollution in most parts of the country. A substantial body of published scientific literature recognizes a correlation between elevated fine particulate matter and increased incidence of illness and premature mortality. The health effects of PM_{2.5} include:

- Increased incidence of premature death, primarily in the elderly and those with heart or lung disease;
- Aggravation of respiratory and cardiovascular illness, leading to hospitalizations and emergency room visits for children and individuals with heart or lung disease;
- Decreased lung function and symptomatic effects, including acute bronchitis, particularly in children and asthmatics;
- New cases of chronic bronchitis;
- Increased work loss days, school absences, and emergency room visits.

Emissions from power generation contribute to a range of human health and environmental concerns.

NO_x emissions react in the atmosphere to form ozone.

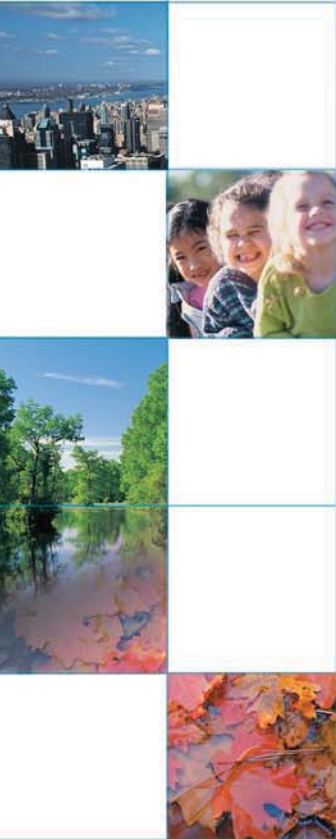
NO_x and volatile organic compounds react in the atmosphere in the presence of sunlight to form ground-level ozone. Ground-level ozone is a major component of smog in our cities and in many rural

areas as well. Though naturally occurring ozone in the stratosphere provides a protective layer high above the earth, the ozone that we breathe at ground level has been linked to respiratory illness and other health problems, including:

- Decreases in lung function, resulting in difficulty breathing, shortness of breath, and other symptoms;
- Respiratory symptoms, including bronchitis, aggravated coughing, and chest pain;
- Increased incidence/severity of respiratory problems (e.g. aggravation of asthma, susceptibility to respiratory infection) resulting in more hospital admissions and emergency room visits;
- Chronic inflammation and irreversible structural changes in the lungs, that, with repeated exposure, can lead to premature aging of the lungs and other respiratory illness.

Mercury emissions are deposited in watersheds and transformed into methylmercury, which contaminates fish.

In the U.S., human exposure to mercury is primarily the result of consumption of fish contaminated with methylmercury. Other fish-eating

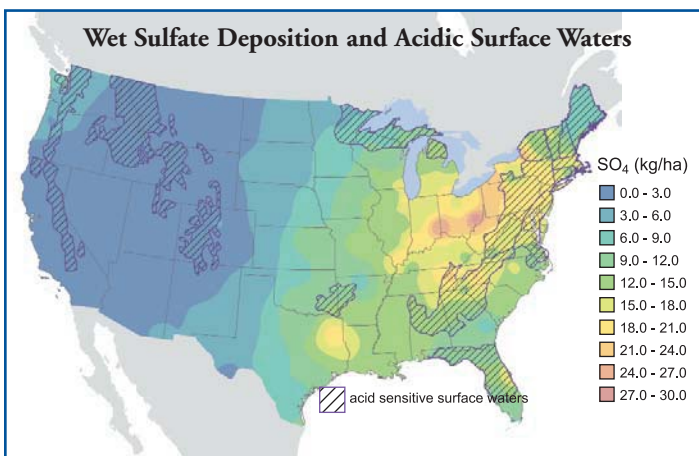


mammals and birds are also exposed in this manner. The primary symptoms of mercury exposure are neurological, including brain damage, lack of motor skills, impaired cognitive skills, and difficulty speaking and hearing. These effects are most pronounced on those exposed during the development of the nervous system, such as fetuses and young children. Forty-four states have advisories warning the public to restrict eating fish from their lakes, rivers, streams, and/or coastal waters due to methylmercury. EPA estimates that 12 million acres of lakes and 475,000 miles of rivers, as well as the coastal waters of 11 states, are impaired by mercury.

How Do Power Plant Emissions Impact the Environment?

SO₂ and NO_x emissions react in the atmosphere to form acidic compounds that harm lakes and streams.

When the acidic compounds that are formed as a result of SO₂ and NO_x emissions are deposited to the earth's surface, they can acidify lakes and streams. Acidification (low pH) and the chemical changes that result, including higher aluminum levels, make it difficult for some fish and other aquatic species to survive, grow, and reproduce. In the 1980s, acid rain was found to be the dominant cause of acidification in 75% of acidic lakes and 50% of acidic streams. Areas especially sensitive to acidification include portions of the Northeast (particularly the Adirondack and Catskill Mountains, portions of New England, and streams in the mid-Appalachian highlands) and Southeastern streams. Today in the Adirondack Mountains, Appalachian plateau, and upper Midwest regions, there are 25-30% fewer chronically acidic lakes and streams than in the early 1990s, although these waterbodies remain sensitive to acid rain. Lakes and streams in New England and the Southeast showed little decrease in acidification throughout the 1990s.



Wet Sulfate deposition is highest in many acid sensitive regions.
Source: National Atmospheric Deposition Program.

Acid deposition harms forests and trees. Acid rain can harm forest ecosystems by directly damaging plant tissues. One of the best examples of direct damage involves the leaching of nutrients from the needles of red spruce, which reduces the ability of the trees to tolerate cold winter temperatures and has contributed to the decline of red spruce forests throughout the mountains of the eastern U.S. In other cases, acid rain can combine with other pollutants, such as ozone, to weaken trees and make them vulnerable to threats such as

pests, which cause mortality. Acid deposition can also affect forest ecosystems indirectly by changing the chemistry of forest soils, including the leaching of plant nutrients from soils. It can also elevate levels of aluminum in soil water, which impairs the ability of trees to use soil nutrients and can be directly toxic to plant roots.

Nitrogen deposition contributes to impaired coastal water quality.

Nitrogen deposited from the atmosphere is a substantial source of nitrogen in many estuaries and coastal waters. Large amounts of nitrogen in estuaries and coastal waters can have significant ecological impacts, including massive die-offs of estuarine and marine plants and animals, loss of biological diversity, and degradation of essential coastal ecosystem habitat such as seagrass beds. For many species of fish and shellfish, these seagrass beds are essential nurseries and places to escape from predators. Excessive amounts of nitrogen in coastal waters from atmospheric deposition are thought to be a contributor to harmful algal blooms, such as red tides, that kill millions of fish each year and can be toxic to humans as well.

Fine particles impair visibility and increase regional haze. Fine particles formed in the atmosphere by the conversion of SO₂ and NO_x emissions scatter light and create hazy conditions, decreasing visibility and contributing to regional haze. Visibility impairment spoils scenic vistas across broad regions of the country, including in many National Parks and wilderness areas. Regional haze is also responsible for impaired urban vistas nationwide. In the western U.S., the level of visibility impairment for the worst days remained unchanged through the 1990s. Visibility in the eastern U.S. improved in some areas during the 1990s, but remains significantly impaired overall.

Acid deposition and particles damage materials and cultural resources.

A significant number of properties of aesthetic and historical value in the United States, including monuments, buildings, and statues, are potentially at risk for damage from air pollution. Structures made of limestone and marble are particularly sensitive to acid deposition. Acid particles and deposition increase the rate of weathering for these materials, eventually resulting in aesthetic and/or structural damage.



Modeled visibility conditions on the National Mall, Washington, D.C.
Left image: poor visibility, 5 mile visual range. Right image: clear day, 90 mile visual range.

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Nitrogen Dioxide Health

Current scientific evidence links short-term NO₂ exposures, ranging from 30 minutes to 24 hours, with adverse respiratory effects including airway inflammation in healthy people and increased respiratory symptoms in people with asthma.

Also, studies show a connection between breathing elevated short-term NO₂ concentrations, and increased visits to emergency departments and hospital admissions for respiratory issues, especially asthma.

NO₂ concentrations in vehicles and near roadways are appreciably higher than those measured at monitors in the current network. In fact, in-vehicle concentrations can be 2-3 times higher than measured at nearby area-wide monitors. Near-roadway (within about 50 meters) concentrations of NO₂ have been measured to be approximately 30 to 100% higher than concentrations away from roadways.

Individuals who spend time on or near major roadways can experience short-term NO₂ exposures considerably higher than measured by the current network. Approximately 16% of U.S. housing units are located within 300 ft of a major highway, railroad, or airport (approximately 48 million people). This population likely includes a higher proportion of non-white and economically-disadvantaged people.

NO₂ exposure concentrations near roadways are of particular concern for susceptible individuals, including people with asthma, children, and the elderly.

The sum of nitric oxide (NO) and NO₂ is commonly called nitrogen oxides or NOx. Other oxides of nitrogen including nitrous acid and nitric acid are part of the nitrogen oxide family. While EPA's National Ambient Air Quality Standard (NAAQS) covers this entire family, NO₂ is the component of greatest interest and the indicator for the larger group of nitrogen oxides.

NOx react with ammonia, moisture, and other compounds to form small particles. These small particles penetrate deeply into sensitive parts of the lungs and can cause or worsen respiratory disease, such as emphysema and bronchitis, and can aggravate existing heart disease, leading to increased hospital admissions and premature death.

Ozone is formed when NOx and volatile organic compounds react in the presence of heat and sunlight. Children, the elderly, people with lung diseases such as asthma, and people who work or exercise outside are at risk for adverse effects from ozone. These include reduction in lung function and increased respiratory symptoms as well as respiratory-related emergency department visits, hospital admissions, and possibly premature deaths.

Emissions that lead to the formation of NO₂ generally also lead to the formation of other NOx. Emissions control measures leading to reductions in NO₂ can generally be expected to reduce population exposures to all gaseous NOx. This may have the important co-benefit of reducing the formation of ozone and fine particles both of which pose significant public health threats.

Last updated on Thursday, March 22, 2012

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ARB Fact Sheet: Air Pollution Sources, Effects and Control

This page reviewed December 2, 2009.

Where does air pollution come from? How does it effect people and the environment? How can we control, or better yet, prevent it? The following table summarizes the sources, effects and prevention and control methods for ten of the most important air pollutants in California.

Pollutant	Sources	Effects	Prevention and Control
Ozone (O3)	Formed when reactive organic gases (ROG) and nitrogen oxides react in the presence of sunlight. ROG sources include any source that burns fuels, (e.g., gasoline, natural gas, wood, oil) solvents, petroleum processing and storage and pesticides.	Breathing Difficulties, Lung Tissue Damage, Damage to Rubber and Some Plastics	Reduce motor vehicle reactive organic gas (ROG) and nitrogen oxide emissions through emissions standards, reformulated fuels, inspections programs and reduced vehicle use. Limit ROG emissions from commercial operations and consumer products. Limit ROG and NOx emissions from industrial sources such as power plants and refineries. Conserve energy.
Respirable Particulate	Road Dust, Windblown	Increased Respiratory	Control Dust Sources,

Matter (PM10)	Dust (Agriculture) and Construction (Fireplaces) Also formed from other pollutants (acid rain, NOx, SOx, organics). Incomplete combustion of any fuel.	Disease, Lung Damage, Cancer, Premature Death, Reduced Visibility, Surface Soiling	Industrial Particulate Emissions, Wood Burning Stoves and Fireplaces Reduce secondary pollutants which react to form PM10. Conserve energy.
Fine Particulate Matter (PM2.5)	Fuel Combustion in Motor Vehicles, Equipment and Industrial Sources, Residential and Agricultural Burning. Also formed from reaction of other pollutants (acid rain, NOx, SOx, organics).	Increases Respiratory Disease, Lung Damage, Cancer, Premature Death, Reduced Visibility, Surface Soiling	Reduces Combustion Emissions from Motor Vehicles, Equipment, Industries and Agriculture and Residential Burning. Precursor controls, like those for ozone, reduce fine particle formation in the atmosphere.
Carbon Monoxide (CO)	Any source that burns fuel such as automobiles, trucks, heavy construction equipment, farming equipment and residential heating.	Chest Pain in Heart Patients, Headaches, Reduced Mental Alertness	Control motor vehicle and industrial emissions. Use oxygenated gasoline during winter months. Conserve energy.
Nitrogen Dioxide (NO2)	See Carbon Monoxide	Lung Irritation and Damage. Reacts in the atmosphere to form ozone and acid rain	Controls motor vehicle and industrial combustion emissions. Conserve energy.
Lead	Metal Smelters, Resource Recovery, Leaded Gasoline,	Learning Disabilities, Brain and Kidney Damage	Control metal smelters, no lead in gasoline. Replace leaded paint with non-lead

	Deterioration of Lead Paint		substitutes.
Sulfur Dioxide (SO₂)	Coal or Oil Burning Power Plants and Industries, Refineries, Diesel Engines	Increases lung disease and breathing problems for asthmatics. Reacts in the atmosphere to form acid rain.	Reduces the use of high sulfur fuels (e.g., use low sulfur reformulated diesel or natural gas). Conserve energy.
Visibility Reducing Particles	See PM _{2.5}	Reduces visibility (e.g., obscures mountains and other scenery), reduced airport safety, lower real estate value, discourages tourism.	See PM _{2.5}
Sulfates	Produced by the reaction in the air of SO ₂ (see SO ₂ sources), a component of acid rain.	Breathing Difficulties, Aggravates Asthma, Reduced Visibility	See SO ₂
Hydrogen Sulfide	Geothermal Power Plants, Petroleum Production and Refining, Sewer Gas	Nuisance Odor (Rotten Egg Smell), Headache and Breathing Difficulties (Higher Concentrations)	Control emissions from geothermal power plants, petroleum production and refining, sewers, sewage treatment plants.

If you have questions or comments regarding this web page, please contact Barbara Weller at (916) 445-1324 or via email at blweller@arb.ca.gov.

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GLOSSARY OF AIR POLLUTION TERMS

Have you ever wondered what a baghouse is or what NMOG stands for? That cold ironing is not a new way to get wrinkles out of a shirt or that a SIP isn't a beverage taste-test? You're not alone. ARB has updated its glossary of air pollution terms and lists of [acronyms](#) to help.

Keep in mind that we are not trying to create an exhaustive list, nor are we giving legal terminology. This glossary is simply a resource for the general public.

[A](#) | [B](#) | [C](#) | [D](#) | [E](#) | [F](#) | [G](#) | [H](#) | [I](#) | [J](#) | [K](#) | [L](#) | [M](#) | [N](#) | [O](#) | [P](#) | [Q](#) | [R](#) | [S](#) | [T](#) | [U](#) | [V](#) | [W](#) | [X](#) | [Y](#) | [Z](#)

A

AB 1807 (Tanner)

A California state law (Health and Safety Code section 39650 et seq.) that became effective in January of 1984 and established the framework for California's [toxic air contaminant](#) identification and control program. For more information, please see our [toxics summary](#).

AB 998

Assembly Bill 998 established the Non-Toxic Dry Cleaning Incentive Program to provide the dry cleaning industry with \$10,000 grant funds to switch from systems using perchloroethylene (Perc), an identified toxic air contaminant and potential human carcinogen, to non-toxic and non-smog forming alternatives. The legislation also requires ARB to establish a demonstration program to showcase these non-toxic and non-smog forming technologies.

AB 2588 (Connelly) Air Toxics "Hot Spots" Information and Assessment Program

A California program (Health and Safety Code Section 44300 et seq.) that requires certain [stationary sources](#) to report the type and quantity of specific toxic substances they routinely release into the air. The program identifies high priority facilities and requires facilities posing significant risks to notify all exposed individuals. For more information, visit our [AB 2588](#) website.

AB 2766 (Sher) Motor Vehicle Fee Program

A program that permits [air districts](#) and local governments to allocate vehicle registration surcharge fees to projects that reduce motor vehicle emissions such as [zero-emission vehicles](#), bike lanes and trip reduction programs.

AB 32(The Global Warming Solutions Act of 2006)

The Legislature passed and Governor Schwarzenegger signed AB 32, which set the 2020 greenhouse gas emissions reduction goal into law. It directed ARB to develop discrete early actions to reduce greenhouse gases while also preparing a scoping plan to identify how best to reach the 2020 limit on greenhouse gas emissions.

Abatement

The reduction or elimination of pollution.

Acceptable Daily Intake (ADI)

The highest daily amount of a substance that may be consumed over a lifetime without adverse effects.

Acid Deposition

Item No. E.3

A workshop held by a public agency for the purpose of informing the public and obtaining its input on the development of a regulatory action or control measure by that agency.

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R

Radon

A colorless, naturally occurring, radioactive, inert gaseous element formed by radioactive decay of radium atoms in soil or rocks.

Reactive Organic Gas (ROG)

A photochemically reactive chemical gas, composed of [non-methane hydrocarbons](#), that may contribute to the formation of [smog](#). Also sometimes referred to as [Non-Methane Organic Gases \(NMOGs\)](#). (See also [Volatile Organic Compounds](#) and [Hydrocarbons](#).)

Reactivity (or Hydrocarbon Photochemical Reactivity)

A term used in the context of air quality management to describe a hydrocarbon's ability to react (participate in photochemical reactions) to form [ozone](#) in the [atmosphere](#). Different hydrocarbons react at different rates. The more reactive a hydrocarbon, the greater potential it has to form ozone.

Reasonably Available Control Measures (RACM)

A broadly defined term referring to technologies and other measures that can be used to control pollution. They include [Reasonably Available Control Technology](#) and other measures. In the case of [PM10](#), RACM refers to approaches for controlling small or dispersed source categories such as road dust, woodstoves and open burning.

Reasonably Available Control Technology (RACT)

Control techniques defined in [U.S. EPA](#) guidelines for limiting emissions from existing sources in [nonattainment](#) areas. RACTs are adopted and implemented by states. For more information, visit our [RACT](#) website.

Reasonably Available Retrofit Control Technology (RARCT)

(See also [Best Available Control Technology](#).)

Reciprocating Internal Combustion Engine

An engine in which air and fuel are introduced into cylinders, compressed by pistons and ignited by a spark plug or by compression. Combustion in the cylinders pushes the pistons sequentially, transferring energy to the crankshaft, causing it to rotate.

Reference Dose (RfD)

An estimate delivered by the [U.S. EPA](#) (with uncertainty spanning perhaps an order of magnitude) of the daily [exposure](#) to the human population, (including sensitive subpopulations) that is likely to be without deleterious effects during a lifetime. The RfD is reported in units of mg of substance/kg body weight/day for oral exposures.

Reference Exposure Concentration (RfC)

An estimate, derived by the [U.S. EPA](#) with an uncertainty spanning perhaps an order of magnitude) of a daily [exposure](#) to the human population, (including sensitive subgroups) that is likely to be without

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Ozone and Your Patients' Health

Training for Health Care Providers
 Institute Ozone and Your Patients' Health Health Effects of Ozone in the General Population

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Health Effects of Ozone in the General Population

- [Introduction](#)
- [How are people exposed to ozone?](#)
- [How does ozone react in the respiratory tract?](#)
- [What are ozone's acute physiological and symptom effects?](#)
- [What effects does ozone have at the cellular level?](#)
- [How does response vary among individuals?](#)
- [What are the effects of ozone on mortality?](#)
- [What are other potential effects of short-term ozone exposure?](#)
- [At what exposure levels are effects observed?](#)
- [What are the effects of recurrent or long-term exposure to ozone?](#)

Review Key Points

Introduction

Breathing ground-level ozone can result in a number of health effects that are observed in broad segments of the population. Some of these effects include:

- Induction of respiratory symptoms
- Decrements in lung function
- Inflammation of airways

Respiratory symptoms can include:

- Coughing
- Throat irritation
- Pain, burning, or discomfort in the chest when taking a deep breath
- Chest tightness, wheezing, or shortness of breath

In addition to these effects, evidence from observational studies strongly indicates that higher daily ozone concentrations are associated with increased asthma attacks, increased hospital admissions, increased daily mortality, and other markers of morbidity. The consistency and coherence of the evidence for effects upon asthmatics suggests that ozone can make asthma symptoms worse and can increase sensitivity to asthma triggers.

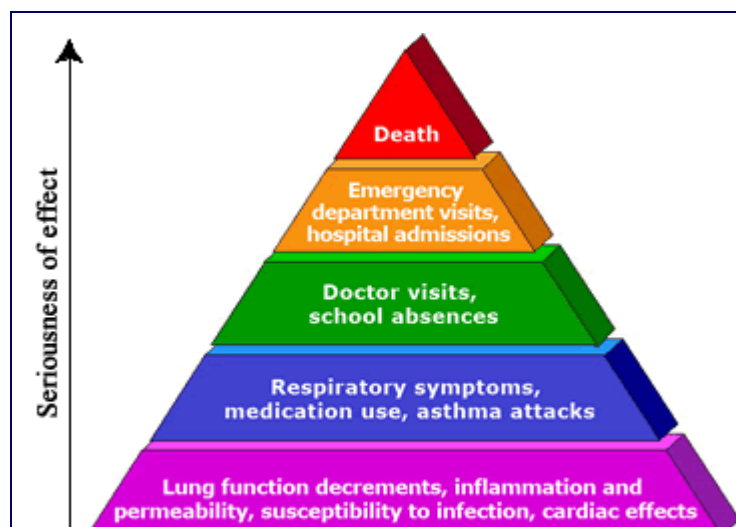
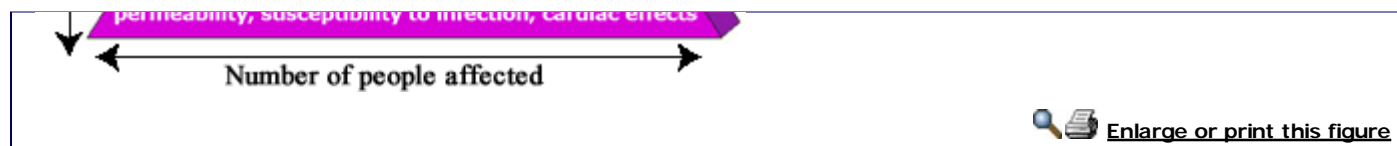


Figure 2: Pyramid of effects caused by ozone

The relationship between the severity of the effect and the proportion of the population experiencing the effect can be presented as a pyramid. Many individuals experience the least serious, most common effects shown at the bottom of the pyramid. Fewer individuals experience the more severe effects such as hospitalization or death.



This section of the course addresses exposure and health effects issues common to all people. The next section of the course, [Health Effects in Patients with Asthma and Other Chronic Respiratory Disease](#), addresses those issues specific to people with asthma and other chronic lung disease.

How are people exposed to ozone?

Primary exposure occurs when people breathe ambient air containing ozone. The rate of exposure for a given individual is related to the concentration of ozone in the surrounding air and the amount of air the individual is breathing per minute (minute ventilation). The cumulative amount of exposure is a function of both the rate and duration of exposure.

Although ozone concentrations in the outside (ambient) air are generally similar across many locations in a particular airshed, a number of factors can affect ozone concentration in "microenvironments" within the larger airshed (e.g., inside a residence, inside a vehicle, along a roadway). Ozone concentrations indoors typically vary between 20% and 80% of outdoor levels depending upon whether windows are open or closed, air conditioning is used, or other factors such as indoor sources. People with the greatest cumulative exposure are those heavily exercising outdoors for long periods of time when ozone concentrations are high. In addition, during exercise people breathe more deeply, and ozone uptake may shift from the upper airways to deeper areas of the respiratory tract, increasing the possibility of adverse health effects. People with the lowest cumulative exposure are those resting for most of the day in an air-conditioned building with little air turnover.

Ozone levels may also affect indoor levels of some aldehydes formed as reaction products of ozone with indoor substances (Apte et al 2008). This provides a potential pathway for people indoors to experience respiratory effects mediated by ozone reaction products. Further research is needed to test the importance of these exposures on health effects.

How does ozone react in the respiratory tract?

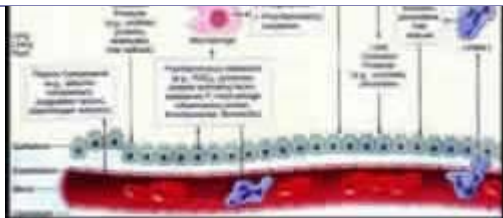
Because ozone has limited solubility in water, the upper respiratory tract is not as effective in scrubbing ozone from inhaled air as it is for more water soluble pollutants such as sulfur dioxide (SO_2) or chlorine gas (Cl_2). Consequently, the majority of inhaled ozone reaches the lower respiratory tract and dissolves in the thin layer of epithelial lining fluid (ELF) throughout the conducting airways of the lung.

In the lungs, ozone reacts rapidly with a number of biomolecules, particularly those containing thiol or amine groups or unsaturated carbon-carbon bonds. These reactions and their products are poorly characterized, but it is thought that the ultimate effects of ozone exposure are mediated by free radicals and other oxidant species in the ELF that then react with underlying epithelial cells, with immune cells, and with neural receptors in the airway wall. In some cases, ozone itself may react directly with these structures. Several effects with distinct mechanisms occur simultaneously following a short-term ozone exposure and will be described below.



Figure 3: Ozone is highly reactive in the respiratory tract

When breathed into the airways, ozone



interacts with proteins and lipids on the surface of cells or present in the lung lining fluid, which decreases in depth from 10 μm in the large airways to 0.2 μm in the alveolar region.

Epithelial cells lining the respiratory tract are the main target of ozone and its products.

These cells become injured and leak

intracellular enzymes such as lactate dehydrogenase into the airway lumen, as well as plasma components. Epithelial cells also release a variety of inflammatory mediators that can attract polymorphonuclear leukocytes (PMNs) into the lung, activate alveolar macrophages, and initiate a train of events leading to lung inflammation. Antioxidants present in cells and lining fluid may protect the epithelial barrier against damage by ozone or its reaction products.

Source: Devlin et al., (1997)



[Enlarge or print this figure](#)

What are ozone's acute physiological and symptom effects?

The predominant physiological effect of short-term ozone exposure is being unable to inhale to total lung capacity. Controlled human exposure studies have demonstrated that short-term exposure - up to 8 hours - causes lung function decrements such as reductions in forced expiratory volume in one second (FEV1), and the following respiratory symptoms:

- Cough
- Throat irritation
- Pain, burning, or discomfort in the chest when taking a deep breath
- Chest tightness, wheezing, or shortness of breath

The effects are reversible, with improvement and recovery to baseline varying from a few hours to 48 hours after an elevated ozone exposure.

Current thinking is that changes in symptoms and lung function are due to stimulation of airway neural receptors (probably airway C-fibers) and transmission to the central nervous system via afferent vagal nerve pathways. Although ozone exposure results in some airway narrowing, neural inhibition of inhalation effort at high lung volumes is believed to be the primary cause of being unable to inhale to total lung capacity.

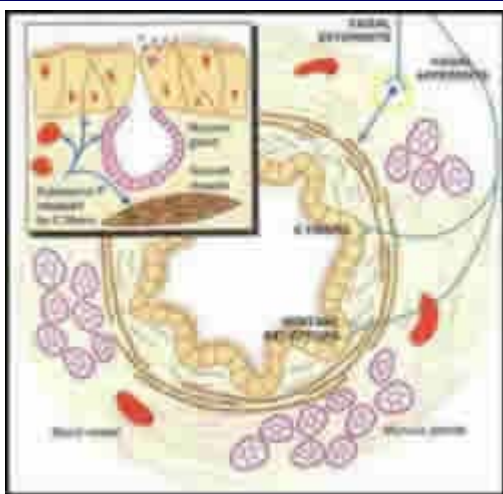


Figure 4: Ozone induces neurally mediated responses in the bronchial airways

Stimulation of nociceptive interepithelial nerve fibers by ozone leads to reflex cough and a decrease in maximal inspiration that is relieved by opioid agonists, which block sensory pathways. Two possible mechanisms are involved: (1) stimulation of irritant receptors contributes to cough and induces a vagally mediated reflex that increases airway resistance, probably via airway smooth muscle contraction that is blocked by atropine; (2) C fiber stimulation releases neurokinins such as substance P that dilate nearby capillaries, activate mucous glands, and contract airway smooth muscle via neurokinin receptors.

Prostaglandin E2 released by epithelial cells

exposed to ozone or to ozone reaction products also sensitizes C fibers.

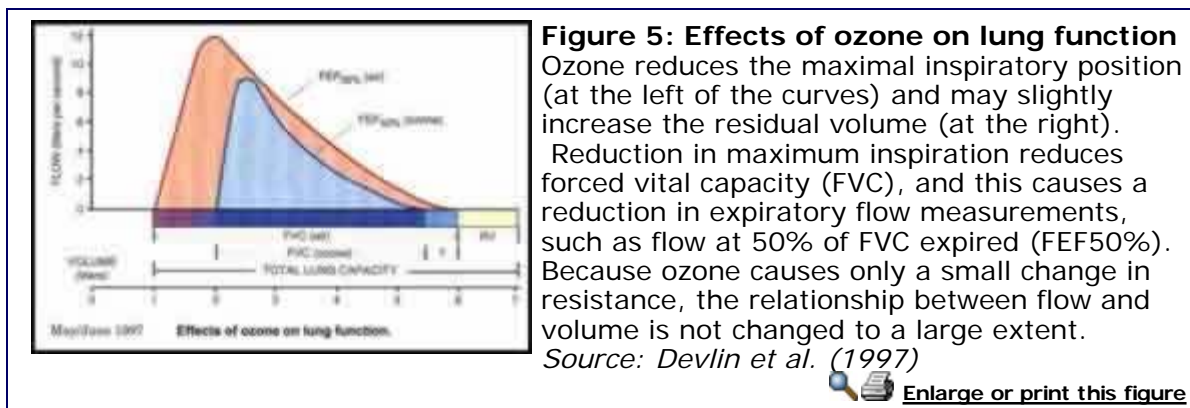
Source: Devlin et al. (1997)



[Enlarge or print this figure](#)

The overall effect is thus primarily restrictive in nature with a smaller obstructive component that reflects itself in decreases in forced vital capacity (FVC), FEV1 and other spirometric measures that require a full inspiration. It is likely that these lung function changes and respiratory symptoms are responsible for observations that short-term ozone exposure limits maximal exercise capability.

Ozone-induced changes in breathing pattern to more rapid shallow breathing may also be a manifestation of C-fiber stimulation and may be a protective response to limit penetration of ozone deep into the respiratory tract. Such effects may also contribute to changes in deposition pattern and retention of other inhaled substances such as allergens and particle pollution (also called particulate matter).



What effects does ozone have at the cellular level?

As a result of short-term exposure, ozone and/or its reactive intermediates cause injury to airway epithelial cells followed by a cascade of other effects. These effects can be measured by a technique known as bronchoalveolar lavage (BAL), in which samples of epithelial lining fluid (ELF) are collected during bronchoscopy on volunteers experimentally exposed to ozone. Cells and biochemical markers in the lavage fluid and in the blood can be analyzed to provide insight into the effects of exposure.

Evidence for airway inflammation following ozone exposure includes visible redness of the airway seen during bronchoscopy as well as an increase in the numbers of neutrophils in the lavage fluid. Cellular injury is suggested by an increase in the concentration of lactate dehydrogenase (LDH), an enzyme released from the cytoplasm of injured epithelial cells, in the ELF. Mediators (e.g., cytokines, prostaglandins, leukotrienes) that are released by injured cells include a number that attract inflammatory cells resulting in a neutrophilic inflammatory response in the airway. In addition, ozone reaction products as well as some mediators produced in the lung can be detected in the blood providing a possible mechanism for extrapulmonary effects of ozone exposure.



Other documented ozone-induced effects that may be related to the underlying injury and

inflammatory response are:

- An increase in small airway obstruction
- A decrease in the integrity of the airway epithelium
- An increase in nonspecific airway reactivity
- A decrease in phagocytic activity of alveolar macrophages

The decrease in epithelial integrity can be measured by an increase in the concentration of plasma proteins appearing in the ELF following exposure and by more rapid clearance of inhaled radio-labeled markers from the lung to the blood. This has the potential for allowing increased movement of inhaled substances (e.g. allergens or particulate air pollution) from the airway to the interstitium or the blood and could modify the known effects of inhaled allergen on asthma and particulate matter on mortality.

Although the significance of increased nonspecific airway reactivity to substances such as methacholine or histamine is not understood in healthy individuals, it is clearly of concern for people with asthma, as increased airway reactivity is a predictor for asthma exacerbations. (See section entitled How does ozone affect people with asthma?).

A decrease in macrophage function has the potential to interfere with host defense. Over a period of several days following a single short-term exposure, inflammation, small airway obstruction, and increased epithelial permeability resolve; damaged ciliated airway epithelial cells are replaced by underlying cells; and damaged type I alveolar epithelial cells are replaced by more ozone-resistant type II cells. Over a period of weeks, the type II cells differentiate into type I cells, and following this single exposure, the airway appears to return to the pre-exposure state.

How does response vary among individuals?

One striking characteristic of the acute responses to short-term ozone exposure is the large amount of variability that exists among individuals. For example, for a 2-hour exposure to 40 ppb ozone (note: 40 ppb is equal to .04 ppm) that includes 1 hour of heavy exercise, the least responsive individual may experience no symptom or lung function changes while the most responsive individual may experience a 50% decrement in FEV1 and have severe coughing, shortness of breath, or pain on deep inspiration. A similar range of response is evident for a 6.6-hour exposure to 80 ppb with 5 hours of moderate activity. Other individual responses fall into what appears to be a unimodal distribution between these two extremes. Those with large responses following exposure on one day also tend to have large responses upon re-exposure. Similarly, those with small responses following exposure on one day tend to have small responses upon re-exposure. A small fraction of the observed variability in lung function and symptom responsiveness can be explained by differences in age and in body mass index (BMI) with young adults (teens to thirties) and those with high BMI being much more responsive than older adults (fifties to eighties) and those with low BMI. Results similar to those in Figure 8 are also seen with longer duration exposures to concentrations more relevant to ambient levels (e.g. over a range of 60 to 120 ppb).

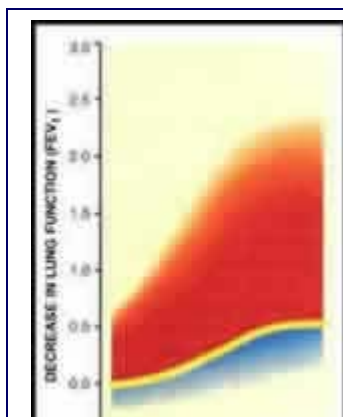


Figure 7:
Variability of
response to
ozone exposure
Source: Devlin et
al. (1997)

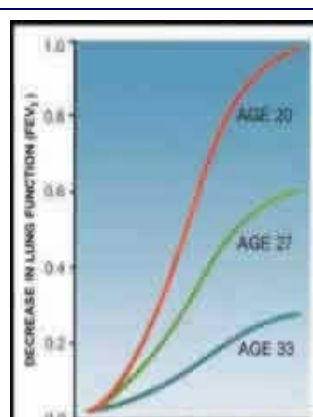


Figure 8:
Sensitivity to
ozone exposure
is age related
Source: Devlin et
al. (1997)



Individual differences in the intensity of the inflammatory response also exist, and it appears that these differences in response are also stable over time. The magnitude of the neurally-mediated lung function response, however, is not related to the degree of cell injury and inflammation for a given individual suggesting that these two effects are the result of different mechanisms of action. Further evidence for multiple mechanisms of action is provided by drug intervention studies. There is some evidence that Vitamin C and E supplements may slightly reduce the lung function effects of ozone but not the inflammatory or symptom responses. Pre-treatment with non-steroidal anti-inflammatory drugs (NSAID) reduces lung function and symptom responses but not the inflammatory responses in non-asthmatics. In asthmatic volunteers NSAID pretreatment did not block the restrictive lung function changes seen in nonasthmatics, but did blunt some of the changes due to airway obstruction. Pre-treatment with high doses of inhaled steroids has been shown to reduce the neutrophil influx following ozone exposure in people with asthma, but not in those without asthma.

True differences in individual responsiveness to ozone can be the result of either environmental or genetic factors. Research has demonstrated that genetic differences among strains of mice can explain the large range of inflammatory responses seen. Some preliminary evidence suggests that genetic polymorphisms for antioxidant enzymes and for genes regulating the inflammatory response may modulate the effect of ozone exposure on pulmonary function and airway inflammation.

What are the effects of ozone on mortality?

Studies show:

- Ozone is associated with increased mortality
- The absolute effect of ozone on mortality is considerably higher in older adults
- The ozone-mortality relationship is most prominent during the warm season

Recent epidemiologic research has clearly demonstrated that both short-term and longer-term exposures to low concentrations of particle pollution, a common air pollutant, are associated with increased mortality. Re-examination of the data upon which those findings are based as well as new studies indicate that short-term exposure to ozone is also associated with increased daily mortality.

The study most representative of the U.S. population (Bell et al 2004) evaluated the relationships between daily mortality counts and ambient ozone concentration for 95 large U.S. communities over the period of 1987-2000. Although there was considerable heterogeneity in the magnitude of effect among the various communities, a 0.5 % overall excess risk in non-accidental daily mortality was observed for each 20 ppb increase in the 24-hour average ozone concentration (approximately equal to a 30 ppb increase in the 8-hour average) on the same day. There was evidence that the effect was greatest on the day of exposure with smaller residual effects being evident for several days. A cumulative 1.04% excess risk was observed for each 20 ppb increase in the 24-hour average concentration during the previous week. The ozone-mortality relationship was robust even after controlling for possible effects of particulate matter and other air pollutants.

Although ozone mortality risk estimates tend to be only slightly higher for the older population compared to the younger population (based predominantly on Medicare studies of people 65 and older), the absolute effect of ozone on mortality is considerably higher in older adults due to their

higher baseline death rates. Even for older adults, however, the risk of dying on any given day as a result of ozone exposure is quite small. However, because of the large number of individuals at risk across the country, an effect of this magnitude has meaningful public health implications.

A preponderance of other time series studies supports the existence of an ozone-mortality relationship although with a wider range of effect estimates primarily due to the smaller sizes of the studies. An independent review of this literature by the National Research Council concludes that short-term ozone is likely to be associated with premature mortality.

Other observations made in these studies include the finding that the ozone-mortality relationship is most prominent during the warm season, with few or smaller effects in the winter. It also appears that the ozone-mortality association persists when deaths are limited to those caused by either cardiac or pulmonary disease or to those caused by cardiovascular disease alone. Risk estimates for other causes of death are generally inconsistent across studies probably reflecting the lower statistical power associated with smaller daily death rates. In the Bell study of 95 cities, the observed city-specific effect rates varied widely. The degree to which this variability reflects different ozone-mortality relationships in the different cities is not clear, but it does raise the question as to whether a single average 0.5% increase in daily mortality rates should be applied to all cities. Other unanswered questions pertain to the lowest concentrations at which these effects occur and the possible mechanisms of action responsible for increased mortality among many who spend much of their time indoors where ozone levels are generally quite low. Bell et al. divided days into those with a 24-hour average ozone concentration above and below 60 ppb and found that the relationship was similar for both subsets suggesting that the relationship is present at even very low levels of ozone. Biological mechanisms responsible for the ozone-mortality relationship are largely unknown although effects of ozone on the autonomic control of the cardiovascular system, on coagulation mechanisms, and on vasoactive substances in the blood are being actively investigated.

What are the other potential effects of short-term ozone exposure?

Other potential effects of short-term ozone exposure include:

- hospital admissions and emergency room visits for respiratory causes
- school absences

There is consistent epidemiologic evidence that ambient ozone levels are associated with other markers of respiratory morbidity, particularly during the warm season. In general, studies have reported positive relationships between short-term ozone concentrations and hospital admissions and emergency room visits for respiratory causes. Although not all studies have found significant effects, risk estimates for the majority of studies are positive. It is likely that those most at risk of serious respiratory morbidity are those with underlying respiratory disease. The evidence indicates that some of the increase in hospital visits for respiratory morbidity is due to exacerbations of asthma and possibly chronic obstructive pulmonary disease (COPD). Because of the small numbers of daily hospital admissions, the effects of ozone on other subcategories of respiratory disease are not clear.

A relationship has also been observed between ozone and school absences in two studies. However, in one case the absences were related to a measure of longer-term exposure, and in the other case absences were not limited to those due to illness. Although these latter results are consistent with increased infections secondary to impaired host defense, more research needs to be done before reaching any conclusion regarding any effect of ozone exposure on respiratory infection.

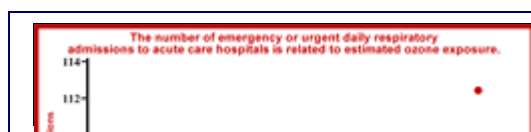
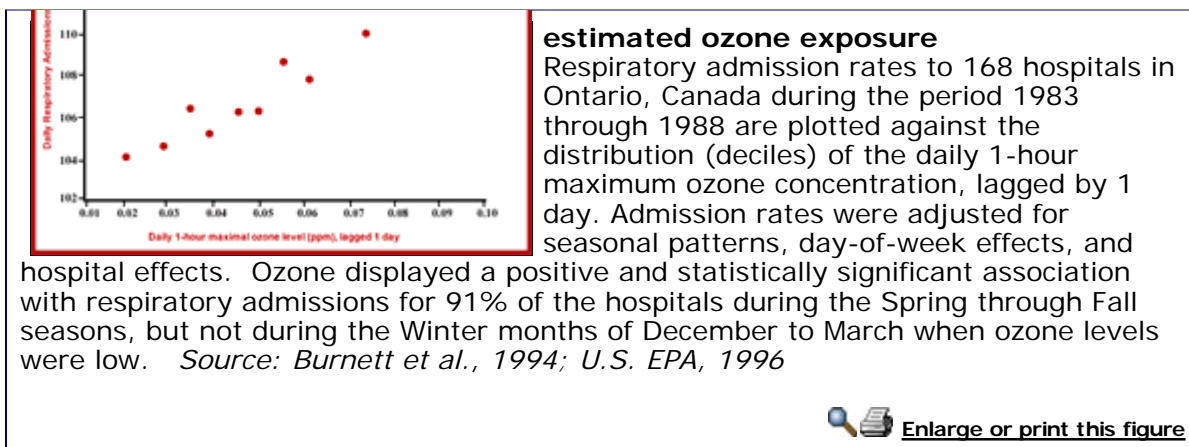


Figure 9: The number of emergency or urgent daily respiratory admissions to acute care hospitals is related to



Ozone has been associated with daily hospitalizations for cardiovascular disease in some studies but it is not a consistent finding. A number of studies have explored the relationships between ozone and various other aspects of cardiovascular pathophysiology including heart rate variability, acute myocardial infarction, and tachyarrhythmias in those with implanted cardiac devices. Although some data are suggestive of a relationship, the results at this time do not fully substantiate a relationship between ozone exposure and adverse cardiovascular events.

At what exposure levels are effects observed?

The concentration of ozone at which effects are first observed depends upon the level of sensitivity of the individual as well as the dose delivered to the respiratory tract. The dose, in turn, is a function of the ambient concentration, the minute ventilation, and the duration of exposure. This can be expressed as a rough formula:

Dose = Ambient concentration X Level of exertion (minute ventilation) X Duration of exposure.

Thus individuals performing strenuous activity (higher minute ventilation) for several hours are likely to respond to lower concentrations than when exposed at rest (lower minute ventilation) for a shorter time. The following examples illustrate this point:

- An average young adult playing an active sport such as soccer or full court basketball outdoors for 2 hours would be expected to experience small to moderate lung function and symptom effects as well as lung injury and inflammation following exposure to 120 ppb ozone.
- If the same average young adult is at rest outdoors for the two hours, such effects would not be expected until exposures reach 300-400 ppb.
- An average outdoor laborer doing intermittent work might experience similar small to moderate lung function and symptom effects as well as lung injury and inflammation following an 8-hour exposure to 60 to 70 ppb ozone.

More sensitive individuals will experience such effects at lower concentrations while less sensitive individuals will experience these effects only at higher concentrations.

Children without asthma experience lung function decrements similar to those of young adults. But children often do not report respiratory symptoms at the lowest ozone concentrations. It is not clear whether this is the result of reduced sensitivity with regard to symptoms or whether children are less likely to recognize and report symptoms.

There are chamber studies and field studies that look at the ozone exposure level at which effects are first observed. It is not surprising that field studies show effects at much lower levels than chamber studies. This is because field studies can look at sensitive populations (including children), include exposure to all oxidant species of pollution, and may include longer exposure times. For

example, field studies of agricultural workers and hikers suggest that lung function changes may be associated with prolonged ozone exposures at lower levels than those observed in chamber studies. Below are findings from key field and observational studies.

Although the results vary somewhat, several field studies suggest that the lung function of highly active asthmatic and ozone sensitive children and the exercise performance of endurance athletes may be affected on days when the 8-hour maximum ozone concentration is less than 80 ppb ozone.

Emergency room data from one study indicate that asthma attacks in the most sensitive population (e.g., children with asthma or reactive airway disease) increase following days on which the 1-hour maximum ozone concentrations exceeded 110 ppb (approximately equivalent to an 8-hour average of 82 ppb). (White et al., 1994) Another study observed increased emergency room visits for asthma on days following those when 7-hour averages exceeded 60 ppb compared to those with lower ozone concentrations. (Weisel et. al., 1995).

For effects measured in some other types of observational studies, the lowest levels at which effects are expected to occur are more difficult to identify for a number of reasons. Effects of ozone on daily mortality have been detected even when study days are restricted to those with a 24-hour average ozone concentration below 60 ppb (approximately equivalent to an 8-hour average below 90 ppb). In one study, hospital admissions for respiratory causes appear to follow a linear relationship down to background levels. (Figure 9). Limited exposure-response modeling suggests that if a population threshold for these ozone effects exists, it is likely near the lower limit of ambient ozone concentrations in the United States.

What are the effects of recurrent or long-term exposure to ozone?

One of the major unanswered questions about the health effects of ozone is whether repeated episodes of damage, inflammation, and repair induced by years of recurrent short-term ozone exposures result in adverse health effects beyond the acute effects themselves.

Daily ozone exposure for a period of 4 days results in an attenuation of some of the acute, neurally-mediated effects (e.g., lung function changes and symptoms) for subsequent exposures occurring within 1 to 2 weeks. Some health experts have, therefore, suggested that individuals living in high ozone areas may be protected from any harmful effects of long-term ozone exposure. Others suggest, however, that the attenuation of the ozone-induced tendency to take rapid and shallow breaths may blunt a protective mechanism, resulting in greater delivery and deposition of ozone deeper in the respiratory tract and other airway responses described below.

Studies including bronchoalveolar lavage and bronchial mucosal biopsies indicate that, unlike the neurally-mediated lung function changes, the processes of airway injury, inflammation, and repair continue to occur during repeated exposure. After either 4 or 5 days of exposure, markers of cell injury and increased epithelial permeability remain elevated, and an increase in airway mucosal PMN, which was not present following a single exposure, has been noted. Also, unlike the neurally-mediated effects, small airway function has been observed to remain depressed over the course of exposures and is thought to be related to the ongoing inflammation.

Studies of laboratory animals have consistently demonstrated that long-term exposure to ozone concentrations above ambient levels results in persistent morphological changes that could be a marker of chronic respiratory disease. Exposed animals experience mucous cell metaplasia and epithelial cell hyperplasia in the upper airway as well as structural changes in the lower airway including an increase in fibrous tissue in the basement membrane area and a remodeling of the distal conducting airways. In addition to airway remodeling and basement membrane changes, concurrent long-term exposure of very young primates to ozone and house dust mite allergen has been observed to result in changes in the innervation of the airways as well as an accumulation of


eosinophils in the distal airways suggesting induction of an allergic phenotype. Other studies indicate that sensitization of animals to antigen occurs more easily during ongoing ozone exposures. Based on traditional measures, there is little evidence that long-term exposure in animals results in substantial changes in airway function. However, these morphological findings suggest that long-term ozone exposure might play a role in the development or progression of chronic lung disease and/or asthma.

The epidemiologic evidence is inconclusive with regard to whether long-term exposure of humans is related to chronic respiratory health effects in humans. Several cross-sectional studies have found that young adults who spent their childhoods in locales with high ozone concentrations had lower measures of lung function than those from locales with lower ozone. Similar results have not been observed, however, in a recent well-conducted longitudinal study of lung function in children or in other cross-sectional studies. Two longitudinal studies have observed associations between development of asthma and long-term ozone concentrations in subgroups of the population. These findings have not been confirmed in other longitudinal or cross-sectional studies, but they are consistent with the animal toxicological literature. Part of the difficulty in evaluating such associations has been the small number of longitudinal epidemiologic studies specifically designed to evaluate respiratory health in samples with differing ozone exposures. The mobility of the population as well as the inability to precisely estimate exposure to ozone and other potential confounders over a period of many years degrades the power of, and leads to bias in, both longitudinal and cross-sectional studies.

In spite of the inconclusive nature of the epidemiologic literature, the repeated cycles of damage, inflammation, and repair in humans and the morphological findings from the animal toxicological studies suggest that it would be prudent to avoid repeated short-term exposures, particularly in young children, until more is known about the effects of long-term ozone exposure.

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University of California at Berkeley
Environmental Economics & Policy 101
Spring 2002

All That Smog

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Negative Externality
Human
Agricultural & Forestry
Materials & Aesthetics
Ecological

We often do not drive a car thinking of all the hazardous emissions we would release. Nor do we turn on the light with thought as to how that energy was generated. Yet, when we do all these activities subconsciously, we indirectly contribute to the growing amounts of hazardous air pollutants in our atmosphere that are responsible for many adversities.

Smog as a Negative Externality

Depending upon various factors, including location, season, and source of generation, the price an entity pays for a given amount of energy can vary. Typically, the price would account for all costs incurred within the value chain—research and development, design, production, marketing, distribution, and customer services—plus a markup. Unfortunately, this price, the cost charged to consumers, is what is known as the market price, and therefore may not accurately reflect the total costs inflicted upon society as a whole (Baird). In such a case as where the actions of one party directly affecting another are not accounted for, an externality arises.

In the case of energy, both productive and consumptive activities result in smog, a negative externality imposed on the environment and the welfare of society. The production of an output of energy through the process of burning coal or other fossil fuels, for example, releases two main air pollutants: sulfur dioxide and nitrogen oxides. Similarly, the consumption of energy—either for self-consumptive or other productive purposes—releases primary pollutants VOCs and nitrogen dioxides, which in turn can undergo chemical reactions to yield secondary pollutants such as ground level ozone and PAN. All these air pollutants are responsible for adverse effects in both humans and plants and on materials and aesthetics, as well as the negative impacts on the environment, namely acid rain. In whichever case, the stated price of either energy or an intermediate form of energy, such as gas, or a finished output that uses energy as an input, rarely reflects the complete burden placed upon society. This neglect of externalities, in turn, often results in an over-production or over-consumption of energy and other related goods. Here, we take a closer look at these externalities as to see what costs to society the market fails to account for.



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Smog and its Effects on Human Health

We, as humans, can live a few days without food and water, but can only live a few minutes without air. The fact that an active adult inhales 10,000 to 20,000 liters of air each day, or 7 to 14 liters every minute, highlights a critical point in the fight for clean air (Elsom 30).

While the effects of smog vary according to factors such as age, state of health, time of exposure, and dosage, the general symptoms include coughing, sneezing, headaches, tiredness, irritation, nausea, and hoarseness of the throat, nose, and eyes, and constrictions of the chest (Lewis 37; Elsom 31).

Additionally, nitrogen dioxide and ground-level ozone were found to cause reductions in the immune system's ability to fight bacteria and viruses in the respiratory system (Nebel and Wright 530; EPA, "Smog-Who Does it Hurt?" 3). These effects are all considered to be short-term in that once exposure ceases, the symptoms are no longer present. However, in most cases, it is the long-term effects of air pollutants that bring the greatest concerns, since these effects are often the most severe.

Unsurprisingly, most acute effects of smog are related to the respiratory system. Some components of smog such as nitrogen dioxide, sulfur dioxide, and ground-level ozone are found to have caused damages to the mucociliary system responsible for cleaning the air tracts (Elsom 56). As a result, the lung's ability to resist disease is reduced, and illnesses, such as bronchitis and emphysema, can be aggravated (Gow and Pidwirny; Elsom 56). Likewise, while some VOCs were found to be carcinogenic, the main problem with VOCs was its role in the formation of ground-level ozone. Present in ambient concentrations, ground-level ozone can cause inflammation and fibrosis to the lungs, resulting in permanent morphological changes to the lungs (Nebel and Wright 530; EPA, "Smog-Who Does it Hurt?" 3). Consequently, these air pollutants can not only decrease lung function, elasticity, and capacity by as much as 5%, but can also lead to the premature aging of the lungs (Elsom 33, 63; "Smog").



While continuous research is being made as to link the long-term effects of smog to human health, scientists in general have agreed on several findings. By and large, children, asthmatics, people with chronic respiratory or pulmonary and heart disease, and the elderly are the most susceptible to air pollutants (Nebel and Wright 530). Because the lungs of children are not yet fully developed and because children inhale more air per unit of body weight than adults, they are prone to greater health effects as well as long-term damage to the lungs (Elsom 42). Similarly, because asthmatics and those suffering from chronic diseases are already in a weakened state, smog adds stress to their bodies

(Nebel and Wright 532). For the elderly, smog increases their susceptibility to viral and bacterial attacks, as both lung and immune system functions decrease with age (Elsom 42). Healthy adults who work actively outdoors or who have higher levels of exposure to air pollutant are also considered, by the EPA, to be in a "sensitive group" (EPA, "Smog-Who Does it Hurt?" 3).

In all these cases, it is important to note that contrary to popular belief, death as a result of a smog siege is often not a result of air pollutant poisoning, but rather, a result of increasing susceptibility to diseases. Equally important, however, is the fact that a great level of uncertainty exists in identifying a cause-and-effect relationship between smog and smog-related illnesses. At most, we can often only say that pollutants are contributing factors to related illnesses. Consequently, this makes the exact measurements of externalities difficult, if not impossible.

Estimates have been made, however, to provide a monetary value of the costs and benefits of smog. In several studies conducted by the American Lung Association, the costs of premature deaths, hospital stays and emergency room visits, productivity loss as a result of missing work or school, and other air pollutant related health effects were an indication of inefficiency within the economy ("Air"). The reports went so far as to argue that economic growth was correlated with environmental protection by demonstrating that human health benefits of cleaner air outweighed the costs industries would have to incur as a result of higher standards (ibid). It was estimated that enforcement of all parts of the Clean Air Act between 1970 and 1990 would result in minimum benefits of \$23 trillion over the twenty years, an average of over \$1 trillion annually (ibid).

In a similar study conducted by the EPA for United States Congress in 1999, it was estimated that if the Clean Air Act Amendments were enforced in the 48 contingent states for the twenty-year period between 1990 and 2010, the total human health benefits in 2000 would be \$68 billion and \$118 billion in 2010 (EPA, "The Benefits and Costs" H-27). These benefits represent underestimates, since, in the words of the EPA itself, "there is insufficient information from both the medical and the economic sciences to satisfactorily resolve these issues from a theoretically/analytical standpoint" (ibid. H-36).

Apparently, smog is a costly externality from a human health perspective alone.

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Smog and its Effects on Agriculture and Forests

The adverse effects of smog are not limited to humans alone. As it turns out, plants are perhaps more sensitive to air pollutants than humans. In particular, acid rain has left areas barren or with severely damaged vegetation (Nebel and Wright 533). Yet, perhaps the greatest damage has been from ground-level ozone and PAN. Entering leaves of plants from the stomata during normal gas exchange, both ground-level ozone and PAN can cause discoloration, damage, and loss of leaves-reducing photosynthesis by as much as 50% (Munster; Gow and Pidwirny). Plants also become more vulnerable to attacks by pests, disease, and other environmental disasters (Shaw). Consequently, the plant's ability to store food, grow, and reproduce is hindered (ibid).

In numerical terms, ground-level ozone, alone, has been estimated to cause 10% to 40% growth loss, premature aging, and a decrease in pollen lifespan resulting in an estimable cost in agriculture of \$2 billion to \$6 billion per year (Nebel and Wright 533; "Smog"). Losses in crop yields were estimated to be 20% to 30% between 1989 and 1992 (Nebel and Wright 533). In Ontario alone, smog was attributed to reduce crop yields equivalent to \$70 million per year ("Smog"). In a study conducted by the EPA to Congress, continuous implementation of a Clean Air Act Amendments over the period 1990 to 2010 would accumulate a minimum 1999 net present value of agricultural benefits of at least \$4 billion (EPA, "The Benefits and Costs" F-8). Along with the fact that 60% of the world's food is produced in countries that also produce 60% of the world's air pollution, the significance of clean air is clearly seen (Nebel and Wright 533).



In a forestry aspect, smog incurs a cost on the existence value of trees and wild plants. In Los Angeles, smog was attributed to the deaths of 50% of trees in nearby areas (ibid.). Similarly, ground-level ozone from the Central Valley and San Francisco-Oakland metropolitan areas was responsible for increasing stress and vulnerability on the ponderosa and Jeffrey pines in the Sierra Nevada (ibid.). An attack by western pine beetles subsequently diminished the number of these trees.

As it perhaps can be predicted, the monetary costs of the loss of forests are difficult to measure, if measurable at all. Yet, it may still be worthwhile to keep in mind the option value benefits, non-consumptive use benefits, and existence value of forests, when making a balance sheet of costs and benefits of reducing smog. In another aspect, the damage to trees can have direct economic costs-as Canada discovered when it was found that ground-level ozone was the cause of damage to its sugar maple trees and other trees in its forestry industry ("Smog").

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Smog and its Effects on Materials and Aesthetics

It is said that cleaning is just as destructive as it is costly. Perhaps this is even more so when considering the material and aesthetic aspects of smog. Besides the fact that most people derive a psychological benefit of seeing a clear sky and a clean surrounding, the costs of smog can be millions of dollars.



The most visible characteristic of cities smothered by smog is perhaps the black and soot-covered windows, walls, drapes and curtains, and other exposed surfaces. Yet, other damages can be seen. Sulfur dioxide corrodes metal and stone-damaging machinery and industrial instruments, as well as destroying buildings, statues, and monuments (Lewis 33; EPA, "The Plain English"). Ground-level ozone, destroying synthetic materials, can cause leather to become brittle and rubber to lose its elasticity, resulting in



cracks (Lewis 33). Moreover, ground-level ozone has been found to damage cotton, acetate, nylon, polyester, and other textiles, while bleaching dyes, paints, and coatings ("Smog").

While it is uncertain as to how much is exactly spent on the cleaning or replacement of materials, a couple of million dollars is considered to be a reasonable estimate. Canada, alone, estimates that the increase in ground-level ozone from the United States has cost it up to one billion dollars in material damages ("Smog"). Considering that cleaning and replacement costs do not include materials that are irreplaceable and the observation that people have actually spent more to move further away from cities, these costs of pollution most likely will be underestimated (Nebel and Wright 534).

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Smog and its Effects on Ecological Systems

Sulfur dioxide and nitrogen oxides are largely responsible for the sources of acid precipitation. Because it results in acid rain with a pH of 5.5 or less, smog can have serious widespread ecological impacts on aquatic systems, forests, and on humans far away from its point of origin.

As a basic biology course will explain, slight deviations from pH values in the environment can be critical to the proper functioning of enzymes, hormones, and other proteins. In aquatic systems with a normal pH of 6 to 8, a slight deviation in most cases will pose no threat, as organisms adapt (Nebel and Wright 541). However, an organism's ability to successfully reproduce may be hindered, and in more extreme cases, a population of an organism may actually become extinct (ibid.). In forests, acid precipitation not only damages trees and plants, but also affects soil contents, which can thwart growth towards acid-tolerant species (ibid. 542). For humans, the effects of acid rain may vary from aesthetic values to the issue of clean water and air. In all of these cases, no exact monetary value can be assigned.



The fact that everyone and everything in the environment is interlinked in a chain demonstrates the difficulty in measuring an externality such as smog. Yet the simple recognition that such externalities exist can work wonders in policies attempting to ensure a more sustainable and healthier future.

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March 12, 2009

Study links smog exposure to premature death

By **ROBIN BRAVENDER**, [Greenwire](#)

Long-term exposure to concentrated smog significantly raises the risk of dying from lung disease, a new study shows.

The [study \(pdf\)](#), published today in the *New England Journal of Medicine*, found that the risk of dying from respiratory disease is more than three times higher in metropolitan areas with the most concentrated ozone -- a precursor of smog -- than in those with the lowest ozone concentrations.

The report is the first nationwide study to evaluate the effects of long-term impacts of ozone on human health and the first to separate the effects of ozone pollution from those of fine particle pollution, or soot, according to a statement from New York University's Langone Medical Center.

"Many studies have shown that a high ozone day leads to an increase in risk of acute health effects the next day, for example, asthma attacks and heart attacks," said co-author George Thurston, a professor at NYU's Department of Environmental Medicine, in the statement.

"What this study says is that to protect the public's health, we can't just reduce the peaks, we must also reduce long-term, cumulative exposure."

The study was co-authored by scientists from Health Canada, Brigham Young University, New York University's School of Medicine, the University of Ottawa, the American Cancer Society and the University of California, Berkeley.

Ozone is formed by a chemical reaction between nitrogen oxides and volatile organic compounds in the presence of sunlight. It is considered beneficial in the earth's stratosphere, where it forms a shield that blocks the sun's harmful rays. But ground-level ozone -- which can come from tailpipes, coal-fired utilities and other industries -- can trigger health problems including chest pain, coughing, throat irritation and congestion, according to U.S. EPA. It can also damage vegetation and ecosystems.

'Substantial risk' under EPA limits

Thurston said the study shows that EPA's current standards for airborne ozone -- measured over eight-hour periods -- do not protect against the long-term effects of ozone exposure.

"It seems clear that even in cities that are approaching meeting the existing standard, you still have a substantial risk from the cumulative long-term exposure that's not addressed by the acute standard," he said.

New York City's air, for example, is nearly in compliance with EPA's short-term ozone standard of 75 parts

per billion, he said. Still, New Yorkers face a 25 percent increased risk of respiratory death as a result of their ozone exposures, he said.

Yesterday, the Obama administration asked a federal appeals court to stall a pending court case over EPA's current smog standards to give the agency more time to consider whether to revise the controversial Bush-era air quality standards (*E&ENews PM*, March 11). Environmental groups have blasted the Bush-era standard for being too weak, while industry groups have argued that the current standard is too stringent.

Frank O'Donnell, president of the advocacy group Clean Air Watch, said the study adds fuel to clean air advocates' argument that the federal standards should be stricter.

"There's certainly a great weight of evidence to document that tougher ozone standards are needed," O'Donnell said.

[Click here](#) (pdf) to read the report.

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AIRtrends 1995 Summary

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<http://www.epa.gov/airtrends/aqtrnd95/pm10.html>

Last updated on Thursday, January 05, 2012

Particulate Matter (PM-10)

Note: EPA no longer updates this information, but it may be useful as a reference or resource.

Please see www.epa.gov/airtrends for the latest information on Air Quality Trends.

Nature and Sources of the Pollutant:

Particulate matter is the term for solid or liquid particles found in the air. Some particles are large or dark enough to be seen as soot or smoke. Others are so small they can be detected only with an electron microscope.

Because particles originate from a variety of mobile and stationary sources (diesel trucks, woodstoves, power plants, etc.), their chemical and physical compositions vary widely. Particulate matter can be directly emitted or can be formed in the atmosphere when gaseous pollutants such as SO₂ and NO_x react to form fine particles.



Health and Environmental Effects: In 1987, EPA replaced the earlier Total Suspended Particulate (TSP) air quality standard with a PM-10 standard. The new standard focuses on smaller particles that are likely responsible for adverse health effects because of their ability to reach the lower regions of the respiratory tract. The PM-10 standard includes particles with a diameter of 10 micrometers or less (0.0004 inches or one-seventh the width of a human hair). EPA's health-based national air quality standard for PM-10 is 50 µg/m³ (measured as an annual mean) and 150 µg/m³ (measured as a daily concentration). Major concerns for human health from exposure to PM-10 include: effects on breathing and respiratory systems, damage to lung tissue, cancer, and premature death. The elderly, children, and people with chronic lung disease, influenza, or asthma, are especially sensitive to the effects of particulate matter. Acidic PM-10 can also damage human-made materials and is a major cause of reduced visibility in many parts of the U.S. New scientific studies suggest that fine particles (smaller than 2.5 micrometers in diameter) may cause serious adverse health effects. As a result, EPA is considering setting a new standard for PM-2.5. In addition, EPA is reviewing whether revisions to the current PM-10 standards are warranted.

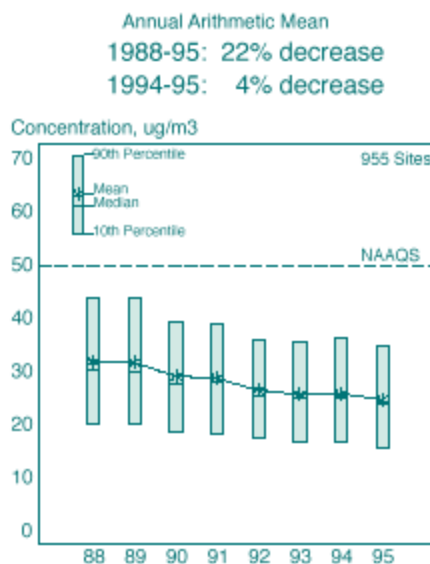
Trends in PM-10 Levels: Air monitoring networks were changed in 1987 to measure PM-10 (replacing the earlier TSP monitors).

Between 1988 and 1995, average PM-10 concentrations decreased 22 percent. Short-term trends between 1994 and 1995 showed a decrease of 4 percent in monitored PM-10 concentration levels.

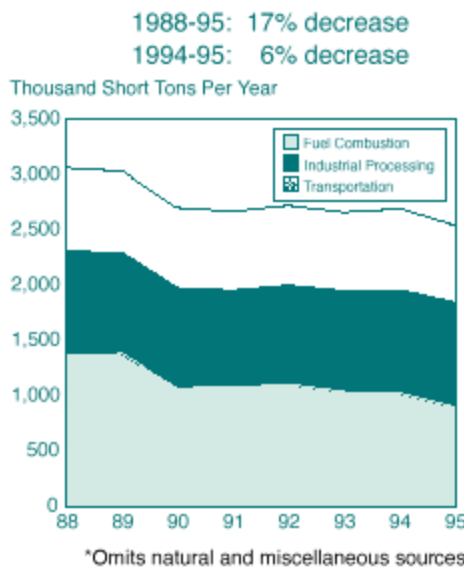
Emissions of PM-10 shown in the chart are based on estimates from fuel combustion sources, industrial processes, and transportation sources, which account for only 6 percent of the total PM-10 emissions nationwide. Between 1988 and 1995, PM-10 emissions for these sources decreased 17 percent. Short-term emissions trends between 1994 and 1995 showed a 6 percent decrease.

The emissions estimates presented below do not include emissions from natural and miscellaneous sources which are fugitive dust (unpaved and paved roads), agricultural and forestry activities, wind erosion, wildfires and managed burning. These emissions estimates also do not account for particulate matter that is secondarily formed in the atmosphere from gaseous pollutants (e.g., SO₂ and NO_x).

PM-10 Concentrations, 1988-95



PM-10 Emissions, 1988-95*



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Air Pollution - Particulate Matter Brochure

This page last reviewed May 6, 2009

What is Particulate Matter (PM10)?

Particulate matter (PM10) pollution consists of very small liquid and solid particles floating in the air. Of greatest concern to public health are the particles small enough to be inhaled into the deepest parts of the lung. These particles are less than 10 microns in diameter - about 1/7th the thickness of the a human hair - and are known as PM10. This includes fine particulate matter known as PM2.5.

PM10 is a major component of air pollution that threatens both our health and our environment.

Where does PM10 come from?

In the western United States, there are sources of PM10 in both urban and rural areas, major sources include:

1. Motor vehicles.
2. Wood burning stoves and fireplaces.
3. Dust from construction, landfills, and agriculture.
4. Wildfires and brush/waste burning.
5. Industrial sources.
6. Windblown dust from open lands.

PM10 is a mixture of materials that can include smoke, soot, dust, salt, acids, and metals. Particulate matter also forms when gases emitted from motor vehicles and industry undergo chemical reactions in the atmosphere.

How does PM10 affect our health?

PM10 is among the most harmful of all air pollutants. When inhaled these particles evade the respiratory system's natural defenses and lodge deep in the lungs.

Health problems begin as the body reacts to these foreign particles. PM10 can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections.

Although particulate matter can cause health problems for everyone, certain people are especially vulnerable to PM10's adverse health effects. These "sensitive populations" include children, the elderly, exercising adults, and those suffering from asthma or bronchitis.

Of greatest concern are recent studies that link PM10 exposure to the premature death of people who already have heart and lung disease, especially the elderly.

Does PM10 affect our view?

PM10 is often responsible for much of the haze that we think of as smog. This is a problem in our cities, rural areas and pristine areas - such as national parks and forests.

What is being done to reduce PM10 pollution?

The United States Environmental Protection Agency has set air quality standards for PM10. Based on health research, these identify acceptable levels of PM10. Currently, these standards are violated in many parts of the western United States.

Air quality agencies in several states have developed, or are now developing, air quality plans to bring PM10 concentrations down to healthful levels. These plans include a variety of programs to reduce emissions, including:

1. Dust control for roads, construction, and landfills.
2. Landscaping, barrier, and fencing to reduce windblown dust.
3. Programs to reduce emission from wood stoves and fireplaces.
4. Cleaner - burning gasoline and diesel fuels.
5. Emission control devices for motor vehicles.
6. Controls for industrial facilities.

What can you do?

Here are a few things individuals, business, and other organizations can do immediately to reduce the threat of PM10:

1. Reduce travel on days with poor air quality.
2. Avoid vigorous physical activity on days that have poor air quality.
3. Avoid using your wood stove and fireplace on days that have poor air quality.
4. Avoid using leaf blowers and other dust - producing equipment.
5. Drive slowly on unpaved roads and other dirt surfaces.
6. Get involved with air quality improvement programs in your community.
7. If you own or operate an industrial source of PM10, comply with local rules that apply to your operation. Work with local agencies to develop strategies that will further reduce PM10 emissions.

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**2009 IMPERIAL COUNTY
STATE IMPLEMENTATION PLAN FOR
PARTICULATE MATTER LESS THAN
10 MICRONS IN AERODYNAMIC DIAMETER**

FINAL

Prepared for

Imperial County Air Pollution Control District
150 South 9th Street
El Centro, CA. 92243-2801

Prepared by

ENVIRON International Corporation
707 Wilshire Blvd., Suite 4950
Los Angeles, CA 90017

August 11, 2009

PM₁₀ is respirable, with fine and ultrafine particles reaching the alveoli deep in the lungs, and larger particles depositing principally in the nose and throat area. PM₁₀ deposition in the lungs results in irritation that triggers a range of inflammation responses, such as mucus secretion and bronchoconstriction, and exacerbates pulmonary dysfunctions, such as asthma, emphysema, and chronic bronchitis. Sufficiently small particles may penetrate into the bloodstream and impact functions such as blood coagulation, cardiac autonomic control, and mobilization of inflammatory cells from the bone marrow. Individuals susceptible to higher health risks from exposure to PM₁₀ airborne pollution include children, the elderly, smokers, and people of all ages with low pulmonary/cardiovascular function. For these individuals in particular, adverse health effects of PM₁₀ pollution include coughing, wheezing, shortness of breath, phlegm, bronchitis, and aggravation of lung or heart disease, leading for example to increased risks of hospitalization and mortality from asthma attacks and heart attacks.¹

1.2 Imperial County

1.2.1 Geography, Population, and Land Use

Imperial County extends over 4,597 square miles² in the southeastern portion of California, bordering Mexico to the south, Riverside County to the north, San Diego County to the west, and the State of Arizona to the east. The Imperial Valley runs approximately north-to-south through the center of the county and extends into Mexico. The terrain elevation varies from as low as 230 feet below sea level at the Salton Sea to the north to more than 2,800 feet above sea level at the mountain summits to the east.

Imperial County's population is about 173,000 people,³ and its principal industries are farming and retail trade. Most of the population, farming, and retail trade exist in a band of land that, on average, comprises less than one-fourth the width of the county, stretching from the south shore of the Salton Sea to the Mexican border. The road network is densest within this strip, as shown in Figure 1.1. The rest of Imperial County is the Salton Sea and mostly dry, barren desert area with little or no human population. Imperial County's population distribution and population growth in recent years are reported in Appendix V.

Imperial County's agricultural industry⁴ grew to \$1.37 billion in 2007, led by cattle farming at \$334 million. More than 40 types of crops and commodities are grown in the county, ranking Imperial County 11th among California counties.⁵ The total acreage of farmed land has remained fairly constant at ~500,000 acres over the last decade, and nearly 25% of the county's labor force works in the Agricultural Sector during the high season.

¹ Additional details regarding the adverse health effects of PM can be found in the San Joaquin Valley 2006 PM₁₀ Plan (Chapter 1, Section 1.5), available at http://www.valleyair.org/Air_Quality_Plans/06PM10.htm.

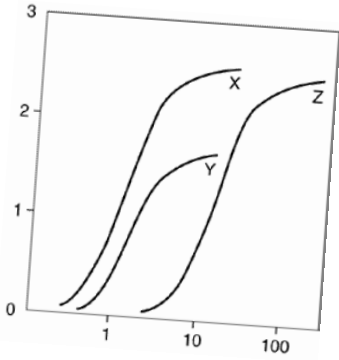
² Official website of Imperial County, <http://www.co.imperial.ca.us/>.

³ Southern California Association of Governments, http://www.scag.ca.gov/publications/pdf/2007/SOTR07/SOTR07_Population.pdf

⁴ Imperial County Agricultural Commissioners Office, *Imperial County 2007 Agricultural Crop and Livestock Report*; available at <http://imperialcounty.net/ag/Crop%20&%20Livestock%20Reports/Crop%20&%20Livestock%20Report%202007%20Color.pdf>

⁵ California Farm Bureau Federation, <http://www.cfbf.com/counties/index.cfm?id=13>

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August 31, 2012

Lozeau | Drury LLP
410 12th Street, Suite 250
Oakland, CA 94607

Attn: Mr. Michael Lozeau

Subject: Comment Letter on the Draft Environmental Impact Report for the Prologis Eucalyptus Industrial Park, SCH No. 2008021002.

Dear Mr. Lozeau:

At the request of Lozeau | Drury LLP (Lozeau Drury), Clark and Associates (Clark) has reviewed materials related to the above referenced project, including the Draft Environmental Impact Report¹ (DEIR) for the Prologis Eucalyptus Industrial Park (hereafter called the Project), SCH No. 2008021002 and its appendices. The proposed project site is located in the eastern portion of the City of Moreno Valley, in Riverside County, California. The 122.8-acre project site is located south of State Route 60 (SR-60) east of the Moreno Valley Auto Mall, and adjacent to and west of the Quincy Channel. According to the DEIR the proposed project would result in the construction and operation of a warehouse facility, consisting of approximately 2,244,638 square feet (sq ft).

Currently the site is used undeveloped for commercial uses and has two citrus groves in the northeastern and northwestern portions of the site, while the central and southern portions are vacant and support mainly weedy vegetation. According to a March, 2012 Memo from LSA

¹ LSA. 2012. Draft Environmental Impact Report, State Clearinghouse No. 2008021002, Prologis Eucalyptus Industrial Park (formerly Prologis Park Moreno Valley Eucalyptus Project), City of Moreno Valley, Riverside County, California. LSA Associates, Inc. 1500 Iowa Ave, Suite 200, Riverside, CA LAS Project No. PLO1101. Prepared July 2012 pg. 1-2

Associates², the project site contains 57-acres of citrus (Grapefruit) trees with the rest of the site vacant. The surrounding area has been dry-farmed in the past, and the eastern end of the City has historically supported a variety of crops, including citrus, melon, potatoes, etc³. There are three small natural drainage features on site, two ephemeral channels in the southwestern portion of the site and the larger Quincy Channel along the eastern edge of the property. According to the DEIR⁴, there is some minor amount of refuse is present in the southwest and southeast corners of the site from unauthorized dumping.

Land adjacent to the project site includes vacant land east and south of the proposed project site, SR- 60 to the north, and the Moreno Valley Auto Mall and the City of Moreno Valley Fire Station No. 58 northwest of the project site. Existing single-family residential uses are located approximately 50 feet southeast of the southeastern corner of the project site⁵.

The proposed project has had and will have significant impacts on the community prior to the approval of the DEIR. The proposed project will require significant changes in the local zoning ordinances (General Plan for the City of Moreno Valley) including:

² LSA. 2012. Project Memorandum: Agricultural Use of ProLogis Industrial Property. Memorandum from Kent Norton, LSA Riverside Office to Jeff Bradshaw, City of Moreno Valley. Dated March 21, 2012.

³ LSA. 2012. Project Memorandum: Agricultural Use of ProLogis Industrial Property. Memorandum from Kent Norton, LSA Riverside Office to Jeff Bradshaw, City of Moreno Valley. Dated March 21, 2012.

⁴ LSA. 2012. Draft Environmental Impact Report, State Clearinghouse No. 2008021002, Prologis Eucalyptus Industrial Park (formerly Prologis Park Moreno Valley Eucalyptus Project), City of Moreno Valley, Riverside County, California. LSA Associates, Inc. 1500 Iowa Ave, Suite 200, Riverside, CA LAS Project No. PLO1101. Prepared July 2012 pg 3-1

⁵ LSA. 2012. Draft Environmental Impact Report, State Clearinghouse No. 2008021002, Prologis Eucalyptus Industrial Park (formerly Prologis Park Moreno Valley Eucalyptus Project), City of Moreno Valley, Riverside County, California. LSA Associates, Inc. 1500 Iowa Ave, Suite 200, Riverside, CA LAS Project No. PLO1101. Prepared July 2012 pg 3-1

- Approval of a General Plan Amendment to change the land use designation of 71.3 acres of the project site from Residential (R15, R5, and R2) to Business Park (BP) so the entire site would then be designated Business Park (BP).
- Approval of a Zone Change of the entire 122.8 acres from its current zoning designations of Business Park (BP), Business Park/Mixed Use (BPX), Residential 15 District (R15), Residential 5 District (R5), and Residential Agriculture 2 (RA-2) to all Light Industrial (LI).
- Zone Change will also be used to redraw the boundary of the Primary Animal Keeping Overlay (PAKO) district.
- Approval of an amendment to the City’s Master Plan of Trails to relocate the Eucalyptus Avenue Trail to the north side of future Eucalyptus Avenue and eliminate the planned trail segment on Quincy Avenue from SR-60 to Fir Avenue (future Eucalyptus Avenue), based on discussion with the City Trails Commission.
- Approval of an amendment to the Circulation Element of the General Plan. These changes include the following:
 - Eliminate the undeveloped Quincy Street from Eucalyptus Avenue south to Encilia Avenue;
 - Realign Encilia Avenue from its current alignment such that its westerly terminus is located at Moreno Beach Drive instead of the current General Plan westerly terminus at Eucalyptus Avenue; and
 - The segment between Quincy Channel and Moreno Beach Drive would be classified as a Collector.

In addition, to the changes above, the proposal of the project has forced the Moreno Valley Unified School District (MVUSD) to abandon plans to locate an elementary school (MVUSD Elementary School #24), a middle school (MVUSD Middle School #7), and a high school (MVUSD

High School #5) in the vicinity of Redlands Boulevard and future Eucalyptus Avenue, in close proximity to the proposed. After the Notice of Preparation (NOP) for the proposed project was released, MVUSD decided to abandon plans for these school sites and relocate the future school facilities in a different area of the City⁶. Students who live in the area to be serviced by the proposed schools will now have to travel farther to attend schools.

The DEIR for the Project, determined that the proposed project's construction and operational phases would have impacts on air quality that would be less than significant with mitigation incorporated. These conclusions are premature and based upon a flawed analysis of the potential emissions at the site. The proponents should re-evaluate the impacts of the project and present them in a revised draft environmental impact report (RDEIR).

Clark's review of the materials in no way constitutes a validation of the conclusions or materials contained within the plan. If we do not comment on a specific item this does not constitute acceptance of the item.

This DEIR was issued prematurely without considering the serious flaws in the Proponent's analysis of the project. The flaws include:

1. The proponent's use of the CalEEMod ensures an underestimation of the potential particulate emission for the construction phase of the proposed project.
2. Failure of the proponent to compare construction emissions to daily construction significance thresholds;
3. Failure to consider health risks from contaminated dust; and
4. Failure to properly identify and address the Project's operational air quality impacts.

⁶ LSA. 2012. Draft Environmental Impact Report, State Clearinghouse No. 2008021002, Prologis Eucalyptus Industrial Park (formerly Prologis Park Moreno Valley Eucalyptus Project), City of Moreno Valley, Riverside County, California. LSA Associates, Inc. 1500 Iowa Ave, Suite 200, Riverside, CA LAS Project No. PLO1101. Prepared July 2012 pg 4.3-6.

COMMENTS

1. The Proponent's Use Of The CalEEMod Ensures An Underestimation Of The Potential Particulate Emission For The Construction Phase Of The Proposed Project.

The California Air Resource Board's (CARB's) Urban Emission (URBEMIS) model and the California Emissions Estimator Model (CalEEMod) are computer models designed to estimate emissions of criteria pollutants during construction and operational phases of projects. Currently, South Coast Air Quality Management District (SCAQMD) accepts the outputs from both models in their air quality analyses. Significant differences in the models must be highlighted in the DEIR. The changes in the method used to estimate construction impacts from the proposed project by using the CalEEMod model instead of the URBEMIS model include:

- Failure to account for wind-blown fugitive dust⁷. According to the July, 2011 CalEEMod Technical Paper, wind-blown fugitive dust is not calculated in CalEEMod. For sites as large as the proposed project site, this can result in significant quantities of particulate matter being released.
- SCAQMD's surveys of construction sites were limited to sites of 35 acres or less. For projects larger than 35-acres the data was extrapolated by increasing the number of construction days but not increasing the number of construction equipment pieces used on a given day. The impact is to reduce the construction PM estimates for the site as compared to URBEMIS⁸.

⁷ CalEEMod. Technical Paper: Methodology Reasoning and Policy Development of the California Emission Estimator Model. July, 2011. Pg 4.

⁸ CalEEMod. Technical Paper: Methodology Reasoning and Policy Development of the California Emission Estimator Model. July, 2011. Pg 5.

- Grading in URBEMIS is based upon 25% of total project acreage in one day. Grading in CalEEMod is based upon Walker's Building Estimator's Reference Book. The impact of this change is to decrease PM emissions from grading in the CalEEMod⁹ by tying the emissions to the number of pieces of equipment present at the site.

The proponent's must include an analysis of these impacts in a revised DEIR (RDEIR) to ensure that an accurate analysis of the potential impacts from the proposed project are presented as required by CEQA.

2. Failure To Accurately Compare Construction Emissions To Daily Construction Significance Thresholds.

Unlike the operational emissions from most projects, which are typically more or less continuous, emissions from construction sites are highly variable depending on the type of construction that is being performed. For example, grading results in large quantities of fugitive dust and combustion emissions from diesel-powered equipment. Short-term emissions during the various construction phases can be considerable and may result in degradation of local and regional air quality and severe health effects.

To determine whether short-term emissions may result in degradation of local and regional air quality and severe health effects, it is common practice for lead agencies to compare project emissions to quantitative significance thresholds developed by local air districts as a screening tool for CEQA review. Thresholds of significance for construction emissions are typically expressed on a short-term basis, *i.e.* daily or hourly basis to adequately capture impacts due to the high variability of emissions during different construction stages.

⁹ CalEEMod. Technical Paper: Methodology Reasoning and Policy Development of the California Emission Estimator Model. July, 2011. Pg 5.

Table 1 presents a summary of short-term emissions thresholds developed by SCAQMD and other air districts for assessing impacts on air quality from construction projects.

Table 1:
CEQA significance thresholds for construction emissions from various air districts

Air district construction thresholds*	NO_x (lbs/day)	ROG (lbs/day)	PM₁₀ (lbs/day)	DPM (lbs/day)	PM_{2.5} (lbs/day)	CO (lbs/day)
SCAQMD	100	75	150		55	550
BAAQMD	54	54	82		54	
EDCAPCD	82	82				
SLOCAPCD				7		
MBUAPCD			82			550
FRAQMD	25	25	80			
SMAQMD	85					
YSAQMD	82	82	150			

SCAQMD = South Coast Air Quality Management District, CEAQ Handbook, 1993;
 BAAQMD = Bay Area Air Quality Management District, CEQA Guidelines 2009;
 EDCAPCD = El Dorado County Air Pollution Control District, CEQA Guide, February 2002;
 SLOCAPCD = San Louis Obispo County Air Pollution Control District, CEQA Air Quality Handbook, December 2009.
 MBUAPCD = Monterey Bay Unified Air Pollution Control District, CEQA Air Quality Guidelines, June 2004,
 FRAQMD = Feather River Air Quality Management District,
http://www.fraqmd.org/CEQA_Thresholds.htm;
 SMAQMD Sacramento Metropolitan Air Quality Management District, Guide to Air Quality Assessment, July 2004;
 YSAQMD, Yolo-Solano Air Quality Management District, Air Quality Handbook, Guidelines for Determining Air Quality Thresholds of Significance and Mitigation Measures for Proposed Development Projects that Generate Emissions from Motor Vehicles, revised 2002

According to the DEIR¹⁰, “criteria pollutant emissions during project construction would exceed the SCAQMD emission thresholds for oxides of nitrogen (NO_x) and reactive organic gases (ROG). Compliance with SCAQMD Rules and Regulations during construction will minimize construction-related air quality impacts from fugitive dust emissions and construction equipment emissions. Mitigation is required. The proposed

¹⁰ LSA. 2012. Draft Environmental Impact Report, State Clearinghouse No. 2008021002, Prologis Eucalyptus Industrial Park (formerly Prologis Park Moreno Valley Eucalyptus Project), City of Moreno Valley, Riverside County, California. LSA Associates, Inc. 1500 Iowa Ave, Suite 200, Riverside, CA LAS Project No. PLO1101. Prepared July 2012 pg 1.

project would not exceed any of the localized significance thresholds (LSTs) during construction periods.” This statement is incorrect and misleading.

A review of the CalEEMod analysis for the project shows that the mitigated construction emissions of ROG and particulate matter less than 2.5 microns (PM_{2.5}) exhaust (a surrogate for diesel particulate emissions) are in excess of the CEQA significance thresholds listed above. During Year 2013, ROG and PM_{2.5} exhaust emissions are estimated to be 368.03 lbs/day and 7.95 lbs/day, respectively.

In addition to the Significant Thresholds above, SCAQMD recommends the use of LSTs to determine potential impacts to receptors near projects. According to the Air Quality Analysis prepared by the proponent, Table I of the Air Quality Analysis (Table 2 below) shows that the emissions of the pollutants on the peak day of construction are below the SCAQMD LST. In this table the proponent uses the emission estimates from the grading phase of the construction. The proponent inaccurately asserts that the emission levels will be below the LST values.

Table 2:

Construction LST Impacts from Air Quality Analysis

Emission Sources	Pollutant Emissions, lbs/day			
	NOx	CO	PM ₁₀	PM _{2.5}
On-Site (grading) Emissions	104	55	8.4	6.3
LST Threshold	270	1,577	13	8
Significant Emissions?	No	No	No	No

A review of the CalEEMod analysis shows that the highest emission values are not associated with the grading phase. In Section 2.0 Emission Summary of the CalEEMod analysis presented in the Air Quality Analysis the construction impacts are listed as:

**Table 3:
Construction LST Impacts from CalEEMod Output**

Emission Sources	Pollutant Emissions, lbs/day			
	NOx	CO	PM ₁₀	PM _{2.5}
Mitigated Construction Emissions	139.84	166.77	29.2	8.28
LST Threshold	270	1,577	13	8
Significant Emissions?	No	No	Yes	Yes

The Proponent’s analysis of air quality impacts clearly fails to accurately describe the impacts of the emissions on the receptors closest to the project site (homes within 50 feet of the site boundary and the fire station immediately adjacent to the site boundary). Emissions of PM_{2.5} (surrogate for diesel exhaust) and PM₁₀ from the construction site may have lasting impacts on the receptors nearby.

Diesel exhaust contains nearly 40 toxic substances including toxic air contaminants (TACs) and may pose a serious public health risk for residents in the vicinity of the facility. TACs are airborne substances that are capable of causing short-term (acute) and/or long-term (chronic or carcinogenic, i.e., cancer causing) adverse human health effects (i.e., injury or illness). TACs include both organic and inorganic chemical substances. The current California list of TACs¹¹ includes approximately 200 compounds, including particulate emissions from diesel-fueled engines.

DPM and TAC emissions may affect numerous sensitive receptors in the region including onsite construction workers, fire personnel at the station adjacent to the site and the single-family residences located near the site. Evidence exists that clouds of soot emitted by heavy-duty

¹¹ URS. 2012. Impacts to Air Quality from the Construction and Operation of the Brannon Solar, LLC Solar Energy Generation Project. Dated Febraury 7, 2012. Table A-7

construction equipment can travel downwind for miles, then drift into heavily populated areas. For example, health impact studies from the SCAQMD¹² have documented that diesel emissions travel miles from the sources impacting residents.

Diesel exhaust has been linked to a range of serious health problems including an increase in respiratory disease, lung damage, cancer, and premature death^{13,14,15}. Fine diesel particles are deposited deep in the lungs in the smallest airways and can result in increased respiratory symptoms and disease; decreased lung function, particularly in children and individuals with asthma; alterations in lung tissue and respiratory tract defense mechanisms; and premature death.¹⁶ Exposure to diesel exhaust increases the risk of lung cancer. It also causes non-cancer effects including chronic bronchitis, inflammation of lung tissue, thickening of the alveolar walls, immunological allergic reactions, and airway constriction.¹⁷

¹² SCAQMD MATES I, II, and III have documented the impacts for DPM in the SCAB.

¹³ California Air Resources Board, Initial Statement of Reasons for Rulemaking, Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant, Staff Report, June 1998.

¹⁴ U.S. EPA, Health Assessment Document for Diesel Engine Exhaust, Report EPA/600/8-90/057F, May 2002.

¹⁵ Environmental Defense Fund, Cleaner Diesel Handbook, Bring Cleaner Fuel and Diesel Retrofits into Your Neighborhood, April 2005; http://www.edf.org/documents/4941_cleanerdieselhandbook.pdf, accessed March 27, 2008.

¹⁶ California Air Resources Board, Initial Statement of Reasons for Rulemaking, Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant, Staff Report, June 1998.

¹⁷ Findings of the Scientific Review Panel on The Report on Diesel Exhaust as adopted at the Panel's April 22, 1998 Meeting.

A recent analysis found that air pollution from diesel construction equipment is already taking a heavy toll on the health and economic well-being of Californians^{18,19}.

PM₁₀ emissions from the construction phase of the proposed project may be extremely troublesome for receptors near the site (i.e., homes near the site boundary and the fire station next to the site) since they will act as carriers for residual pesticides/herbicides from the site (see comment below). The project site currently contains 57-acres of citrus (Grapefruit) trees and the surrounding area has been dry-farmed in the past, and the eastern end of the City of Moreno Valley historically supported a variety of other crops²⁰. Given the proximity of receptors to the site and the estimated emission rates of particulate matter from the site after mitigation, it is clear that construction activities at the project site will adversely impact the previously identified receptors.

Based on my expert opinion, applicable significance thresholds, and the CalEEMod analysis performed by the proponent, I conclude that the Project will have significant adverse impacts from construction air emissions of fugitive dust, ROG, and diesel emissions. The lead agency must re-evaluate the construction emissions and incorporate a phased approach to estimate the true impacts of construction activities on air quality, and propose all feasible mitigation measures to reduce these significant emissions, in a RDEIR.

¹⁸ These estimates are conservative because they do not include emissions from a large number of small construction projects (residential and commercial and projects smaller than 1 acre in size). Further, John Hakel, vice president of the Associated General Contractors, which represents construction equipment fleet owners and general contractors, indicated that the report appeared to underestimate the sheer volume of construction equipment.

¹⁹ Union of Concerned Scientists, Digging up Trouble: Construction Pollution in the Bay Area; http://www.ucsusa.org/assets/documents/clean_vehicles/Bay-Area-Fact-Sheet.pdf, accessed March 27, 2008.

²⁰ LSA. 2012. Project Memorandum: Agricultural Use of ProLogis Industrial Property. Memorandum from Kent Norton, LSA Riverside Office to Jeff Bradshaw, City of Moreno Valley. Dated March 21, 2012.

3. Failure To Consider Health Risks From Contaminated Dust.

Residual contaminants in soils at the site may be entrained in dust generated during construction activities. The release of residual contamination is a potentially significant impact, given the past use of the site for agricultural production. According to the California Department of Toxic Substances Control August 2002 Interim Guidance for Sampling Agricultural Fields for School Sites (known sensitive receptors), “the most commonly detected pesticides have been DDT and its derivatives DDD and DDE, toxaphene, dieldrin, and aldrin. Of these pesticides, toxaphene has been the major pesticide driving unacceptable levels of risk requiring remediation by soil removal.” Given the volume of soils to be graded at each of the sites it is imperative to understand whether particulate matter generated at the sites will pose a potential health risk to sensitive receptors in the vicinity of each site.

According to DTSC, “the guidance is applicable to agricultural land that is currently under cultivation with row, fiber or food crops, orchards, or pasture. It is also applicable to fallow and former agricultural land that is no longer in production and has not been disturbed beyond normal disking and plowing practices. Each field of the same crop is assumed to have been watered, fertilized, and treated with agricultural chemicals to the same degree across the field. Because of this homogeneous application, contaminant levels are expected to be similar at any given location within the field.”

There is no indication of a sampling and analysis plan in the DEIR, or the Project documents provided by the lead agency, which is a serious deficiency. Prior to issuing a DEIR for the project, the Proponent should be required to complete a sampling and analysis plan to confirm or rule out the possibility of the presence of residual contaminants at the site. Identifying residual pesticides or other contaminants in soils at the site

prior to construction activities will provide an opportunity for the Proponent to remove/mitigate the potential exposure of sensitive receptors within the vicinity of the sites. In the absence of any sampling or analysis, and given the past use of the Project site, I conclude that there is at least a fair argument that the Project may have significant impacts related to residual contaminants at the site.

4. Failure To Properly Identify and Address the Project's Operational Air Quality Impacts.

The DEIR asserts with no analysis whatsoever that the project's emissions of criteria pollutants will not result in a considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard.

During the operational phase of the project the project will have the potential to generate significant quantities of criteria pollutants (NO_x, SO_x, Ozone precursors, PM). According to Table 3-1 of the most recent BAAQMD CEQA guidance, a construction of a 259,000 square foot light industrial or warehouse operation will typically violate NO_x construction thresholds and GHG operational thresholds. The proposed Project's 2,000,000 square feet plus of warehouse and manufacturing buildings are nearly 8 times the size of the screening threshold, ensuring a violation of local air quality thresholds. I therefore conclude that the Project will have significant NO_x and GHG emissions during Project operations.

The air quality impacts from the traffic associated with a 2,000,000 square foot facility are significant. Typically the impacts are quantified by the number of vehicle trips per day. In the case of the proposed project, the primary concern will be the number of truck trips per day. A truck trip is one round trip (one trip segment to a site and one trip segment away from a site).

According to one source, Bluffstone and Ouderkirk²¹, a 500,000 square feet facility on 50 acres, will on average have 350 truck trips per day (or 700 trip segments) associated with its development. This figure is proportionate to estimates for an AMB Property Corporation center in Redlands (1,000 truck trips for a 1.3 million square feet structure); Wal-Mart distribution centers in Pueblo, Colorado (700 truck trips per day for an 880,000 square feet facility), Connecticut, and Delaware (both 1,000 truck trips per day for 1.2 million square feet structures); and a grocery distribution center in New York (Boas, 2002; Gasiewski, 2004; Hernandez, 2005; Pueblo Chieftain, 2004; Sholl, 2004).

Estimates from other sources indicate approximately 1 truck per 1,000 square feet of the building, which means that the proposed project would require 1,000 trucks per day (or 1,000 trip segments per day) for the warehouse segment of the Project. The number of truck trips could be higher at a new, more efficient facility where more inventory is moved per day. Without proper modeling of the emissions from these additional vehicles the impacts on the environment and the citizens of Moreno Valley is unknown. It is clear that the size of the Project will have significant NOx and GHG emissions during Project operations.

A proper operational impact analysis is vital for an environmental analysis because the full environmental impact of a proposed project cannot be gauged in a vacuum. One of the most important environmental lessons that has been learned is that the environmental damage often occurs incrementally from a variety of small sources with which they interact. The increase in PM in the region, even for short periods of time, will only exacerbate the already serious air quality issues in the region.

²¹Bluffstone and Ouderkirk. 2007. Warehouses, trucks, and [PM.sub.2.5]: human health and logistics industry growth in the eastern Inland Empire. Contemporary Economic Policy 25(1):

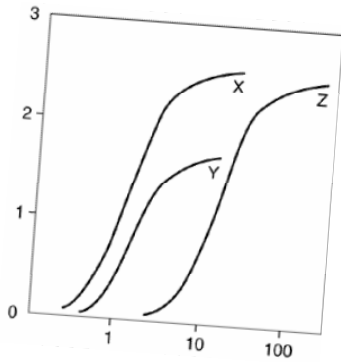
Conclusion

The facts identified and referenced in this comment letter lead me to reasonably conclude that the Project will result in significant adverse impacts that were not identified in the DEIR and that are not adequately mitigated. Many of the DEIR's conclusions that environmental impacts are not significant or less than significant with mitigation are unsupported or contradicted by the evidence. As a result, several analyses presented in the DEIR, including impacts on air quality fail to identify or disclose the magnitude of significant adverse impacts. To protect air quality and public health the Proponent must prepare a RDEIR for the Project.

Sincerely,

A handwritten signature in blue ink, appearing to read "James Clark".

James Clark, Ph.D.



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James J. J. Clark, Ph.D.

Principal Toxicologist

Toxicology/Exposure Assessment Modeling
Risk Assessment/Analysis/Dispersion Modeling

Education:

Ph.D., Environmental Health Science, University of California, 1995
M.S., Environmental Health Science, University of California, 1993
B.S., Biophysical and Biochemical Sciences, University of Houston, 1987

Professional Experience:

Dr. Clark is a well recognized toxicologist, air modeler, and health scientist. He has 20 years of experience in researching the effects of environmental contaminants on human health including environmental fate and transport modeling (SCREEN3, AEROMOD, ISCST3, Johnson-Ettinger Vapor Intrusion Modeling); exposure assessment modeling (partitioning of contaminants in the environment as well as PBPK modeling); conducting and managing human health risk assessments for regulatory compliance and risk-based clean-up levels; and toxicological and medical literature research.

Significant projects performed by Dr. Clark include the following:

LITIGATION SUPPORT

Case: James Harold Caygle, et al, v. Drummond Company, Inc. Circuit Court for the Tenth Judicial Circuit, Jefferson County, Alabama. Civil Action. CV-2009

Client: Environmental Litigation Group, Birmingham, Alabama

Dr. Clark performed an air quality assessment of emissions from a coke factory located in Tarrant, Alabama. The assessment reviewed include a comprehensive review of air quality standards, measured concentrations of pollutants from factory, an inspection of the facility and detailed assessment of the impacts on the community. The results of the assessment and literature have been provided in a declaration to the court.

Case Result: Settlement in favor of plaintiff.

Case: Rose Roper V. Nissan North America, et al. Superior Court of the State Of California for the County Of Los Angeles – Central Civil West. Civil Action. NC041739

Client: Rose, Klein, Marias, LLP, Long Beach, California

Dr. Clark performed a toxicological assessment of an individual occupationally exposed to multiple chemicals, including benzene, who later developed a respiratory distress. A review of the individual's medical and occupational history was performed to prepare an exposure assessment. The exposure assessment was evaluated against the known outcomes in published literature to exposure to respiratory irritants. The results of the assessment and literature have been provided in a declaration to the court.

Case Result: Settlement in favor of plaintiff.

Case: O'Neil V. Sherwin Williams, et al. United States District Court Central District of California

Client: Rose, Klein, Marias, LLP, Long Beach, California

Dr. Clark performed a toxicological assessment of an individual occupationally exposed to petroleum distillates who later developed a bladder cancer. A review of the individual's medical and occupational history was performed to prepare a quantitative exposure assessment. The results of the assessment and literature have been provided in a declaration to the court.

Case Result: Summary judgment for defendants.

Case: Moore V., Shell Oil Company, et al. Superior Court of the State Of California for the County Of Los Angeles

Client: Rose, Klein, Marias, LLP, Long Beach, California

Dr. Clark performed a toxicological assessment of an individual occupationally exposed to chemicals while benzene who later developed a leukogenic disease. A review of the individual's medical and occupational history was performed to prepare a quantitative exposure assessment. The exposure assessment was evaluated against the known outcomes in published literature to exposure to refined petroleum hydrocarbons. The results of the assessment and literature have been provided in a declaration to the court.

Case Result: Settlement in favor of plaintiff.

Case: Raymond Saltonstall V. Fuller O'Brien, KILZ, and Zinsser, et al. United States District Court Central District of California

Client: Rose, Klein, Marias, LLP, Long Beach, California

Dr. Clark performed a toxicological assessment of an individual occupationally exposed to benzene who later developed a leukogenic disease. A review of the individual's medical and occupational history was performed to prepare a quantitative exposure assessment. The exposure assessment was evaluated against the known outcomes in published literature to exposure to refined petroleum hydrocarbons. The results of the assessment and literature have been provided in a declaration to the court.

Case Result: Settlement in favor of plaintiff.

Case: Richard Boyer and Elizabeth Boyer, husband and wife, V. DESCO Corporation, et al. Circuit Court of Brooke County, West Virginia. Civil Action Number 04-C-7G.

Client: Frankovitch, Anetakis, Colantonio & Simon, Morgantown, West Virginia.

Dr. Clark performed a toxicological assessment of a family exposed to chlorinated solvents released from the defendant's facility into local drinking water supplies. A review of the individual's medical and occupational history was performed to prepare a qualitative exposure assessment. The exposure assessment was evaluated against the known outcomes in published literature to exposure to chlorinated solvents. The results of the assessment and literature have been provided in a declaration to the court.

Case Result: Settlement in favor of plaintiff.

Case: JoAnne R. Cook, V. DESCO Corporation, et al. Circuit Court of Brooke County, West Virginia. Civil Action Number 04-C-9R

Client: Frankovitch, Anetakis, Colantonio & Simon, Morgantown, West Virginia.

Dr. Clark performed a toxicological assessment of an individual exposed to chlorinated solvents released from the defendant's facility into local drinking water supplies. A review of the individual's medical and occupational history was performed to prepare a qualitative exposure assessment. The exposure assessment was evaluated against the known outcomes in published literature to exposure to chlorinated solvents. The results of the assessment and literature have been provided in a declaration to the court.

Case Result: Settlement in favor of plaintiff.

Case: Patrick Allen And Susan Allen, husband and wife, and Andrew Allen, a minor, V. DESCO Corporation, et al. Circuit Court of Brooke County, West Virginia. Civil Action Number 04-C-W

Client: Frankovitch, Anetakis, Colantonio & Simon, Morgantown, West Virginia.

Dr. Clark performed a toxicological assessment of a family exposed to chlorinated solvents released from the defendant's facility into local drinking water supplies. A review of the individual's medical and occupational history was performed to prepare a qualitative exposure assessment. The exposure assessment was evaluated against the known outcomes in published literature to exposure to chlorinated solvents. The results of the assessment and literature have been provided in a declaration to the court.

Case Result: Settlement in favor of plaintiff.

Case: Michael Fahey, Susan Fahey V. Atlantic Richfield Company, et al. United States District Court Central District of California Civil Action Number CV-06 7109 JCL.

Client: Rose, Klein, Marias, LLP, Long Beach, California

Dr. Clark performed a toxicological assessment of an individual occupationally exposed to refined petroleum hydrocarbons who later developed a leukogenic disease. A review of the individual's medical and occupational history was performed to prepare a qualitative exposure assessment. The exposure assessment was evaluated against the known outcomes in published literature to exposure to refined petroleum hydrocarbons. The results of the assessment and literature have been provided in a declaration to the court.

Case Result: Settlement in favor of plaintiff.

Case: Constance Acevedo, et al., V. California Spray-Chemical Company, et al., Superior Court of the State Of California, County Of Santa Cruz. Case No. CV 146344

Dr. Clark performed a comprehensive exposure assessment of community members exposed to toxic metals from a former lead arsenate manufacturing facility. The former manufacturing site had undergone a DTSC mandated removal action/remediation for the presence of the toxic metals at the site. Opinions were presented regarding the elevated levels of arsenic and lead (in attic dust and soils) found throughout the community and the potential for harm to the plaintiffs in question.

Case Result: Settlement in favor of defendant.

Case: Michael Nawrocki V. The Coastal Corporation, Kurk Fuel Company, Pautler Oil Service, State of New York Supreme Court, County of Erie, Index Number I2001-11247

Client: Richard G. Berger Attorney At Law, Buffalo, New York

Dr. Clark performed a toxicological assessment of an individual occupationally exposed to refined petroleum hydrocarbons who later developed a leukogenic disease. A review of the individual's medical and occupational history was performed to prepare a qualitative exposure assessment. The exposure assessment was evaluated against the

known outcomes in published literature to exposure to refined petroleum hydrocarbons. The results of the assessment and literature have been provided in a declaration to the court.

Case Result: Judgement in favor of defendant.

SELECTED AIR MODELING RESEARCH/PROJECTS

Client – Confidential

Dr. Clark performed a comprehensive evaluation of criteria pollutants, air toxins, and particulate matter emissions from a carbon black production facility to determine the impacts on the surrounding communities. The results of the dispersion model will be used to estimate acute and chronic exposure concentrations to multiple contaminants and will be incorporated into a comprehensive risk evaluation.

Client – Confidential

Dr. Clark performed a comprehensive evaluation of air toxins and particulate matter emissions from a railroad tie manufacturing facility to determine the impacts on the surrounding communities. The results of the dispersion model have been used to estimate acute and chronic exposure concentrations to multiple contaminants and have been incorporated into a comprehensive risk evaluation.

Client – Los Angeles Alliance for a New Economy (LAANE), Los Angeles, California

Dr. Clark is advising the LAANE on air quality issues related to current flight operations at the Los Angeles International Airport (LAX) operated by the Los Angeles World Airport (LAWA) Authority. He is working with the LAANE and LAX staff to develop a comprehensive strategy for meeting local community concerns over emissions from flight operations and to engage federal agencies on the issue of local impacts of community airports.

Client – City of Santa Monica, Santa Monica, California

Dr. Clark is advising the City of Santa Monica on air quality issues related to current flight operations at the facility. He is working with the City staff to develop a comprehensive strategy for meeting local community concerns over emissions from flight operations and to engage federal agencies on the issue of local impacts of community airports.

Client: Omnitrans, San Bernardino, California

Dr. Clark managed a public health survey of three communities near transit fueling facilities in San Bernardino and Montclair California in compliance with California Senate Bill 1927. The survey included an epidemiological survey of the effected communities, emission surveys of local businesses, dispersion modeling to determine potential emission concentrations within the communities, and a comprehensive risk assessment of each community. The results of the study were presented to the Governor as mandated by Senate Bill 1927.

Client: Confidential, San Francisco, California

Summarized cancer types associated with exposure to metals and smoking. Researched the specific types of cancers associated with exposure to metals and smoking. Provided causation analysis of the association between cancer types and exposure for use by non-public health professionals.

Client: Confidential, Minneapolis, Minnesota

Prepared human health risk assessment of workers exposed to VOCs from neighboring petroleum storage/transport facility. Reviewed the systems in place for distribution of petroleum hydrocarbons to identify chemicals of concern (COCs), prepared comprehensive toxicological summaries of COCs, and quantified potential risks from carcinogens and non-carcinogens to receptors at or adjacent to site. This evaluation was used in the support of litigation.

Client – United Kingdom Environmental Agency

Dr. Clark is part of team that performed comprehensive evaluation of soil vapor intrusion of VOCs from former landfill adjacent residences for the United Kingdom's Environment

Agency. The evaluation included collection of liquid and soil vapor samples at site, modeling of vapor migration using the Johnson Ettinger Vapor Intrusion model, and calculation of site-specific health based vapor thresholds for chlorinated solvents, aromatic hydrocarbons, and semi-volatile organic compounds. The evaluation also included a detailed evaluation of the use, chemical characteristics, fate and transport, and toxicology of chemicals of concern (COC). The results of the evaluation have been used as a briefing tool for public health professionals.

EMERGING/PERSISTENT CONTAMINANT RESEARCH/PROJECTS

Client: Ameren Services, St. Louis, Missouri

Managed the preparation of a comprehensive human health risk assessment of workers and residents at or near an NPL site in Missouri. The former operations at the Property included the servicing and repair of electrical transformers, which resulted in soils and groundwater beneath the Property and adjacent land becoming impacted with PCB and chlorinated solvent compounds. The results were submitted to U.S. EPA for evaluation and will be used in the final ROD.

Client: City of Santa Clarita, Santa Clarita, California

Dr. Clark is managing the oversight of the characterization, remediation and development activities of a former 1,000 acre munitions manufacturing facility for the City of Santa Clarita. The site is impacted with a number of contaminants including perchlorate, unexploded ordinance, and volatile organic compounds (VOCs). The site is currently under a number of regulatory consent orders, including an Imminent and Substantial Endangerment Order. Dr. Clark is assisting the impacted municipality with the development of remediation strategies, interaction with the responsible parties and stakeholders, as well as interfacing with the regulatory agency responsible for oversight of the site cleanup.

Client: Confidential, Los Angeles, California

Prepared comprehensive evaluation of perchlorate in environment. Dr. Clark evaluated the production, use, chemical characteristics, fate and transport, toxicology, and remediation of perchlorate. Perchlorates form the basis of solid rocket fuels and have recently been detected in water supplies in the United States. The results of this research

were presented to the USEPA, National GroundWater, and ultimately published in a recent book entitled *Perchlorate in the Environment*.

Client – Confidential, Los Angeles, California

Dr. Clark is performing a comprehensive review of the potential for pharmaceuticals and their by-products to impact groundwater and surface water supplies. This evaluation will include a review if available data on the history of pharmaceutical production in the United States; the chemical characteristics of various pharmaceuticals; environmental fate and transport; uptake by xenobiotics; the potential effects of pharmaceuticals on water treatment systems; and the potential threat to public health. The results of the evaluation may be used as a briefing tool for non-public health professionals.

PUBLIC HEALTH/TOXICOLOGY

Client: Brayton Purcell, Novato, California

Dr. Clark performed a toxicological assessment of residents exposed to methyl-tertiary butyl ether (MTBE) from leaking underground storage tanks (LUSTs) adjacent to the subject property. The symptomology of residents and guests of the subject property were evaluated against the known outcomes in published literature to exposure to MTBE. The study found that residents had been exposed to MTBE in their drinking water; that concentrations of MTBE detected at the site were above regulatory guidelines; and, that the symptoms and outcomes expressed by residents and guests were consistent with symptoms and outcomes documented in published literature.

Client: Confidential, San Francisco, California

Identified and analyzed fifty years of epidemiological literature on workplace exposures to heavy metals. This research resulted in a summary of the types of cancer and non-cancer diseases associated with occupational exposure to chromium as well as the mortality and morbidity rates.

Client: Confidential, San Francisco, California

Summarized major public health research in United States. Identified major public health research efforts within United States over last twenty years. Results were used as a briefing tool for non-public health professionals.

Client: Confidential, San Francisco, California

Quantified the potential multi-pathway dose received by humans from a pesticide applied indoors. Part of team that developed exposure model and evaluated exposure concentrations in a comprehensive report on the plausible range of doses received by a specific person. This evaluation was used in the support of litigation.

Client: Covanta Energy, Westwood, California

Evaluated health risk from metals in biosolids applied as soil amendment on agricultural lands. The biosolids were created at a forest waste cogeneration facility using 96% whole tree wood chips and 4 percent green waste. Mass loading calculations were used to estimate Cr(VI) concentrations in agricultural soils based on a maximum loading rate of 40 tons of biomass per acre of agricultural soil. The results of the study were used by the Regulatory agency to determine that the application of biosolids did not constitute a health risk to workers applying the biosolids or to residences near the agricultural lands.

Client – United Kingdom Environmental Agency

Oversaw a comprehensive toxicological evaluation of methyl-*tertiary* butyl ether (MtBE) for the United Kingdom's Environment Agency. The evaluation included available data on the production, use, chemical characteristics, fate and transport, toxicology, and remediation of MtBE. The results of the evaluation have been used as a briefing tool for public health professionals.

Client – Confidential, Los Angeles, California

Prepared comprehensive evaluation of *tertiary* butyl alcohol (TBA) in municipal drinking water system. TBA is the primary breakdown product of MtBE, and is suspected to be the primary cause of MtBE toxicity. This evaluation will include available information on the production, use, chemical characteristics, fate and transport in the environment, absorption, distribution, routes of detoxification, metabolites, carcinogenic potential, and remediation of TBA. The results of the evaluation were used as a briefing tool for non-public health professionals.

Client – Confidential, Los Angeles, California

Prepared comprehensive evaluation of methyl *tertiary* butyl ether (MTBE) in municipal drinking water system. MTBE is a chemical added to gasoline to increase the octane

rating and to meet Federally mandated emission criteria. The evaluation included available data on the production, use, chemical characteristics, fate and transport, toxicology, and remediation of MTBE. The results of the evaluation have been used as a briefing tool for non-public health professionals.

Client – Ministry of Environment, Lands & Parks, British Columbia

Dr. Clark assisted in the development of water quality guidelines for methyl tertiary-butyl ether (MTBE) to protect water uses in British Columbia (BC). The water uses to be considered includes freshwater and marine life, wildlife, industrial, and agricultural (e.g., irrigation and livestock watering) water uses. Guidelines from other jurisdictions for the protection of drinking water, recreation and aesthetics were to be identified.

Client: Confidential, Los Angeles, California

Prepared physiologically based pharmacokinetic (PBPK) assessment of lead risk of receptors at middle school built over former industrial facility. This evaluation is being used to determine cleanup goals and will be basis for regulatory closure of site.

Client: Kaiser Venture Incorporated, Fontana, California

Prepared PBPK assessment of lead risk of receptors at a 1,100-acre former steel mill. This evaluation was used as the basis for granting closure of the site by lead regulatory agency.

RISK ASSESSMENTS/REMEDIAL INVESTIGATIONS

Client: Confidential, Atlanta, Georgia

Researched potential exposure and health risks to community members potentially exposed to creosote, polycyclic aromatic hydrocarbons, pentachlorophenol, and dioxin compounds used at a former wood treatment facility. Prepared a comprehensive toxicological summary of the chemicals of concern, including the chemical characteristics, absorption, distribution, and carcinogenic potential. Prepared risk characterization of the carcinogenic and non-carcinogenic chemicals based on the exposure assessment to quantify the potential risk to members of the surrounding community. This evaluation was used to help settle class-action tort.

Client: Confidential, Escondido, California

Prepared comprehensive Preliminary Endangerment Assessment (PEA) of dense non-aqueous liquid phase hydrocarbon (chlorinated solvents) contamination at a former printed circuit board manufacturing facility. This evaluation was used for litigation support and may be used as the basis for reaching closure of the site with the lead regulatory agency.

Client: Confidential, San Francisco, California

Summarized epidemiological evidence for connective tissue and autoimmune diseases for product liability litigation. Identified epidemiological research efforts on the health effects of medical prostheses. This research was used in a meta-analysis of the health effects and as a briefing tool for non-public health professionals.

Client: Confidential, Bogotá, Columbia

Prepared comprehensive evaluation of the potential health risks associated with the redevelopment of a 13.7 hectares plastic manufacturing facility in Bogotá, Colombia. The risk assessment was used as the basis for the remedial goals and closure of the site.

Client: Confidential, Los Angeles, California

Prepared comprehensive human health risk assessment of students, staff, and residents potentially exposed to heavy metals (principally cadmium) and VOCs from soil and soil vapor at 12-acre former crude oilfield and municipal landfill. The site is currently used as a middle school housing approximately 3,000 children. The evaluation determined that the site was safe for the current and future uses and was used as the basis for regulatory closure of site.

Client: Confidential, Los Angeles, California

Managed remedial investigation (RI) of heavy metals and volatile organic chemicals (VOCs) for a 15-acre former manufacturing facility. The RI investigation of the site included over 800 different sampling locations and the collection of soil, soil gas, and groundwater samples. The site is currently used as a year round school housing approximately 3,000 children. The Remedial Investigation was performed in a manner

that did not interrupt school activities and met the time restrictions placed on the project by the overseeing regulatory agency. The RI Report identified the off-site source of metals that impacted groundwater beneath the site and the sources of VOCs in soil gas and groundwater. The RI included a numerical model of vapor intrusion into the buildings at the site from the vadose zone to determine exposure concentrations and an air dispersion model of VOCs from the proposed soil vapor treatment system. The Feasibility Study for the Site is currently being drafted and may be used as the basis for granting closure of the site by DTSC.

Client: Confidential, Los Angeles, California

Prepared comprehensive human health risk assessment of students, staff, and residents potentially exposed to heavy metals (principally lead), VOCs, SVOCs, and PCBs from soil, soil vapor, and groundwater at 15-acre former manufacturing facility. The site is currently used as a year round school housing approximately 3,000 children. The evaluation determined that the site was safe for the current and future uses and will be basis for regulatory closure of site.

Client: Confidential, Los Angeles, California

Prepared comprehensive evaluation of VOC vapor intrusion into classrooms of middle school that was former 15-acre industrial facility. Using the Johnson-Ettinger Vapor Intrusion model, the evaluation determined acceptable soil gas concentrations at the site that did not pose health threat to students, staff, and residents. This evaluation is being used to determine cleanup goals and will be basis for regulatory closure of site.

Client –Dominguez Energy, Carson, California

Prepared comprehensive evaluation of the potential health risks associated with the redevelopment of 6-acre portion of a 500-acre oil and natural gas production facility in Carson, California. The risk assessment was used as the basis for closure of the site.

Kaiser Ventures Incorporated, Fontana, California

Prepared health risk assessment of semi-volatile organic chemicals and metals for a fifty-year old wastewater treatment facility used at a 1,100-acre former steel mill. This evaluation was used as the basis for granting closure of the site by lead regulatory agency.

ANR Freight - Los Angeles, California

Prepared a comprehensive Preliminary Endangerment Assessment (PEA) of petroleum hydrocarbon and metal contamination of a former freight depot. This evaluation was as the basis for reaching closure of the site with lead regulatory agency.

Kaiser Ventures Incorporated, Fontana, California

Prepared comprehensive health risk assessment of semi-volatile organic chemicals and metals for 23-acre parcel of a 1,100-acre former steel mill. The health risk assessment was used to determine clean up goals and as the basis for granting closure of the site by lead regulatory agency. Air dispersion modeling using ISCST3 was performed to determine downwind exposure point concentrations at sensitive receptors within a 1 kilometer radius of the site. The results of the health risk assessment were presented at a public meeting sponsored by the Department of Toxic Substances Control (DTSC) in the community potentially affected by the site.

Unocal Corporation - Los Angeles, California

Prepared comprehensive assessment of petroleum hydrocarbons and metals for a former petroleum service station located next to sensitive population center (elementary school). The assessment used a probabilistic approach to estimate risks to the community and was used as the basis for granting closure of the site by lead regulatory agency.

Client: Confidential, Los Angeles, California

Managed oversight of remedial investigation most contaminated heavy metal site in California. Lead concentrations in soil excess of 68,000,000 parts per billion (ppb) have been measured at the site. This State Superfund Site was a former hard chrome plating operation that operated for approximately 40-years.

Client: Confidential, San Francisco, California

Coordinator of regional monitoring program to determine background concentrations of metals in air. Acted as liaison with SCAQMD and CARB to perform co-location sampling and comparison of accepted regulatory method with ASTM methodology.

Client: Confidential, San Francisco, California

Analyzed historical air monitoring data for South Coast Air Basin in Southern California and potential health risks related to ambient concentrations of carcinogenic metals and volatile organic compounds. Identified and reviewed the available literature and calculated risks from toxins in South Coast Air Basin.

IT Corporation, North Carolina

Prepared comprehensive evaluation of potential exposure of workers to air-borne VOCs at hazardous waste storage facility under SUPERFUND cleanup decree. Assessment used in developing health based clean-up levels.

Professional Associations

American Public Health Association (APHA)
Association for Environmental Health and Sciences (AEHS)
American Chemical Society (ACS)
California Redevelopment Association (CRA)
International Society of Environmental Forensics (ISEF)
Society of Environmental Toxicology and Chemistry (SETAC)

Publications and Presentations:

Books and Book Chapters

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Baker, J.; **Clark, J.J.J.**; Stanford, J.T. 1994. Ex Situ Remediation of Diesel Contaminated Railroad Sand by Soil Washing. Principles and Practices for Diesel Contaminated Soils, Volume III. P.T. Kostecki, E.J. Calabrese, and C.P.L. Barkan, eds. Amherst Scientific Publishers, Amherst, MA. pp 89-96.

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- Tam L. K., Wu C. D., Clark J. J. and **Rosenfeld, P.E.** (2008) Methods For Collect Samples For Assessing Dioxins And Other Environmental Contaminants In Attic Dust: A Review. *Organohalogen Compounds*, Volume 70 (2008) page 000527
- Hensley A.R., Scott, A., Rosenfeld P.E., **Clark, J.J.J.** (2007). "Attic Dust And Human Blood Samples Collected Near A Former Wood Treatment Facility." *Environmental Research*. 105:194-199.
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- Hensley A.R., Scott, A., Rosenfeld P.E., **Clark, J.J.J.** 2006. "Dioxin Containing Attic Dust And Human Blood Samples Collected Near A Former Wood Treatment Facility." The 26th International Symposium on Halogenated Persistent Organic Pollutants – DIOXIN2006, August 21 – 25, 2006. Radisson SAS Scandinavia Hotel in Oslo Norway.
- Rosenfeld, P.E., **Clark, J. J.** and Suffet, I.H. 2005. "The Value Of An Odor Quality Classification Scheme For Compost Facility Evaluations" The U.S. Composting Council's 13th Annual Conference January 23 - 26, 2005, Crowne Plaza Riverwalk, San Antonio, TX.
- Rosenfeld, P.E., **Clark, J. J.** and Suffet, I.H. 2004. "The Value Of An Odor Quality Classification Scheme For Urban Odor" WEFTEC 2004. 77th Annual Technical Exhibition & Conference October 2 - 6, 2004, Ernest N. Morial Convention Center, New Orleans, Louisiana.
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Selected References



Technical Paper

Methodology Reasoning and Policy Development of the California Emission Estimator Model
July 2011

South Coast Air Quality Management District
Bay Area Air Quality Management District
Sacramento Metropolitan Air Quality Management District
San Joaquin Valley Air Pollution Control District
Santa Barbara County Air Pollution Control District
San Luis Obispo Air Pollution Control District

The following sections discuss the three primary emission source sectors (construction, area, and operational), the factors and methodology used in CalEEMod that were different from other models such as URBEMIS, and the justification if different from the URBEMIS model, which has been widely used in the past for calculating criteria pollutant emissions from land use development projects.

Construction

A construction schedule is critical in determining the appropriate CARB OFFROAD emission factors for construction equipment because the emission factors change each year. In addition, the peak daily emissions will be different if the schedule between construction phases (e.g., site preparation, grading, building construction, etc.) overlaps. CalEEMod was developed using a construction survey to determine the construction profile (equipment type, number of equipment, hours of activity, etc.) for each construction phase. When changing the construction schedule, the model does not automatically change the default construction equipment type. The equipment type dictates construction phase activity, such as acres graded per day. Fugitive dust is generated when material (e.g., from demolition objects) and soil (e.g., from site preparation and grading) are transported to and from the site.

For non-residential land uses, the default lot acreage value corresponds to the building footprint. The lot acreage is used to calculate grading values. Therefore, any additional graded area must be entered separately as “other paved surfaces” or other land use to ensure an accurate grading calculation. For residential land uses, the default lot acreage value is greater than the default square footage value because the values are derived from different sources. The default lot acreage per residential dwelling unit is from the ITE Trip Generation and the square footage per dwelling unit is from the California Energy Commission’s Residential Appliance Saturation Survey (RASS). Thus, the lot acreage includes building footprint, paved areas and undeveloped areas, so no additional grading area need to be entered separately.

Wind-blown fugitive dust is not calculated in CalEEMod because of the number of input parameters required such as soil type, moisture content, wind speed, etc. This limitation could result in underestimated fugitive dust emissions if high wind and loose soil are substantial characteristics for a given land use/construction scenario.

Construction activity also involves on-road mobile source emissions from vehicles driven to and from the construction site by workers, vendors (e.g., water trucks, product deliveries, etc.), and haulers. In addition, fugitive dust is generated by these vehicles.

Finally, volatile organic compound (VOC) emissions are generated when the interior and exterior surface walls of the structures are painted.

Differences in methodology between CalEEMod and URBEMIS for the construction emissions sector are summarized in the following table.

Table 1 – Updated/New Features in CalEEMod during Construction Phase

CalEEMod Updated/New Feature	Justification for Change in Methodology	General Trends in CalEEMod as compared to URBEMS
Uses a construction profile (equipment type, hours of activity) based on SCAQMD construction survey	Uses documented data (URBEMIS survey data is not well documented). During the development of its localized significance thresholds, SCAQMD staff worked with construction and building industries to conduct a construction site survey gathering accurate information to better estimate emissions from construction equipment based on their typical operations. The SCAQMD hired a consultant to conduct construction site surveys throughout the South Coast Air Basin. The consultant surveyed approximately 50 construction sites and compiled information on the various construction phases including demolition, site preparation, construction of structures, etc. The survey was limited to 35 acres or less. For those projects sized larger, the data was extrapolated by increasing the number of construction phase days but not increasing the number of construction equipment on a given day.	<ul style="list-style-type: none"> • Increase in construction ROG, NOx, CO and SO2 • Decrease in construction PM (see grading activity)
Revises amount of acres graded	Acreage graded based on construction equipment ability (i.e., maximum acres a piece of equipment can pass over land in an 8-hr day) from Walker's Building Estimator's Reference Book. Grading in URBEMIS is based on 25% of total project acreage in one day.	<ul style="list-style-type: none"> • Decrease in PM emissions from grading
Modifies calculation methodology from material hauling	Provides a more specific calculation based on actual construction equipment and amount of material hauled. Although the user inputs the amount of material hauled, the model calculates exhaust and fugitive dust emissions based on 16 cubic yards per truck (an industry average). The model credits “phased” trips (i.e., the truck enters and leaves with a load, thus reducing the total number of trips in half).	<ul style="list-style-type: none"> • PM emissions increase or decrease depending upon user input

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California Environmental Protection Agency



Air Resources Board

INITIAL STATEMENT OF REASONS
FOR RULEMAKING

STAFF REPORT

PROPOSED IDENTIFICATION OF DIESEL EXHAUST
AS A TOXIC AIR CONTAMINANT

Prepared by the Staff of
the Air Resources Board and
the Office of Environmental Health Hazard Assessment

June 1998

specific compounds emitted from a variety of engine technologies, operating cycles, and fuel to characterize better any differences between old and new fuels and technologies and the potential impact on the toxicity of diesel exhaust.

HEALTH EFFECTS OF DIESEL EXHAUST EXPOSURE

The OEHHA reviewed and evaluated the potential for diesel exhaust to affect human health, and the associated scientific uncertainties. The OEHHA considered acute and chronic noncancer health impacts, and potential cancer health impacts. The SRP approved the OEHHA's health assessment at its April 22, 1998, meeting.

A number of adverse short-term (acute) health effects have been associated with exposures to diesel exhaust. Occupational exposures to diesel exhaust particles have been associated with significant cross-shift decreases in lung function. Increased cough, labored breathing, chest tightness, and wheezing have been associated with exposure to diesel exhaust in bus garage workers. A significant increase in airway resistance and increases in eye and nasal irritation were observed in human volunteers following one-hour chamber exposure to diesel exhaust. In acute and subchronic animal studies, exposure to diesel exhaust particles induced inflammatory airway changes, lung function changes, and increased the animals' susceptibility to infection.

A number of adverse long-term (chronic) noncancer effects have been associated with exposures to diesel exhaust. Occupational studies have shown that there may be a greater incidence of cough, phlegm and chronic bronchitis among those exposed to diesel exhaust than among those not exposed. Histopathological changes in the lung of diesel-exposed test animals reflect inflammation of the lung tissue. Reduced pulmonary function was noted in monkeys during long-term exposure. Reductions in pulmonary function have also been reported following occupational exposures in chronic studies.

Diesel exhaust particles can induce immunological allergic reactions and localized inflammatory responses in humans, as well as acting as an adjuvant for pollen allergy. Intranasal challenge with diesel exhaust particles in human volunteers resulted in an immunological response. Co-exposure to diesel exhaust particles and ragweed pollen resulted in an immune response greater than that following pollen or diesel exhaust particles alone. Effects of intratracheal, intranasal, and inhalation exposures of laboratory animals are supportive of the findings in humans. These effects include allergic reactions and inflammation, increased mucus secretion and respiratory resistance, and airway constriction.

The World Health Organization and the OEHHA have conducted further analyses of the dose-response relationships for several of the non-cancer, adverse effects of chronic exposures to diesel exhaust on the rat lung. These analyses gave a range of health risk guidance values of 2 to 21 $\mu\text{g}/\text{m}^3$ and support the adoption of 5 $\mu\text{g}/\text{m}^3$ which is also the 1993 U.S. EPA Reference Concentration. A U.S. EPA Reference Concentration or California Reference Exposure Level (REL) of a chemical is an estimate, with uncertainty spanning perhaps an order of magnitude, of the air concentration below which no noncancer adverse health effects are likely to occur from

lifetime exposure. This estimate takes into consideration persons who may be more sensitive than others to the effects of a chemical. The OEHHA concurs with the U.S. EPA in recommending 5 $\mu\text{g}/\text{m}^3$ as the chronic REL for diesel exhaust.

Diesel exhaust contains genotoxic compounds in both the vapor phase and the particle phase. Diesel exhaust particles or extracts of diesel exhaust particles are mutagenic in bacteria and in mammalian cell systems, and can induce adverse chromosomal changes. DNA adducts (representing genotoxins bound chemically to DNA) have been shown to increase following inhalation exposure of rodents and monkeys to whole diesel exhaust and have been found in mammalian cells following treatment with diesel exhaust particle extract. Elevated levels of DNA adducts have been associated with occupational exposure to diesel exhaust.

Over 30 human epidemiological studies have investigated the potential carcinogenicity of diesel exhaust. These epidemiological studies provide evidence consistent with a causal relationship between occupational diesel exhaust exposure and lung cancer. These studies, on average, found that long-term occupational exposures to diesel exhaust were associated with a 40 percent increase in the relative risk of lung cancer. The OEHHA analyzed the lung cancer findings for consistency and found that the association was unlikely to be due to bias or chance. Results of inhalation bioassays in the rat, and with less certainty in mice, have demonstrated the carcinogenic potential of diesel exhaust in animals, although the mechanisms by which diesel exhaust induces lung tumors in animals remain uncertain.

Other agencies or scientific bodies have studied the health effects of diesel exhaust. The National Institute of Occupational Safety and Health first recommended that whole diesel exhaust be regarded as a potential occupational carcinogen based upon animal and human evidence in 1988. The IARC concluded that diesel engine exhaust is probably carcinogenic to humans (Group 2A). Based upon the IARC findings, in 1990, the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) identified diesel exhaust as a chemical “known to the State to cause cancer.” (Title 22, California Code of Regulations, section 12000.) The 1998 draft U.S. EPA document (Health Assessment Document for Diesel Emissions, Review Draft, February 1998) similarly concluded that diesel exhaust be considered a “probable” human carcinogen (category B1). This conclusion evolves from positive yet “limited” evidence in the human studies, a “sufficient” level of evidence in bioassays, and consideration of the supporting information from mutagenicity and genotoxicity data.

Risk assessments can use carcinogenicity data from either animal or human studies. For diesel exhaust, there are data from human epidemiological studies of occupationally exposed populations which are useful for quantitative risk assessment. On balance, the OEHHA concluded that available human data lend more confidence in the prediction of human risks than the data from the available animal studies because of the uncertainties in the animal studies and of extrapolating from animals to humans. Thus, the OEHHA preferred to derive the range of human risk estimates based only upon the epidemiological findings and not the animal data. Using data from a case-control study and a cohort study, the OEHHA estimated the risk (95 percent upper confidence limit) of lung cancer in the general population due to diesel exhaust. Because of

uncertainties in the actual workplace exposures, the OEHHA developed a variety of exposure scenarios to bracket the exposures that were plausible. Based on these exposure estimates, presented in Table 1-1, the range of resulting estimates of cancer unit risk is 1.3×10^{-4} to $2.4 \times 10^{-3} (\mu\text{g}/\text{m}^3)^{-1}$. The unit risk represents the 95 percent upper confidence limit of cancer risk per million people exposed per microgram of diesel exhaust particulate in a cubic meter of air over a 70-year lifetime. The SRP approved the range of risk estimated by the OEHHA. In addition, the SRP concluded that a value of $3 \times 10^{-4} (\mu\text{g}/\text{m}^3)^{-1}$ is a reasonable estimate of unit risk expressed in terms of diesel particulate (see Appendix II).

The OEHHA and ARB staffs recognize that the limited exposure information available contributes to the uncertainty of the dose response risk assessment based on the human studies. However, the overall magnitude of uncertainty is not atypical of the types of uncertainty encountered when the Board identified other TACs. The greater than usual uncertainty in the exposure estimates is substantially offset by the much smaller than usual range of extrapolation from the occupational exposures to the ambient air concentrations. Interspecies extrapolation uncertainty is not an issue in this diesel exhaust risk assessment. In addition, there are more than 30 human studies of more than one occupation that show overall an increase in lung cancer from diesel exhaust exposure.

Based on available scientific evidence, a level of diesel exhaust exposure below which no carcinogenic effects are anticipated has not been identified. This finding was approved by the SRP at its meeting on April 22, 1998.

As with other substances evaluated by the SRP and after reviewing the field of published peer reviewed research studies on diesel exhaust, the SRP indicated that additional research is appropriate to further clarify the health effects of diesel exhaust. The OEHHA and ARB staffs recognize that diesel exhaust health studies will continue. For example, the HEI, which is jointly funded by industry and the U.S. EPA, has started a five-year study to review key epidemiologic studies and make recommendations for the design of new studies. The OEHHA and ARB staffs will follow these efforts closely, and will provide support to the extent resources are available. If the outcome of this, or other future health studies, ultimately reduces uncertainties or improves the scientific basis for estimating diesel exhaust risk, the OEHHA and ARB staffs would consider such information. When research results become available, the TAC program has a process in place for further evaluation of new scientific evidence pertaining to a previously completed TAC risk assessment. The process specifically addresses the evaluation and response to submittals of new scientific information as evidence for review of a TAC risk assessment.

Table 1-1. Summary of Cancer Unit Risks According to Study, Exposure Assumptions, and Modeling Approaches.

	95% UCL Cancer Unit Risk ($\mu\text{g}/\text{m}^3$) ⁻¹	95% Upper Confidence Limit of Cancer Risk per Million per Microgram of Diesel Exhaust Particulate in a Cubic Meter of Air Exposure Over a 70-year Lifetime
Garshick <i>et al.</i> (1987a) Case Control ¹		
Scenario ²		
A	2.4×10^{-3}	2400
B	1.8×10^{-3}	1800
C	1.0×10^{-3}	1000
D	6.6×10^{-4}	660
E	3.6×10^{-4}	360
Garshick <i>et al.</i> (1988) Cohort Study (Chapter 7) ³		
Scenario		
A	1.8×10^{-3}	1800
B	1.4×10^{-3}	1400
C	8.2×10^{-4}	820
D	5.1×10^{-4}	510
E	2.8×10^{-4}	280
Garshick <i>et al.</i> (1988) Cohort Study (Appendix D) ⁴		
Scenario A		
general multiplicative model	1.9×10^{-3}	1900
biologically based ⁵	3.8×10^{-4}	380
Scenario C		
general multiplicative model	7.2×10^{-4}	720
biologically based ⁵	1.3×10^{-4}	130
biologically based ⁶	1.5×10^{-4}	150

EVALUATION OF NEED AND APPROPRIATE DEGREE OF CONTROL FOR DIESEL

¹ Using published slope coefficient for hazard on years to diesel exhaust as described in Appendix III (Part B, Section 7.3.3).

² A Ramp pattern of exposure plateauing in 1959 at the 1980 exposure level of $50 \mu\text{g}/\text{m}^3$
 B Roof pattern of exposure peaking in 1959 at twice the 1980 exposure level of $40 \mu\text{g}/\text{m}^3$
 C Roof pattern of exposure peaking in 1959 at 3-fold the 1980 exposure level of $50 \mu\text{g}/\text{m}^3$
 D Roof pattern of exposure peaking in 1959 at 3-fold the 1980 exposure level of $80 \mu\text{g}/\text{m}^3$
 E Roof pattern of exposure peaking in 1959 at 10-fold the 1980 exposure level of $50 \mu\text{g}/\text{m}^3$

³ Using individual data to obtain a slope for hazard on years of exposure to diesel exhaust as described in Appendix III (Part B, Section 7.3.4).

⁴ Applying time varying concentrations to individual data to obtain a slope of hazard on exposure as described in Appendix III (Part B, Appendix D).

⁵ 6th/7 stage model.

⁶ 7th/7 stage model.

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Health Assessment Document For Diesel Engine Exhaust

Health Assessment Document for Diesel Engine Exhaust

National Center for Environmental Assessment
Office of Research and Development
U.S. Environmental Protection Agency
Washington, DC

atmosphere. It is not clear what the overall toxicological consequences of DE's transformations are because some compounds in the DE mixture are altered to more toxic forms while others are made less toxic.

1.5. EXPOSURE TO DIESEL EXHAUST

DPM mass (expressed as $\mu\text{g DPM}/\text{m}^3$) has historically been used as a surrogate measure of exposure for whole DE. Although uncertainty exists as to whether DPM is the most appropriate parameter to correlate with human health effects, it is considered a reasonable choice until more definitive information about the mechanisms of toxicity or mode(s) of action of DE becomes available. In the ambient environment, human exposure to DE comes from both on-road and nonroad engine exhaust. A large percentage of the U.S. population also is exposed to ambient $\text{PM}_{2.5}$, of which DPM is typically a significant constituent. Although this document does not provide an exposure assessment, DE exposure information is included to provide a context for the health effects information. Exposure estimates for the early to mid-1990s suggest that national annual average DE exposure from on-road engines alone was in the range of about 0.5 to 0.8 $\mu\text{g DPM}/\text{m}^3$ of inhaled air in many rural and urban areas, respectively. Exposures could be higher if there is a nonroad DE source that adds to the exposure from on-road vehicles. For example, preliminary estimates show that, on a national average basis, accounting for nonroad DE emissions adds another twofold to the on-road exposure. For localized urban areas where people spend a large portion of their time outdoors, the exposures are higher and, for example, may range up to 4.0 $\mu\text{g DPM}/\text{m}^3$ of inhaled air.

1.6. HEALTH EFFECTS OF DIESEL EXHAUST

Available evidence indicates that there are human health hazards associated with exposure to DE. The hazards include acute exposure-related symptoms, chronic exposure-related noncancer respiratory effects, and lung cancer. The health hazard conclusions are based on exhaust emissions from diesel engines built prior to the mid-1990s. With current engine use including some new and many more older engines (engines typically stay in service for a long time), the health hazard conclusions, in general, are applicable to engines currently in use. As new and cleaner diesel engines, together with different diesel fuels, replace a substantial number of existing engines, the general applicability of the health hazard conclusions will need to be re-evaluated. With new engine and fuel technology expected to produce significantly cleaner engine exhaust by 2007 (e.g., in response to new federal heavy duty engine regulations), significant reductions in public health hazards are expected for those engine uses affected by the regulations.

1.6.1. Acute (Short-Term Exposure) Effects

Information is limited for characterizing the potential health effects associated with acute or short-term exposure. However, on the basis of available human and animal evidence, it is concluded that acute or short-term (e.g., episodic) exposure to DE can cause acute irritation (e.g., eye, throat, bronchial), neurophysiological symptoms (e.g., lightheadedness, nausea), and respiratory symptoms (cough, phlegm). There also is evidence for an immunologic effect—the exacerbation of allergenic responses to known allergens and asthma-like symptoms. The lack of adequate exposure-response information in the acute health effect studies precludes the development of recommendations about levels of exposure that would be presumed safe for these effects.

1.6.2. Chronic (Long-Term Exposure) Noncancer Respiratory Effects

Information from the available human studies is inadequate for a definitive evaluation of possible noncancer health effects from chronic exposure to DE. However, on the basis of extensive animal evidence, DE is judged to pose a chronic respiratory hazard to humans. Chronic-exposure, animal inhalation studies show a spectrum of dose-dependent inflammation and histopathological changes in the lung in several animal species including rats, mice, hamsters, and monkeys.

This assessment provides an estimate of inhalation exposure of DE (as measured by DPM) to which humans may be exposed throughout their lifetime without being likely to experience adverse noncancer respiratory effects. This exposure level, known as the reference concentration (RfC) for DE of $5 \mu\text{g}/\text{m}^3$ of DPM was derived on the basis of dose-response data on inflammatory and histopathological changes in the lung from rat inhalation studies. In recognition of the presence of DPM in ambient $\text{PM}_{2.5}$, it also is appropriate to consider the wealth of $\text{PM}_{2.5}$ human health effects data. In this regard, the 1997 National Ambient Air Quality Standard for $\text{PM}_{2.5}$ of $15 \mu\text{g}/\text{m}^3$ (annual average concentration) also would be expected to provide a measure of protection from DPM, reflecting DPM's current approximate proportion to $\text{PM}_{2.5}$.

1.6.3. Chronic (Long-Term Exposure) Carcinogenic Effects

This assessment concludes that DE is “likely to be carcinogenic to humans by inhalation” and that this hazard applies to environmental exposures. This conclusion is based on the totality of evidence from human, animal, and other supporting studies. There is considerable evidence demonstrating an association between DE exposure and increased lung cancer risk among workers in varied occupations where diesel engines historically have been used. The human evidence from occupational studies is considered strongly supportive of a finding that DE

exposure is causally associated with lung cancer, though the evidence is less than that needed to definitively conclude that DE is carcinogenic to humans. There is some uncertainty about the degree to which confounders are having an influence on the observed cancer risk in the occupational studies, and there is uncertainty evolving from the lack of actual DE exposure data for the workers. In addition to the human evidence, there is supporting evidence of DPM's carcinogenicity and associated DPM organic compound extracts in rats and mice by noninhalation routes of exposure. Other supporting evidence includes the demonstrated mutagenic and chromosomal effects of DE and its organic constituents, and the suggestive evidence for bioavailability of the DPM organics in humans and animals. Although high-exposure chronic rat inhalation studies show a significant lung cancer response, this is not thought predictive of a human hazard at lower environmental exposures. The rat response is considered to result from an overload of particles in the lung resulting from the high exposure, and such an overload is not expected to occur in humans at environmental exposures.

Although the available human evidence shows a lung cancer hazard to be present at occupational exposures that are generally higher than environmental levels, it is reasonable to presume that the hazard extends to environmental exposure levels. While there is an incomplete understanding of the mode of action for DE-induced lung cancer that may occur in humans, there is the potential for a nonthreshold mutagenic mode of action stemming from the organics in the DE mixture. A case for an environmental hazard also is shown by the simple observation that the estimated higher environmental exposure levels are close to, if not overlapping, the lower range of occupational exposures for which lung cancer increases are reported. These considerations taken together support the prudent public health choice of presuming a cancer hazard for DE at environmental levels of exposure. Overall, the evidence for a potential cancer hazard to humans resulting from chronic inhalation exposure to DE is persuasive, even though assumptions and uncertainties are involved. While the hazard evidence is persuasive, this does not lead to similar confidence in understanding the exposure/dose-response relationship.

Given a carcinogenicity hazard, EPA typically performs a dose-response assessment of the human or animal data to develop a cancer unit risk estimate that can be used with exposure information to characterize the potential cancer disease impact on an exposed population. The DE human exposure-response data are considered too uncertain to derive a confident quantitative estimate of cancer unit risk, and with the chronic rat inhalation studies not being predictive for environmental levels of exposure, EPA has not developed a quantitative estimate of cancer unit risk.

In the absence of a cancer unit risk, simple exploratory analyses were used to provide a perspective of the range of possible lung cancer risk from environmental exposure to DE. The analyses make use of reported lung cancer risk increases in occupational epidemiologic studies,

and the differences between occupational and environmental exposure. The purpose of having a risk perspective is to illustrate and have a sense of the possible significance of the lung cancer hazard from environmental exposure. The risk perspective cannot be viewed as a definitive quantitative characterization of cancer risk nor is it suitable for estimation of exposure-specific population risks.

1.7. SOURCES OF UNCERTAINTY

Even though the overall evidence for potential human health effects of DE is persuasive, many uncertainties exist because of the use of assumptions to bridge data and knowledge gaps about human exposures to DE and the general lack of understanding about underlying mechanisms by which DE causes observed toxicities in humans and animals. A notable uncertainty of this assessment is whether the health hazards identified from studies using emissions from older engines can be applied to present-day environmental emissions and related exposures, as some physical and chemical characteristics of the emissions from certain sources have changed over time. Available data are not sufficient to provide definitive answers to this question because changes in DE composition over time cannot be confidently quantified, and the relationship between the DE components and the mode(s) of action for DE toxicity is/are unclear. While recognizing the uncertainty, for this assessment a judgment is made that prior-year toxicologic and epidemiologic findings can be applied to more current exposures, both of which use DPM mass in air as the measure of DE exposure.

Other uncertainties include the assumptions that health effects observed at high doses may be applicable to low doses, and that toxicologic findings in laboratory animals generally are predictive of human responses. In the absence of a more complete understanding of how DE may cause adverse health effects in humans and laboratory animals, related assumptions (i.e., the presence of a biological threshold for chronic respiratory effects based on cumulative dosage and absence of a threshold for lung cancer stemming from subtle and irreversible effects) are considered reasonable and prudent.

Although parts of this assessment, particularly the noncancer RfC estimate, have been derived with a generic consideration of sensitive subgroups within the population, the actual spectrum of the population that may have a greater susceptibility to DE is unknown and cannot be better characterized until more information is available regarding the adverse effects of DPM in humans. Increased susceptibility, for example, could result from above-average increases in DE deposition and retention in the respiratory system or intrinsic differences in respiratory system tissue sensitivity. There is no DE-specific information that provides direct insight to the question of differential human susceptibility. Given the nature of DE's noncancer effects on the respiratory system it would be reasonable, for example, to consider possible vulnerable

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The Report on Diesel Exhaust

This page last reviewed July 29, 2008

Findings of the Scientific Review Panel On

The Report on Diesel Exhaust

As Adopted at the Panel's April 22, 1998 Meeting

Pursuant to Health and Safety Code section 39661, the Scientific Review Panel (SRP / Panel) has reviewed the report *Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant* by the staffs of the California Air Resources Board (ARB or Board) and the Office of Environmental Health Hazard Assessment (OEHHA) describing the public exposure to, and health effects of, diesel exhaust. The Panel members also reviewed the public comments received on this report.

Panel members participated in workshops devoted to discussion of the exposure and health issues associated with diesel exhaust in September 1994, January 1996, July 1997, and March 1998. The SRP reviewed the issues at its meetings in October 1997 and April 1998. A special meeting of the SRP was held on March 11, 1998, to hear testimony on health issues including the quantitative risk assessment from highly respected scientists invited by the Panel. Based on these reviews and information provided at scientific workshops and meetings, the SRP makes the following findings pursuant to Health and Safety Code section 39661:

Exposure Related Conclusions:

1. Diesel exhaust is a complex mixture of gases and fine particles emitted by a diesel-fueled internal combustion engine.
2. The gaseous fraction is composed of typical combustion gases such as nitrogen, oxygen, carbon dioxide, and water vapor. However, as a result of incomplete combustion, the gaseous fraction also contains air pollutants such as carbon monoxide, sulfur oxides, nitrogen oxides, volatile organics, alkenes, aromatic hydrocarbons, and aldehydes, such as formaldehyde and 1,3-butadiene and low-molecular weight polycyclic aromatic hydrocarbons (PAH) and PAH-derivatives.
3. One of the main characteristics of diesel exhaust is the release of particles at a markedly greater rate than from gasoline-fueled vehicles, on an equivalent fuel energy basis. The particles are mainly aggregates of spherical carbon particles coated with inorganic and organic substances. The inorganic fraction primarily consists of small solid carbon (or elemental carbon) particles ranging from 0.01 to 0.08 microns in diameter. The organic fraction consists of soluble organic compounds such as aldehydes, alkanes and alkenes, and high-molecular weight PAH and PAH-derivatives, such as nitro-PAHs. Many of these PAHs and PAH-derivatives, especially nitro-PAHs, have been found to be potent mutagens and carcinogens. Nitro-PAH compounds can also be formed during transport through the

atmosphere by reactions of adsorbed PAH with nitric acid and by gas-phase radical-initiated reactions in the presence of oxides of nitrogen.

4. Diesel exhaust includes over 40 substances that are listed by the United States Environmental Protection Agency (U.S. EPA) as hazardous air pollutants and by the ARB as toxic air contaminants. Fifteen of these substances are listed by the International Agency for Research on Cancer (IARC) as carcinogenic to humans, or as a probable or possible human carcinogen. Some of these substances are: acetaldehyde; antimony compounds; arsenic; benzene; beryllium compounds; bis(2-ethylhexyl)phthalate; dioxins and dibenzofurans; formaldehyde; inorganic lead; mercury compounds; nickel; POM (including PAHs); and styrene.
5. Almost all of the diesel particle mass is in the fine particle range of 10 microns or less in diameter (PM₁₀). Approximately 94 percent of the mass of these particles are less than 2.5 microns in diameter. Because of their small size, these particles can be inhaled and a portion will eventually become trapped within the small airways and alveolar regions of the lung.
6. The estimated population-weighted average outdoor diesel exhaust PM₁₀ concentration in California for 1995 is 2.2 microgram per cubic meter ($\mu\text{g}/\text{m}^3$). Several independent studies have reported similar outdoor air diesel exhaust PM₁₀ concentrations. The 1995 estimated average indoor exposure concentration is approximately $1.5 \mu\text{g}/\text{m}^3$.
7. The population time-weighted average total air exposure to diesel exhaust particle concentrations across all environments (including outdoors) is estimated to be $1.5 \mu\text{g}/\text{m}^3$ in 1995. This total exposure estimate may underestimate many Californians' actual total exposure because it excludes elevated exposures near roadways, railroad tracks, and inside vehicles. Near-source exposures to diesel exhaust may be as much as five times higher than the 1995 population time-weighted average total air exposure. It also excludes other routes of exposure to diesel exhaust, such as ingestion and dermal absorption.
8. Diesel engine exhaust contains small carbonaceous particles and a large number of chemicals that are adsorbed onto these particles or present as vapors. These particles have been the subject of many studies because of their adverse effects on human health and the environment. A recent study conducted for the Health Effects Institute showed that, despite a substantial reduction in the weight of the total particulate matter, the total number of particles from a 1991-model engine was 15 to 35 times greater than the number of particles from a 1988 engine when both engines were operated without emission control devices. This suggests that more fine particles, a potential health concern, could be formed as a result of new technologies. Further study is needed since the extent of these findings only measured exhaust from two engines and engine technologies.
9. The major sources of diesel exhaust in ambient outdoor air are estimated to emit approximately 27,000 tons per year in 1995. On-road mobile sources (heavy-duty trucks, buses, light-duty cars and trucks) contribute the majority of total diesel exhaust PM₁₀ emissions in California. Other mobile sources (mobile equipment, ships, trains, and boats) and stationary sources contribute the remaining emissions.
10. Significant progress has been made as a result of federal and state regulations that have addressed particulate matter levels from diesel engines. Emissions of on-road mobile source diesel exhaust PM₁₀ in California are expected to decline by approximately 85 percent from 1990 to 2010 as a result of mobile source regulations already adopted by the ARB.
11. The results of a study funded by the ARB at the University of California, Riverside, indicate that the diesel exhaust from the new fuel tested contained the same toxic air contaminants as the old fuel, although their concentrations and other components may differ. Further research would be helpful to quantify the amounts of specific compounds emitted from a variety of

engine technologies, operating cycles, and fuel to characterize better any differences between old and new fuels and technologies.

Health Effects Associated with Diesel Exhaust:

12. A number of adverse short-term health effects have been associated with exposures to diesel exhaust. Occupational exposures to diesel exhaust particles have been associated with significant cross-shift decreases in lung function. Increased cough, labored breathing, chest tightness, and wheezing have been associated with exposure to diesel exhaust in bus garage workers. A significant increase in airway resistance and increases in eye and nasal irritation were observed in human volunteers following one-hour chamber exposure to diesel exhaust. In acute or subchronic animal studies, exposure to diesel exhaust particles induced inflammatory airway changes, lung function changes, and increased the animals' susceptibility to infection.
13. A number of adverse long-term noncancer effects have been associated with exposure to diesel exhaust. Occupational studies have shown that there may be a greater incidence of cough, phlegm and chronic bronchitis among those exposed to diesel exhaust than among those not exposed. Reductions in pulmonary function have also been reported following occupational exposures in chronic studies. Reduced pulmonary function was noted in monkeys during long-term exposure. Histopathological changes in the lung of diesel-exposed test animals reflect inflammation of the lung tissue. These changes include dose-dependent proliferations of Type II epithelial cells, marked infiltration of macrophages, plasma cells and fibroblasts into the alveolar septa, thickening of the alveolar walls, alveolar proteinosis, and focal fibrosis.
14. Studies have shown that diesel exhaust particles can induce immunological reactions and localized inflammatory responses in humans, as well as acting as an adjuvant for pollen allergy. Intranasal challenge with diesel exhaust particles in human volunteers resulted in increased nasal IgE antibody production and a significant increase in mRNA for pro-inflammatory cytokines. Co-exposure to diesel exhaust particles and ragweed pollen resulted in a nasal IgE response greater than that following pollen or diesel exhaust particles alone. Effects of intratracheal, intranasal, and inhalation exposures of laboratory animals are supportive of the findings in humans. These effects include eosinophilic infiltration into bronchi and bronchioles, elevated IgE response, increased mucus secretion and respiratory resistance, and airway constriction.
15. Based on the animal studies, the U.S. EPA determined a chronic inhalation Reference Concentration value of $5 \mu\text{g}/\text{m}^3$ for noncancer effects of diesel exhaust. This estimate takes into consideration persons who may be more sensitive than others to the effects of diesel exhaust. The report supports the recommendation of $5 \mu\text{g}/\text{m}^3$ as the California Reference Exposure Level (REL) (Table 1). It should be noted that this REL may need to be lowered further as more data emerge on potential adverse noncancer effects from diesel exhaust.
16. Diesel exhaust contains genotoxic compounds in both the vapor phase and the particle phase. Diesel exhaust particles or extracts of diesel exhaust particles are mutagenic in bacteria and in mammalian cell systems, and can induce chromosomal aberrations, aneuploidy, and sister chromatid exchange in rodents and in human cells *in vitro*. Diesel exhaust particles induced unscheduled DNA synthesis *in vitro* in mammalian cells. DNA adducts have been isolated from calf thymus DNA *in vitro* following treatment with diesel exhaust particle extracts. DNA adducts have been shown to increase following inhalation exposure of rodents and monkeys to whole diesel exhaust. Elevated levels of DNA adducts have been associated with occupational exposure to diesel exhaust. Results of inhalation bioassays in the rat, and with lesser certainty in mice, have demonstrated the carcinogenicity of diesel exhaust in test animals, although the mechanisms by which diesel exhaust induces lung tumors in animals

remains uncertain.

17. Over 30 human epidemiological studies have investigated the potential carcinogenicity of diesel exhaust. These studies, on average, found that long-term occupational exposures to diesel exhaust were associated with a 40 percent increase in the relative risk of lung cancer. The lung cancer findings are consistent and the association is unlikely to be due to chance. These epidemiological studies strongly suggest a causal relationship between occupational diesel exhaust exposure and lung cancer.
18. Other agencies or scientific bodies have evaluated the health effects of diesel exhaust. The National Institute of Occupational Safety and Health first recommended in 1988 that whole diesel exhaust be regarded as a potential occupational carcinogen based upon animal and human evidence. The International Agency for Research on Cancer (IARC) concluded that diesel engine exhaust is probably carcinogenic to humans and classified diesel exhaust in Group 2A. Based upon the IARC findings, in 1990, the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) identified diesel exhaust as a chemical "known to the State to cause cancer." The U.S. EPA has proposed a conclusion similar to IARC in their draft documents. The 1998 draft U.S. EPA document concluded similarly that there was sufficient animal evidence of carcinogenicity and that the human evidence was limited.
19. There are data from human epidemiological studies of occupationally exposed populations which are useful for quantitative risk assessment. The estimated range of lung cancer risk (upper 95% confidence interval) based on human epidemiological data is 1.3×10^{-4} to $2.4 \times 10^{-3} (\mu\text{g}/\text{m}^3)^{-1}$ (Table 2). After considering the results of the meta-analysis of human studies, as well as the detailed analysis of railroad workers, the SRP concludes that $3 \times 10^{-4} (\mu\text{g}/\text{m}^3)^{-1}$ is a reasonable estimate of unit risk expressed in terms of diesel particulate. Thus this unit risk value was derived from two separate approaches which yield similar results. A comparison of estimates of risk can be found in Table 3.
20. Based on available scientific information, a level of diesel exhaust exposure below which no carcinogenic effects are anticipated has not been identified.
21. Based on available scientific evidence, as well as the results of the risk assessment, we conclude that diesel exhaust be identified as a Toxic Air Contaminant.
22. As with other substances evaluated by this Panel and after reviewing the field of published peer reviewed research studies on diesel exhaust, additional research is appropriate to clarify further the health effects of diesel exhaust. This research may have significance for estimating the unit risk value.
23. The Panel, after careful review of the February 1998 draft SRP version of the ARB report, *Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant*, as well as the scientific procedures and methods used to support the data, the data itself, and the conclusions and assessments on which the Report is based, finds this report with the changes specified during our October 16, 1997, meeting and as a result of comments made at the March 11, 1998, meeting, is based upon sound scientific knowledge, methods, and practices and represents a complete and balanced assessment of our current scientific understanding.

For these reasons, we agree with the science presented in Part A by ARB and Part B by OEHHA in the report on diesel exhaust and the ARB staff recommendation to its Board that diesel exhaust be listed by the ARB as a Toxic Air Contaminant.

I certify that the above is a true and correct copy
of the findings adopted by the Scientific Review

Panel on April 22, 1998.

Sincerely,
 /s/
 John R. Froines, Ph.D.
 Acting Chairman
 Scientific Review Panel

TABLE 1
NONCANCER HEALTH VALUES APPROVED BY THE
SCIENTIFIC REVIEW PANEL
1998

Compound	Health Value	End Point
Acetaldehyde	9 $\mu\text{g}/\text{m}^3$	Respiratory System
Diesel Exhaust	5 $\mu\text{g}/\text{m}^3$	Respiratory System
Inorganic Lead	$4.6 \times 10^{-4} (\mu\text{g}/\text{m}^3)^{-1}$	Cardiovascular Mortality
Perchloroethylene	35 $\mu\text{g}/\text{m}^3$	Alimentary System (Liver)
$\mu\text{g}/\text{m}^3$: Microgram Per Cubic Meter		

TABLE 2
CANCER POTENCIES APPROVED BY THE SCIENTIFIC REVIEW PANEL
FROM 1984 TO 1998
(In Order of Cancer Potency)

Compound	Unit Risk $(\mu\text{g}/\text{m}^3)^{-1}$	Range $(\mu\text{g}/\text{m}^3)^{-1}$
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TABLE 3

COMPARISON OF OTHER ORGANIZATIONS' ESTIMATED 95 PERCENT UPPER CONFIDENCE LIMITS OF LIFETIME RISK PER $\mu\text{g}/\text{m}^3$ DIESEL PARTICULATE MATTER FROM RISK ASSESSMENTS BASED ON EPIDEMIOLOGIC DATA WITH OEHHA ESTIMATES

Method	Unit Risk / Range	Basis of Assessment	Reference
Epidemiologic Analysis	3×10^{-4}	Based on Smoking-Adjusted Pooled RR	Smith, 1998
Epidemiologic Analysis^b	3.6×10^{-4} to 2.4×10^{-3}	Case-Control Study of Garshick et al., 1987	OEHHA, Part B, Section 7.3.3
Epidemiologic Analysis	2.8×10^{-4} to 1.8×10^{-3}	Cohort Study of Garshick et al., 1988	OEHHA, Part B, Section 7.3.4
Epidemiologic Analysis	1.3 to 7.2×10^{-4}	Cohort Study, Time Varying Conc., Roof (3,50) Pattern	OEHHA, Part B, Appendix D
Epidemiologic Analysis	3.8×10^{-4} to 1.9×10^{-3}	Cohort Study, Time Varying Conc., Ramp (1,50) Pattern	OEHHA, Part B, Appendix D
Epidemiologic Analysis	1.4×10^{-3}	London Transport Study ^c	Harris, 1983
Epidemiologic Analysis	2×10^{-3}	Epidemiologic Data of Garshick (Top End of U.S. EPA's Range)	U.S. EPA, 1998
Epidemiologic Analysis	1.3×10^{-4} to 1.3×10^{-2}	Using Smoking-Adjusted RR and Exposures of 5 or $500 \mu\text{g}/\text{m}^3$	OEHHA, Part B, Section 7.3; Bracketed Risk Bounds
a) Bolded values are included in OEHHA's range of risk.			
b) Obtained by applying Harris' slope of $5 \times 10^{-4} (\mu\text{g}/\text{m}^3 \times \text{yr})^{-1}$ to California life table.			

Air Toxics Program
Particulate Emissions from Diesel-Fueled Engines as a TAC
Toxic Emissions from Diesel-Fueled Engines

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Department of Toxic Substances Control



Winston H. Hickox
Agency Secretary
California Environmental
Protection Agency

Edwin F. Lowry, Director
1001 I Street, 25th Floor, P.O. Box 806
Sacramento, California 95812-0806

Gray Davis
Governor

Interim Guidance for Sampling Agricultural Fields for School Sites (Second Revision)

California Department of Toxic Substances Control
California Environmental Protection Agency

August 26, 2002

Preface

Effective January 1, 2000, new California Department of Education statutes require the Department of Toxic Substances Control (DTSC) of the California Environmental Protection Agency (CalEPA) to review environmental assessments for proposed new school sites and/or new construction school expansion projects. Some of these sites are situated on agriculture land where residual agricultural chemicals may remain in the soil. In June 2000, DTSC issued "Interim Guidance for Sampling Agricultural Soils" to provide a uniform approach for evaluating former agricultural properties where pesticides have been applied. Since this guidance was issued, over 75 agricultural sites have been evaluated across California with the majority in the Sacramento-San Joaquin Valley, Oxnard Plains, and Imperial Valley. The most commonly detected pesticides have been DDT and its derivatives DDD and DDE, toxaphene, dieldrin, and aldrin. Of these pesticides, toxaphene has been the major pesticide driving unacceptable levels of risk requiring remediation by soil removal. These results and the experience of working with the guidance has allowed for refinement of the original guidance. The revised guidance contained in this document reflects these refinements.

**This guidance is intended to supplement the DTSC Preliminary
Endangerment Assessment (PEA) Guidance Manual (Manual), CalEPA 1994**

(Second Printing, June 1999). Data obtained from the investigations should be evaluated for potential health risks according the PEA Manual. This guidance is not intended to diminish the need to take focused, authoritative samples at site locations commonly associated with hazardous substances releases nor replace guidance provided by the PEA Guidance Manual. This guidance is not applicable to areas where pesticides were mixed, stored, disposed, or areas where pesticides may have accumulated, such as ponds and drainage ditches.

The scope of this document is limited to evaluating only agricultural fields during a PEA or other initial sampling investigation related to proposed new and/or expanded school sites. These are properties (or portions of properties) where pesticides were uniformly applied for agricultural purposes consistent with normal application practices, and where other non-agriculturally related activities have been absent. The data obtained from the sampling analyses will be incorporated into the PEA Report, including performing a risk analysis in accordance with the guidance in the PEA Manual.

This guidance does not apply to disturbed land, such as, land that has been graded in preparation for construction, areas where imported soil has been brought in, or any other activity that would redistribute or impact the soil, other than normal disking and plowing.

This guidance is an on-going effort to streamline the characterization of agricultural sites. As additional knowledge and experience is obtained, DTSC may modify this guidance, as appropriate.

1.0 PURPOSE

This guidance was prepared for use in evaluating soil at proposed new school sites and/or new school construction expansion projects that are currently, or were previously used for certain types of agricultural activities where residual agricultural chemicals may pose a threat to human health and the environment. This guidance is intended to supplement the DTSC Preliminary Endangerment Assessment (PEA) Guidance Manual (Manual), CalEPA 1994 (Second Printing, June 1999), and provide a uniform and streamlined approach for evaluating agricultural soils. It is intended to assist environmental assessors in designing initial investigations or developing Preliminary Endangerment Assessment (PEA) Work Plans for sites with certain historical agricultural uses. The analytical data obtained are to be incorporated into a risk analysis and PEA Report performed in accordance with the guidance in the PEA Manual.

2.0 IDENTIFYING ELIGIBLE AGRICULTURAL SITES

2.1 Eligible Sites

This guidance is specific to agricultural lands where pesticides and/or fertilizers were presumably applied, more or less uniformly, for agricultural purposes consistent with normal application practices. It is applicable to agricultural land that is currently under cultivation with row, fiber or food crops, orchards, or pasture. It is also applicable to fallow and former agricultural land that is no longer in production and has not been disturbed beyond normal disking and plowing practices. Each field of the same crop is assumed to have been watered, fertilized and treated with agricultural chemicals to the same degree across the field. Because of this homogeneous application, contaminant levels are expected to be similar at any given location within the field. This is the underlying premise of the guidance, and one that must be verified at the scoping stage of the PEA process.

2.2 Sites To Which The Guidance Does Not Apply

This guidance is not applicable to agricultural land under or adjacent to structures such as residences, barns, or other outbuildings. Pesticide mixing/loading areas, fence lines, ditches, canals, berms, and other areas that may have been treated differently from an agricultural field are not considered in this guidance. Also excluded are animal facilities such as cattle and poultry barns, settling ponds, and manure piles. This guidance does not apply to former agricultural land that has been graded for construction or other purposes, that has received fill, or has had parking lots or structures placed on it following active use as an agricultural field. An urban residential area that was agricultural land in the past does not qualify for this guidance since the construction of the residences would have resulted in the disturbance and redistribution of potential agricultural contaminants in the soil. These excluded areas require biased, discrete sampling as opposed to the sampling for agricultural fields discussed in this document.

3.0 SAMPLING STRATEGIES

3.1 Sampling Frequency

Sampling frequency may vary depending on the size of the site and conditions found. When the site has been uniformly used for a single agricultural crop, the presumption is that agricultural chemicals were applied equally to the site in any given year and that their distribution will be relatively uniform. **When differing agricultural crops were produced on different areas of the site, each area should be**

addressed separately and the sampling rate should be sufficient to characterize each area.

The sampling pattern should be sufficient to characterize the site. Recommended numbers of sampling locations are provided in Table 1. For sites two acres or less, discrete samples should be collected on ¼ acre centers. For sites between two and four acres, a total of eight locations, evenly spaced across the site, should be sampled. For sites greater than four acres and up to 20 acres, discrete samples should be collected on ½ acre centers, and for sites between 21 and 100 acres, on 1-acre centers. For sites greater than 100 acres, DTSC should be consulted for the appropriate number of sampling locations. Compositing of samples is discussed in Section 4.5.

Table 1: Recommended Number of Sampling Locations

Land Size	Suggested Minimum Sampling Locations
One (1) to two (2) acres	Discrete samples taken on ¼ acre centers
Greater than two (2) up to four (4) acres	Discrete samples taken from eight (8) locations evenly spaced across the site
Greater than four (4) up to twenty (20) acres	Eight (8) composite samples from discrete samples taken on half-acre centers.
Twenty-one (21) to sixty (60) acres	Fifteen (15) composite samples from discrete samples taken on one (1) acre centers.
Sixty-one (61) to one hundred (100) acres	Twenty five (25) composite samples from discrete samples taken on one (1) acre centers
Greater than one hundred (100) acres	Consult with DTSC

3.2 Sampling Depth

Each location should be sampled to include one surface sample (0 to 6 inches) and one subsurface sample (2 to 3 foot range). [Note: 0 inches means first encountered soil. Thick mats of vegetable material, roots, and other extraneous material should not be sampled.]

3.3 Sample Collection

Sampling both the furrows and beds of existing rows will detect the greatest variability in the residuals. Some methods of pesticide application will favor residuals in the beds while others favor the furrows. In fields where rows remain, roughly half of the samples should be gathered from the furrows and half from the beds in an alternating pattern. Orchards should have the sampling locations placed at the current drip line for the trees, under the canopy, between the tree rows, and between the trees within a row. For sites with slopes, swales, or other uneven topography, sampling from centers should be modified to include samples from those areas where surface water would be expected to flow and accumulate.

3.4 Offsite Background Samples

A minimum of four offsite locations must be sampled at the surface (0 to 6 inches) to determine background or ambient levels of heavy metals in the area. The samples must be collected near the site, preferably one from each of the four sides. The soil type of the offsite samples should be the same as the site samples, and if possible, the offsite samples should be collected from areas that have not been impacted by agricultural or industrial chemicals. If other properties in the area have gone through the PEA process, it may be possible to use data from these sites for establishing background metal concentrations providing that soil types are compatible. This may only be done in consultation with the DTSC Project Manager.

4.0 ANALYSES

4.1 Identifying Agricultural Chemicals Used on the Site

When the land is under active agricultural production, the grower should be interviewed to determine the types and amounts of pesticides historically used at the site. The County Agricultural Commissioner should also be consulted to verify pesticide usage on the property. The Agricultural Commissioner is required to maintain this information for three years, but often will have extensive knowledge of the farming practices over many years. A local or specialized farm advisor such as the University of California Cooperative Extension Agent is another source of information for farming practices in the area. These consultations should occur during the scoping phase of the investigation. For those sites that have not been actively farmed in the past three years, obtaining accurate information is more difficult. Information from surrounding or neighboring agricultural operations on the types of crops grown in the area during the time of active farming can provide clues on what chemicals may have been applied.

4.2 Chemicals of Potential Concern (COPC): Pesticides

The chemicals of greatest concern are those that persist in the environment. For the majority of newer pesticides persistence is limited to a few days; however, organochlorine pesticides (OCPs) can still persist in soil at levels of health concern for many years following application. Unless it can be documented that OCPs were not used on the property, they must be considered COPC. Paraquat also has a relatively long persistence in the soil. Paraquat should also be considered a COPC if there is a history of its use on the property. Under certain conditions, such as in rice growing fields, near surface conditions exist that establish anaerobic soil over an extended time. For these situations, anaerobically stable pesticides such as ametryn, cryomazine, and thiabendazole should also be considered as COPC. The selection of COPCs should be done in consultation with the DTSC project manager and toxicologist assigned to the project.

4.3 Chemicals of Potential Concern (COPC): Metals (Inorganic Elements)

Heavy metals have been applied to agricultural fields, both as pesticides and fertilizers. To ensure that the concentrations of these metals in site soils do not pose a potential health risk or hazard, the CAM 17 metals must be considered as COPC. Heavy metals are also evaluated to detect natural mineral deposits that may pose an unacceptable risk.

4.4 Discrete Samples

For sites four acres or less, each of the surface discrete samples must be analyzed for OCPs and CAM 17 metals. Analysis for other pesticides may be necessary, depending on the history of agricultural activities at the site. Offsite background samples should be analyzed for CAM 17 metals only. Subsurface samples should be frozen and held for analysis pending the outcome of the surface sampling results. No deterioration is expected during the time period required to complete the PEA.

4.5 Composite Samples

While the analysis of discrete samples is preferred, it is recognized that for large sites this may not be practical. Since this guidance assumes a relatively even distribution of chemicals across the site, compositing of discrete samples may be considered when the area to be sampled is greater than four acres.

4.5.1 Number of Composite Samples

The minimum number of composite samples analyzed is dependent on the size of the site (see Table 1). Compositing is not applicable for sites four acres or less. For sites greater than four acres and up to 20 acres, a minimum of eight composite samples is required. For sites 21 to 60 acres, a minimum of 15 composite samples is required. For sites between 61 and 100 acres, the minimum number of composite samples is 25. For sites over 100 acres, DTSC should be consulted for the appropriate number of composite samples.

4.5.2 Makeup of Composite Samples

Composite surface samples may be made up of a maximum of four discrete surface samples. The discrete samples must be from adjacent sampling locations. In cases where two crops were grown on the site, only discrete samples from within the same crop area may be composited.

4.5.3 Preparation of Composite Samples

The discrete samples should be individually mixed and uniformly split by the laboratory or trained field staff prior to compositing. Mixing and compositing should be performed under uniform, controlled conditions. The unused portion of each discrete sample should be frozen and archived in case additional analysis is warranted from the composite results. The samples may be discarded when the PEA process has been completed and approved by the DTSC.

4.6 Laboratory Analyses

4.6.1 Methods

The analytes of primary concern are OCPs and some of the CAM 17 metals. Depending on the site history, analysis of other types of pesticides may be required. OCPs should be analyzed using U.S. EPA 8081A or equivalent. Metals must be analyzed using the U.S. EPA 6000/7000 series. If the site history indicates other classes of persistent pesticides should be evaluated, DTSC should be consulted for the acceptable method of analysis and appropriate detection limits.

4.6.2 Detection Limits

The actual detection limits obtained will vary depending on the particular analyte. For OCPs, the analytes typically causing detection limit concerns in agricultural fields

are aldrin, dieldrin, and toxaphene. The detection limits should be 0.005 mg/kg for aldrin, dieldrin, and 0.100 mg/kg for toxaphene. Table 3 lists the detection limits for several OCPs and paraquat.

In samples with elevated DDT, the detected concentration may be above the range of calibration. This can result in the analytical laboratory diluting the sample for reanalysis, and then reporting only the final result. In these cases, the reported detection limits for aldrin, dieldrin, and toxaphene may exceed the detection limits needed for determining potential health effects. Ideally the laboratory should be asked to report if those three analytes were detected in the first analysis prior to dilution. Multiple analyses of the same samples may be required to obtain the data necessary for risk assessment purposes.

Table 2. Analytical Methods and Detection Limits for Selected OCPs and Paraquat

Pesticide	Methods	CAS No.¹	DL² mg/kg
ALDRIN	8081A, 8270C	309-00-2	0.005
CHLORDANE	8081A	57-74-9	0.10
CHLORONEB	8081A (R)	2675-77-6	100
DBCP	8081A	96-12-8	0.01
DDD	8081A	72-54-8	0.10
DDE	8081A	72-55-9	0.10
DDT	8081A	50-29-3	0.10
DIELDRIN	8081A	60-57-1	0.005
HEPTACHLOR	8081A, 8270C	76-44-8	0.10
HEXACHLOROBENZENE	8081A, 8121, 8270C, 8275, 8410	118-74-1	0.30
LINDANE	8081A	58-89-9	0.10
METHOXYCHLOR	8081A	72-43-5	0.40
MIREX	8081A(R), 8270C	2385-85-5	0.10
PARAQUAT_DICHLORIDE	Zeneca SOP RAM 272/01; Chevron RM 8- 10; 549.1*	4685-14-7	270
TOXAPHENE	8081A, 8270C	8001-35-2	0.1
TRIFLURALIN	8091, 8081A(R), 8270C	1582-09-8	63
<p>*Water and Wastewater Methods. Soil must be extracted and the method validated by the laboratory for a soil matrix. (R) = must be requested for inclusion in the method CAS No¹ = Chemical Abstract Service registry number DL² = Detection Limit recommended for risk assessment purposes</p>			

4.6.3 Pesticide Analyses

Each of the surface samples, discrete or composite, must be analyzed for OCPs. Analysis for other classes of persistent pesticides may be required as indicated by the agricultural history of the site. When using composites, each discrete sample associated with the composite sample having the highest detected concentration of OCPs must be analyzed.

4.6.4 Metal Analyses (Inorganic Elements)

Each of the background and a minimum of four (4) on-site surface samples must be analyzed for the CAM 17 metals. In addition, each of the on-site discrete surface samples must be analyzed for arsenic. When samples are composited, one (1) discrete sample from each composite must be analyzed for arsenic. The number of discrete samples analyzed for arsenic does not need to be greater than the number of total composite samples used for OCP analysis. The subsurface samples need only be analyzed for CAM 17 metals and arsenic if the concentration of an element detected is above the background concentration for that element. Analysis of additional subsurface samples may be requested by DTSC.

4.6.5 Quality Control

Quality control procedures specified in SW-846 must be followed. A matrix spike/matrix spike duplicate on one soil sample per batch of samples must be performed to demonstrate that the targeted pesticide(s) can be recovered from the soil investigated. Highly organic topsoil may interfere with proper extraction of pesticides. The laboratory data package must include a summary of the quality control sample results: blanks, matrix spike/matrix spike duplicate, surrogate recoveries, laboratory control samples, etc., as specified by the method. The laboratory should provide a signed narrative stating whether the QC was met and listing any discrepancies.

5.0 REPORTING

5.1 Format

The results of the sampling effort are to be reported in a Preliminary Endangerment Assessment (PEA) as described in the DTSC Preliminary Endangerment Assessment (PEA) Guidance Manual (Manual), CalEPA 1994 (Second Printing, June 1999).

5.2 Evaluating Metals (Inorganic Elements) Data

Using a robust statistical procedure to determine if on-site metal concentrations are indicative of background conditions or the result of site-related activities can be problematic because of the limited number of background samples collected at any one site. DTSC is in the process of establishing background metals concentrations for specific school districts. If the site is in a school district for which DTSC background levels have been established, those values should be used. If DTSC background levels are not available, then a defensible procedure for comparing on-site with background metals should be used. The Staff Toxicologist assigned to the project should be consulted on the most appropriate method of comparison.

5.3 Data Interpretation

All detected pesticides, and any onsite metals above background must be evaluated in a risk assessment as described in the DTSC PEA Guidance Manual. In the initial screening analysis, the highest concentration of each detected pesticide and metal above background must be used as the exposure point concentration in the risk assessment. If the maximum concentrations detected on site pose an unacceptable risk or hazard, a spatial analysis should be conducted to determine if the elevated levels represent a “hot spot”, or are representative of concentrations across the site. In those cases where the elevated concentrations are determined to be one or more “hot spots”, risk or concentration isopleths should be constructed to differentiate between those areas of the site in need of further action, and those where no further action is required. Any deviations from these analyses must be approved by the Staff Toxicologist assigned to the project. For sites with elevated levels of chlordane, it may be necessary to determine if the concentrations detected would pose an unacceptable risk from indoor air exposures, as evaluated with the Johnson and Ettinger Indoor Air Model. The DTSC Staff Toxicologist assigned to the project should be consulted for further guidance if necessary.

6.0 ADDITIONAL SOURCES OF INFORMATION

6.1 Pesticide Physical Properties and Half-Lives

<http://ace.orst.edu/info/extoxnet/pips/ghindex.html>

<http://www.arsusda.gov/rsml/ppdb1.html>

6.2 Active Pesticide Ingredient by Brand Name

<http://www.cdpr.ca.gov/docs/label/prodnam.htm>

<http://www.cdpr.ca.gov/> - see databases

Farm Chemicals Handbook, current edition, Meister Publishing Company, Willoughby, Ohio.

6.3 Maximum Application Rates

<http://ace.orst.edu/info/extoxnet/>

Agricultural Chemicals – Thomas Publications, Fresno, CA

6.4 Pesticide Usage by Year, County, and Crop

<http://www.ipm.ucdavis.edu/PUSE/puse1.html>

<http://www.cdpr.ca.gov/> - see databases

6.5 Test Methods

<http://www.epa.gov/epaoswer/hazwaste/test/>

SW-846: USEPA, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, Current Revision*

6.6 Pesticide Toxicology Information

<http://ace.orst.edu/info/extoxnet/ghindex.html>

<http://www.state.nj.us/health/eoh/rtkweb/rtkhsfs.htm>

Darisa Vargas

From: George Hague <gbhague@gmail.com>
Sent: Monday, March 10, 2014 10:45 PM
To: Jeffrey Bradshaw
Cc: Chris Ormsby; John Terell
Subject: Prologis & Tell Moreno Valley's Skechers to Stop Sweatshop Conditions in America! | CREDO Mobilize

<http://www.credomobilize.com/petitions/tell-skechers-to-stop-sweatshop-conditions-in-america>

Good afternoon/evening Moreno Valley Planning Commissioners,

re: Prologis FEIR & economic benefits to our residents

You will be asked to vote in favor of the Statement of Overriding Considerations where all of Prologis' unmitigated environmental impacts are overridden by mainly its economic benefits to our residents. I hope you have reviewed the sections of the FEIR I pointed out in my email yesterday which includes those unmitigated impacts to Transportation/our roadways, Air Quality, Green House Gas (GHG), and Climate Change or as the Sierra Club likes to say Climate Disruption. Please read the links in this email and ask yourself if warehousing is really an economic benefit to Moreno Valley residents.

Moreno Valley is getting a lot of publicity with the following online petition which over 4,000 people have already signed. You should be able to use the above link to read what is happening with Skechers' approval and to send a message to support this former Moreno Valley Skechers truck driver. There are additional links at the bottom if you wish to know more.

Take care,

George Hague
Sierra Club
Moreno Valley Group
Conservation Chair

Tell Skechers to Stop Sweatshop Conditions in America!

To: CEO Robert Greenberg, Skechers Shoes



Campaign created by Mateo Mares 

[Campaign Facebook Page](#)
[Campaign Website](#)

[Facebook](#)

[Twitter](#)

Email

End the sweatshop conditions for workers who haul your shoes from the Port of Los Angeles to your distribution center in the Moreno Valley. Hold your trucking contractor, Green Fleet Systems, accountable by demanding that it stop the harassment and intimidation of workers, and immediately rehire all illegally fired workers. It is time to reverse your track record of sweatshop working conditions around the globe.

Why is this important?

My name is Mateo Mares. Until early January of this year, my coworker Amilcar Cardona and I hauled Skechers shoes from the Port of Los Angeles to their national distribution center 80 miles/130 KM away. We were fired for trying to improve our working conditions and for standing up for our rights.

Our job is like a sweatshop-on-wheels. We work long hours, face safety hazards, endure harassment, and have our wages stolen from us. Drivers like us are standing up for our rights by filing legal claims with the government for wage theft, wage violations, retaliation for union and protected concerted activities, and illegal harassment. We were fired by our Skechers' trucking contractor, Green Fleet Systems, after we exercised our rights to engage in union activities at our workplace and after we refused to withdraw our claims for wage theft when we were pressured to do so by our boss.

Now our families are struggling to survive. We worked hard for many years hauling Skechers shoes and other foreign-made products from the docks to warehouses, but now we don't have any work and don't have any money to buy food or pay rent - much less help our kids get through college to make a better life for themselves.

Our struggle is like the men and women who manufacture Skechers shoes in places like China, Vietnam, and Cambodia. Like workers in Skechers' overseas factory, we are mistreated, deal with safety hazards, and don't get paid what we deserve. When we learned that Skechers has a record for bad treatment of its workers overseas*, we realized that Skechers is spreading sweatshop conditions to America.

Our children and wives are frightened about our future. It's time for Skechers to do the right thing, get us back to work, and end the sweatshop-on-wheels conditions for workers like us.

Add your name and tell Skechers to end the spread of sweatshops in America. Skechers has the power to demand that its trucking contractor stop violating workers' rights and U.S. labor laws. By signing, you are making a real difference in the lives of workers like me.

REFERENCES:

*Skechers has consistently received an "F" grade for its global supply chain policies. (The Kingmaker Company's Factory in Zhuhai, China: Stolen Wages, Unfair Labor Practices. China Labor Watch, June 2005;

<http://www.free2work.org/trends/apparel/>

Apparel Industry Trends: From Farm to Factory. Free2Work, 2012.

<http://digitalcommons.ilr.cornell.edu/cgi/viewcon...>

Green Fleet Drivers on strike in protest of unfair labor practices

<http://www.randomlengthsnews.com/green-fleet-truckers-strike-for-union-rights/>

http://inthesetimes.com/working/entry/15903/why_port_truckers_are_striking_12_hour_shifts_noxious_fumes_and_12.90_paych

Category: [labor](#)

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March 11, 2014

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City of Moreno Valley
14177 Frederick Street
Moreno Valley, CA 92553

General Manager
Paul D. Jones II, P.E.

**Re: NOA of DEIR, Prologis Eucalyptus Industrial Park
PA07-0081,82,83,84,142,158,159,160,161,162,&186**

Treasurer
Joseph J. Kuebler, CPA

Attn: Jeff Bradshaw, Associate Planner, City Of Moreno Valley

**Director of The
Metropolitan Water
District of So. Calif.**
Randy A. Record

Thank you for the opportunity to review the Notice of Public Hearing for the above referenced project. The project is generally described as General Plan Amendment and Zone Change from existing Business Park, to Business Park Mixed-Use, R15, R5, and RA-2 land use designations to Light Industrial for 116.99-net acres. The land use changes are required for development of six distribution warehouse facilities totaling 2,244,419 square feet with building sizes that range from 160,106 square feet to 862,035 square feet. The applicant also proposes Tentative Parcel Map No. 35679 to subdivide the project into six parcels corresponding to the six warehouse facilities. A General Plan Amendment is also required for proposed changes to the City's circulation element and the master Plan of Trails. Eastern Municipal Water District (EMWD) offers the following comments:

**Board Secretary and
Assistant to the
General Manager**
Rosemarie V. Howard

The subject project requires water, sewer and recycled water services from EMWD. The details of said service connection points will be further detailed in a separate document, known as EMWD's Plan of Service (POS), which is still not yet developed by the project proponent. To that end, EMWD requires dialog with the project proponent, to develop the EMWD Plan of Service, as clarified herein.

Legal Counsel
Lemieux & O'Neill

EMWD requires beginning dialogue with the project proponent at an early stage in site design and development, via a one-hour complimentary Due Diligence meeting. To set up this meeting, the project proponent should complete a Project Questionnaire (form NBD-058) and submit to EMWD. For additional information, please visit our "New Development Process" web page, under the "Businesses" tab, at www.emwd.org. To download forms, please select "New Development Process: Print Page". This meeting will offer the following benefits:

1. Describe EMWD's development work-flow process
2. Identify project scope and parameters
3. Preliminary, high level review of the project within the context of existing infrastructure
4. Discuss potential candidacy for recycled water service

Following the Due Diligence meeting, to proceed with this project, a Plan Of Service (POS) will need to be developed by the developer's engineer, and reviewed/approved by EMWD prior to submitting improvement plans for Plan Check. The POS process will provide the following:

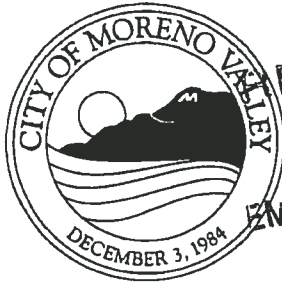
- 1- Technical evaluation of the project's preliminary design
- 2- Defined facility requirements, i.e. approved POS
- 3- Exception: for feasibility evaluation of a purchase acquisition, only a conceptual facilities assessment may be developed.

Again, EMWD appreciates the opportunity to comment on this project. Please forward the Final Environmental Impact Report to the attention of Helen Stratton at the mailing address shown on page one. If you have questions concerning these comments, please feel free to contact Maroun El-Hage, Ext. 4468.

Sincerely,



Maroun El-Hage, M.S., P.E.
Senior Civil Engineer
Plan of Service Section
New Business Development
Engineering Department
(951) 928-3777 x4468
El-hagem@emwd.org



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Notice of PUBLIC HEARING

This may affect your property. Please read.

Notice is hereby given that a Public Hearing will be held by the Planning Commission of the City of Moreno Valley on the following item(s):

- CASE:** PA07-0081 - Zone Change
 PA07-0082 - General Plan Amendment
 PA07-0083 - Master Plot Plan including Building 2
 PA07-0084 - Tentative Parcel Map 35679
 PA07-0158 - Plot Plan for Building 1
 PA07-0159 - Plot Plan for Building 3
 PA07-0160 - Plot Plan for Building 4
 PA07-0161 - Plot Plan for Building 5
 PA07-0162 - Plot Plan for Building 6
 P07-186 - Environmental Impact Report

If you challenge any of these items in court, you may be limited to raising only those items you or someone else raised at the Public Hearing described in this notice, or in written correspondence delivered to the Planning Commission at, or prior to, the Public Hearing.

APPLICANT: Prologis

OWNER: Prologis

REPRESENTATIVE: Prologis

LOCATION: South of State Route 60 and east of Moreno Valley Auto Mall, at Fir Avenue (Future Eucalyptus Avenue) and between Pettit Street and the Quincy Channel.

PROPOSAL: General Plan Amendment and Zone Change from existing Business Park, Business Park Mixed-use, R15, R5, and RA-2 land use designations to Light Industrial for 116.99-net acres. The land use changes are required for development of six distribution warehouse facilities totaling 2,244,419 square feet with building sizes that range from 160,106 square feet to 862,035 square feet. The applicant also proposes Tentative Parcel Map No. 35679 to subdivide the project site into six parcels. A General Plan Amendment is also required for proposed changes to the City's circulation element and the Master Plan of Trails. Approval of this project will require certification of an EIR.

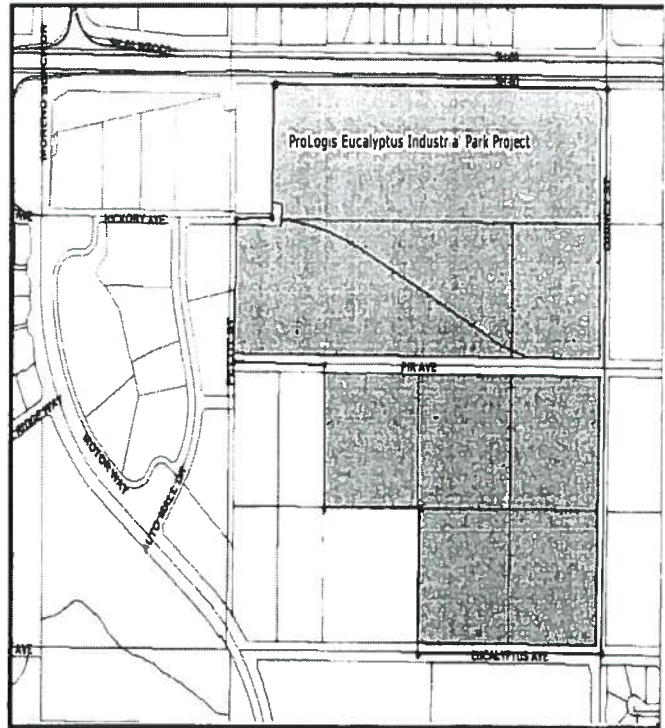
ENVIRONMENTAL DETERMINATION: Environmental Impact Report

COUNCIL DISTRICT: 3

Any person interested in any listed proposal can contact the Community & Economic Development Department, Planning Division, at 14177 Frederick St., Moreno Valley, California, during normal business hours (7:30 a.m. to 6:00 p.m., Monday through Thursday and 2nd and 4th Fridays from 7:30 a.m. to 1:30 p.m.), or may telephone (951) 413-3206 for further information. The associated documents will be available for public inspection at the above address.

In the case of Public Hearing items, any person may also appear and be heard in support of or opposition to the project or recommendation of adoption of the Environmental Determination at the time of the Hearing.

The Planning Commission, at the Hearing or during deliberations, could approve changes or alternatives to the proposal.



LOCATION N ↑

PLANNING COMMISSION HEARING

City Council Chamber, City Hall
14177 Frederick Street
Moreno Valley, Calif. 92553

DATE AND TIME: March 13, 2014 at 7 PM

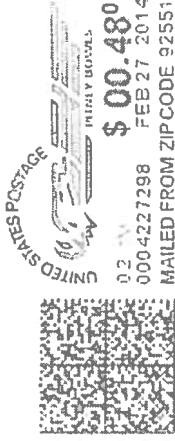
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March 10, 2014

Planning Commission
City of Moreno Valley
14177 Frederick St.
P.O. Box 88005
Moreno Valley, CA 92553
(951) 413-3224

VIA US MAIL AND EMAIL

RE: Opposition to Prologis Eucalyptus Industrial Park Project and Comments on Final EIR (SCH No. 2008021002)

Greetings:

On behalf of the Sierra Club, Moreno Valley Group, and Residents for a Livable Moreno Valley, I hereby submit these comments on the Prologis Eucalyptus Industrial Park Final Environmental Impact Report (EIR). (SCH No. 2008021002)

Independently Prepared EIR

The City failed to independently prepare the EIR. CEQA requires a draft EIR be prepared by a lead agency or prepared independently under contract to the lead agency. Before using an EIR prepared by another person, the lead agency must subject the draft to the agency's own review and analysis. The lead agency is responsible for the adequacy and objectivity of the EIR, and an EIR sent out for public review must reflect the independent judgment of a lead agency. (Guidelines § 15084) Moreover, CEQA provides a lead agency shall prepare the final EIR; CEQA grants no authority for the preparation of the final EIR by the applicant, consultant, or other entity. (Guidelines § 15089)

Responses to Comments

The FEIR fails to adequately respond to the significant environmental points raised in public comments pursuant to CEQA Guidelines. Particularly, Guidelines § 15088 (c) requires that a response to comments evince a "good faith, reasoned analysis." "Conclusory statements unsupported by factual information will not suffice." (Guidelines § 15088 (c).) The FEIR fails to properly respond to comments and instead makes these conclusory statements and often makes statements unrelated to the comments made. The FEIR also groups together several comments and responds to only a portion of the issues raised by commenters. This is contrary to

the policy of CEQA. The following responses to comments were glaringly inadequate or failed to resolve the significant defects in the EIR raised by the commenters:

CDFW Comment Letter A-2

- CDFW commented that impacts to streams and riparian habitat should be compensated by 3:1 replacement of in-kind habitat on- or off-site. (CDFW Comment 7) The response to this comment states that “there are times when small eroded ephemeral drainage courses must be channelized or incorporated into the overall drainage management of a site to provide effective erosion and flood control.” This response insinuates that the Project proposed is not the direct cause of the removal of onsite habitat. The Response also states that 2:1 mitigation is “sufficient mitigation under CEQA” without demonstrating impacts will be reduced below significance (according to CDFW they will not) or that 3:1 mitigation is infeasible.

- CDFW Commented that the EIR failed to consider regional impacts to other highways SR-91, I-10, etc. and failed to consider projects outside a 5-mile radius where these project would cumulatively affect these local and regional traffic conditions. CDFW noted the scale of these projects shows they are designed as regional warehousing centers, so consideration of regional impacts is essential. (CDFW Comment 8)

The Response to this comment is not on point. The Response states that, to the contrary, the 2035 conditions were reliant on General Plan forecasts. It is, however, apparent that the commenter was referring to the list of projects relied on for the cumulative impact analysis. While buildout conditions may also have been considered, the fact remains that cumulative effects of the Project and others in the area were reliant on consideration of those projects within a five mile radius.

The Response to Comment 8 ignores the comment that regional traffic impacts along other highways including SR-91 and I-10 need to be considered where the Project and cumulative projects are being developed with a regional purpose.

- CDFW also commented the traffic study failed to consider impacts from the World Logistics Project, instead only looking at 13 mil. total sf of warehousing. Also failed to include Villages of Lakeview Specific Plan and residential development proposed near Lamb Canyon Rd. and SR-60. CDFW commented the traffic study should be revised and recirculated to include these projects. (CDFW Comment 8.)

The Response to this comment notes that the NOP was prepared in 2008 for this Project, so that the World Logistics Center was not considered. While generally an NOP establishes the baseline and environmental setting for the Project, there is no such hardline limitation for what cumulative projects should be considered; instead CEQA provides that the discussion of cumulative impacts should be guided by standards of practicality and reasonableness. (Guidelines §§ 15125, 15130; *Association of Irrigated Residents v. County of Madera* (2003) 107 Cal.App.4th 1383, 1404) Where the NOP was prepared six (6) years ago and a large number and scope of cumulative projects have been added in the vicinity, the EIR must be updated and

recirculated to account for these projects where they will likely result in cumulative impacts not considered in either this EIR of the Moreno Valley General Plan.

Further, the fact that the Moreno Highlands Specific Plan was considered is a red herring. While the Moreno Highlands Specific Plan may generate more “trips” generally, that does not mean that traffic impacts will be the same or less with the World Logistics Center. The World Logistics Center would generate a significant number of regional truck trips on regional highways to/from the ports and other known locales similar to this Project, instead of more localized trips indicative of the Moreno Highlands Specific Plan. The vehicle mix would also be significantly weighted toward heavy duty trucks, as with this Project, and add cumulative diesel emissions which may cause additional unconsidered health risks. These issues were not considered in the cumulative impact analysis. Similarly, the Villages at Lakeview project was not included in the cumulative impact analysis.

The consideration of General Plan Buildout 2035 traffic based on General Plan predictions (the RivTam Model) is not the same as addressing cumulative effects with respect to existing conditions or opening year conditions. Moreover, where many of the cumulative projects are seeking/ will seek General Plan Amendments to go forward, the General Plan is increasingly becoming an inaccurate predictor of cumulative effects in Moreno Valley.

- CDFW commented increase in traffic on surface streets from congestion on SR-60 not adequately considered, particularly Gilman Hot Springs Rd. and the Ramona Expressway. (CDFW Comment 8.)

The Response to this Comment states that such diversion will not occur based on 2035 conditions and modeling, but fails to show based on substantial evidence that diversion trips will not occur under existing or opening year conditions.

- CDFW commented potential impacts to San Jacinto Wildlife Area not adequately evaluated. Impacts from increased traffic, lighting, noise, windblown trash, emissions, and surface road runoff were not adequately considered. (CDFW Comment 8.) The Response to this comment ignores potential direct and indirect impacts from lighting, noise, trash, air quality emissions, etc., focusing only on vehicle trips.

SCAQMD Comments Letter B-3

Introduction Letter

- Response to comment 1-: the Response to this comment purports to resolve the issue raised by SCAQMD that mitigation is unenforceable. Comment 1- in the “Technical Evaluation” further clarified that mitigation is unenforceable where, for example, tenants are “encouraged to promote” certain actions but not actually required to implement them. Response to Comment 1- Introduction utterly fails to resolve this issue as the Response to this comment absurdly states that the City is eliminating the “encouraged” language with enforceable language; however any additional mitigation is placed under the

“requirement” at page 58 that “lease/purchase documents shall identify *that tenants are encouraged to promote the following*.” [emphasis added].

Technical Evaluation

- Response to comment 1-. First, this response fails to respond to the comment made by SCAQMD relative to the unenforceability of mitigation (see above). Second, the claim that the recommendation of SCAQMD are beyond the scope of the project level EIR is incorrect, particularly where SCAQMD recommended measures relative to vehicles to be used exclusively onsite.

Third, the four measures recommended by SCAQMD have *not* been adopted, contrary to the claims in the Response to comments, or shown to be infeasible based on substantial evidence:

1. Requiring all on-site vehicles (hostlers, forklifts, etc.) to utilize zero or near zero emission technology. The Response to this mitigation claims Mitigation Measure 4.3.6.6A “requires the inclusion of electric powered and/or compressed natural gas fueled trucks and/or vehicles in fleets.” This is incorrect- MM 4.3.6.6A only requires that “lease/purchase documents shall identify that tenants are encouraged to promote” “the inclusion of electric powered and/or compressed natural gas fueled trucks and/or vehicles in fleets.” Moreover, even if inclusion of electric or CNG trucks was actually required by MM 4.3.6.6A (it is not), there is no term requiring that *all on-site vehicles* use this zero or near zero emission technology; as little as one electric or CNG vehicle would suffice. There is no reasoning or evidence that this mitigation measures is infeasible.
2. Requiring the installation of sufficient alternative fueling infrastructure (e.g., electric charging, CNG/LNG, hydrogen, etc.) for trucks on-site or within close proximity to the site to facilitate the use of these technologies. The Response to this comment states that these technologies do not yet represent a significant share of truck fleets and would be burdensome. If, however, all on-site vehicles also use zero-emission technology (e.g. electric), these modifications may not be burdensome. There is no evidence that this measure is technically or financially infeasible.
3. Providing a phase-in schedule and goals for the introduction of zero or near zero technology trucks (e.g., 10% by 2020, 20% by 2025, etc.) that visit warehouses. The Response to this suggested mitigation states that MM 4.3.6.6 encourages Smartway participation and states that participation in a SmartWay program may not be feasible. The Response, however, does not actually address the comment made regarding phase in of zero or nearzero technology trucks. There is no evidence or reasoning provided showing that this mitigation is infeasible.
4. Prohibiting the placement of loading docks or major truck routes within 500

feet of sensitive receptors. The Response to this comment does not address truck travel from the loading docks nearest sensitive receptors to the truck route.

- Response to Comment 2- The response to this comment is unresponsive to the comment made re: requirement that all trucks entering the property meet or exceed 2010 standards or the phase in of clean trucks.
- Response to Comments 3: The recommended mitigation has not been incorporated. MM 4.3.6.6A only requires that “lease/purchase documents shall identify that tenants are encouraged to promote” a truck log.
- Response to Comments 4: The recommended mitigation has not been incorporated. MM 4.3.6.6A only requires that “lease/purchase documents shall identify that tenants are encouraged to promote” idling limits.
- Response to Comments 5: The recommended mitigation has not been incorporated. MM 4.3.6.6A only requires that “lease/purchase documents shall identify that tenants are encouraged to promote” log monitoring training.
- Response to Comments 7: is unresponsive to the comment made re: limiting to non-refrigerated uses.
- Response to Comment 8: the City does not show that the mitigation recommended by SCAQMD that “at least a portion of the fleet” use alternatively fueled technologies is infeasible. Mitigation could feasibly require that 1% of the fleet be alternatively fueled.
- Response to Comment 9 is unresponsive to the comment made about applying for funding to retrofit trucks. As CEQA requires that all feasible mitigation be adopted for a project which will result in significant environmental effects, and as this Project will result in significant effect to operational air quality, the claim that the additions to 4.3.6.6 “are adequate to reduce project emissions to the extent practical” is legally and effectively incorrect.
- Response to Comment 10 is unresponsive to the comment made that the warehouse should be designed to place a check-in point for trucks inside the facility property. The fact that there’s sufficient distance does not mean the project is designed in this manner.
- Response to Comment 12 fails to consider the installation of solar panels at this Project. The fact that ProLogis has installed solar projects on other buildings does not mean it will install solar on this building or that solar has been incorporated as mitigation.
- Response to Comment 13: The recommended mitigation has not been incorporated. MM 4.3.6.6A.
- Response to Comment 14 states that the recommendation for trucking support services is beyond the scope of the EIR. In fact many of the recommended mitigation measures apply directly to this project to avoid trips within the project neighborhood

and prevent idling including: (1) establish area(s) within the facility for repair needs; (2) post signs outside of the facility providing a phone number where neighbors can call if there is a specific issue; (3) provide food options, fueling, truck repair or convenience store onsite to minimize the need for trucks to traverse through residential neighborhoods; (4) improve traffic flow by signal synchronization; and (5) design the warehouse/distribution centers to ensure the truck traffic within the facility is located away from the property line(s) closest to its residential or sensitive receptor neighbors.

- Response to Comment 15 fails to address the issues raised by SCAQMD that the impacts from on-site equipment is not accounted for in the HRA. Additionally, the response states that the project does not plan to use diesel generators or TRUs during normal operations but does not prohibit the use of this equipment where the end user of the project is unknown.
- Response to Comment 17 fails to address the comment that the HRA fails to validate the assumption that 2025 is a representative year where diesel emissions will be significantly higher in the years preceding 2025. The HRA should evaluate impacts based on current emissions to provide a conservative assumption.
- Response to comment 18 fails to provide evidence to support the claim that onsite travel was included in the emissions calculations. The response also claims: “There are no diesel generators planned and TRUs will not burn diesel fuel because any refrigerated trucks will plug in and their TRUs run off that electricity. There are also no plans for onsite diesel-powered hostlers or other diesel-powered equipment.” While such uses may not be *planned* because the project tenant is unknown, at least some of the uses should be *expected* and considered in the modeling. AQMD found an average rate of 3.1 hostlers per million square feet of warehousing in studying high cube warehouses, so at least 6 hostlers are likely with this Project. (High Cube Warehouse Truck Study (October 11, 2013), http://www.aqmd.gov/ceqa/Warehouse/Stakeholder/SWG_10-11-13-print.pdf.)
- Response to comment 20 acknowledges that the EIR erroneously assumes a 50/50 trip distribution east and west on Eucalyptus where only 33% are expected to travel west. While this may provide conservative estimates at the residences adjacent to the Project site, it may skew evaluation of health risks along the truck route east. The HRA should be updated to evaluate health risks with an accurate east-west truck distribution and to evaluate health risk along Project truck routes.
- Response to Comment 21 acknowledges that the EIR fails to assume that 100% of trucks accessing the Project site will be diesel as recommended by AQMD. SCAQMD further notes that the kind of trucks that typically serve warehouses are not necessarily the same mix as those on the road- i.e. they are diesel. The EIR understates project health risk impacts by this assumption.

- Comment 22 provides a rate of 9.27E-05 g/s for heavy duty trucks. The HRA should be updated to reflect us of this rate.
- Response to Comment 25 that the number of occurrences of >5 minutes of idling is “so small as to not affect the health risk assessment” is absurd. Even if queuing will not occur entering the site, traffic may existing exiting the site plus any idling time at the loading dock. SCAQMD recommends 15 minutes be presumed for onsite idling based on their expert opinion and considerable experience. The HRA should be updated to presume 15 minutes of onsite idling.
- Response to Comment 26 is unresponsive to the comment made. The air quality analysis appears to severely understate emissions.
- Response to Comment 29 is unresponsive to the comment made. Moreover, if the EIR is not indicative of the grading onsite, then the EIR should be updated.

City of Riverside Letter C-1

- Response to Comment 1 is unresponsive to the excellent comment made that because the TUMF model is based on the existing Moreno Valley General Plan and this Project would change the General Plan designation on 71 acres of the site, payment of TUMF is not shown to sufficiently mitigate Project traffic impacts. While the project may generate fewer trips when compared to residential uses, the vehicle mix will be entirely different and be comprised, in large amount, of heavy trucks. Trucks cause a substantial amount of wear and tear to streets not considered in the TUMF, are noisier, and result in other effects that may impact improvements of streets scheduled in the TUMF (E.g. need for barriers/wall with expansion, weight limits, etc.). Hence even improvements planned in the TUMF may be insufficient to accommodate this increased need.
- Response to Comment 2 fails to resolve the issue raised- that cumulative traffic impacts were not well considered. As discussed above, where the NOP for this project was prepared in 2008 and a significant number and scope of new Projects have since been proposed (e.g. are past, current, or probable future projects), the excuse that cumulative projects were not yet initiated falls flat. While usually a cut-off date may be appropriate, that is simply not the case here, and the City fails to show any reasonable basis or evidence supporting the decision to ignore these cumulatively important projects. Moreover, some projects not included in the cumulative analysis are now “current” projects e.g. RPT Centerpointe West Project.
- Response to Comment 3 focuses only on 2035 buildout projections and not forecasted impacts to roadways under existing or opening year conditions. While “spill-over” traffic may not be explicitly required, disclosure of significant impacts is required by CEQA. The EIR is inadequate for failing to consider these potential impacts, particularly with updated consideration of cumulative projects.

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Sierra Club, San Geronio Chapter

- Response to Comment 1 is unresponsive to the comment made that it is feasible to require as mitigation that the Project be developed to LEED Silver or Gold standards to reduce the Project's GHG and air quality impacts.
- Response to Comment 2 is unresponsive to the comments made. First, the response fails to consider the feasibility of installing solar panels offset GHG impacts. Second, the response fails to address the unenforceability and complete failure to mitigate impacts where words such as "will be considered" are used instead of actually requiring implementation of such mitigation. Third, the response ignores the proposed mitigation that the Project be required to exceed current Title 24 standards by at least 25%.
- Response to Comment 3 is unresponsive to the issue raised that the EIR fails to consider the impacts from losing citrus groves on GHG emissions. While the GHG analysis assumes such groves are not present onsite, it fails to evaluate the impacts from reducing the carbon dioxide removal and storage that these agricultural trees will no longer be providing.

Furthermore, while contributions to the Riverside Land Conservancy or San Jacinto Basin Resource Conservation District are not required as part of a mitigation plan, they would mitigate an otherwise significant impact and are not shown to be infeasible. As such, CEQA requires this feasible mitigation be adopted to reduce project impacts to agriculture.

- Response to Comment 11 See above re: baseline conditions and the need for consideration of cumulative impacts. Also, *San Franciscans for Reasonable Growth v. City & County of San Francisco* (1984) 151 Cal.App.3d 61, 74 fn. 14, *City of Maywood v. Los Angeles Unified School Dist.* (2012) 208 Cal. App. 4th 362.
- Response to Comment 22 fails to respond to the comment that climate change may increase air pollution formation due to rising temperature and impact to/from water supply reduction.

Johnson & Sedlack- Letter D-3

- Response to Comment 10 fails to adequately address the mitigation proposed that buildings be more widely dispersed or that setbacks be incorporated. The Project could remain quite large while incorporating this mitigation.
- Response to Comment 12 fails to evaluate the project's inconsistency with other policies at page 4.1-21.
- Response to Comment 14 fails to respond to the comment that the EIR fails to disclose the signs proposed and thereon evaluate impacts. An EIR is foremost an information and disclosure document, and the EIR has failed in this respect.
- Response to Comment 15 fails to provide a good faith response to the comment that although the buildings have a maximum height of 50 feet the aesthetic evaluation considered an average height of 39 ft.

- Response to Comment 19 fails to address whether cumulative impacts to the PAKO were adequately considered, particularly where a large portion of the City is being converted to industrial uses.
- Response to Comment 22 fails to detail why purchase of conservation easements or payment of in-lieu fees in neighboring regions where agriculture may be less costly is infeasible. There is also no explanation of why conservation easements or payment of in-lieu fees are infeasible where they are set up specifically to maintain farming even as the costs push out agricultural uses.
- Response to Comment 24 does not resolve the issue raised that at least two sites near the project have not been abandoned by MVUSD. The potential for these sensitive receptors to be located near the project must be considered in the EIR.
- Response to Comment 27 acknowledges that the modeling of health risks does not include dedicated emissions sources from the loadings docks along the building and driveways onto Eucalyptus Avenue.
- Response to Comment 28 acknowledges that the commenter is correct that onsite project operations will occur 365 days a year, yet the HRA did not account for this increased exposure compared to the standard 350 day/year assumption.
- Response to Comment 30 fails to respond to the comment made that the Project may contribute to a severe existing health risks environment. Moreover, the EIR fails to adequately evaluate and quantify cumulative health risks of this Project and other projects in the area, which will doubtless exceed the 10 in 1 million threshold.
- Response to Comment 32 again fails to resolve the issue raised by the commenters (Johnson & Sedlack and SCAQMD) that the use of projected 2025 emissions understates health risks based on current rates and is unsupported by evidence for use in the EIR. The EIR should provide modeling based on SCAQMD's recommendation.
- Response to Comment 45 does not resolve the issue raised- that construction could occur 14+ hours per day but that equipment usage was only evaluated for 6-8 hours per day.
- Response to Comment 46 fails to make a good faith effort to respond to the comment made.
- Response to Comment 47 is unresponsive to the comment made re: odors. The odor threshold question of CEQA is at issue, not whether the Project will result in a nuisance pursuant to SCAQMD Rule 402. The EIR must consider whether odors from construction may be significant.
- Response to Comment 48 is unresponsive to the comment made. As specifically stated by SCAQMD, "The LST mass rate look-up tables only apply to projects that are less than or equal to five acres...In the event that the project area exceeds five acres, it is recommended that lead agencies perform project-specific air quality modeling for these larger projects." (<http://www.aqmd.gov/ceqa/handbook/lst/lst.html>, see also, http://www.aqmd.gov/ceqa/handbook/lst/Method_final.pdf at p. 3-3 ["Large industrial projects... are beyond the scope of these LST lookup tables."]) The EIR's use of the LST table for a 5-acre project site is improper. Project-specific modeling should be performed.

- Response to Comment 50 fails to resolve the issues raised regarding the vagueness of the terms used.
- Response to Comment 55 fails to resolve the issue raised that the mere requirement that a term be in a construction document does not actually mandate its incorporation into construction of the Project for purposes of enforceability. MM 4.3.6.2J must be amended to read: “Grading plans, construction specifications, and bid documents shall also include the following requirements, and such requirements shall be incorporated into construction of the Project.” The amendment to replace “where feasible” with “where it is practical” makes not difference in improving enforceability. Further, the change to not provide lunch vendor services reduces project mitigation.
- Response to Comment 60 is unresponsive to the comment made that each of the suggested mitigation measures that are permitted in the EIR should be *required* of the Project to reduce its significant and unmitigated air quality impacts. As written such mitigation is uncertain and unenforceable. The response additionally fails to consider many of the mitigation measures proposed by the commenter by lumping them into one giant comment.
- Response to Comment 61 fails to respond to the comment made which references the Air Quality Analysis of Appendix B, not the Air Quality section of the EIR.
- Response to Comment 62 in no way responds to the comment made, but appears to be the response to comment 61. Comment 62 raised the issue that the EIR and HRA failed to evaluate potential cumulative health risks from this Project and other projects in the vicinity; and failed to cite the accurate current risk in the project area according to the MATES Study of SCAQMD. According to SCAQMD’s MATES III study, the existing cancer risk in the project area is up to 497 in one million, well over levels disclosed in the EIR. (<http://www3.aqmd.gov/webappl/matesiii/>) This number does not include proposed or expected future projects that would be considered with an adequate cumulative impact evaluation.
- Response to Comment 66 is unresponsive to the comment made that the payment of in lieu fees shall be for the purpose of acquiring equivalent habitat.
- Response to Comment 67 is unresponsive to the comment made that preparation of a Habitat Mitigation and Monitoring Plan in the future defers mitigation without establishing that there is a practical reason for doing so.
- Response to Comment 69 is unresponsive to the comment made that the EIR fails to consider cumulative biological effects. Contrary to the response’s implications, it is the duty of the lead agency to provide an adequate environmental document including an evaluation of cumulative impacts.
- Response to Comment 73 fails to provide any reasoning or evidence that the preparation of a paleontological resource impact mitigation program does not improperly defer mitigation, particularly when it appears that many of the issues to be covered are already known. This Response also fails to respond to the remainder of the comment re: salvage.
- Response to Comment 79 is unresponsive to the comment made that the EIR itself, not the commenter acknowledges the Project may create an oversupply of warehousing so that overriding considerations and project benefits may not exist.

- Response to Comment 81 fails to account for the fact that noise will result from both the loading areas and internal truck operation. While loading area noise may be greater, accumulation of noise from both activities may be greater still.
- Response to Comment 83 is unresponsive to the comment made which considered noise increases over existing ambient levels and not exceedences of the Municipal Code Maximum levels. Increases over ambient levels should be measured at the property line to accurately predict noise impacts.
- Response to Comment 84 again confuses the City's two noise criteria- whether the Project would exceed noise standards or whether the Project would result in a substantial increase in ambient noise over existing levels. It is clear the Project would significantly increase noise above existing levels. The same is true for response to comments 85 through 87.
- Response to Comment 86 fails to respond to the issue raised regarding exceedences of General Plan noise levels for residences.
- Response to Comments 88 and 89 are unresponsive to the comment made. It is clear Project construction will significantly increase ambient noise levels and exceed the residential noise levels set out in the General Plan and that the EIR relies entirely on compliance with construction hours to reduce these impacts. Mitigation is inadequate, and this impact should be deemed significant.
- Response to Comment 90 fails to resolve the issue raised that Mitigation Measure 4.9.6.1D provides that construction may occur outside construction hours with City approval. Project construction noise impacts are not shown to be mitigated below a level of significance. The mitigation suggested in comment 91 should be implemented as the measures are not found to be infeasible and are plainly needed.
- Response to Comment 100 ignores the majority of the comment regarding inadequacy of DIF or TUMF funding where roadways are not scheduled for improvements and improvements may not timely occur. I concur with the City of Riverside's comment with that compliance in the TUMF may provide inadequate mitigation where the TUMF is based on the General Plan, and the Project requires a General Plan Amendment. Similar issues will likely result with DIF as well.
- Response to Comment 101 also fails to resolve or respond to the issue raised as trip generation is not the only influence on traffic or the need of the roadway system and as there is no evidence the prioritization, programming, and allocation of funding will be sufficient to make needed roadway improvements.
- Response to Comment 107 is unresponsive to the comment made that the listed potentially feasible mitigation for the project's significant air quality impacts must be adopted.
- Response to Comment 109 states that new state energy standards *now in effect* require 20% savings above 2008 Title 24 standards. This "mitigation" in the EIR is thus not mitigation at all but a legal requirement.
- Response to Comment 110 is unresponsive to the comment made. CEQA requires that mitigation be certain, enforceable, and not vague. MM 4.13.6.1.C fails to meet this requirement where it merely requires implementation of some strategy, however ineffectual.
- Cumulative GHG effects are improperly considered in the EIR, as noted at comment 112.

- Trip generation rates used for the Project are understate the Project's trip rate and misstate the vehicle mix. SCAQMD recommends a trip rate of 2.57 trips/1,000 sf and, more importantly, 40% trucks.

Additional Comments:

Not all feasible mitigation has been required as set out in great detail by EIR commenters. Many mitigation measures are incorporated in language only with no requirement that they ever be implemented with Project construction or operation. Numerous commenters noted the inadequacy and ineffectiveness of mitigation for transportation, air quality, greenhouse gases, biological resources, etc. Moreover, no mitigation has been required for impacts to/from aesthetics or agricultural resources.

It is feasible to require the additional mitigation of this Project including, but not limited to, those measures recommended by commenters in the FEIR and the following:

1. The building and site plan designs shall demonstrate that the project's energy efficiencies represent a 25% reduction from current Title 24 energy efficiency standard. The Project shall be built in compliance with the building and site plans.
2. Require by contract provision that Project tenant/purchaser implement compressed workweek schedules.
3. Require that all heavy trucks accessing the Project site are Smartway 1.25 (or 1.0) or greater.
4. Alternatively to the above, require by contract provision that Project tenant/ purchaser achieve at least 20 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of consolidated trips carried by SmartWay carriers until it reaches a minimum of 90 percent of all long-haul trips carried by SmartWay 1.0 or greater carriers.
5. Require that all heavy trucks accessing the Project site conform to CARB 2010 air quality standards or better.
6. Install catalytic converters on all gasoline-powered equipment.
7. Include 10% electric powered and/or compressed natural gas fueled trucks and/or vehicles in fleets.
8. Require by contract provision that Project tenant/ purchaser establish a carpool/vanpool program.
9. Require by contract provision that Project tenant/purchaser charge parking fees for single-occupancy vehicles.
10. Provide preferential parking for EV and CNG vehicles across at minimum of 10% of auto parking spaces in locations nearest to the Project entrances.
11. Install EV charging stations, including at least one Quickcharge unit, on the Project site.
12. Require use of electrical equipment (instead of gasoline-powered equipment) for landscape maintenance.

13. Diesel or gasoline powered yard trucks, hostlers, yard goats, and forklifts shall be prohibited. Only electric yard trucks, hostlers, yard goats, and forklifts shall be used.
14. Each facility operator shall provide regular sweeping of onsite parking and drive areas using street sweepers that comply with applicable SCAQMD Rules.
15. Each facility operator shall maintain a log of all trucks entering the facility to ensure that, on average, the daily truck fleet meets applicable air quality emission standards. This log shall be available for inspection by City staff at any time.
16. Each facility operator shall prohibit all vehicles from idling in excess of three minutes in all onsite areas.
17. Each facility operator shall ensure that onsite staff in charge of keeping the daily log and monitoring for excess idling will be trained and certified in diesel health effects and technologies, such as by requiring attendance at CARB-approved courses.
18. Each facility operator which upon occupancy does not already operate 2077 and newer trucks shall in good faith be required to apply for funding to replace or retrofit their trucks such as Carl Moyer, VIP, Prop 1B or similar funds. Should funds be awarded, the tenant shall be required to accept and use them.

As an important note, merely incorporating any of these feasible mitigation measures within the requirement that "lease/purchase documents shall identify that tenants are encouraged to promote the following" or requiring only a writing or notation without requiring compliance therewith immediately renders them uncertain, unenforceable, and ineffective.

Thank you for your consideration of these additional comments.

Sincerely,



Raymond W. Johnson
JOHNSON & SEDLACK

From: Lynne Ashley [lashley@rsbcihi.org]

Sent: Monday, July 30, 2012 4:55 PM

To: Jeffrey Bradshaw

Subject: no on ProLogis

My comment is I am very much against the ProLogis project; as I am against any where houses on the East side of Moreno Valley. I know it won't make a difference, but it is a stupid idiotic idea.....and is just so sad for the homeowners in that area.

Thank you,

Lynne Ashley

Human Resources

Riverside-San Bernardino County

Indian Health, Inc.

11555 1/2 Potrero Road

Banning, Ca 92220

(951) 849-4761 Ext 1111

(951) 849-5631 Fax



Think before you print.

From: Leola9@aol.com
Sent: Friday, July 27, 2012 9:23 AM
To: Jeffrey Bradshaw
Subject: Warehouses in East Moreno Valley
Dear Sir:

I have lived in Moreno Valley for forty five years. I voted for incorporation under the threat of being annexed by Riverside. I have watched as our new city grew. The city is now blocked from expansion to the north by a natural boundary and residential occupancy. The cities of Riverside and Perris block expansion to the west and south. Now you want to limit future expansion by authorizing a warehouse project covering the entire eastern boundary of the city. This adventure dooms the city as a haven for transients and other undesirable elements of society not to mention the environmental impact. It will not encourage more lucrative development and investment by other ventures. I urge this project be abandoned. Much of our area is already devoted to warehouses which exist on all major streets both north/south and east/west. I do not believe any of the promises touted by council members or its developer who support the project.

Paul Haisty
28499 Forest Oaks Way
Moreno Valley, Ca. 92555
Phone 951 924 6037

From: Jeffrey Bradshaw
Sent: Wednesday, August 08, 2012 10:55 AM
To: 'Lynne Ashley'
Subject: RE: no on ProLogis
Dear Ms. Ashley

I received your email comments, which appear to be intended for the Planning Commission and/or City Council who will be responsible for making a decision to approve or deny the project. I will save your comments and make them available to the decision makers when this project is scheduled for a public hearing.

Sincerely,

Jeff Bradshaw
Associate Planner
City of Moreno Valley
Community & Economic Development Department
Planning Division
14177 Frederick Street
P.O. Box 88005
Moreno Valley, CA 92552
Tel: 951.413.3224
Fax: 951.413.3210
Email: jeffreyb@moval.org
www.moval.org

From: Lynne Ashley [mailto:lashley@rsbcihi.org]
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(951) 849-4761 Ext 1111
(951) 849-5631 Fax



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Sent: Wednesday, August 08, 2012 10:56 AM
To: 'Leola9@aol.com'
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Paul Haisty
28499 Forest Oaks Way
Moreno Valley, Ca. 92555
Phone 951 924 6037

Jeffrey Bradshaw

From: Peggy Hadaway <phadaway@roadrunner.com>
Sent: Wednesday, March 05, 2014 2:02 PM
To: Jeffrey Bradshaw
Subject: FW: Prologis Project and other warehouse/logistics projects

From: Peggy Hadaway [<mailto:phadaway@roadrunner.com>]
Sent: Wednesday, March 5, 2014 11:43 AM
To: 'jefferyb@moval.org'
Subject: Prologis Project and other warehouse/logistics projects

Dear Mr. Bradshaw,

I understand the Moreno Valley city planners intend to present their recommendation on the Prologis Project on 13 March 2014. I am unable to attend meetings to voice my position on Prologis. I want to take this opportunity in email form to do just that.

We have a perfectly good general plan that has let everyone know the zoning permitted in all areas of Moreno Valley. Based on the general plan many people have made decisions on when and where to make purchases of various types of parcels of land, etc. Just because the city council allowed Sketchers to be built should in no way mean other warehouses should be allowed to be built on the east side of Moreno Valley and especially if any such project would require any zoning changes from the general plan. I realize the city council can ignore the city planners, as they did with the Sketchers project if I recall that situation correctly.

I am adamantly opposed to building more of the behemoth warehouse/logistics building in Moreno Valley. We already have too many which are negatively impacting the environment. More to the point, the current members of logistics organizations advocate only building warehouses/logistic centers where rail lines can be used (as opposed to using trucks on streets and highways) to transport products to and from these warehouses. The reason is that the "logistics" industry is concerned about the very negative responses to the "older style" warehouse/logistics centers built to use the surface streets and highways from the general public and especially from people who live close to these centers who directly and personally experience the very real downside to these centers. In the case of Sketchers the possible number of new jobs for Moreno Valley people there just did NOT materialize, nor will it with any of the highly mechanized warehouse/logistics centers.

I would expect Prologis to be another highly mechanized center. I urge you to recommend NOT approving the Prologis Project as well as any other such logistics center on the east side of Moreno Valley as clearly there is no rail service there to be used. The current city council has a couple of members who may very well be removed when the voters have a chance to legally register their opinions very soon. One member was placed there in illegal contravention of the Brown Act according to my reading of that law. If nothing else this decision should be delayed until the membership of the city council is decided, because this is a very important decision that will affect this city for many years to come. Moreno Valley already has a very poor reputation as a city. I would hate to see our reputation further tarnished by expediting the Prologis Project under these adverse circumstances.

Sincerely,
Peggy Hadaway and John Neal
12255 Cocopah Court
Moreno Valley, CA 92557

30 July 2012

TO: Jeff Bradshaw : Associate City Planner
FROM: Ruben Penururi
SUBJECT: Prologis Eucalyptus Industrial Park Project

IT APPEARS TO ME THAT THERE MAY BE SOME MIS-INFORMATION BEING STATED REGARDING THE PROLOGIS WAREHOUSE PROJECT.

IN THE PRESS ENTERPRISE (FRIDAY JULY 27, 2012) PAGE A-B "OFFICIALS SEEK COMMENT ON WAREHOUSES"

PROLOGIS OFFICIALS ESTIMATED THAT WHEN THIS PROJECT WAS PROPOSED, IT WOULD COST AS MUCH AS \$150 MILLION TO DEVELOPE, & WOULD CREATE BETWEEN 1,000 TO 1,500 JOBS.

NO ONE FROM THE CORPORATION COULD BE REACHED ON THURSDAY JULY 26, 2012 TO OFFER A COST OR JOBS UPDATE OR COMMENT ON THE PROJECT.

FRONT PAGE OF THE BUSINESS SECTION OF THE PRESS ENTERPRISE (FRIDAY JULY 27, 2012) "NATION"

PROLOGIS PREDICTS SELL OFF IN WAREHOUSE HOLDINGS.

PROLOGIS MAY SELL ABOUT \$800 MILLION OF U.S. PROPERTIES BY THE END OF 2012 AMID GROWING INVESTOR DEMAND FOR INDUSTRIAL BUILDINGS, CO-CHIEF EXECUTIVE OFFICER HAMID MOGHADAM SAID.

"IT'S MORE OF A SELLERS MARKET THAN A BUYER'S MARKET IN THE U.S."

MOGHADAM SAID WEDNESDAY

"WE'RE JUST PUSHING THE TIME TABLE"

RECEIVED

AUG - 1 2012

30 July 2012

CITY OF MORENO VALLEY
Planning Division

IT'S my opinion THAT Prologis Warehouse Corporation is looking to make A FAST BUCK AT THE EXPENSE OF THE CITIZENS OF MORENO VALLEY.

Skechers warehouse project was to produce 1000 new jobs AS stated by Moreno Valley officials. IT only employs roughly 600, & most of these employees came from the five smaller Skechers warehouses in Ontario, consolidating them in Moreno Valley.

THE CURRENT Freeway System IS Very congested, due to the wall to wall homes that developers were allow to construct now you want to increase the volume of traffic with large truck.

PLEASE remember that you are ALL Public Service employees working on behalf of the citizens of Moreno Valley


Rubin Penunuri

I AM NOT IN FAVOR OF THIS PROJECT

Mr. Jeff Bradshaw
Moreno Valley Planning Division
14177 Frederick St.
Moreno Valley, Ca. 92553

08/05/2012

RECEIVED

AUG - 7 2012

CITY OF MORENO VALLEY
Planning Division

Dear Mr. Bradshaw

I am writing you concerning the various warehouse projects proposed for Moreno Valley. More to the point. I am writing to point out what I feel are errors made by the cities so called experts. I am neither for or against the projects. Build them or don't build. I don't care. What I don't like is to hear so called facts that I don't feel are accurate. I have enclosed a 2010 article about the Fontana logistics warehouses for you to read. It has a union slant to it but the facts on how the logistics warehouses are run is accurate. Only when the city has all the facts, pro & con, can it decide what is best for Moreno Valley.

Some time back my wife & I watched the city counsel meeting on TV. I didn't write down the names & dates but it was one of the meetings on the proposed Highland Fairview World Logistics Center. The first "expert" said the average logistics job pays around \$42,000.00 per year. This maybe true for the few people employed by the logistics company but not the majority of the workers, who in fact are low paid temps. As a rule logistics companies do not provide good blue collar jobs. Their whole reason for being is to drive down costs. Labor costs.

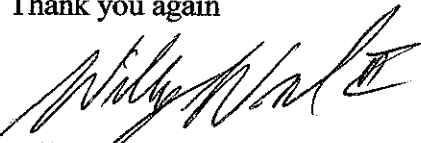
The second expert is the one I really take issue with. He is the professor from the University Of Redlands. Now let me say my step daughter just graduated from the University Of Redlands so I have great respect for the University. I do not feel the "expert" professor knows what he is talking about when he talks about Moreno Valley being the ideal location and how this ideal location will reduce truck traffic in the So. Cal. Area. Ontario and Fontana are ideal locations because of all the freeway access that surround those cities. From a truckers view point Moreno Valley is a bad location. One way in & one way out. The 60/215 freeway. He states in his presentation that trucks will come from the east to Moreno Valley to pickup loads and then return east never having to go into the So. Cal. area. This maybe true in a few cases but not in the majority. The reason is this. Most trucks come here loaded. Those loads will deliver in the So. Cal area. Not many loads deliver in the Banning area. So when these trucks are empty they will have to come up the 60/215 freeway to get to Moreno Valley. Pulling that hill, with all the other trucks, is not fun. Leaving heading east thru the hills in the bad lands is not fun. Traffic will be a mess on the 60/215 freeway for a number of other reasons. One, most trucks coming to any logistics warehouse come from the ports. Two, other trucks from UPS, Fedex, YRC, JB Hunt, Swift, ABF, Conway, Schneider, Knight, England and others that all have yards in the Inland basin will all be coming & leaving via the 60/215 freeway. The more warehouses you build in Moreno Valley the more truck traffic you will have on the 60/215 freeway. Not less as the "experts" would like you to believe. One way in and one way out. When a ship hits the port some large logistics warehouses can get 20, 30 or more containers a day and take back as many empty

containers to the ports. Once in the warehouse the goods must be sorted to fill orders & shipped out. Those trucks coming to pick up those orders will come from the Inland basin area to the west not from the east. And most like UPS & Fedex will return to their yards in the Inland area basin.

After you review all this information if you agree with what I have said and still plan to build all there warehouses I have one suggestion. One most truck drivers will hate me for but one I feel needs to be done. This suggestion will involve contacting CalTrans and dealing with them will be harder then dealing with the people of Moreno Valley. What I suggest is a restricted truck lane coming up (east) the 60/215 freeway. Cal Trans built the truck bypass at the top of the hill. At the 60/215 split. But they did not restrict the trucks to the right lane to force them to use the truck by pass. A "trucks must stay in the right lane. No passing" lane restriction would go a long way to helping traffic in the long run. This restriction should run from the MLK off ramp up to the truck bypass. Right now a truck going 45 mph up the hill can pass a slower truck even if he later moves back over to use the truck bypass. The more trucks you have the more this will cause traffic problems. Heck, right now the old 60 east sign at the top of the hill still has a "trucks ok lane" on it. Which can be confusing. That needs to be removed as well as adding the lane restriction. Any cost for signs, painting, and any lane realignment should be picked and paid for by the different warehouse projects under consideration now and in the future. The same idea of a lane restriction can be used leaving Moreno Valley going down the hill with a speed restriction. But without a truck bypass for trucks merging from the 215 north to the 60 west this probably would not work.

Thank you for your time. I have lived in Moreno Valley for 26 years. I have been driving a truck for a living for 36 years. I have driven long haul & local. I have been a member of the Teamsters Union for 27 years. I work for YRC Freight and have been with them for 20 years. So I would like to think I know a little about the transportation industry. At least from the end where the truck meets the dock.

Thank you again



Willy Wohlford
25554 Ericson Dr.
Moreno Valley, Ca. 92553
(951) 660-2764 cell (951) 924-4772 home

cc: Highland Fairview
cc: Lora Hines, The Press Enterprise

Meetcha Dating with a twist.

Holding WAL-MART ACCOUNTABLE

HAROLD MEYERSON | September 6, 2010

Nobody, it seems, is responsible for the conditions of work in the warehouses of Fontana -- even though warehouse work is mainly what Fontana has to offer. The Los Angeles exurb is part of California's Inland Empire, which boasts the world's largest concentration of warehouses, to which thousands of trucks make a daily 70-mile trek from the ports of Long Beach and Los Angeles, carrying Asian-made goods for market. Thousands more trucks depart daily from Fontana, carrying those goods, re-sorted and repackaged, to Wal-Marts, Targets, Loews, and Home Depots up to a thousand miles away. Close to 90,000 people work in those warehouses. But no one is responsible for the conditions of their work.

Homero Lovato loaded trucks for several years in one of the many warehouses containing goods bound for Wal-Mart's shelves. With one other worker, he loaded three or four truckloads a day, making \$42.50 per truckload. Even before unemployment began to skyrocket, he says, the terms of work were hard and degrading: "If people get sick, they have to stay on the job. If people have to go to the bathroom, they have to wait until the break." It was, he says, a rush job, with workers frequently falling behind the loading schedules and then racing to finish their tasks.

Workers in other Fontana warehouses tell similar stories. Blanca Cortes, who worked in quality control at a warehouse for UPS Mail Innovations, a nonunion subsidiary of United Parcel Service, once fainted on the job when she was six months pregnant. The warehouse wasn't air-conditioned even though temperatures in Fontana frequently exceed 100 degrees. "There were about 10 faintings that year," she recalls. "They wouldn't even buy a fan." Olga Romero, who worked in a warehouse that shipped shoes to Wal-Mart, also remembers the heat -- and the cold. "It would be over 100 in the summer and in the 40s in the winter," she says. "Something's wrong when you have to work with a couple of jackets."

Fontana's warehouse workers never made a decent wage, even when the economy was robust. Cortes made \$9.50 an hour with no benefits, until she was replaced last year by a new hire who was paid \$7 an hour. In their 2008 book, *Getting The Goods: Ports, Labor and the Logistics Revolution*, Edna Bonacich and Jake B. Wilson report that direct hires at Fontana's Target warehouses started at \$12.80 an hour and could work their way up to \$17, while temps started at \$8.50 and maxed out at \$12. (Of course, these figures date from the bubble years. Today, unemployment in the Fontana area is close to 15 percent.) And by one estimate, 53,000 of the 90,000 Fontana warehouse workers -- even though they may hold down the same job year after year -- are temps.

When you drive through Fontana on Interstates 10 or 15, it doesn't seem hard to tell whose warehouse is whose. One warehouse has hundreds of Wal-Mart trucks lined up at its bays; another, hundreds of Home Depot trucks. But, as far as Wal-Mart, Home Depot, and the law are concerned, these are not the companies' warehouses.

The warehouses, in fact, are part of an elaborate system enabling Wal-Mart and its competitors to keep their prices low and their revenues high by depressing wages and labor costs all along their supply chains -- and to protect outfits like Wal-Mart from responsibility for working conditions. The giant retailers that have come to dominate much of the American economy don't own many of the hundreds of warehouses in Fontana or anyplace else.

In Fontana, the warehouses are owned by local commercial realtors and operated by logistics companies. But the logistics companies don't formally employ a majority of the warehouse workers, either. Rather, the workers are employed by some of the region's 270 temp agencies. The way a famously demanding employer like Wal-Mart ensures that the warehouses are running as it sees fit is to contract with a few large logistics companies (Wal-Mart likes Exel, a British firm), which in turn contract with a few large temp agencies (Exel likes Staffmark).

Thus are the goods moved with dispatch, while workers receive low pay, no benefits, can't readily join a union, and can be let go at a moment's notice. There is a situation that the workers themselves -- almost entirely Hispanic, largely immigrant, and between a quarter to 40 percent of them, in the assessment of one union organizer, undocumented -- cannot easily remedy. And there is a

situation for which their real employers -- the Targets, the Sears, and above all the Wal-Marts -- can and do deny all responsibility.

The warehouse workers of Fontana constitute a key link in both the global supply chain and the American political economy. For the American labor movement to experience a rebirth and American workers to enjoy a rising share of the nation's wealth, it's imperative that unions make gains among America's new working class and its dominant and standard-setting employer: Wal-Mart. And the road to a unionized Wal-Mart runs straight through Fontana: Shut down the temp warehouses, and Wal-Mart's shelves will soon be bare.

Last year, the Change to Win labor federation waged an ambitious campaign to organize Fontana's warehouse workers, a campaign it then wound down after local unemployment soared and Congress failed to pass the Employee Free Choice Act. But Change to Win has not given up on Fontana, much less Wal-Mart, and is looking at ways that the government can help the warehouse workers ease their plight.

It's not an easy task. By the standard of common sense, the tens of thousands of full-time warehouse workers who are employed by temp agencies are misclassified. Clarissa Lua, who worked alongside Blanca Cortes at UPS Mail Innovations, went through 10 staffing agencies in the five years she worked there. Or rather, the agencies went through her, since UPS, not she, switched her agencies. At each agency the job was always the same: "Sometimes we didn't even know which agency we worked for," she said.

Like millions of American workers, Lua was a perma-temp, trapped in a work arrangement common not only to bottom-feeders like Wal-Mart but to such presumably high-end employers as Microsoft. So while unionists and other worker advocates are asking President Barack Obama's Department of Labor and Middle Class Task Force to remedy misclassification violations at major employers, it's tricky to apply that remedy to warehouse workers unless they can be shown to be permanent workers misclassified as temps. Neither can the government deny contracts to the middlemen -- the logistics firms or employment agencies -- for these companies don't have government contracts.

Instead, the unions are asking the government for two things: First, to enforce the Fair Labor Standards Act (FLSA) rigorously inside the warehouses, tallying and fining them for violations of minimum-wage and maximum-hours laws. And second, to hold accountable not the temp agencies or the logistics companies or the local real-estate companies but, rather, the big-box retailers -- the companies that structured and benefit from this byzantine system.

"At the very least," one union official says, the Department of Labor can "enforce the FLSA on warehouse workers not being paid for overtime. The temp agencies can fudge on this by not listing hours-worked on their paychecks." In fact, at the direction of Labor Secretary Hilda Solis, the department hired 250 new wage and hour investigators last year, an increase that brings the Wage and Hour Division, after years of neglect, close to its all-time high.

"The department is willing to spend more on enforcement: It's asking for \$25 million more in the president's 2011 budget," another union official says. "The question is where they'll focus their resources. They haven't yet said they're going after the biggest offenders. They need to go after Wal-Mart and FedEx, not some bodega owners."

There's a precedent for targeting the retailers who design and control the supply chains. In 1996, at the direction of Labor Secretary Robert Reich (yes, *our* Robert Reich), the Wage and Hour Division began a "No Sweat" campaign, which held retailers responsible for the sweatshop wages and conditions its inspectors had found in the small garment factories (chiefly in Los Angeles) that turn out their products. When the contractors and subcontractors who employed the seamstresses were unable to come up with money for the back-pay settlements that the division had ordered them to make, the Labor Department held the retailers -- in this case, Macy's -- liable for the payments. To persuade Macy's to settle with the workers, Reich threatened to seize the Macy's-bound garments they had sewn, under the "hot goods" provision of the FLSA that permits the department to take goods produced under conditions prohibited by the act. Macy's settled, and, with Target, then signed an agreement taking responsibility to see that the working conditions all along their supply chains conformed to the FLSA's standards.

"Invoking 'hot goods' is the nuclear option," one union staffer says. "But we want Labor to be open to using it. We want them to go after the top of the food chain."

Going after the top of the chain to improve working conditions should fit comfortably within President Obama's stated economic goals, paramount among which is reversing the long-term decline of jobs and worker compensation in America. An administration trying to bolster green jobs and green manufacturing cannot remain indifferent to jobs in the service and retail sectors, which employ far more people than manufacturing and construction combined.

Raising the Wal-Mart wage -- and the Wal-Mart wage is paid not just to the company's direct employees but to many of its competitors' employees and, in one form or another, to all those who work along its, and its competitors', supply chains -- is a key step in re-creating the broadly shared prosperity America once enjoyed. To that end, the president supported the Employee Free Choice Act. To that end -- all the more because EFCA failed to become a law -- he should support enforcement actions that compel Wal-Mart to become a more responsible employer.

Wal-Mart is not the only company at the top of its respective food chain, of course. Another is FedEx, which as a point of both law and common sense looks to be misclassifying its 30,000 "ground drivers," who pick up and deliver packages that are not shipped by air, as independent contractors, not eligible for benefits, though their routes, hours, pay, and vacations are all determined by FedEx. The Teamsters union, which represents truck drivers at rival UPS, was stymied by the hostility of the George W. Bush administration (FedEx CEO Fred Smith is a Republican mega-donor). So the Teamsters over the past decade succeeded in getting roughly 30 state attorneys general to investigate FedEx's misclassification of drivers.

With a number of those attorneys general closing in, FedEx has shifted its employment model in several states -- not to one in which it finally assumes responsibility for its workers, however, but to a system of "super contractors" who purchase multiple routes and then hire drivers who travel them -- all under FedEx's careful, if unacknowledged, supervision. Organized labor wants the administration to build on the work of the state attorneys general, to determine on its own that FedEx is misclassifying 30,000 employees, and then to declare that violations of labor law -- such as misclassification -- constitute grounds to reduce or terminate its business with companies guilty of such practices. (See "A Long Haul" by David Bensman and Molly Greenberg, Page A9.)

In taking on the Wal-Marts and FedExes, of course, the administration would be challenging some of the most powerful institutions in the land. Then again, in the America that Obama has pledged to rebuild, someone should always be responsible for the conditions of work.

.....

Harold Meyerson is the editor-at-large at *The American Prospect* and a columnist for *The Washington Post*. [Click here](#) to read more about him.



7/27/12

Officials seek comments on warehouses

Comments are being accepted on a proposal for massive project in Moreno Valley

BY LORA HINES
STAFF WRITER
lhines@pe.com

Public comments are being accepted on a draft environmental impact report for proposed 2.2 million square-foot warehouse project in Moreno Valley that officials began discussing about five years ago.

City planning officials recently released the report for the proposed ProLogis Eucalyptus Industrial Park Project, which would consist of six warehouses south of Highway 60 and east of the Moreno Valley Auto Mall. Residents, state and local agencies and community and environmental groups have until Sept. 4 to submit comments on the report.

ProLogis, a San Francisco-based international warehouse developer, bought more than 125 acres in the 3000 block of Eucalyptus Avenue more than five years ago. Almost all of it will be used for the project, which will require amendments to the city's general plan and zoning requirements.

WAREHOUSE

CONTINUED FROM A8

agencies, residents and environmental groups about concerns with the proposed project, including increased traffic, pollution and its proximity to schools.

The report states the project could affect areas such as air and water quality, animal habitat, Native American prehistoric sites, drainage and traffic.

Resident Marti Orth was among those who submitted comment about the proposed project in 2008. She said she is as opposed to it now as she was then, but she believes her opinion will have little effect on the City Council, which will decide whether to approve the project later this year.

"I think it's a forgone conclusion," said Orth, a resident of more than 40 years. "First, decisions are made. Then they ask for opinions."

On Wednesday, July 25, city manager Henry Garcia told hundreds of Inland area officials and business owners that warehouse development and health care will be Moreno Valley's job growth focus areas because they have the most potential to employ the city's primarily blue-collar workforce.

Orth said residents have little reason to believe that the proposed project will bring as many jobs as officials claimed because the Skechers warehouse didn't.

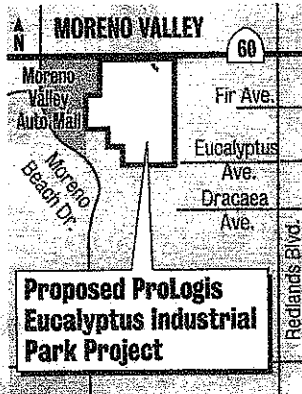
"I don't know why (ProLogis) would be any better," she said.

Skechers had employed about 1,000 people in five smaller warehouses in Ontario before consolidating and moving to Moreno Valley. Moreno Valley officials and project supporters

promised that Skechers warehouse would bring more than 1,000 jobs. It employs about 600 people.

City officials have said they expect the number of employees to increase as the economy improves.

Comments about the ProLogis project are to be sent to associate city planner Je Bradshaw, Moreno Valley Planning Division, 141 Frederick St., Moreno Valley 92553 or send e-mail to je.freyb@moval.org.



STAFF ARTIST

proposed, ProLogis officials estimated the project could cost as much as \$150 million to develop and would create between 1,000 and 1,500 jobs. No one from the corporation could be reached Thursday, July 26, to offer a cost or job update or comment on the project.

According to the draft environmental impact report, the poor economy in 2008 stalled the project. ProLogis recently decided to pursue the process, the report states.

City planning official John Terrell said there is nothing unusual about the project or its potential impacts that have delayed it.

In March 2008, city planning officials received 25 responses from state and local

SEE WAREHOUSE/AT

**World Logistics Center Project
Draft Environmental Impact Report**

4.12 NOISE

This section of the EIR is intended to satisfy the City's requirements for a project-specific noise impact analysis by examining the short-term and long-term noise impacts of the proposed project on sensitive uses adjacent to the proposed project area and by evaluating the effectiveness of mitigation measures. This includes the potential for the proposed project to result in impacts associated with a substantial temporary and/or permanent increase in ambient noise levels in the vicinity of the project area; exposure of people to excessive noise levels, groundborne vibration, or groundborne noise levels.

CEQA requires an analysis of the proposed project's impacts on the existing environment; not an analysis on the existing environment's impacts on the proposed project. The occasional blow downs that occur at the Southern California Gas Company (SCGC) are part of the existing conditions and have been part of the existing conditions for years. Thus, for purposes of clarity, it should be noted that the impact analysis below goes beyond the requirements of CEQA and provided as part of an analysis to ensure worker safety. All mitigation measures imposed in this analysis are the responsibility of future developers and not SCGC.

For the reader's reference, this EIR and each of the technical reports and analyses contained herein have been written to address a series of planning entitlements, which affect several separate, adjacent and related properties. The overall project site covers 3,918 acres in the Rancho Belago area of the City of Moreno Valley. It includes 3,814 acres of land, which is the subject of various entitlements, plus 104 acres of land affected by off-site improvements needed to support the proposed development. The proposed entitlements are summarized below.

A General Plan Amendment is proposed covering 3,814 acres, which redesignates approximately 71 percent of the area (2,710 acres) for logistics warehousing and the remaining 29 percent (1,104 acres) for permanent open space and public facilities. The following elements of the General Plan are included in the proposed Amendment: Community Development (land use); Circulation; Parks, Recreation, and Open Space; Safety; Conservation; and the General Plan Goals and Objectives.

A new Specific Plan will be adopted to govern development of the World Logistics Center for the 2,710 acres. A separate zoning amendment will also be processed and adopted to rezone 1,104 acres for open space and public facilities uses and to incorporate the Specific Plan into the City's Zoning Map.

In addition to the General Plan Amendment, Specific Plan, and Zone Change, the project includes a Tentative Parcel Map covering 1,539 acres (property owned by the project applicant, Highland Fairview) within the project site. This subdivision map is for financing purposes only and will not confer any development rights to the property owner.

The project includes pre-annexation zoning for an 85-acre parcel of land within the project area.

Finally, a Development Agreement between the City and Highland Fairview (the project applicant) is included as one of the project entitlements. The details of all the project entitlements are included in Section 3.4 of the EIR, *Project Characteristics*. The environmental impacts of all of these entitlements on the entire project area are addressed in this EIR and the accompanying technical reports and analyses.

The analysis contained in this section is based on the following technical study prepared for the proposed project:

- *Noise Assessment for the World Logistic Center Specific Plan*, Mestre Greve Associates, January 24, 2013 (Appendix K of this EIR); and

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In addition to these project-specific technical studies, the analysis contained in this section is also based on the following reference documents:

- *California Noise Insulation Standards*, California Code of Regulations, Title 24, Part 2, §3501;
- *Highway Traffic Noise Prediction Model (FHWA-RD-77-108)*, Federal Highway Administration (FHWA);
- *City of Moreno Valley General Plan*, City of Moreno Valley, July 2006;
- *Moreno Valley Municipal Code*, City of Moreno Valley, current through Ordinance 836 and the February 2012 code supplement; and
- *State of California General Plan Guidelines*, Governor's Office of Planning and Research, October 2003, pages 249 and 250.

4.12.1 Existing Setting

4.12.1.1 Background

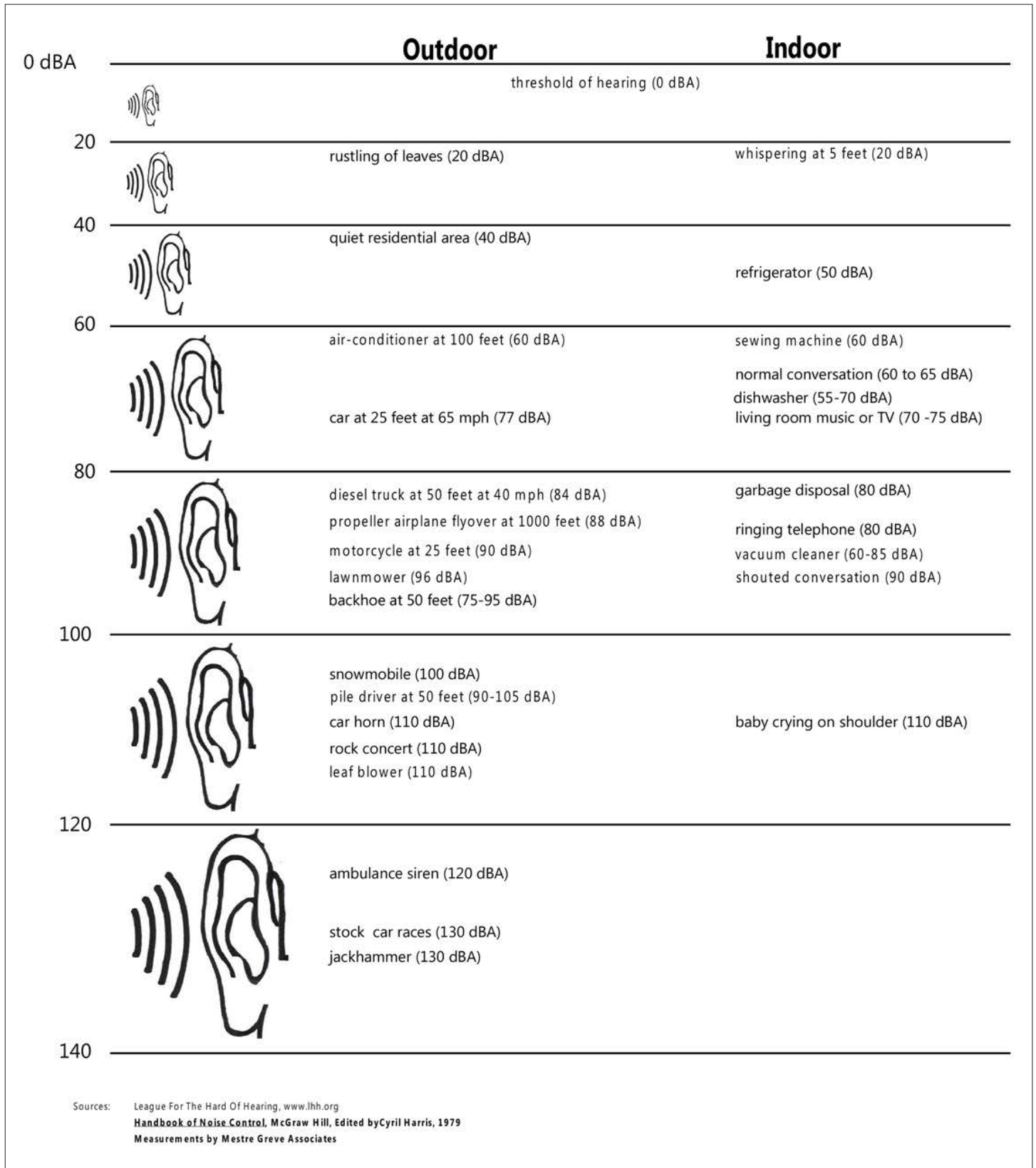
Characteristics of Noise. To the human ear, sound is technically described in terms of its loudness (amplitude) and pitch (frequency). Pitch is generally an annoyance, while loudness can affect our ability to hear. Noise is usually defined as unwanted sound; it consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, and sleep.

Measurement of Noise. The standard unit of measurement of the loudness of sound is the decibel (dB). Decibels are based on a logarithmic scale. The logarithmic scale compresses the wide range in sound levels resulting in a more usable range of sound level values, similar to the Richter scale used to measure earthquakes. To humans, a sound 10 dB higher than another is considered to be twice as loud; a sound 20 dB higher than another is considered four times as loud; etc. Typical daily sounds in the environmental range from 30 dB (very quiet) to 100 dB (very loud).

Since the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted decibel (dBA) scale performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear. Community noise levels are measured in terms of the dBA. Figure 4.12.1 shows examples of various noises sources and their typical dBA noise level.

There are two categories of noise that are measured to characterize noise conditions: single event noise and community, or cumulative, noise. Single event measurements describe the noise levels from an individual event such as a passing airplane or a heavy-duty truck. Cumulative measurements average the total noise in a community over a specific time period, which is typically 1 or 24-hours. The noise impact analysis performed for this EIR is based on assessment of both single event noise and community or cumulative, noise.

Several rating scales have been developed for measurement of community noise. These account for: (1) the parameters of noise that have been shown to contribute to the effects of noise on humans; (2) the variety of noises found in the environment; (3) the variations in noise levels that occur as a person moves through the environment; and (4) the variations associated with the time of day. They are designed to account for the known health effects of noise on people described previously. Based on these effects, the observation has been made that the potential for a noise to affect people is



LSA

FIGURE 4.12.1

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 Typical A-Weighted Noise Levels

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dependent on the total acoustical energy content of the noise. A number of noise scales have been developed to account for this observation. Two of the predominant noise scales are the Equivalent Noise Level (L_{eq}) and the Community Noise Equivalent Level (CNEL). L_{eq} is the sound level corresponding to a steady-state sound level containing the same total energy as a time-varying signal over a given sample period. L_{eq} is the “energy” average noise level during the time period of the sample. L_{eq} can be measured for any time period, but is typically measured for 1 hour. This 1-hour noise level can also be referred to as the Hourly Noise Level (HNL). It is the energy sum of all the events and background noise levels that occur during that time period.

CNEL is the predominant rating scale now in use in California for land use noise compatibility assessment. The CNEL scale represents a time weighted 24-hour average noise level based on the dBA. Time weighted refers to the inclusion of penalties for noise that occurs during certain noise-sensitive time periods. The evening time period (7 p.m. to 10 p.m.) penalizes noises by 5 dBA, while nighttime (10 p.m. to 7 a.m.) noises are penalized by 10 dBA, reflecting people’s increased sensitivity to noise during these time periods. A CNEL noise level may be reported as a CNEL of 60 dBA, 60 dBA CNEL, or simply 60 CNEL.

$L(\%)$ is a statistical method of describing noise which accounts for variance in noise levels throughout a given measurement period. $L(\%)$ is a way of expressing the noise level exceeded for a percentage of time in a given measurement period. For example, since 5 minutes is 25 percent of 20 minutes, $L(25)$ is the noise level that is equal to or exceeded for five minutes in a twenty-minute measurement period. It is $L(\%)$ that is used for most Noise Ordinance standards. For example most daytime County, State and City noise ordinances use a standard of 55 dBA for 30 minutes per hour, or an $L(50)$ level of 55 dBA. In other words, the noise ordinance may state that no noise level should exceed 55 dBA for more than fifty percent of a given period.

The maximum noise level (L_{max}) is the highest exponential time averaged sound level that occurs during a stated time period. The noise levels discussed in this analysis for short-term noise impacts are specified in terms of maximum levels denoted by L_{max} , which reflects peak noise conditions and addresses the annoying aspects of intermittent noise. It is often used together with another noise scale, or noise standards in terms of percentile noise levels, in noise ordinances for enforcement purposes. For example, the L_{10} noise level represents the noise level exceeded 10 percent of the time during a stated period. The L_{50} noise level represents the median noise level. Half the time the noise level exceeds this level, and half the time it is less than this level. The L_{90} noise level represents the noise level exceeded 90 percent of the time and is considered the background noise level during a monitoring period. For a relatively constant noise source, the L_{eq} and L_{50} are approximately the same.

Fundamentals of Groundborne Vibration. Vibration refers to groundborne noise and perceptible motion of the earth. Similar to noise, vibration is transmitted in noise-like waves through the earth and solid objects.

There are several ways to categorize vibration sources. One way is to divide vibration into natural sources (e.g., earthquakes, volcanic eruptions, sea waves, and landslides) and human sources (e.g., explosions, machinery, traffic, trains, and construction equipment). Similar to noise sources, vibration sources can also be described as continuous (e.g., operating factory machinery) or transient (e.g., explosions).

As with noise, ground vibrations can be described by amplitude and frequency. Vibration amplitude is characterized by its displacement, velocity, and acceleration. Displacement is the distance that soil particles travel from their original location as a result of vibration, as measured in inches or millimeters. Velocity is the speed of the soil particles measured in inches per second or millimeters per second. Acceleration is the acceleration of the soil particles measured in inches per second per second or millimeters per second per second. Particle velocity is the most commonly used vibration

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attribute used to describe vibration. Table 4.12.A presents the human reaction to various levels of peak particle velocity. Vibrations also vary in frequency. Traffic vibrations generally range in frequencies from 10 to 30 hertz (Hz), and tend to average around 15 Hz. As a point of reference, city buses often generate frequencies around 3 Hz at high vehicle speeds, due to their suspension systems.

Table 4.12.A: Human Reaction to Typical Vibration Levels

Vibration Level Peak Particle Velocity (inches/second)	Human Reaction
0.0059–0.0188	Threshold of perception, possibility of intrusion.
0.0787	Vibrations readily perceptible.
0.0984	Level at which continuous vibrations begin to annoy people.
0.1968	Vibrations annoying to people in buildings.
0.3937–0.5905	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges.

Source: Caltrans 1992.

Groundborne vibration is almost exclusively a concern inside buildings and is rarely perceived as a problem outdoors, where the motion may be discernable. However, without the effects associated with the shaking of a building, there is less adverse reaction. Building vibration may be perceived by the occupants as motion of building surfaces, rattling of items on shelves or hanging on walls, or as a low-frequency rumbling noise. Building damage is not a factor for normal projects, with the occasional exception of blasting and pile driving during construction or mining. Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by up to 10 decibels. This is an order of magnitude below the damage threshold for normal buildings.

Typical sources of groundborne vibration are construction activities (e.g., blasting, pile driving, and operating heavy-duty earthmoving equipment), steel-wheeled trains, and occasional traffic on rough roads. Problems with groundborne vibration and noise from these sources are usually localized to within about 100 feet of the vibration source, although there are examples of groundborne vibration causing interference out to distances greater than 200 feet, as described in the FTA Transit Noise and Vibration Impact Assessment (FTA, May 2006). When roadways are smooth, vibration from traffic, even heavy trucks, is rarely perceptible.

Factors that influence groundborne vibration and noise include the following:

- *Vibration Source:* Vehicle suspension, wheel types and condition, track/roadway surface, track support system, speed, transit structure, and depth of vibration source.
- *Vibration Path:* Soil type, rock layers, soil layering, depth to water table, and frost depth.
- *Vibration Receiver:* Foundation type, building construction, and acoustical absorption.

Among the factors listed above, there are significant differences in the vibration characteristics when the source is underground versus at ground surface. In addition, soil conditions are known to have a strong influence on the levels of groundborne vibration. Among the most important factors are the stiffness and internal damping of the soil and the depth to bedrock. Vibration propagation is more efficient in stiff clay soils than in loose sandy soils, and shallow rock seems to concentrate the vibration energy close to the surface and can result in groundborne vibration problems at a great distance from the track. Factors such as layering of the soil and depth to water table can have significant effects on the propagation of groundborne vibration. Soft, loose, sandy soils tend to attenuate more vibration energy than hard, rocky materials. Vibration propagation through groundwater is more efficient than through sandy soils.

4.12.1.2 Sensitive Land Uses in the Project Vicinity

Certain land uses are considered more sensitive to noise than others. Examples include residential areas, educational facilities, hospitals, childcare facilities, and senior housing. The project vicinity and Specific Plan area are characterized by a mix of developed and undeveloped properties. Developed properties in the vicinity include an industrial/warehouse building in Moreno Valley to the northwest (Skechers) and several residential neighborhoods along Redlands Boulevard along the western boundary of the project site. An area of the City known as “Old Moreno” is situated near the southwest portion of the project site, around the intersection of Redlands and Alessandro Boulevards. The homes along Merwin Street, east of Redlands Boulevard, constitute the closest sensitive receptors to the project site (i.e., they are adjacent to the property).

4.12.1.3 Existing Noise Measurements

Existing noise levels in the vicinity of the proposed project are used establish baseline noise levels in key areas. Noise measurements within the project site and in the surrounding area were taken. The noise measurement locations were selected to provide coverage of the project’s potential noise impact area. The noise measurement locations are shown Figure 4.12.2.

Noise measurements were taken at sixteen sites in the project vicinity during the daytime hours (between 7 a.m. and 10 p.m.) and during nighttime hours (between 10 p.m. and 7 a.m.). For each measurement site and time period, noise levels were measured for 15 minutes and calibrated to ensure that the measured sound level readings were accurate. The measurements were used to calculate existing L_{eq} , L_{min} , L_{max} , $L_{1.7}$, $L_{8.3}$, L_{25} and L_{50} values for the measurement locations. Table 4.12.B shows the results for the daytime measurements, and Table 4.12.C shows the nighttime measurements.

Table 4.12.B: Existing Daytime Noise Measurements (dBA)

Site	Date	Start Time	L_{eq}	L_{max}	$L_{1.7}$	$L_{8.3}$	L_{25}	L_{50}	L_{min}
1	1-25-12	9:38 a.m.	55.4	72.0	63.0	56.5	54.0	53.0	48.7
2	1-25-12	10:15 a.m.	53.6	68.8	61.0	57.0	53.5	50.5	44.0
3	1-25-12	10:42 a.m.	66.3	73.7	73.0	71.5	68.0	61.5	43.5
4	1-25-12	11:04 a.m.	40.8	50.3	46.0	43.5	41.0	39.5	35.9
5	1-25-12	11:27 a.m.	40.4	56.9	48.0	44.5	39.5	36.0	31.4
6	1-25-12	11:48 a.m.	46.1	68.3	51.5	41.0	37.5	34.0	30.0
7	1-25-12	12:08 p.m.	57.7	75.3	66.5	63.0	55.5	47.5	34.8
8	1-25-12	12:30 p.m.	65.1	85.5	73.5	70.0	63.0	56.5	39.0
9	1-25-12	12:50 p.m.	42.9	55.8	53.0	46.0	41.5	37.5	33.5
10	1-25-12	1:48 p.m.	49.2	68.0	56.0	48.0	46.5	45.0	40.5
11	1-25-12	2:10 p.m.	60.4	73.0	66.5	64.5	61.0	58.0	47.2
12	1-25-12	2:32 p.m.	51.2	58.4	55.5	53.5	51.5	50.5	44.7
13	1-25-12	2:52 p.m.	45.8	59.8	52.0	48.0	45.5	44.0	39.9
14	1-25-12	3:15 p.m.	65.5	73.3	70.0	68.5	66.5	64.5	54.4
15	1-25-12	3:39 p.m.	52.6	72.1	59.5	55.5	51.5	49.5	42.9
16	1-25-12	4:08 p.m.	58.7	75.2	67.0	59.0	57.0	55.0	50.5

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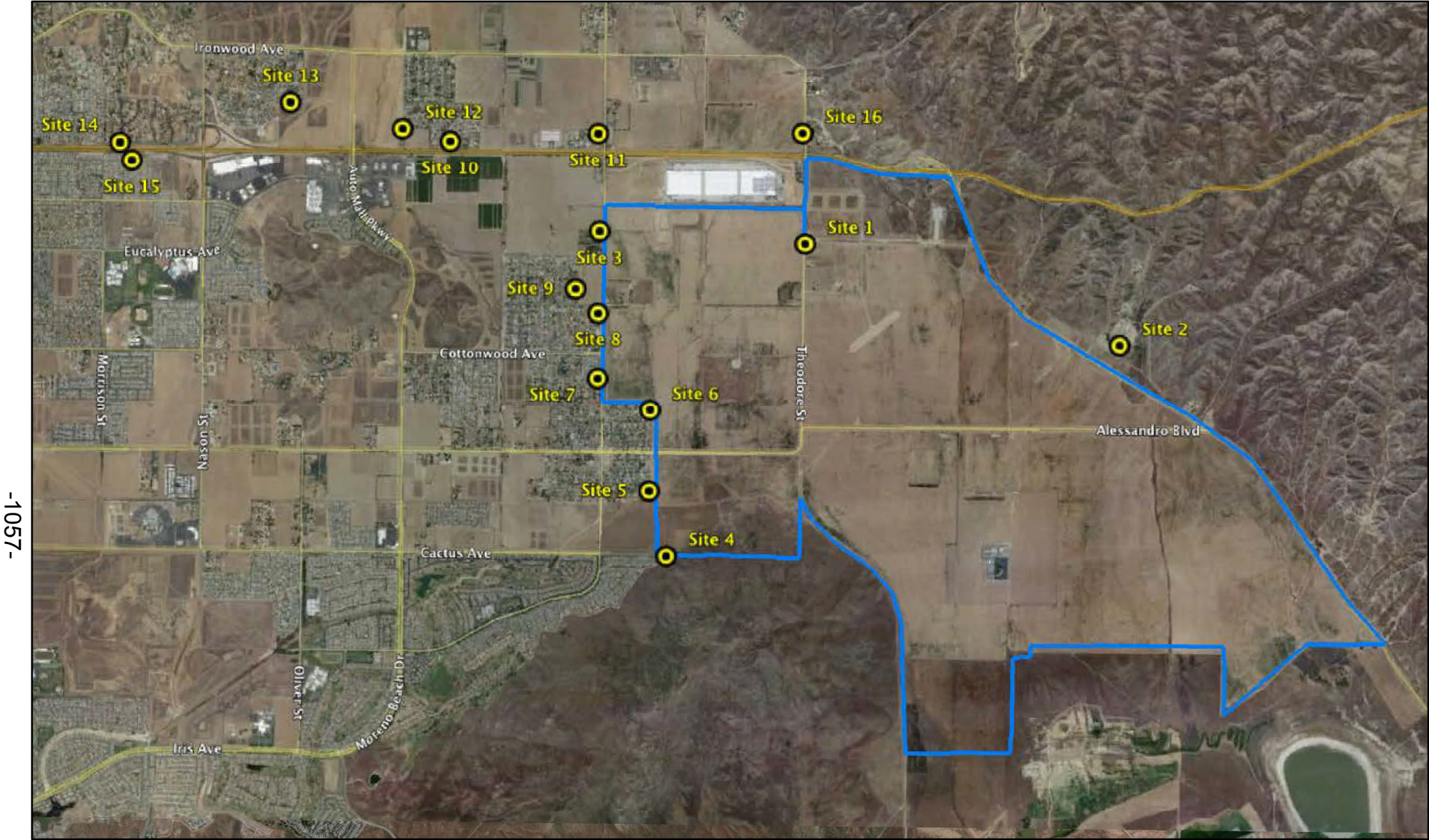
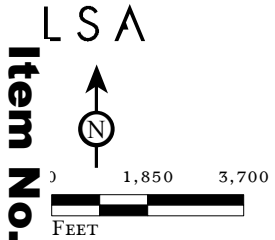


FIGURE 4.12.2



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SOURCE: Mestre Greve Associates, 2013
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Noise Measurement Locations

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Table 4.12.C: Existing Nighttime Noise Measurements (dBA)

Site	Date	Start Time	L _{eq}	L _{max}	L _{1.7}	L _{8.3}	L ₂₅	L ₅₀	L _{min}
1	2-8-12	11:51 p.m.	50.6	64.5	59.0	54.5	50.5	45.5	36.0
2	2-6-12	10:30 p.m.	47.4	65.1	52.5	50.0	48.0	45.5	37.5
3	2-6-12	10:55 p.m.	61.8	75.9	71.0	67.5	58.0	54.0	45.9
4	2-6-12	11:33 p.m.	35.8	51.1	44.0	39.0	34.5	32.0	30.0
5	2-9-12	12:15 a.m.	36.4	46.6	42.5	39.5	36.0	35.0	31.5
6	2-7-12	12:15 a.m.	43.2	51.0	49.5	46.5	44.0	41.5	35.3
7	2-7-12	12:35 a.m.	51.5	66.9	64.0	54.0	41.5	37.5	32.6
8	2-7-12	12:55 a.m.	56.0	74.1	68.0	57.0	42.5	38.5	33.6
9	2-9-12	12:35 a.m.	41.5	57.1	50.5	44.5	38.0	36.0	30.4
10	2-9-12	1:01 a.m.	46.7	63.8	50.5	48.5	46.5	45.0	38.1
11	2-9-12	1:25 a.m.	59.6	68.3	67.5	64.5	60.5	54.0	46.3
12	2-9-12	1:48 a.m.	51.8	63.9	58.0	55.0	52.0	50.0	39.2
13	2-9-12	2:09 a.m.	48.0	59.7	55.5	52.0	47.5	45.0	38.6
14	2-9-12	2:33 a.m.	60.8	72.3	68.0	65.5	61.0	57.5	44.9
15	2-9-12	2:56 a.m.	48.2	59.9	54.5	52.5	49.0	45.0	35.4
16	2-9-12	3:20 a.m.	54.3	62.7	60.0	58.5	55.5	52.0	38.8

4.12.1.4 Existing Traffic Noise Environment

The primary existing noise sources in the project area are transportation facilities. Traffic on SR-60, Redlands Boulevard, Theodore Street, Gilman Springs Road, and other local streets is the dominant source contributing to the ambient noise levels in the project vicinity. Noise from motor vehicles is generated by engine vibrations, the interaction between the tires and the road, and the exhaust system. Table 4.12.D identifies the existing (2012) traffic noise levels adjacent to roadway segments in the project vicinity.

Table 4.12.D: Existing Traffic Noise Levels (dBA)

Roadway Segment	CNEL (dBA) at 100 feet
Alessandro Boulevard (Lasselle Street and Morrison Street)	55.5
Alessandro Boulevard (Morrison Street to Nason Street)	56.8
Alessandro Boulevard (Nason Street to Oliver Street)	64.4
Cactus Avenue (Nason Street to Oliver Street)	64.3
Cactus Avenue (Oliver Street to Moreno Beach Drive)	58.2
Cactus Avenue (Redlands Boulevard to Street D)	50.2
Cactus Avenue (west of Redlands Boulevard)	57.5
Canyon Crest Drive (Alessandro Boulevard to Sandtrack Road)	41.8
Canyon Crest Drive (Central Avenue to Country Club Drive)	67.0
Country Club Drive (Chicago Avenue to Canyon Crest Drive)	57.5
Crescent Avenue (west of Alessandro Road)	57.1
Day Street (Cottonwood Avenue to Alessandro Boulevard)	57.7
Elsworth Street (Cottonwood Avenue to Alessandro Boulevard)	62.9
Evans Road (Marbella Gate to Ramona Expressway)	56.9
Gilman Springs Road (Bridge Street to Beaumont Avenue)	61.0

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Table 4.12.D: Existing Traffic Noise Levels (dBA)

Roadway Segment	CNEL (dBA) at 100 feet
Gilman Springs Road (Bridge Street to SR-79 Southbound Ramps)	61.0
Gilman Springs Road (Eucalyptus Avenue to Street C)	46.1
Gilman Springs Road (Jack Rabbit Trail to Bridge Street)	62.7
Gilman Springs Road (south of Street C)	56.1
Gilman Springs Road (SR-79 Northbound Ramps to Record Road)	60.7
Heacock Street (Alessandro Boulevard to Cactus Avenue)	59.7
Heacock Street (Cactus Avenue to John F Kennedy Drive)	62.6
Indian Street (Alessandro Boulevard to Cactus Avenue)	59.9
Indian Street (Cactus Avenue to John F Kennedy Drive)	59.3
Iris Avenue (Kitching Street to Lasselle Street)	60.31
Iris Avenue (Lasselle Street to Nason Street)	57.0
Iris Avenue (Nason Street to Oliver Street)	60.0
Iris Avenue (Perris Boulevard to Kitching Street)	60.8
Ironwood Avenue (Moreno Beach Drive to Redlands Boulevard)	55.6
Ironwood Avenue (Redlands Boulevard to Highland Boulevard)	46.3
John F Kennedy Drive (south of Cactus Avenue)	61.5
Kitching Street (Alessandro Boulevard to Cactus Avenue)	58.2
Kitching Street (Cactus Avenue to John F Kennedy Drive)	59.1
Kitching Street (Iris Avenue to Ivory Avenue)	61.1
Kitching Street (Krameria Avenue to Lurin Avenue)	62.4
Krameria Avenue (Perris Boulevard to Lasselle Street)	57.5
Lasselle Street (Cahuilla Drive to Krameria Avenue)	60.5
Lasselle Street (Cottonwood Avenue to Alessandro Boulevard)	64.4
Lasselle Street (Krameria Avenue to Arroyo Park Drive)	56.4
Live Oak Canyon Road (San Timoteo Canyon Road to I-10)	56.5
Lochmoor Drive (Central Avenue to Fair Isle Drive)	52.1
Locust Avenue (Moreno Beach Drive to Redlands Boulevard)	55.7
Locust Avenue (Moreno Beach Drive to Smiley Boulevard)	46.2
Mission Grove Parkway (Alessandro Boulevard to Northrop Drive)	58.1
Mission Grove Parkway (Cannon Road to Alessandro Boulevard)	62.5
Moreno Beach Drive (John F Kennedy Drive to Cactus Avenue)	57.6
Moreno Beach Drive (John F Kennedy Drive to Oliver Street)	55.2
Moreno Beach Drive (Locust Avenue to Ironwood Avenue)	55.3
Old 215 Frontage Road (Eucalyptus Avenue to Alessandro Boulevard)	61.4
Orange Avenue (Evans Road to Foothill Drive)	55.3
Perris Boulevard (Alessandro Boulevard to Cactus Avenue)	61.0
Perris Boulevard (Alessandro Boulevard to Cottonwood Avenue)	61.9
Perris Boulevard (Cactus Avenue to John F Kennedy Drive)	62.0
Perris Boulevard (Iris Avenue to Krameria Avenue)	60.8
Perris Boulevard (John F Kennedy Drive to Iris Avenue)	67.2
Perris Boulevard (Krameria Avenue to Harley Knox Boulevard)	60.7
Perris Boulevard (Krameria Avenue to Harley Knox Boulevard)	59.6

Table 4.12.D: Existing Traffic Noise Levels (dBA)

Roadway Segment	CNEL (dBA) at 100 feet
Perris Boulevard (Sunnymead Boulevard to Fir Avenue)	69.0
Ramona Expressway (Evans Road to Rider Street)	59.2
Reche Canyon Road (Keissel Road to Reche Vista Drove)	62.7
Reche Vista Drive (Heacock Street to Reche Canyon Road)	66.7
Redlands Boulevard (Ironwood Avenue to San Timoteo Canyon Road)	67.8
Redlands Boulevard (Ironwood Avenue to SR-60)	68.3
Redlands Boulevard (SR-60 to Eucalyptus Avenue)	58.8
San Timoteo Canyon Road (Alessandro Road to Live Oak Canyon Road)	62.0
San Timoteo Canyon Road (Live Oak Canyon Road to Redlands Boulevard)	62.7
Street A (Eucalyptus Avenue to Street F)	47.0
Sunset Drive (Alessandro Road to Cameo Drive)	52.5
Sunset Drive (Crown Street to Alessandro Road)	49.0
Sycamore Canyon Boulevard (Central Avenue to College Boulevard)	62.8
Theodore Street (SR-60 to Highland Boulevard)	53.6
Freeways	
SR-60 (Heacock Street to Perris Boulevard)	65.2
SR-60 (Moreno Beach Drive to Redlands Boulevard)	62.5
SR-60 (Perris Boulevard to Nason Street)	64.6
SR-60 (Pigeon Pass Road/Frederick Street to Heacock Street)	66.5
SR-60 (Redlands Boulevard to Theodore Street)	60.2

Source: Mestre Greve Associates, November 2012.

4.12.1.5 Existing SDG&E and SCGC Facilities

The proposed World Logistics Center Specific Plan area is currently occupied by one San Diego Gas and Electric Company (SDG&E) compressor station and two Southern California Gas Company (SCGC) facilities. These facilities are located within the boundaries of the Specific Plan as shown in previously referenced Figure 4.12.2. The SDG&E compressor station recompresses natural gas received from interstate gas pipelines and delivers the gas to Southern California via transmission pipelines. The two SCGC facilities contain flow valve and metering equipment facilities. The southern SCGC facility contains a maintenance functions as well. All of these facilities contain gas pipeline blow-down equipment. This equipment includes exhaust stacks that vent the high pressure gas into the atmosphere occur during emergencies, scheduled maintenance, and annual testing of the blow-down systems.

The SDG&E and SCGC facilities produce noise from three different sources that could affect future development within the proposed project: 1) the operation of the compressor station; 2) blow-down events at the compressor station; and 3) blow-down events at the SCGC facilities. The blow-down events generate infrequent high noise levels for relatively short periods. The compressor station generates a relatively constant noise level, although noise levels vary slightly when the compressors are turned on and off when the gas is conveyed to the transmission pipelines.

The SDG&E compressors are the primary source of operational noise generated by the compressor station. The facility contains two sets of three reciprocating natural gas combustion engines and one set of four natural gas-fired turbines, for a total of ten compressors with power ranging from 995 to 3,400 horsepower. The compressors are located within noise attenuation structures and are equipped

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with intake and exhaust silencers. The facility routinely operates at maximum capacity 24 hours per day. It is anticipated that demand on the compressor station will increase in the future to the point where the facility operates 24 hours a day, year round.

The CNEL levels for the SDG&E compressor station presented in Figure 4.12.3 are based on a worst-case assumption that the compressor station is in full operation 24 hours a day. Figure 4.12.4 presents the average (L_{eq}) noise levels generated by the compressor station during full operation. Both the CNEL and L_{eq} metrics are used to assess the noise impacts from the facility.

There are several blow-down points within the SDG&E compressor station. As stated previously, these blow-down points allow for the release of pressurized gas during emergencies, scheduled maintenance, and annual testing. Blow-down events at the compressor station vent gas and last between 30 and 90 seconds. The maximum sound levels (L_{max} dBA) generated by the blow-down events is presented in Figure 4.12.5.

There are blow-down points in the SCGC facilities. Blow-down events at the SCGC facilities vent gas from miles of pipeline and are much longer than those at the compressor station, and can last up to 90 minutes. Approximately four blow-down events occur annually at the SCGC facilities. L_{max} noise levels (dBA) are shown in in Figure 4.12.6. The noise level will be at or near the L_{max} level during the entire blow-down event. It should also be noted that blow-down events generate ground vibrations and natural gas odors in the vicinity in the surrounding area when events occur. Again, it must be noted that these blow-down events are part of the existing conditions of the project site, and any impacts caused by development of new warehousing near these facilities, and any mitigation necessary, are not the responsibility of SCGC or SDG&E.

4.12.2 Existing Policies and Regulations

The applicable noise standards governing the project site are the criteria in the City of Moreno Valley General Plan Safety Element (Environmental Safety, Noise) and Municipal Code (Noise Ordinance). The City's Safety Element of the General Plan does not contain specific noise standards or significance thresholds. However, the General Plan does cite applicable State standards including the California Administrative Code, Section 1092 of Title 25, Chapter 1, Subchapter 1, Article 4 and Section 5014 of Title 21, Subchapter 6, Article 2. In addition, other applicable standards identified in the *California Noise Insulation Standards*¹ and the *State of California Vehicular Code*² are included below. The following sections list the General Plan policies, Municipal Code, and State standards relevant to noise for the proposed project.

4.12.2.1 City of Moreno Valley General Plan Policies

Chapter 9 of the *City of Moreno Valley General Plan*³ defines goals, objectives, policies, and action items related to noise conditions in the City. The specific policies related to noise that are relevant to the proposed project are as follows:

Objective 6.3 Provide noise compatible land use relationships by establishing noise standards utilized for design and siting purposes.

Policy 6.3.5 Enforce the California Administrative Code, Title 24 noise insulation standards for new multi-family housing developments, motels and hotels.

Policy 6.3.6 Building shall be limited in areas of sensitive receptors.

¹ California Code of Regulations, Title 24, Part 2, §3501, *California Noise Insulation Standards*.

² Governor's Office of Planning and Research, *State of California General Plan Guidelines*, October 2003, pages 249 and 250.

³ *City of Moreno Valley General Plan*, City of Moreno Valley, July 2006.

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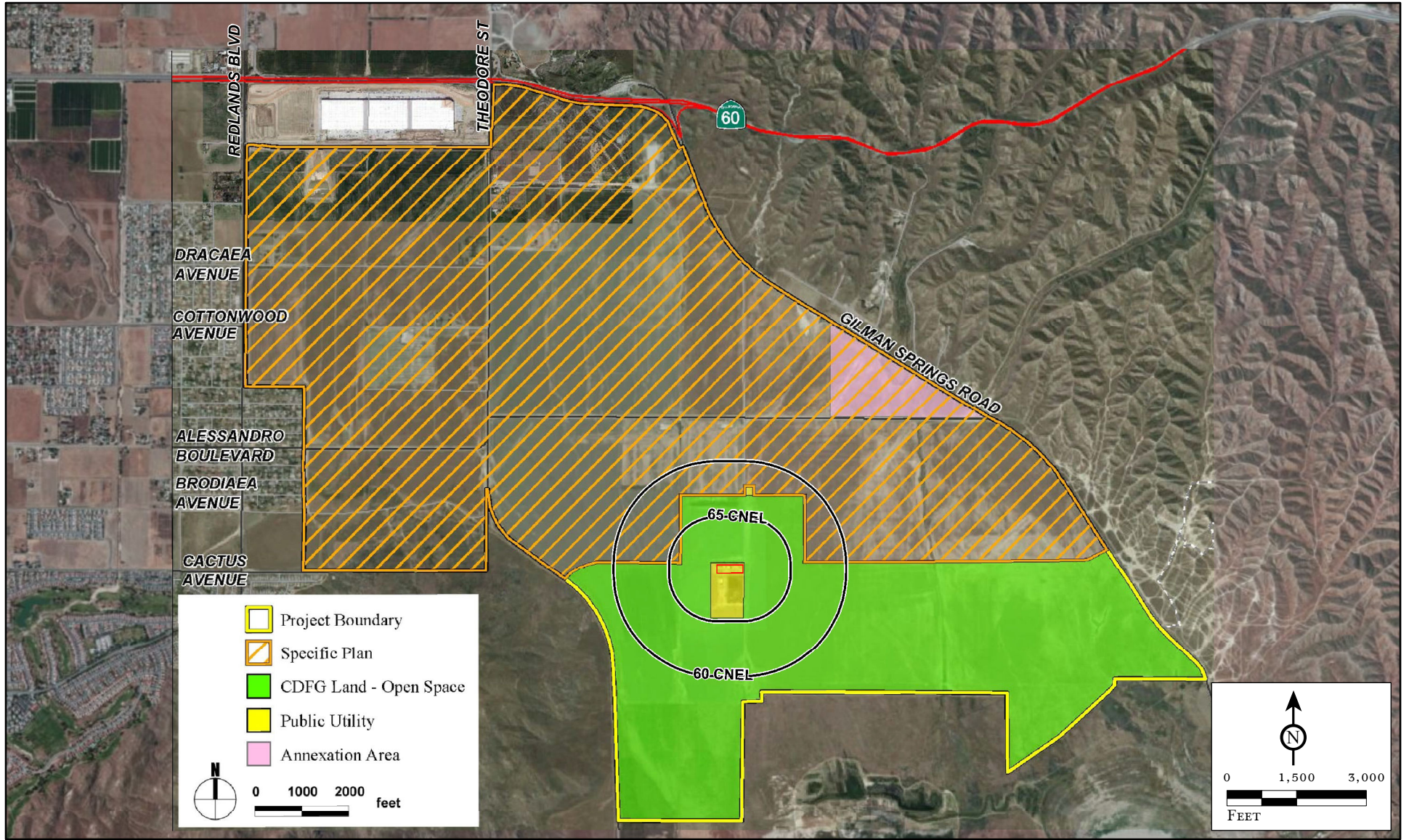


FIGURE 4.12.3

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Item No. E.3

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Existing CNEL Noise Contours for the SDG & E Compressor Station

SOURCE: Mestre Greve Associates, 2013.

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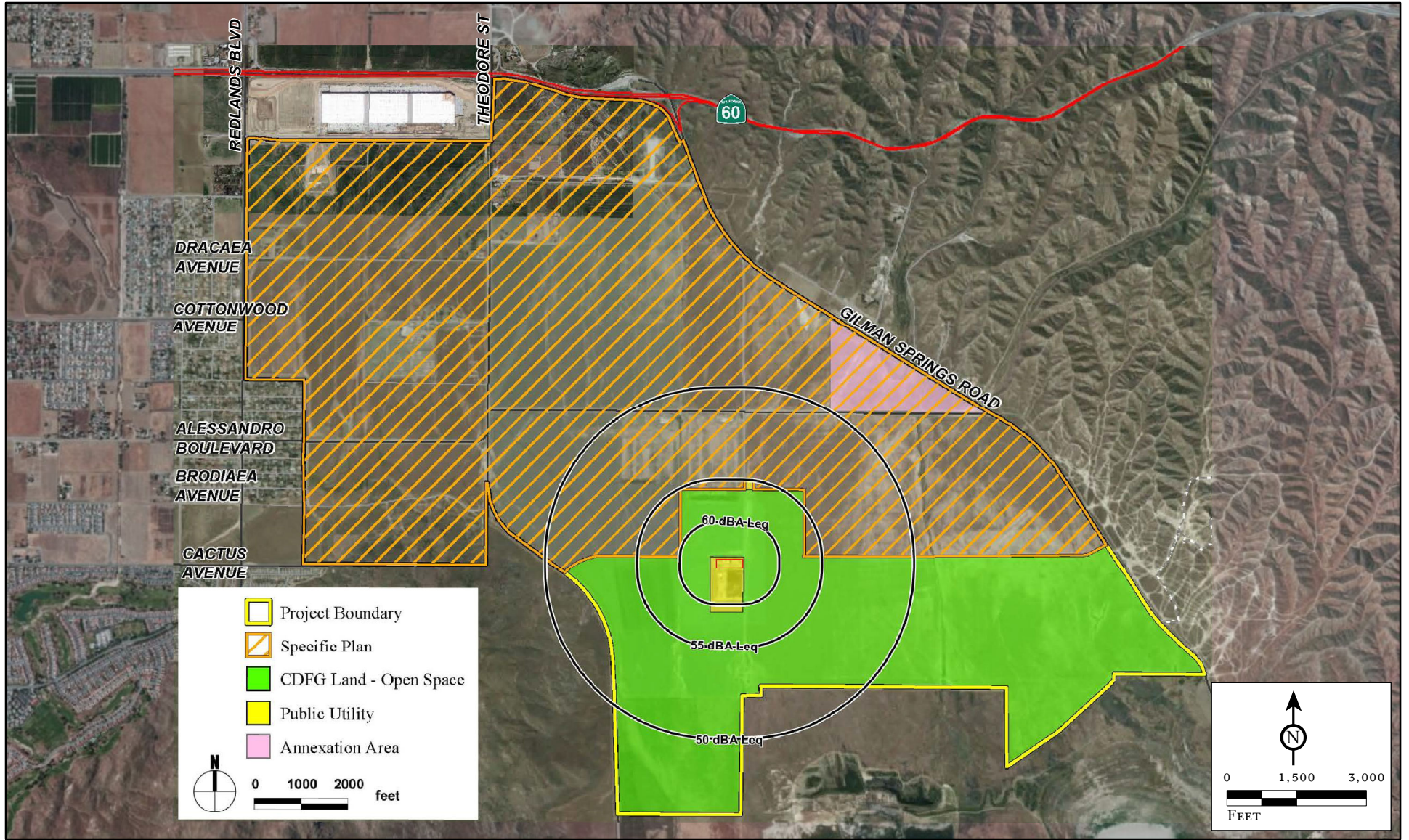


FIGURE 4.12.4

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Item No. E.3

World Logistics Center Project
Environmental Impact Report

Existing Leq Noise Levels for the SDG & E Compressor Station

SOURCE: Mestre Greve Associates, 2013.

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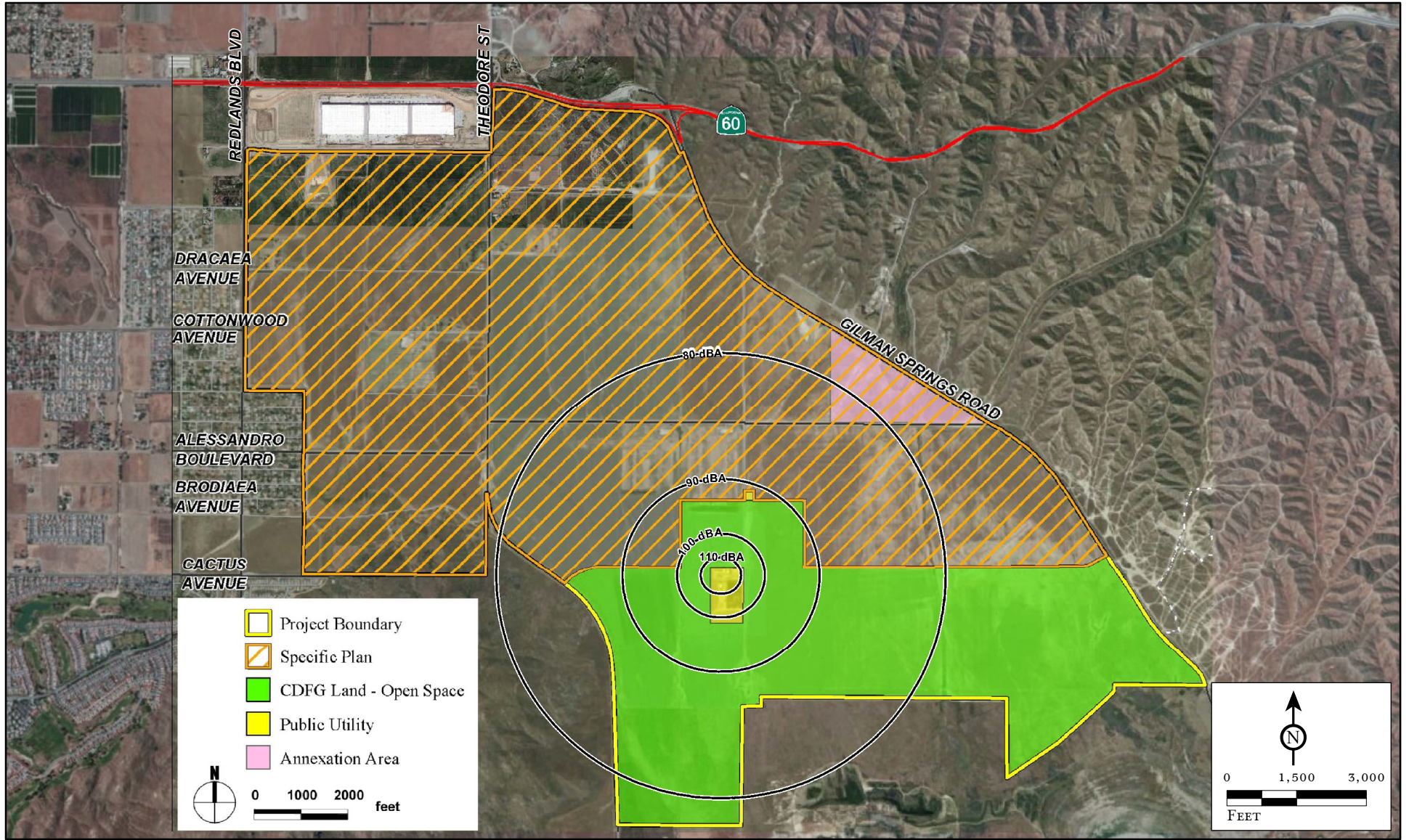


FIGURE 4.12.5

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Item No. E.3

World Logistics Center Project
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Existing Lmax Levels for SDG&E Blow-Down

SOURCE: Mestre Greve Associates, 2013.

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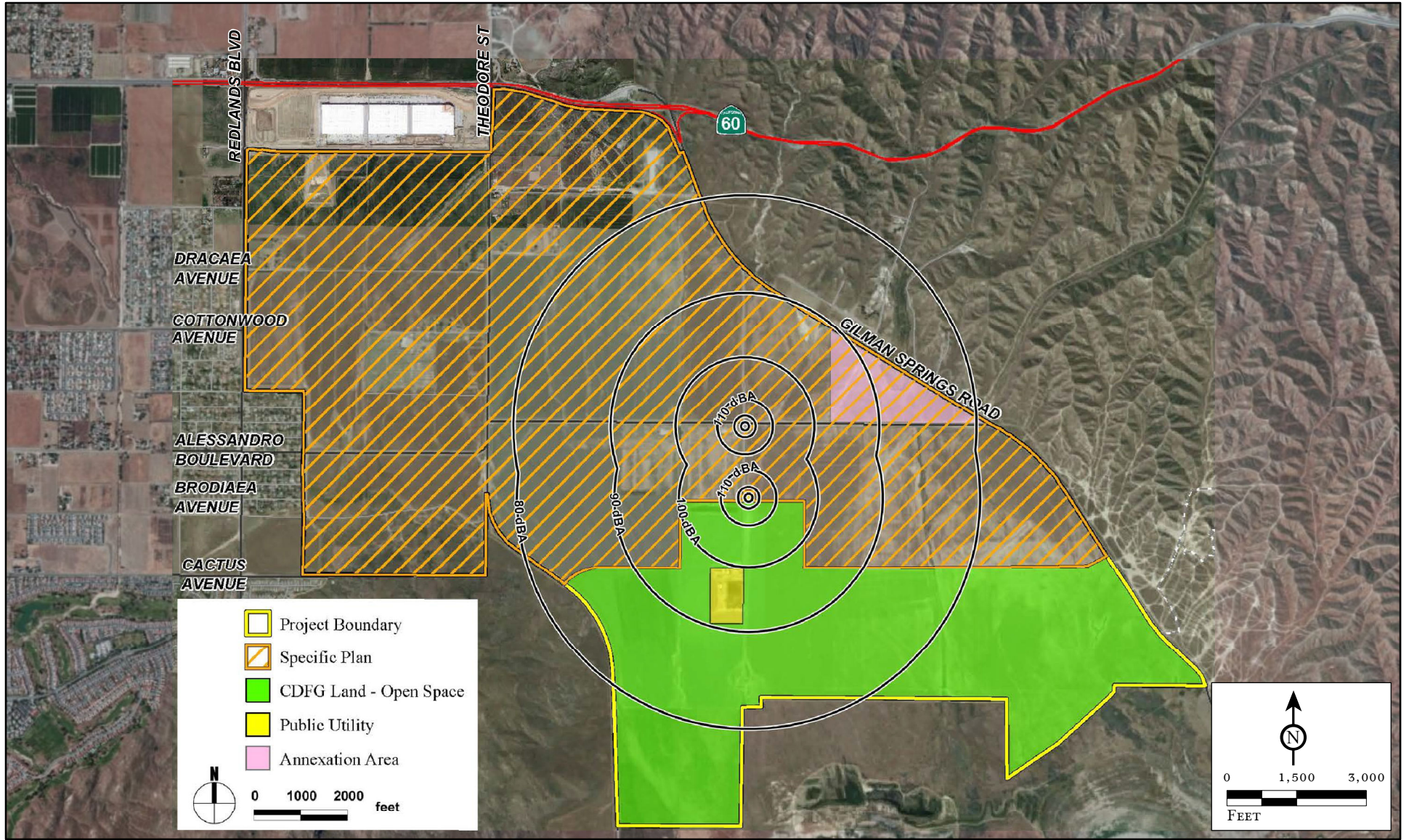


FIGURE 4.12.6

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- Objective 6.4** Review noise issues during the planning process and require noise attenuation measures to minimize acoustic impacts to existing and future surrounding land uses.
- Policy 6.4.1** Site, landscape and architectural design features shall be encouraged to mitigate noise impacts for new developments, with a preference for noise barriers that avoid freeway sound barrier walls.
- Objective 6.5** Minimize noise impacts from significant noise generators such as, but not limited to, motor vehicles, trains, aircraft, commercial, industrial, construction, and other activities.
- Policy 6.5.1** New commercial and industrial activities (including the placement of mechanical equipment) shall be evaluated and designed to mitigate noise impacts on adjacent uses.
- Policy 6.5.2** Construction activities shall be operated in a manner that limits noise impacts on surrounding uses.

4.12.2.2 City of Moreno Valley Municipal Code

The *Moreno Valley Municipal Code*¹ establishes a Noise Ordinance that describes the noise standards within the City. Chapter 11.80.030 (Title 11) lists specific prohibited acts.

The City's residential site development standards, as identified in Chapter 9.03.040 of the City's Planning and Zoning Code, state that in all residential districts, air conditioners, heating, cooling, and ventilating equipment and all other mechanical lighting or electrical devices shall be operated so that noise levels do not exceed 60 dBA (L_{dn}) at the property line.

The City's Municipal Code, Section 6.04.030.J states that "to create, allow or maintain any loud or unusual noise or operate or maintain any device, instrument, vehicle, or machinery in such a manner as to create loud or unusual noise, cause vibrations, or unreasonable light spillage or glare which causes discomfort or annoyance to reasonable persons of normal sensitivity, or which endangers the comfort, repose, health or peace of the public or of any person using or occupying other property in the vicinity" is prohibited.

The City's Municipal Code, Section 9.10.140, specifies that all commercial and industrial uses shall be operated so that noise created by any loudspeaker, bells, gongs, buzzers, or other noise attenuation or attracting devices shall not exceed 55 dBA at any one time beyond the boundaries of the property.

Chapter 11.80.030 of the City's Municipal Code also states:

Based on statistics from the Center for Disease Control and Prevention and the National Institute for Occupational Safety and Health, Table 1 and Table 1-A specify sound level limits which, if exceeded, will have a high probability of producing permanent hearing loss in anyone in the area where the sound levels are being exceeded. No sound shall be permitted within the City which exceeds the parameters set forth in Table 11.80.030-1 [Table 4.12.E] and 11.80.030-1-A [Table 4.12.F] of this chapter.

No person shall maintain, create, operate or cause to be operated on private property any source of sound in such a manner as to create any nonimpulsive sound which exceeds the limits set forth for the source land use category (as defined in Section 11.80.020) in Table 11.80.030-2 [Table 4.12.F] when measured at a distance of two hundred (200) feet or more from the real property line of the source of the sound, if the sound occurs on privately owned property, or from the source of the sound, if the sound occurs on public right-of-way, public space or other publicly owned property. Any source of sound in violation of this subsection shall be deemed prima facie to be a noise disturbance.

¹ *Moreno Valley Municipal Code*, City of Moreno Valley, current through Ordinance 836 and the November 2012 code supplement.

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The following uses and activities shall be exempt from the sound level regulations except the maximum sound levels provided in Tables 11.80.030-1 [Table 4.12.E] and 11.80.030-1A [Table 4.12.F]:

1. Sounds resulting from any authorized emergency vehicle when responding to an emergency call or acting in time of an emergency.
2. Sounds resulting from emergency work as defined in Section 11.80.020.
3. Any aircraft operated in conformity with, or pursuant to, federal law, federal air regulations and air traffic control instruction used pursuant to and within the duly adopted federal air regulations; and any aircraft operating under technical difficulties in any kind of distress, under emergency orders or air traffic control, or being operated pursuant to and subsequent to the declaration of an emergency under federal air regulations.
4. All sounds coming from the normal operations of interstate motor and rail carriers, to the extent that local regulation of sound levels of such vehicles has been preempted by the Noise Control Act of 1972 (42 U.S.C. § 4901 et seq.) or other applicable federal laws or regulations.
5. Sounds from the operation of motor vehicles, to the extent they are regulated by the California Vehicle Code.
6. Any constitutionally protected noncommercial speech or expression conducted within or upon any public right-of-way, public space or other publicly owned property constituting an open or a designated public forum in compliance with any applicable reasonable time, place and manner restriction on such speech or expression or otherwise pursuant to legal authority.
7. Sounds produced at otherwise lawful and permitted city-sponsored events, organized sporting events, school assemblies, school playground activities, by permitted fireworks, and by permitted parades on public right-of-way, public space, or other publicly owned property.
8. An event for which a temporary use permit or special event permit has been issued under other provisions of this code, where the provision of Section 11.80.010 are met, the permit granted expressly grants an exemption from specific standards contained in this chapter, and the permittee and all persons under the permittee's reasonable control actually comply with all conditions of such permit. Violation of any condition of such permit related to sound or sound equipment shall be in violation of this chapter and punishable as such.

Table 4.12.E and Table 4.12.F show the maximum sound levels that are permitted in the City for continuous and impulsive sounds, respectively.

Table 4.12.E: Maximum Continuous Sound Levels*

Duration Per Day Continuous Hours	Sound Level (dBA)
8	90
6	92
4	95
3	97
2	100
1.5	102
1	105
0.5	110
0.25	115

* When the daily sound exposure is composed of two or more periods of sound exposure at different levels, the combined effect of all such periods shall constitute a violation of this section if the sum of the percentage of allowed period of sound exposure at each level exceeds 100 percent.

Source: Chapter 11.80.030 Table 11.80.030-1, City of Moreno Valley Municipal Code, City of Moreno Valley.

Table 4.12.F: Maximum Impulsive Sound Levels

Number of Repetitions Per 24-Hour Period	Sound Level (dBA)
1	145
10	135
100	125

Source: Chapter 11.80.030 Table 11.80.030-1A, City of Moreno Valley Municipal Code, City of Moreno Valley.

The City also restricts the sound levels for non-impulsive sound on lands designated for residential and commercial land uses during the daytime and nighttime time periods. These levels are shown in Table 4.12.G. Section 11.80.050 (3) clearly identifies the measurement as an “average” noise level, and therefore, the noise limits shown in Table 4.12.G are interpreted as the L_{eq} noise level.

Table 4.12.G: Maximum Sound Levels (in dBA) for Source Land Uses

Residential		Commercial	
Daytime	Nighttime	Daytime	Nighttime
60	55	65	60

Source: Chapter 11.80.030 Table 11.80.030-2, City of Moreno Valley Municipal Code, City of Moreno Valley.

The City prohibits all construction and demolition activities between the hours of 8:00 p.m. and 7:00 a.m. the day following a noise disturbance. A noise disturbance is defined as any sound which that disturbs a reasonable person of normal sensitivities, exceeds the sound level limits set forth in the Noise Ordinance, or is plainly audible. A noise disturbance is defined as plainly audible measured at a distance of 200 feet from the real property line of the source of the sound if the sound occurs on privately owned property, or from the source of the sound, if the sound occurs on public right-of-way, public space or other publicly owned property.

4.12.2.3 State of California Vehicle Code

Recent studies have shown that the most objectionable feature of traffic noise is the sound produced by vehicles equipped with illegal or faulty exhaust systems. In addition, such vehicles are often operated in a manner that causes tire squeal and excessively loud exhaust noise. A number of California State vehicle noise regulations can be enforced by local authorities as well as the California Highway Patrol. These include § 27150 (mufflers) of the California Vehicle Code (CVC), as well as excessive speed laws, which may be applied to curtail traffic noise. The California Highway Patrol and the Department of Health Services (through local health departments) are available to aid local authorities in code enforcement and training pursuant to proper vehicle sound level measurements.

4.12.2.4 State of California Noise Compatibility Guidelines

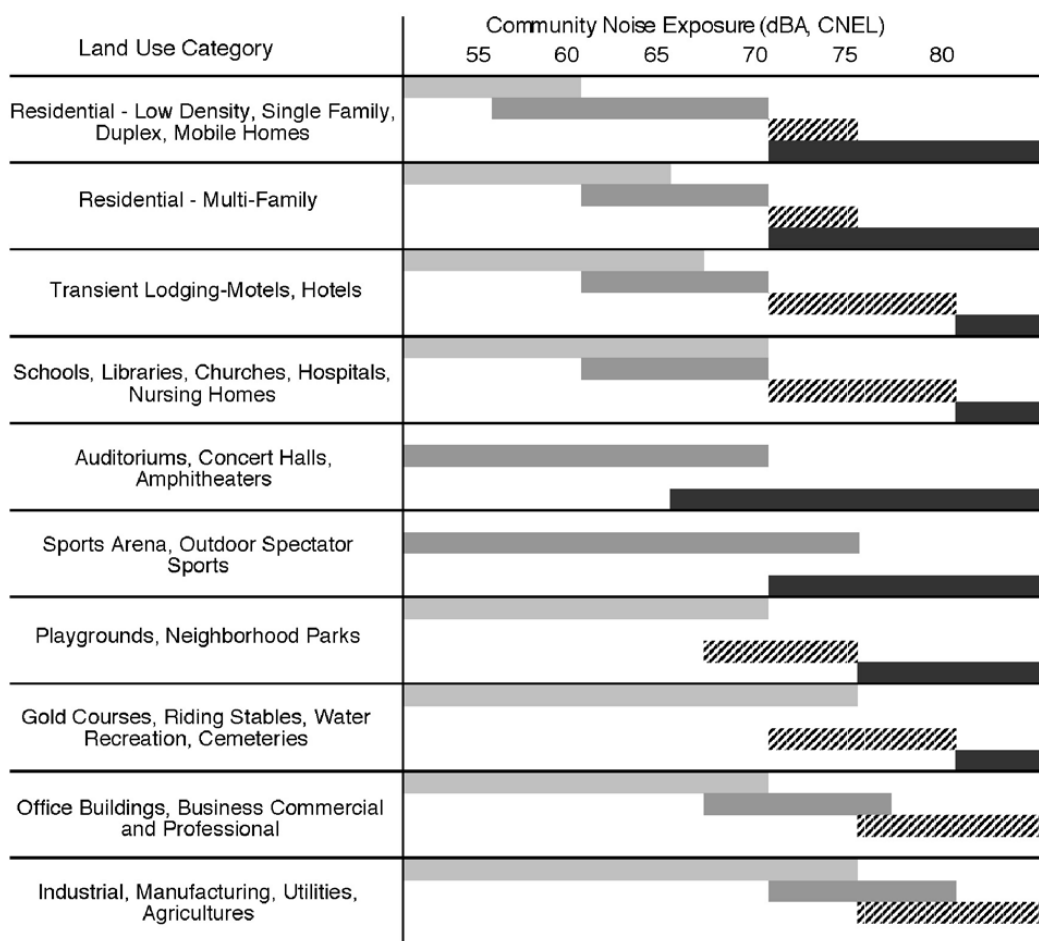
The State of California Noise Compatibility Guidelines, published by the Department of Health, Services provides guidance for use when siting land uses. The compatibility guidelines are shown in Figure 4.12.7. The guidelines will be used to evaluate the compatibility of the proposed land uses with the noise environment. The guidelines show compatibility of various land uses with different noise environments. The guidelines show that industrial uses are normally acceptable in noise environments up to 75 CNEL.





4.12.3 Methodology

Evaluation of noise impacts associated with the proposed project includes the following:

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Land Use/Noise Compatibility Guidelines



-  **Normally Acceptable** Specified land use is satisfactory based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements
-  **Conditionally Acceptable** - New construction or development shall be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply system of air conditioning, will normally suffice.
-  **Normally Unacceptable** New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design
-  **Clearly Unacceptable** New construction or development should generally not be undertaken

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FIGURE 4.12.7

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California Noise Compatibility Guidelines

SOURCE: Mestre Greve Associates, 2012

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- Determination of the short-term construction noise impacts on off-site noise-sensitive uses;
- Determination of the long-term noise impacts, including vehicular traffic and stationary noise sources, on on-site and off-site noise-sensitive uses; and
- Determination of the required mitigation measures to reduce long-term noise impacts from all sources.

Because of the location of noise-sensitive receptors, the noise analysis evaluates the noise effects of the industrial development on the existing residential development (sensitive receptors) near the southwest portion of the proposed project area.

There are no Federal Highway Administration (FHWA), State, or local standards for vibration. According to the FHWA, highway traffic and construction vibrations pose no threat to buildings and structures; and annoyance to people is not considered any worse than other discomforts experienced from living near highways. However, a substantial amount of research has been completed to compare vibrations from single events such as dynamite blasts with architectural and structural damage. The U.S. Bureau of Mines has set a safe limit of 0.5 inch per second peak particle velocity to avoid structure damage in residential structures (U.S. Bureau of Mines 1980). Below this level, there is virtually no risk of building damage.

4.12.4 Thresholds of Significance

A project would have a significant effect on the environment related to noise if it would substantially increase the ambient noise levels for adjoining areas or if it would conflict with adopted environmental plans and goals of the community in which it is located.

The applicable noise standards and guidelines governing the project are those specified previously in Sections 4.12.2.1 through 4.12.2.4. In summary, these criteria are contained within the Safety Element of the General Plan, the Municipal Code, the California Vehicle Code, and the State Noise Compatibility Guidelines.

For this project, a noise impact is considered significant if the project would result in:

- Exposure of persons to or generation of noise levels in excess of standards established in the *City of Moreno Valley General Plan*, *Moreno Valley Municipal Code*, or applicable standards of other agencies;
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;
- A substantial temporary, periodic, and/or permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels; and/or
- For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

The standards within the *City of Moreno Valley General Plan* and *Moreno Valley Municipal Code* determine the acceptable noise environment for proposed project and its vicinity. The standards are as follows:

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- To the extent feasible, ensure through the design review process that exterior noise levels at commercial and industrial areas do not exceed 75 dBA CNEL.
- Consider the following uses noise-sensitive and discourage them in areas where exterior noise levels exceed 65 dBA CNEL unless measures are implemented that reduce the noise exposure below this level: single-family and multiple-family residential uses, group homes, hospitals, schools and other learning institutions, and parks and open space areas where quiet is a basis for use.

Long-term impacts from the project's traffic noise that affect existing sensitive land uses are considered to be substantial and, therefore, constitute a significant noise impact if the project would:

- Increase noise levels by 5 dB or more where the no project noise level is less than 60 CNEL;
- Increase noise level by 3 dB or more where the no project noise level is 60 CNEL to 65 CNEL; or
- Increase noise levels by 1.5 dB or more where the no project noise level is greater than 65 CNEL.

The project's incremental contribution to a cumulative noise increase would be considered cumulatively considerable and significant when ambient noise levels affect noise-sensitive land uses and when the project increases noise levels by 1 dB or more over pre-project conditions and the predicted future cumulative with project noise levels cause the following cumulative increases:

- Increase noise levels by 5 dB or more where the existing noise level is less than 60 CNEL;
- Increase noise levels by 3 dB or more where the existing noise level is 60 to 65 CNEL; or
- Increase noise levels by 1.5 dB or more where the existing noise level is greater than 65 CNEL.

4.12.5 No Impact/Less than Significant Impacts

The following impacts were identified as having a less than significant impact or no impact on the environment with implementation of the proposed project.

4.12.5.1 Groundborne Vibration Impacts

Threshold	Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?
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Roadways in the vicinity of the project area are either paved or would be paved as the area develops, and would not result in project traffic driving over rough or dirt roads. Well maintained roads typically do not result in substantial vibration levels. Even roads with irregularities typically only generate substantial levels of vibration very near, less than 50 feet from the irregularity. Construction activities that would occur within the WLCSP area are not anticipated to require blasting or pile driving. Roadway vibrations are typically not perceptible more than 50 feet from the roadway except in very unusual circumstances. Generally, the interface between the soft tire of a truck or automobile will not generate significant vibration unless the road is in poor shape (e.g., potholes or pavement joints) Therefore, impacts associated with this issue are anticipated to be less than significant, and no mitigation is required.

4.12.5.2 Airport Noise Impacts

Threshold	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, results in exposure of people residing or working in the project area to excessive noise levels. For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.
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The project area is located approximately 5.5 miles northeast of the March Airfield (MAF) and is not located within two miles of a private airstrip. The MAF is a joint-use airport, used for both military and civilian purposes. The March Air Reserve Base (MARB) is the military operator of the MAF and March Inland Port (MIP) is the civilian operator of the airport. This facility is anticipated to play an increasingly important role in the transportation of goods and cargo for the Southern California region. Existing flight patterns affect a large portion of the City of Moreno Valley, along a path that affects the western portion of the City in a northwest/southeast alignment. Aircraft operations from the airport currently contribute intermittent single-event noise.

There is potential for single-event noise exposure levels from MAF activity to affect the proposed project. The exposure levels will vary dependent upon the type of aircraft and flight track flown for each operation at MAF. However, the proposed project is not identified as being within the noise or safety contours delineated for the MARB Airport.¹ In addition, the proposed project is not considered to contain sensitive receivers and, therefore, the impacts from these single-event noise levels are considered to be below the level of significance. The City's exterior noise standard for industrial uses is 70 dBA CNEL. MAF noise levels are less than 60 dB CNEL within the project area. Therefore, the proposed project would not have the potential to expose people to excessive noise levels from airport operations. Therefore, no significant noise impacts would occur regarding these issues from implementation of the proposed project, and no mitigation is required.

4.12.6 Significant Impacts

4.12.6.1 Short-Term Construction Noise Impacts

Threshold	Would the project result in a substantial temporary, periodic, and/or permanent increase in ambient noise levels in the project vicinity above levels existing without the project?
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Short-term noise would occur during the construction of the WLCSP. First, construction crew commutes and the transport of construction equipment and materials to the site for the proposed WLC project would incrementally increase noise levels on access roads in the WLC planning area. In addition, noise would be generated during excavation, grading, and building construction on various portions of the Specific Plan site. Construction is completed in discrete steps, each of which has its own mix of equipment, and consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on the site and, therefore, the noise levels surrounding the site as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. The site preparation phase, which includes excavation and grading of the site, tends to generate the highest noise levels, because the noisiest construction equipment is earthmoving equipment, which includes excavating machinery such as backfillers, bulldozers, draglines, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve one or two minutes of full-power operation followed by three to four minutes at

¹ Figure 5.4-1 March Reserve Air Base Noise Impact Area, City of Moreno Valley General Plan EIR, July 2006.

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lower power settings. Implementation of the Specific Plan would result in construction activities that would require the use of scrapers, bulldozers, and water and pickup trucks within the WLCSP area.

Figure 4.12.8 presents construction noise levels measured at 50 feet. The peak noise level for the majority of the equipment that will be used during construction of the proposed project will range from 70 to 95 dBA. Based on the fact that noise levels dissipate with increases in distance from the noise source due to noise divergence, noise levels at greater distances are less than those presented in Figure 4.12.8. Noise measurements made by Mestre Greve Associates demonstrate that the noise levels generated by commonly used grading equipment (e.g., loaders, graders, and trucks) generate noise levels that typically do not exceed the middle of the range shown in Figure 4.12.8.¹ However, the noise levels shown in Figure 4.12.8 have been used as the basis for the noise analysis estimates presented in this EIR.

Construction activities that are associated with the proposed WLCSP project would occur in two general areas: on-site and off-site. Some phases of the on-site construction would occur for 24 hours a day for 7 days a week. It is anticipated that on-site construction would occur periodically over a nine-year period with a potential start year of 2013 and ending in 2021. Off-site construction (which would involve minor grading, drainage, interchange, utility, and roadway improvements) is anticipated to only during the daytime weekday hours and would have a shorter construction duration.

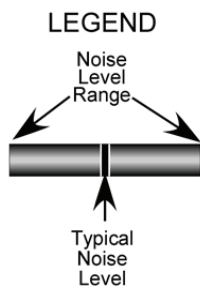
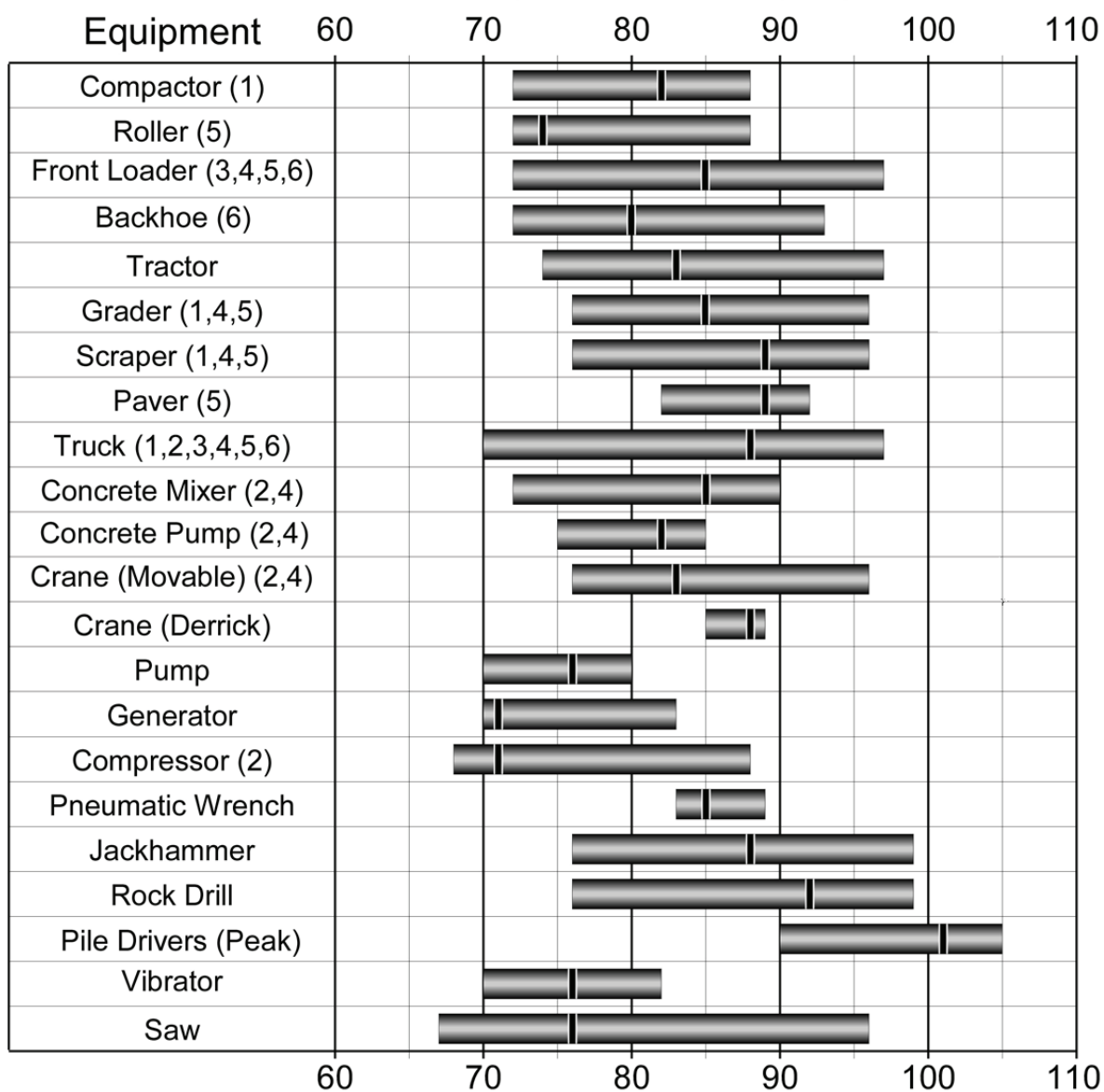
On-site Construction. Sensitive receptors that would be potentially affected by on-site construction activities would include residences located within and adjacent to the WLCSP area as well as residences located on the north side of SR-60. For residences on the opposite side of SR-60, existing daytime and nighttime freeway noise is anticipated to be greater than the noise generated by the construction activities that would occur within the WLCSP area. Although certain conditions at night, such as low inversions and very calm conditions, can increase the ability of construction noise to travel to the residences north of the freeway, these same conditions would also amplify the noise generated on the freeway. Since freeway noise would continue to be the dominant noise source in the area for these residences along SR-60, construction noise impacts on the residents north of the freeway will be less than significant and no mitigation is required.

Existing residences within the WLCSP area or adjacent to the Specific Plan area, such as those along Redlands Boulevard, Merwin Street, Bay Avenue, Cactus Avenue, and Gilman Springs Road, may be located within 50 feet or less from areas where intense construction (24 hours a day, 7 days a week) would occur. Although residential properties located within the WLCSP would be rezoned as Light Logistics, the existing residences are considered to be noise-sensitive uses that would be affected by intense construction activities. Similarly, residences located adjacent to the project site (i.e., along Redlands Boulevard, Merwin Street, Bay Avenue, Cactus Avenue, and Gilman Springs Road) would also be affected by intense construction activities. Based on a 50-foot noise attenuation distance, these residences may experience worst-case unmitigated peak construction noise levels (L_{max}) up to 97 dBA. The average noise levels are typically 5 to 15 dB lower than the peak noise levels. Average noise levels (L_{eq}) at 50 feet could easily be in the range of 82 to 92 dBA during most phases of construction.

The City of Moreno Valley Municipal Code does not include any exemptions for construction noise. Therefore, construction would be subject the limitations of 60 dBA during daytime and 55 dBA at nighttime measured at residential areas. According to Section 3.4.14, *Project Description*, WLC project construction may occur 24 hours a day, 7 days a week for certain activities. Significant noise impacts would be expected, especially if work with high noise levels occurs between 8:00 p.m. and 6:00 a.m.

¹ *Noise Assessment for the World Logistic Center Specific Plan*, page 27, Mestre Greve Associates, Division of Landrum & Brown, November 2012.

A-Weighted Sound Level (dBA) At 50 Feet



Construction Phases

- 1 - Grading
- 2 - Building
- 3 - Utilities
- 4 - Interchange
- 5 - Curbing and Paving
- 6 - Landscaping

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FIGURE 4.12.8

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Typical Construction Equipment Noise Levels

SOURCE: Mestre Greve Associates, 2012

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Based on these projections, anticipated worst-case construction noise levels would regularly be exceeded during daytime and nighttime hours at residences within the Specific Plan area. Based on an L_{eq} noise level of 90 dBA at 50 feet, an observer would need to be 1,580 feet from the construction to experience a noise level of 60 dBA (L_{eq}), or 2,800 feet for a noise level of 55 dBA (L_{eq}). Therefore, a residence within 1,580 feet during active construction during the daytime would be affected. Similarly, a residence within 2,800 feet during the nighttime would be affected by construction noise.

As set forth in Section 3.4.14 and as stated by the project applicant, construction could occur 24 hours per day, 7 days per week for these construction activities. Therefore, noise levels at the nearest residences would exceed the City's exterior noise standard of the 60 dBA¹ CNEL daytime standard and 55 dBA CNEL nighttime standard for residential uses. This is a significant impact requiring mitigation.

Off-site Construction. Construction activities associated with off-site construction include road improvements along Cactus Avenue and Redlands Boulevard, water and utility improvements, construction of a detention basin, debris basins, and interchange improvements. Roadway and interchange improvements are planned along Cactus Avenue, Redlands Boulevard, State Route 60, and Gilman Springs Road. Often the loudest pieces of equipment associated with this type of construction are the graders/scrapper equipment. Peak noise levels at 50 feet can reach 96 dBA, with average noise levels (L_{eq}) in the 85 dBA range. Noise levels of 60 dBA (L_{eq}) could be exceeded for up to 900 feet from the construction area. Existing residences are located within 900 feet of the off-site construction areas and would be exposed to noise levels that would exceed of the Moreno Valley noise criteria for residential uses.

Other off-site construction improvements such as drainage, sewer, water, and utility features would also generate noise in close proximity to existing sensitive uses. However, these activities typically utilize less construction equipment, which results in lower noise levels. These construction activities may commonly employ a backhoe as the loudest piece of equipment. A backhoe may have a peak noise level that exceeds 90 dBA at 50 feet, but has an average noise level around 80 dBA (L_{eq}) at 50 feet. However, at this noise level one would need to be more than 500 feet away to experience a noise level (L_{eq}) of less than 60 dBA. This noise level would exceed the City's daytime criteria at the nearest existing residences and mitigation measures would be required.

Specific Plan Design Features. The WLCSP does not contain any design features that specifically address noise. Other features, such as perimeter setback requirements, will have the effect of reducing noise to certain residential areas.

Mitigation Measures. Construction of the proposed project would result in noise levels at the closest residences exceeding the maximum noise level allowed under the City's Municipal Code. The following measures² would reduce short-term construction-related noise impacts associated with the proposed WLC project:

4.12.6.1A Prior to issuance of any discretionary approvals for development in the WLCSP, the project applicant shall submit a Noise Reduction Compliance Plan (NRCP) to the City of Moreno Valley for review and approval. The NRCP shall show the limits of nighttime construction in relation to any then occupied residential dwellings. Conditions shall be added to any discretionary projects requiring that the limits of nighttime grading be shown on the NRCP and all grading plans submitted to the City.

¹ Chapter 11.80.030 Table 11.80.030-2, City of Moreno Valley Municipal Code, City of Moreno Valley.

² Measures 4.12.6.1B-F correspond to the noise study measures N-1 through N-5

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The limits of construction allowed at night shall be clearly staked on site, and contractors will be provided with a copy of the plan showing the limits of nighttime construction.

- 4.12.6.1B** During all project site grading, all construction equipment, fixed or mobile, shall be equipped with operating and maintained mufflers consistent with manufacturers' standards.
- 4.12.6.1C** All discretionary approvals for development in the WLCSP shall prohibit construction vehicles from using Redlands Boulevard south of Fir Avenue during on-site construction for all phases of the Specific Plan.
- 4.12.6.1D** All discretionary approvals for development in the WLCSP shall include conditions of approval stating that no nighttime grading shall occur within 2,800 feet of residences south of SR-60 (between 8 p.m. and 6 a.m. on weekends and 8 p.m. and 7 a.m. on weekends or holidays). These restrictions shall be included as part of the Noise Reduction Compliance Plan. As an alternative to this requirement, a temporary construction sound barrier may be used in lieu of the construction buffer, per Mitigation Measure 4.12.6.1E.
- 4.12.6.1E** As an alternative to Mitigation Measure 4.12.6.1D, a 12-foot tall temporary construction sound barrier may be installed for residences within 1,580 feet of active nighttime construction areas. The temporary sound barrier shall be constructed of plywood with a total thickness of 1 to 1.5 inches, or a sound blanket wall may be used. If sound blankets are used, the curtains must have a Sound Transmission Class (STC) rating of 27. This shall be included as part of the Noise Reduction Compliance Plan required in Mitigation Measure 4.12.6.1A, which shall be reviewed and approved by the City prior to implementation.
- 4.12.6.1F** As an alternative to Mitigation Measure 4.12.6.1D, actual noise measurements of construction areas may be taken by qualified personnel and recommend specific buffer distances between construction activities and existing residences based on actual noise levels. These measurements will be incorporated into the Noise Reduction Compliance Plan required in Mitigation Measure 4.12.6.1A, which shall be reviewed and approved by the City prior to implementation.
- 4.12.6.1G** Any discretionary approvals for development that proposes grading within 1,580 feet of occupied residential units shall require that all grading equipment be equipped with residential grade mufflers (or better).
- 4.12.6.1H** All material stockpiles in connection with any grading operations shall be located at least 1,200 feet from existing residences.
- 4.12.6.1I** All project-related off-site construction shall be limited to 6 a.m. and 8 p.m. on weekdays only. Construction during City holidays shall not be permitted.
- 4.12.6.1J** Prior to the issuance of grading permits for off-site construction activities in support of development in the WLCSP, the project developer shall provide evidence to the City that any off-site construction area adjacent to occupied residential units shall have a 12-foot temporary sound barrier installed for construction activities lasting more than one month.

Level of Significance after Mitigation. *On-site Construction.* Elimination of nighttime construction within 2,800 feet of residences would lower the noise levels to 55 dBA (L_{eq}) at the closest residences. The noise levels would just meet the 55 dBA (L_{eq}) nighttime criteria contained in the Moreno Valley Noise Ordinance resulting in a less than significant impact. With the implementation of **Mitigation Measures 4.12.6.1A** through **4.12.6.1J**, the loudest noise level that would be experienced at any

developed residential parcel would be less than the 55 dBA (L_{eq}) nighttime threshold and would be consistent with the limits established in the City's Noise Ordinance resulting in a less than significant impact. In addition, implementation of **Mitigation Measure 4.12.6.1H**, would reduce the noise experienced at existing residences, resulting in a less than significant impact.

As previously stated, construction within 1,580 feet of residential areas south of the freeway has the potential to exceed the daytime Moreno Valley Noise Ordinance criteria of 60 dBA (L_{eq}). With implementation of **Mitigation Measure 4.12.6.1E**, any existing residences within 1,580 feet of a construction area would be shielded from construction noise with a 12-foot temporary sound barrier. A sound barrier will reduce the noise levels by about 10 dB resulting in a reduction of noise below City thresholds at residences 500 feet or further from the construction area. Although the installation of the temporary sound barrier would reduce noise levels experienced at the closest residences, those residences that are located within 500 feet of a construction area would still be exposed to noise levels greater than 60 dBA (L_{eq}). Therefore, impacts associated with this issue would remain significant and unavoidable.

Off-site Construction. With the implementation of **Mitigation Measure 4.12.6.1I**, off-site construction activities would be limited to daytime hours while **Mitigation Measure 4.12.6.1J** would require the installation of a temporary sound barrier. With these mitigation measures in place, residences adjacent to construction activities (depending on the loudness of the construction equipment) could experience noise levels greater than 60 dBA (L_{eq}) for off-site construction projects lasting less than one month. These impacts would only occur during weekday, daytime hours. However, even with implementation of these mitigation measures, noise levels experienced at these residences would be above the City's threshold. Therefore, impacts would remain significant and unavoidable.

4.12.6.2 Long-Term Traffic Noise Impacts

Threshold	Would the project result in a substantial temporary, periodic, and/or permanent increase in ambient noise levels in the project vicinity above levels existing without the project?
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The noise analysis for the proposed project is based on the traffic volume data contained in the Traffic Impact Analysis (TIA) prepared for the project (contained in its entirety as EIR Appendix L). The TIA addressed the intersections of surface streets in Moreno Valley of a collector or higher classification street with another collector or higher classification street, at which the proposed project will add 50 or more peak hour trips. The study area also included the main travel routes between the project and the neighboring cities of Riverside, Perris, Beaumont, San Jacinto, and Redlands. The study area extended west to the nearest ramps on SR-91 and as far south as the I-215 ramps at Redlands Avenue in Perris. The study area for freeways was selected to cover the freeway routes radiating from the project site to the north, south, east, and west. The traffic analysis covered SR-60 from SR-62 in the east to SR-71 in the west, SR-91 from I-215 in the east to I-15 in the west, and I-215 from SR-210 in the north to the Scott Road interchange in the south.

Three hundred and thirty nine (339) roadway links and eighty (80) freeway segments were analyzed in the noise analysis. The change in noise level was calculated for all 419 roadway and freeway links with and without the project for the existing case (2012), 2017, 2022, and 2035 time horizons. Links with noise increases less than 1.5 dB would not have a substantial noise increase and were not presented in the main body of the noise report (i.e., the tables and figures). Similarly, any links that do not have sensitive receptors (e.g., residential uses) were also not presented in the main body of the noise report. Based on this filtering process, of the 419 links analyzed, 72 links have sensitive receptors and an increase of 1.5 dB for at least one time horizon and were therefore addressed in the analysis.

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The projected future daily traffic volumes (Parsons Brinckerhoff, Inc., December, 2012) for roadway segments in the project vicinity were used in the traffic noise impact analysis. Modeled noise levels represent the worst-case scenario, which assumes that no shielding is provided between the traffic and the location where the noise contours are drawn. As previously identified, the threshold for traffic noise is 65 dBA CNEL for sensitive receptors.

Operation of development that could occur within the proposed project area would generate traffic along roadways in the project vicinity. Table 4.12.H identifies existing with project roadway traffic noise levels with the project.

Table 4.12.H: Existing Year (2012) Plus Project Traffic Noise Levels (dBA)

Roadway Segment	CNEL (dBA) at 100 feet		
	Without Project	With Project	Change
Alessandro Boulevard (west of Redlands Boulevard)	60.5	61.5	1.0
Alessandro Road (Crescent Avenue to Sunset Drive)	63.3	65.1	1.8
Alessandro Road (Sunset Drive to San Timoteo Canyon Road)	63.3	65.4	2.1
Cactus Avenue (Oliver Street to Moreno Beach Drive)	58.2	59.8	1.6
Cactus Avenue (Redlands Boulevard to Street D)	50.2	65.6	15.4
Cactus Avenue (west of Redlands Boulevard)	57.5	59.2	1.7
Canyon Crest Drive (Alessandro Boulevard to Sandtrack Road)	41.8	41.9	0.1
Country Club Drive (Chicago Avenue to Canyon Crest Drive)	57.5	59.2	1.7
Crescent Avenue (west of Alessandro Boulevard)	57.1	59.7	2.6
Day Street (Cottonwood Avenue to Alessandro Boulevard)	57.7	57.9	0.2
Evans Road (Marbella Date to Ramon Expressway)	56.9	57.9	1.0
Evans Road (north of Harley Knox Boulevard)	0.0	0.0	0.0
Evans Road (Nuevo Road to San Jacinto Avenue)	0.0	0.0	0.0
Fir Avenue (Quincy Drive to Redlands Boulevard)	0.0	0.0	0.0
Gilman Springs Road (Bridge Street to Beaumont Avenue)	61.0	62.1	1.1
Gilman Springs Road (Bridge Street to SR-79 Southbound Ramps)	61.0	62.2	1.2
Gilman Springs Road (Eucalyptus Avenue to Street C)	46.1	53.5	7.4
Gilman Springs Road (Jack Rabbit Trail to Bridge Street)	62.7	63.9	1.2
Gilman Springs Road (south of Street C)	56.1	57.4	1.3
Gilman Springs Road (SR-79 Northbound Ramps to Record Road)	60.7	60.9	0.2
Iris Avenue (Kitching Street to Lasselle Street)	60.1	61.6	1.5
Iris Avenue (Lasselle Street to Nason Street)	57.0	59.4	2.4
Iris Avenue (Nason Street to Oliver Street)	60.0	63.0	3.0
Ironwood Avenue (Moreno Beach Drive to Redlands Boulevard)	55.6	55.7	0.1
Ironwood Avenue (Redlands Boulevard to Highland Boulevard)	46.3	57.1	10.8
John F Kennedy Drive (south of Cactus Avenue)	61.5	67.0	5.5
Kitching Street (Iris Avenue to Ivory Avenue)	61.1	62.1	1.0
Krameria Avenue (Perris Boulevard to Lasselle Street)	57.5	60.6	3.1
Lasselle Street (Cahuilla Drive to Krameria Avenue)	60.5	61.7	1.2
Lasselle Street (Krameria Avenue to Arroyo Park Drive)	56.4	59.0	2.6
Live Oak Canyon Road (San Timoteo Canyon Road to I-10)	56.5	58.6	2.1
Lochmoor Drive (Central Avenue to Fair Isle Drive)	52.1	53.7	1.6

Table 4.12.H: Existing Year (2012) Plus Project Traffic Noise Levels (dBA)

Roadway Segment	CNEL (dBA) at 100 feet		
	Without Project	With Project	Change
Locust Avenue (Moreno Beach Drive to Smiley Boulevard)	46.2	46.2	0.0
Locust Avenue (Moreno Beach Drive to Redlands Boulevard)	55.7	59.7	4.0
Moreno Beach Drive (John F Kennedy to Oliver Street)	55.2	58.8	3.6
Moreno Beach Drive (Locust Avenue to Ironwood Avenue)	55.3	57.8	2.5
Old 215 Frontage Road (Eucalyptus Avenue to Alessandro Boulevard)	61.4	61.4	0.0
Oliver Street (Alessandro Boulevard to Cactus Avenue)	54.1	56.5	2.3
Orange Avenue (Evans Road to Foothill Drive)	55.3	55.4	0.1
Perris Boulevard (Alessandro Boulevard to Cactus Avenue)	61.0	61.0	0.0
Perris Boulevard (Alessandro Boulevard to Cottonwood Avenue)	61.9	61.9	0.0
Perris Boulevard (Iris Avenue to Krameria Avenue)	60.8	61.5	0.7
Perris Boulevard (John F Kennedy Drive to Iris Avenue)	67.2	67.2	0.0
Perris Boulevard (Krameria Avenue to Harley Knox Boulevard)	60.7	61.8	1.1
Perris Boulevard (Krameria Avenue to Harley Knox Boulevard)	59.6	60.6	1.0
Placentia Avenue (Evans Road to El Nido Avenue)	0.0	0.0	0.0
Placentia Avenue (Water Avenue to Evans Road)	0.0	0.0	0.0
Quincy Drive (Alessandro Boulevard to Cactus Avenue)	0.0	0.0	0.0
Quincy Drive (Cottonwood Avenue to Alessandro Boulevard)	0.0	0.0	0.0
Ramona Expressway (Evans Road to Rider Street)	59.2	59.4	0.1
Reche Canyon Road (Keissel Road to Reche Vista)	62.7	62.9	0.2
Reche Canyon Road (Reche Vista Drive to High Country Drive)	48.9	48.9	0.0
Redlands Boulevard (Eucalyptus Avenue to Dracaea Avenue)	0.0	49.4	49.4
Redlands Boulevard (Ironwood Avenue to SR-60)	68.3	71.1	2.8
Redlands Boulevard (Ironwood Avenue to San Timoteo)	67.8	70.2	2.3
Redlands Boulevard (SR-60 to Eucalyptus Avenue)	58.8	64.9	6.1
San Timoteo Canyon Road (Alessandro Road to Live Oak Canyon Road)	62.0	65.2	3.2
San Timoteo Canyon Road (Live Oak Canyon Road to Redlands Boulevard)	62.7	65.8	3.2
Street A (Eucalyptus Avenue to Street F)	47.0	73.2	26.3
Street D (Street E to Cactus Avenue)	0.0	69.6	69.6
Street E (north of Alessandro Boulevard)	0.0	70.3	70.3
Street F (east of Street A)	0.0	68.4	68.4
Sunset Drive (Alessandro Road to Cameo Drive)	52.5	55.2	2.7
Sunset Drive (Crown Street to Alessandro Road)	49.0	51.4	2.3
Sycamore Canyon Boulevard (Central Avenue to College Boulevard)	62.8	63.2	0.4
Theodore Street (SR-60 to Highland Boulevard)	56.8	64.9	8.1
Freeways			
SR-60 (Pigeon Pass Road/Frederick Street to Heacock Street)	66.5	68.1	1.6
SR-60 (Heacock Street to Perris Boulevard)	65.2	66.9	1.7

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Table 4.12.H: Existing Year (2012) Plus Project Traffic Noise Levels (dBA)

Roadway Segment	CNEL (dBA) at 100 feet		
	Without Project	With Project	Change
SR-60 (Perris Boulevard to Nason Street)	64.6	66.7	2.1
SR-60 (Nason Street to Moreno Beach Drive)	52.0	54.3	2.3
SR-60 (Moreno Beach Drive to Redlands Boulevard)	62.5	65.6	3.1
SR-60 (Redlands Boulevard to Theodore Street)	60.2	63.5	3.4

Source: Mestre Greve Associates, November 2012.

Year 2017 (Phase I) with and without project scenarios projected daily traffic volumes on roadway segments in the project vicinity were used to conduct the traffic noise modeling. The projected daily traffic volumes in the area were taken from the TIA prepared for the proposed project. Table 4.12.I identifies year 2017 without project and with project traffic noise levels.

Table 4.12.I: Phase I (2017) Plus Project Traffic Noise Levels (dBA)

Roadway Segment	CNEL (dBA) at 100 feet		
	Without Project	With Project	Change
Alessandro Boulevard (west of Redlands Boulevard)	61.4	61.3	-0.1
Alessandro Road (Crescent Avenue to Sunset Drive)	63.8	65.3	1.5
Alessandro Road (Sunset Drive to San Timoteo Canyon Road)	64.0	65.6	1.6
Cactus Avenue (Oliver Street to Moreno Beach Drive)	58.7	60.5	1.8
Cactus Avenue (Redlands Boulevard to Street D)	50.2	64.2	14.0
Cactus Avenue (west of Redlands Boulevard)	57.9	59.4	1.5
Canyon Crest Drive (Alessandro Boulevard to Sandtrack Road)	42.0	42.5	0.5
Country Club Drive (Chicago Avenue to Canyon Crest Drive)	57.5	58.0	0.5
Crescent Avenue (west of Alessandro Boulevard)	57.6	59.3	1.7
Day Street (Cottonwood Avenue to Alessandro Boulevard)	59.7	60.9	1.3
Evans Road (Marbella Date to Ramon Expressway)	57.3	58.6	1.2
Evans Road (north of Harley Knox Boulevard)	0.0	0.0	0.0
Evans Road (Nuevo Road to San Jacinto Avenue)	0.0	0.0	0.0
Fir Avenue (Quincy Drive to Redlands Boulevard)	0.0	0.0	0.0
Gilman Springs Road (Bridge Street to Beaumont Avenue)	62.1	63.3	1.2
Gilman Springs Road (Bridge Street to SR-79 Southbound Ramps)	62.1	63.4	1.3
Gilman Springs Road (Eucalyptus Avenue to Street C)	46.8	47.0	.02
Gilman Springs Road (Jack Rabbit Trail to Bridge Street)	63.9	65.4	1.5
Gilman Springs Road (south of Street C)	57.3	58.9	1.6
Gilman Springs Road (SR-79 Northbound Ramps to Record Road)	61.0	61.6	0.6
Iris Avenue (Kitching Street to Lasselle Street)	60.6	61.8	1.1
Iris Avenue (Lasselle Street to Nason Street)	60.2	62.3	2.1
Iris Avenue (Nason Street to Oliver Street)	62.8	65.2	2.3
Ironwood Avenue (Moreno Beach Drive to Redlands Boulevard)	56.0	56.8	0.8
Ironwood Avenue (Redlands Boulevard to Highland Boulevard)	49.2	57.6	8.4
John F Kennedy Drive (south of Cactus Avenue)	61.5	65.5	4.0

Table 4.12.I: Phase I (2017) Plus Project Traffic Noise Levels (dBA)

Roadway Segment	CNEL (dBA) at 100 feet		
	Without Project	With Project	Change
Kitching Street (Iris Avenue to Ivory Avenue)	61.7	62.7	1.0
Krameria Avenue (Perris Boulevard to Lasselle Street)	58.9	60.5	1.6
Lasselle Street (Cahuilla Drive to Krameria Avenue)	61.1	62.4	1.3
Lasselle Street (Krameria Avenue to Arroyo Park Drive)	57.6	59.7	2.2
Live Oak Canyon Road (San Timoteo Canyon Road to I-10)	57.3	58.1	0.8
Lochmoor Drive (Central Avenue to Fair Isle Drive)	55.2	56.8	1.6
Locust Avenue (Moreno Beach Drive to Smiley Boulevard)	46.2	46.8	0.6
Locust Avenue (Moreno Beach Drive to Redlands Boulevard)	59.2	61.9	2.7
Moreno Beach Drive (John F Kennedy to Oliver Street)	55.2	57.7	2.5
Moreno Beach Drive (Locust Avenue to Ironwood Avenue)	57.6	59.7	2.1
Old 215 Frontage Road (Eucalyptus Avenue to Alessandro Boulevard)	61.6	62.3	0.7
Oliver Street (Alessandro Boulevard to Cactus Avenue)	58.5	59.3	0.8
Orange Avenue (Evans Road to Foothill Drive)	55.3	55.9	0.6
Perris Boulevard (Alessandro Boulevard to Cactus Avenue)	62.0	63.0	1.0
Perris Boulevard (Alessandro Boulevard to Cottonwood Avenue)	62.6	63.4	0.9
Perris Boulevard (Iris Avenue to Krameria Avenue)	61.9	62.6	0.8
Perris Boulevard (John F Kennedy Drive to Iris Avenue)	68.8	69.9	1.0
Perris Boulevard (Krameria Avenue to Harley Knox Boulevard)	62.0	63.2	1.2
Perris Boulevard (Krameria Avenue to Harley Knox Boulevard)	60.6	61.5	0.9
Placentia Avenue (Evans Road to El Nido Avenue)	0.0	0.0	0.0
Placentia Avenue (Water Avenue to Evans Road)	0.0	0.0	0.0
Quincy Drive (Alessandro Boulevard to Cactus Avenue)	0.0	0.0	0.0
Quincy Drive (Cottonwood Avenue to Alessandro Boulevard)	0.0	0.0	0.0
Ramona Expressway (Evans Road to Rider Street)	59.5	59.9	0.4
Reche Canyon Road (Keissel Road to Reche Vista)	62.9	63.8	1.0
Reche Canyon Road (Reche Vista Drive to High Country Drive)	48.9	49.3	0.4
Redlands Boulevard (Eucalyptus Avenue to Dracaea Avenue)	0.0	0.0	0.0
Redlands Boulevard (Ironwood Avenue to SR-60)	68.5	69.4	1.0
Redlands Boulevard (Ironwood Avenue to San Timoteo Canyon Road)	68.2	69.5	1.3
Redlands Boulevard (SR-60 to Eucalyptus Avenue)	59.2	60.0	0.8
San Timoteo Canyon Road (Alessandro Road to Live Oak Canyon Road)	62.4	64.2	1.8
San Timoteo Canyon Road (Live Oak Canyon Road to Redlands Boulevard)	63.2	64.9	1.7
Street A (Eucalyptus Avenue to Street F)	51.8	71.2	19.4
Street D (Street E to Cactus Avenue)	0.0	68.3	68.3
Street E (north of Alessandro Boulevard)	0.0	65.5	65.5
Street F (east of Street A)	0.0	29.8	29.8
Sunset Drive (Alessandro Road to Cameo Drive)	53.8	55.8	2.0

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Table 4.12.I: Phase I (2017) Plus Project Traffic Noise Levels (dBA)

Roadway Segment	CNEL (dBA) at 100 feet		
	Without Project	With Project	Change
Sunset Drive (Crown Street to Alessandro Road)	50.2	51.6	1.4
Sycamore Canyon Boulevard (Central Avenue to College Boulevard)	63.3	64.9	4.6
Theodore Street (SR-60 to Highland Boulevard)	56.8	64.1	7.4
Freeways			
SR-60 (Pigeon Pass Road/Frederick Street to Heacock Street)	67.2	67.9	0.7
SR-60 (Heacock Street to Perris Boulevard)	66.0	66.8	0.8
SR-60 (Perris Boulevard to Nason Street)	65.5	66.5	1.0
SR-60 (Nason Street to Moreno Beach Drive)	52.9	54.0	1.1
SR-60 (Moreno Beach Drive to Redlands Boulevard)	63.5	65.1	1.5
SR-60 (Redlands Boulevard to Theodore Street)	61.3	63.1	1.8

Source: Mestre Greve Associates, November 2012.

As identified in Table 4.12.I, implementation of the proposed WLC project would result in relatively minor changes in traffic noise levels in Year 2017 (Phase I). The largest project-related increase in traffic noise would be along Street D (Street E to Cactus Avenue) and Street E (north of Alessandro Boulevard), where increases of greater than 65 dBA are predicted for the 2017 With Project scenario over the Year 2017 without project scenario. The increase associated with these roadway segments is attributable in part to Streets D and E being new roads that will be constructed by the proposed project.

Future Year (2022) with and without project scenarios projected daily traffic volumes on roadway segments in the project vicinity were used to conduct the traffic noise modeling. The projected daily traffic volumes in the area were taken from the TIA prepared for the proposed project. Table 4.12.J identifies the future year (2022) without project and with project traffic noise levels.

Table 4.12.J: Future Year (2022) Plus Project Traffic Noise Levels (dBA)

Roadway Segment	CNEL (dBA) at 100 feet		
	Without Project	With Project	Change
Alessandro Boulevard (west of Redlands Boulevard)	61.5	63.4	1.9
Alessandro Road (Crescent Avenue to Sunset Drive)	64.6	65.9	1.3
Alessandro Road (Sunset Drive to San Timoteo Canyon Road)	65.0	66.3	1.3
Cactus Avenue (Oliver Street to Moreno Beach Drive)	58.9	60.7	1.8
Cactus Avenue (Redlands Boulevard to Street D)	50.2	65.7	15.5
Cactus Avenue (west of Redlands Boulevard.)	58.3	60.2	1.9
Canyon Crest Drive (Alessandro Boulevard to Sandtrack Road)	45.2	45.9	0.7
Country Club Drive (Chicago Avenue to Canyon Crest Drive)	58.9	59.1	0.2
Crescent Avenue (west of Alessandro Boulevard)	58.5	60.8	2.3
Day Street (Cottonwood Avenue to Alessandro Boulevard)	63.2	64.7	1.5
Evans Road (Marbella Date to Ramon Expressway)	58.1	59.2	1.1
Evans Road (north of Harley Knox Boulevard)	0.0	0.0	0.0
Evans Road (Nuevo Road to San Jacinto Avenue)	0.0	0.0	0.0

Table 4.12.J: Future Year (2022) Plus Project Traffic Noise Levels (dBA)

Roadway Segment	CNEL (dBA) at 100 feet		
	Without Project	With Project	Change
Fir Avenue (Quincy Drive to Redlands Boulevard)	0.0	0.0	0.0
Gilman Springs Road (Bridge Street to Beaumont Avenue)	61.2	63.1	2.0
Gilman Springs Road (Bridge Street to SR-79 Southbound Ramps)	61.2	63.2	2.0
Gilman Springs Road (Eucalyptus Avenue to Street C)	46.4	55.0	8.6
Gilman Springs Road (Jack Rabbit Trail to Bridge Street)	63.0	65.3	2.4
Gilman Springs Road (south of Street C)	56.5	58.8	2.3
Gilman Springs Road (SR-79 Northbound Ramps to Record Road)	62.3	62.6	0.2
Iris Avenue (Kitching Street to Lasselle Street)	61.0	62.4	1.4
Iris Avenue (Lasselle Street to Nason Street)	61.1	63.6	2.5
Iris Avenue (Nason Street to Oliver Street)	63.8	66.7	2.9
Ironwood Avenue (Moreno Beach Drive to Redlands Boulevard)	56.2	56.6	0.4
Ironwood Avenue (Redlands Boulevard to Highland Boulevard)	51.9	57.8	5.9
John F Kennedy Drive (south of Cactus Avenue)	62.8	67.2	4.3
Kitching Street (Iris Avenue to Ivory Avenue)	62.5	63.9	1.4
Krameria Avenue (Perris Boulevard to Lasselle Street)	60.5	62.2	1.8
Lasselle Street (Cahuilla Drive to Krameria Avenue)	61.9	63.3	1.4
Lasselle Street (Krameria Avenue to Arroyo Park Drive)	59.2	61.5	2.3
Live Oak Canyon Road (San Timoteo Canyon Road to I-10)	58.0	59.0	0.9
Lochmoor Drive (Central Avenue to Fair Isle Drive)	57.0	57.9	0.9
Locust Avenue (Moreno Beach Drive to Smiley Boulevard)	46.2	45.7	-0.5
Locust Avenue (Moreno Beach Drive to Redlands Boulevard)	60.7	63.3	2.6
Moreno Beach Drive (John F Kennedy to Oliver Street)	56.1	59.1	3.0
Moreno Beach Drive (Locust Avenue to Ironwood Avenue)	58.8	60.9	2.1
Old 215 Frontage Road (Eucalyptus Avenue to Alessandro Boulevard)	62.8	64.3	1.5
Oliver Street (Alessandro Boulevard to Cactus Avenue)	58.9	59.7	0.8
Orange Avenue (Evans Road to Foothill Drive)	55.3	55.7	0.4
Perris Boulevard (Alessandro Boulevard to Cactus Avenue)	62.7	63.4	0.7
Perris Boulevard (Alessandro Boulevard to Cottonwood Avenue)	63.2	63.7	0.5
Perris Boulevard (Iris Avenue to Krameria Avenue)	62.7	63.2	0.5
Perris Boulevard (John F Kennedy Drive to Iris Avenue)	69.7	70.5	0.8
Perris Boulevard (Krameria Avenue to Harley Knox Boulevard)	62.8	63.7	0.9
Perris Boulevard (Krameria Avenue to Harley Knox Boulevard)	61.5	62.0	0.5
Placentia Avenue (Evans Road to El Nido Avenue)	0.0	0.0	0.0
Placentia Avenue (Water Avenue to Evans Road)	0.0	0.0	0.0
Quincy Drive (Alessandro Boulevard to Cactus Avenue)	0.0	0.0	0.0
Quincy Drive (Cottonwood Avenue to Alessandro Boulevard)	0.0	0.0	0.0
Ramona Expressway (Evans Road to Rider Street)	59.4	60.2	0.8
Reche Canyon Road (Keissel Road to Reche Vista)	63.5	64.1	0.6
Reche Canyon Road (Reche Vista Drive to High Country Drive)	49.3	49.0	-0.3
Redlands Boulevard (Eucalyptus Avenue to Dracaea Avenue)	0.0	50.6	50.6

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Table 4.12.J: Future Year (2022) Plus Project Traffic Noise Levels (dBA)

Roadway Segment	CNEL (dBA) at 100 feet		
	Without Project	With Project	Change
Redlands Boulevard (Ironwood Avenue to SR-60)	69.2	71.4	2.2
Redlands Boulevard (Ironwood Avenue to San Timoteo Canyon Road)	69.1	70.8	1.7
Redlands Boulevard (SR-60 to Eucalyptus Avenue)	60.5	66.1	5.6
San Timoteo Canyon Road (Alessandro Road to Live Oak Canyon Road)	63.4	65.8	2.4
San Timoteo Canyon Road (Live Oak Canyon Road to Redlands Boulevard)	64.2	66.4	2.2
Street A (Eucalyptus Avenue to Street F)	49.4	73.1	23.8
Street D (Street E to Cactus Avenue)	0.0	69.8	69.8
Street E (north of Alessandro Boulevard)	0.0	65.4	65.4
Street F (east of Street A)	0.0	68.4	68.4
Sunset Drive (Alessandro Road to Cameo Drive)	55.3	56.9	1.7
Sunset Drive (Crown Street to Alessandro Road)	49.0	49.0	0.0
Sycamore Canyon Boulevard (Central Avenue to College Boulevard)	65.1	65.2	0.1
Theodore Street (SR-60 to Highland Boulevard)	60.3	64.1	3.8
Freeways			
SR-60 (Pigeon Pass Road/Frederick Street to Heacock Street)	67.2	68.4	1.2
SR-60 (Heacock Street to Perris Boulevard)	66.1	67.4	1.3
SR-60 (Perris Boulevard to Nason Street)	65.6	67.2	1.6
SR-60 (Nason Street to Moreno Beach Drive)	53.1	54.9	1.8
SR-60 (Moreno Beach Drive to Redlands Boulevard)	63.8	66.2	2.4
SR-60 (Redlands Boulevard to Theodore Street)	61.7	64.1	2.4

Source: Mestre Greve Associates, November 2012.

As identified in Table 4.12.J, implementation of the proposed WLC project would result in relatively minor changes in traffic noise levels in Future Year 2022. The largest project-related increase in traffic noise would be along Street D (Street E to Cactus Avenue), Street E (north of Alessandro Boulevard), and Street F west (of Street A), where increases of greater than 65 dBA are predicted for the Future Year 2022 With Project scenario over the Future Year 2022 Without Project scenario. The increase associated with these roadway segments is attributable in part to Streets D, E, and F being new roads that will be constructed by the proposed project.

Operation of the proposed project would generate traffic along roadways in the surrounding area during the buildout year (2035) scenario. Buildout Year (2035) with and without project scenarios projected daily traffic volumes on roadway segments in the project vicinity were used to conduct the traffic noise modeling. The projected daily traffic volumes in the area were taken from the TIA prepared for the proposed project. Table 4.12.K identifies the Buildout Year (2035) without project and with project traffic noise levels.

Table 4.12.K: Buildout Year (2035) Plus Project Traffic Noise Levels (dBA)

Roadway Segment	CNEL (dBA) at 100 feet		
	Without Project	With Project	Change
Alessandro Boulevard (west of Redlands Boulevard)	65.6	66.5	0.9
Alessandro Road (Crescent Avenue to Sunset Drive)	64.5	64.9	0.4
Alessandro Road (Sunset Drive to San Timoteo Canyon Road)	65.0	65.5	0.5
Cactus Avenue (Oliver Street to Moreno Beach Drive)	60.4	62.3	1.9
Cactus Avenue (Redlands Boulevard to Street D)	50.1	66.3	16.3
Cactus Avenue (west of Redlands Boulevard.)	59.7	64.8	5.1
Canyon Crest Drive (Alessandro Boulevard to Sandtrack Road)	58.1	59.7	1.6
Country Club Drive (Chicago Avenue to Canyon Crest Drive)	62.4	64.9	2.5
Crescent Avenue (west of Alessandro Boulevard)	58.9	60.1	1.2
Day Street (Cottonwood Avenue to Alessandro Boulevard)	67.8	69.4	1.7
Evans Road (Marbella Date to Ramon Expressway)	61.3	62.7	1.5
Evans Road (north of Harley Knox Boulevard)	60.1	62.9	2.8
Evans Road (Nuevo Road to San Jacinto Avenue)	60.5	62.0	1.5
Fir Avenue (Quincy Drive to Redlands Boulevard)	61.6	68.3	6.7
Gilman Springs Road (Bridge Street to Beaumont Avenue)	63.5	65.5	2.0
Gilman Springs Road (Bridge Street to SR-79 Southbound Ramps)	63.7	65.5	1.8
Gilman Springs Road (Eucalyptus Avenue to Street C)	52.0	57.4	5.4
Gilman Springs Road (Jack Rabbit Trail to Bridge Street)	65.7	68.0	2.3
Gilman Springs Road (south of Street C)	61.9	63.6	1.7
Gilman Springs Road (SR-79 Northbound Ramps to Record Road)	62.6	64.8	2.2
Iris Avenue (Kitching Street to Lasselle Street)	63.2	65.1	1.9
Iris Avenue (Lasselle Street to Nason Street)	63.1	65.4	2.3
Iris Avenue (Nason Street to Oliver Street)	65.6	67.4	2.8
Ironwood Avenue (Moreno Beach Drive to Redlands Boulevard)	57.9	60.6	2.7
Ironwood Avenue (Redlands Boulevard to Highland Boulevard)	58.6	63.6	5.0
John F Kennedy Drive (south of Cactus Avenue)	64.3	67.9	3.6
Kitching Street (Iris Avenue to Ivory Avenue)	63.6	64.8	1.2
Krameria Avenue (Perris Boulevard to Lasselle Street)	57.5	59.4	1.9
Lasselle Street (Cahuilla Drive to Krameria Avenue)	62.1	63.3	1.2
Lasselle Street (Krameria Avenue to Arroyo Park Drive)	60.0	61.8	1.8
Live Oak Canyon Road (San Timoteo Canyon Road to I-10)	57.5	58.6	1.1
Lochmoor Drive (Central Avenue to Fair Isle Drive)	65.4	68.9	3.5
Locust Avenue (Moreno Beach Drive to Smiley Boulevard)	60.8	63.3	2.5
Locust Avenue (Moreno Beach Drive to Redlands Boulevard)	60.8	63.3	2.5
Moreno Beach Drive (John F Kennedy to Oliver Street)	56.8	60.4	3.6
Moreno Beach Drive (Locust Avenue to Ironwood Avenue)	63.3	66.6	3.3
Old 215 Frontage Road (Eucalyptus Avenue to Alessandro Boulevard)	32.2	63.5	1.2
Oliver Street (Alessandro Boulevard to Cactus Avenue)	54.1	54.4	0.3
Orange Avenue (Evans Road to Foothill Drive)	57.3	65.1	7.8
Perris Boulevard (Alessandro Boulevard to Cactus Avenue)	63.5	65.0	1.5

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Table 4.12.K: Buildout Year (2035) Plus Project Traffic Noise Levels (dBA)

Roadway Segment	CNEL (dBA) at 100 feet		
	Without Project	With Project	Change
Perris Boulevard (Alessandro Boulevard to Cottonwood Avenue)	63.5	65.0	1.5
Perris Boulevard (Iris Avenue to Krameria Avenue)	64.4	66.0	1.5
Perris Boulevard (John F Kennedy Drive to Iris Avenue)	70.5	72.2	1.7
Perris Boulevard (Krameria Avenue to Harley Knox Boulevard)	64.0	65.5	1.5
Perris Boulevard (Krameria Avenue to Harley Knox Boulevard)	64.0	65.8	1.8
Placentia Avenue (Evans Road to El Nido Avenue)	54.0	68.2	14.3
Placentia Avenue (Water Avenue to Evans Road)	57.4	67.5	10.1
Quincy Drive (Alessandro Boulevard to Cactus Avenue)	31.1	54.5	23.4
Quincy Drive (Cottonwood Avenue to Alessandro Boulevard)	49.2	66.8	1.8
Ramona Expressway (Evans Road to Rider Street)	59.9	61.6	1.7
Reche Canyon Road (Keissel Road to Reche Vista)	65.1	66.9	1.8
Reche Canyon Road (Reche Vista Drive to High Country Drive)	64.2	67.5	3.3
Redlands Boulevard (Eucalyptus Avenue to Dracaea Avenue)	0.0	48.5	48.5
Redlands Boulevard (Ironwood Avenue to SR-60)	69.4	71.6	2.2
Redlands Boulevard (Ironwood Avenue to San Timoteo Canyon Road)	68.7	70.6	1.9
Redlands Boulevard (SR-60 to Eucalyptus Avenue)	61.3	67.3	6.0
San Timoteo Canyon Road (Alessandro Road to Live Oak Canyon Road)	63.5	66.4	2.8
San Timoteo Canyon Road (Live Oak Canyon Road to Redlands Boulevard)	64.1	66.4	2.3
Street A (Eucalyptus Avenue to Street F)	54.0	73.0	19.0
Street D (Street E to Cactus Avenue)	0.0	70.4	70.4
Street E (north of Alessandro Boulevard)	0.0	65.8	65.8
Street F (east of Street A)	0.0	69.2	69.2
Sunset Drive (Alessandro Road to Cameo Drive)	56.9	58.7	1.8
Sunset Drive (Crown Street to Alessandro Road)	50.7	51.7	1.1
Sycamore Canyon Boulevard (Central Avenue to College Boulevard)	65.1	66.5	1.3
Theodore Street (SR-60 to Highland Boulevard)	65.0	67.9	2.9
Freeways			
SR-60 (Pigeon Pass Road/Frederick Street to Heacock Street)	67.6	68.6	1.0
SR-60 (Heacock Street to Perris Boulevard)	66.6	67.7	1.1
SR-60 (Perris Boulevard to Nason Street)	66.5	67.8	1.3
SR-60 (Nason Street to Moreno Beach Drive)	54.2	55.6	1.3
SR-60 (Moreno Beach Drive to Redlands Boulevard)	65.5	67.1	1.6
SR-60 (Redlands Boulevard to Theodore Street)	63.7	65.1	1.4

Source: Mestre Greve Associates, November 2012.

Increases in noise levels associated with Buildout Year (2035) traffic conditions on area roadways range from 0.1 to 68.0 dBA. As identified in the Table 4.12.K, the greatest increase in noise levels would be along Street D (Street E to Cactus Avenue), Street E (north of Alessandro Boulevard), and

Street F west (of Street A), where increases of greater than 65 dBA are predicted for the Buildout Year 2035 With Project scenario over the Buildout Year 2035 Without Project scenario. The increase associated with these roadway segments is attributable in part to Streets D, E, and F being new roads that will be constructed by the proposed project.

Tables 4.12.H through 4.12.K identify the noise increases directly caused by the proposed project. These numbers represent the distance from the centerline of the road to the contour value shown. Note that the values given in Tables 4.12.H through 4.12.I do not take into account the effect of any existing noise attenuation in the form of barriers, soundwalls, or topography that may affect ambient noise levels.

For the reader's convenience, the significance threshold for a project-specific roadway noise impact as defined previously is:

- Project induced increase in noise levels by 5 dB or more where the no project noise level is less than 60 CNEL;
- Project induced increase in noise level by 3 dB or more where the no project noise level is 60 CNEL to 65 CNEL; or
- Project induced increase in noise levels by 1.5 dB or more where the no project noise level is greater than 65 CNEL.

For the reader's convenience, the significance threshold for a project's incremental contribution to a cumulative noise increase as defined previously is:

A project increase of the ambient (cumulative without project) noise level by 1 dB or more, and the predicted future cumulative with project noise levels cause the following cumulative increases:

- Increase noise levels by 5 dB or more where the existing noise level is less than 60 CNEL;
- Increase noise levels by 3 dB or more where the existing noise level is 60 to 65 CNEL; or
- Increase noise levels by 1.5 dB or more where the existing noise level is greater than 65 CNEL.

It should be noted that the same noise increase occurs at all locations along a roadway link. In other words, the same increase will occur at 50 feet from a roadway as it does at 100 feet. In addition, the noise contours cover a wider area around the local roadways than does the existing condition. State Route 60, however, continues to be the dominant noise source in the area.

In general, the project proposes logistics uses and will not be affected by these noise increases. However, there are a few scattered residences within the project area and adjacent to the WLCSP area that would be affected by the proposed logistics uses.

Within the Specific Plan Area. For locations within the WLCSP area, these include three groups of residences that may remain with the implementation of the proposed project. The Specific Plan would rezone the properties as Light Logistics, but it is anticipated that the residences may remain for some time. The Light Logistics use is not sensitive to noise. However, the existing residences, as long as they remain, must be considered sensitive land uses.

- *Redlands Boulevard (north of Brodiaea Avenue).* The first group of homes is located east of Redlands Boulevard north of the intersection with Brodiaea Avenue. The traffic on Redlands Boulevard will not increase significantly as a result of the project. Future Street E is proposed to be constructed west of these existing residences. However, as stated in the Noise Study

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conducted for the Specific Plan, it is likely that there will be intervening buildings and that the distance from Street E will be so great that these homes will not experience significant noise from public roadways. Therefore, impacts are anticipated to be less than significant and no mitigation is required.

- *Street A/Theodore Street (Street B to Street F)*. The second group of residences within the Specific Plan area is located on the east side of Street A (Theodore Street) midway between the future Street B and Street F. There are currently two residences in this area. These residences are anticipated to experience noise increases up to 18 dB due to the implementation of the Specific Plan. As a result, existing noise levels at these two residences will be changed significantly. The exact alignment of the roadway is yet to be determined, but the homes may be roughly 100 feet from the centerline on the roadway. As identified in Table 4.12.J, at this distance, the noise level by future year (2022) could be as high as 73.1 CNEL. This level of noise would be above the 65 CNEL threshold and would result in a greater than 1.5 dB noise increase when compared to without project conditions. This is a significant impact requiring mitigation.
- *Street F/Dracaea Avenue (east of Theodore Street)*. The third area is a single residence located east of Theodore Street along what is currently Dracaea Avenue (future Street F). Existing conditions identify low levels of traffic noise on Dracaea Avenue. The 65 CNEL contour is projected to lie 84 feet from the centerline of Street F and it is likely that the one residence would lie within this zone. This level of noise would be above the 65 CNEL threshold and result in a greater than 1.5 dB noise increase when compared to without project conditions. Therefore, this is a significant impact requiring mitigation.

Off-Site Areas Adjacent to the Specific Plan Area. For areas adjacent to the Specific Plan area, 22 segments would experience a noise increase that would be greater than significance criteria specified previously. These seven areas are described below.

- *Cactus Avenue (Redlands Boulevard to Street D)*. This area is occupied by a small group of single-family homes along Cactus Avenue between the future Street D and Redlands Boulevard. A significant noise increase is projected for all four time horizons. Currently, there is no soundwall along these homes. Therefore, this is a significant impact requiring mitigation.
- *Cactus Avenue (west of Redlands Boulevard)*. As identified in the noise study, this area shows noise increases ranging from 1.5 dB to 5.1 dB depending on the time horizon. Only the 2035 case results in a significant noise increase.

Existing residences are located along Redlands Boulevard with rear yards facing Cactus Avenue. Existing 6-foot high soundwalls are located along the residences and rear yard areas are approximately 60 feet from the centerline of the roadway. In buildout year (2035), the noise levels for 60 feet from the centerline of the roadway including the effects of the soundwall are projected to be 64.8 CNEL. This is below the City criteria of 65 CNEL and, therefore, a less than significant impact will occur and no mitigation is required.

- *Day Street (between Cottonwood Avenue and Alessandro Boulevard)*. There are scattered single-family homes along this roadway that front onto Day Street. Only the 2035 time horizon results in a significant noise increase for this area. In 2035, the project is projected to increase noise levels by 1.7 dB, bringing the noise level up to 69.4 CNEL. Therefore, this is a significant impact requiring mitigation.
- *Fir Avenue (between Quincy Drive and Redlands Boulevard)*. There is one single-family home along this roadway fronting Fir Avenue. Only the 2035 time horizon results in a significant noise increase for this area. In 2035, the project is projected to increase noise levels by 6.7 dB, bringing the noise level up to 68.3 CNEL. Therefore, this is a significant impact requiring mitigation.

- *Gilman Springs Road (between Eucalyptus Avenue and Street C, and between Jack Rabbit Trail and Bridge Street)*. There are three single-family homes scattered along these roadway segments. All of the houses are set back from the roadway, but none has soundwalls. A significant noise increase is projected for at least one of these segments in three of the four case years. Therefore, this is a significant impact requiring mitigation.
- *Ironwood Avenue (between Redlands Boulevard and Highland Boulevard)*. There are two single-family homes that front onto Ironwood Avenue. There are also two churches along this roadway. A significant noise increase is projected for all four study years. In 2035, the project is projected to increase noise levels by 5 dB, bringing the noise level to 63.6 CNEL. Therefore, this is a significant impact requiring mitigation.
- *John F. Kennedy Drive (south of Cactus Avenue)*. The residences along John F. Kennedy Drive south of Cactus Avenue will experience significant noise increases in all four time horizons. Similar to the area along Cactus Avenue, this noise increase will be due to cars and light vehicles, and not heavy trucks. The residences along the west side of the roadway are generally depressed with respect to the road and have existing 6-foot soundwalls. Due to the presence of the existing soundwalls and slope conditions, noise levels would be reduced by 6 to 10 dB. This would result in noise levels being below the City threshold of 65 CNEL for residential uses. Therefore, residences on the west side of the street will not be affected. Impacts are considered to be less than significant and no mitigation is required.

The residences on the east side of the roadway are elevated with respect to the roadway and do not have soundwalls. Rear yards areas on both sides of the street are approximately 60 to 90 feet from the centerline of the roadway and are bordered by wrought iron fencing. As identified in Tables 4.12.H through 4.12.K, the greatest noise levels that would be experienced at these residences would range up to 67.9 CNEL, which is above the City threshold of 65 CNEL. This is a significant impact requiring mitigation.

- *Locust Avenue (between Moreno Beach Drive and Smiley Boulevard)*. There are three single-family homes along this roadway and they front onto the roadway. The 2035 time horizon results in a significant noise increase for this area. In 2035, the project will increase noise levels by 3.5 dB, bringing the noise level to 68.9 CNEL. This is a significant impact requiring mitigation.
- *Moreno Beach Drive (between Locust Avenue and Ironwood Avenue)*. There are 18 single-family homes along this roadway. Some homes front onto the roadway, but most back up to the roadway. The 2035 time horizon results in a significant noise increase for this area. In 2035, the project will increase noise levels by 3.3 dB, bringing the noise level to 66.6 CNEL. This is a significant impact requiring mitigation.
- *Perris Boulevard (between John F. Kennedy Drive and Iris Avenue)*. This is a mixed area in terms of residential land use. There are approximately 36 single-family homes along this roadway, some with a soundwall and some without. There is also a large multifamily development without a soundwall. Most of the homes either back up to the roadway or side-on to the roadway, making a soundwall feasible. Approximately half of the homes along this roadway do have a soundwall in place. The 2035 time horizon results in a significant noise increase for this area. In 2035, the project will increase noise levels by 1.7 dB, bringing the noise level up to 72.2 CNEL for areas without a soundwall. For the homes with a soundwall, there would not be a significant noise impact since the year 2035 the noise would increase by 1.7 dB and reaching up to 66.2 CNEL. For the homes on this roadway that do not have a soundwall, there would be a significant noise impact and mitigation is required.
- *Placentia Avenue (from El Nido Avenue to Evans Road, and on to Water Avenue)*. There are scattered single-family homes along this roadway that front onto the roadway. The 2035 time horizon results in a significant noise increase for this area. In 2035, the project will increase noise levels by 10 to 14 dB, bringing the noise level up to 68 CNEL. This is a significant impact requiring mitigation.

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- *Quincy Drive (from Cactus Avenue to Alessandro Boulevard, and on to Cottonwood Avenue)*. The existing single-family homes along Quincy Drive have a soundwall. Quincy Drive currently only exists from Cottonwood to Bay Avenue, which is north of Alessandro Boulevard. The 2035 time horizon results in a significant noise increase. This is a significant impact requiring mitigation.
- *Reche Canyon Road (from Keissel Road to Reche Vista Drive, and on to High Country Drive)*. There are roughly 22 single-family homes scattered along these two roadway segments. These homes are scattered along the roadway and front onto Reche Canyon Road. The 2035 time horizon results in a significant noise increase for this area. In 2035, the project will increase noise levels by 1.8 to 3.3 dB with resulting noise levels in the 67 to 68 CNEL range. This is a significant impact requiring mitigation.
- *Redlands Boulevard (from Dracaea Avenue to State Route 60)*. There are scattered homes in this area that either face Redlands Boulevard (or Shubert Street) or are on Redlands Boulevard. The 2012, 2022, and 2035 time horizons result in a significant noise increase for this area. This is a significant impact requiring mitigation.
- *Redlands Boulevard (from State Route 60 to San Timoteo Canyon Road)*. There are approximately 28 homes along this roadway that would be affected. The single-family homes are scattered and generally front the roadway. The 2012, 2022, and 2035 time horizons result in a significant noise increase for this area. The increases in noise are around 2 dB with a resultant noise level in the 71 to 72 CNEL range. This is a significant impact requiring mitigation.
- *San Timoteo Canyon Road (from Alessandro Road to Live Oak Canyon Road to Redlands Boulevard)*. There are about four scattered residences along this roadway that would be affected. The existing baseline plus project time horizon results in a significant noise increase for this area. The noise increases by up to 3.3 dB with resultant noise levels in the 65 to 66 CNEL range. This is a significant impact requiring mitigation.
- *Theodore Street (State Route 60 to Highland Boulevard)*. There are four existing homes on Theodore Street that front onto the roadway. Implementation of the Specific Plan would result in a 10.7 dB increase over baseline conditions (2012), a 7.4 dB increase in Opening Year (2017), and a 3.8 dB increase in future year (2022). By Buildout Year (2035), the noise increase associated with the proposed project is anticipated to be 2.9 dB, which would not be significant. In future year (2022), the 65 CNEL contour for this roadway link would lie approximately 138 feet from the centerline of the roadway. The four existing residences on Theodore Street are within 138 feet of the roadway. As a result, these existing residences could experience noise levels above the 65 CNEL threshold during all time horizons. This is a significant impact requiring mitigation.
- *Street D (from Street E to Cactus Avenue)*. Street D, as shown in the Specific Plan, will come down the western side of the project parallel to Merwin Street. It then merges with Cactus Avenue traveling to the west until Redlands Boulevard. A specific alignment has not been determined for this roadway. There are approximately 14 homes that side-on to Merwin Street that could be affected by traffic on Street D. There are no soundwalls along these homes. There would be limited or no heavy trucks using this roadway. The 65 CNEL contour will lie 114 feet from the centerline of Street D. If the centerline of Street D is located closer than 114 feet to the residences, then a significant impact would occur. Outdoor living spaces for homes along Merwin Street would experience noise levels greater than 65 CNEL, and this would not be consistent with City criteria. This is a significant impact requiring mitigation.
- *State Route 60 (from Pigeon Pass Road to Perris Boulevard)*. All residential areas along this stretch of freeway have soundwalls in place. The 2012 time horizon results in a significant noise increase for this area. The noise levels are projected to increase by 1.5 to 1.7 dB in this area with resultant noise levels in the 66.9 to 68.1 CNEL range. This is a significant impact requiring mitigation.
- *State Route 60 (from Perris Boulevard to Nason Street)*. All residential areas along this stretch of freeway have soundwalls in place. The 2022 time horizon results in a significant noise increase

for this area. The noise level will go up by 1.6 dB with the project up to a level of 67.2 CNEL. This is a significant impact requiring mitigation.

- *State Route 60 (from Moreno Beach Drive to Redlands Boulevard)*. There are soundwalls in place for all residences in this area. The existing 2012 and 2035 time horizons result in a significant noise increase for this area, reaching 67.1 CNEL by 2035. This is a significant impact requiring mitigation.
- *State Route 60 (from Redlands Boulevard to Theodore Street)*. No soundwalls are present in this area. The residential area is set back from the freeway and is clustered along Redlands Boulevard north of the freeway. The existing 2012 time horizon results in a significant noise increase for this area. The resultant noise level will be 63.5 CNEL with an increase due to the project of 3.4 dB. This is a significant impact requiring mitigation.

Specific Plan Design Features. The WLCSP indicates there will be a 250-foot setback from existing housing along Redlands Boulevard. No additional design features to attenuate noise impacts are planned as part of the WLCSP.

Mitigation Measures. Construction of the proposed WLC project would result in noise levels at the closest residences within and adjacent to the WLCSP area exceeding the maximum noise level allowed under the City's Municipal Code. The following measures would reduce long-term traffic related noise impacts associated with the proposed project:

4.12.6.2A Within the WLCSP, Street D shall be designed such that exterior noise levels at existing residential areas shall not exceed 65 CNEL, which may require installation of a soundwall or other noise attenuation improvements. The design and calculations of such improvements shall be incorporated into a report that shall be submitted to the City for review and approval prior to the issuance of construction permits for Street D.

4.12.6.2B Prior to issuance of any discretionary approvals for development in the WLCSP, a WLC Noise Development Impact Fee study shall be submitted to the City for review and approval. The City shall require future development within the WLCSP to participate in a WLC Noise Development Impact Fee program to include soundwall attenuation to mitigate impacts from the proposed project based on the collection of fair-share fee payments from each increment of development and the implementation of each soundwall in accordance with Mitigation Measure 4.12.6.2C. The update to the DIF shall be based on a nexus study in conformance with State law (i.e., AB 1600). The Nexus study shall examine the soundwalls specified below, shall include detailed cost estimates for each soundwall, and shall establish a pro-rated fee to be paid per square foot by all development proposals within the WLCSP. The soundwalls to be included in this study include:

Cactus Avenue Soundwall from Redlands Boulevard to Street D. Construct an approximately 1,000-foot long, 6-foot high soundwall at the top of slope. The existing wrought-iron fencing will be removed and replaced with the soundwall (e.g., masonry wall, berming, glass barrier, or combinations of these barriers). The soundwall would need to measure 6 feet as measured from the rear yard of the residences.

John F. Kennedy Drive, east side, Soundwall from Cactus Avenue to Bay Hill Drive. Construct an approximately 5,000-foot long, 6-foot high soundwall at the top of slope for the existing residences that are on the east side of John F. Kennedy Drive. The existing wrought-iron fencing will be removed and replaced with the soundwall (e.g., masonry wall, berming, glass barrier, or combinations of these barriers). The

soundwall would need to measure 6 feet as measured from the rear yard of the residences.

Moreno Beach Drive Soundwall between Locust Avenue and Ironwood Avenue. Construct an approximately 2,000-foot long, 6-foot high soundwall at the top of slope for the existing residences that are on the east side of John F. Kennedy Drive. The soundwall would need to measure 6 feet as measured from the rear yard of the residences.

Perris Boulevard Soundwall between John F. Kennedy Drive and Iris Avenue. Construct an approximately 1,500-foot long, 6-foot high soundwall at the top of slope for the existing residences that are on the east side of John F. Kennedy Drive. The soundwall would need to measure 6 feet as measured from the rear yard of the residences.

State Route 60 Soundwall from Redlands Boulevard to Theodore Street. Construct an approximately 580-foot long, 6-foot high soundwall for the existing residences. The soundwall would need to measure 6 feet as measured from the rear yard of the residences.

Iris Avenue Soundwall from Nason Street to Oliver Street. Construct an approximately 3,000-foot long, 6-foot high soundwall along the property line for the existing residences.

Sycamore Canyon Boulevard Soundwall from College Boulevard and Central Avenue. Construct an approximately 1,000-foot long, 6-foot high soundwall at the top of slope for the existing residences. The soundwall would need to measure 6 feet as measured from the rear yard of the residences.

4.12.6.2C Prior to issuance of any building permits for development in the WLCSP, the City shall collect the Development Impact Fee (DIF) as modified in accordance with Mitigation Measure 4.12.6.2B. The City shall establish a schedule for installing the specific soundwalls listed in Mitigation Measure 4.12.6.2B consistent with the WLC Noise DIF program..

Level of Significance after Mitigation. *Within the WLC Specific Plan Area.* For areas within the WLCSP area, these include three groups of residences that may remain with the implementation of the proposed project. The level of significance after mitigation is provided for each of the two areas for which a significant impact has been identified.

- *Theodore Street/Street A (Street B to Street F).* There are two residences in this area. These residences are anticipated to experience noise increases up to 18 dB due to the implementation of the Specific Plan. As a result, existing noise levels at these two residences will be changed significantly. The exact alignment of the roadway is to be determined, but the homes may be roughly 100 feet from the centerline on the roadway. One residence fronts onto Street A (Theodore Street), and the driveway access would make a soundwall ineffective. The other residence is on to Street A. It is difficult to determine where an outdoor living area is for this residence. However, since it is a single residence, a soundwall would have a limited effectiveness. Since mitigation is not feasible, impacts remain significant and unavoidable.
- *Dracaea Avenue/Street F (east of Theodore Street).* There is one residence in this area fronting onto the future alignment of Street F (currently Dracaea Avenue). Existing conditions identify low levels of traffic noise on Dracaea Avenue. The 65 CNEL contour is projected to lie 84 feet from the centerline of Street F and it is likely that the one residence would lie within this zone. Installation of a soundwall would not be effective in reducing noise levels due to the opening for the driveway. Since mitigation is not feasible, impacts remain significant and unavoidable.

Off-Site Areas Adjacent to the Specific Plan Area. For areas adjacent to the WLCSP area, eight areas would experience noise increases that would be mitigated to a less than significant level with implementation of **Mitigation Measures 4.12.6.2A** through **4.12.6.2C**. These areas are as follows:

- Cactus Avenue from Redlands Boulevard to Street D;
- John F. Kennedy Drive, west side, from Cactus Avenue to Bay Hill Drive;
- Moreno Beach Drive between Locust Avenue and Ironwood Avenue (15 of 18 homes);
- Perris Boulevard between John F. Kennedy Drive and Iris Avenue;
- State Route 60 from Redlands Boulevard to Theodore Street;
- Iris Avenue from Nason Street to Oliver Street;
- Sycamore Canyon Boulevard from College Boulevard and Central Avenue; and
- Street D from Street E to Cactus Avenue (8).

For the remaining noise impact locations adjacent to the WLCSP area for which significant noise impacts have been identified, mitigation measures are not feasible or will not fully reduce the impact to less than significant levels. Each location that will remain significant and unavoidable with implementation of the proposed project is discussed below.

- *Cactus Avenue (west of Redlands Boulevard).* Existing soundwalls will reduce noise levels by an estimated 6 dB, lowering the ultimate noise levels to 64.8 CNEL in the rear yard areas along Cactus Avenue. This is below the City criteria of 65 CNEL. It is not feasible to modify the existing residential block wall to reduce the project increase in noise levels because the block walls are designed for the height that they are built. In addition, the projected noise levels in year 2035 are within the City's exterior noise level for residences. Therefore, the significant impact cannot be feasibly mitigated and it will remain significant and unavoidable.
- *Day Street (between Cottonwood Avenue and Alessandro Boulevard).* The scattered single-family homes along this roadway front onto Day Street. In 2035, the project is projected to increase noise levels by 1.7 dB, bringing the noise level up to 69.4 CNEL. Homes that are widely separated from other homes cannot be effectively mitigated with a soundwall. Therefore, the significant impact cannot be feasibly mitigated and it will remain significant and unavoidable.
- *Fir Avenue (between Quincy Drive and Redlands Boulevard).* There is one single-family home along this roadway fronting Fir Avenue. Only the 2035 time horizon results in a significant noise increase for this area. In 2035, the project is projected to increase noise levels by 6.7 dB, bringing the noise level up to 68.3 CNEL. A single home that fronts on a roadway cannot be effectively mitigated with a soundwall. Therefore, the significant impact cannot be feasibly mitigated and it will remain significant and unavoidable.
- *Gilman Springs Road (between Eucalyptus Avenue and Street C, and between Jack Rabbit Trail and Bridge Street).* There are three single-family homes scattered along these roadway segments. All of the houses are set back from the roadway, but none has soundwalls. A significant noise increase is projected for at least one of these segments in three of the four case years. Homes that are widely separated from other homes cannot be effectively mitigated with a soundwall. Therefore, the significant impact cannot be feasibly mitigated and it will remain significant and unavoidable.
- *Ironwood Avenue (between Redlands Boulevard and Highland Boulevard).* There are two single-family homes that front onto Ironwood Avenue. There are also two churches along this roadway. A significant noise increase is projected for all four study years. In 2035, the project is projected to increase noise levels by 5 dB, bringing the noise level to 63.6 CNEL. Land uses that are widely

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separated from one another cannot be effectively mitigated with a soundwall. Therefore, the significant impact cannot be feasibly mitigated and it will remain significant and unavoidable.

- *Locust Avenue (between Moreno Beach Drive and Smiley Boulevard)*. There are three single-family homes along this roadway and they front onto the roadway. The 2035 time horizon results in a significant noise increase for this area. In 2035, the project will increase noise levels by 3.5 dB, bringing the noise level to 68.9 CNEL. As discussed above, homes that are scattered and front onto a street cannot be effectively mitigated with a soundwall. Therefore, the significant impact cannot be feasibly mitigated and it will remain significant and unavoidable.
- *Moreno Beach Drive (between Locust Avenue and Ironwood Avenue)*. There are 18 single-family homes along this roadway. Some homes front onto the roadway, but most back up to the roadway. The 2035 time horizon results in a significant noise increase for this area. In 2035, the project will increase noise levels by 3.3 dB, bringing the noise level to 66.6 CNEL. This is a significant impact requiring mitigation. Even with the soundwall that would be implemented as part of **Mitigation Measures 4.12.6.2A** through **4.12.6.2C**, sound levels at 3 of the 18 homes would exceed 65 CNEL. These homes front onto Moreno Beach Drive and cannot be effectively mitigated with a soundwall. Therefore, the significant impact cannot be feasibly mitigated and it will remain significant and unavoidable.
- *Placentia Avenue (from El Nido Avenue to Evans Road, and on to Water Avenue)*. There are scattered single-family homes that front onto the roadway. The 2035 time horizon results in a significant noise increase for this area. In 2035, the project will increase noise levels by 10 to 14 dB, bringing the noise level up to 68 CNEL. As discussed above, homes that are scattered and front onto a street cannot be effectively mitigated with a soundwall. Therefore, the significant impact cannot be feasibly mitigated and it will remain significant and unavoidable.
- *Quincy Drive (from Cactus Avenue to Alessandro Boulevard, and on to Cottonwood Avenue)*. The existing single-family homes along Quincy Drive have a soundwall. Quincy Drive currently only exists from Cottonwood to Bay Avenue, which is north of Alessandro Boulevard. The 2035 time horizon results in a significant noise increase. It is not feasible to modify the existing residential block walls to reduce the project increase in noise levels because the block walls are designed for the height that they are built. Therefore, the significant impact cannot be feasibly mitigated and it will remain significant and unavoidable.
- *Reche Canyon Road (from Keissel Road to Reche Vista Drive, and on to High Country Drive)*. There are approximately 22 single-family homes scattered along these two roadway segments. These homes front onto Reche Canyon Road. The 2035 time horizon results in a significant noise increase for this area. In 2035, the project will increase noise levels by 1.8 to 3.3 dB with resulting noise levels in the 67 to 68 CNEL range. Homes that are scattered and front onto a street cannot be effectively mitigated with a soundwall. Therefore, the significant impact cannot be feasibly mitigated and it will remain significant and unavoidable.
- *Redlands Boulevard (Dracaea Avenue to State Route 60)*. There are scattered homes in this area that either face Redlands Boulevard (or Shubert Street) or are on Redlands Boulevard. The 2012, 2022, and 2035 time horizons result in a significant noise increase for this area. Homes that are scattered and front onto a street cannot be effectively mitigated with a soundwall. Therefore, the significant impact cannot be feasibly mitigated and it will remain significant and unavoidable.
- *Redlands Boulevard (State Route 60 to San Timoteo Canyon Road)*. There are approximately 28 homes along this roadway that would be affected. The single-family homes are scattered and generally front the roadway. The 2012, 2022, and 2035 time horizons result in a significant noise increase for this area. The increases in noise are around 2 dB with a resultant noise level in the 71 to 72 CNEL range. Homes that are scattered and front onto a street cannot be effectively mitigated with a soundwall. Therefore, the significant impact cannot be feasibly mitigated and it will remain significant and unavoidable.

- *San Timoteo Canyon Road (from Alessandro Road to Live Oak Canyon Road to Redlands Boulevard)*. There are approximately four scattered residences along this roadway that would be affected. The existing baseline plus project time horizon results in a significant noise increase for this area. The noise increases by up to 3.3 dB with resultant noise levels in the 65 to 66 CNEL range. Homes that are scattered and front onto a street cannot be effectively mitigated with a soundwall. Therefore, the significant impact cannot be feasibly mitigated and it will remain significant and unavoidable.
- *Theodore Street (State Route 60 to Highland Boulevard)*. There are four existing homes on Theodore Street that front onto the roadway. Implementation of the Specific Plan would result in a 10.7 dB increase over baseline conditions (2012), a 7.4 dB increase in Opening Year (2017), and a 3.8 dB increase in future year (2022). By Buildout Year (2035), the noise increase associated with the proposed project is anticipated to be 2.9 dB, which would not be significant. In future year (2022), the 65 CNEL contour for this roadway link would lie approximately 138 feet from the centerline of the roadway. The four existing residences on Theodore Street are within 138 feet of the roadway. As a result, these existing residences could experience noise levels above the 65 CNEL threshold for all time horizons. Homes that are scattered and front onto a street cannot be effectively mitigated with a soundwall. Therefore, the significant impact cannot be feasibly mitigated and it will remain significant and unavoidable.

4.12.6.3 Long-Term Operational Noise Impacts

Threshold	Would the project cause exposure of persons to or generation of noise levels in excess of standards established in the <i>City of Moreno Valley General Plan, Moreno Valley Municipal Code</i> , or applicable standards of other agencies?
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Potential long-term stationary noise impacts would primarily be associated with operations at logistics facilities within the WLCSP area. Logistics facility uses would generate noise from truck delivery, loading/unloading activities at the loading areas, heating, ventilation, and air-conditioning (HVAC) equipment and other noise-producing activities within the parking lot (e.g., doors slamming, vehicle engine start-ups, and conversing in the parking lot). These activities are potential point sources of noise that could affect noise-sensitive receptors adjacent to the loading areas and parking lots. As noise spreads from a source, it loses energy; therefore, the farther away the noise receiver is from the noise source, the lower the perceived noise level would be.

Noise levels were measured at similar facilities to determine representative noise levels that might be generated by this type of activity. Noise measurements were made at two facilities; specifically, Lowes Distribution Center (3984 Indian Avenue, Perris, CA) and Ross Distribution Center (3404 Indian Avenue, Perris, CA). Based on these representative noise measurements, Table 4.12.L provides the noise levels for various distances from the warehouse property line with no noise barrier in place and with an assumed 12-foot noise barrier.

Table 4.12.L: Representative Noise Levels for Warehousing Activities

Distance from Facility (feet)	Noise Level (dBA L_{eq})	
	No Barrier	With 12-foot barrier
50	56.9	48.6
100	54.9	47.8
250	50.8	44.7
500	46.6	40.9

Source: Mestre Greve Associates, November 2012.

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The City of Moreno Valley Noise Ordinance requires that noise levels remain below 55 dBA (L_{eq}) during nighttime hours. To achieve this noise level, the warehouse property line would only need to be 100 feet from the nearest residential property and no soundwall would need to be present.

Another consideration is whether the proposed activity levels will be substantially higher than current ambient conditions. No matter what is developed in the Specific Plan area, ambient conditions would be higher in future years due to higher levels of traffic and activity. Ambient noise levels were measured at seven sites that could border the World Logistics Center (i.e., Measurement Sites 3 through 9). The nighttime ambient noise levels (L_{eq}) ranged from 35.8 to 61.8 dBA with an average for the sites of 46.6 dBA. To keep the noise levels at nearby residential areas less than typical ambient conditions, the logistics property line should be located a minimum distance of 250 feet and a 12-foot soundwall should be located along the perimeter of the property that faces any residential areas. This would keep the logistic use noise to less than 45 dBA (L_{eq}) at the residences. The implementation of this buffer between logistics uses and noise sensitive uses has been included as **Mitigation Measure 4.12.6.3A**.

Specific Plan Design Features. The WLCSP indicates there will be a 250-foot building setback from residentially zoned property along Redlands Boulevard, Bay Avenue, and Merwin Street.

Mitigation Measures. Operation of the proposed WLC project would result in noise levels at the closest residences within and adjacent to the WLC Specific Plan area exceeding the maximum noise level allowed under the City's Municipal Code. The following measure would reduce long-term operational noise impacts associated with the proposed WLC project:

4.12.6.3A All discretionary approvals for development in the area of Redlands Boulevard, Bay Avenue, Merwin Street, and Cactus Avenue shall provide a minimum 250-foot setback between residentially zoned property and logistics buildings within the WLCSP. In addition, all such discretionary approvals shall provide sound attenuation improvements that will reduce expected noise levels from development to within City standards.

Level of Significance after Mitigation. Implementation of **Mitigation Measure 4.12.6.3A** would eliminate any noise impacts on residential areas due to the operation of logistic activities. Through the provision of a 250-foot buffer, berms, and/or soundwalls, noise levels at the nearest residences would be reduced to below the City's thresholds. Therefore, with adherence to the identified mitigation measure, impacts associated with this issue would be less than significant.

4.12.6.4 Long-Term Utility Noise Impacts

Threshold	Would the project cause exposure of persons to or generation of noise levels in excess of standards established in the <i>City of Moreno Valley General Plan</i> , <i>Moreno Valley Municipal Code</i> , or applicable standards of other agencies?
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As illustrated in previously referenced Figure 4.12.3 and Figure 4.12.6, there is one existing SDG&E compressor station and two existing SCGC facilities located within the WLC Specific Plan area.

Based on preliminary calculations as illustrated in Figure 4.12.3, the worst-case compressor station operational characteristics will result in a maximum noise level just above 65 CNEL within the project area proposed for development (i.e., not open space). Typical commercial construction results in buildings that achieve at least a 20 dB reduction of outdoor noise levels. Therefore, an office use

exposed to the highest noise level from the compressor station will be just above 45 CNEL and below the 50 CNEL limit prescribed by the City's General Plan, resulting in a less than significant impact and no mitigation is required.

As illustrated in previously referenced Figure 4.12.4, the L_{eq} noise level generated by the compressor station does not exceed 60 dBA L_{eq} beyond the property lines of the facility. Therefore, the compressor station is not considered a noise disturbance based on City criteria. Operation of the compressor station would not result in any interior noise levels exceeding the limits established by the City in the General Plan. Therefore, noise impacts associated with the operation of the compressor station would be less than significant and no mitigation is required.

As identified in previously referenced Figure 4.12.5, the maximum noise level from a blow-down at the SDG&E compressor station within the WLCSP area proposed for development (i.e., the Logistics Development land use) is 100 dBA. A person would need to be exposed to this level for more than two hours in a day before permanent hearing loss would be expected. As discussed above, blow-down events at the SDG&E compressor station typically do not last longer than 90 seconds. Therefore, the SDG&E blow-down events will not result in a significant impact to the uses proposed within the WLCSP area, and no mitigation is required.

For SCGC blow-down events, noise generated could reach as high as 130 dBA just outside the fence line of the southern facility and in excess of 135 dB just outside the fence line of the northern facility. People within approximately 250 feet of the blow-down points would be exposed to noise levels greater than 115 dBA, which would likely cause permanent hearing damage regardless of the exposure time. The SCGC blow-downs could last as long as 90 minutes. It is anticipated that people exposed to noise levels greater than 102 dBA, within approximately 1,300 feet from the blow-down point could experience permanent hearing loss based on this event duration. Noise generated by SCGC blow-down events has the potential to cause permanent hearing loss in persons in the developed area of the project. This is a significant impact and mitigation is required.

SCGC blow-down events also have the potential to produce groundborne vibration. However, the effect of the blow-down groundbourne vibration would be limited to within 100 feet of the equipment and would not be perceived beyond the facility fenceline, resulting in a less than significant impact and no mitigation is required.

Specific Plan Design Features. The WLCSP provides a setback of open space and a street between the SCGC facility and planned warehouse buildings in the WLCSP. However, the separation may not be sufficient to prevent significant noise impacts during blow-down events.

Mitigation Measures. Operation of the proposed WLC project could result in exposure of people to noise levels as high as 130 dBA or greater during SCGC blow-down events. The following measure would reduce long-term utility related noise impacts associated with the proposed WLC project:

4.12.6.4A Prior to the issuance of building permits for projects within 500 feet of the SCGC and SDG&E facilities, documentation shall be submitted to the City confirming that sound attenuation devices or improvements for the blow-down facilities providing at least a 40 dB reduction in noise levels during blow-down events area available and will be installed for all planned blow-down events. This measure shall be implemented to the satisfaction of the City Planning Official.

Level of Significance after Mitigation. The SCGC blow-down equipment does not currently include a permanent silencer system. A review of the literature of a leading manufacturer of specialty silencer

systems (Industrial Acoustics Company) determined that a specialty silencer system added to the blow-down equipment could reduce noise levels by about 40 dB. With a silencer system providing 40 dB of noise reduction, blow-down noise levels would be less than 102 dBA approximately 30 feet from the blow-down point, which is within the property line of these facilities. 102 dBA is the noise level that could be experienced for up to 90 minutes without causing permanent hearing loss. Therefore, while occupants within the WLCSP in close proximity to the SCGC facilities would be subject to high noise levels during these infrequent noise events, they would not be subject to any permanent hearing damage. With implementation of **Mitigation Measure 4.12.6.4A**, SCGC blow-down events would not result in noise levels that could cause permanent hearing loss and the project would not be significantly affected by noise from the SCGC facilities, resulting in a less than significant impact.

4.12.7 Cumulative Impacts

The cumulative area for noise impacts is the City of Moreno Valley. Implementation of the Specific Plan would result in the introduction of new noise sources and levels from on-site activities and from increased traffic volumes on vicinity roadway and freeways.

Construction crew commutes and the transport of construction equipment, and materials to the WLCSP area would incrementally increase noise levels on access roads leading to the site. Secondary sources of noise would include noise generated during excavation, grading, and building erection on the project site. The net increase in project site noise levels generated by these activities and other sources has been quantitatively estimated and compared to the applicable noise standards and thresholds of significance. Although it is not possible to predict if contiguous properties may be constructed at the same time and create cumulative noise impacts that would be greater than if developed at separate times, it is unlikely that adjacent properties will be developed at the same time as the Specific Plan area. However, in the unlikely event that adjacent properties are developed at the same time as the proposed WLC project, adherence to the City's Municipal Code provisions that regulate construction activities and other development standards would render the cumulative impacts of the proposed project to less than significant levels.

The noise analysis contained in this section also provides an assessment of on-site operational noise level impacts on adjacent sensitive uses, both existing and future. Additionally, on-site operational noises are individual noise occurrences and are not typically additive in nature. It is extremely unlikely that adjacent properties will generate noises that would be additive in nature because of two important reasons. First, the noise sources would have to be adjacent or in close proximity to one another in order for the noises to intermingle. Second, the sensitive receptor or receptors would also have to be adjacent to or in close proximity to the noise generators. Although it is not possible to predict if contiguous or proximate properties may generate noise at the same time that would be additive in nature and thus create a significant cumulative noise impact at sensitive receptors, adherence to the City's Municipal Code provisions that regulate nuisance noise from land uses and other development standards would render the cumulative impacts of the proposed project to less than significant levels.

Cumulative traffic volumes contained in the TIA were developed for the Future Year 2022 and Buildout 2035 analysis time horizons. Traffic volumes for each time horizon were developed utilizing a combination of various future traffic growth methods as follows. For Future Year 2022, traffic volumes were developed by interpolating year 2035 traffic volume projections from the Riverside County Transportation and Analysis Model (RivTAM) to year 2022 plus traffic from a list of past, present, and reasonably foreseeable projects. For Buildout Year 2035, traffic volumes were developed by utilizing the year 2035 traffic volume projections from the RivTAM plus traffic from a list of past, present, and reasonably foreseeable projects.

Cumulative noise impacts associated with roadway noise have been addressed based on the cumulative traffic volumes. Previously referenced Tables 4.12.J and 4.12.K provide a comparison of Future Year (2022) and Buildout Year (2035) without and with project noise levels, and if a significant impact (project-specific or cumulatively significant) occurs.

The project calls for improvements to several of the roadways around the project area in order to accommodate the projected increase in project traffic volumes. There are no new noise-sensitive land uses proposed to be constructed within the area of analysis. However the presence of residential uses occurs within the WLCSP project and nearby area. These roadway segments are analyzed against the thresholds for determining significant impacts defined previously in Section 4.12.6.2. As described previously in Section 4.12.4, the project's incremental contribution to a cumulative noise increase would be considered cumulatively considerable and significant when ambient noise levels affect noise-sensitive land uses and when the proposed project increases noise levels by 1 dB or more over pre-project conditions and the predicted future cumulative with project noise levels cause the following cumulative increases:

- Increase noise levels by 5 dB or more where the existing noise level is less than 60 CNEL;
- Increase noise levels by 3 dB or more where the existing noise level is 60 to 65 CNEL; or
- Increase noise levels by 1.5 dB or more where the existing noise level is greater than 65 CNEL.

Cumulative noise impacts associated with roadway noise have been addressed based on the 2022 and 2035 time horizons analyses contained in Section 4.12.6.2. As identified in the preceding analysis, Tables 4.12.J and 4.12.K show the Future Year 2022 and Buildout Year 2035 CNEL values without and with the proposed project and if a significant impact would be produced based on the project-specific significance criteria identified in Section 4.12.4 and the cumulatively significant significance criteria identified in Section 4.12.4 and repeated above. Traffic noise level increases from the existing baseline condition and the future (2022 and 2035) time horizons are attributable to the intermingled effects of both the cumulative (i.e., past, present, and reasonably foreseeable projects) development projects in the project vicinity and region as well as the proposed project. As indicated in Section 4.12.6.2, roadway noise impacts have been identified and **Mitigation Measures 4.12.6.2A** through **4.12.6.2C** have been presented to reduce roadway noise impacts to the greatest extent feasible. As disclosed in Section 4.12.6.2, there are numerous instances in which there is no feasible means to reduce roadway noise impacts because of the existing developed nature of the affected roadway segment and/or the scattered nature of the sensitive receptors (i.e., residences), which prohibits the effectiveness of a soundwall. Therefore, no significant cumulative noise impacts would occur after implementation of the proposed mitigation measures. For those segments at which there is a cumulatively considerable impact and there is no feasible means to provide mitigation, the significant cumulative impact will remain significant and unavoidable.

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Locust Avenue between Moreno Beach Drive and Smiley Boulevard (54). Only the 2035 case results in a significant noise increase for this area. In 2035 the project will result in a 3.5 dB increase raising the noise level up to 68.9 CNEL. There are three single-family homes along this roadway and they front onto the roadway. As discussed above, homes that front onto a street cannot be effectively mitigated with a soundwall. ***Therefore, this potentially significant impact feasibly cannot be mitigated.***

Moreno Beach Drive between Locust Avenue and Ironwood Avenue (56). Only the 2035 case results in a significant noise increase for this area. In 2035 the project will result in a 3.3 dB increase raising the noise level up to 66.6 CNEL. There are 18 single-family homes along this roadway. Some homes front onto the roadway, but most backup to the roadway. Currently there are no soundwalls along these homes. The walls would need to be 6 feet tall with respect to the rear yard. **Roughly 2,000 feet of six foot tall barrier** would need to be provided for mitigation for 15 of the 18 impacted homes (Exhibit 18). With the retrofit the noise levels would drop at least 5 dB, with the resultant noise levels around 62 CNEL in rear yard areas. Approximately 3 homes would remain unmitigated, because these homes front onto Moreno Beach.

Ironwood Avenue between Redlands Boulevard and Highland Boulevard (36). A significant noise increase is projected for all four study years on this roadway link. In 2035, the noise level will increase 5 dB to 63.6 CNEL. There are two single-family homes that front onto Ironwood Avenue. There are also two churches along this roadway, however, the churches are setback from the roadway far enough that no significant impacts will occur. Although the noise levels remain below the City's 65 CNEL standard, the noise levels will increase substantially above those without the project. As discussed above, homes that front onto a street cannot be effectively mitigated with a soundwall. ***This potentially significant impact feasibly cannot be mitigated.***

Redlands Boulevard from State Route 60 to San Timoteo Canyon Road (35, 42). The noise analysis shows significant noise increases along this roadway segment for the 2012, 2022, and 2035 cases. The increases in noise are around 2 dB with a resultant noise level in the 71 to 72 CNEL range. There are 28 homes along this roadway that would be affected. The single-family homes are scattered and generally front the roadway. As discussed above, homes that front onto a street cannot be effectively mitigated with a soundwall. ***Therefore, this potentially significant impact feasibly cannot be mitigated.***

San Timoteo Canyon Road from Alessandro Road to Live Oak Canyon Road to Redlands Boulevard (177, 179). The noise analysis shows a significant impact in the existing (2012) to existing plus project comparison. The noise increases by a little over 3 dB with resultant noise levels in the 65 to 66 CNEL range. There are four scattered residences along the roadway that would be impacted. As discussed above, homes that are scattered cannot be effectively mitigated with a soundwall. ***Therefore, this potentially significant impact feasibly cannot be mitigated.***

Theodore Street from State Route 60 to Highland Blvd (38). The noise analysis indicates that the project will cause a 2.9 dB increase in the year 2035 with a resulting noise level of 67.9 CNEL. There are 4 homes on Theodore Street that front onto the roadway. As discussed above, homes that front onto a street cannot be effectively mitigated with a soundwall. ***This potentially significant impact feasibly cannot be mitigated.***

State Route 60 from Moreno Beach Drive to Redlands Boulevard (33). A significant increase is shown for the existing case and for 2035. It is not feasible to modify the existing residential block wall to lower the increase in project generated noise because block walls are designed for the height that they are built. It is also infeasible for the Lead Agency to demolish the existing walls on private property and build new ones of increased height so that the noise level increases are lowered. ***Therefore, this potentially significant impact feasibly cannot be mitigated.***

WILL THE WORLD LOGISTIC CENTER TRUCK TRAFFIC IMPACT YOUR HOME OR NEIGHBORHOOD? SOUND WALLS MAY HELP LOWER SOUND LEVELS, BUT THEY DON'T STOP TOXIC DIESEL POLLUTION FROM ENTER YOUR YARDS AND NEIGHBORHOODS. SOME EXISTING WALLS WILL BE TORN DOWN AND REPLACED. PLEASE READ

Cactus Avenue from Redlands Boulevard to Street D (Towards eastern end of Cactus Avenue)(50). A significant noise increase is project for all four case years. Currently there is no soundwall along these homes. The homes along Cactus Avenue are elevated above the roadway. A soundwall will need to be located at the top of the slope along the residents rear yards. At the top of slope the residents currently have wrought iron fencing. The wrought iron fencing would need to be replaced with a masonry wall or retrofitted with a glass barrier. The walls would need to be 6 feet tall with respect to the rear yard. Roughly 1,000 feet of barrier would need to be provided depending on where Street D intersects Cactus Avenue. With the retrofit the noise levels would drop at least 5 dB, with the resultant noise levels around 63 CNEL in rear yard areas. A new 6 foot high wall at the top of slope for the existing residences that are on the south side of Cactus Avenue between Street D and Redlands Boulevard is needed for mitigation. The 6 foot wall will need to extend roughly 1,000 feet. Prior to the opening of Street D, the soundwall should be in place.

Cactus Avenue West of Redlands Boulevard (32). This area shows noise increases ranging from 1.5 dB to 5.1 dB depending on the study year. Only the 2035 case results in a significant noise increase. Single-family residences back up to this street with rear yards facing Cactus Avenue. Soundwalls are located along the residences that are approximately 6 foot high. Rear yard areas are approximately 60 feet from the centerline of the roadway. In 2035, the noise levels projected for the yard area, including the effects of the soundwall, will be 64.8 CNEL which will be below the City standard of 65 CNEL. The significant impact is not creating noise levels above the noise standard, but rather creating a significant increase in noise levels above the ambient noise level that would not occur without the project. It will be necessary to modify the existing residential block wall, or to remove and replace the wall to lower the increase in project generated noise.

John F. Kennedy Drive South of Cactus Avenue (9). The homes along John F. Kennedy Drive south of Cactus Avenue will experience significant noise increases for all four study years. Similar to the area along Cactus Avenue, this noise increase will be due to cars and light trucks, and not heavy trucks. The homes along the west side of the roadway are generally lower than the adjacent roadway have a roughly 6 foot soundwall. The homes on the east side of the roadway do not have any soundwalls and are elevated with respect to the roadway. Rear yards areas on both sides of the street generally are in the range of 60 to 90 feet from the centerline of the roadway. Without any sound barrier exterior noise levels at the residences along John F. Kennedy Drive will be 67.9 CNEL. The homes on the west side of the roadway have soundwalls and slope conditions that will reduce noise levels 6 to 10 dB, putting these homes well under the City criteria. Homes on the west side of the street will not be impacted. Homes on the east side of the street do not have soundwalls, and there will be a significant impact unless adequately mitigated.

The homes on the east side of John F. Kennedy Drive are elevated with respect to the road. Their rear yard area sits above the roadway, so there is a slope going up to their yards. At the top of slope the residents have wrought iron fencing. The wrought iron fencing would need to be replaced with a masonry wall or retrofitted with a glass barrier. The walls would need to 6 feet tall with respect to the rear yard. Roughly 5,000 feet of barrier would need to be provided. With the retrofit the noise levels would drop at least 5 dB, with the resultant noise levels around 62.6 CNEL in rear yard areas. A new 6 foot high wall at the top of slope for the existing residences that are on the east side of John F. Kennedy Drive between Cactus Avenue and Bay Hill Drive will be needed for mitigation. The 6 foot wall will need to extend roughly 5,000 feet.

Perris Boulevard between John F. Kennedy Drive and Iris Avenue (303). Only the 2035 case results in a significant noise increase for this area. In 2035 the project will result in a 1.7 dB increase raising the noise level to 72.2 CNEL for areas without a soundwall. This is a mixed area in terms of residential land use. There are 36 single-family homes along this roadway, some with a soundwall and some without. There is also a large multi-family development without a soundwall. Most of the homes either back up to the roadway or side-on to the roadway, making a soundwall feasible. Approximately half of the homes along this roadway do have a soundwall in place. For these homes, there would not be a significant noise impact since for the year 2035 the noise would increase by 1.7 dB going up to 66.2 CNEL.

The walls would need to be 6 feet tall with respect to the rear yard. Roughly 1,500 feet of barrier would need to be provided (Exhibit 19). With the retrofit the noise levels would drop at least 5 dB, with the resultant noise levels around 61 CNEL in rear yard areas. A new 6 foot high wall along the property line for the existing residences that are on Perris Boulevard between John F. Kennedy Drive and Iris Avenue is needed for mitigation (Exhibit 19). The 6 foot wall will need to extend roughly 2,000 feet. The impact is not anticipated to occur until sometime after 2022 and before 2035.

Redlands Boulevard from Dracaea Avenue to State Route 60 (12, 13). The noise analysis shows significant noise increases along this roadway segment for the 2012, 2022, and 2035 cases. There are scattered homes in this area that either face Redlands Boulevard (actually on Shubert Street) or are on Redlands Boulevard. As discussed above, homes that front onto a street cannot be effectively mitigated with a soundwall. *Therefore, this potentially significant impact feasibly cannot be mitigated.* **SPREAD THE WORD-1111- ABOUT THESE AND OTHER N** **Item No. E.3**

4.12 NOISE

This section of the EIR is intended to satisfy the City's requirements for a project-specific noise impact analysis by examining the short-term and long-term noise impacts of the proposed project on sensitive uses adjacent to the proposed project area and by evaluating the effectiveness of mitigation measures. This includes the potential for the proposed project to result in impacts associated with a substantial temporary and/or permanent increase in ambient noise levels in the vicinity of the project area; exposure of people to excessive noise levels, groundborne vibration, or groundborne noise levels.

CEQA requires an analysis of the proposed project's impacts on the existing environment; not an analysis on the existing environment's impacts on the proposed project. The occasional blow downs that occur at the Southern California Gas Company (SCGC) are part of the existing conditions and have been part of the existing conditions for years. Thus, for purposes of clarity, it should be noted that the impact analysis below goes beyond the requirements of CEQA and provided as part of an analysis to ensure worker safety. All mitigation measures imposed in this analysis are the responsibility of future developers and not SCGC.

For the reader's reference, this EIR and each of the technical reports and analyses contained herein have been written to address a series of planning entitlements, which affect several separate, adjacent and related properties. The overall project site covers 3,918 acres in the Rancho Belago area of the City of Moreno Valley. It includes 3,814 acres of land, which is the subject of various entitlements, plus 104 acres of land affected by off-site improvements needed to support the proposed development. The proposed entitlements are summarized below.

A General Plan Amendment is proposed covering 3,814 acres, which redesignates approximately 71 percent of the area (2,710 acres) for logistics warehousing and the remaining 29 percent (1,104 acres) for permanent open space and public facilities. The following elements of the General Plan are included in the proposed Amendment: Community Development (land use); Circulation; Parks, Recreation, and Open Space; Safety; Conservation; and the General Plan Goals and Objectives.

A new Specific Plan will be adopted to govern development of the World Logistics Center for the 2,710 acres. A separate zoning amendment will also be processed and adopted to rezone 1,104 acres for open space and public facilities uses and to incorporate the Specific Plan into the City's Zoning Map.

In addition to the General Plan Amendment, Specific Plan, and Zone Change, the project includes a Tentative Parcel Map covering 1,539 acres (property owned by the project applicant, Highland Fairview) within the project site. This subdivision map is for financing purposes only and will not confer any development rights to the property owner.

The project includes pre-annexation zoning for an 85-acre parcel of land within the project area.

Finally, a Development Agreement between the City and Highland Fairview (the project applicant) is included as one of the project entitlements. The details of all the project entitlements are included in Section 3.4 of the EIR, *Project Characteristics*. The environmental impacts of all of these entitlements on the entire project area are addressed in this EIR and the accompanying technical reports and analyses.

The analysis contained in this section is based on the following technical study prepared for the proposed project:

- *Noise Assessment for the World Logistic Center Specific Plan*, Mestre Greve Associates, January 24, 2013 (Appendix K of this EIR); and

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In addition to these project-specific technical studies, the analysis contained in this section is also based on the following reference documents:

- *California Noise Insulation Standards*, California Code of Regulations, Title 24, Part 2, §3501;
- *Highway Traffic Noise Prediction Model (FHWA-RD-77-108)*, Federal Highway Administration (FHWA);
- *City of Moreno Valley General Plan*, City of Moreno Valley, July 2006;
- *Moreno Valley Municipal Code*, City of Moreno Valley, current through Ordinance 836 and the February 2012 code supplement; and
- *State of California General Plan Guidelines*, Governor's Office of Planning and Research, October 2003, pages 249 and 250.

4.12.1 Existing Setting

4.12.1.1 Background

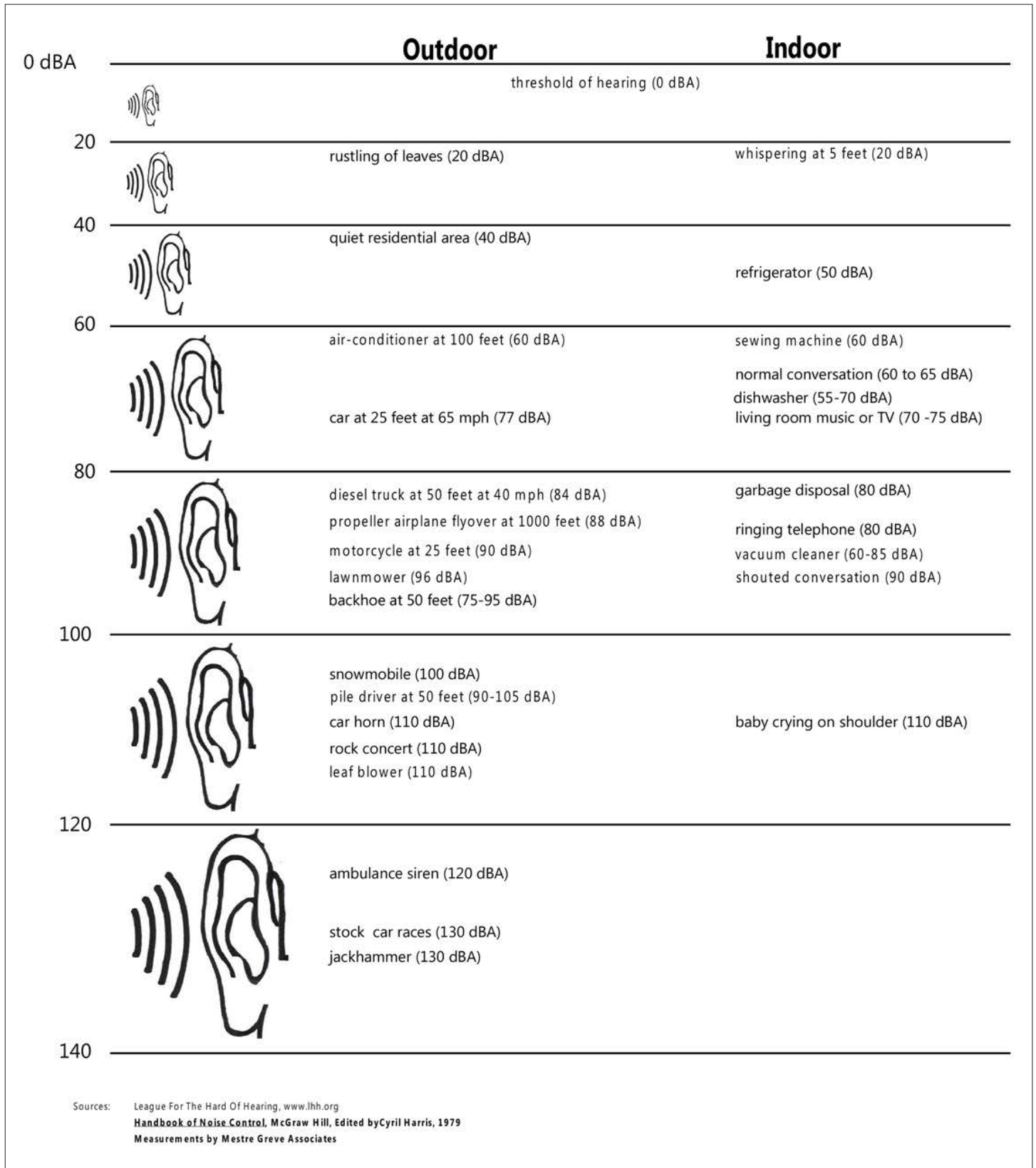
Characteristics of Noise. To the human ear, sound is technically described in terms of its loudness (amplitude) and pitch (frequency). Pitch is generally an annoyance, while loudness can affect our ability to hear. Noise is usually defined as unwanted sound; it consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, and sleep.

Measurement of Noise. The standard unit of measurement of the loudness of sound is the decibel (dB). Decibels are based on a logarithmic scale. The logarithmic scale compresses the wide range in sound levels resulting in a more usable range of sound level values, similar to the Richter scale used to measure earthquakes. To humans, a sound 10 dB higher than another is considered to be twice as loud; a sound 20 dB higher than another is considered four times as loud; etc. Typical daily sounds in the environmental range from 30 dB (very quiet) to 100 dB (very loud).

Since the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted decibel (dBA) scale performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear. Community noise levels are measured in terms of the dBA. Figure 4.12.1 shows examples of various noises sources and their typical dBA noise level.

There are two categories of noise that are measured to characterize noise conditions: single event noise and community, or cumulative, noise. Single event measurements describe the noise levels from an individual event such as a passing airplane or a heavy-duty truck. Cumulative measurements average the total noise in a community over a specific time period, which is typically 1 or 24-hours. The noise impact analysis performed for this EIR is based on assessment of both single event noise and community or cumulative, noise.

Several rating scales have been developed for measurement of community noise. These account for: (1) the parameters of noise that have been shown to contribute to the effects of noise on humans; (2) the variety of noises found in the environment; (3) the variations in noise levels that occur as a person moves through the environment; and (4) the variations associated with the time of day. They are designed to account for the known health effects of noise on people described previously. Based on these effects, the observation has been made that the potential for a noise to affect people is



LSA

FIGURE 4.12.1

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 Typical A-Weighted Noise Levels

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dependent on the total acoustical energy content of the noise. A number of noise scales have been developed to account for this observation. Two of the predominant noise scales are the Equivalent Noise Level (L_{eq}) and the Community Noise Equivalent Level (CNEL). L_{eq} is the sound level corresponding to a steady-state sound level containing the same total energy as a time-varying signal over a given sample period. L_{eq} is the “energy” average noise level during the time period of the sample. L_{eq} can be measured for any time period, but is typically measured for 1 hour. This 1-hour noise level can also be referred to as the Hourly Noise Level (HNL). It is the energy sum of all the events and background noise levels that occur during that time period.

CNEL is the predominant rating scale now in use in California for land use noise compatibility assessment. The CNEL scale represents a time weighted 24-hour average noise level based on the dBA. Time weighted refers to the inclusion of penalties for noise that occurs during certain noise-sensitive time periods. The evening time period (7 p.m. to 10 p.m.) penalizes noises by 5 dBA, while nighttime (10 p.m. to 7 a.m.) noises are penalized by 10 dBA, reflecting people’s increased sensitivity to noise during these time periods. A CNEL noise level may be reported as a CNEL of 60 dBA, 60 dBA CNEL, or simply 60 CNEL.

$L(\%)$ is a statistical method of describing noise which accounts for variance in noise levels throughout a given measurement period. $L(\%)$ is a way of expressing the noise level exceeded for a percentage of time in a given measurement period. For example, since 5 minutes is 25 percent of 20 minutes, $L(25)$ is the noise level that is equal to or exceeded for five minutes in a twenty-minute measurement period. It is $L(\%)$ that is used for most Noise Ordinance standards. For example most daytime County, State and City noise ordinances use a standard of 55 dBA for 30 minutes per hour, or an $L(50)$ level of 55 dBA. In other words, the noise ordinance may state that no noise level should exceed 55 dBA for more than fifty percent of a given period.

The maximum noise level (L_{max}) is the highest exponential time averaged sound level that occurs during a stated time period. The noise levels discussed in this analysis for short-term noise impacts are specified in terms of maximum levels denoted by L_{max} , which reflects peak noise conditions and addresses the annoying aspects of intermittent noise. It is often used together with another noise scale, or noise standards in terms of percentile noise levels, in noise ordinances for enforcement purposes. For example, the L_{10} noise level represents the noise level exceeded 10 percent of the time during a stated period. The L_{50} noise level represents the median noise level. Half the time the noise level exceeds this level, and half the time it is less than this level. The L_{90} noise level represents the noise level exceeded 90 percent of the time and is considered the background noise level during a monitoring period. For a relatively constant noise source, the L_{eq} and L_{50} are approximately the same.

Fundamentals of Groundborne Vibration. Vibration refers to groundborne noise and perceptible motion of the earth. Similar to noise, vibration is transmitted in noise-like waves through the earth and solid objects.

There are several ways to categorize vibration sources. One way is to divide vibration into natural sources (e.g., earthquakes, volcanic eruptions, sea waves, and landslides) and human sources (e.g., explosions, machinery, traffic, trains, and construction equipment). Similar to noise sources, vibration sources can also be described as continuous (e.g., operating factory machinery) or transient (e.g., explosions).

As with noise, ground vibrations can be described by amplitude and frequency. Vibration amplitude is characterized by its displacement, velocity, and acceleration. Displacement is the distance that soil particles travel from their original location as a result of vibration, as measured in inches or millimeters. Velocity is the speed of the soil particles measured in inches per second or millimeters per second. Acceleration is the acceleration of the soil particles measured in inches per second per second or millimeters per second per second. Particle velocity is the most commonly used vibration

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attribute used to describe vibration. Table 4.12.A presents the human reaction to various levels of peak particle velocity. Vibrations also vary in frequency. Traffic vibrations generally range in frequencies from 10 to 30 hertz (Hz), and tend to average around 15 Hz. As a point of reference, city buses often generate frequencies around 3 Hz at high vehicle speeds, due to their suspension systems.

Table 4.12.A: Human Reaction to Typical Vibration Levels

Vibration Level Peak Particle Velocity (inches/second)	Human Reaction
0.0059–0.0188	Threshold of perception, possibility of intrusion.
0.0787	Vibrations readily perceptible.
0.0984	Level at which continuous vibrations begin to annoy people.
0.1968	Vibrations annoying to people in buildings.
0.3937–0.5905	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges.

Source: Caltrans 1992.

Groundborne vibration is almost exclusively a concern inside buildings and is rarely perceived as a problem outdoors, where the motion may be discernable. However, without the effects associated with the shaking of a building, there is less adverse reaction. Building vibration may be perceived by the occupants as motion of building surfaces, rattling of items on shelves or hanging on walls, or as a low-frequency rumbling noise. Building damage is not a factor for normal projects, with the occasional exception of blasting and pile driving during construction or mining. Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by up to 10 decibels. This is an order of magnitude below the damage threshold for normal buildings.

Typical sources of groundborne vibration are construction activities (e.g., blasting, pile driving, and operating heavy-duty earthmoving equipment), steel-wheeled trains, and occasional traffic on rough roads. Problems with groundborne vibration and noise from these sources are usually localized to within about 100 feet of the vibration source, although there are examples of groundborne vibration causing interference out to distances greater than 200 feet, as described in the FTA Transit Noise and Vibration Impact Assessment (FTA, May 2006). When roadways are smooth, vibration from traffic, even heavy trucks, is rarely perceptible.

Factors that influence groundborne vibration and noise include the following:

- *Vibration Source:* Vehicle suspension, wheel types and condition, track/roadway surface, track support system, speed, transit structure, and depth of vibration source.
- *Vibration Path:* Soil type, rock layers, soil layering, depth to water table, and frost depth.
- *Vibration Receiver:* Foundation type, building construction, and acoustical absorption.

Among the factors listed above, there are significant differences in the vibration characteristics when the source is underground versus at ground surface. In addition, soil conditions are known to have a strong influence on the levels of groundborne vibration. Among the most important factors are the stiffness and internal damping of the soil and the depth to bedrock. Vibration propagation is more efficient in stiff clay soils than in loose sandy soils, and shallow rock seems to concentrate the vibration energy close to the surface and can result in groundborne vibration problems at a great distance from the track. Factors such as layering of the soil and depth to water table can have significant effects on the propagation of groundborne vibration. Soft, loose, sandy soils tend to attenuate more vibration energy than hard, rocky materials. Vibration propagation through groundwater is more efficient than through sandy soils.

4.12.1.2 Sensitive Land Uses in the Project Vicinity

Certain land uses are considered more sensitive to noise than others. Examples include residential areas, educational facilities, hospitals, childcare facilities, and senior housing. The project vicinity and Specific Plan area are characterized by a mix of developed and undeveloped properties. Developed properties in the vicinity include an industrial/warehouse building in Moreno Valley to the northwest (Skechers) and several residential neighborhoods along Redlands Boulevard along the western boundary of the project site. An area of the City known as “Old Moreno” is situated near the southwest portion of the project site, around the intersection of Redlands and Alessandro Boulevards. The homes along Merwin Street, east of Redlands Boulevard, constitute the closest sensitive receptors to the project site (i.e., they are adjacent to the property).

4.12.1.3 Existing Noise Measurements

Existing noise levels in the vicinity of the proposed project are used establish baseline noise levels in key areas. Noise measurements within the project site and in the surrounding area were taken. The noise measurement locations were selected to provide coverage of the project’s potential noise impact area. The noise measurement locations are shown Figure 4.12.2.

Noise measurements were taken at sixteen sites in the project vicinity during the daytime hours (between 7 a.m. and 10 p.m.) and during nighttime hours (between 10 p.m. and 7 a.m.). For each measurement site and time period, noise levels were measured for 15 minutes and calibrated to ensure that the measured sound level readings were accurate. The measurements were used to calculate existing L_{eq} , L_{min} , L_{max} , $L_{1.7}$, $L_{8.3}$, L_{25} and L_{50} values for the measurement locations. Table 4.12.B shows the results for the daytime measurements, and Table 4.12.C shows the nighttime measurements.

Table 4.12.B: Existing Daytime Noise Measurements (dBA)

Site	Date	Start Time	L_{eq}	L_{max}	$L_{1.7}$	$L_{8.3}$	L_{25}	L_{50}	L_{min}
1	1-25-12	9:38 a.m.	55.4	72.0	63.0	56.5	54.0	53.0	48.7
2	1-25-12	10:15 a.m.	53.6	68.8	61.0	57.0	53.5	50.5	44.0
3	1-25-12	10:42 a.m.	66.3	73.7	73.0	71.5	68.0	61.5	43.5
4	1-25-12	11:04 a.m.	40.8	50.3	46.0	43.5	41.0	39.5	35.9
5	1-25-12	11:27 a.m.	40.4	56.9	48.0	44.5	39.5	36.0	31.4
6	1-25-12	11:48 a.m.	46.1	68.3	51.5	41.0	37.5	34.0	30.0
7	1-25-12	12:08 p.m.	57.7	75.3	66.5	63.0	55.5	47.5	34.8
8	1-25-12	12:30 p.m.	65.1	85.5	73.5	70.0	63.0	56.5	39.0
9	1-25-12	12:50 p.m.	42.9	55.8	53.0	46.0	41.5	37.5	33.5
10	1-25-12	1:48 p.m.	49.2	68.0	56.0	48.0	46.5	45.0	40.5
11	1-25-12	2:10 p.m.	60.4	73.0	66.5	64.5	61.0	58.0	47.2
12	1-25-12	2:32 p.m.	51.2	58.4	55.5	53.5	51.5	50.5	44.7
13	1-25-12	2:52 p.m.	45.8	59.8	52.0	48.0	45.5	44.0	39.9
14	1-25-12	3:15 p.m.	65.5	73.3	70.0	68.5	66.5	64.5	54.4
15	1-25-12	3:39 p.m.	52.6	72.1	59.5	55.5	51.5	49.5	42.9
16	1-25-12	4:08 p.m.	58.7	75.2	67.0	59.0	57.0	55.0	50.5

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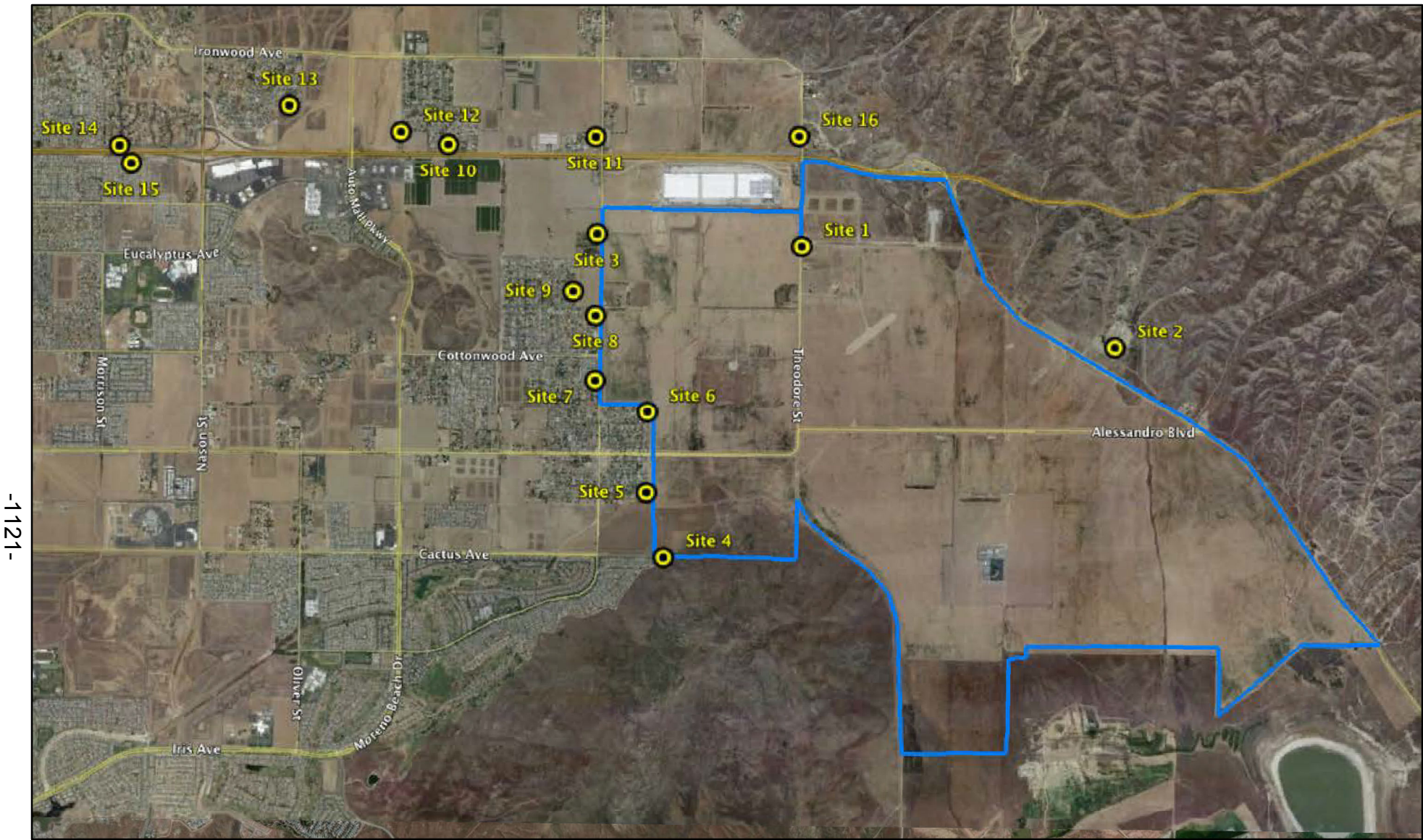
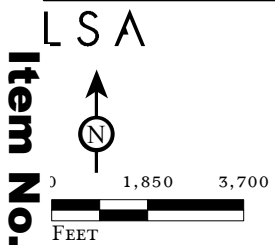


FIGURE 4.12.2



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SOURCE: Mestre Greve Associates, 2013
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 Noise Measurement Locations

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Table 4.12.C: Existing Nighttime Noise Measurements (dBA)

Site	Date	Start Time	L _{eq}	L _{max}	L _{1.7}	L _{8.3}	L ₂₅	L ₅₀	L _{min}
1	2-8-12	11:51 p.m.	50.6	64.5	59.0	54.5	50.5	45.5	36.0
2	2-6-12	10:30 p.m.	47.4	65.1	52.5	50.0	48.0	45.5	37.5
3	2-6-12	10:55 p.m.	61.8	75.9	71.0	67.5	58.0	54.0	45.9
4	2-6-12	11:33 p.m.	35.8	51.1	44.0	39.0	34.5	32.0	30.0
5	2-9-12	12:15 a.m.	36.4	46.6	42.5	39.5	36.0	35.0	31.5
6	2-7-12	12:15 a.m.	43.2	51.0	49.5	46.5	44.0	41.5	35.3
7	2-7-12	12:35 a.m.	51.5	66.9	64.0	54.0	41.5	37.5	32.6
8	2-7-12	12:55 a.m.	56.0	74.1	68.0	57.0	42.5	38.5	33.6
9	2-9-12	12:35 a.m.	41.5	57.1	50.5	44.5	38.0	36.0	30.4
10	2-9-12	1:01 a.m.	46.7	63.8	50.5	48.5	46.5	45.0	38.1
11	2-9-12	1:25 a.m.	59.6	68.3	67.5	64.5	60.5	54.0	46.3
12	2-9-12	1:48 a.m.	51.8	63.9	58.0	55.0	52.0	50.0	39.2
13	2-9-12	2:09 a.m.	48.0	59.7	55.5	52.0	47.5	45.0	38.6
14	2-9-12	2:33 a.m.	60.8	72.3	68.0	65.5	61.0	57.5	44.9
15	2-9-12	2:56 a.m.	48.2	59.9	54.5	52.5	49.0	45.0	35.4
16	2-9-12	3:20 a.m.	54.3	62.7	60.0	58.5	55.5	52.0	38.8

4.12.1.4 Existing Traffic Noise Environment

The primary existing noise sources in the project area are transportation facilities. Traffic on SR-60, Redlands Boulevard, Theodore Street, Gilman Springs Road, and other local streets is the dominant source contributing to the ambient noise levels in the project vicinity. Noise from motor vehicles is generated by engine vibrations, the interaction between the tires and the road, and the exhaust system. Table 4.12.D identifies the existing (2012) traffic noise levels adjacent to roadway segments in the project vicinity.

Table 4.12.D: Existing Traffic Noise Levels (dBA)

Roadway Segment	CNEL (dBA) at 100 feet
Alessandro Boulevard (Lasselle Street and Morrison Street)	55.5
Alessandro Boulevard (Morrison Street to Nason Street)	56.8
Alessandro Boulevard (Nason Street to Oliver Street)	64.4
Cactus Avenue (Nason Street to Oliver Street)	64.3
Cactus Avenue (Oliver Street to Moreno Beach Drive)	58.2
Cactus Avenue (Redlands Boulevard to Street D)	50.2
Cactus Avenue (west of Redlands Boulevard)	57.5
Canyon Crest Drive (Alessandro Boulevard to Sandtrack Road)	41.8
Canyon Crest Drive (Central Avenue to Country Club Drive)	67.0
Country Club Drive (Chicago Avenue to Canyon Crest Drive)	57.5
Crescent Avenue (west of Alessandro Road)	57.1
Day Street (Cottonwood Avenue to Alessandro Boulevard)	57.7
Elsworth Street (Cottonwood Avenue to Alessandro Boulevard)	62.9
Evans Road (Marbella Gate to Ramona Expressway)	56.9
Gilman Springs Road (Bridge Street to Beaumont Avenue)	61.0

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Table 4.12.D: Existing Traffic Noise Levels (dBA)

Roadway Segment	CNEL (dBA) at 100 feet
Gilman Springs Road (Bridge Street to SR-79 Southbound Ramps)	61.0
Gilman Springs Road (Eucalyptus Avenue to Street C)	46.1
Gilman Springs Road (Jack Rabbit Trail to Bridge Street)	62.7
Gilman Springs Road (south of Street C)	56.1
Gilman Springs Road (SR-79 Northbound Ramps to Record Road)	60.7
Heacock Street (Alessandro Boulevard to Cactus Avenue)	59.7
Heacock Street (Cactus Avenue to John F Kennedy Drive)	62.6
Indian Street (Alessandro Boulevard to Cactus Avenue)	59.9
Indian Street (Cactus Avenue to John F Kennedy Drive)	59.3
Iris Avenue (Kitching Street to Lasselle Street)	60.31
Iris Avenue (Lasselle Street to Nason Street)	57.0
Iris Avenue (Nason Street to Oliver Street)	60.0
Iris Avenue (Perris Boulevard to Kitching Street)	60.8
Ironwood Avenue (Moreno Beach Drive to Redlands Boulevard)	55.6
Ironwood Avenue (Redlands Boulevard to Highland Boulevard)	46.3
John F Kennedy Drive (south of Cactus Avenue)	61.5
Kitching Street (Alessandro Boulevard to Cactus Avenue)	58.2
Kitching Street (Cactus Avenue to John F Kennedy Drive)	59.1
Kitching Street (Iris Avenue to Ivory Avenue)	61.1
Kitching Street (Krameria Avenue to Lurin Avenue)	62.4
Krameria Avenue (Perris Boulevard to Lasselle Street)	57.5
Lasselle Street (Cahuilla Drive to Krameria Avenue)	60.5
Lasselle Street (Cottonwood Avenue to Alessandro Boulevard)	64.4
Lasselle Street (Krameria Avenue to Arroyo Park Drive)	56.4
Live Oak Canyon Road (San Timoteo Canyon Road to I-10)	56.5
Lochmoor Drive (Central Avenue to Fair Isle Drive)	52.1
Locust Avenue (Moreno Beach Drive to Redlands Boulevard)	55.7
Locust Avenue (Moreno Beach Drive to Smiley Boulevard)	46.2
Mission Grove Parkway (Alessandro Boulevard to Northrop Drive)	58.1
Mission Grove Parkway (Cannon Road to Alessandro Boulevard)	62.5
Moreno Beach Drive (John F Kennedy Drive to Cactus Avenue)	57.6
Moreno Beach Drive (John F Kennedy Drive to Oliver Street)	55.2
Moreno Beach Drive (Locust Avenue to Ironwood Avenue)	55.3
Old 215 Frontage Road (Eucalyptus Avenue to Alessandro Boulevard)	61.4
Orange Avenue (Evans Road to Foothill Drive)	55.3
Perris Boulevard (Alessandro Boulevard to Cactus Avenue)	61.0
Perris Boulevard (Alessandro Boulevard to Cottonwood Avenue)	61.9
Perris Boulevard (Cactus Avenue to John F Kennedy Drive)	62.0
Perris Boulevard (Iris Avenue to Krameria Avenue)	60.8
Perris Boulevard (John F Kennedy Drive to Iris Avenue)	67.2
Perris Boulevard (Krameria Avenue to Harley Knox Boulevard)	60.7
Perris Boulevard (Krameria Avenue to Harley Knox Boulevard)	59.6

Table 4.12.D: Existing Traffic Noise Levels (dBA)

Roadway Segment	CNEL (dBA) at 100 feet
Perris Boulevard (Sunnymead Boulevard to Fir Avenue)	69.0
Ramona Expressway (Evans Road to Rider Street)	59.2
Reche Canyon Road (Keissel Road to Reche Vista Drove)	62.7
Reche Vista Drive (Heacock Street to Reche Canyon Road)	66.7
Redlands Boulevard (Ironwood Avenue to San Timoteo Canyon Road)	67.8
Redlands Boulevard (Ironwood Avenue to SR-60)	68.3
Redlands Boulevard (SR-60 to Eucalyptus Avenue)	58.8
San Timoteo Canyon Road (Alessandro Road to Live Oak Canyon Road)	62.0
San Timoteo Canyon Road (Live Oak Canyon Road to Redlands Boulevard)	62.7
Street A (Eucalyptus Avenue to Street F)	47.0
Sunset Drive (Alessandro Road to Cameo Drive)	52.5
Sunset Drive (Crown Street to Alessandro Road)	49.0
Sycamore Canyon Boulevard (Central Avenue to College Boulevard)	62.8
Theodore Street (SR-60 to Highland Boulevard)	53.6
Freeways	
SR-60 (Heacock Street to Perris Boulevard)	65.2
SR-60 (Moreno Beach Drive to Redlands Boulevard)	62.5
SR-60 (Perris Boulevard to Nason Street)	64.6
SR-60 (Pigeon Pass Road/Frederick Street to Heacock Street)	66.5
SR-60 (Redlands Boulevard to Theodore Street)	60.2

Source: Mestre Greve Associates, November 2012.

4.12.1.5 Existing SDG&E and SCGC Facilities

The proposed World Logistics Center Specific Plan area is currently occupied by one San Diego Gas and Electric Company (SDG&E) compressor station and two Southern California Gas Company (SCGC) facilities. These facilities are located within the boundaries of the Specific Plan as shown in previously referenced Figure 4.12.2. The SDG&E compressor station recompresses natural gas received from interstate gas pipelines and delivers the gas to Southern California via transmission pipelines. The two SCGC facilities contain flow valve and metering equipment facilities. The southern SCGC facility contains a maintenance functions as well. All of these facilities contain gas pipeline blow-down equipment. This equipment includes exhaust stacks that vent the high pressure gas into the atmosphere occur during emergencies, scheduled maintenance, and annual testing of the blow-down systems.

The SDG&E and SCGC facilities produce noise from three different sources that could affect future development within the proposed project: 1) the operation of the compressor station; 2) blow-down events at the compressor station; and 3) blow-down events at the SCGC facilities. The blow-down events generate infrequent high noise levels for relatively short periods. The compressor station generates a relatively constant noise level, although noise levels vary slightly when the compressors are turned on and off when the gas is conveyed to the transmission pipelines.

The SDG&E compressors are the primary source of operational noise generated by the compressor station. The facility contains two sets of three reciprocating natural gas combustion engines and one set of four natural gas-fired turbines, for a total of ten compressors with power ranging from 995 to 3,400 horsepower. The compressors are located within noise attenuation structures and are equipped

with intake and exhaust silencers. The facility routinely operates at maximum capacity 24 hours per day. It is anticipated that demand on the compressor station will increase in the future to the point where the facility operates 24 hours a day, year round.

The CNEL levels for the SDG&E compressor station presented in Figure 4.12.3 are based on a worst-case assumption that the compressor station is in full operation 24 hours a day. Figure 4.12.4 presents the average (L_{eq}) noise levels generated by the compressor station during full operation. Both the CNEL and L_{eq} metrics are used to assess the noise impacts from the facility.

There are several blow-down points within the SDG&E compressor station. As stated previously, these blow-down points allow for the release of pressurized gas during emergencies, scheduled maintenance, and annual testing. Blow-down events at the compressor station vent gas and last between 30 and 90 seconds. The maximum sound levels (L_{max} dBA) generated by the blow-down events is presented in Figure 4.12.5.

There are blow-down points in the SCGC facilities. Blow-down events at the SCGC facilities vent gas from miles of pipeline and are much longer than those at the compressor station, and can last up to 90 minutes. Approximately four blow-down events occur annually at the SCGC facilities. L_{max} noise levels (dBA) are shown in in Figure 4.12.6. The noise level will be at or near the L_{max} level during the entire blow-down event. It should also be noted that blow-down events generate ground vibrations and natural gas odors in the vicinity in the surrounding area when events occur. Again, it must be noted that these blow-down events are part of the existing conditions of the project site, and any impacts caused by development of new warehousing near these facilities, and any mitigation necessary, are not the responsibility of SCGC or SDG&E.

4.12.2 Existing Policies and Regulations

The applicable noise standards governing the project site are the criteria in the City of Moreno Valley General Plan Safety Element (Environmental Safety, Noise) and Municipal Code (Noise Ordinance). The City's Safety Element of the General Plan does not contain specific noise standards or significance thresholds. However, the General Plan does cite applicable State standards including the California Administrative Code, Section 1092 of Title 25, Chapter 1, Subchapter 1, Article 4 and Section 5014 of Title 21, Subchapter 6, Article 2. In addition, other applicable standards identified in the *California Noise Insulation Standards*¹ and the *State of California Vehicular Code*² are included below. The following sections list the General Plan policies, Municipal Code, and State standards relevant to noise for the proposed project.

4.12.2.1 City of Moreno Valley General Plan Policies

Chapter 9 of the *City of Moreno Valley General Plan*³ defines goals, objectives, policies, and action items related to noise conditions in the City. The specific policies related to noise that are relevant to the proposed project are as follows:

Objective 6.3 Provide noise compatible land use relationships by establishing noise standards utilized for design and siting purposes.

Policy 6.3.5 Enforce the California Administrative Code, Title 24 noise insulation standards for new multi-family housing developments, motels and hotels.

Policy 6.3.6 Building shall be limited in areas of sensitive receptors.

¹ California Code of Regulations, Title 24, Part 2, §3501, *California Noise Insulation Standards*.

² Governor's Office of Planning and Research, *State of California General Plan Guidelines*, October 2003, pages 249 and 250.

³ *City of Moreno Valley General Plan*, City of Moreno Valley, July 2006.

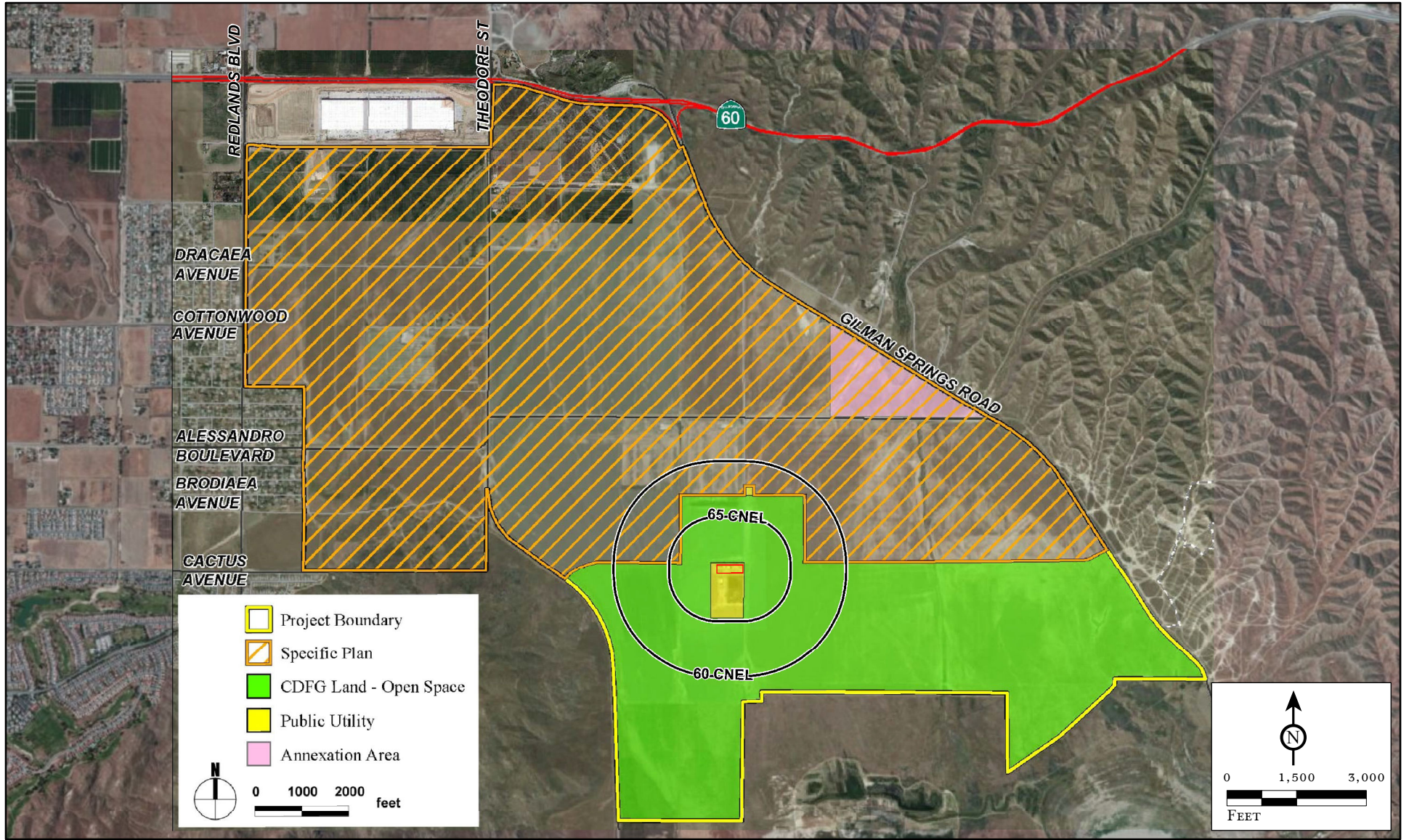


FIGURE 4.12.3

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Existing CNEL Noise Contours for the SDG & E Compressor Station

SOURCE: Mestre Greve Associates, 2013.

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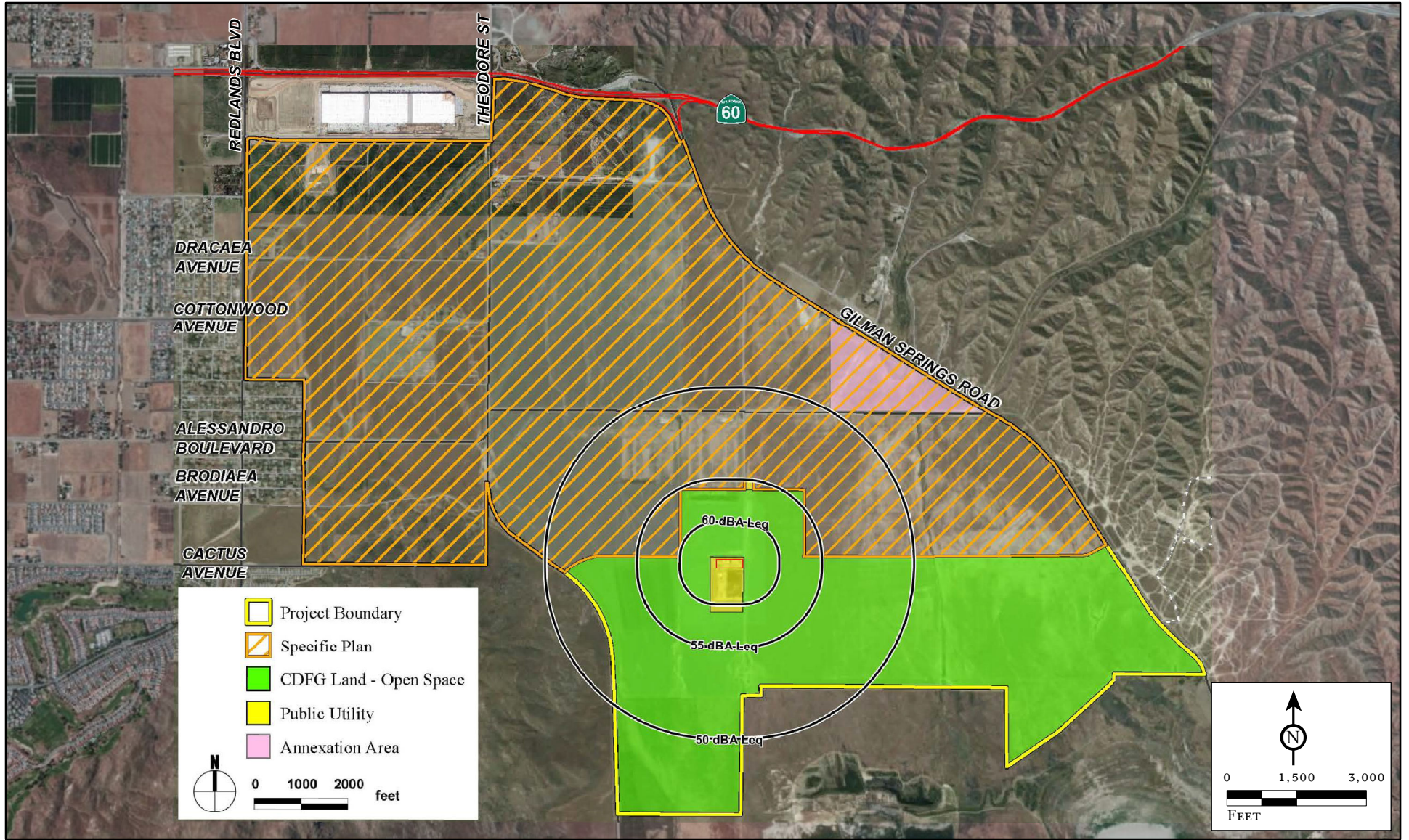


FIGURE 4.12.4

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Existing Leq Noise Levels for the SDG & E Compressor Station

SOURCE: Mestre Greve Associates, 2013.

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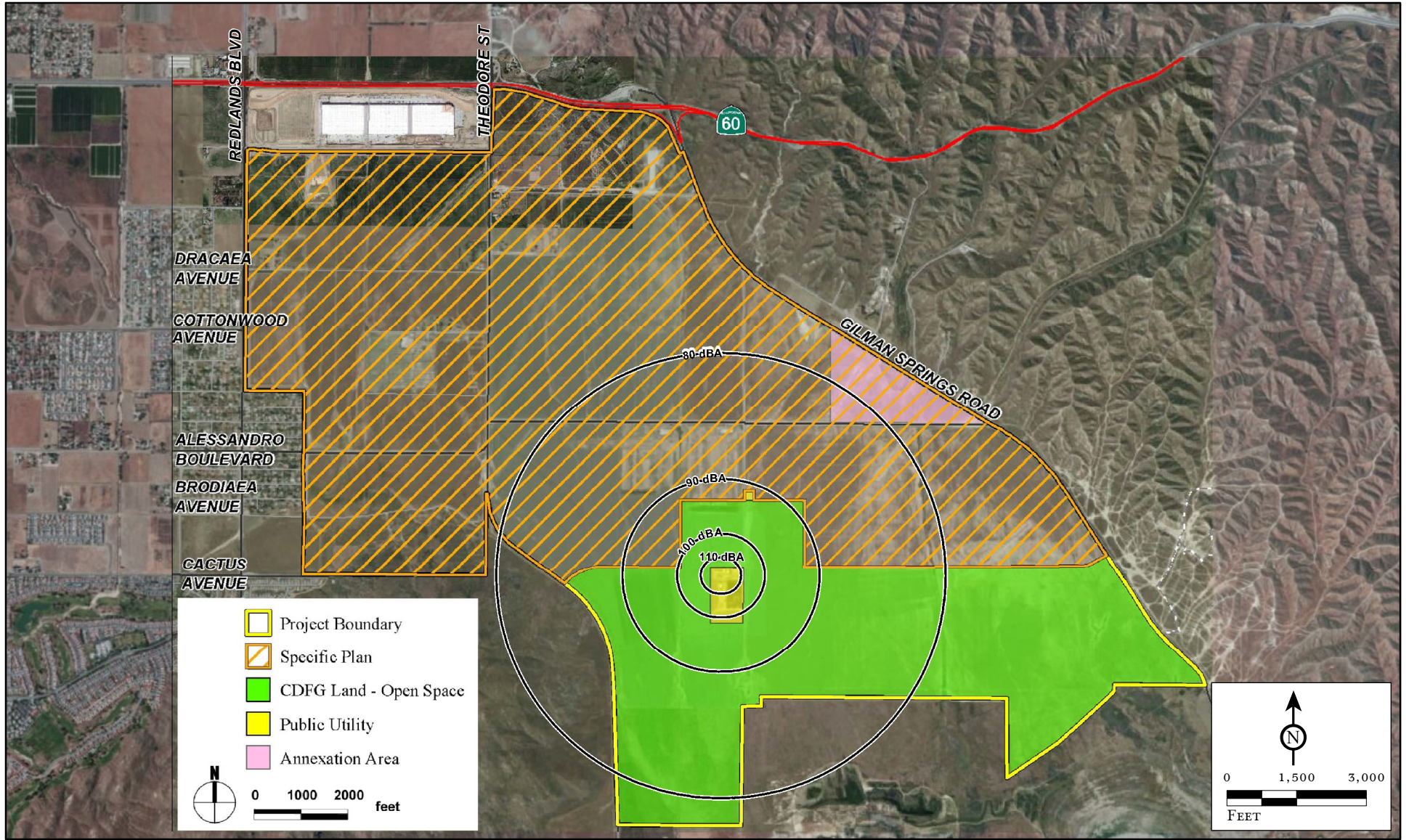


FIGURE 4.12.5

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Existing Lmax Levels for SDG&E Blow-Down

SOURCE: Mestre Greve Associates, 2013.

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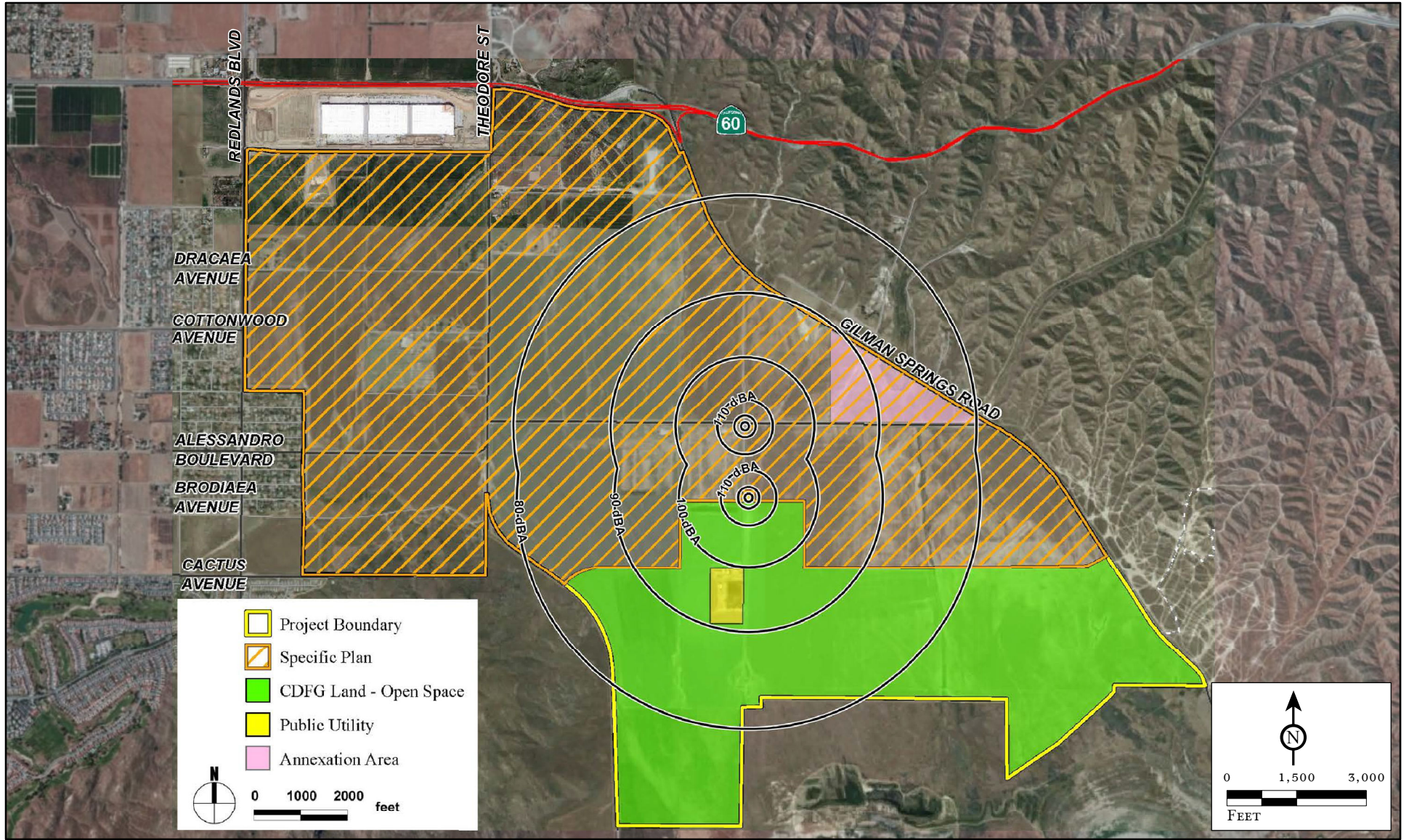


FIGURE 4.12.6

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Existing Lmax Noise Levels for the SCE Blow Down Event

SOURCE: Mestre Greve Associates, 2013.
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- Objective 6.4** Review noise issues during the planning process and require noise attenuation measures to minimize acoustic impacts to existing and future surrounding land uses.
- Policy 6.4.1** Site, landscape and architectural design features shall be encouraged to mitigate noise impacts for new developments, with a preference for noise barriers that avoid freeway sound barrier walls.
- Objective 6.5** Minimize noise impacts from significant noise generators such as, but not limited to, motor vehicles, trains, aircraft, commercial, industrial, construction, and other activities.
- Policy 6.5.1** New commercial and industrial activities (including the placement of mechanical equipment) shall be evaluated and designed to mitigate noise impacts on adjacent uses.
- Policy 6.5.2** Construction activities shall be operated in a manner that limits noise impacts on surrounding uses.

4.12.2.2 City of Moreno Valley Municipal Code

The *Moreno Valley Municipal Code*¹ establishes a Noise Ordinance that describes the noise standards within the City. Chapter 11.80.030 (Title 11) lists specific prohibited acts.

The City's residential site development standards, as identified in Chapter 9.03.040 of the City's Planning and Zoning Code, state that in all residential districts, air conditioners, heating, cooling, and ventilating equipment and all other mechanical lighting or electrical devices shall be operated so that noise levels do not exceed 60 dBA (L_{dn}) at the property line.

The City's Municipal Code, Section 6.04.030.J states that "to create, allow or maintain any loud or unusual noise or operate or maintain any device, instrument, vehicle, or machinery in such a manner as to create loud or unusual noise, cause vibrations, or unreasonable light spillage or glare which causes discomfort or annoyance to reasonable persons of normal sensitivity, or which endangers the comfort, repose, health or peace of the public or of any person using or occupying other property in the vicinity" is prohibited.

The City's Municipal Code, Section 9.10.140, specifies that all commercial and industrial uses shall be operated so that noise created by any loudspeaker, bells, gongs, buzzers, or other noise attenuation or attracting devices shall not exceed 55 dBA at any one time beyond the boundaries of the property.

Chapter 11.80.030 of the City's Municipal Code also states:

Based on statistics from the Center for Disease Control and Prevention and the National Institute for Occupational Safety and Health, Table 1 and Table 1-A specify sound level limits which, if exceeded, will have a high probability of producing permanent hearing loss in anyone in the area where the sound levels are being exceeded. No sound shall be permitted within the City which exceeds the parameters set forth in Table 11.80.030-1 [Table 4.12.E] and 11.80.030-1-A [Table 4.12.F] of this chapter.

No person shall maintain, create, operate or cause to be operated on private property any source of sound in such a manner as to create any nonimpulsive sound which exceeds the limits set forth for the source land use category (as defined in Section 11.80.020) in Table 11.80.030-2 [Table 4.12.F] when measured at a distance of two hundred (200) feet or more from the real property line of the source of the sound, if the sound occurs on privately owned property, or from the source of the sound, if the sound occurs on public right-of-way, public space or other publicly owned property. Any source of sound in violation of this subsection shall be deemed prima facie to be a noise disturbance.

¹ *Moreno Valley Municipal Code*, City of Moreno Valley, current through Ordinance 836 and the November 2012 code supplement.

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The following uses and activities shall be exempt from the sound level regulations except the maximum sound levels provided in Tables 11.80.030-1 [Table 4.12.E] and 11.80.030-1A [Table 4.12.F]:

1. Sounds resulting from any authorized emergency vehicle when responding to an emergency call or acting in time of an emergency.
2. Sounds resulting from emergency work as defined in Section 11.80.020.
3. Any aircraft operated in conformity with, or pursuant to, federal law, federal air regulations and air traffic control instruction used pursuant to and within the duly adopted federal air regulations; and any aircraft operating under technical difficulties in any kind of distress, under emergency orders or air traffic control, or being operated pursuant to and subsequent to the declaration of an emergency under federal air regulations.
4. All sounds coming from the normal operations of interstate motor and rail carriers, to the extent that local regulation of sound levels of such vehicles has been preempted by the Noise Control Act of 1972 (42 U.S.C. § 4901 et seq.) or other applicable federal laws or regulations.
5. Sounds from the operation of motor vehicles, to the extent they are regulated by the California Vehicle Code.
6. Any constitutionally protected noncommercial speech or expression conducted within or upon any public right-of-way, public space or other publicly owned property constituting an open or a designated public forum in compliance with any applicable reasonable time, place and manner restriction on such speech or expression or otherwise pursuant to legal authority.
7. Sounds produced at otherwise lawful and permitted city-sponsored events, organized sporting events, school assemblies, school playground activities, by permitted fireworks, and by permitted parades on public right-of-way, public space, or other publicly owned property.
8. An event for which a temporary use permit or special event permit has been issued under other provisions of this code, where the provision of Section 11.80.010 are met, the permit granted expressly grants an exemption from specific standards contained in this chapter, and the permittee and all persons under the permittee's reasonable control actually comply with all conditions of such permit. Violation of any condition of such permit related to sound or sound equipment shall be in violation of this chapter and punishable as such.

Table 4.12.E and Table 4.12.F show the maximum sound levels that are permitted in the City for continuous and impulsive sounds, respectively.

Table 4.12.E: Maximum Continuous Sound Levels*

Duration Per Day Continuous Hours	Sound Level (dBA)
8	90
6	92
4	95
3	97
2	100
1.5	102
1	105
0.5	110
0.25	115

* When the daily sound exposure is composed of two or more periods of sound exposure at different levels, the combined effect of all such periods shall constitute a violation of this section if the sum of the percentage of allowed period of sound exposure at each level exceeds 100 percent.

Source: Chapter 11.80.030 Table 11.80.030-1, City of Moreno Valley Municipal Code, City of Moreno Valley.

Table 4.12.F: Maximum Impulsive Sound Levels

Number of Repetitions Per 24-Hour Period	Sound Level (dBA)
1	145
10	135
100	125

Source: Chapter 11.80.030 Table 11.80.030-1A, City of Moreno Valley Municipal Code, City of Moreno Valley.

The City also restricts the sound levels for non-impulsive sound on lands designated for residential and commercial land uses during the daytime and nighttime time periods. These levels are shown in Table 4.12.G. Section 11.80.050 (3) clearly identifies the measurement as an “average” noise level, and therefore, the noise limits shown in Table 4.12.G are interpreted as the L_{eq} noise level.

Table 4.12.G: Maximum Sound Levels (in dBA) for Source Land Uses

Residential		Commercial	
Daytime	Nighttime	Daytime	Nighttime
60	55	65	60

Source: Chapter 11.80.030 Table 11.80.030-2, City of Moreno Valley Municipal Code, City of Moreno Valley.

The City prohibits all construction and demolition activities between the hours of 8:00 p.m. and 7:00 a.m. the day following a noise disturbance. A noise disturbance is defined as any sound which that disturbs a reasonable person of normal sensitivities, exceeds the sound level limits set forth in the Noise Ordinance, or is plainly audible. A noise disturbance is defined as plainly audible measured at a distance of 200 feet from the real property line of the source of the sound if the sound occurs on privately owned property, or from the source of the sound, if the sound occurs on public right-of-way, public space or other publicly owned property.

4.12.2.3 State of California Vehicle Code

Recent studies have shown that the most objectionable feature of traffic noise is the sound produced by vehicles equipped with illegal or faulty exhaust systems. In addition, such vehicles are often operated in a manner that causes tire squeal and excessively loud exhaust noise. A number of California State vehicle noise regulations can be enforced by local authorities as well as the California Highway Patrol. These include § 27150 (mufflers) of the California Vehicle Code (CVC), as well as excessive speed laws, which may be applied to curtail traffic noise. The California Highway Patrol and the Department of Health Services (through local health departments) are available to aid local authorities in code enforcement and training pursuant to proper vehicle sound level measurements.

4.12.2.4 State of California Noise Compatibility Guidelines

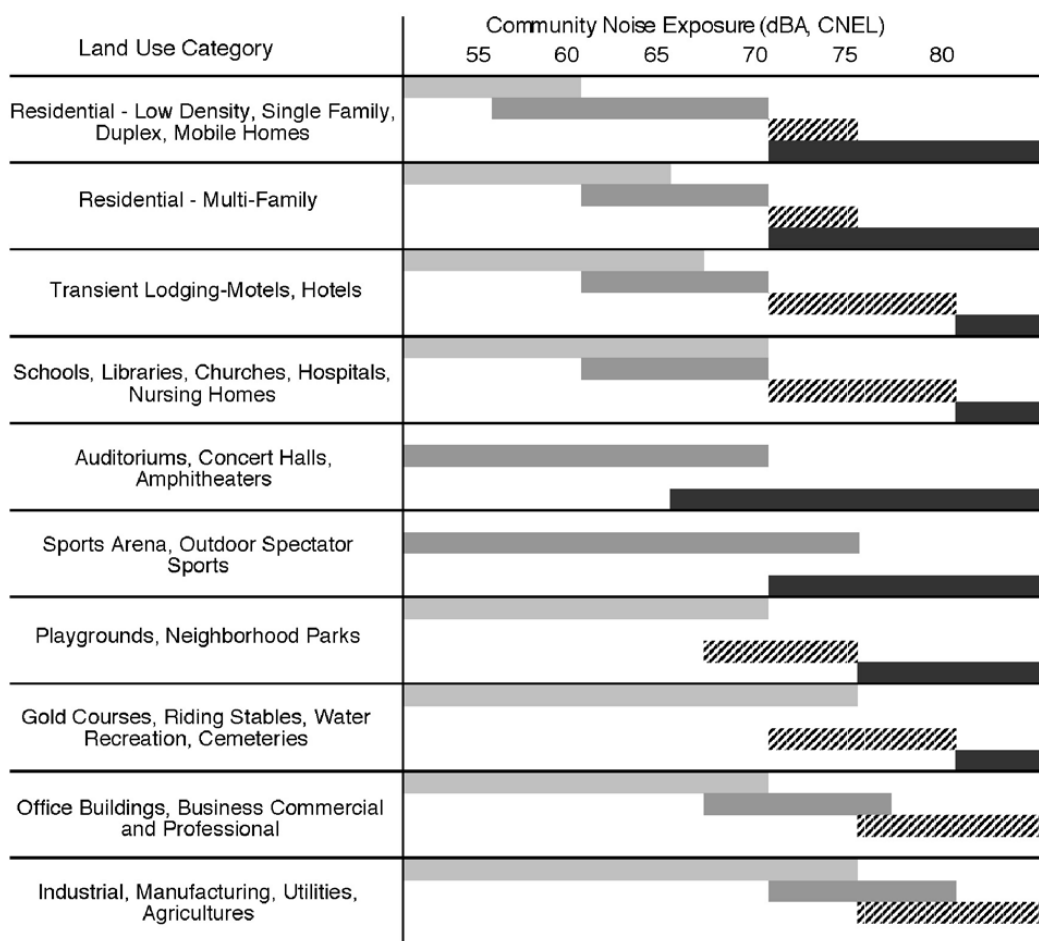
The State of California Noise Compatibility Guidelines, published by the Department of Health, Services provides guidance for use when siting land uses. The compatibility guidelines are shown in Figure 4.12.7. The guidelines will be used to evaluate the compatibility of the proposed land uses with the noise environment. The guidelines show compatibility of various land uses with different noise environments. The guidelines show that industrial uses are normally acceptable in noise environments up to 75 CNEL.





4.12.3 Methodology

Evaluation of noise impacts associated with the proposed project includes the following:

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Land Use/Noise Compatibility Guidelines



-  **Normally Acceptable** Specified land use is satisfactory based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements
-  **Conditionally Acceptable** - New construction or development shall be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply system of air conditioning, will normally suffice.
-  **Normally Unacceptable** New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design
-  **Clearly Unacceptable** New construction or development should generally not be undertaken

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FIGURE 4.12.7

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California Noise Compatibility Guidelines

SOURCE: Mestre Greve Associates, 2012

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- Determination of the short-term construction noise impacts on off-site noise-sensitive uses;
- Determination of the long-term noise impacts, including vehicular traffic and stationary noise sources, on on-site and off-site noise-sensitive uses; and
- Determination of the required mitigation measures to reduce long-term noise impacts from all sources.

Because of the location of noise-sensitive receptors, the noise analysis evaluates the noise effects of the industrial development on the existing residential development (sensitive receptors) near the southwest portion of the proposed project area.

There are no Federal Highway Administration (FHWA), State, or local standards for vibration. According to the FHWA, highway traffic and construction vibrations pose no threat to buildings and structures; and annoyance to people is not considered any worse than other discomforts experienced from living near highways. However, a substantial amount of research has been completed to compare vibrations from single events such as dynamite blasts with architectural and structural damage. The U.S. Bureau of Mines has set a safe limit of 0.5 inch per second peak particle velocity to avoid structure damage in residential structures (U.S. Bureau of Mines 1980). Below this level, there is virtually no risk of building damage.

4.12.4 Thresholds of Significance

A project would have a significant effect on the environment related to noise if it would substantially increase the ambient noise levels for adjoining areas or if it would conflict with adopted environmental plans and goals of the community in which it is located.

The applicable noise standards and guidelines governing the project are those specified previously in Sections 4.12.2.1 through 4.12.2.4. In summary, these criteria are contained within the Safety Element of the General Plan, the Municipal Code, the California Vehicle Code, and the State Noise Compatibility Guidelines.

For this project, a noise impact is considered significant if the project would result in:

- Exposure of persons to or generation of noise levels in excess of standards established in the *City of Moreno Valley General Plan*, *Moreno Valley Municipal Code*, or applicable standards of other agencies;
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;
- A substantial temporary, periodic, and/or permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels; and/or
- For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

The standards within the *City of Moreno Valley General Plan* and *Moreno Valley Municipal Code* determine the acceptable noise environment for proposed project and its vicinity. The standards are as follows:

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- To the extent feasible, ensure through the design review process that exterior noise levels at commercial and industrial areas do not exceed 75 dBA CNEL.
- Consider the following uses noise-sensitive and discourage them in areas where exterior noise levels exceed 65 dBA CNEL unless measures are implemented that reduce the noise exposure below this level: single-family and multiple-family residential uses, group homes, hospitals, schools and other learning institutions, and parks and open space areas where quiet is a basis for use.

Long-term impacts from the project's traffic noise that affect existing sensitive land uses are considered to be substantial and, therefore, constitute a significant noise impact if the project would:

- Increase noise levels by 5 dB or more where the no project noise level is less than 60 CNEL;
- Increase noise level by 3 dB or more where the no project noise level is 60 CNEL to 65 CNEL; or
- Increase noise levels by 1.5 dB or more where the no project noise level is greater than 65 CNEL.

The project's incremental contribution to a cumulative noise increase would be considered cumulatively considerable and significant when ambient noise levels affect noise-sensitive land uses and when the project increases noise levels by 1 dB or more over pre-project conditions and the predicted future cumulative with project noise levels cause the following cumulative increases:

- Increase noise levels by 5 dB or more where the existing noise level is less than 60 CNEL;
- Increase noise levels by 3 dB or more where the existing noise level is 60 to 65 CNEL; or
- Increase noise levels by 1.5 dB or more where the existing noise level is greater than 65 CNEL.

4.12.5 No Impact/Less than Significant Impacts

The following impacts were identified as having a less than significant impact or no impact on the environment with implementation of the proposed project.

4.12.5.1 Groundborne Vibration Impacts

Threshold	Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?
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Roadways in the vicinity of the project area are either paved or would be paved as the area develops, and would not result in project traffic driving over rough or dirt roads. Well maintained roads typically do not result in substantial vibration levels. Even roads with irregularities typically only generate substantial levels of vibration very near, less than 50 feet from the irregularity. Construction activities that would occur within the WLCSP area are not anticipated to require blasting or pile driving. Roadway vibrations are typically not perceptible more than 50 feet from the roadway except in very unusual circumstances. Generally, the interface between the soft tire of a truck or automobile will not generate significant vibration unless the road is in poor shape (e.g., potholes or pavement joints) Therefore, impacts associated with this issue are anticipated to be less than significant, and no mitigation is required.

4.12.5.2 Airport Noise Impacts

Threshold	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, results in exposure of people residing or working in the project area to excessive noise levels. For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.
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The project area is located approximately 5.5 miles northeast of the March Airfield (MAF) and is not located within two miles of a private airstrip. The MAF is a joint-use airport, used for both military and civilian purposes. The March Air Reserve Base (MARB) is the military operator of the MAF and March Inland Port (MIP) is the civilian operator of the airport. This facility is anticipated to play an increasingly important role in the transportation of goods and cargo for the Southern California region. Existing flight patterns affect a large portion of the City of Moreno Valley, along a path that affects the western portion of the City in a northwest/southeast alignment. Aircraft operations from the airport currently contribute intermittent single-event noise.

There is potential for single-event noise exposure levels from MAF activity to affect the proposed project. The exposure levels will vary dependent upon the type of aircraft and flight track flown for each operation at MAF. However, the proposed project is not identified as being within the noise or safety contours delineated for the MARB Airport.¹ In addition, the proposed project is not considered to contain sensitive receivers and, therefore, the impacts from these single-event noise levels are considered to be below the level of significance. The City's exterior noise standard for industrial uses is 70 dBA CNEL. MAF noise levels are less than 60 dB CNEL within the project area. Therefore, the proposed project would not have the potential to expose people to excessive noise levels from airport operations. Therefore, no significant noise impacts would occur regarding these issues from implementation of the proposed project, and no mitigation is required.

4.12.6 Significant Impacts

4.12.6.1 Short-Term Construction Noise Impacts

Threshold	Would the project result in a substantial temporary, periodic, and/or permanent increase in ambient noise levels in the project vicinity above levels existing without the project?
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Short-term noise would occur during the construction of the WLCSP. First, construction crew commutes and the transport of construction equipment and materials to the site for the proposed WLC project would incrementally increase noise levels on access roads in the WLC planning area. In addition, noise would be generated during excavation, grading, and building construction on various portions of the Specific Plan site. Construction is completed in discrete steps, each of which has its own mix of equipment, and consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on the site and, therefore, the noise levels surrounding the site as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. The site preparation phase, which includes excavation and grading of the site, tends to generate the highest noise levels, because the noisiest construction equipment is earthmoving equipment, which includes excavating machinery such as backfillers, bulldozers, draglines, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve one or two minutes of full-power operation followed by three to four minutes at

¹ Figure 5.4-1 March Reserve Air Base Noise Impact Area, City of Moreno Valley General Plan EIR, July 2006.

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lower power settings. Implementation of the Specific Plan would result in construction activities that would require the use of scrapers, bulldozers, and water and pickup trucks within the WLCSP area.

Figure 4.12.8 presents construction noise levels measured at 50 feet. The peak noise level for the majority of the equipment that will be used during construction of the proposed project will range from 70 to 95 dBA. Based on the fact that noise levels dissipate with increases in distance from the noise source due to noise divergence, noise levels at greater distances are less than those presented in Figure 4.12.8. Noise measurements made by Mestre Greve Associates demonstrate that the noise levels generated by commonly used grading equipment (e.g., loaders, graders, and trucks) generate noise levels that typically do not exceed the middle of the range shown in Figure 4.12.8.¹ However, the noise levels shown in Figure 4.12.8 have been used as the basis for the noise analysis estimates presented in this EIR.

Construction activities that are associated with the proposed WLCSP project would occur in two general areas: on-site and off-site. Some phases of the on-site construction would occur for 24 hours a day for 7 days a week. It is anticipated that on-site construction would occur periodically over a nine-year period with a potential start year of 2013 and ending in 2021. Off-site construction (which would involve minor grading, drainage, interchange, utility, and roadway improvements) is anticipated to only during the daytime weekday hours and would have a shorter construction duration.

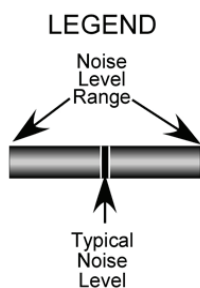
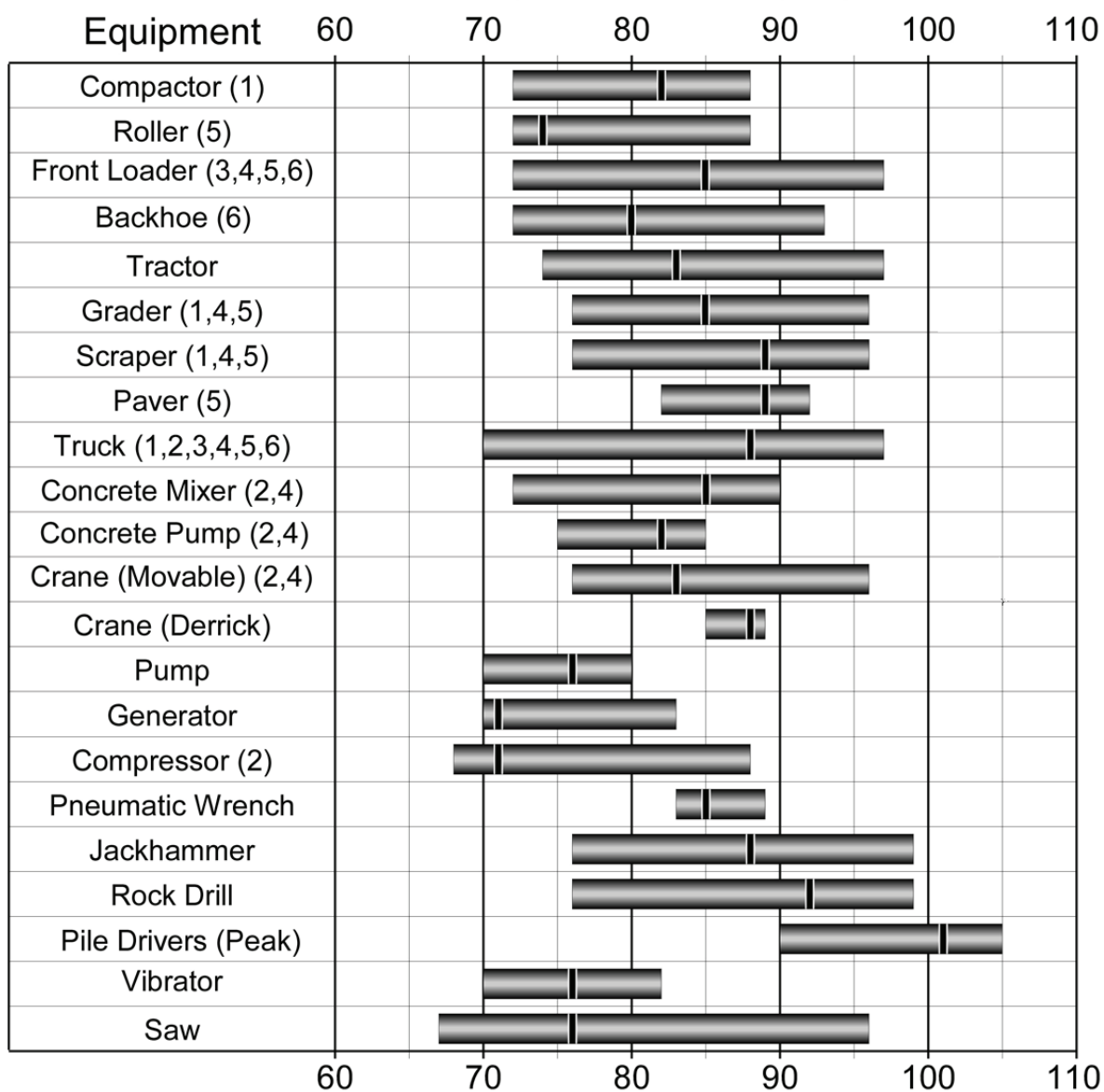
On-site Construction. Sensitive receptors that would be potentially affected by on-site construction activities would include residences located within and adjacent to the WLCSP area as well as residences located on the north side of SR-60. For residences on the opposite side of SR-60, existing daytime and nighttime freeway noise is anticipated to be greater than the noise generated by the construction activities that would occur within the WLCSP area. Although certain conditions at night, such as low inversions and very calm conditions, can increase the ability of construction noise to travel to the residences north of the freeway, these same conditions would also amplify the noise generated on the freeway. Since freeway noise would continue to be the dominant noise source in the area for these residences along SR-60, construction noise impacts on the residents north of the freeway will be less than significant and no mitigation is required.

Existing residences within the WLCSP area or adjacent to the Specific Plan area, such as those along Redlands Boulevard, Merwin Street, Bay Avenue, Cactus Avenue, and Gilman Springs Road, may be located within 50 feet or less from areas where intense construction (24 hours a day, 7 days a week) would occur. Although residential properties located within the WLCSP would be rezoned as Light Logistics, the existing residences are considered to be noise-sensitive uses that would be affected by intense construction activities. Similarly, residences located adjacent to the project site (i.e., along Redlands Boulevard, Merwin Street, Bay Avenue, Cactus Avenue, and Gilman Springs Road) would also be affected by intense construction activities. Based on a 50-foot noise attenuation distance, these residences may experience worst-case unmitigated peak construction noise levels (L_{max}) up to 97 dBA. The average noise levels are typically 5 to 15 dB lower than the peak noise levels. Average noise levels (L_{eq}) at 50 feet could easily be in the range of 82 to 92 dBA during most phases of construction.

The City of Moreno Valley Municipal Code does not include any exemptions for construction noise. Therefore, construction would be subject the limitations of 60 dBA during daytime and 55 dBA at nighttime measured at residential areas. According to Section 3.4.14, *Project Description*, WLC project construction may occur 24 hours a day, 7 days a week for certain activities. Significant noise impacts would be expected, especially if work with high noise levels occurs between 8:00 p.m. and 6:00 a.m.

¹ *Noise Assessment for the World Logistic Center Specific Plan*, page 27, Mestre Greve Associates, Division of Landrum & Brown, November 2012.

A-Weighted Sound Level (dBA) At 50 Feet



Construction Phases

- 1 - Grading
- 2 - Building
- 3 - Utilities
- 4 - Interchange
- 5 - Curbing and Paving
- 6 - Landscaping

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FIGURE 4.12.8

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Typical Construction Equipment Noise Levels

SOURCE: Mestre Greve Associates, 2012

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Based on these projections, anticipated worst-case construction noise levels would regularly be exceeded during daytime and nighttime hours at residences within the Specific Plan area. Based on an L_{eq} noise level of 90 dBA at 50 feet, an observer would need to be 1,580 feet from the construction to experience a noise level of 60 dBA (L_{eq}), or 2,800 feet for a noise level of 55 dBA (L_{eq}). Therefore, a residence within 1,580 feet during active construction during the daytime would be affected. Similarly, a residence within 2,800 feet during the nighttime would be affected by construction noise.

As set forth in Section 3.4.14 and as stated by the project applicant, construction could occur 24 hours per day, 7 days per week for these construction activities. Therefore, noise levels at the nearest residences would exceed the City's exterior noise standard of the 60 dBA¹ CNEL daytime standard and 55 dBA CNEL nighttime standard for residential uses. This is a significant impact requiring mitigation.

Off-site Construction. Construction activities associated with off-site construction include road improvements along Cactus Avenue and Redlands Boulevard, water and utility improvements, construction of a detention basin, debris basins, and interchange improvements. Roadway and interchange improvements are planned along Cactus Avenue, Redlands Boulevard, State Route 60, and Gilman Springs Road. Often the loudest pieces of equipment associated with this type of construction are the graders/scrapper equipment. Peak noise levels at 50 feet can reach 96 dBA, with average noise levels (L_{eq}) in the 85 dBA range. Noise levels of 60 dBA (L_{eq}) could be exceeded for up to 900 feet from the construction area. Existing residences are located within 900 feet of the off-site construction areas and would be exposed to noise levels that would exceed of the Moreno Valley noise criteria for residential uses.

Other off-site construction improvements such as drainage, sewer, water, and utility features would also generate noise in close proximity to existing sensitive uses. However, these activities typically utilize less construction equipment, which results in lower noise levels. These construction activities may commonly employ a backhoe as the loudest piece of equipment. A backhoe may have a peak noise level that exceeds 90 dBA at 50 feet, but has an average noise level around 80 dBA (L_{eq}) at 50 feet. However, at this noise level one would need to be more than 500 feet away to experience a noise level (L_{eq}) of less than 60 dBA. This noise level would exceed the City's daytime criteria at the nearest existing residences and mitigation measures would be required.

Specific Plan Design Features. The WLCSP does not contain any design features that specifically address noise. Other features, such as perimeter setback requirements, will have the effect of reducing noise to certain residential areas.

Mitigation Measures. Construction of the proposed project would result in noise levels at the closest residences exceeding the maximum noise level allowed under the City's Municipal Code. The following measures² would reduce short-term construction-related noise impacts associated with the proposed WLC project:

4.12.6.1A Prior to issuance of any discretionary approvals for development in the WLCSP, the project applicant shall submit a Noise Reduction Compliance Plan (NRCP) to the City of Moreno Valley for review and approval. The NRCP shall show the limits of nighttime construction in relation to any then occupied residential dwellings. Conditions shall be added to any discretionary projects requiring that the limits of nighttime grading be shown on the NRCP and all grading plans submitted to the City.

¹ Chapter 11.80.030 Table 11.80.030-2, City of Moreno Valley Municipal Code, City of Moreno Valley.

² Measures 4.12.6.1B-F correspond to the noise study measures N-1 through N-5

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The limits of construction allowed at night shall be clearly staked on site, and contractors will be provided with a copy of the plan showing the limits of nighttime construction.

- 4.12.6.1B** During all project site grading, all construction equipment, fixed or mobile, shall be equipped with operating and maintained mufflers consistent with manufacturers' standards.
- 4.12.6.1C** All discretionary approvals for development in the WLCSP shall prohibit construction vehicles from using Redlands Boulevard south of Fir Avenue during on-site construction for all phases of the Specific Plan.
- 4.12.6.1D** All discretionary approvals for development in the WLCSP shall include conditions of approval stating that no nighttime grading shall occur within 2,800 feet of residences south of SR-60 (between 8 p.m. and 6 a.m. on weekends and 8 p.m. and 7 a.m. on weekends or holidays). These restrictions shall be included as part of the Noise Reduction Compliance Plan. As an alternative to this requirement, a temporary construction sound barrier may be used in lieu of the construction buffer, per Mitigation Measure 4.12.6.1E.
- 4.12.6.1E** As an alternative to Mitigation Measure 4.12.6.1D, a 12-foot tall temporary construction sound barrier may be installed for residences within 1,580 feet of active nighttime construction areas. The temporary sound barrier shall be constructed of plywood with a total thickness of 1 to 1.5 inches, or a sound blanket wall may be used. If sound blankets are used, the curtains must have a Sound Transmission Class (STC) rating of 27. This shall be included as part of the Noise Reduction Compliance Plan required in Mitigation Measure 4.12.6.1A, which shall be reviewed and approved by the City prior to implementation.
- 4.12.6.1F** As an alternative to Mitigation Measure 4.12.6.1D, actual noise measurements of construction areas may be taken by qualified personnel and recommend specific buffer distances between construction activities and existing residences based on actual noise levels. These measurements will be incorporated into the Noise Reduction Compliance Plan required in Mitigation Measure 4.12.6.1A, which shall be reviewed and approved by the City prior to implementation.
- 4.12.6.1G** Any discretionary approvals for development that proposes grading within 1,580 feet of occupied residential units shall require that all grading equipment be equipped with residential grade mufflers (or better).
- 4.12.6.1H** All material stockpiles in connection with any grading operations shall be located at least 1,200 feet from existing residences.
- 4.12.6.1I** All project-related off-site construction shall be limited to 6 a.m. and 8 p.m. on weekdays only. Construction during City holidays shall not be permitted.
- 4.12.6.1J** Prior to the issuance of grading permits for off-site construction activities in support of development in the WLCSP, the project developer shall provide evidence to the City that any off-site construction area adjacent to occupied residential units shall have a 12-foot temporary sound barrier installed for construction activities lasting more than one month.

Level of Significance after Mitigation. *On-site Construction.* Elimination of nighttime construction within 2,800 feet of residences would lower the noise levels to 55 dBA (L_{eq}) at the closest residences. The noise levels would just meet the 55 dBA (L_{eq}) nighttime criteria contained in the Moreno Valley Noise Ordinance resulting in a less than significant impact. With the implementation of **Mitigation Measures 4.12.6.1A** through **4.12.6.1J**, the loudest noise level that would be experienced at any

developed residential parcel would be less than the 55 dBA (L_{eq}) nighttime threshold and would be consistent with the limits established in the City's Noise Ordinance resulting in a less than significant impact. In addition, implementation of **Mitigation Measure 4.12.6.1H**, would reduce the noise experienced at existing residences, resulting in a less than significant impact.

As previously stated, construction within 1,580 feet of residential areas south of the freeway has the potential to exceed the daytime Moreno Valley Noise Ordinance criteria of 60 dBA (L_{eq}). With implementation of **Mitigation Measure 4.12.6.1E**, any existing residences within 1,580 feet of a construction area would be shielded from construction noise with a 12-foot temporary sound barrier. A sound barrier will reduce the noise levels by about 10 dB resulting in a reduction of noise below City thresholds at residences 500 feet or further from the construction area. Although the installation of the temporary sound barrier would reduce noise levels experienced at the closest residences, those residences that are located within 500 feet of a construction area would still be exposed to noise levels greater than 60 dBA (L_{eq}). Therefore, impacts associated with this issue would remain significant and unavoidable.

Off-site Construction. With the implementation of **Mitigation Measure 4.12.6.1I**, off-site construction activities would be limited to daytime hours while **Mitigation Measure 4.12.6.1J** would require the installation of a temporary sound barrier. With these mitigation measures in place, residences adjacent to construction activities (depending on the loudness of the construction equipment) could experience noise levels greater than 60 dBA (L_{eq}) for off-site construction projects lasting less than one month. These impacts would only occur during weekday, daytime hours. However, even with implementation of these mitigation measures, noise levels experienced at these residences would be above the City's threshold. Therefore, impacts would remain significant and unavoidable.

4.12.6.2 Long-Term Traffic Noise Impacts

Threshold	Would the project result in a substantial temporary, periodic, and/or permanent increase in ambient noise levels in the project vicinity above levels existing without the project?
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The noise analysis for the proposed project is based on the traffic volume data contained in the Traffic Impact Analysis (TIA) prepared for the project (contained in its entirety as EIR Appendix L). The TIA addressed the intersections of surface streets in Moreno Valley of a collector or higher classification street with another collector or higher classification street, at which the proposed project will add 50 or more peak hour trips. The study area also included the main travel routes between the project and the neighboring cities of Riverside, Perris, Beaumont, San Jacinto, and Redlands. The study area extended west to the nearest ramps on SR-91 and as far south as the I-215 ramps at Redlands Avenue in Perris. The study area for freeways was selected to cover the freeway routes radiating from the project site to the north, south, east, and west. The traffic analysis covered SR-60 from SR-62 in the east to SR-71 in the west, SR-91 from I-215 in the east to I-15 in the west, and I-215 from SR-210 in the north to the Scott Road interchange in the south.

Three hundred and thirty nine (339) roadway links and eighty (80) freeway segments were analyzed in the noise analysis. The change in noise level was calculated for all 419 roadway and freeway links with and without the project for the existing case (2012), 2017, 2022, and 2035 time horizons. Links with noise increases less than 1.5 dB would not have a substantial noise increase and were not presented in the main body of the noise report (i.e., the tables and figures). Similarly, any links that do not have sensitive receptors (e.g., residential uses) were also not presented in the main body of the noise report. Based on this filtering process, of the 419 links analyzed, 72 links have sensitive receptors and an increase of 1.5 dB for at least one time horizon and were therefore addressed in the analysis.

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The projected future daily traffic volumes (Parsons Brinckerhoff, Inc., December, 2012) for roadway segments in the project vicinity were used in the traffic noise impact analysis. Modeled noise levels represent the worst-case scenario, which assumes that no shielding is provided between the traffic and the location where the noise contours are drawn. As previously identified, the threshold for traffic noise is 65 dBA CNEL for sensitive receptors.

Operation of development that could occur within the proposed project area would generate traffic along roadways in the project vicinity. Table 4.12.H identifies existing with project roadway traffic noise levels with the project.

Table 4.12.H: Existing Year (2012) Plus Project Traffic Noise Levels (dBA)

Roadway Segment	CNEL (dBA) at 100 feet		
	Without Project	With Project	Change
Alessandro Boulevard (west of Redlands Boulevard)	60.5	61.5	1.0
Alessandro Road (Crescent Avenue to Sunset Drive)	63.3	65.1	1.8
Alessandro Road (Sunset Drive to San Timoteo Canyon Road)	63.3	65.4	2.1
Cactus Avenue (Oliver Street to Moreno Beach Drive)	58.2	59.8	1.6
Cactus Avenue (Redlands Boulevard to Street D)	50.2	65.6	15.4
Cactus Avenue (west of Redlands Boulevard)	57.5	59.2	1.7
Canyon Crest Drive (Alessandro Boulevard to Sandtrack Road)	41.8	41.9	0.1
Country Club Drive (Chicago Avenue to Canyon Crest Drive)	57.5	59.2	1.7
Crescent Avenue (west of Alessandro Boulevard)	57.1	59.7	2.6
Day Street (Cottonwood Avenue to Alessandro Boulevard)	57.7	57.9	0.2
Evans Road (Marbella Date to Ramon Expressway)	56.9	57.9	1.0
Evans Road (north of Harley Knox Boulevard)	0.0	0.0	0.0
Evans Road (Nuevo Road to San Jacinto Avenue)	0.0	0.0	0.0
Fir Avenue (Quincy Drive to Redlands Boulevard)	0.0	0.0	0.0
Gilman Springs Road (Bridge Street to Beaumont Avenue)	61.0	62.1	1.1
Gilman Springs Road (Bridge Street to SR-79 Southbound Ramps)	61.0	62.2	1.2
Gilman Springs Road (Eucalyptus Avenue to Street C)	46.1	53.5	7.4
Gilman Springs Road (Jack Rabbit Trail to Bridge Street)	62.7	63.9	1.2
Gilman Springs Road (south of Street C)	56.1	57.4	1.3
Gilman Springs Road (SR-79 Northbound Ramps to Record Road)	60.7	60.9	0.2
Iris Avenue (Kitching Street to Lasselle Street)	60.1	61.6	1.5
Iris Avenue (Lasselle Street to Nason Street)	57.0	59.4	2.4
Iris Avenue (Nason Street to Oliver Street)	60.0	63.0	3.0
Ironwood Avenue (Moreno Beach Drive to Redlands Boulevard)	55.6	55.7	0.1
Ironwood Avenue (Redlands Boulevard to Highland Boulevard)	46.3	57.1	10.8
John F Kennedy Drive (south of Cactus Avenue)	61.5	67.0	5.5
Kitching Street (Iris Avenue to Ivory Avenue)	61.1	62.1	1.0
Krameria Avenue (Perris Boulevard to Lasselle Street)	57.5	60.6	3.1
Lasselle Street (Cahuilla Drive to Krameria Avenue)	60.5	61.7	1.2
Lasselle Street (Krameria Avenue to Arroyo Park Drive)	56.4	59.0	2.6
Live Oak Canyon Road (San Timoteo Canyon Road to I-10)	56.5	58.6	2.1
Lochmoor Drive (Central Avenue to Fair Isle Drive)	52.1	53.7	1.6

Table 4.12.H: Existing Year (2012) Plus Project Traffic Noise Levels (dBA)

Roadway Segment	CNEL (dBA) at 100 feet		
	Without Project	With Project	Change
Locust Avenue (Moreno Beach Drive to Smiley Boulevard)	46.2	46.2	0.0
Locust Avenue (Moreno Beach Drive to Redlands Boulevard)	55.7	59.7	4.0
Moreno Beach Drive (John F Kennedy to Oliver Street)	55.2	58.8	3.6
Moreno Beach Drive (Locust Avenue to Ironwood Avenue)	55.3	57.8	2.5
Old 215 Frontage Road (Eucalyptus Avenue to Alessandro Boulevard)	61.4	61.4	0.0
Oliver Street (Alessandro Boulevard to Cactus Avenue)	54.1	56.5	2.3
Orange Avenue (Evans Road to Foothill Drive)	55.3	55.4	0.1
Perris Boulevard (Alessandro Boulevard to Cactus Avenue)	61.0	61.0	0.0
Perris Boulevard (Alessandro Boulevard to Cottonwood Avenue)	61.9	61.9	0.0
Perris Boulevard (Iris Avenue to Krameria Avenue)	60.8	61.5	0.7
Perris Boulevard (John F Kennedy Drive to Iris Avenue)	67.2	67.2	0.0
Perris Boulevard (Krameria Avenue to Harley Knox Boulevard)	60.7	61.8	1.1
Perris Boulevard (Krameria Avenue to Harley Knox Boulevard)	59.6	60.6	1.0
Placentia Avenue (Evans Road to El Nido Avenue)	0.0	0.0	0.0
Placentia Avenue (Water Avenue to Evans Road)	0.0	0.0	0.0
Quincy Drive (Alessandro Boulevard to Cactus Avenue)	0.0	0.0	0.0
Quincy Drive (Cottonwood Avenue to Alessandro Boulevard)	0.0	0.0	0.0
Ramona Expressway (Evans Road to Rider Street)	59.2	59.4	0.1
Reche Canyon Road (Keissel Road to Reche Vista)	62.7	62.9	0.2
Reche Canyon Road (Reche Vista Drive to High Country Drive)	48.9	48.9	0.0
Redlands Boulevard (Eucalyptus Avenue to Dracaea Avenue)	0.0	49.4	49.4
Redlands Boulevard (Ironwood Avenue to SR-60)	68.3	71.1	2.8
Redlands Boulevard (Ironwood Avenue to San Timoteo)	67.8	70.2	2.3
Redlands Boulevard (SR-60 to Eucalyptus Avenue)	58.8	64.9	6.1
San Timoteo Canyon Road (Alessandro Road to Live Oak Canyon Road)	62.0	65.2	3.2
San Timoteo Canyon Road (Live Oak Canyon Road to Redlands Boulevard)	62.7	65.8	3.2
Street A (Eucalyptus Avenue to Street F)	47.0	73.2	26.3
Street D (Street E to Cactus Avenue)	0.0	69.6	69.6
Street E (north of Alessandro Boulevard)	0.0	70.3	70.3
Street F (east of Street A)	0.0	68.4	68.4
Sunset Drive (Alessandro Road to Cameo Drive)	52.5	55.2	2.7
Sunset Drive (Crown Street to Alessandro Road)	49.0	51.4	2.3
Sycamore Canyon Boulevard (Central Avenue to College Boulevard)	62.8	63.2	0.4
Theodore Street (SR-60 to Highland Boulevard)	56.8	64.9	8.1
Freeways			
SR-60 (Pigeon Pass Road/Frederick Street to Heacock Street)	66.5	68.1	1.6
SR-60 (Heacock Street to Perris Boulevard)	65.2	66.9	1.7

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Table 4.12.H: Existing Year (2012) Plus Project Traffic Noise Levels (dBA)

Roadway Segment	CNEL (dBA) at 100 feet		
	Without Project	With Project	Change
SR-60 (Perris Boulevard to Nason Street)	64.6	66.7	2.1
SR-60 (Nason Street to Moreno Beach Drive)	52.0	54.3	2.3
SR-60 (Moreno Beach Drive to Redlands Boulevard)	62.5	65.6	3.1
SR-60 (Redlands Boulevard to Theodore Street)	60.2	63.5	3.4

Source: Mestre Greve Associates, November 2012.

Year 2017 (Phase I) with and without project scenarios projected daily traffic volumes on roadway segments in the project vicinity were used to conduct the traffic noise modeling. The projected daily traffic volumes in the area were taken from the TIA prepared for the proposed project. Table 4.12.I identifies year 2017 without project and with project traffic noise levels.

Table 4.12.I: Phase I (2017) Plus Project Traffic Noise Levels (dBA)

Roadway Segment	CNEL (dBA) at 100 feet		
	Without Project	With Project	Change
Alessandro Boulevard (west of Redlands Boulevard)	61.4	61.3	-0.1
Alessandro Road (Crescent Avenue to Sunset Drive)	63.8	65.3	1.5
Alessandro Road (Sunset Drive to San Timoteo Canyon Road)	64.0	65.6	1.6
Cactus Avenue (Oliver Street to Moreno Beach Drive)	58.7	60.5	1.8
Cactus Avenue (Redlands Boulevard to Street D)	50.2	64.2	14.0
Cactus Avenue (west of Redlands Boulevard)	57.9	59.4	1.5
Canyon Crest Drive (Alessandro Boulevard to Sandtrack Road)	42.0	42.5	0.5
Country Club Drive (Chicago Avenue to Canyon Crest Drive)	57.5	58.0	0.5
Crescent Avenue (west of Alessandro Boulevard)	57.6	59.3	1.7
Day Street (Cottonwood Avenue to Alessandro Boulevard)	59.7	60.9	1.3
Evans Road (Marbella Date to Ramon Expressway)	57.3	58.6	1.2
Evans Road (north of Harley Knox Boulevard)	0.0	0.0	0.0
Evans Road (Nuevo Road to San Jacinto Avenue)	0.0	0.0	0.0
Fir Avenue (Quincy Drive to Redlands Boulevard)	0.0	0.0	0.0
Gilman Springs Road (Bridge Street to Beaumont Avenue)	62.1	63.3	1.2
Gilman Springs Road (Bridge Street to SR-79 Southbound Ramps)	62.1	63.4	1.3
Gilman Springs Road (Eucalyptus Avenue to Street C)	46.8	47.0	.02
Gilman Springs Road (Jack Rabbit Trail to Bridge Street)	63.9	65.4	1.5
Gilman Springs Road (south of Street C)	57.3	58.9	1.6
Gilman Springs Road (SR-79 Northbound Ramps to Record Road)	61.0	61.6	0.6
Iris Avenue (Kitching Street to Lasselle Street)	60.6	61.8	1.1
Iris Avenue (Lasselle Street to Nason Street)	60.2	62.3	2.1
Iris Avenue (Nason Street to Oliver Street)	62.8	65.2	2.3
Ironwood Avenue (Moreno Beach Drive to Redlands Boulevard)	56.0	56.8	0.8
Ironwood Avenue (Redlands Boulevard to Highland Boulevard)	49.2	57.6	8.4
John F Kennedy Drive (south of Cactus Avenue)	61.5	65.5	4.0

Table 4.12.I: Phase I (2017) Plus Project Traffic Noise Levels (dBA)

Roadway Segment	CNEL (dBA) at 100 feet		
	Without Project	With Project	Change
Kitching Street (Iris Avenue to Ivory Avenue)	61.7	62.7	1.0
Krameria Avenue (Perris Boulevard to Lasselle Street)	58.9	60.5	1.6
Lasselle Street (Cahuilla Drive to Krameria Avenue)	61.1	62.4	1.3
Lasselle Street (Krameria Avenue to Arroyo Park Drive)	57.6	59.7	2.2
Live Oak Canyon Road (San Timoteo Canyon Road to I-10)	57.3	58.1	0.8
Lochmoor Drive (Central Avenue to Fair Isle Drive)	55.2	56.8	1.6
Locust Avenue (Moreno Beach Drive to Smiley Boulevard)	46.2	46.8	0.6
Locust Avenue (Moreno Beach Drive to Redlands Boulevard)	59.2	61.9	2.7
Moreno Beach Drive (John F Kennedy to Oliver Street)	55.2	57.7	2.5
Moreno Beach Drive (Locust Avenue to Ironwood Avenue)	57.6	59.7	2.1
Old 215 Frontage Road (Eucalyptus Avenue to Alessandro Boulevard)	61.6	62.3	0.7
Oliver Street (Alessandro Boulevard to Cactus Avenue)	58.5	59.3	0.8
Orange Avenue (Evans Road to Foothill Drive)	55.3	55.9	0.6
Perris Boulevard (Alessandro Boulevard to Cactus Avenue)	62.0	63.0	1.0
Perris Boulevard (Alessandro Boulevard to Cottonwood Avenue)	62.6	63.4	0.9
Perris Boulevard (Iris Avenue to Krameria Avenue)	61.9	62.6	0.8
Perris Boulevard (John F Kennedy Drive to Iris Avenue)	68.8	69.9	1.0
Perris Boulevard (Krameria Avenue to Harley Knox Boulevard)	62.0	63.2	1.2
Perris Boulevard (Krameria Avenue to Harley Knox Boulevard)	60.6	61.5	0.9
Placentia Avenue (Evans Road to El Nido Avenue)	0.0	0.0	0.0
Placentia Avenue (Water Avenue to Evans Road)	0.0	0.0	0.0
Quincy Drive (Alessandro Boulevard to Cactus Avenue)	0.0	0.0	0.0
Quincy Drive (Cottonwood Avenue to Alessandro Boulevard)	0.0	0.0	0.0
Ramona Expressway (Evans Road to Rider Street)	59.5	59.9	0.4
Reche Canyon Road (Keissel Road to Reche Vista)	62.9	63.8	1.0
Reche Canyon Road (Reche Vista Drive to High Country Drive)	48.9	49.3	0.4
Redlands Boulevard (Eucalyptus Avenue to Dracaea Avenue)	0.0	0.0	0.0
Redlands Boulevard (Ironwood Avenue to SR-60)	68.5	69.4	1.0
Redlands Boulevard (Ironwood Avenue to San Timoteo Canyon Road)	68.2	69.5	1.3
Redlands Boulevard (SR-60 to Eucalyptus Avenue)	59.2	60.0	0.8
San Timoteo Canyon Road (Alessandro Road to Live Oak Canyon Road)	62.4	64.2	1.8
San Timoteo Canyon Road (Live Oak Canyon Road to Redlands Boulevard)	63.2	64.9	1.7
Street A (Eucalyptus Avenue to Street F)	51.8	71.2	19.4
Street D (Street E to Cactus Avenue)	0.0	68.3	68.3
Street E (north of Alessandro Boulevard)	0.0	65.5	65.5
Street F (east of Street A)	0.0	29.8	29.8
Sunset Drive (Alessandro Road to Cameo Drive)	53.8	55.8	2.0

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Table 4.12.I: Phase I (2017) Plus Project Traffic Noise Levels (dBA)

Roadway Segment	CNEL (dBA) at 100 feet		
	Without Project	With Project	Change
Sunset Drive (Crown Street to Alessandro Road)	50.2	51.6	1.4
Sycamore Canyon Boulevard (Central Avenue to College Boulevard)	63.3	64.9	4.6
Theodore Street (SR-60 to Highland Boulevard)	56.8	64.1	7.4
Freeways			
SR-60 (Pigeon Pass Road/Frederick Street to Heacock Street)	67.2	67.9	0.7
SR-60 (Heacock Street to Perris Boulevard)	66.0	66.8	0.8
SR-60 (Perris Boulevard to Nason Street)	65.5	66.5	1.0
SR-60 (Nason Street to Moreno Beach Drive)	52.9	54.0	1.1
SR-60 (Moreno Beach Drive to Redlands Boulevard)	63.5	65.1	1.5
SR-60 (Redlands Boulevard to Theodore Street)	61.3	63.1	1.8

Source: Mestre Greve Associates, November 2012.

As identified in Table 4.12.I, implementation of the proposed WLC project would result in relatively minor changes in traffic noise levels in Year 2017 (Phase I). The largest project-related increase in traffic noise would be along Street D (Street E to Cactus Avenue) and Street E (north of Alessandro Boulevard), where increases of greater than 65 dBA are predicted for the 2017 With Project scenario over the Year 2017 without project scenario. The increase associated with these roadway segments is attributable in part to Streets D and E being new roads that will be constructed by the proposed project.

Future Year (2022) with and without project scenarios projected daily traffic volumes on roadway segments in the project vicinity were used to conduct the traffic noise modeling. The projected daily traffic volumes in the area were taken from the TIA prepared for the proposed project. Table 4.12.J identifies the future year (2022) without project and with project traffic noise levels.

Table 4.12.J: Future Year (2022) Plus Project Traffic Noise Levels (dBA)

Roadway Segment	CNEL (dBA) at 100 feet		
	Without Project	With Project	Change
Alessandro Boulevard (west of Redlands Boulevard)	61.5	63.4	1.9
Alessandro Road (Crescent Avenue to Sunset Drive)	64.6	65.9	1.3
Alessandro Road (Sunset Drive to San Timoteo Canyon Road)	65.0	66.3	1.3
Cactus Avenue (Oliver Street to Moreno Beach Drive)	58.9	60.7	1.8
Cactus Avenue (Redlands Boulevard to Street D)	50.2	65.7	15.5
Cactus Avenue (west of Redlands Boulevard.)	58.3	60.2	1.9
Canyon Crest Drive (Alessandro Boulevard to Sandtrack Road)	45.2	45.9	0.7
Country Club Drive (Chicago Avenue to Canyon Crest Drive)	58.9	59.1	0.2
Crescent Avenue (west of Alessandro Boulevard)	58.5	60.8	2.3
Day Street (Cottonwood Avenue to Alessandro Boulevard)	63.2	64.7	1.5
Evans Road (Marbella Date to Ramon Expressway)	58.1	59.2	1.1
Evans Road (north of Harley Knox Boulevard)	0.0	0.0	0.0
Evans Road (Nuevo Road to San Jacinto Avenue)	0.0	0.0	0.0

Table 4.12.J: Future Year (2022) Plus Project Traffic Noise Levels (dBA)

Roadway Segment	CNEL (dBA) at 100 feet		
	Without Project	With Project	Change
Fir Avenue (Quincy Drive to Redlands Boulevard)	0.0	0.0	0.0
Gilman Springs Road (Bridge Street to Beaumont Avenue)	61.2	63.1	2.0
Gilman Springs Road (Bridge Street to SR-79 Southbound Ramps)	61.2	63.2	2.0
Gilman Springs Road (Eucalyptus Avenue to Street C)	46.4	55.0	8.6
Gilman Springs Road (Jack Rabbit Trail to Bridge Street)	63.0	65.3	2.4
Gilman Springs Road (south of Street C)	56.5	58.8	2.3
Gilman Springs Road (SR-79 Northbound Ramps to Record Road)	62.3	62.6	0.2
Iris Avenue (Kitching Street to Lasselle Street)	61.0	62.4	1.4
Iris Avenue (Lasselle Street to Nason Street)	61.1	63.6	2.5
Iris Avenue (Nason Street to Oliver Street)	63.8	66.7	2.9
Ironwood Avenue (Moreno Beach Drive to Redlands Boulevard)	56.2	56.6	0.4
Ironwood Avenue (Redlands Boulevard to Highland Boulevard)	51.9	57.8	5.9
John F Kennedy Drive (south of Cactus Avenue)	62.8	67.2	4.3
Kitching Street (Iris Avenue to Ivory Avenue)	62.5	63.9	1.4
Krameria Avenue (Perris Boulevard to Lasselle Street)	60.5	62.2	1.8
Lasselle Street (Cahuilla Drive to Krameria Avenue)	61.9	63.3	1.4
Lasselle Street (Krameria Avenue to Arroyo Park Drive)	59.2	61.5	2.3
Live Oak Canyon Road (San Timoteo Canyon Road to I-10)	58.0	59.0	0.9
Lochmoor Drive (Central Avenue to Fair Isle Drive)	57.0	57.9	0.9
Locust Avenue (Moreno Beach Drive to Smiley Boulevard)	46.2	45.7	-0.5
Locust Avenue (Moreno Beach Drive to Redlands Boulevard)	60.7	63.3	2.6
Moreno Beach Drive (John F Kennedy to Oliver Street)	56.1	59.1	3.0
Moreno Beach Drive (Locust Avenue to Ironwood Avenue)	58.8	60.9	2.1
Old 215 Frontage Road (Eucalyptus Avenue to Alessandro Boulevard)	62.8	64.3	1.5
Oliver Street (Alessandro Boulevard to Cactus Avenue)	58.9	59.7	0.8
Orange Avenue (Evans Road to Foothill Drive)	55.3	55.7	0.4
Perris Boulevard (Alessandro Boulevard to Cactus Avenue)	62.7	63.4	0.7
Perris Boulevard (Alessandro Boulevard to Cottonwood Avenue)	63.2	63.7	0.5
Perris Boulevard (Iris Avenue to Krameria Avenue)	62.7	63.2	0.5
Perris Boulevard (John F Kennedy Drive to Iris Avenue)	69.7	70.5	0.8
Perris Boulevard (Krameria Avenue to Harley Knox Boulevard)	62.8	63.7	0.9
Perris Boulevard (Krameria Avenue to Harley Knox Boulevard)	61.5	62.0	0.5
Placentia Avenue (Evans Road to El Nido Avenue)	0.0	0.0	0.0
Placentia Avenue (Water Avenue to Evans Road)	0.0	0.0	0.0
Quincy Drive (Alessandro Boulevard to Cactus Avenue)	0.0	0.0	0.0
Quincy Drive (Cottonwood Avenue to Alessandro Boulevard)	0.0	0.0	0.0
Ramona Expressway (Evans Road to Rider Street)	59.4	60.2	0.8
Reche Canyon Road (Keissel Road to Reche Vista)	63.5	64.1	0.6
Reche Canyon Road (Reche Vista Drive to High Country Drive)	49.3	49.0	-0.3
Redlands Boulevard (Eucalyptus Avenue to Dracaea Avenue)	0.0	50.6	50.6

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Table 4.12.J: Future Year (2022) Plus Project Traffic Noise Levels (dBA)

Roadway Segment	CNEL (dBA) at 100 feet		
	Without Project	With Project	Change
Redlands Boulevard (Ironwood Avenue to SR-60)	69.2	71.4	2.2
Redlands Boulevard (Ironwood Avenue to San Timoteo Canyon Road)	69.1	70.8	1.7
Redlands Boulevard (SR-60 to Eucalyptus Avenue)	60.5	66.1	5.6
San Timoteo Canyon Road (Alessandro Road to Live Oak Canyon Road)	63.4	65.8	2.4
San Timoteo Canyon Road (Live Oak Canyon Road to Redlands Boulevard)	64.2	66.4	2.2
Street A (Eucalyptus Avenue to Street F)	49.4	73.1	23.8
Street D (Street E to Cactus Avenue)	0.0	69.8	69.8
Street E (north of Alessandro Boulevard)	0.0	65.4	65.4
Street F (east of Street A)	0.0	68.4	68.4
Sunset Drive (Alessandro Road to Cameo Drive)	55.3	56.9	1.7
Sunset Drive (Crown Street to Alessandro Road)	49.0	49.0	0.0
Sycamore Canyon Boulevard (Central Avenue to College Boulevard)	65.1	65.2	0.1
Theodore Street (SR-60 to Highland Boulevard)	60.3	64.1	3.8
Freeways			
SR-60 (Pigeon Pass Road/Frederick Street to Heacock Street)	67.2	68.4	1.2
SR-60 (Heacock Street to Perris Boulevard)	66.1	67.4	1.3
SR-60 (Perris Boulevard to Nason Street)	65.6	67.2	1.6
SR-60 (Nason Street to Moreno Beach Drive)	53.1	54.9	1.8
SR-60 (Moreno Beach Drive to Redlands Boulevard)	63.8	66.2	2.4
SR-60 (Redlands Boulevard to Theodore Street)	61.7	64.1	2.4

Source: Mestre Greve Associates, November 2012.

As identified in Table 4.12.J, implementation of the proposed WLC project would result in relatively minor changes in traffic noise levels in Future Year 2022. The largest project-related increase in traffic noise would be along Street D (Street E to Cactus Avenue), Street E (north of Alessandro Boulevard), and Street F west (of Street A), where increases of greater than 65 dBA are predicted for the Future Year 2022 With Project scenario over the Future Year 2022 Without Project scenario. The increase associated with these roadway segments is attributable in part to Streets D, E, and F being new roads that will be constructed by the proposed project.

Operation of the proposed project would generate traffic along roadways in the surrounding area during the buildout year (2035) scenario. Buildout Year (2035) with and without project scenarios projected daily traffic volumes on roadway segments in the project vicinity were used to conduct the traffic noise modeling. The projected daily traffic volumes in the area were taken from the TIA prepared for the proposed project. Table 4.12.K identifies the Buildout Year (2035) without project and with project traffic noise levels.

Table 4.12.K: Buildout Year (2035) Plus Project Traffic Noise Levels (dBA)

Roadway Segment	CNEL (dBA) at 100 feet		
	Without Project	With Project	Change
Alessandro Boulevard (west of Redlands Boulevard)	65.6	66.5	0.9
Alessandro Road (Crescent Avenue to Sunset Drive)	64.5	64.9	0.4
Alessandro Road (Sunset Drive to San Timoteo Canyon Road)	65.0	65.5	0.5
Cactus Avenue (Oliver Street to Moreno Beach Drive)	60.4	62.3	1.9
Cactus Avenue (Redlands Boulevard to Street D)	50.1	66.3	16.3
Cactus Avenue (west of Redlands Boulevard.)	59.7	64.8	5.1
Canyon Crest Drive (Alessandro Boulevard to Sandtrack Road)	58.1	59.7	1.6
Country Club Drive (Chicago Avenue to Canyon Crest Drive)	62.4	64.9	2.5
Crescent Avenue (west of Alessandro Boulevard)	58.9	60.1	1.2
Day Street (Cottonwood Avenue to Alessandro Boulevard)	67.8	69.4	1.7
Evans Road (Marbella Date to Ramon Expressway)	61.3	62.7	1.5
Evans Road (north of Harley Knox Boulevard)	60.1	62.9	2.8
Evans Road (Nuevo Road to San Jacinto Avenue)	60.5	62.0	1.5
Fir Avenue (Quincy Drive to Redlands Boulevard)	61.6	68.3	6.7
Gilman Springs Road (Bridge Street to Beaumont Avenue)	63.5	65.5	2.0
Gilman Springs Road (Bridge Street to SR-79 Southbound Ramps)	63.7	65.5	1.8
Gilman Springs Road (Eucalyptus Avenue to Street C)	52.0	57.4	5.4
Gilman Springs Road (Jack Rabbit Trail to Bridge Street)	65.7	68.0	2.3
Gilman Springs Road (south of Street C)	61.9	63.6	1.7
Gilman Springs Road (SR-79 Northbound Ramps to Record Road)	62.6	64.8	2.2
Iris Avenue (Kitching Street to Lasselle Street)	63.2	65.1	1.9
Iris Avenue (Lasselle Street to Nason Street)	63.1	65.4	2.3
Iris Avenue (Nason Street to Oliver Street)	65.6	67.4	2.8
Ironwood Avenue (Moreno Beach Drive to Redlands Boulevard)	57.9	60.6	2.7
Ironwood Avenue (Redlands Boulevard to Highland Boulevard)	58.6	63.6	5.0
John F Kennedy Drive (south of Cactus Avenue)	64.3	67.9	3.6
Kitching Street (Iris Avenue to Ivory Avenue)	63.6	64.8	1.2
Krameria Avenue (Perris Boulevard to Lasselle Street)	57.5	59.4	1.9
Lasselle Street (Cahuilla Drive to Krameria Avenue)	62.1	63.3	1.2
Lasselle Street (Krameria Avenue to Arroyo Park Drive)	60.0	61.8	1.8
Live Oak Canyon Road (San Timoteo Canyon Road to I-10)	57.5	58.6	1.1
Lochmoor Drive (Central Avenue to Fair Isle Drive)	65.4	68.9	3.5
Locust Avenue (Moreno Beach Drive to Smiley Boulevard)	60.8	63.3	2.5
Locust Avenue (Moreno Beach Drive to Redlands Boulevard)	60.8	63.3	2.5
Moreno Beach Drive (John F Kennedy to Oliver Street)	56.8	60.4	3.6
Moreno Beach Drive (Locust Avenue to Ironwood Avenue)	63.3	66.6	3.3
Old 215 Frontage Road (Eucalyptus Avenue to Alessandro Boulevard)	32.2	63.5	1.2
Oliver Street (Alessandro Boulevard to Cactus Avenue)	54.1	54.4	0.3
Orange Avenue (Evans Road to Foothill Drive)	57.3	65.1	7.8
Perris Boulevard (Alessandro Boulevard to Cactus Avenue)	63.5	65.0	1.5

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Table 4.12.K: Buildout Year (2035) Plus Project Traffic Noise Levels (dBA)

Roadway Segment	CNEL (dBA) at 100 feet		
	Without Project	With Project	Change
Perris Boulevard (Alessandro Boulevard to Cottonwood Avenue)	63.5	65.0	1.5
Perris Boulevard (Iris Avenue to Krameria Avenue)	64.4	66.0	1.5
Perris Boulevard (John F Kennedy Drive to Iris Avenue)	70.5	72.2	1.7
Perris Boulevard (Krameria Avenue to Harley Knox Boulevard)	64.0	65.5	1.5
Perris Boulevard (Krameria Avenue to Harley Knox Boulevard)	64.0	65.8	1.8
Placentia Avenue (Evans Road to El Nido Avenue)	54.0	68.2	14.3
Placentia Avenue (Water Avenue to Evans Road)	57.4	67.5	10.1
Quincy Drive (Alessandro Boulevard to Cactus Avenue)	31.1	54.5	23.4
Quincy Drive (Cottonwood Avenue to Alessandro Boulevard)	49.2	66.8	1.8
Ramona Expressway (Evans Road to Rider Street)	59.9	61.6	1.7
Reche Canyon Road (Keissel Road to Reche Vista)	65.1	66.9	1.8
Reche Canyon Road (Reche Vista Drive to High Country Drive)	64.2	67.5	3.3
Redlands Boulevard (Eucalyptus Avenue to Dracaea Avenue)	0.0	48.5	48.5
Redlands Boulevard (Ironwood Avenue to SR-60)	69.4	71.6	2.2
Redlands Boulevard (Ironwood Avenue to San Timoteo Canyon Road)	68.7	70.6	1.9
Redlands Boulevard (SR-60 to Eucalyptus Avenue)	61.3	67.3	6.0
San Timoteo Canyon Road (Alessandro Road to Live Oak Canyon Road)	63.5	66.4	2.8
San Timoteo Canyon Road (Live Oak Canyon Road to Redlands Boulevard)	64.1	66.4	2.3
Street A (Eucalyptus Avenue to Street F)	54.0	73.0	19.0
Street D (Street E to Cactus Avenue)	0.0	70.4	70.4
Street E (north of Alessandro Boulevard)	0.0	65.8	65.8
Street F (east of Street A)	0.0	69.2	69.2
Sunset Drive (Alessandro Road to Cameo Drive)	56.9	58.7	1.8
Sunset Drive (Crown Street to Alessandro Road)	50.7	51.7	1.1
Sycamore Canyon Boulevard (Central Avenue to College Boulevard)	65.1	66.5	1.3
Theodore Street (SR-60 to Highland Boulevard)	65.0	67.9	2.9
Freeways			
SR-60 (Pigeon Pass Road/Frederick Street to Heacock Street)	67.6	68.6	1.0
SR-60 (Heacock Street to Perris Boulevard)	66.6	67.7	1.1
SR-60 (Perris Boulevard to Nason Street)	66.5	67.8	1.3
SR-60 (Nason Street to Moreno Beach Drive)	54.2	55.6	1.3
SR-60 (Moreno Beach Drive to Redlands Boulevard)	65.5	67.1	1.6
SR-60 (Redlands Boulevard to Theodore Street)	63.7	65.1	1.4

Source: Mestre Greve Associates, November 2012.

Increases in noise levels associated with Buildout Year (2035) traffic conditions on area roadways range from 0.1 to 68.0 dBA. As identified in the Table 4.12.K, the greatest increase in noise levels would be along Street D (Street E to Cactus Avenue), Street E (north of Alessandro Boulevard), and

Street F west (of Street A), where increases of greater than 65 dBA are predicted for the Buildout Year 2035 With Project scenario over the Buildout Year 2035 Without Project scenario. The increase associated with these roadway segments is attributable in part to Streets D, E, and F being new roads that will be constructed by the proposed project.

Tables 4.12.H through 4.12.K identify the noise increases directly caused by the proposed project. These numbers represent the distance from the centerline of the road to the contour value shown. Note that the values given in Tables 4.12.H through 4.12.I do not take into account the effect of any existing noise attenuation in the form of barriers, soundwalls, or topography that may affect ambient noise levels.

For the reader's convenience, the significance threshold for a project-specific roadway noise impact as defined previously is:

- Project induced increase in noise levels by 5 dB or more where the no project noise level is less than 60 CNEL;
- Project induced increase in noise level by 3 dB or more where the no project noise level is 60 CNEL to 65 CNEL; or
- Project induced increase in noise levels by 1.5 dB or more where the no project noise level is greater than 65 CNEL.

For the reader's convenience, the significance threshold for a project's incremental contribution to a cumulative noise increase as defined previously is:

A project increase of the ambient (cumulative without project) noise level by 1 dB or more, and the predicted future cumulative with project noise levels cause the following cumulative increases:

- Increase noise levels by 5 dB or more where the existing noise level is less than 60 CNEL;
- Increase noise levels by 3 dB or more where the existing noise level is 60 to 65 CNEL; or
- Increase noise levels by 1.5 dB or more where the existing noise level is greater than 65 CNEL.

It should be noted that the same noise increase occurs at all locations along a roadway link. In other words, the same increase will occur at 50 feet from a roadway as it does at 100 feet. In addition, the noise contours cover a wider area around the local roadways than does the existing condition. State Route 60, however, continues to be the dominant noise source in the area.

In general, the project proposes logistics uses and will not be affected by these noise increases. However, there are a few scattered residences within the project area and adjacent to the WLCSP area that would be affected by the proposed logistics uses.

Within the Specific Plan Area. For locations within the WLCSP area, these include three groups of residences that may remain with the implementation of the proposed project. The Specific Plan would rezone the properties as Light Logistics, but it is anticipated that the residences may remain for some time. The Light Logistics use is not sensitive to noise. However, the existing residences, as long as they remain, must be considered sensitive land uses.

- *Redlands Boulevard (north of Brodiaea Avenue).* The first group of homes is located east of Redlands Boulevard north of the intersection with Brodiaea Avenue. The traffic on Redlands Boulevard will not increase significantly as a result of the project. Future Street E is proposed to be constructed west of these existing residences. However, as stated in the Noise Study

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conducted for the Specific Plan, it is likely that there will be intervening buildings and that the distance from Street E will be so great that these homes will not experience significant noise from public roadways. Therefore, impacts are anticipated to be less than significant and no mitigation is required.

- *Street A/Theodore Street (Street B to Street F)*. The second group of residences within the Specific Plan area is located on the east side of Street A (Theodore Street) midway between the future Street B and Street F. There are currently two residences in this area. These residences are anticipated to experience noise increases up to 18 dB due to the implementation of the Specific Plan. As a result, existing noise levels at these two residences will be changed significantly. The exact alignment of the roadway is yet to be determined, but the homes may be roughly 100 feet from the centerline on the roadway. As identified in Table 4.12.J, at this distance, the noise level by future year (2022) could be as high as 73.1 CNEL. This level of noise would be above the 65 CNEL threshold and would result in a greater than 1.5 dB noise increase when compared to without project conditions. This is a significant impact requiring mitigation.
- *Street F/Dracaea Avenue (east of Theodore Street)*. The third area is a single residence located east of Theodore Street along what is currently Dracaea Avenue (future Street F). Existing conditions identify low levels of traffic noise on Dracaea Avenue. The 65 CNEL contour is projected to lie 84 feet from the centerline of Street F and it is likely that the one residence would lie within this zone. This level of noise would be above the 65 CNEL threshold and result in a greater than 1.5 dB noise increase when compared to without project conditions. Therefore, this is a significant impact requiring mitigation.

Off-Site Areas Adjacent to the Specific Plan Area. For areas adjacent to the Specific Plan area, 22 segments would experience a noise increase that would be greater than significance criteria specified previously. These seven areas are described below.

- *Cactus Avenue (Redlands Boulevard to Street D)*. This area is occupied by a small group of single-family homes along Cactus Avenue between the future Street D and Redlands Boulevard. A significant noise increase is projected for all four time horizons. Currently, there is no soundwall along these homes. Therefore, this is a significant impact requiring mitigation.
- *Cactus Avenue (west of Redlands Boulevard)*. As identified in the noise study, this area shows noise increases ranging from 1.5 dB to 5.1 dB depending on the time horizon. Only the 2035 case results in a significant noise increase.

Existing residences are located along Redlands Boulevard with rear yards facing Cactus Avenue. Existing 6-foot high soundwalls are located along the residences and rear yard areas are approximately 60 feet from the centerline of the roadway. In buildout year (2035), the noise levels for 60 feet from the centerline of the roadway including the effects of the soundwall are projected to be 64.8 CNEL. This is below the City criteria of 65 CNEL and, therefore, a less than significant impact will occur and no mitigation is required.

- *Day Street (between Cottonwood Avenue and Alessandro Boulevard)*. There are scattered single-family homes along this roadway that front onto Day Street. Only the 2035 time horizon results in a significant noise increase for this area. In 2035, the project is projected to increase noise levels by 1.7 dB, bringing the noise level up to 69.4 CNEL. Therefore, this is a significant impact requiring mitigation.
- *Fir Avenue (between Quincy Drive and Redlands Boulevard)*. There is one single-family home along this roadway fronting Fir Avenue. Only the 2035 time horizon results in a significant noise increase for this area. In 2035, the project is projected to increase noise levels by 6.7 dB, bringing the noise level up to 68.3 CNEL. Therefore, this is a significant impact requiring mitigation.

- *Gilman Springs Road (between Eucalyptus Avenue and Street C, and between Jack Rabbit Trail and Bridge Street).* There are three single-family homes scattered along these roadway segments. All of the houses are set back from the roadway, but none has soundwalls. A significant noise increase is projected for at least one of these segments in three of the four case years. Therefore, this is a significant impact requiring mitigation.
- *Ironwood Avenue (between Redlands Boulevard and Highland Boulevard).* There are two single-family homes that front onto Ironwood Avenue. There are also two churches along this roadway. A significant noise increase is projected for all four study years. In 2035, the project is projected to increase noise levels by 5 dB, bringing the noise level to 63.6 CNEL. Therefore, this is a significant impact requiring mitigation.
- *John F. Kennedy Drive (south of Cactus Avenue).* The residences along John F. Kennedy Drive south of Cactus Avenue will experience significant noise increases in all four time horizons. Similar to the area along Cactus Avenue, this noise increase will be due to cars and light vehicles, and not heavy trucks. The residences along the west side of the roadway are generally depressed with respect to the road and have existing 6-foot soundwalls. Due to the presence of the existing soundwalls and slope conditions, noise levels would be reduced by 6 to 10 dB. This would result in noise levels being below the City threshold of 65 CNEL for residential uses. Therefore, residences on the west side of the street will not be affected. Impacts are considered to be less than significant and no mitigation is required.

The residences on the east side of the roadway are elevated with respect to the roadway and do not have soundwalls. Rear yards areas on both sides of the street are approximately 60 to 90 feet from the centerline of the roadway and are bordered by wrought iron fencing. As identified in Tables 4.12.H through 4.12.K, the greatest noise levels that would be experienced at these residences would range up to 67.9 CNEL, which is above the City threshold of 65 CNEL. This is a significant impact requiring mitigation.

- *Locust Avenue (between Moreno Beach Drive and Smiley Boulevard).* There are three single-family homes along this roadway and they front onto the roadway. The 2035 time horizon results in a significant noise increase for this area. In 2035, the project will increase noise levels by 3.5 dB, bringing the noise level to 68.9 CNEL. This is a significant impact requiring mitigation.
- *Moreno Beach Drive (between Locust Avenue and Ironwood Avenue).* There are 18 single-family homes along this roadway. Some homes front onto the roadway, but most back up to the roadway. The 2035 time horizon results in a significant noise increase for this area. In 2035, the project will increase noise levels by 3.3 dB, bringing the noise level to 66.6 CNEL. This is a significant impact requiring mitigation.
- *Perris Boulevard (between John F. Kennedy Drive and Iris Avenue).* This is a mixed area in terms of residential land use. There are approximately 36 single-family homes along this roadway, some with a soundwall and some without. There is also a large multifamily development without a soundwall. Most of the homes either back up to the roadway or side-on to the roadway, making a soundwall feasible. Approximately half of the homes along this roadway do have a soundwall in place. The 2035 time horizon results in a significant noise increase for this area. In 2035, the project will increase noise levels by 1.7 dB, bringing the noise level up to 72.2 CNEL for areas without a soundwall. For the homes with a soundwall, there would not be a significant noise impact since the year 2035 the noise would increase by 1.7 dB and reaching up to 66.2 CNEL. For the homes on this roadway that do not have a soundwall, there would be a significant noise impact and mitigation is required.
- *Placentia Avenue (from El Nido Avenue to Evans Road, and on to Water Avenue).* There are scattered single-family homes along this roadway that front onto the roadway. The 2035 time horizon results in a significant noise increase for this area. In 2035, the project will increase noise levels by 10 to 14 dB, bringing the noise level up to 68 CNEL. This is a significant impact requiring mitigation.

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- *Quincy Drive (from Cactus Avenue to Alessandro Boulevard, and on to Cottonwood Avenue)*. The existing single-family homes along Quincy Drive have a soundwall. Quincy Drive currently only exists from Cottonwood to Bay Avenue, which is north of Alessandro Boulevard. The 2035 time horizon results in a significant noise increase. This is a significant impact requiring mitigation.
- *Reche Canyon Road (from Keissel Road to Reche Vista Drive, and on to High Country Drive)*. There are roughly 22 single-family homes scattered along these two roadway segments. These homes are scattered along the roadway and front onto Reche Canyon Road. The 2035 time horizon results in a significant noise increase for this area. In 2035, the project will increase noise levels by 1.8 to 3.3 dB with resulting noise levels in the 67 to 68 CNEL range. This is a significant impact requiring mitigation.
- *Redlands Boulevard (from Dracaea Avenue to State Route 60)*. There are scattered homes in this area that either face Redlands Boulevard (or Shubert Street) or are on Redlands Boulevard. The 2012, 2022, and 2035 time horizons result in a significant noise increase for this area. This is a significant impact requiring mitigation.
- *Redlands Boulevard (from State Route 60 to San Timoteo Canyon Road)*. There are approximately 28 homes along this roadway that would be affected. The single-family homes are scattered and generally front the roadway. The 2012, 2022, and 2035 time horizons result in a significant noise increase for this area. The increases in noise are around 2 dB with a resultant noise level in the 71 to 72 CNEL range. This is a significant impact requiring mitigation.
- *San Timoteo Canyon Road (from Alessandro Road to Live Oak Canyon Road to Redlands Boulevard)*. There are about four scattered residences along this roadway that would be affected. The existing baseline plus project time horizon results in a significant noise increase for this area. The noise increases by up to 3.3 dB with resultant noise levels in the 65 to 66 CNEL range. This is a significant impact requiring mitigation.
- *Theodore Street (State Route 60 to Highland Boulevard)*. There are four existing homes on Theodore Street that front onto the roadway. Implementation of the Specific Plan would result in a 10.7 dB increase over baseline conditions (2012), a 7.4 dB increase in Opening Year (2017), and a 3.8 dB increase in future year (2022). By Buildout Year (2035), the noise increase associated with the proposed project is anticipated to be 2.9 dB, which would not be significant. In future year (2022), the 65 CNEL contour for this roadway link would lie approximately 138 feet from the centerline of the roadway. The four existing residences on Theodore Street are within 138 feet of the roadway. As a result, these existing residences could experience noise levels above the 65 CNEL threshold during all time horizons. This is a significant impact requiring mitigation.
- *Street D (from Street E to Cactus Avenue)*. Street D, as shown in the Specific Plan, will come down the western side of the project parallel to Merwin Street. It then merges with Cactus Avenue traveling to the west until Redlands Boulevard. A specific alignment has not been determined for this roadway. There are approximately 14 homes that side-on to Merwin Street that could be affected by traffic on Street D. There are no soundwalls along these homes. There would be limited or no heavy trucks using this roadway. The 65 CNEL contour will lie 114 feet from the centerline of Street D. If the centerline of Street D is located closer than 114 feet to the residences, then a significant impact would occur. Outdoor living spaces for homes along Merwin Street would experience noise levels greater than 65 CNEL, and this would not be consistent with City criteria. This is a significant impact requiring mitigation.
- *State Route 60 (from Pigeon Pass Road to Perris Boulevard)*. All residential areas along this stretch of freeway have soundwalls in place. The 2012 time horizon results in a significant noise increase for this area. The noise levels are projected to increase by 1.5 to 1.7 dB in this area with resultant noise levels in the 66.9 to 68.1 CNEL range. This is a significant impact requiring mitigation.
- *State Route 60 (from Perris Boulevard to Nason Street)*. All residential areas along this stretch of freeway have soundwalls in place. The 2022 time horizon results in a significant noise increase

for this area. The noise level will go up by 1.6 dB with the project up to a level of 67.2 CNEL. This is a significant impact requiring mitigation.

- *State Route 60 (from Moreno Beach Drive to Redlands Boulevard)*. There are soundwalls in place for all residences in this area. The existing 2012 and 2035 time horizons result in a significant noise increase for this area, reaching 67.1 CNEL by 2035. This is a significant impact requiring mitigation.
- *State Route 60 (from Redlands Boulevard to Theodore Street)*. No soundwalls are present in this area. The residential area is set back from the freeway and is clustered along Redlands Boulevard north of the freeway. The existing 2012 time horizon results in a significant noise increase for this area. The resultant noise level will be 63.5 CNEL with an increase due to the project of 3.4 dB. This is a significant impact requiring mitigation.

Specific Plan Design Features. The WLCSP indicates there will be a 250-foot setback from existing housing along Redlands Boulevard. No additional design features to attenuate noise impacts are planned as part of the WLCSP.

Mitigation Measures. Construction of the proposed WLC project would result in noise levels at the closest residences within and adjacent to the WLCSP area exceeding the maximum noise level allowed under the City's Municipal Code. The following measures would reduce long-term traffic related noise impacts associated with the proposed project:

4.12.6.2A Within the WLCSP, Street D shall be designed such that exterior noise levels at existing residential areas shall not exceed 65 CNEL, which may require installation of a soundwall or other noise attenuation improvements. The design and calculations of such improvements shall be incorporated into a report that shall be submitted to the City for review and approval prior to the issuance of construction permits for Street D.

4.12.6.2B Prior to issuance of any discretionary approvals for development in the WLCSP, a WLC Noise Development Impact Fee study shall be submitted to the City for review and approval. The City shall require future development within the WLCSP to participate in a WLC Noise Development Impact Fee program to include soundwall attenuation to mitigate impacts from the proposed project based on the collection of fair-share fee payments from each increment of development and the implementation of each soundwall in accordance with Mitigation Measure 4.12.6.2C. The update to the DIF shall be based on a nexus study in conformance with State law (i.e., AB 1600). The Nexus study shall examine the soundwalls specified below, shall include detailed cost estimates for each soundwall, and shall establish a pro-rated fee to be paid per square foot by all development proposals within the WLCSP. The soundwalls to be included in this study include:

Cactus Avenue Soundwall from Redlands Boulevard to Street D. Construct an approximately 1,000-foot long, 6-foot high soundwall at the top of slope. The existing wrought-iron fencing will be removed and replaced with the soundwall (e.g., masonry wall, berming, glass barrier, or combinations of these barriers). The soundwall would need to measure 6 feet as measured from the rear yard of the residences.

John F. Kennedy Drive, east side, Soundwall from Cactus Avenue to Bay Hill Drive. Construct an approximately 5,000-foot long, 6-foot high soundwall at the top of slope for the existing residences that are on the east side of John F. Kennedy Drive. The existing wrought-iron fencing will be removed and replaced with the soundwall (e.g., masonry wall, berming, glass barrier, or combinations of these barriers). The

soundwall would need to measure 6 feet as measured from the rear yard of the residences.

Moreno Beach Drive Soundwall between Locust Avenue and Ironwood Avenue. Construct an approximately 2,000-foot long, 6-foot high soundwall at the top of slope for the existing residences that are on the east side of John F. Kennedy Drive. The soundwall would need to measure 6 feet as measured from the rear yard of the residences.

Perris Boulevard Soundwall between John F. Kennedy Drive and Iris Avenue. Construct an approximately 1,500-foot long, 6-foot high soundwall at the top of slope for the existing residences that are on the east side of John F. Kennedy Drive. The soundwall would need to measure 6 feet as measured from the rear yard of the residences.

State Route 60 Soundwall from Redlands Boulevard to Theodore Street. Construct an approximately 580-foot long, 6-foot high soundwall for the existing residences. The soundwall would need to measure 6 feet as measured from the rear yard of the residences.

Iris Avenue Soundwall from Nason Street to Oliver Street. Construct an approximately 3,000-foot long, 6-foot high soundwall along the property line for the existing residences.

Sycamore Canyon Boulevard Soundwall from College Boulevard and Central Avenue. Construct an approximately 1,000-foot long, 6-foot high soundwall at the top of slope for the existing residences. The soundwall would need to measure 6 feet as measured from the rear yard of the residences.

4.12.6.2C Prior to issuance of any building permits for development in the WLCSP, the City shall collect the Development Impact Fee (DIF) as modified in accordance with Mitigation Measure 4.12.6.2B. The City shall establish a schedule for installing the specific soundwalls listed in Mitigation Measure 4.12.6.2B consistent with the WLC Noise DIF program..

Level of Significance after Mitigation. *Within the WLC Specific Plan Area.* For areas within the WLCSP area, these include three groups of residences that may remain with the implementation of the proposed project. The level of significance after mitigation is provided for each of the two areas for which a significant impact has been identified.

- *Theodore Street/Street A (Street B to Street F).* There are two residences in this area. These residences are anticipated to experience noise increases up to 18 dB due to the implementation of the Specific Plan. As a result, existing noise levels at these two residences will be changed significantly. The exact alignment of the roadway is to be determined, but the homes may be roughly 100 feet from the centerline on the roadway. One residence fronts onto Street A (Theodore Street), and the driveway access would make a soundwall ineffective. The other residence is on to Street A. It is difficult to determine where an outdoor living area is for this residence. However, since it is a single residence, a soundwall would have a limited effectiveness. Since mitigation is not feasible, impacts remain significant and unavoidable.
- *Dracaea Avenue/Street F (east of Theodore Street).* There is one residence in this area fronting onto the future alignment of Street F (currently Dracaea Avenue). Existing conditions identify low levels of traffic noise on Dracaea Avenue. The 65 CNEL contour is projected to lie 84 feet from the centerline of Street F and it is likely that the one residence would lie within this zone. Installation of a soundwall would not be effective in reducing noise levels due to the opening for the driveway. Since mitigation is not feasible, impacts remain significant and unavoidable.

Off-Site Areas Adjacent to the Specific Plan Area. For areas adjacent to the WLCSP area, eight areas would experience noise increases that would be mitigated to a less than significant level with implementation of **Mitigation Measures 4.12.6.2A** through **4.12.6.2C**. These areas are as follows:

- Cactus Avenue from Redlands Boulevard to Street D;
- John F. Kennedy Drive, west side, from Cactus Avenue to Bay Hill Drive;
- Moreno Beach Drive between Locust Avenue and Ironwood Avenue (15 of 18 homes);
- Perris Boulevard between John F. Kennedy Drive and Iris Avenue;
- State Route 60 from Redlands Boulevard to Theodore Street;
- Iris Avenue from Nason Street to Oliver Street;
- Sycamore Canyon Boulevard from College Boulevard and Central Avenue; and
- Street D from Street E to Cactus Avenue (8).

For the remaining noise impact locations adjacent to the WLCSP area for which significant noise impacts have been identified, mitigation measures are not feasible or will not fully reduce the impact to less than significant levels. Each location that will remain significant and unavoidable with implementation of the proposed project is discussed below.

- *Cactus Avenue (west of Redlands Boulevard).* Existing soundwalls will reduce noise levels by an estimated 6 dB, lowering the ultimate noise levels to 64.8 CNEL in the rear yard areas along Cactus Avenue. This is below the City criteria of 65 CNEL. It is not feasible to modify the existing residential block wall to reduce the project increase in noise levels because the block walls are designed for the height that they are built. In addition, the projected noise levels in year 2035 are within the City's exterior noise level for residences. Therefore, the significant impact cannot be feasibly mitigated and it will remain significant and unavoidable.
- *Day Street (between Cottonwood Avenue and Alessandro Boulevard).* The scattered single-family homes along this roadway front onto Day Street. In 2035, the project is projected to increase noise levels by 1.7 dB, bringing the noise level up to 69.4 CNEL. Homes that are widely separated from other homes cannot be effectively mitigated with a soundwall. Therefore, the significant impact cannot be feasibly mitigated and it will remain significant and unavoidable.
- *Fir Avenue (between Quincy Drive and Redlands Boulevard).* There is one single-family home along this roadway fronting Fir Avenue. Only the 2035 time horizon results in a significant noise increase for this area. In 2035, the project is projected to increase noise levels by 6.7 dB, bringing the noise level up to 68.3 CNEL. A single home that fronts on a roadway cannot be effectively mitigated with a soundwall. Therefore, the significant impact cannot be feasibly mitigated and it will remain significant and unavoidable.
- *Gilman Springs Road (between Eucalyptus Avenue and Street C, and between Jack Rabbit Trail and Bridge Street).* There are three single-family homes scattered along these roadway segments. All of the houses are set back from the roadway, but none has soundwalls. A significant noise increase is projected for at least one of these segments in three of the four case years. Homes that are widely separated from other homes cannot be effectively mitigated with a soundwall. Therefore, the significant impact cannot be feasibly mitigated and it will remain significant and unavoidable.
- *Ironwood Avenue (between Redlands Boulevard and Highland Boulevard).* There are two single-family homes that front onto Ironwood Avenue. There are also two churches along this roadway. A significant noise increase is projected for all four study years. In 2035, the project is projected to increase noise levels by 5 dB, bringing the noise level to 63.6 CNEL. Land uses that are widely

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separated from one another cannot be effectively mitigated with a soundwall. Therefore, the significant impact cannot be feasibly mitigated and it will remain significant and unavoidable.

- *Locust Avenue (between Moreno Beach Drive and Smiley Boulevard)*. There are three single-family homes along this roadway and they front onto the roadway. The 2035 time horizon results in a significant noise increase for this area. In 2035, the project will increase noise levels by 3.5 dB, bringing the noise level to 68.9 CNEL. As discussed above, homes that are scattered and front onto a street cannot be effectively mitigated with a soundwall. Therefore, the significant impact cannot be feasibly mitigated and it will remain significant and unavoidable.
- *Moreno Beach Drive (between Locust Avenue and Ironwood Avenue)*. There are 18 single-family homes along this roadway. Some homes front onto the roadway, but most back up to the roadway. The 2035 time horizon results in a significant noise increase for this area. In 2035, the project will increase noise levels by 3.3 dB, bringing the noise level to 66.6 CNEL. This is a significant impact requiring mitigation. Even with the soundwall that would be implemented as part of **Mitigation Measures 4.12.6.2A** through **4.12.6.2C**, sound levels at 3 of the 18 homes would exceed 65 CNEL. These homes front onto Moreno Beach Drive and cannot be effectively mitigated with a soundwall. Therefore, the significant impact cannot be feasibly mitigated and it will remain significant and unavoidable.
- *Placentia Avenue (from El Nido Avenue to Evans Road, and on to Water Avenue)*. There are scattered single-family homes that front onto the roadway. The 2035 time horizon results in a significant noise increase for this area. In 2035, the project will increase noise levels by 10 to 14 dB, bringing the noise level up to 68 CNEL. As discussed above, homes that are scattered and front onto a street cannot be effectively mitigated with a soundwall. Therefore, the significant impact cannot be feasibly mitigated and it will remain significant and unavoidable.
- *Quincy Drive (from Cactus Avenue to Alessandro Boulevard, and on to Cottonwood Avenue)*. The existing single-family homes along Quincy Drive have a soundwall. Quincy Drive currently only exists from Cottonwood to Bay Avenue, which is north of Alessandro Boulevard. The 2035 time horizon results in a significant noise increase. It is not feasible to modify the existing residential block walls to reduce the project increase in noise levels because the block walls are designed for the height that they are built. Therefore, the significant impact cannot be feasibly mitigated and it will remain significant and unavoidable.
- *Reche Canyon Road (from Keissel Road to Reche Vista Drive, and on to High Country Drive)*. There are approximately 22 single-family homes scattered along these two roadway segments. These homes front onto Reche Canyon Road. The 2035 time horizon results in a significant noise increase for this area. In 2035, the project will increase noise levels by 1.8 to 3.3 dB with resulting noise levels in the 67 to 68 CNEL range. Homes that are scattered and front onto a street cannot be effectively mitigated with a soundwall. Therefore, the significant impact cannot be feasibly mitigated and it will remain significant and unavoidable.
- *Redlands Boulevard (Dracaea Avenue to State Route 60)*. There are scattered homes in this area that either face Redlands Boulevard (or Shubert Street) or are on Redlands Boulevard. The 2012, 2022, and 2035 time horizons result in a significant noise increase for this area. Homes that are scattered and front onto a street cannot be effectively mitigated with a soundwall. Therefore, the significant impact cannot be feasibly mitigated and it will remain significant and unavoidable.
- *Redlands Boulevard (State Route 60 to San Timoteo Canyon Road)*. There are approximately 28 homes along this roadway that would be affected. The single-family homes are scattered and generally front the roadway. The 2012, 2022, and 2035 time horizons result in a significant noise increase for this area. The increases in noise are around 2 dB with a resultant noise level in the 71 to 72 CNEL range. Homes that are scattered and front onto a street cannot be effectively mitigated with a soundwall. Therefore, the significant impact cannot be feasibly mitigated and it will remain significant and unavoidable.

- *San Timoteo Canyon Road (from Alessandro Road to Live Oak Canyon Road to Redlands Boulevard)*. There are approximately four scattered residences along this roadway that would be affected. The existing baseline plus project time horizon results in a significant noise increase for this area. The noise increases by up to 3.3 dB with resultant noise levels in the 65 to 66 CNEL range. Homes that are scattered and front onto a street cannot be effectively mitigated with a soundwall. Therefore, the significant impact cannot be feasibly mitigated and it will remain significant and unavoidable.
- *Theodore Street (State Route 60 to Highland Boulevard)*. There are four existing homes on Theodore Street that front onto the roadway. Implementation of the Specific Plan would result in a 10.7 dB increase over baseline conditions (2012), a 7.4 dB increase in Opening Year (2017), and a 3.8 dB increase in future year (2022). By Buildout Year (2035), the noise increase associated with the proposed project is anticipated to be 2.9 dB, which would not be significant. In future year (2022), the 65 CNEL contour for this roadway link would lie approximately 138 feet from the centerline of the roadway. The four existing residences on Theodore Street are within 138 feet of the roadway. As a result, these existing residences could experience noise levels above the 65 CNEL threshold for all time horizons. Homes that are scattered and front onto a street cannot be effectively mitigated with a soundwall. Therefore, the significant impact cannot be feasibly mitigated and it will remain significant and unavoidable.

4.12.6.3 Long-Term Operational Noise Impacts

Threshold	Would the project cause exposure of persons to or generation of noise levels in excess of standards established in the <i>City of Moreno Valley General Plan</i> , <i>Moreno Valley Municipal Code</i> , or applicable standards of other agencies?
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Potential long-term stationary noise impacts would primarily be associated with operations at logistics facilities within the WLCSP area. Logistics facility uses would generate noise from truck delivery, loading/unloading activities at the loading areas, heating, ventilation, and air-conditioning (HVAC) equipment and other noise-producing activities within the parking lot (e.g., doors slamming, vehicle engine start-ups, and conversing in the parking lot). These activities are potential point sources of noise that could affect noise-sensitive receptors adjacent to the loading areas and parking lots. As noise spreads from a source, it loses energy; therefore, the farther away the noise receiver is from the noise source, the lower the perceived noise level would be.

Noise levels were measured at similar facilities to determine representative noise levels that might be generated by this type of activity. Noise measurements were made at two facilities; specifically, Lowes Distribution Center (3984 Indian Avenue, Perris, CA) and Ross Distribution Center (3404 Indian Avenue, Perris, CA). Based on these representative noise measurements, Table 4.12.L provides the noise levels for various distances from the warehouse property line with no noise barrier in place and with an assumed 12-foot noise barrier.

Table 4.12.L: Representative Noise Levels for Warehousing Activities

Distance from Facility (feet)	Noise Level (dBA L _{eq})	
	No Barrier	With 12-foot barrier
50	56.9	48.6
100	54.9	47.8
250	50.8	44.7
500	46.6	40.9

Source: Mestre Greve Associates, November 2012.

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The City of Moreno Valley Noise Ordinance requires that noise levels remain below 55 dBA (L_{eq}) during nighttime hours. To achieve this noise level, the warehouse property line would only need to be 100 feet from the nearest residential property and no soundwall would need to be present.

Another consideration is whether the proposed activity levels will be substantially higher than current ambient conditions. No matter what is developed in the Specific Plan area, ambient conditions would be higher in future years due to higher levels of traffic and activity. Ambient noise levels were measured at seven sites that could border the World Logistics Center (i.e., Measurement Sites 3 through 9). The nighttime ambient noise levels (L_{eq}) ranged from 35.8 to 61.8 dBA with an average for the sites of 46.6 dBA. To keep the noise levels at nearby residential areas less than typical ambient conditions, the logistics property line should be located a minimum distance of 250 feet and a 12-foot soundwall should be located along the perimeter of the property that faces any residential areas. This would keep the logistic use noise to less than 45 dBA (L_{eq}) at the residences. The implementation of this buffer between logistics uses and noise sensitive uses has been included as **Mitigation Measure 4.12.6.3A**.

Specific Plan Design Features. The WLCSP indicates there will be a 250-foot building setback from residentially zoned property along Redlands Boulevard, Bay Avenue, and Merwin Street.

Mitigation Measures. Operation of the proposed WLC project would result in noise levels at the closest residences within and adjacent to the WLC Specific Plan area exceeding the maximum noise level allowed under the City's Municipal Code. The following measure would reduce long-term operational noise impacts associated with the proposed WLC project:

4.12.6.3A All discretionary approvals for development in the area of Redlands Boulevard, Bay Avenue, Merwin Street, and Cactus Avenue shall provide a minimum 250-foot setback between residentially zoned property and logistics buildings within the WLCSP. In addition, all such discretionary approvals shall provide sound attenuation improvements that will reduce expected noise levels from development to within City standards.

Level of Significance after Mitigation. Implementation of **Mitigation Measure 4.12.6.3A** would eliminate any noise impacts on residential areas due to the operation of logistic activities. Through the provision of a 250-foot buffer, berms, and/or soundwalls, noise levels at the nearest residences would be reduced to below the City's thresholds. Therefore, with adherence to the identified mitigation measure, impacts associated with this issue would be less than significant.

4.12.6.4 Long-Term Utility Noise Impacts

Threshold	Would the project cause exposure of persons to or generation of noise levels in excess of standards established in the <i>City of Moreno Valley General Plan</i> , <i>Moreno Valley Municipal Code</i> , or applicable standards of other agencies?
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As illustrated in previously referenced Figure 4.12.3 and Figure 4.12.6, there is one existing SDG&E compressor station and two existing SCGC facilities located within the WLC Specific Plan area.

Based on preliminary calculations as illustrated in Figure 4.12.3, the worst-case compressor station operational characteristics will result in a maximum noise level just above 65 CNEL within the project area proposed for development (i.e., not open space). Typical commercial construction results in buildings that achieve at least a 20 dB reduction of outdoor noise levels. Therefore, an office use

exposed to the highest noise level from the compressor station will be just above 45 CNEL and below the 50 CNEL limit prescribed by the City's General Plan, resulting in a less than significant impact and no mitigation is required.

As illustrated in previously referenced Figure 4.12.4, the L_{eq} noise level generated by the compressor station does not exceed 60 dBA L_{eq} beyond the property lines of the facility. Therefore, the compressor station is not considered a noise disturbance based on City criteria. Operation of the compressor station would not result in any interior noise levels exceeding the limits established by the City in the General Plan. Therefore, noise impacts associated with the operation of the compressor station would be less than significant and no mitigation is required.

As identified in previously referenced Figure 4.12.5, the maximum noise level from a blow-down at the SDG&E compressor station within the WLCSP area proposed for development (i.e., the Logistics Development land use) is 100 dBA. A person would need to be exposed to this level for more than two hours in a day before permanent hearing loss would be expected. As discussed above, blow-down events at the SDG&E compressor station typically do not last longer than 90 seconds. Therefore, the SDG&E blow-down events will not result in a significant impact to the uses proposed within the WLCSP area, and no mitigation is required.

For SCGC blow-down events, noise generated could reach as high as 130 dBA just outside the fence line of the southern facility and in excess of 135 dB just outside the fence line of the northern facility. People within approximately 250 feet of the blow-down points would be exposed to noise levels greater than 115 dBA, which would likely cause permanent hearing damage regardless of the exposure time. The SCGC blow-downs could last as long as 90 minutes. It is anticipated that people exposed to noise levels greater than 102 dBA, within approximately 1,300 feet from the blow-down point could experience permanent hearing loss based on this event duration. Noise generated by SCGC blow-down events has the potential to cause permanent hearing loss in persons in the developed area of the project. This is a significant impact and mitigation is required.

SCGC blow-down events also have the potential to produce groundborne vibration. However, the effect of the blow-down groundbourne vibration would be limited to within 100 feet of the equipment and would not be perceived beyond the facility fenceline, resulting in a less than significant impact and no mitigation is required.

Specific Plan Design Features. The WLCSP provides a setback of open space and a street between the SCGC facility and planned warehouse buildings in the WLCSP. However, the separation may not be sufficient to prevent significant noise impacts during blow-down events.

Mitigation Measures. Operation of the proposed WLC project could result in exposure of people to noise levels as high as 130 dBA or greater during SCGC blow-down events. The following measure would reduce long-term utility related noise impacts associated with the proposed WLC project:

4.12.6.4A Prior to the issuance of building permits for projects within 500 feet of the SCGC and SDG&E facilities, documentation shall be submitted to the City confirming that sound attenuation devices or improvements for the blow-down facilities providing at least a 40 dB reduction in noise levels during blow-down events area available and will be installed for all planned blow-down events. This measure shall be implemented to the satisfaction of the City Planning Official.

Level of Significance after Mitigation. The SCGC blow-down equipment does not currently include a permanent silencer system. A review of the literature of a leading manufacturer of specialty silencer

systems (Industrial Acoustics Company) determined that a specialty silencer system added to the blow-down equipment could reduce noise levels by about 40 dB. With a silencer system providing 40 dB of noise reduction, blow-down noise levels would be less than 102 dBA approximately 30 feet from the blow-down point, which is within the property line of these facilities. 102 dBA is the noise level that could be experienced for up to 90 minutes without causing permanent hearing loss. Therefore, while occupants within the WLCSP in close proximity to the SCGC facilities would be subject to high noise levels during these infrequent noise events, they would not be subject to any permanent hearing damage. With implementation of **Mitigation Measure 4.12.6.4A**, SCGC blow-down events would not result in noise levels that could cause permanent hearing loss and the project would not be significantly affected by noise from the SCGC facilities, resulting in a less than significant impact.

4.12.7 Cumulative Impacts

The cumulative area for noise impacts is the City of Moreno Valley. Implementation of the Specific Plan would result in the introduction of new noise sources and levels from on-site activities and from increased traffic volumes on vicinity roadway and freeways.

Construction crew commutes and the transport of construction equipment, and materials to the WLCSP area would incrementally increase noise levels on access roads leading to the site. Secondary sources of noise would include noise generated during excavation, grading, and building erection on the project site. The net increase in project site noise levels generated by these activities and other sources has been quantitatively estimated and compared to the applicable noise standards and thresholds of significance. Although it is not possible to predict if contiguous properties may be constructed at the same time and create cumulative noise impacts that would be greater than if developed at separate times, it is unlikely that adjacent properties will be developed at the same time as the Specific Plan area. However, in the unlikely event that adjacent properties are developed at the same time as the proposed WLC project, adherence to the City's Municipal Code provisions that regulate construction activities and other development standards would render the cumulative impacts of the proposed project to less than significant levels.

The noise analysis contained in this section also provides an assessment of on-site operational noise level impacts on adjacent sensitive uses, both existing and future. Additionally, on-site operational noises are individual noise occurrences and are not typically additive in nature. It is extremely unlikely that adjacent properties will generate noises that would be additive in nature because of two important reasons. First, the noise sources would have to be adjacent or in close proximity to one another in order for the noises to intermingle. Second, the sensitive receptor or receptors would also have to be adjacent to or in close proximity to the noise generators. Although it is not possible to predict if contiguous or proximate properties may generate noise at the same time that would be additive in nature and thus create a significant cumulative noise impact at sensitive receptors, adherence to the City's Municipal Code provisions that regulate nuisance noise from land uses and other development standards would render the cumulative impacts of the proposed project to less than significant levels.

Cumulative traffic volumes contained in the TIA were developed for the Future Year 2022 and Buildout 2035 analysis time horizons. Traffic volumes for each time horizon were developed utilizing a combination of various future traffic growth methods as follows. For Future Year 2022, traffic volumes were developed by interpolating year 2035 traffic volume projections from the Riverside County Transportation and Analysis Model (RivTAM) to year 2022 plus traffic from a list of past, present, and reasonably foreseeable projects. For Buildout Year 2035, traffic volumes were developed by utilizing the year 2035 traffic volume projections from the RivTAM plus traffic from a list of past, present, and reasonably foreseeable projects.

Cumulative noise impacts associated with roadway noise have been addressed based on the cumulative traffic volumes. Previously referenced Tables 4.12.J and 4.12.K provide a comparison of Future Year (2022) and Buildout Year (2035) without and with project noise levels, and if a significant impact (project-specific or cumulatively significant) occurs.

The project calls for improvements to several of the roadways around the project area in order to accommodate the projected increase in project traffic volumes. There are no new noise-sensitive land uses proposed to be constructed within the area of analysis. However the presence of residential uses occurs within the WLCSP project and nearby area. These roadway segments are analyzed against the thresholds for determining significant impacts defined previously in Section 4.12.6.2. As described previously in Section 4.12.4, the project's incremental contribution to a cumulative noise increase would be considered cumulatively considerable and significant when ambient noise levels affect noise-sensitive land uses and when the proposed project increases noise levels by 1 dB or more over pre-project conditions and the predicted future cumulative with project noise levels cause the following cumulative increases:

- Increase noise levels by 5 dB or more where the existing noise level is less than 60 CNEL;
- Increase noise levels by 3 dB or more where the existing noise level is 60 to 65 CNEL; or
- Increase noise levels by 1.5 dB or more where the existing noise level is greater than 65 CNEL.

Cumulative noise impacts associated with roadway noise have been addressed based on the 2022 and 2035 time horizons analyses contained in Section 4.12.6.2. As identified in the preceding analysis, Tables 4.12.J and 4.12.K show the Future Year 2022 and Buildout Year 2035 CNEL values without and with the proposed project and if a significant impact would be produced based on the project-specific significance criteria identified in Section 4.12.4 and the cumulatively significant significance criteria identified in Section 4.12.4 and repeated above. Traffic noise level increases from the existing baseline condition and the future (2022 and 2035) time horizons are attributable to the intermingled effects of both the cumulative (i.e., past, present, and reasonably foreseeable projects) development projects in the project vicinity and region as well as the proposed project. As indicated in Section 4.12.6.2, roadway noise impacts have been identified and **Mitigation Measures 4.12.6.2A** through **4.12.6.2C** have been presented to reduce roadway noise impacts to the greatest extent feasible. As disclosed in Section 4.12.6.2, there are numerous instances in which there is no feasible means to reduce roadway noise impacts because of the existing developed nature of the affected roadway segment and/or the scattered nature of the sensitive receptors (i.e., residences), which prohibits the effectiveness of a soundwall. Therefore, no significant cumulative noise impacts would occur after implementation of the proposed mitigation measures. For those segments at which there is a cumulatively considerable impact and there is no feasible means to provide mitigation, the significant cumulative impact will remain significant and unavoidable.

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April 23, 2014

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RE: Comment on Final Environmental Impact Report for ProLogis Eucalyptus Industrial Park (State Clearinghouse No. 2008021002)

Dear Mr. Bradshaw:

I am writing on behalf of Laborers International Union of North America, Local Union No. 1184 and its members living in Riverside County (collectively "LIUNA Local 1184") regarding the Final Environmental Impact Report ("FEIR") prepared for the ProLogis Eucalyptus Industrial Park, State Clearinghouse No. 2008021002 ("Project").

LIUNA Local 1184 appreciates the Planning Commission's decision to delay its consideration of the FEIR until staff and the EIR consultant reviewed and prepared responses to our comments of August 2012. Unfortunately, it appears the brief delay was not sufficient time for staff to adequately review and consider those comments as many of the concerns expressed about the DEIR still remain in regard to the FEIR. In addition, LIUNA Local 1184 is particularly concerned that the Commission's staff is proposing not to address the significant new information of the proposed nearby World Logistics Center which, when combined with the ProLogis project, the two projects alone will emit as much greenhouse gasses per year in 2020 as the City has established as its total GHG emission target for that year. In other words, the two projects together will emit as much GHGs as the entire City and will cause the City to emit twice as many GHGs as its announced goal as of 2020. Obviously, this is significant new information regarding a serious significant impact of the ProLogis Project's cumulative GHG emissions that must be addressed in a recirculated EIR for public review. These and other concerns are elaborated upon in the following comments.

In addition, LIUNA Local 1184 has had its consultants who prepared comments in 2012 review the staff's responses to comments. Matthew Hagemann, P.G., C.Hg. and Anders Sutherland, of SWAPE Consulting and Dr. James Clark, Ph.D., have reviewed the FEIR and prepared detailed comments regarding numerous technical shortcomings and omissions in the responses. SWAPE Comments (attached as Exhibit A); Clark Comments (attached as Exhibit B). Although this comment will highlight some of those technical comments below, the Commission should review each of the concerns raised in those expert comments.

LIUNA Local 1184 requests that the Planning Commission not certify the EIR at this time but request staff to reconsider the analyses and require additional mitigation measures in order to address the Project's significant air quality impacts, GHG emissions, health risks, farmland conversion, and hazardous material risks that the Project as proposed will cause in the City of Moreno Valley.

A. The FEIR's Failure To Tackle The Project's Massive GHG Emissions is an Abuse of Discretion.

The total GHG emissions that the City claims it will achieve by 2020 are 798,693 metric tons of CO₂ equivalent per year for the entire City. *See* World Logistics Center DEIR, p. 4.7-9 (excerpts attached as Exhibit C). Yet the Prologis Project alone is projected to emit 79,000 metric tons of CO₂e per year at full build-out – a full ten percent of the City's target. The FEIR basically relies upon a wish and a prayer that a number of air quality mitigations will miraculously reduce the Project by about 70,000 tons of GHGs per year down to 10,000 tons per year, the South Coast Air Quality Management District's ("SCAQMD") threshold of significance for GHG emissions. *See* FEIR, PDF p. 111 ("The mitigation measures discussed in the project-level impact analysis of GHG emissions indicated the measures would substantially reduce the project's emissions of greenhouse gases..."). No effort to rationally quantify or describe a reviewable basis for concluding that the smattering of air quality mitigations will come anywhere close to reducing the Project's GHG emissions by that level is provided or discussed. Moreover, when combined with the nearby World Logistics Center's GHG emissions of about 700,000 metric tons of CO₂ equivalents per year, the City has essentially abandoned any GHG reduction strategy, instead taking steps to almost double its projected GHG emissions.

1. There is no substantial evidence to support the FEIR's remarkable assertion that the air quality mitigations applied to the Project will reduce GHG emissions by 70,000 tons per year.

It is not sufficient under CEQA for the City to pick a few air quality mitigations of unknown efficacy and then simply assume that they will miraculously reduce the Project's 79,000 metric tons of GHG emissions down to less than 10,000 metric tons. As SWAPE explains in its comments, there is nothing precluding the City from estimating quantitative reductions by any claimed mitigations and providing the public, this Commission, and the City Council with a rational means to evaluate whether the currently optimistic predictions have any basis in reality. SWAPE Comments, pp. 2-3. The FEIR must do more than make exaggerated

claims of mitigation effectiveness. *See Friends of Oroville v. City of Oroville* (2013) 219 Cal.App.4th 832. In *Oroville*, the court held that failing to calculate existing air emissions at the project site, and “failing to quantitatively or qualitatively ascertain or estimate the effect of the Project’s mitigation measures on those emissions,” amounted to misapplication of the threshold-of-significance standard. *Id.* at 842-843. Claiming to rely on a qualitative assessment, the City instead applies bald assumptions, assuming that the air quality mitigations will have a dramatic effect on reducing GHG emissions from the project all the way down to a level of insignificance, *i.e.* less than 10,000 metric tons per year. No rational discussion relying on explicable estimates, whether qualitative or quantitative, is provided to explain this unlikely result for this Project that will include upwards of 5,800 vehicle trips per day. *See Clark & Associates Comments*, p. 3 (attached as Exhibit B).

The FEIR all but admits the randomness of its GHG emission discussion, responding at one point to the Sierra Club’s comments that “it is not possible to determine with certainty whether the project’s emissions of greenhouse gases will be cumulatively considerable, within the meaning of CEQA Guidelines Sections 15065(a)(3) and 15130.” FEIR, p. 109. A hundred pages later, that uncertainty appears to have vanished, the FEIR restating its two rationales for discounting the Project’s 79,000 metric tons of GHGs per year. First, the EIR attempts to find solace in the claim that “the project’s impacts alone would not cause or significantly contribute to global climate change...” FEIR, p. 222. This statement is entirely arbitrary given the SCAQMD’s significance threshold of 10,000 metric tons per year. 79,000 metric tons per year is obviously very large compared to the threshold. And nothing in the EIR explains how or which mitigation measures will reduce the Project’s GHG emissions to this level. The second rationale set forth in the EIR is that “the project has no substantial effect on consumption of fuels or other energy resources, especially fossil fuels that contribute to GHG emissions when consumed.” *Id.* How a project that will generate upwards of 5,000 vehicle trips per day would have no substantial effect on consumption of fuels is not further elucidated in the EIR. What these two rationales mean in the end is that the world is already suffering from global warming and because this project’s GHG contribution is small compared to the overall problem, there is no need to grapple with it in any meaningful way. Of course, as *Oroville* recognized, that capitulation renders the SCAQMD’s expert threshold, which is a rational quantification of the point where a project’s GHG emissions are significant and cumulatively considerable, a meaningless number.

2. The Proposed World Logistics Center and its massive GHG emissions is significant new information that must be addressed in the cumulative impact analysis.

The EIR’s mishandling of the Project’s large GHG emissions is exacerbated to a frightening level by the FEIR’s refusal to account for the massive World Logistics Center project (“WLC”). WLC is expected to emit about 700,000 metric tons of GHGs per year from within the City. WLC and Prologis together all but scuttle the City’s GHG reduction target. The FEIR, responding to comments about the WLC’s cumulative impacts on traffic states that, because the WLC project was not proposed at the time of the Notice of Preparation (“NOP”) for the Prologis

Project (in 2008), the EIR need not include WLC's impacts in its baseline. The City claims that the baseline traffic for the previous development proposed for the WLC site was actually higher at the time of the NOP. This response, in addition to steadfastly refusing to provide the City and its residents a realistic assessment of the Project's cumulative impacts, overlooks the City's responsibility to address significant new information that arises after a DEIR is released but prior to certification of the FEIR. Alternatively, it is simply unreasonable for the City to not adjust its baseline to reflect the impacts of the WLC project, especially given the long delay between the Project's 2008 NOP and the FEIR now six years later.

The CEQA Guidelines require recirculation of an EIR when significant new information, such as the processing of a nearby project that will drastically increase the City's GHG contributions inconsistent with its GHG reduction targets, as well as NOx and PM emissions. Section 15088.5 provides:

(a) A lead agency is required to recirculate an EIR when significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public review under Section 15087 but before certification. As used in this section, the term "information" can include changes in the project or environmental setting as well as additional data or other information. New information added to an EIR is not "significant" unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement. "Significant new information" requiring recirculation include, for example, a disclosure showing that:

...

(2) A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.

(3) A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the significant environmental impacts of the project, but the project's proponents decline to adopt it.

(4) The draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded. (*Mountain Lion Coalition v. Fish & Game Com.*(1989) 214 Cal.App.3d 1043).

14 CCR 15088.5. The processing of the WLC is significant new information requiring recirculation. It is plain that the WLC's emission of 700,000 metric tons of GHG per year would largely erase the City's GHG reduction target in 2020 and the additional Prologis GHG emissions will have a more profound cumulative impact on the City's GHG contributions than are evident without considering the WLC project. Likewise, because the DEIR was so basically inadequate and conclusory in asserting without any meaningful estimates that air quality mitigations uncoupled from any detailed information regarding their effectiveness at reducing GHG emissions would reduce the Prologis Project's GHG emissions by 70,000 metric tons per

year, the addition of WLC's 700,000 metric tons of GHG per year makes it imperative that the City revisit and recirculate the EIR's GHG analysis before the City further dooms its supposed GHG reduction targets.

The need to address this new information and/or adjust the baseline for GHGs is also supported by the fact that, unlike traffic levels purportedly included in the baseline, the GHG emissions for WLC increase any conceivable GHG emissions that may have been estimated for that project's location at the time of the WLC project's NOP by at least 60 percent, possibly more. *See* World Logistics EIR, p. 6-16 & Table 6.F (665,321 metric tons of GHG for WLC as compared to zero at site with no project or 228,719 metric tons if built out consistent with previous General Plan) (*see* Exhibit C). This massive addition of GHG emissions to the baseline is new information that must be addressed and recirculated or, alternatively, added to the Project's baseline in order to make sure the City's EIR remains realistic.

3. The substantial evidence in the record establishes that the Project will have a significant impact on GHG emissions, including the sheer volume of its GHG emissions and its adverse impact on the City's ever achieving its GHG reduction targets.

The FEIR confirms that the City has not gathered in any estimate of actual reductions of GHG emissions by any of the mitigation measures it purports will address those emissions. Hence, it is clear that there is no substantial evidence in the record to show that the Project will emit 10,000 metric tons or less per year of CO₂ equivalents. As a result, the EIR cannot substantiate a conclusion that the Project's GHG emissions will result in less than significant impacts and, instead, must conclude that these emissions will result in significant impacts. The EIR must include additional feasible mitigations to address these GHG impacts, including electrified loading docks, mandating the installation of solar panels (rather than the mere possibility of solar panels), on-site industrial solar power storage, additional pollution control equipment on trucks utilizing the facility, and, where other feasible project specific mitigations are exhausted, the use of offset credits through recognized programs. SWAPE describes several mitigation measures in its comments as well as the availability of offset credits. SWAPE Comments, pp. 3-4.

Mitigation measures, including for a project's GHG emissions, must be fully enforceable through permit conditions, agreements or other legally binding instruments. 14 CCR § 15126.4(a)(2). *See Woodward Park Homeowners Assn., Inc. v. City of Fresno* (2007) 150 Cal. App. 4th 683, 730 (project proponent's agreement to a mitigation by itself is insufficient; mitigation measure must be an enforceable requirement). Especially given the uncertainty claimed by the City in measuring GHG reductions from various mitigation measures, the EIR must include a monitoring and verification process to confirm reductions in the Project's overall GHG emissions and include contingencies, *i.e.* additional mitigations including more offsets, if the measures do not achieve expected GHG reductions.

Lastly, because the evidence does not support a finding of no significant impact from the Project's GHG emissions, the City must acknowledge that significant impact and make a finding of overriding considerations that is supported by a showing that all feasible mitigation measures have been required. CEQA Guidelines §§ 15126.4, 15091, 15092(b)(2); Pub. Res. Code § 21002.

B. The EIR Significantly Underestimates the Project's Air Pollution Emissions From Mobile Sources.

The EIR makes a significant error in its air pollution emissions analysis by failing to rely upon substantial evidence regarding the veracity of the estimated truck trips for the Project. According to the review of Dr. James Clark, the EIR relies on an uncorroborated estimate of the Project's daily truck trips of 1.96 daily truck trips per 1,000 square feet. As Dr. Clark explains, "[i]n order to avoid underestimating the number of trips associated with large warehouse/distribution center operations without rail service, the SCAQMD staff recommended that lead agencies utilize a rate of 2.59 trips per TSF [thousand square feet] for large warehouse air quality analyses on a project specific basis." Clark Comments, p. 3. By using a value that is significantly reduced from SCAQMD's recommended value for the CalEEMod model, the EIR significantly understates the Project's air emissions:

Based upon the trip generation rate of 2.59, the total number of trips associated with Project would increase from 4,400 to 5,813 trips per day. The net result is that the air quality analysis performed by the Proponent greatly underestimates the emissions from mobile sources by at least one-third during the operational phase of the Project. Those impacts are likely to lead to a significant impact that will be unmitigated and unaccounted for in the FEIR. Without proper modeling of the emissions from these additional vehicles the impacts on the environment and the citizens of the Moreno Valley are unknown.

Clark Comments, p. 4. Because the EIR fails to disclose the full extent of the Project's air pollution impacts, it should be revised to include an accurate discussion of those impacts and recirculated along with any necessary additional mitigation measures.

C. The EIR Does Not Include Additional Feasible Mitigation Measures to Further Reduce the Project's Significant Impacts From its Emissions of NOx and PM10 and, Without Requiring Additional Measures, the City Cannot Adopt a Statement of Overriding Considerations.

An agency may adopt a statement of overriding considerations only *after* it has imposed all feasible mitigation measures to reduce a project's impact to less than significant levels. CEQA Guidelines §§ 15126.4, 15091. CEQA prohibits agencies from approving projects with significant environmental impacts when feasible mitigation measures can substantially lessen or avoid such impacts. Pub. Res. Code § 21002. As explained in CEQA Guidelines section 15092(b)(2), an agency is prohibited from approving a project unless it has "[e]liminated or

substantially lessened all significant effects on the environment where feasible.” The EIR states that the Project’s direct and cumulative emissions of NO_x and ROG_s will remain significant after the identified mitigation measures are implemented. *See* DEIR, pp. 1-22, 1-28. As a result, the EIR must require all feasible mitigations to reduce these impacts. As explained by SWAPE, additional mitigation measures are available that are not included by the City. The measures include requiring electrified loading docks for all refrigeration units and the use of fuel cell trucks to reduce NO_x emissions. SWAPE Comments, pp. 4-5. SCAQMD also provided a list of feasible mitigations that must be mandated for the Project. *See* FEIR, Letter B-3, pp. 3-4.

In addition, whether or not to implement several key measures included in the EIR is left to the future discretion of the City. *See, e.g.* DEIR, p. 1-22 (Mitigation Measure 4.3.6.5B) (“Prior to issuance of building permits, the project applicant shall provide evidence to the City that energy-efficient and low-emission methods and features of building construction shall be incorporated into the project design. These methods and features *may include* (but are not limited to) the following...” (emphasis added)). The list of measures included in Mitigation Measure 4.3.6.5B should be mandatory and enforceable in order to be consistent with the CEQA Guidelines.

LIUNA Local 1184 appreciates the change in the FEIR to make the energy efficiency requirement set forth in Measure 4.3.6.5A mandatory rather than voluntary. However, a number of the requirements embedded within the mandatory efficiency standard should also be adjusted to be mandatory requirements or otherwise clarified. For example, there is a requirement that lease/purchase documents shall identify that tenants are merely encouraged to promote a list of air pollution reduction measures. *See* DEIR, 1-27 – 1-28, Table 1.C; FEIR, pp. 58-59, 61-62. The FEIR should be revised to make these feasible tenant/purchaser measures mandatory as well.

Measure 4.3.6.5A also includes a vague requirement to “[i]ncorporate energy efficient space heating and cooling equipment.” This measure should be clarified to require that cooling for the main warehouse spaces at the Project shall be provided through evaporative coolers rather than air conditioners, or use new or different cooling technology that is at least as efficient. In addition, the mitigation should require the warehouse spaces to incorporate automated airflow and ventilation systems designed to minimize need for supplemental heating and cooling within the warehouse spaces. These measures are feasible, having been applied at other warehouse facilities. *See Coalition for Clean Air v. VWR Int’l LLC*, Consent Decree, attached as Exhibit D.

Currently, Measure 4.3.6.5A requires that “[a]ll buildings shall be designed to accommodate renewable energy sources, such as photovoltaic solar electricity systems, appropriate to their architectural design.” FEIR, p. 197. This mitigation measure should be revised to require that photovoltaic, or comparable renewable energy sources, be actually installed on all buildings sufficient to provide all of the energy needs of the Project and, if feasible, surplus energy to help offset the Project’s remaining pollution emissions. Given the size of the buildings’ roofs, this measure is feasible and would reduce or help offset the Project’s emissions of both ROG_s, NO_x, and GHG_s.

Additionally, Mitigation Measure 4.3.6.5B currently appears inconsistent with Mitigation Measure 4.3.6.5A. Unlike Measure 4.3.6.5A, Measure 4.3.6.5B does not increase the improvement over energy efficiency standards to 20 percent as was proposed in the DEIR and which applies to the related Measure 4.3.6.5A. FEIR, pp. 194-201. In order to apply all feasible measures, Measure 4.3.6.5B's list of measures should be made mandatory (replace "may" with "shall") and the measure to exceed statewide energy efficiency requirements by 10 percent restored to a 20 percent exceedance. FEIR, pp. 194-96. In addition, a requirement that the Project use building automation systems to control and optimize the efficiency of its mechanical systems, including lighting, HVAC, exhaust dampers, fans, and ventilation louvers should be added to Measure 4.3.6.5B's list.

Until each of the above mitigation measures as well as those measures identified by SCAQMD are incorporated as enforceable measures into the Project approval, the City will not be in a position to make a finding of overriding considerations for the Project's NOx, ROG, and GHG emissions.

D. The EIR Does Not Include Additional Feasible Mitigation Measures to Further Reduce the Project's Significant Impacts From its Particulate Matter Emissions During Construction and, Without Requiring Additional Measures, the City Cannot Adopt a Statement of Overriding Considerations.

An additional feasible mitigation measure that also would assist in assuring that the Project's air quality pollution mitigations during construction are enforceable is a measure to require monitoring of dust plumes. SWAPE identifies "[m]onitoring for opacity for all construction activities, including grading, not just for "screening" and "turf overseeding" activities" as an additional feasible measure. Without such a measure, it is not clear how the implementation or effectiveness of many of the air pollution control measures during construction will be documented or enforced. SWAPE lays out the following monitoring requirement:

Opacity monitoring should be conducted by qualified personnel using a Ringelmann chart. Monitoring with use of the Ringelmann Chart should be required when construction is occurring when wind speeds exceed 15 miles an hour, as gauged by a wind meter installed at the Project site. When a 20% opacity (Ringelmann 1) standard is exceeded, construction activities should cease until wind speeds drop to below 15 miles per hour. A log should be kept at the Project site to document when wind speeds exceed 15 miles per hour and the Ringelmann readings recorded during those periods, along with actions taken to comply when Ringelmann readings exceed the 20% opacity threshold.

SWAPE Comments, p. 4. Because this mitigation is feasible, would help to prevent any oversight of other mitigation measures, and would further reduce actual excessive emissions of PM10 at the Project site, it must be included in the mitigation requirements for construction-related air pollution.

E. The EIR Fails to Disclose the Project's Serious Cancer Risks to Neighbors and Workers.

a. The Project has significant air quality and health risk impacts because it will expose nearby residents to cancer risks of 22 cancers in one million for adults and 33 excess cancers in a million for children.

The EIR states that nearby residents and on-site workers will not be exposed to any significant health risks by the Project's construction. DEIR, p. 4.3-14. However, the EIR dramatically understates the health risks that will result from the Project's construction phase because the health risk assessment it relies upon assumes construction will only occur for four months rather than the 11.5 months reported in the EIR. SWAPE Comments, pp. 6-10. See DEIR, p. 4.3-13. This is despite the EIR's acknowledgement that "[a]lthough construction of the structures uses different types of equipment on site than during grading periods, similarities do exist in terms of equipment exhaust emissions and fugitive dust emissions." DEIR, p. 4.3-23. SWAPE prepared a screening-level HRA for construction-related DPM air quality impacts using the emissions and phasing data from the EIR and covering the full construction period. As SWAPE concludes, its risk assessment for nearby residences "shows that the adult exposure resulted in an additional 22 cancers in one million while the child exposure resulted in 33 excess cancers in a million. For both adult and child exposure parameters, the CEQA significance threshold of ten in one million excess cancer risk was exceeded during the construction period." SWAPE Comments, p. 9. In contrast to SWAPE's analysis, which fully discloses all of its inputs and models, "no modeling files or cancer risk calculations for the construction impacts analysis were provided in the DEIR or the FEIR" for the EIR's health risk assessment. *Id.*, pp. 9-10. Hence, the substantial evidence available to the Commission and others indicates that cancer risks to the Project's neighbors are significant. This must be acknowledged in the EIR and additional mitigations required. As SWAPE concludes:

An updated HRA should be prepared that incorporates all emissions from construction equipment over the entire duration of Project construction, and addresses the potential for significant air quality impacts to nearby sensitive receptors. Our analysis has demonstrated that by utilizing appropriate U.S. EPA and OEHHA exposure assessment methodologies, excess cancer risks consequent of Project construction have the potential to exceed CEQA thresholds of significance even under mitigated construction scenarios.

SWAPE Comments, p. 10.

b. The Project relied on a flawed health risk assessment in concluding that health risks to workers for the life of the Project would be insignificant.

The EIR also underestimates health risk impacts to workers to be employed at the Project site. SWAPE Comments, pp. 10-11. First, the Project's worker health risk assessment assumes

that trucks will be 87.5 percent diesel, explaining in its response to SCAQMD that the City believed such a number was appropriate because “[i]t is pure guesswork to predict how the diesel emissions will change over this period.” FEIR, p. 66. Acknowledging uncertainty of future actions does not warrant then selecting a number based on the acknowledged guesswork. Rather than use the conditions that the City knows exist currently to prepare a reasonable estimate of future worker health risks, they made a guess that trucks using the Project would be 87.5 percent diesel. That number, by the FEIR’s own admission, is not supported by substantial evidence. Likewise, SWAPE notes that the EIR suggests that a health risk assessment was prepared assuming operations were concentrated in 12-hours of each day rather than 24-hours. No such calculation was made in the health risk assessment for 12-hour days at the Project. SWAPE Comments, p. 11. A revised HRA for workers must be prepared and reviewed to determine if any changes to the EIR should be made prior to the Commission and City taking action on the EIR.

F. The EIR Continues to Fail to Require Feasible Mitigations to the Project’s Destruction of Farmland, Including Requiring the Applicant to Locate and Purchase an Equivalent or More Acreage of Farmland Conservation Easements Outside of the City and Western Riverside County.

In response to LIUNA’s comments noting the absence of any measures to mitigate the Project’s destruction of 82.55 acres of Prime Farmland and 36.4 acres of Farmland of Local Importance, the City continues to claim that it is excused from mitigating this impact simply because it intends to eventually destroy all remaining farmland within the City and because there is no program established by either the City or the County of Riverside for those governmental entities to manage conservation easement or land purchases for mitigation. *See* FEIR, p. 218. Neither of these excuses relieves the City and the Project Applicant from having to mitigate the Project’s significant impacts on farmland. Farmland conservation easements are feasible within Riverside County. The State of California has a program to facilitate such easements, providing grants and easement template applicable anywhere in the State of California, including Riverside County. *See* Exhibit E. There is no need for the City or County to create some bureaucratic program in order for the City to require the Project applicant to mitigate the 119-acres of farmland by purchasing easements or farmland of equivalent quality somewhere in Riverside or even other nearby counties. Private organizations also exist to facilitate the creation of farmland easements, including one located in Riverside County – the Riverside Land Conservancy. *See* Exhibit F.

The City claims that a 2010 Court of Appeal decision – *Building Industry Association of Central California v. County of Stanislaus* (2010) 190 Cal.App.4th 582 – conditioned the use of conservation easements as CEQA mitigation on the presence of a city- or county-wide program. FEIR, p. 218 (“That case concluded that it is appropriate to mitigate at a 1:1 ratio for the loss of prime agricultural land through the acquisition of an offsite agricultural easement if such a program is established by a county or regional governmental entity”). No such rule is found in the case. Instead, the pertinent rule is that the Court of Appeal upheld a requirement included in Stanislaus County’s General Plan requiring either 1:1 mitigation of developed

farmland based primarily on private purchases of farmland conservation easements. *See* 190 Cal.App.4th at 601 (“Under the FMP, although the developer is required to arrange for the granting of a conservation easement in order to obtain a development approval, most likely by a purchase, *no particular landowner* is required to grant the conservation easement”) (emphasis added). The case was not even a CEQA case so it certainly did not preclude mitigation under CEQA of destroyed farmland through a conservation easement unless some governmental program was in place. Nor is there any reason to restrict mitigation farmland to western Riverside County, given the county-wide and indeed statewide problem of farmland conversion. In short, there is no reason the applicant cannot take the steps necessary to purchase one or more farmland conservation easements for farmland of similar quality to that being destroyed by the Project somewhere in Riverside County or other nearby counties in southern California. Because the Project’s destruction of farmland is significant and unavoidable, the City must incorporate all feasible mitigation measures. Requiring the applicant to obtain farmland conservation easements for comparable quality farmland in other areas is plainly feasible and must be included.

G. Additional Details for Sampling Soils for Residual Pesticides Should be Required.

The FEIR has added a mitigation measure to require additional soil sampling prior to issuance of a grading permit. FEIR, p. 222. LIUNA Local 1184 believes that, because the additional information will not be available prior to the certification of the EIR, this change does not cure the baseline concerns raised in their previous comment letter. In addition, unless additional details are added to the mitigation, it amounts to improper deferred mitigation. SWAPE recommends the following additional details:

The mitigation measure (MM 4.6.6.1A) should be revised to include specifics on the number of samples to be collected, the chemical analytes, and to provide for documentation of the sampling and analysis of the results prior to FEIR certification. The mitigation measure should also include a commitment to compare sampling results to health-protective regulatory screening levels such as U.S. EPA Regional Screening Levels and California Human Health Screening Levels, and to mitigate any exceedances of the screening levels through further evaluation of health risks and the removal of any contaminated soil that may pose a risk to human health.

SWAPE Comments, p. 2. LIUNA Local 1184 request that the EIR’s mitigation be changed to address these details.

VI. CONCLUSION

For the foregoing reasons, as well as each of the comments raised in LIUNA Local 1184’s DEIR comments, LIUNA Local 1184 recommends that the Commission continue the matter for future consideration pending completion of a supplemental EIR addressing the above

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concerns. Thank you for your attention to these comments. Please include this letter and all attachments hereto in the record of proceedings for this project.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael Lozeau". The signature is fluid and cursive, with a large initial "M" and a stylized "L".

Michael Lozeau
Lozeau Drury LLP
Attorneys for LIUNA Local Union No. 1184

EXHIBIT A



Technical Consultation, Data Analysis and
Litigation Support for the Environment

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April 21, 2014

Richard Drury
Lozeau | Drury LLP
410 12th Street, Suite 250
Oakland, CA 94607

Subject: Comments on the Final Environmental Impact Report, Prologis Eucalyptus Industrial Park Project, Riverside County, California

Dear Mr. Drury:

We have reviewed the April 2, 2014 Revised Final Environmental Impact Report (FEIR) for the Prologis Eucalyptus Industrial Park Project ("Project"). We have found the FEIR fails to adequately address comments we made in an August 30, 2012 letter on the July 2012 Draft Environmental Impact Report (DEIR). The comments we made focused on issues related to hazardous waste, greenhouse gas emissions and air quality. The FEIR should not be certified until these concerns are adequately addressed.

Hazards and Hazardous Materials

Baseline Conditions Remain Undisclosed

Comments we made on the July 2012 Draft Environmental Impact Report (DEIR) focused on the inadequacy of ten year-old Phase I Environmental Site Assessments (ESAs) to represent conditions at the Project site that may pose risks to workers and the neighboring public. We also noted that the Phase I ESAs that had been completed did not cover the entire Project site and that potential residual pesticide risks had not been satisfactorily addressed.

In response to concerns we expressed about the potential for residual pesticides to be present (Comment 9), the FEIR adds a mitigation measure (MM 4.6.6.1A) to sample for agricultural chemicals prior to issuance of a grading permit. While we applaud the addition of this needed mitigation measure, it does not go far enough in that it does not specify the manner in which the samples will be collected (namely, the number of samples, the depths and the chemical analytes) and the sampling is not to occur until after certification of the project (and prior to grading).

The mitigation measure (MM 4.6.6.1A) should be revised to include specifics on the number of samples to be collected, the chemical analytes, and to provide for documentation of the sampling and analysis of the results prior to FEIR certification. The mitigation measure should also include a commitment to compare sampling results to health-protective regulatory screening levels such as U.S. EPA Regional Screening Levels¹ and California Human Health Screening Levels,² and to mitigate any exceedances of the screening levels through further evaluation of health risks and the removal of any contaminated soil that may pose a risk to human health.

The FEIR should also provide the closure documentation we requested in DEIR comments for a 13,400 gallon underground storage tank (UST) that was reportedly removed from the Project site in 2004. As we requested, the documentation should be produced to disclose if closure for the UST removal was granted by the County.

Greenhouse Gas Emissions

In DEIR comments (Comment 12), we expressed concern that estimates of the Project's operational greenhouse gas (GHG) emissions, following mitigation, were not quantified. We commented that the need to show the efficacy of the mitigation was necessary because pre-mitigation operational GHG emissions were well above any applicable South Coast Air Quality Management District thresholds. The Response to Comment 12 states:

This comment states that the EIR did not show the GHG emissions with mitigation. The reductions with mitigation were not calculated because the GHG-related mitigation measures included in the EIR do not have quantified reduction amounts.

The mitigation in the DEIR, for which emissions reductions were not quantified, included:

- Establishment of a Transportation Management Association (TMA) to encourage and coordinate carpooling among building occupants (p. 1-26).
- Green building and maintenance provisions (MMs 4.13.6.1A, 4.13.6.1B, 4.13.6.1C)

Other measures identified in the DEIR to reduce GHG emissions include recommended actions within the Transportation, Electricity and Natural Gas, Green Buildings, and Water sectors. Again, no effort was made to quantify the reductions in GHG emissions from the incorporation of these measures.

It is simply not good enough for the Responses to assert, qualitatively, that mitigation measures and recommended actions will reduce GHG emissions from 79,000 MTCO₂e/yr to below 10,000 MTCO₂e/yr, the applicable South Coast Air Quality Management District (SCAQMD) threshold. Without quantifying the reductions, there is absolutely no basis to say that reductions will be below the applicable threshold.

Likewise, it is non-responsive to state that mitigation could not be quantified "because the GHG-related mitigation measures included in the EIR do not have quantified reduction amounts" (Response to Comment 12). Numerous means to quantify GHG mitigation emissions reductions are available,

¹ <http://www.epa.gov/region9/superfund/prg/>

² <http://www.calepa.ca.gov/brownfields/documents/2005/CHHSLsGuide.pdf>

including methods as published in an August 2010 guidance document published by the California Air Pollution Control Officers Association (CAPCOA), entitled “Quantifying Greenhouse Gas Mitigation Measures”.³ The CAPCOA document has numerous separate methodologies to quantify GHG mitigation emission reductions for activities related to the project, and for the mitigation measures identified for the Project. The reductions cited below, from the CAPCOA guidance document, are for operational activities relevant to the Project:

Transportation

- Use of electrified loading docks to reduce the need for diesel auxiliary engines to run in order to keep refrigerated transportation units temperature controlled to achieve a 26-71% reduction in GHG emissions;
- Use of electric or hybrid vehicles to achieve a 0.4-20% reduction in GHG emissions; and
- Use of alternative fueled vehicles (reductions vary).

Water Use

- Install low-flow water fixtures (as identified in MM 4.13.6.1A) to achieve a 17-31% reduction in GHG emissions;
- Design water-efficient landscapes (as identified in MM 4.13.6.1C) to achieve up to 70% in GHG emissions reductions; and
- Use reclaimed water for up to 81% GHG emissions reductions.

The need to quantify GHG reductions is critical to show that the Project’s emissions will meet the SCAQMD threshold of 10,000 MTCO₂e/yr. The examples from the CAPCOA guidance, as cited above, are just a few of those measures that can be quantified to estimate GHG emissions reductions, demonstrating that Response to Comment 12 is inadequate when it states mitigation could not be quantified “because the GHG-related mitigation measures included in the EIR do not have quantified reduction amounts.”

The FEIR should not be certified until GHG mitigation measures are quantified to demonstrate estimates that are below the SCAQMD threshold of 10,000 MTCO₂e/yr. If the threshold is not met, additional mitigation or use of credits (offsets) would be necessary, consistent with other Southern California projects where the SCAQMD threshold was exceeded, after mitigation.⁴

If emissions reductions estimates do not demonstrate that the threshold is met, additional measures should be undertaken, to include credits for all GHG emissions generated above the threshold of 10,000 MTCO₂e per year. To ensure GHG emissions reductions are real and verifiable, a GHG reporting and reduction plan should be submitted to the SCAQMD and the City detailing the measures to be implemented to achieve the required reductions. Credits should comply with

³ <http://capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf>

⁴ http://www.hermosabch.org/ftp/oil_docs/_ALL%20DEIR.pdf

- SCAQMD Regulation XXVII protocol;⁵
- CAPCOA GHG Rx program;⁶ and
- Those verified by the Climate Action Reserve or the American Carbon Registry.

Air Quality

Mitigation of Criteria Air Pollutants is Inadequate

The Responses fail to address to the concerns we expressed about the need to employ all available mitigation to address what the FEIR identifies as significant emissions of criteria air pollutants from construction and operation. The specific response to the comment we made on this issue (Letter D-4C, Response to Comment 5) stated:

For a detailed response on comparing construction emissions to daily construction thresholds, see the Responses to Comments D-4A-13 and D-4A-14 in the previous Letter D-4A from Lozeau Drury. For a detailed response on operational impacts of the project, see the Response to Comment D-4A-16 in the previous Letter D-4A from Lozeau Drury.

Responses to Comments D-4A-13, D-4A-14 and D-4A-16 have nothing to do with the issue of the inadequacy of mitigation measures to reduce construction emissions of NOx and ROG and operational emissions of ROG, NOx, and PM10 to less-than-significant levels. Some responses to other comments did address the need for additional mitigation (see Responses 1-12, Comment Letter B-3 and Responses 49-60, Comment Letter D-3) but we find these measures do not incorporate all measures that are feasible to reduce criteria air pollutant emissions.

Applicable Construction Mitigation Measures

- Monitoring for opacity for all construction activities, including grading, not just for “screening” and “turf overseeding” activities (as cited in the Air Quality Measure 4.3.6.2M Best Available Control Measures for Fugitive Dust). Opacity monitoring should be conducted by qualified personnel using a Ringelmann chart. Monitoring with use of the Ringelmann Chart should be required when construction is occurring when wind speeds exceed 15 miles an hour, as gauged by a wind meter installed at the Project site. When a 20% opacity (Ringelmann 1) standard is exceeded, construction activities should cease until wind speeds drop to below 15 miles per hour. A log should be kept at the Project site to document when wind speeds exceed 15 miles per hour and the Ringelmann readings recorded during those periods, along with actions taken to comply when Ringelmann readings exceed the 20% opacity threshold.

Applicable Operation Mitigation Measures

⁵ http://www.aqmd.gov/rules/reg/reg27_tofc.html

⁶ <http://www.capcoa.org/>

- Use of electrified loading docks for all refrigeration units;
- Use fuel cell trucks that use hydrogen produced primarily from natural gas show only slightly lower net PM emissions (11 percent) relative to new diesel trucks, largely due to the steam reformation process to produce hydrogen from natural gas; NOx emissions are reduced 84 percent in total and GHGs are cut in half. Greater use of renewable hydrogen or improved hydrogen production methods could cut fuel cell emissions relative to conventional technology.⁷

Cumulative Impacts have not been Adequately Addressed

We commented that the DEIR identified 13 proposed projects within five miles of the Project but failed to identify a construction schedule for the projects. The Responses (Comment D-4A-19) did not provide this schedule and simply states:

The EIR includes a complete cumulative air quality impacts analysis that satisfies all CEQA requirements and that includes the conclusion that the long-term cumulative air quality impacts would be significant and avoidable.

The FEIR does not go far enough to address concerns about emissions of criteria air pollutants. For example, to meet air quality standards required by 2023, NOx emissions must be reduced by approximately two thirds beyond existing rules and regulations. The largest source of NOx emissions in the SCAQMD are heavy duty trucks. Without meeting air quality standards, the Southern California area faces federally mandated sanctions, including possible loss of transportation funding.

Other major projects in Moreno Valley, which involve significant trucking operations, include the WestRidge Commerce Center Project (which will be built adjacent to the proposed Project), the VIP Moreno Valley Project and the March Business Center. Along with the Project, these projects may be constructed simultaneously, highlighting the need for an estimate of the combined emissions of these projects.

Although the FEIR states that cumulative impacts are significant, additional measures are available to mitigate cumulative impacts on air quality. Perhaps most important is to quantify the emissions that will stem from the construction of other projects and, using those emissions estimates, identify how the construction of the projects might be staged to reduce temporal impacts. The US EPA has commented on the benefit of this approach to prevent violations of air quality standards.⁸

The FEIR should not be certified until cumulative emissions data from all projects have been compiled, by month, for construction in a six-mile radius that would overlap with the Project. From use of this data, a phased construction schedule, for projects that will undergo construction concurrently, should be derived so that violations of local, state or federal air quality regulations will not result. Consistent

⁷ http://www.ucsusa.org/assets/documents/clean_vehicles/Moving-California-Forward-Executive-Summary.pdf p.

2

⁸ U.S. Environmental Protection Agency, Comments on the Alta East Wind Project, September 27, 2012 <http://www.epa.gov/region9/nepa/letters/blm/ca/alta-east-wind-project-kern-county-deis.pdf>, p. 2

with US EPA's recommendations, the Project should be scheduled for constructed in light of the other planned construction activities to ensure air quality standards are not exceeded.

Diesel Particulate Matter Emissions have not been Evaluated and Addressed Adequately

Emissions of diesel particulate matter (DPM) associated with activities occurring on the Project site both during construction and operations have not been adequately characterized in estimating risks to human health. We have re-reviewed the DEIR documents, the 2012 LSA Air Quality Analysis (AQA) report, and the FEIR Responses to Comments and determined that impacts of DPM emissions on human health should be reevaluated before certification of the FEIR. Our evaluation has shown that construction of the Project has the potential to result in DPM exposures at nearby residences that exceed CEQA significance thresholds, and DPM exposure to workers on-site during operations warrants additional investigation by the Lead Agency.

Construction of the Project Will Result in Significant Air Quality Impacts

The Project location is situated just south of the Moreno Valley Freeway (SR60), with residential neighborhoods located within 50 feet to the southeast and 200 feet to the north of the Project boundary. The 2012 LSA AQA relied upon several inaccurate assumptions in preparing the Health Risk Assessment (HRA) for off-site residential exposure that accompanied the DEIR:

"The anticipated level of diesel-powered equipment use will, on average for the entire construction period, emit approximately 6.0 lbs/day of diesel exhaust particulate. A screening health risk assessment was performed using this emission rate and assuming the mobile equipment operates for 22 days per month and 4 months continuously at this high rate. This is considered conservative even though the total construction period will be longer than 4 months due to the extreme variation from day to day of heavy-duty construction equipment usage. **All of these values are deliberately higher than expected so that the risk levels will not be underestimated.**⁹ [*emphasis added*]

This statement contradicts itself in saying that even though average daily emissions of DPM were assumed to be 6 pounds, the duration of construction utilized for the exposure model was actually less than half of the total anticipated length. Therefore, it is impossible that all values are deliberately higher than expected, as LSA admits that the Project construction will in fact take longer than 4 months. By a simple calculation, the total pounds of DPM emissions evaluated in the HRA for construction-related activities is: $\frac{6 \text{ lbs}}{\text{day}} \times \frac{22 \text{ days}}{\text{month}} \times \frac{4 \text{ months}}{\text{Project}} = 528 \text{ lbs DPM}$ from construction. We believe that this represents a significant underestimate of actual construction-related DPM emissions, as the total length of Project construction is approximately 11.5 months. We have prepared a revised estimate that more accurately represents the exposures that nearby residents will be subjected to during Project construction.

⁹ LSA Associates, Inc., 2012. Air Quality Analysis, Eucalyptus Industrial Park, City of Moreno Valley, California. March 2012. Page 43.

We extracted only the estimates of mitigated on-site daily construction exhaust emissions provided in the CalEEMod output files (shown in the table below from the FEIR¹⁰), and multiplied the daily emissions estimates for each phase by the number of days given in AQA Table E: Construction Schedule, also shown below. The total pounds of construction-related DPM emissions was calculated to be 934.37 pounds, or 177% of the emissions that LSA incorporated into their HRA for off-site residential exposure. The HRA and FEIR should be revised to include more accurate estimates of total construction-related DPM emissions, as well as the appropriate exposure duration for nearby sensitive receptors in the residential communities.

Construction Phase	Onsite Pollutant Emissions, lbs/day							
	ROG	NO _x	CO	SO ₂	Fugitive PM ₁₀	Exhaust PM ₁₀	Fugitive PM _{2.5}	Exhaust PM _{2.5}
Site Preparation	10.43	84.72	47.82	0.07	7.05	4.27	3.87	4.27
Grading	12.5	103.9	55.13	0.1	3.38	5.01	1.29	5.01
Building Construction	5.63	37.37	23.73	0.04	0	2.54	0	2.54
Architectural Coating	342.39	2.96	1.94	0	0	0.27	0	0.27
Paving	7.91	33.81	20.89	0.03	0	2.93	0	2.93

Table E: Construction Schedule

Phase Name	Phase Start Date	Phase End Date	Number of Days
Site Preparation	9/1/2012	9/26/2012	18
Grading	9/27/2012	11/27/2012	44
Building Construction	11/28/2012	8/16/2013	188
Architectural Coating	1/17/2013	8/16/2013	152
Paving	6/1/2013	8/16/2013	55

Source: Project Plans

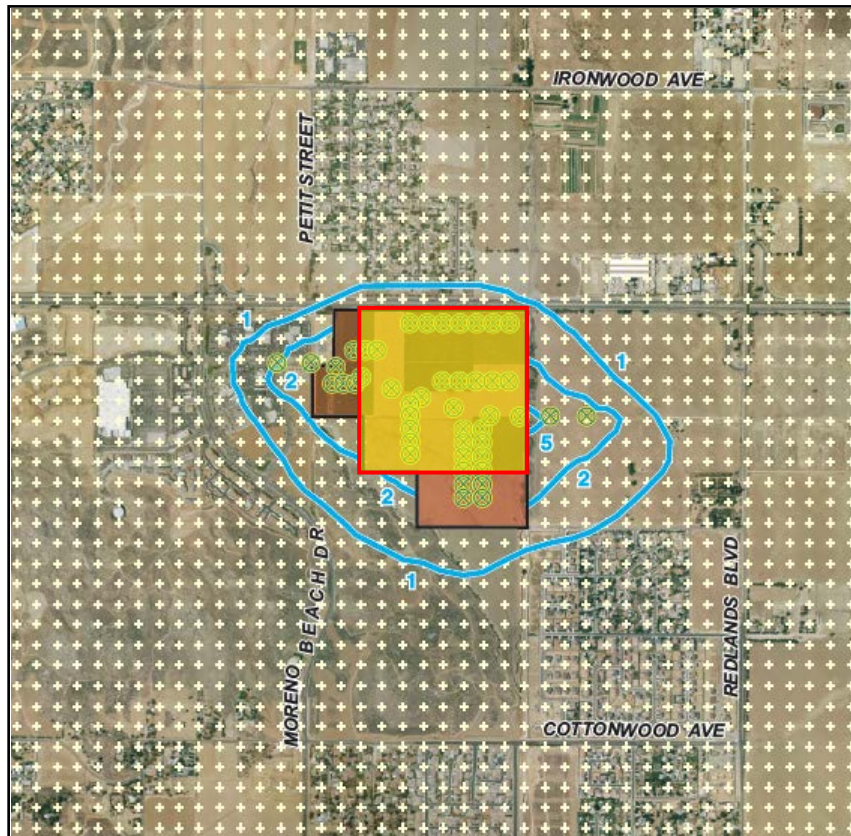
We have prepared our own screening-level HRA for construction-related DPM air quality impacts using the emissions and phasing data from the above tables. From the AQA appendices, we determined that diesel-fueled construction equipment would be operated for no more than 8 hours per day, and 5 days per week. The total number of construction days was 250 (weekdays between 9/1/2012 and 8/16/2013, or 18+44+188 as the last three phases of the Project in Table E overlap entirely). The emission rate derived for our screening model was therefore:

$$\text{Emission Rate (grams/second)} = \frac{934.37 \text{ lbs} \times 453.6 \text{ grams/lb}}{250 \text{ days} \times 8 \text{ hours/day} \times 3600 \text{ seconds/hour}} = 0.05886 \text{ g/s}$$

This value represents the average DPM emission rate during hours that construction activities are occurring for the entire Project

¹⁰ Response to Letter D-4A, Final EIR - Response to Comments, Prologis Eucalyptus Industrial Park, City of Moreno Valley. Page 223.

We used the EPA-recommended screening model AERSCREEN to evaluate off-site impacts to residential receptors during construction¹¹. As of 2011, AERSCREEN replaced SCREEN3 as the official screening model of the EPA due to its enhanced ability to simulate near-field dispersion from emissions sources. When detailed data pertaining to specific locations of emissions sources are unavailable, it is acceptable to model the average emission rate over the entire area of project construction. However, the Project boundary is geometrically complicated, and so our analysis focused on a subset of the Project site for screening-level modeling and HRA. The figure below depicts the portion of the site that was considered for the screening model. The yellow rectangle measures approximately 570 meters by 600 meters, with an area of approximately 84.51 acres.



The total Project boundary encompasses an area of 122.8 meters. For the purposes of our screening model, we multiplied the emission rate of 0.05886 g/s by the fraction $\frac{84.51}{122.8} = 0.6882$ to arrive at an average emission rate of 0.0405 g/s for the designated area over the course of Project construction. Due to lack of available information describing the anticipated sequencing of Project construction by area within the boundary, we assumed that averaging the emissions over the total duration was the best methodology to prepare this screening-level HRA.

The AERSCREEN model predicts the maximum single-hour concentration of a pollutant downwind of an emissions source. The maximum downwind concentration of DPM will be encountered during hours of

¹¹ U.S. Environmental Protection Agency Air Quality Modeling Group, C439-01 , MEMORANDUM: AERSCREEN Released as the EPA Recommended Screening Model, April 11, 2011.

construction equipment use, during which air quality impacts to sensitive receptors will also be highest. EPA screening methodology states that to estimate the maximum reasonable annualized concentration of an air pollutant, the maximum single-hour concentration can be multiplied by a scaling factor of 0.1¹². The maximum single-hour concentration of DPM produced by the AERSCREEN model during construction hours of the Project was 50.89 µg/m³ at 402 meters (1,319 feet) downwind. Residential receptors in the community to the southeast of the Project boundary are situated at this downwind distance.

The following table provides our estimations for a screening-level HRA for excess cancer risk at downwind residential receptors. The maximum single-hour concentration was multiplied by 0.1 to represent a maximum reasonable estimate of the annualized DPM concentration from construction. 80th percentile breathing rates were obtained from OEHHA guidance on HRA, as utilized in the LSA AQA¹³. Instead of incorporating the 4-month exposure considered by LSA, we utilized an 11.5 month exposure duration based on anticipated start and end dates of Project construction given in the tables presented above.

402-Meter Downwind Exposure

Parameter	Description	Units	Adult Exposure	Child Exposure
CPF	Cancer Potency Factor	1/(mg/kg-day)	1.1	1.1
Cair	Concentration in Air	µg/m ³	5.09	5.09
DBR	Daily Breathing Rate	L/kg-day	302	452
EF	Exposure Frequency	days/year	350	350
ED	Exposure Duration	years	0.95	0.95
AT	Averaging Time	days	25550	25550
	Inhaled Dose		2.0E-05	3.0E-05
	Cancer Risk		2.20E-05	3.29E-05

The table shows that the adult exposure resulted in an additional 22 cancers in one million while the child exposure resulted in 33 excess cancers in a million. For both adult and child exposure parameters, the CEQA significance threshold of ten in one million excess cancer risk was exceeded during the construction period. The maximum calculated inhalation cancer risk estimate provided in Table Q of the AQA report was 0.53 in one million at approximately 50-56 feet downwind. However, there is no modeling files or cancer risk calculations for the construction impacts analysis were provided in the DEIR

¹² U.S. Environmental Protection Agency Office of Air Quality Planning and Standards, Screening Procedures for Estimating the Air Quality Impacts of Stationary Sources, Revised, , October 1992.

¹³ Office of Environmental Health Hazard Assessment, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments, Air Toxics Hot Spots Program Risk Assessment Guidelines, August 2003.

or the FEIR. In fact, the 2012 LSA AQA report references a November 2011 Traffic Impact Study as the source of the information, however this report does not mention cancer risk a single time¹⁴.

There is a considerable discrepancy between the 0.53 in one million calculated by LSA and the 22 in one million calculated in our analysis. An updated HRA should be prepared that incorporates all emissions from construction equipment over the entire duration of Project construction, and addresses the potential for significant air quality impacts to nearby sensitive receptors. Our analysis has demonstrated that by utilizing appropriate U.S. EPA and OEHHA exposure assessment methodologies, excess cancer risks consequent of Project construction have the potential to exceed CEQA thresholds of significance even under mitigated construction scenarios.

A Health Risk Assessment for On-Site Workers Should be Prepared Using Appropriate Parameters

Neither the FEIR, the DEIR, nor the AQA provides a detailed description of the methodologies utilized in arriving at the on-site worker excess cancer risk reported to be 1.5 in one million in Table 4.3.F of the DEIR. Response to Comment 13 of Letter D-2 addresses the lack of available data that made the assessment of operational DPM exposure to workers difficult in making a reference to the AQA:

Due to lack of data, precise evaluation of vehicle exhaust impacts is not feasible; however, based on the limited amount of TAC from vehicle exhaust associated with the project operations in relation to background levels, the impact is not expected to be significant.

This conclusion relied upon several inappropriate assumptions, and a revision to the on-site worker HRA should be prepared. An example of an appropriate HRA for on-site workers can be found in the ENVIRON HHRA for the proposed Stanford University Medical Center¹⁵, which clearly demonstrates that evaluation of vehicle exhaust impacts is indeed feasible.

The fleet of trucks that will be passing through the facility on a daily basis is expected to include 1,246 heavy-duty trailer trucks. In Response to Comment 21 of Letter B-3 the Lead Agency defends its assumption that the heavy-duty trailer trucks will be 87.5% diesel based on fuel use percentages from the URBEMIS model. However, the SCAQMD website clearly states that, "Emissions calculated using URBEMIS are now outdated and SCAQMD staff recommends all projects now evaluate emissions with CalEEMod if they use software for their analysis."¹⁶ Furthermore, the SCAQMD Comment Letter directly asserts that the fleet should be assumed 100% diesel.¹⁷ The FEIR admits that adjusting the fuel use of the fleet will increase the carcinogenic health risks to workers during Project operations (Comment 21, Response to Letter B-3), and this adjustment should be made in a revised iteration of the worker HRA.

¹⁴ LSA Associates, Inc., Draft Traffic Study, Eucalyptus Industrial Park, City of Moreno Valley, California, April 24, 2012.

¹⁵ ENVIRON, Human Health Risk Assessment, Construction and Incremental Operational Emissions, Proposed Stanford University Medical Center, Facilities Renewal and Replacement Project, Palo Alto, California, February 22, 2010.

¹⁶ SCAQMD, Air Quality Modeling. <http://www.aqmd.gov/ceqa/models.html>.

¹⁷ Comment 21, Letter B-3: South Coast Air Quality Management District, Final EIR - Response to Comments, ProLogis Eucalyptus Industrial Park, City of Moreno Valley, p. 54.

Additionally, the methodology by which daily operational emissions associated with the heavy-duty truck fleet were quantified is unclear. In the AQA, page 44 clearly states that, "Deliveries are assumed to occur 24 hours per day and 7 days per week." This was confirmed by reviewing the HRA emission worksheet in Appendix C to the AQA. However, the FEIR claims that, "Modeling the actual number of trucks that are planned to operate over 24 hours as if they operated over 12 hours results in much higher hourly emissions. Thus, the HRA is protective of human health in case there is a change in the project operations to only operate 12 hours per day" (Comment 19, Response to Letter B-3). There is no evidence to suggest that the HRA utilized an emission rate assumed over 12 hours per day instead of 24.

A revised iteration of the HRA during Project operations should be prepared prior to FEIR certification to clearly identify how the emissions generated by truck idling and movement were quantified. Incorporation of the SCAQMD comments regarding the use of a 100% diesel-fueled fleet, as well as the increased idle time per truck of fifteen minutes per trip instead of five, will unquestionably increase the estimates of emissions from Project operations. Adjustment of these parameters will provide a more accurate characterization of air quality impacts to on-site workers during Project operations, as current assumptions may have resulted in underestimated exposures.

Sincerely,

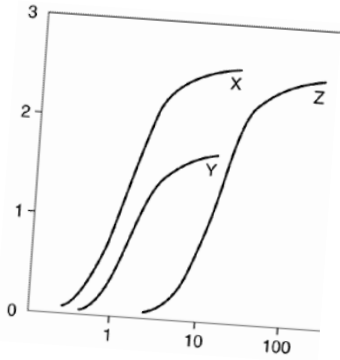


Matt Hagemann, P.G., C.Hg.



Anders Sutherland

EXHIBIT B



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April 22, 2014

Lozeau | Drury LLP
410 12th Street, Suite 250
Oakland, CA 94607

Attn: Mr. Richard Drury

Subject: Comment Letter on the Final Environmental Impact Report for the Prologis Eucalyptus Industrial Park, SCH No. 2008021002

Dear Mr. Drury:

At the request of Lozeau | Drury LLP (Lozeau Drury), Clark and Associates (Clark) has reviewed materials related to the above referenced project, including the Final Environmental Impact Report¹ (FEIR) for the Prologis Eucalyptus Industrial Park (hereafter called the Project), SCH No. 2008021002 and its appendices. The proposed project site is located in the eastern portion of the City of Moreno Valley, in Riverside County, California. The 122.8-acre project site is located south of State Route 60 (SR-60) east of the Moreno Valley Auto Mall, and adjacent to and west of the Quincy Channel. According to the FEIR the proposed project would result in the construction and operation of a warehouse facility, consisting of approximately 2,244,638 square feet (sq ft).

¹ LSA. 2014. Final Environmental Impact Report, State Clearinghouse No. 2008021002, Prologis Eucalyptus Industrial Park (formerly Prologis Park Moreno Valley Eucalyptus Project), City of Moreno Valley, Riverside County, California. LSA Associates, Inc. 1500 Iowa Ave, Suite 200, Riverside, CA LAS Project No. PLO1101. Prepared February 12, 2014 and revised April 2, 2014

Clark's review of the materials in no way constitutes a validation of the conclusions or materials contained within the plan. If we do not comment on a specific item this does not constitute acceptance of the item.

Project Description

This FEIR was issued prematurely without considering the serious flaws in the Proponent's analysis of the project by failing to accurately characterize truck traffic at the site

The air quality impacts from the traffic associated with an approximately 2,250,000 square foot facility are significant. The most significant factor used to quantify air quality impacts from project traffic is the vehicle trip rate, or the number of vehicle trips per day. A vehicle trip is one round trip (one trip segment to a site and one trip segment away from a site). In the case of the proposed Project, the primary concern will be the number of truck trips per day.

In the analysis of this Project, the Proponent estimates the vehicle trip rate used a truck trip rate of 1.96 trips per 1,000 square feet of land use to estimate operational air quality impacts instead of the default Cal EEMod land use model trip rate of 2.59 (an underestimation of operational emissions by 32%).

According to SCAQMD², for CEQA purposes, the volume of truck traffic predicted to serve a new large warehouse project has historically been derived using the ITE Trip Generation manual's general rate for warehouse projects (land use type 150), which is 4.96 trips per 1,000

² As reported in Appendix E, p. 10, Technical Source Documentation for the CalEEMod, prepared for the CAPCOA by Environ International Corporation and the California Air Districts, July 2013, available at : <http://www.aqmd.gov/caleemod/doc/AppendixE.pdf>

square feet (TSF). This is the same source of traffic data used in the URBEMIS air quality model.³ This value is from the 7th Edition of the ITE Trip Generation manual, published in 2003. Several developers of high-cube warehouses in recent years have questioned the validity of this value for modern warehousing operations and commissioned local studies to investigate these trip rates⁴. As a result, in the most recent version of the ITE Trip Generation manual (8th Edition, 2008), additional data has been included to provide a new high-cube warehouse (land use type 152) trip rate of 1.44 trips/TSF⁵.

This greatly reduced trip rate has been criticized in California. In order to avoid underestimating the number of trips associated with large warehouse/distribution center operations without rail service, the SCAQMD staff recommended that lead agencies utilize a rate of 2.59 trips per TSF for large warehouse air quality analyses on a project specific basis⁶. According to SCAQMD and based on a review of warehouse studies and operations, this value provides a reasonable default rate for individual new warehouses in the absence of more project-specific data.⁷ This trip rate has been accepted by CAPCOA and incorporated into the CalEEMod model.

Another way to illustrate how the DEIR greatly underestimates truck traffic associated with the Project is to review the estimated number of daily truck trips per 1,000 square feet of warehouse. As described above, the DEIR estimates 1.96 daily truck trips per 1,000 square feet.

³ *Ibid.*

⁴ *Ibid.*

⁵ *Ibid.*

⁶ *Ibid.*

⁷ *Ibid.*

The results of utilizing the CalEEMOD method for estimating the traffic impacts from the Project are substantial. Based upon the trip generation rate of 2.59, the total number of trips associated with Project would increase from 4,400 to 5,813 trips per day.

The net result is that the air quality analysis performed by the Proponent greatly underestimates the emissions from mobile sources by at least one-third during the operational phase of the Project. Those impacts are likely to lead to a significant impact that will be unmitigated and unaccounted for in the FEIR. Without proper modeling of the emissions from these additional vehicles the impacts on the environment and the citizens of the Moreno Valley are unknown.

Conclusion

The facts identified and referenced in this comment letter lead me to reasonably conclude that the Project will result in significant adverse impacts that were not identified in the FEIR and that are not adequately mitigated. Many of the FEIR's conclusions that environmental impacts are not significant or less than significant with mitigation are unsupported or contradicted by the evidence. As a result, several analyses presented in the FEIR, including impacts on air quality, fail to identify or disclose the magnitude of significant adverse impacts. To protect air quality and public health the Proponent must prepare a revised FEIR for the Project.

Sincerely,

A handwritten signature in blue ink that reads "James Clark".

James Clark, Ph.D.

EXHIBIT C

4.7.1.4 Greenhouse Gas Inventories

The City of Moreno Valley estimated greenhouse gas emissions for the community for 2007 and 2010 and projected emissions for 2020 are shown in Table 4.7.B, which shows the reduced 2020 emissions are below the reduction target.

Table 4.7.B: City of Moreno Valley Projected Greenhouse Gas Emissions

Source Category	Moreno Valley Greenhouse Gas Emissions (MTCO ₂ e per year)			
	2007	2010	BAU 2020	Reduced 2020
Transportation	517,098	513,581	788,267	421,561
Energy	287,261	277,230	356,192	251,372
Area	69,390	69,437	84,665	73,046
Water and Wastewater	21,595	16,831	20,216	14,158
Solid Waste	44,294	43,633	49,203	38,000
Total	939,638	920,712	1,298,543	798,137
Reduction Target	—	—	798,693	798,693

Notes: MTCO₂e = metric tons of carbon dioxide equivalents BAU = business as usual
Source: Table 9, City of Moreno Valley Greenhouse Gas Analysis, 2012., MBA 2013

The existing WLC project site is largely vacant with scattered dry farming that generates minimal greenhouse gas emissions. For the purposes of this analysis, a zero baseline will be assumed to identify the “worst case” emissions (i.e., GHG emissions from the entire WLC project without removal of any existing GHG emissions).

4.7.2 Regulatory Setting

4.7.2.1 International Regulation of Climate Change

Intergovernmental Panel on Climate Change (IPCC). In 1988, the United Nations created the IPCC to provide independent scientific information regarding climate change to policymakers. The IPCC does not conduct research itself, but rather compiles information from a variety of sources into reports regarding climate change and its impacts. The IPCC has thereafter periodically released reports on climate change, and in 2007 released its Fourth Assessment Report which concluded most global climate change was the result of human activity, mainly the burning of fossil fuels (see Section 4.7.1.1).

United Nations Framework Convention on Climate Change. On March 21, 1994, the United States joined a number of countries around the world in signing the United Nations Framework Convention on Climate Change (Convention). Under the Convention, governments gather and share information on greenhouse gas emissions, national policies, and best practices; launch national strategies for addressing greenhouse gas emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change.

Kyoto Protocol. The Kyoto Protocol is an international agreement linked to the United Nations Framework Convention on Climate Change. The major feature of the Kyoto Protocol is that it sets binding targets for 37 industrialized countries and the European community for reducing greenhouse gas emissions at average of five per cent against 1990 levels over the five-year period 2008-2012. The Convention (discussed above) encouraged industrialized countries to stabilize emissions; however, the Protocol commits them to do so. Developed countries have contributed more emissions

**World Logistics Center Project
Draft Environmental Impact Report**

Table 4.7.I: Project Operational GHG Emissions (Year by Year with Mitigation)

Source	Emissions with Mitigation and Project Design Features (MTCO ₂ e/year)								
	2014	2015	2016	2017	2018	2019	2020	2021	2022
Vehicles	10,638	21,784	28,283	39,632	52,154	57,836	61,228	65,730	66,329
Trucks	51,111	107,099	141,204	199,737	269,134	304,600	328,592	358,109	366,971
Electricity	14,513	30,387	40,428	58,208	79,917	91,993	101,491	110,174	112,888
Natural gas	177	371	494	711	976	1,124	1,240	1,346	1,379
Water	299	626	833	1,199	1,646	1,895	2,090	2,269	2,325
Waste	12,812	26,826	35,690	51,385	70,550	81,211	89,595	97,261	99,657
Refrigerants	182	380	506	728	1,000	1,151	1,269	1,378	1,412
Construction	37,927	31,634	26,947	94,510	41,743	34,665	26,818	26,818	14,471
Sequestration	-14	-30	-40	-57	-79	-90	-100	-108	-111
Total	127,645	219,077	274,345	446,053	517,041	574,385	612,223	662,977	665,321
Threshold	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Significant?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Reduction summary: local vehicles = 3 percent; waste = 35 percent
Source: Michael Brandman Associates 2013.

When compared with the proposed project, air quality impacts associated with the No Project/Existing General Plan Alternative would be correspondingly decreased in magnitude. Similar to the proposed project, the generation of these emissions would still result in a cumulative contribution of air pollutants in a nonattainment basin; therefore, impacts remain significant and unavoidable.

Table 6.E: No Project/Existing General Plan Alternative Operational Emissions

Source	Pollutant Emissions, lbs/day					
	CO	VOC	NO _x	SO _x	PM ₁₀	PM _{2.5}
Proposed Project ¹	3,466	729	3,059	21	1,685	153
No Project/Existing General Plan ²	4,853	1,114	1072	14	1,231	86
Net Change	+1,387	+385	-1,987	-7	-454	-67
SCAQMD thresholds	550	55	55	150	150	55
Alternative exceeds thresholds?	Yes	Yes	Yes	No	Yes	Yes

Source: MBA 2013

¹ MBA 2013 Air Quality Assessment for the proposed project

² From Moreno Highlands Specific Plan updated by MBA using CalEEMod software

Global Climate Change: GHG emissions associated with the No Project/Existing General Plan Alternative are correspondingly decreased as this alternative does not include a logistics warehouse component. In addition, the No Project/Existing General Plan Alternative would decrease the amount of water utilized and wastewater generated. As identified in Table 6.F, the No Project/Existing General Plan Alternative would generate 228,719 metric tons of total CO₂ equivalent¹ (mt CO₂e), which is approximately 60 percent less than what was identified for the proposed project.

Table 6.F: Comparison of Greenhouse Gas Emissions

Type of Development	Annual MTCO ₂ e Emissions	Change
Proposed Project	665,321	100%
No Project/No Build ¹	—	0%
No Project/Existing General Plan ²	228,719	35%
Alternative 1: Reduced Density	465,725	70%
Alternative 2: Mixed Use A	794,828	120%
Alternative 3: Mixed Use B	318,808	48%
Alternative Sites	665,321	100%

MTCO₂e is metric tons of carbon dioxide equivalents, which is a standard unit of measure for greenhouse gases.

¹ Estimated based on existing on-site rural residential uses.

² Based on approved Moreno Highland Specific Plan.

Source: MBA 2013 project air quality study, alternatives analysis (see Appendix D).

Hazards and Hazardous Materials: Development of the No Project/Existing General Plan Alternative would still result in the on-site handling of hazardous substances, both during project construction and operation. It is reasonable to assume that, like any current use, these substances would continue to be used in accordance with applicable local, State, and Federal standards. Impacts associated with the transport or use of hazardous materials or potential upsets or accidents would not be increased in magnitude because the intensity of development is still below what is envisioned under the proposed project. Therefore, it is not expected that increased quantities of hazardous materials would be present on site. With the adherence to existing hazardous materials regulations,

¹ Carbon dioxide equivalent (CO₂e) is an internationally accepted measure that expresses the amount of other greenhouse gases (e.g., methane and nitrous oxide) in terms of the amount of carbon dioxide (CO₂). The CO₂e measure is used as a way to measure the warming potential of a greenhouse gas as compared to CO₂, which has the highest global warming potential.

EXHIBIT D

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5 Attorneys for Defendant and Real Party in Interest
VWR International, LLC
6

7
8 UNITED STATES DISTRICT COURT
9 EASTERN DISTRICT OF CALIFORNIA

10 COALITION FOR CLEAN AIR, et al.,

11 Plaintiff,

12 v.

13 VWR INTERNATIONAL, LLC, et al.,

14 Defendant.
15
16

Case No. 1:12-CV-1569-LJO-BAM

CONSENT JUDGMENT

17
18 Pursuant to Rules 54 and 58 of the Federal Rules of Civil Procedure, the Court hereby
19 ORDERS, ADJUDGES AND DECREES as follows:

20 1. Defendant VWR International, LLC (“VWR”) shall install two (2) electric vehicle
21 charging stations at its warehousing and distribution facility located at 8711 West Riggin Avenue
22 in the City of Visalia (the “Project”). VWR shall make said electric vehicle charging stations
23 available to VWR employees and/or customers.

24 2. VWR shall maintain the following features of the Project until June 11, 2022 (10
25 years after the Project became operational), unless VWR ceases to own and operate the Project in
26 its present form and for its present function prior to that time:

27 a. The emergency generator for the Project shall be powered by natural gas and
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- include a catalytic converter.
- b. Ninety percent of the truck carriers contracted to service the Project by VWR shall be Environmental Protection Agency SmartWay partners, provided however, that temporary variances from this percentage due to circumstances not created by VWR shall not be a violation of this order.
 - c. The Project shall utilize energy efficient interior lighting, *i.e.*, light-emitting diodes (“LED”), and T5 and T8 fluorescent lamps, provided, however, that this order shall not prohibit VWR from incorporating new or different lighting technology that is at least as efficient.
 - d. The Project shall utilize energy efficient exterior lighting, *i.e.*, LED, and T5 and T8 fluorescent lamps, provided, however, that this order shall not prohibit VWR from incorporating new or different lighting technology that is at least as efficient.
 - e. The air conditioning system for the management offices at the Project shall use non-chlorofluorocarbon refrigerant.
 - f. Cooling for the main warehouse space at the Project shall be provided through evaporative coolers rather than air conditioners, provided, however, that this order shall not prohibit VWR from incorporating new or different cooling technology that is at least as efficient.
 - g. The warehouse space at the Project shall incorporate automated airflow and ventilation systems designed to minimize need for supplemental heating and cooling within the warehouse space.
 - h. Forklifts and interior vehicles at the Project shall be electric powered.
 - i. The Project shall use a building automation system to control and optimize the efficiency of its mechanical systems, including lighting, HVAC, exhaust dampers, fans, and ventilation louvers
 - j. Interior lights shall incorporate motion sensors that turn them off when not in use.

- 1 k. The Project shall incorporate a light colored “cool roof” membrane to reduce
- 2 surface temperature, heat island effect, and heat transfer to the interior of the
- 3 structure.
- 4 l. The landscape design and irrigation system shall be in compliance with LEED
- 5 Silver certification standards to reduce water consumption.
- 6 m. The warehouse shall incorporate water-efficient building design with water
- 7 efficient fixtures and appliances meeting LEED Silver certification standards.
- 8 n. The Project shall have an operational recycling program covering paper,
- 9 corrugated cardboard, glass, plastics and metals.
- 10 o. A bicycle rack shall be provided at the Project for employees who wish to
- 11 bicycle commute.
- 12 p. Five (5) premium car/vanpool spaces shall be provided at the Project.

13 3. Notwithstanding the provisions of paragraph 2, above, this order shall not prohibit
14 VWR from incorporating new or different technology at its facility instead of the specific
15 technology specified in paragraph 2, provided that is no less efficient than the technology
16 specified.

17 4. VWR need not take further action to comply with San Joaquin Valley Air
18 Pollution Control District Rule 9510, as incorporated into the California State Implementation
19 Plan under the Clean Air Act (42 U.S.C. Section 7604(a)).

20 5. VWR need not take further action to comply with Visalia Municipal Code Section
21 17.28.040A.

22 6. VWR shall pay no civil penalties.

23 7. Nothing in this judgment shall prohibit VWR from selling, transferring,
24 demolishing, rebuilding, or repurposing the Project, in whole or in part, or the real property upon
25 which it sits.

26 8. Except as may otherwise be provided by written agreement, each party shall bear
27 their own fees and costs.

28 / / /

1 9. This judgment shall be entered by the clerk of the court forthwith. The Clerk is
2 directed to close this action.

3 IT IS SO ORDERED, ADJUDGED, AND DECREED.

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6 IT IS SO ORDERED.

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Dated: September 11, 2013

/s/ Lawrence J. O'Neill
UNITED STATES DISTRICT JUDGE

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EXHIBIT E

Recording requested by and when recorded please return to:

[Grantee's name & address]

(Space above this line reserved for Recorder's use)

DEED OF AGRICULTURAL CONSERVATION EASEMENT

This Deed of Agricultural Conservation Easement is granted on this ____ of _____ 2012, by [Landowner's name], [Ownership status], having an address at [Landowner's address] ("Landowner"), to [Grantee's name], a California nonprofit public benefit corporation, having an address at [Grantee's address] ("Grantee"), for the purpose of forever conserving the agricultural productive capacity and open space character of the subject property.

RECITALS

A. The Landowner is the sole owner in fee simple of the [farm/rangeland] property ("Property") legally described in Exhibit A ("Legal Description") and generally depicted in Exhibit B ("Vicinity Map"), attached to and made a part of this Agricultural Conservation Easement ("Easement"). The Property consists of approximately [acres] acres of land and is commonly known as the "[Farm/Ranch name]," together with buildings and other improvements, is located in [County name] County, California, and is identified by assessor's parcel number(s) [parcel numbers]. The existing buildings and improvements on the Property are shown within the Building Envelope as depicted in Exhibit C ("Building Envelope and Existing Improvements"), also attached to and made a part of this Easement. Except as shown in Exhibit C, the Property is open farmland, whose soils have been classified as [prime farmland, farmland of statewide importance, etc.] by the U.S. Department of Agriculture's Natural Resources Conservation Service, and by the California Department of Conservation's Farmland Mapping and Monitoring Program, because this land has the soil quality, growing season, and water supply needed for sustained agricultural production.

B. The agricultural and other characteristics of the Property, its current use and state of improvement, are documented and described in a Baseline Documentation Report ("Baseline Report"), prepared by the Grantee with the cooperation of the Landowner and incorporated herein by this reference. The Landowner and the Grantee acknowledge that the Baseline Report is complete and accurate as of the date of this Easement. Both the Landowner and the Grantee shall retain duplicate original copies of the Baseline Report. The Baseline Report may be used to establish whether or not a change in the use or condition of the Property has occurred, but its existence shall not preclude the use of other evidence to establish the condition of the Property as of the date of this Easement.

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C. The Department of Conservation’s California Farmland Conservancy Program (hereinafter alternatively referred to as the “Department” or “Department of Conservation”) has made a grant of funds to the Grantee to support the acquisition of this Agricultural Conservation Easement. The Department’s funds represent a substantial investment by the people of the State of California in the long-term conservation of valuable agricultural land and the retention of agricultural land in perpetuity. The Property and this Easement have met the California Farmland Conservancy Program’s mandatory eligibility criteria and certain selection criteria and have multiple natural resource conservation objectives. The rights vested herein in the State of California arise out of the State’s statutory role in fostering the conservation of agricultural land in California and its role as fiduciary for the public investment represented by the Department’s funds.

D. The Landowner grants this Easement for valuable consideration to the Grantee for the purpose of assuring that, under the Grantee’s perpetual granteeship, the agricultural productive capacity and open space character of the Property will be conserved and maintained forever, and that uses of the land that are inconsistent with these conservation purposes will be prevented or corrected. The parties agree, however, that the current agricultural use of, and improvements to, the Property are consistent with the conservation purposes of this Easement.

E. The conservation purposes of this Easement are recognized by, and the grant of this Easement will serve, the following clearly delineated governmental conservation policies:

The Farmland Protection Policy Act, P.L. 97-98, 7 U.S.C. section 4201 et seq., whose purpose is “to minimize the extent to which Federal programs and policies contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses, and to assure that Federal programs are administered in a manner that, to the extent practicable, will be compatible with State, unit of local government and private programs and policies to protect farmland;”

California Civil Code at Part 2, Chapter 4, (commencing with section 815), which defines and authorizes perpetual conservation easements;

California Constitution Article XIII, section 8, California Revenue and Taxation Code sections 421.5 and 422.5, and California Civil Code section 815.1, under which this Agricultural Conservation Easement is an enforceable restriction, requiring that the Property’s tax valuation be consistent with restriction of its use for purposes of food and fiber production and conservation of natural resources;

Section 10200 et seq. of the California Public Resources Code, which creates the California Farmland Conservancy Program within the Department;

85 Section 51220 of the California Government Code, which declares a public
86 interest in the preservation of agricultural lands, by providing that “agricultural
87 lands have a definitive public value as open space” and “that the discouragement of
88 premature and unnecessary conversion of agricultural land to urban uses is a matter
89 of public interest”;

90
91 California Food and Agriculture Code Section 821 states that one of the major
92 principles of the State's agricultural policy is "to sustain the long-term productivity
93 of the State's farms by conserving and protecting the soil, water, and air, which are
94 agriculture's basic resources;"

95
96 The California General Plan law section 65300 et seq. and Section 65400 et seq.
97 of the California Government Code, and the [*County name*] County General Plan,
98 as updated on [*Update date*], which includes as one of its goals to protect
99 farmlands designated as prime, of statewide importance, unique, or of local
100 importance from conversion to and encroachment of non-agricultural uses; and,

101
102 Resolution No. [*Resolution number*], approved by the Board of Supervisors of
103 [*County name*] County on the [*day*] of [*month*], [*year*], which expresses support
104 for the acquisition of this Easement and finds that the acquisition is consistent
105 with the County’s General Plan and the Resolution’s findings. (NOTE: If the
106 Property lies within the Sphere of Influence of an incorporated city, both the city
107 and county must pass resolutions of support.)

108
109 F. The Grantee is a California nonprofit organization within the meaning of
110 California Public Resources Code section 10221 and California Civil Code section 815.3
111 and is a tax exempt and “qualified conservation organization” within the meaning of
112 Sections 501(c)(3) and 170(b)(1)(A)(iv) as defined by the United States Internal Revenue
113 Code. Grantee, as certified by a resolution of Grantee's Board of Trustees, accepts the
114 responsibility of enforcing the terms of this Easement and upholding its conservation
115 purposes forever.

116 117 GRANT OF AGRICULTURAL CONSERVATION EASEMENT

118
119 Now, therefore, for the reasons given, and in consideration of their mutual
120 promises and covenants, terms, conditions and restrictions contained herein, and other
121 good and valuable consideration, the receipt and adequacy of which are hereby
122 acknowledged, the Landowner voluntarily grants and conveys to the Grantee, and the
123 Grantee voluntarily accepts, a perpetual conservation easement, as defined by Section
124 815.1 and 815.2 of the California Civil Code and California Public Resources Code
125 section 10211, and of the nature and character described in this Easement for the purpose
126 described below, and agree as follows:

127 128 1. *Conservation Purpose.*

129
130 The conservation purpose (“Conservation Purpose” or “Purpose”) of this Easement is to

131 enable the Property to remain in productive agricultural use in perpetuity by preventing
132 and correcting uses of the Property prohibited by the provisions of this Easement. To the
133 extent that the preservation of the open space character and [*scenic, habitat, natural, or*
134 *historic, etc.*] values of the Property are consistent with such use, it is within the Purpose
135 of this Easement to protect those values.

136
137 *2. Right to Use Property for Agricultural Purposes.*
138

139 The Landowner retains the right to use the Property for agricultural purposes, or to permit
140 others to use the Property for agricultural purposes, in accordance with applicable law and
141 this Easement.

142
143 *3. Prohibited Uses.*
144

145 The Landowner shall not perform, nor knowingly allow others to perform, any act on or
146 affecting the Property that is inconsistent with this Easement. Any use or activity that
147 would diminish or impair the agricultural productive capacity and open space character
148 [*or scenic, habitat, natural, historic etc. values*] of the Property, or that would cause
149 significant soil degradation or erosion, restrict agricultural husbandry practices, or that is
150 otherwise inconsistent with the Conservation Purpose is prohibited (“Prohibited Use”).
151 “Husbandry practices” means agricultural activities, such as those specified in Section
152 3482.5(e) of the California Civil Code, conducted or maintained for commercial purposes
153 in a manner consistent with proper and accepted customs and standards, as established
154 and followed by similar agricultural operations in the same locality. This Easement
155 authorizes the Grantee to enforce these covenants in the manner described herein.
156 However, unless otherwise specified, nothing in this Easement shall require the
157 Landowner to take any action to restore the condition of the Property after any Act of
158 God or other event over which it had no control. The Landowner understands that
159 nothing in this Easement relieves it of any obligation or restriction on the use of the
160 Property imposed by law.

161
162 *4. Permission of the Grantee.*
163

164 Where the Landowner is expressly required to obtain the Grantee’s permission for a
165 proposed use hereunder, said permission (a) shall not be unreasonably delayed or
166 withheld by the Grantee, (b) shall be sought and given in writing, with copies of all
167 documents to be provided to the Department, and (c) shall in all cases be obtained by the
168 Landowner prior to the Landowner's undertaking of the proposed use. The Grantee shall
169 grant permission to the Landowner only where the Grantee, acting in the Grantee's sole
170 reasonable discretion and in good faith, determines that the proposed use is not a
171 “Prohibited Use” per Section 3.

172
173 *5. Construction or Placement of Buildings and Other Improvements.*
174

175 The Landowner may undertake construction, erection, installation, or placement of
176 buildings, structures, or other improvements on the Property only as provided in

177 subsections (a) through (d) below. All other construction, erection, installation, or
178 placement of buildings, structures, or other improvements on the Property is prohibited.
179 Before undertaking any construction, erection, installation or placement that requires
180 permission, the Landowner shall notify the Grantee and obtain prior written permission
181 from the Grantee.

182
183 For purposes of this section, the term “improvements” shall not refer to, and specifically
184 excludes, crops, plants, trees, vines, or other living improvements planted for agricultural
185 purposes, nor shall it refer to irrigation improvements necessary or desirable to irrigate
186 the Property for agricultural purposes, all of which may be made without permission of
187 the Grantee.

188
189 (a) Fences – Existing fences may be repaired and replaced without permission of
190 the Grantee. New fences may be built anywhere on the Property for purposes of
191 reasonable and customary agricultural management, and for security of farm
192 produce, livestock, equipment, and improvements on the Property, without
193 permission of the Grantee.

194
195 (b) Agricultural Structures and Improvements – Existing agricultural structures
196 and improvements as shown in Exhibit C and more fully described in the Baseline
197 Report, may be repaired, reasonably enlarged, and replaced at their current
198 locations within the Building envelope for agricultural purposes without
199 permission from the Grantee. New buildings and other structures and
200 improvements to be used solely for agricultural production on the Property or sale
201 of farm products predominantly grown or raised on the Property, including barns
202 and equipment sheds, but not including any dwelling or farm labor housing, may
203 be built on the Property within the Building Envelope depicted in Exhibit B,
204 without permission of the Grantee. All permissible new agricultural structures
205 may be repaired, reasonably enlarged, and replaced without permission of the
206 Grantee. Any other agricultural production or marketing-related structures may
207 be constructed only with permission of the Grantee pursuant to Section 4.

208
209 (c) Residential Dwellings – The single-family dwelling shown in Exhibit C may
210 be repaired, enlarged or replaced at the current location entirely within the
211 Building Envelope shown in Exhibit C without permission of the Grantee. Said
212 single-family dwelling shall not exceed three thousand square feet (3,000 sq. ft.)
213 of living area. No other residential structures may be constructed or placed on the
214 Property except for agricultural employee housing per Section 5(d).

215
216 *(NOTE: With approval of the funder(s), this section may need to be modified*
217 *depending on the circumstances of the property and other factors)*

218
219 (d) Agricultural Employee Housing – The agricultural employee house shown in
220 Exhibit C may be repaired, enlarged or replaced at the current location entirely
221 within the Building Envelope shown in Exhibit C without permission of the
222 Grantee. No additional agricultural employee housing may be constructed or

223 placed on the Property without permission of the Grantee. Grantee may only
224 grant permission pursuant to Section 4 and only if the Landowner can
225 demonstrate to the Grantee's satisfaction that such additional agricultural
226 employee housing is reasonable and necessary for the agricultural operation of the
227 Property. The aggregate living area of agricultural employee housing shall not
228 exceed two thousand five hundred square feet (2,500 sq ft.). All agricultural
229 employee housing must be located entirely within the Building Envelope shown
230 in Exhibit C.

231

232 *(NOTE: With approval of the funder(s), this section may need to be modified*
233 *depending on the circumstances of the property and other factors)*

234

235 (e) Utilities and Septic Systems. Wires, lines, pipes, cables or other facilities
236 providing electrical, gas, water, sewer, communications, energy generation, or
237 other utility services solely to serve the improvements permitted herein or to
238 transmit power generated on the Property may be installed, maintained, repaired,
239 removed, relocated and replaced. In addition, septic or other underground
240 sanitary systems serving the improvements permitted herein may be installed,
241 maintained, repaired, replaced, relocated or improved, but must be located within
242 the Building Envelope. Power generation and transmission facilities primarily for
243 agricultural and other permitted uses on the Property may be constructed within
244 the Building Envelope. Power generated in excess of requirements on the
245 Property may be sold to appropriate public utilities. Notwithstanding the
246 foregoing, commercial power generation, collection or transmission facilities,
247 including wind or solar farms outside of Building Envelope, and the conveyance
248 of any rights-of-way over, under or on the Property for any such purpose, are
249 prohibited.

250

251 6. *No Subdivision.*

252

253 The division, subdivision, defacto subdivision, or partition of the Property, including
254 transfer of development rights, whether by physical, legal, or any other process, is
255 prohibited.

256

257 The Landowner and Grantee acknowledge and understand that the Property consists of
258 [number] legal parcel(s), and that no additional, separate legal parcels currently exist
259 within the Property that may be recognized by a certificate of compliance or conditional
260 certificate of compliance pursuant to California Government Code section 66499.35
261 based on previous patent or deed conveyances, subdivisions, or surveys. The Landowner
262 will not apply for or otherwise seek recognition of additional legal parcels within the
263 Property based on certificates of compliance or any other authority. The Landowner shall
264 continue to maintain the legal parcels comprising the Property, and all interests therein,
265 under common ownership, as though a single legal parcel.

266

267 Lot line adjustment may be permitted only with the written approval of the Grantee
268 pursuant to Section 4, in conjunction with the approval of the local jurisdiction, and for

269 purposes of maintaining, enhancing or expanding agricultural practices or productivity on
270 the Property.

271

272 *7. Extinguishment of Development Rights.*

273

274 The Landowner hereby grants to the Grantee all development rights except as specifically
275 reserved in this Easement, that were previously, are now or hereafter allocated to,
276 implied, reserved, appurtenant to, or inherent in the Property, and the parties agree that
277 such rights are released, terminated, and extinguished, and may not be used on or
278 transferred by either party to any portion of the Property as it now or later may be
279 bounded or described, or to any other property adjacent or otherwise, or used for the
280 purpose of calculating permissible lot yield of the Property or any other property. This
281 Easement shall not create any development rights.

282

283 *8. Mining.*

284

285 The mining or extraction of soil, sand, gravel, rock, oil, natural gas, fuel, or any other
286 mineral substance, using any method that disturbs the surface of the land, is prohibited.

287

288 *(NOTE: With approval of the funder(s), this section may need to be modified depending*
289 *on the circumstances of the property and other factors)*

290

291 *9. Paving and Road Construction.*

292

293 Other than existing roads shown within the Building Envelope as identified in the Baseline
294 Report, no portion of the Property presently unpaved shall be paved or otherwise covered
295 with concrete, asphalt, or any other impervious paving material, unless such measures are
296 required by air quality laws or regulations applicable to the Property. Except as otherwise
297 permitted herein, no road for access or other purposes shall be constructed without the
298 permission of the Grantee pursuant to Section 4. Notwithstanding the foregoing,
299 construction of unpaved farm roads, as necessary or desirable by agricultural operations,
300 is permitted without permission from the Grantee. The Landowner shall notify the
301 Grantee of any significant net relocation or addition of unpaved farm roads.

302

303 *10. Trash and Storage.*

304

305 The dumping or accumulation on the Property of any kind of trash, refuse, vehicle bodies
306 or parts, or "Hazardous Materials," as defined in Section 25 is prohibited. Farm-related
307 trash and refuse produced on the Property may be temporarily stored on the Property
308 subject to all applicable laws. The storage of agricultural products and byproducts
309 produced on the Property and materials reasonably required for agricultural production
310 on the Property, including Hazardous Materials, is permitted as long as it is done in
311 accordance with all applicable government laws and regulations.

312

313

314 11. *Commercial Signs.*

315

316 Commercial signs (including billboards) unrelated to permitted activities conducted on
317 the Property are prohibited.

318

319 12. *Recreational Uses; Motorized Vehicle Use Off Roadways*

320

321 Resort structures, athletic fields, golf courses, non-residential swimming pools, public or
322 commercial airstrips, commercial equestrian facilities, public or commercial helicopter
323 pads, and any other non-agricultural recreational structures or facilities are prohibited on
324 the Property. Recreational structures or improvements for the personal use of the
325 Landowner and its guests (e.g. swimming pool, tennis court) are permitted only within
326 the Building Envelope. The use of motorized vehicles off roadways and outside of the
327 Building Envelope is prohibited except where used for agricultural production, property
328 maintenance and security, or for the purpose of monitoring this Easement.

329

330 13. *Water Rights.*

331

332 The Landowner shall retain and reserve all ground water, and all appurtenant,
333 prescriptive, contractual or other water rights appurtenant to the Property at the time this
334 Easement becomes effective. The Landowner shall not permanently transfer, encumber,
335 lease, sell, or otherwise separate such quantity of water or water rights from title to the
336 Property itself. Permanent separation of water or water rights is prohibited. All water
337 shall be retained in [*County name*] County for agricultural production and used in
338 conjunction with the improvements permitted by Section 5 of this Easement only. Water
339 may be distributed to a contiguous property or other property owned or leased by the
340 Landowner on an annual basis for agricultural production only. Any temporary
341 distribution of water shall not impair the long-term agricultural productive capacity or
342 open space character of the Property.

343

344 14. *Rights Retained by the Landowner.*

345

346 Subject to Section 7 and to interpretation under Section 22, as owner of the Property, the
347 Landowner reserves all interests in the Property not transferred, conveyed, restricted,
348 prohibited or extinguished by this Easement. These ownership rights include, but are not
349 limited to, the right to sell, lease, or otherwise transfer the Property to anyone the
350 Landowner chooses, as well as the right to privacy, the right to exclude any member of
351 the public from trespassing on the Property, and any other rights consistent with the
352 Purpose of this Easement. Nothing contained herein shall be construed as a grant to the
353 general public of any right to enter upon any part of the Property.

354

355 Nothing in this Easement relieves the Landowner of any obligation or restriction on the
356 use of the Property imposed by law.

357

358

359 15. *Responsibilities of the Landowner and the Grantee Not Affected.*

360
361 Other than as specified herein, this Easement is not intended to impose any legal or other
362 responsibility on the Grantee, or in any way to affect any existing obligation of the
363 Landowner as owner of the Property. Among other things, this shall apply to:

364
365 (a) Taxes – The Landowner shall be solely responsible for payment of all taxes
366 and assessments levied against the Property. If the Grantee ever pays any taxes or
367 assessments on the Property, or if the Grantee pays levies on the Landowner’s
368 interest in order to protect Grantee’s interests in the Property, the Landowner will
369 reimburse the Grantee for the same. It is intended that this Easement constitute an
370 enforceable restriction within the meaning of Article XIII, Section 8 of the
371 California Constitution and that this Easement qualify as an enforceable
372 restriction under the provisions of California Revenue and Taxation Code
373 Sections 402.1(a)(8) and 423.

374
375 (b) Upkeep and Maintenance – The Landowner shall be solely responsible for the
376 upkeep and maintenance of the Property, to the extent it may be required by law.
377 The Grantee shall have no obligation for the upkeep or maintenance of the
378 Property. If the Grantee acts to maintain the Property in order to protect the
379 Grantee’s interest in the Property, the Landowner will reimburse the Grantee for
380 any such costs.

381
382 (c) Liability and Indemnification – In view of the Grantee’s and the Department
383 of Conservation’s negative rights, limited access to the land, and lack of active
384 involvement in the day-to-day management activities on the Property, the
385 Landowner shall indemnify, protect, defend and holds harmless the Grantee, the
386 Department of Conservation, their officers, directors, members, employees,
387 contractors, legal representatives, agents, successors and assigns (collectively,
388 “Agents and Assigns”) from and against all liabilities, costs, losses, orders, liens,
389 penalties, claims, demands, damages, expenses, or causes of action or cases,
390 including without limitation reasonable attorneys’ fees, arising out of or in any
391 way connected with or relating to the Property or the Easement. The Landowner
392 shall be solely liable for injury or the death of any person, or physical damage to
393 any property, or any other costs or liabilities resulting from any act, omission,
394 condition, or other matter related to or occurring on or about the Property,
395 regardless of cause, unless due to the negligence or willful misconduct of the
396 Grantee, the Department of Conservation, and/or their respective Agents and
397 Assigns. The Grantee shall be named as an additional insured on Landowner’s
398 general liability insurance policy.

399
400 Neither the Grantee, the Department of Conservation, nor their Agents and
401 Assigns shall have responsibility for the operation of the Property, monitoring of
402 hazardous conditions on it, or the protection of the Landowner, the public or any
403 third parties from risks relating to conditions on the Property. Without limiting
404 the foregoing, neither the Grantee, the Department, nor their respective Agents

405 and Assigns shall be liable to the Landowner or other person or entity in
406 connection with consents given or withheld, or in connection with any entry upon
407 the Property occurring pursuant to this Easement, or on account of any claim,
408 liability, damage or expense suffered or incurred by or threatened against the
409 Landowner or any other person or entity, except as the claim, liability, damage, or
410 expense is the result of the gross negligence or intentional misconduct of the
411 Grantee, the Department, and/or their respective Agents and Assigns.
412

413 *16. Monitoring.*
414

415 The Grantee shall manage its responsibilities as holder of this Easement in order to
416 uphold the Purpose of this Easement. The Grantee's responsibilities include, but are not
417 limited to, annual monitoring, such additional monitoring as circumstances may require,
418 record keeping, and enforcement of this Easement, for the purpose of preserving the
419 Property's agricultural productive capacity and open space character in perpetuity.
420 Failure of the Grantee to carry out these responsibilities shall not impair the validity of
421 this Easement or limit its enforceability in any way. With reasonable advance notice
422 (except in the event of an emergency circumstance or prevention of a threatened breach),
423 Grantee shall have the right to enter upon, inspect, observe, monitor and evaluate the
424 Property to identify the current condition of, and uses and practices on the Property and
425 to determine whether the condition, uses and practices are consistent with this Easement.
426

427 Grantee shall indemnify, defend with counsel of Landowner's choice, and hold
428 Landowner harmless from, all expense, loss, liability, damages and claims, including
429 Landowner's attorneys' fees, if necessary, arising out of Grantee's entry on the Property,
430 unless caused by a violation of this Easement by Landowner or by Landowner's
431 negligence or willful misconduct.
432

433 The Grantee shall report to the Department of Conservation by June 30 of each year after
434 the annual monitoring visit, describing method of monitoring, condition of the Property,
435 stating whether any violations were found during the period, describing any corrective
436 actions taken, the resolution of any violation, and any transfer of interest in the Property.
437 Failure to do so shall not impair the validity of this Easement or limit its enforceability in
438 any way.
439

440 *17. Enforcement.*
441

442 The Grantee may take all actions that it deems necessary to ensure compliance with the
443 terms, conditions, covenants, and purposes of this Easement. The Grantee shall have the
444 right to prevent and correct violations of the terms, conditions, covenants, and purposes
445 of this Easement. If the Grantee finds what it believes is a violation or potential
446 violation, it may at its discretion take appropriate legal action to ensure compliance with
447 the terms, conditions, covenants, and purposes of this Easement and shall have the right
448 to correct violations and prevent the threat of violations. Except when an ongoing or
449 imminent violation could irreversibly diminish or impair the agricultural productive
450 capacity and open space character of the Property, the Grantee shall give the Landowner

451 written notice of the violation or potential violation, and thirty (30) days to correct it,
452 before filing any legal action.

453

454 If a court with jurisdiction determines that a violation may exist, has occurred, or is about
455 to occur, the Grantee may obtain an injunction, specific performance, or any other
456 appropriate equitable or legal remedy, including (i) money damages, including damages
457 for the loss of the agricultural conservation values protected by this Easement, (ii)
458 restoration of the Property to its condition existing prior to such violation, and (iii) an
459 award for all of the Grantee's expenses incurred in stopping and correcting the violation,
460 including but not limited to reasonable attorney's fees. The failure of the Grantee to
461 discover a violation or potential violation, or to take immediate legal action to prevent or
462 correct a violation or potential violation known to the Grantee, shall not bar the Grantee
463 from taking subsequent legal action. The Grantee's remedies under this section shall be
464 cumulative and shall be in addition to all remedies now or hereafter existing at law or in
465 equity.

466

467 Without limiting the Landowner's liability therefor, the Grantee shall apply damages
468 recovered to the cost of undertaking any corrective action on the Property. Should the
469 restoration of lost values be impossible or impractical for whatever reason, the Grantee
470 shall apply any and all damages recovered to furthering its mission, with primary
471 emphasis on agricultural conservation easement acquisition and enforcement.

472

473 In the event the Grantee fails to enforce any term, condition, covenant or purpose of this
474 Easement, as determined by the Director of the Department of Conservation, the Director
475 of the Department and his or her successors and assigns shall have the right to enforce the
476 Easement after giving notice to the Grantee and the Landowner and providing a
477 reasonable opportunity under the circumstances for the Grantee to enforce any term,
478 condition, covenant, or purpose of the Easement. In the event that the Director of the
479 Department determines that the Grantee has failed to enforce any of the terms,
480 conditions, covenants, or purposes of the Easement, the Director of the Department and
481 his or her successors and assigns shall be entitled to exercise the same right to enter the
482 Property granted to the Grantee, including right of immediate entry in the event of an
483 emergency or suspected emergency where the Director of the Department or his or her
484 successor or assign determines that immediate entry is required to prevent, terminate or
485 mitigate a violation of this Easement.

486

487 Failure or refusal to exercise any rights under the terms of this Easement by the Grantee
488 in the event of a violation by the Landowner of any term herein shall not constitute a
489 waiver or forfeiture of the Grantee's right to enforce any term, condition, covenant, or
490 purpose of this Easement.

491

492 18. *Transfer of Easement.*

493

494 This Easement may only be assigned or transferred to a private nonprofit organization
495 that, at the time of transfer, is a "qualified organization" under Section 170(h) of the
496 United States Internal Revenue Code and meets the requirements of Section 815.3(a) of

497 the California Civil Code and has similar purposes to preserve agricultural lands and
498 open space. If no such private nonprofit organization exists or is willing to assume the
499 responsibilities imposed by this Easement, then this Easement may be transferred to any
500 public agency authorized to hold interests in real property as provided in Section 815.3(b)
501 of the California Civil Code. Such an assignment or transfer may proceed only if the
502 organization or agency expressly agrees to assume the responsibility imposed on the
503 Grantee by the terms of this Easement and is expressly willing and able to hold this
504 Easement for the Purpose for which it was created. All assignment and assumption
505 agreements transferring the Easement shall be duly recorded in <County name> County.
506

507 If the Grantee should desire to assign or transfer this Easement, the Grantee must obtain
508 written permission from the Landowner and the Department of Conservation, which
509 permission shall not be unreasonably withheld.
510

511 If the Grantee or its successors ever ceases to exist or no longer qualifies under Section
512 170(h) of the U.S. Internal Revenue Code, or applicable state law, the Department of
513 Conservation, in consultation with the Landowner, shall identify and select an
514 appropriate private or public entity to whom this Easement shall be transferred.
515

516 *19. Perpetual Duration and No Merger of Title.*
517

518 Pursuant to California Civil Code at Part 2, Chapter 4, (commencing with section 815),
519 which defines and authorizes perpetual conservation easements; this Easement shall run
520 with the land in perpetuity. Every provision of this Easement that applies to the
521 Landowner or the Grantee shall also apply to their respective agents, heirs, executors,
522 administrators, assigns, and all other successors as their interests may appear.
523

524 No merger of title, estate or interest shall be deemed effected by any previous,
525 contemporaneous, or subsequent deed, grant, or assignment of an interest or estate in the
526 Property, or any portion thereof, to the Grantee, or its successors or assigns. It is the
527 express intent of the parties that this Easement not be extinguished by, merged into,
528 modified, or otherwise deemed affected by any other interest or estate in the Property
529 now or hereafter held by the Grantee or its successors or assigns.
530

531 *20. Transfer of Property Interest.*
532

533 Any time the Property itself, or any interest in it, is transferred by the Landowner to any
534 third party, the Landowner shall notify the Grantee and the Department of Conservation
535 in writing at least thirty (30) days prior to the transfer of the Property or interest, and the
536 document of conveyance shall expressly incorporate by reference this Easement. Any
537 document conveying a lease of the Property shall expressly incorporate by reference this
538 Easement. Failure of the Landowner to do so shall not impair the validity of this
539 Easement or limit its enforceability in any way.
540
541

542 21. *Amendment of Easement.*

543

544 This Easement may be amended only with the written consent of the Landowner, the
545 Grantee, and the Director of the Department of Conservation. Any such amendment shall
546 be consistent with the Purpose of this Easement and with the Grantee's easement
547 amendment policies, and shall comply with all applicable laws, including Section 170(h)
548 of the Internal Revenue Code, or any regulations promulgated in accordance with that
549 section, and with Section 815 et seq. of the California Civil Code, and the California
550 Farmland Conservancy Program Act as codified in Section 10200 et seq. of the California
551 Public Resources Code, and any regulations promulgated thereunder. No amendment
552 shall diminish or affect the perpetual duration or the Purpose of this Easement, nor the
553 status or rights of the Grantee under the terms of this Easement.

554

555 This Easement and any amendment to it shall be recorded in [*County name*] County.
556 Copies of any amendments to this Easement shall be provided to the Department of
557 Conservation within 30 days of recordation.

558

559

560 22. *Termination of Easement.*

561 *(NOTE: Landowners may waive the administrative termination provision defined in*
562 *Public Resources Code sections 10270-77, in which case Scenario A shall be used below,*
563 *with potential easement termination shall be governed solely by judicial termination*
564 *proceedings. Otherwise, Scenario B on page 15 shall be used.)*

565

566 ***[Scenario A: Landowner's Administrative Termination Rights Waived]***

567

568 (a) It is the intention of the parties that the Conservation Purpose of this Easement
569 shall be carried out forever as provided in the Section 10211 of the Public
570 Resources Code and Section 815 et seq. of the Civil Code. Accordingly,
571 Landowner hereby waives on behalf of the Landowner and the Landowner's
572 successors and assigns all rights at law or inequity to request a termination of this
573 Easement pursuant to Public Resources Code Sections 10270 et seq.

574

575 Waiver of Right to Request Administrative Termination:

576

577 Landowner's Initials: _____ [*and* _____]

578

579 (b) Other than pursuant to eminent domain or purchase in lieu of eminent
580 domain, no other voluntary or involuntary sale, exchange, conversion, or
581 conveyance of any kind of all or part of the Property, or of any interest in it, shall
582 limit or terminate the provisions of this Easement. This Easement can only be
583 terminated or extinguished, whether in whole or in part, by judicial proceedings in
584 a court of competent jurisdiction. The fact that the land is not in agricultural use
585 is not reason for termination of this Easement.

586

587 Termination of the Easement through condemnation is subject to the requirements

588 of Section 10261 of the Public Resources Code, the eminent domain laws of the
589 State of California, federal law, and this Easement. The Property may not be
590 taken by eminent domain or in lieu of eminent domain if the planned use is more
591 than seven (7) years in the future (California Code of Civil Procedure section
592 1240.220). Grantee shall be paid by the condemnor the value of the Easement at
593 the time of condemnation (Public Resources Code section 10261(a)(2)). Purchase
594 in lieu of condemnation, or settlement of an eminent domain proceeding, shall
595 occur pursuant to applicable laws and procedures, including but not limited to
596 California Government Code sections 7267.1 and 7267.2, and shall require
597 approval of the Grantee, the Director of the Department, and the [match funder].
598 Grantee shall have an opportunity to accompany the appraiser for the condemning
599 agency when the appraiser goes on the Property with Landowner. Should this
600 Easement be condemned or otherwise terminated on any portion of the Property,
601 the balance of the Property shall remain subject to this Easement. In this event,
602 all relevant related documents shall be updated and re-recorded by the Grantee to
603 reflect the modified easement area. Encumbrances junior to this Easement shall
604 remain subordinate to the Easement as amended.
605

606 (c) In the event the Landowner is notified that a public entity intends or proposes
607 to acquire the Easement Area in whole or in part by eminent domain, the
608 Landowner shall provide the Grantee, the Department, and the [match funder]
609 with a copy of the notification within five (5) business days of having received
610 such notification. In the event the Landowner intends to seek termination of the
611 easement pursuant to initiation of a judicial proceeding which is not based on
612 eminent domain, the Landowner shall notify the Grantee, the Department and the
613 [match funder] of such intent no later than sixty (60) days before initiating such
614 proceedings. No inaction or silence by the Grantee, the Department, or the
615 [match funder] shall be construed as abandonment of the Easement.
616

617 (d) The grant of this Easement gives rise to a property right immediately vested in
618 the Grantee. For the purpose of determining the amount to be paid by the
619 Landowner in a repurchase of the Easement pursuant to judicial proceedings, and
620 for the purpose of allocating proceeds from a sale or other disposition of the
621 Property at the time of termination, the Easement and the Grantee's property right
622 therein shall have a value equal to the difference between the current fair market
623 value of the Property as if unencumbered by this Easement and the current fair
624 market value of the Property encumbered by this Easement, each as determined
625 on or about the date of termination. The values shall be determined by an
626 appraisal performed by an appraiser jointly selected by the Landowner and the
627 Grantee. The Landowner shall pay the cost of the appraisal, and it is subject to
628 approval by the Department and the [match funder]. Nothing herein shall prevent
629 the Landowner, the Grantee, the Department, or the [match funder] from having
630 an appraisal prepared at its own expense.
631

632 (e) Upon approval of termination of this Easement or any portion thereof, the
633 Landowner shall reimburse the State of California, Department of Conservation

634 California Farmland Conservancy Program Fund and *[match funder]*, the amount
635 equal to the value of the Easement that is terminated. If the entire Easement is
636 terminated, the amount required to be paid in connection with the Landowner's
637 repurchase shall be distributed as follows: (i) to the State of California,
638 Department of Conservation, California Farmland Conservancy Program Fund,
639 ?%; and (ii) to the *[match funder]*, ?%, representing the proportion of easement
640 value originally contributed by these agencies for the purchase of this Easement.
641 If only a portion of the Easement is so terminated, the reimbursement shall be
642 pro-rated. This Easement shall not be deemed terminated under a judicial
643 termination proceeding until such payment is received by the State of California,
644 Department of Conservation California Farmland Conservancy Program Fund, the
645 *[match funder]* and Grantee *[if any bargain sale occurred]*. Grantee, in using any
646 funds received from the termination of this Easement, shall use the funds in a
647 manner consistent with the Purpose of this Easement.

648

649 *(NOTE: Additional language IRS language may need to be used for landowners*
650 *seeking IRS recognition of a charitable donation)*

651

652 (f) If the Grantee obtains payment on a claim under a title insurance policy
653 insuring this Easement, payment shall be distributed as set forth in Section 22(e).

654

655 ***[Scenario B: Landowner's Administrative Termination Rights NOT Waived]***

656

657 (a) Other than pursuant to eminent domain or purchase in lieu of eminent domain,
658 no other voluntary or involuntary sale, exchange, conversion, or conveyance of
659 any kind of all or part of the Property, or of any interest in it, shall limit or
660 terminate the provisions of this Easement. This Easement can only be terminated
661 or extinguished, whether in whole or in part, by judicial proceedings in a court of
662 competent jurisdiction or by administrative termination pursuant to Section
663 10270-10277 of the Public Resources Code. The fact that the land is not in
664 agricultural use is not reason for termination of this Easement.

665

666 Termination of the Easement through condemnation is subject to the requirements
667 of Section 10261 of the Public Resources Code, the eminent domain laws of the
668 State of California, federal law, and this Easement. The Property may not be
669 taken by eminent domain or in lieu of eminent domain if the planned use is more
670 than seven (7) years in the future (California Code of Civil Procedure section
671 1240.220). Grantee shall be paid by the condemnor the value of the Easement at
672 the time of condemnation (Public Resources Code section 10261(a)(2)). Purchase
673 in lieu of condemnation, or settlement of an eminent domain proceeding, shall
674 occur pursuant to applicable laws and procedures, including but not limited to
675 California Government Code sections 7267.1 and 7267.2, and shall require
676 approval of the Grantee, the Director of the Department, and the *[match funder]*.
677 Grantee shall have an opportunity to accompany the appraiser for the condemning
678 agency when the appraiser goes on the Property with Landowner. Should this
679 Easement be condemned or otherwise terminated on any portion of the Property,

680 the balance of the Property shall remain subject to this Easement. In this event,
681 all relevant related documents shall be updated and re-recorded by the Grantee to
682 reflect the modified easement area. Encumbrances junior to this Easement shall
683 remain subordinate to the Easement as amended.

684
685 (b) In the event the Landowner is notified that a public entity intends or proposes
686 to acquire the Easement Area in whole or in part by eminent domain, the
687 Landowner shall provide the Grantee, the Department, and the [match funder]
688 with a copy of the notification within five (5) business days of having received
689 such notification. In the event the Landowner intends to seek termination of the
690 easement pursuant to administrative termination or judicial proceeding that is not
691 based on eminent domain, the Landowner shall notify the Grantee, the
692 Department and the [match funder] of such intent no later than sixty (60) days
693 before initiating such proceedings. No inaction or silence by the Grantee, the
694 Department, or the [match funder] shall be construed as abandonment of the
695 Easement.

696
697 (c) The grant of this Easement gives rise to a property right immediately vested in
698 the Grantee. For the purpose of determining the amount to be paid by the
699 Landowner in a repurchase of the Easement at the time of a administrative
700 termination or pursuant to judicial proceedings, and for the purpose of allocating
701 proceeds from a sale or other disposition of the Property at the time of
702 termination, the Easement and the Grantee's property right therein shall have a
703 value equal to the difference between the current fair market value of the Property
704 as if unencumbered by this Easement and the current fair market value of the
705 Property encumbered by this Easement, each as determined on or about the date
706 of termination. The values shall be determined by an appraisal performed by an
707 appraiser jointly selected by the Landowner and the Grantee. The Landowner
708 shall pay the cost of the appraisal, and it is subject to approval by the Department
709 and the [match funder]. Nothing herein shall prevent the Landowner, the Grantee,
710 the Department, or the [match funder] from having an appraisal prepared at its
711 own expense.

712
713 (d) Upon approval of termination of this Easement or any portion thereof, the
714 Landowner shall reimburse the State of California, Department of Conservation
715 California Farmland Conservancy Program Fund and [match funder], the amount
716 equal to the value of the Easement that is terminated. If the entire Easement is
717 terminated, the amount required to be paid in connection with the Landowner's
718 repurchase shall be distributed as follows: (i) to the State of California,
719 Department of Conservation, California Farmland Conservancy Program Fund,
720 ?%; and (ii) to the [match funder], ?%, representing the proportion of easement
721 value originally contributed by these agencies for the purchase of this Easement.
722 If only a portion of the Easement is so terminated, the reimbursement shall be
723 pro-rated. This Easement shall not be deemed terminated under a judicial
724 termination proceeding until such payment is received by the State of California,
725 Department of Conservation California Farmland Conservancy Program Fund, the

726 [match funder] and Grantee [if any bargain sale occurred]. Grantee, in using any
727 funds received from the termination of this Easement, shall use the funds in a
728 manner consistent with the Purpose of this Easement.

729
730 (NOTE: Additional language IRS language may need to be used for landowners
731 seeking IRS recognition of a charitable donation)

732
733 (s) If the Grantee obtains payment on a claim under a title insurance policy
734 insuring this Easement, payment shall be distributed as set forth in Section 22(d).

735
736 23. Interpretation.

737
738 (a) This Easement shall be interpreted under the laws of the State of California,
739 resolving any ambiguities and questions of the validity of specific provisions so as
740 to give maximum effect to its conservation purposes.

741
742 (b) References to specific authorities in this Easement shall be to the statute, rule,
743 regulation, ordinance, or other legal provision that is in effect at the time this
744 Easement becomes effective.

745
746 (c) No provision of this Easement shall constitute governmental approval of any
747 improvements, construction or other activities that may be permitted under this
748 Easement.

749
750 24. Notices.

751
752 Any notices to the Landowner and the Grantee required by this Easement shall be in
753 writing and shall be personally delivered or sent by First-Class Mail to the following
754 addresses, unless a party has been notified by the other of a change of address:

755
756 To the Landowner:

757
758 _____
759 _____
760 _____

761
762 To the Grantee:

763
764 _____
765 _____
766 _____

767
768 Any notices required by this Easement to be sent to the Department shall be in writing
769 and shall be personally delivered or sent by first class mail, at the following address,
770 unless a party has been notified by the Department of a change of address:

771

772 To the Department of Conservation:

773

774 Department of Conservation

775 801 K Street, MS 18-01

776 Sacramento, CA 95814

777 Attn: California Farmland Conservancy Program

778

779 25. *The Landowner's Environmental Warranty.*

780

781 (a) Nothing in this Easement shall be construed as giving rise to any right or
782 ability in the Grantee or the Department of Conservation to exercise physical or
783 management control over the day-to-day operations of the Property, or any of the
784 Landowner's activities on the Property, or otherwise to become an "owner" or
785 "operator" with respect to the Property as those words are defined and used in
786 environmental laws, including the Comprehensive Environmental Response,
787 Compensation, and Liability Act of 1980 ("CERCLA"), as amended or any
788 corresponding state and local statute or ordinance.

789

790 (b) The Landowner warrants that it has no actual knowledge of a release or
791 threatened release of any Hazardous Materials on, at, beneath or from the
792 Property. Moreover the Landowner hereby promises to defend and indemnify the
793 Grantee and the Department of Conservation against all litigation, claims,
794 demands, penalties and damages, including reasonable attorneys' fees, arising
795 from or connected with the release or threatened release of any Hazardous
796 Materials on, at, beneath or from the Property, or arising from or connected with a
797 violation of any Environmental Laws. The Landowner's indemnification
798 obligation shall not be affected by any authorizations provided by the Grantee to
799 the Landowner with respect to the Property or any restoration activities carried
800 out by the Grantee at the Property; provided, however, that the Grantee shall be
801 responsible for any Hazardous Materials contributed after this date to the Property
802 by the Grantee.

803

804 (c) The Landowner warrants that it shall remain in compliance with, all applicable
805 Environmental Laws. The Landowner warrants that there are no notices by any
806 governmental authority of any violation or alleged violation of, non-compliance
807 or alleged non-compliance with or any liability under any Environmental Law
808 relating to the operations or conditions of the Property.

809

810 (d) "Environmental Law" or "Environmental Laws" means any and all Federal,
811 state, local or municipal laws, rules, orders, regulations, statutes, ordinances,
812 codes, guidelines, policies or requirements of any governmental authority
813 regulating or imposing standards of liability or standards of conduct (including
814 common law) concerning air, water, solid waste, Hazardous Materials, worker
815 and community right-to-know, hazard communication, noise, radioactive
816 material, resource protection, subdivision, inland wetlands and watercourses,
817 health protection and similar environmental health, safety, building and land use

818 as may now or at any time hereafter be in effect.

819

820 (e) "Hazardous Materials" means any petroleum, petroleum products, fuel oil,
821 waste oils, explosives, reactive materials, ignitable materials, corrosive materials,
822 hazardous chemicals, hazardous wastes, hazardous substances, extremely
823 hazardous substances, toxic substances, toxic chemicals, radioactive materials,
824 infectious materials and any other element, compound, mixture, solution or
825 substance which may pose a present or potential hazard to human health or the
826 environment or any other material defined and regulated by Environmental Laws.

827

828 (f) If at any time after the effective date of this Easement there occurs a release,
829 discharge or other incident in, on, or about the Property of any substance now or
830 hereafter defined, listed, or otherwise classified pursuant to any federal, state, or
831 local law, regulation, or requirement as hazardous, toxic, polluting, or otherwise
832 contaminating to the air, water, or soil, or in any way harmful or threatening to
833 human health or the environment, the Landowner agrees to take any steps that are
834 required of the Landowner with respect thereto under federal, state, or local law
835 necessary to ensure its containment and remediation, including any cleanup.

836

837 26. *The Landowner's Title Warranty; No Prior Conservation Easements.*

838

839 The Landowner represents and warrants that it owns the entire fee simple interest in the
840 Property, including the entire mineral estate, and hereby promises to defend this
841 Easement against all claims that may be made against it. Any and all financial liens or
842 financial encumbrances with priority over this Easement existing as of the date of the
843 recording of this Easement have been subordinated. Exhibit C (Prior Encumbrances) sets
844 forth all prior encumbrances. The Landowner represents and warrants that the Property
845 is not subject to any other conservation easement whatsoever.

846

847 27. *Granting Subsequent Easements, Interests in Land, or Use Restrictions.*

848

849 With permission of the Grantee pursuant to Section 4, the Landowner may grant
850 subsequent easements, including conservation easements, interests in land, or use
851 restrictions on the Property. Under no circumstances shall the Grantee approve the
852 granting of subsequent easements, interests in land, or use restrictions that might diminish
853 or impair the agricultural productive capacity or open space character of the Property.
854 The Grantee's written approval shall be obtained at least thirty (30) days in advance of
855 the Landowner's execution of any proposed subsequent easement, interests in land, or use
856 restriction on the Property, and such subsequent easements, interests in land, and use
857 restrictions shall make reference to and be subordinate to this Easement. The Grantee
858 shall notify the Department immediately upon receipt of request by the Landowner to
859 grant a subsequent easement, interest in land, or use restriction on the Property. The
860 Grantee shall notify the Department in the event that it approves the grant of any
861 subsequent easement, interest in land, or use restriction on the Property.

862

863 28. *Severability.*

864

865 If any term, provision, covenant, condition, or restriction of this Easement is held by a
866 court of competent jurisdiction to be unlawful, invalid, void, unenforceable, or not
867 effective the remainder of this Easement shall remain in full force and effect and shall in
868 no way be affected, impaired, or invalidated.

869

870 29. *Entire Agreement.*

871

872 This Easement is the final and complete expression of the agreement between the parties
873 with respect to the subject matter contained herein. Any and all prior or
874 contemporaneous agreements with respect to this subject matter, written or oral, are
875 merged into and superseded by this written instrument.

876

877 30. *Acceptance.*

878

879 As attested by the signature of its [*Position title*] affixed hereto, as authorized by
880 Grantee's Board of Directors/Trustees, in exchange for consideration, the Grantee hereby
881 accepts without reservation the rights and responsibilities conveyed by this Deed of
882 Agricultural Conservation Easement.

883

884 To Have and To Hold, this Deed of Agricultural Conservation Easement unto the
885 Grantee, its successors and assigns, forever.

886

887 In Witness Whereof, the Landowner and the Grantee, intending to legally bind
888 themselves, have set their hands on the date first written above.

889

890 LANDOWNER

891

892 [*Landowner's Name*].

893

894 By: _____

895

896 Name: _____

897

898 Title: _____

899

900
901
902
903
904
905
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GRANTEE

[*Grantee's Name*],
a California nonprofit public benefit corporation

By: _____

Name: _____

Title: _____

ACKNOWLEDGMENTS

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958

State of California) ss
County of)

On _____ before me, _____, personally appeared
_____, who proved to me on the basis of satisfactory evidence to
be the person(s) whose name is subscribed to the within instrument and acknowledged to
me that he executed the same in his authorized capacity, and that by his signature on the
instrument the person, or the entity upon behalf of which the person acted, executed the
instrument.

I certify under PENALTY of PERJURY under the laws of the State of California that the
foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____

Notary Public

State of California) ss
County of)

On _____ before me, _____, personally appeared
_____, who proved to me on the basis of satisfactory evidence to
be the person(s) whose name is subscribed to the within instrument and acknowledged to
me that he executed the same in his authorized capacity, and that by his signature on the
instrument the person, or the entity upon behalf of which the person acted, executed the
instrument.

I certify under PENALTY of PERJURY under the laws of the State of California that the
foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____

Notary Public

959 Exhibit A (Legal Description) Attached
960 Exhibit B (Vicinity Map) Attached
961 Exhibit C (Building Envelope and Existing Improvements) Attached
962 Exhibit D (Prior Encumbrances) Attached
963
964

965
966
967
968
969
970

Exhibit A
(Legal Description)

971
972
973
974
975
976

Exhibit B
(Vicinity Map)

977
978
979
980
981
982

Exhibit C
(Building Envelope and Existing Improvements)

983
984
985
986
987

Exhibit D
(Prior Encumbrances)

EXHIBIT F

News & Events: [Join Riverside Land Conservancy, Mission Inn Foundation and Museum and Friends of Mt. R...](#)

 [Click' Here Subscribe to our New](#)

Conservation Easements

The Riverside Land Conservancy is increasingly making use of conservation easements as a conservation tool. A conservation easement (or conservation restriction) is a legal agreement between a landowner and a land trust or government agency that permanently limits uses of the land in order to protect its conservation value. It allows landowners to continue to own and use their land and to sell it or pass it on to heirs. Future owners continue to be bound by the easement's terms. Currently, RLC holds conservation easements on 801 acres in western Riverside and San Bernardino Counties including a conservation easement on the 150 acre Colton Dehii sands flower-loving fly Conservation Bank. RLC is in active negotiations to accept an additional 375 acres of conservation easements on sensitive open space and natural habitat areas.



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Or come to meet John Muir.



176 people like Riverside Land Conservancy.



Facebook social plugin



Riverside Land Conservancy
4075 Mission Inn Avenue, Riverside, CA 92501
Phone: (951) 788-0670
[Send Us An Email](#)
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DEPARTMENT OF TRANSPORTATION

DISTRICT 8

PLANNING

464 WEST 4th STREET, 6th Floor MS 725

SAN BERNARDINO, CA 92401-1400

PHONE (909) 383-4557

FAX (909) 383-5936

TTY (909) 383-6300

*Flex your power!
Be energy efficient!***RECEIVED**

MAR 20 2014

CITY OF MORENO VALLEY
Planning Division

March 17, 2014

Jeff Bradshaw
City of Moreno Valley
Planning Department
14177 Frederick Street
P.O. Box 88055
Moreno Valley, CA 92552ProLogis Eucalyptus Industrial Park (formerly ProLogis Park Moreno Valley Eucalyptus Project)
SCH # 2008021002

Mr. Bradshaw,

We have completed our review for above named project located south of State Route 60, east of Moreno Valley Auto Mall, and adjacent to and west of the Quincy Channel. The proposed project consists of construction of a warehouse facility with six individual warehouses of varying sizes with a total of 2,244,638 square feet on 122.8 acres. The project includes construction of parking and driving areas, detention basins, erosion protection and bridge over Quincy Channel, offsite road and utility improvements, and landscaping along the perimeter and roadway frontages.

As the owner and operator of the State Highway System (SHS), it is our responsibility to coordinate and consult with local jurisdictions when proposed development may impact our facilities. As the responsible agency under the California Environmental Quality Act (CEQA), it is also our responsibility to make recommendations to offset associated impacts with the proposed project. Although the project is under the jurisdiction of the City of Moreno Valley due to the Project's potential impact to State facilities it is also subject to the policies and regulations that govern the SHS.

We recommend the following to be provided:

- It is recommended that a system of coordinating these fees with a state sponsored program of collecting transportation mitigation fees from development projects be developed to implement the necessary improvements and mitigation measures on the State Highway System.

We appreciate the opportunity to offer comments concerning this project. If you have any questions regarding this letter, please contact Talvin Dennis at (909) 383-6908 or myself at (909) 383-4557 for assistance.

Mr. Bradshaw
March 17, 2014
Page 2

Sincerely,



DANIEL KOPULSKY
Office Chief
Community Planning/IGR-CEQA

Darisa Vargas

From: George Hague <gbhague@gmail.com>
Sent: Wednesday, March 19, 2014 10:02 PM
To: Chris Ormsby
Cc: John Terell; Jeffrey Bradshaw
Subject: SAN JACINTO VALLEY: Audubon booklet shows many species | Local News | PE.com

<http://www.pe.com/local-news/columns/cassie-macduff-headlines/20140317-san-jacinto-valley-audubon-booklet-shows-many-species.ece>

Good afternoon/evening Planning Commissioners,

The booklet I gave you at your last meeting is the subject of the below article. If you use the above link you will be able to see at least one picture that goes with the below. I hope you read both the article and the text of the booklet. The public has paid more than \$80,000,000 in tax dollars for this wonderful area known as the San Jacinto Wildlife Area. If you wish to have a guided visit to the area, Google the Friends of the Northern San Jacinto Valley and read their latest newsletter which will provide you a list of walks during the next two months which are some of the best times to visit.

Take care,

George Hague

SAN JACINTO VALLEY: Audubon booklet shows many species

An Audubon photo booklet, “Birds of the San Jacinto Valley,” shows myriad species that share the wildlife area. Audubon put out the book to highlight the area’s importance.

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BY CASSIE MACDUFF
March 17, 2014; 08:20 PM

When a friend gave me a free booklet about the birds of the San Jacinto Wildlife Area, I was stunned by the variety and beauty of the species that could be found so close to Riverside.

The booklet, published by the San Bernardino Valley Audubon Society, contains 86 color photos taken by Audubon members at the wildlife area and neighboring Lake Perris.

A vermilion flycatcher, a cinnamon teal duck, a snowy egret, Northern Harriers, bald eagles, a white-tailed kite poised to pounce on its prey, and an amazing variety of shorebirds with bills long and longer, all grace the booklet.

I had heard of the wildlife area, but had never seen it. Now I was determined to visit it and view the burgeoning avian population for myself.

I couldn't have picked a better time of year.

When I arrived last Tuesday morning, the rocky slopes surrounding the valley were turning green from the recent rain. And the warm spring weather was bringing out flocks and pairs of birds by the dozens.

A group of birders from Oceanside was just setting up. They let me look through their scope at a flock of ibis on a distant pond.

The area's former manager, Tom Paulek, and his wife, Susan Nash, showed me around, identifying the birds and explaining their significance.

The shallow ponds, flooded with reclaimed water from the Eastern Municipal Water District, attract all kinds of wading birds that skim the surface or probe the mud for insects, worms and grubs.

Some that we saw that day are rare in the inland area.

Long-billed curlews, their downward-curving bills almost as long as their bodies, were tiptoeing through the waters and pecking at invisible food sources.

American avocets with up-turned bills, and stilts with long red legs under petite black-and-white bodies, plied the same waters but at different depths, feeding on different bugs. Two kinds of egrets stood quietly and stared into the water, watching for prey.

At one point, a golden eagle swooped by.

By far, the highlight of the morning was seeing a pair of great horned owls.

I spotted one soaring over a newly plowed field, circling low then disappearing behind a stand of trees. As we came closer, a second owl flew out of the trees to a nearby limb, perching high and watching at us.

Wildlife advocates like Paulek and Nash are concerned that the water district will raise the discounted price the wildlife area has been paying since 1987.

The district already has said it plans to cut the area's annual water allocation from 4,500 acre-feet to 2,200 acre-feet. That's been enough to flood the ponds part of the year, but it won't be enough to expand the wildlife area as planned, Paulek and Nash said.

Audubon put out the booklet to highlight the importance of the area to birds migrating between Alaska and South America. The ponds attract shorebirds and ducks, which in turn, along with rodents in the fields, attract raptors — more than 20 species, according to the Audubon booklet.

The authors say the area is threatened by proposed developments to the north and south:

World Logistics Center, a 40 million square-foot warehouse complex, is proposed at the north end of the wildlife area in Moreno Valley.

The Villages of Lakeview, with more than 11,000 homes on 2,800 acres, was successfully challenged in court, sending the environmental report back for revisions. But the proposal is expected to return with the revisions.

Audubon members are worried surrounding development will eventually crowd out many of the species.

“You can’t just preserve the wildlife area alone and expect to maintain the numbers and diversity of birds,” said Dave Goodward, a naturalist and retired science teacher who wrote much of the booklet.

“The farmers’ fields are very important for a lot of birds to forage in, to look for food,” he said. If the agricultural land is developed, some species will no longer be able to find food, he said.

Environmentalists aren’t the only ones concerned.

Elmer Lackey of the wildlife area’s Little Ramona Duck Club said his group is “100 percent against” the projects.

“I think it’ll kill us,” he said. “It will affect our duck club. It will dry up this valley.”

If homes are built nearby, Lackey said, eventually residents will complain about the shooting. That’s what happened when the Irvine Co. was allowed to build next to the Irvine Duck Club, he said: A homeowner sued; the hunting club was shut down.

The Audubon Society sent copies of the San Jacinto Valley bird booklet to members of the Moreno Valley City Council and Riverside County Board of Supervisors, who will decide on the projects.

I called several to find out what they thought.

Supervisor Marion Ashley, whose district includes the area, said the birds are really important, and the wildlife area is core to Riverside County’s multi-species habitat plan.

“The main thing is to protect the birds we have and, if anything, grow them,” Ashley said. Any development will have to be consistent with the habitat plan, he said.

“It’s all part of the fabric of life,” he said. “I really appreciate (Audubon) doing the booklet. It will bring the board’s awareness of the importance of the birds and wildlife.”

Moreno Valley Councilman Richard Stewart didn’t remember seeing the booklet but said he is very familiar with the issues, adding, “We can’t stop development on thousands of acres of... just because there’s a wildlife area near it and Lake Perris.”

To see the booklet for yourself, log onto sbvas.net and scroll down to “Birds of the San Jacinto Valley.” That will take you to the conservation page. Then click on the booklet link to open it.

Contact Cassie MacDuff at 951-368-9470 or cmacduff@PE.com

Key facts

San Jacinto Wildlife Area: Established in 1979 by the state Department of Fish and Wildlife to make up for wetlands and riparian habitat lost to the state water project. Consists of 19,000 acres east of Lake Perris. Attracts thousands of migrating ducks, shore birds, raptors and other species that co-exist on the flooded ponds and dry fields.

Villages of Lakeview: Proposed 2,800-acre, 11,350-home development south of wildlife area on unincorporated county land. Court struck down environmental report last summer. Project being revised.

World Logistics Center: Proposed 40 million square foot, distribution center complex north of the wildlife area in Moreno Valley. Environmental report being revised, may come to planning commission later this year.

Eastern Municipal Water District: Proposed to cut the wildlife area's allocation from 4,500 acre-feet of treated wastewater annually to 2,200 acre-feet. The water, which can't be used for drinking, is used to create ponds and wetlands as shelter, feeding grounds and breeding grounds for many species of birds and waterfowl.

Darisa Vargas

From: George Hague <gbhague@gmail.com>
Sent: Sunday, March 09, 2014 11:05 PM
To: Jeffrey Bradshaw
Cc: Chris Ormsby; John Terell
Subject: Prologis Planning Commission letter

<http://www.pe.com/local-news/riverside-county/moreno-valley/moreno-valley-headlines-index/20140307-moreno-valley-warehouse-project-subject-of-hearing.ece>

Article: Planning Commission meeting on Prologis warehouse with 2,000 trucks per day (Press-Enterprise 3-7-2014)

Dictionary

review |ri'vyoō|noun1 a formal assessment or examination of something with the possibility or intention of instituting change if necessary : *a comprehensive review of defense policy | all areas of the company will come under review.* • a critical appraisal of a book, play, movie, exhibition, etc., published in a newspaper or magazine.

Good afternoon/evening Planning Commissioner

re: Prologis Eucalyptus Industrial Park Final EIR

On page three of the Staff Report it reads that "the Planning Commission **reviewed** and considered the information contained in the Final EIR". This means as defined from the dictionary above you have conducted a formal assessment, examination and critical appraisal of the Final EIR. Read the first paragraph of page three of the Final EIR to know what you must read prior to voting. This specifically includes the Draft EIR and all the comment letters written on the document as well as the Statement of Overriding Consideration, Staff Reports and several other important sections. When you vote on this project you are affirming you are aware of all aspects of this project and believe it is worth all the impacts which can not be mitigated. It is important that in your review that you read pages 77-115 of exhibit A.

This project will not just make its 2,000 daily toxic diesel trucks (mentioned in the above link) go from SR-60 to/from the project by way of Redlands Blvd or Moreno Beach. A significant number of their trucks will head south to Alessandro Blvd as you can read on pages 256-260 of Appendix A. You can read how little their fair share is to improve these intersections which means it will take many years before full improvements will take place. They stop their impacts to Alessandro Blvd at Nason Street, because of the City's use of only a five mile radius for a projects's traffic impacts. The Sierra Club and some judges have stated such a limited range is not enough to show the true impacts of a project. Many of these trucks will use Alessandro Blvd all the way to/from the I-215 and in some cases going through the City of Riverside. Pages 111 - 115 will explain more about these five mile traffic impacts which may not, as stated, be fully mitigated until 2035. They continue to avoid doing the proper analysis which would include the 41,600,000 sq ft World Logistic Center with its more than 70,000 additional Daily trips added to our City and surrounding infrastructure. Two years ago in March of 2012 agencies/groups and individuals were writing comments about the WLC's Notice of Preparation and the City knew about the WLC in 2011 -- the Prologis Draft EIR didn't come out until July 2012. This makes their traffic analysis invalid and they cannot just say that we thought about our project before the WLC formalized theirs. The fact that the existing traffic data is three years old

(2011) also makes it an invalid analysis. They also do not address impacts to the 1-215, I-10, or SR-91 which 2,000 daily diesel trucks and many other project related vehicles will impact -- in addition to many of City's surface streets.

Based on the Staff's recommendation you are suppose to believe the following quote about another toxic and traffic clogging warehouse added to our City and vote yes "c) Environmental, economic, social and other considerations and benefits derived from the development of the proposed Project **OVERRIDE** and make infeasible any alternatives to the proposed Project OR future mitigation measures beyond those incorporated into the proposed Project." (Page 130 Appendix A) Within everything you are suppose to read prior to voting they mention it is possible to approve a portion of the project and also allow the Auto Mall to expand. This shows an alternative is possible and invalidates the above quote.

The Sierra Club believes that the above is just one of a number of reasons to vote no or tell them to go back and redo their EIR to allow you to have valid data prior to voting. You represent the residents of Moreno Valley and your are our voices. I do not know many residents who would accept all of the Statement of Overriding Considerations for this project which displaces land zoned for homes and will make it impossible for other nearby lands also zoned for homes to be built. This is because it is recommended that sensitive receptors like homes should be 1,500 yards away from warehouses and their toxic diesel trucks. Will all current homes be 1,500 yards away from Prologis or even 1000 yards?

Take care,

George Hague Sierra Club Moreno Valley Group Conservation Chair

C. ENVIRONMENTAL IMPACTS NOT FULLY MITIGATED TO A LEVEL OF LESS-THAN-SIGNIFICANT

The Moreno Valley City Council finds the following environmental impacts identified in the EIR remain significant even after application of all feasible mitigation measures: aesthetics (individually and cumulative), agricultural resources (individually and cumulative), air quality (individually and cumulative), cumulative population and housing, and transportation. In accordance with CEQA Guidelines Section 15092(b)(2), the City Council of the City of Moreno Valley cannot approve the Project unless it first finds (1) under *Public Resources Code* Section 21081(a)(3), and CEQA Guidelines Section 15091(a)(3), that specific economic, legal, social technological, or other considerations, including provisions of employment opportunities to highly trained workers, make infeasible the mitigation measures or Project alternatives identified in the EIR; and (2) under CEQA Guidelines section 15092(b), that the remaining significant effects are acceptable due to overriding concerns described in the CEQA Guidelines Section 15093 and, therefore, a statement of overriding considerations is included herein. (Page 77 of Exhibit A of Prologis Read pages 77-115)

VI. STATEMENT OF OVERRIDING CONSIDERATIONS

The Moreno Valley City Council adopts this Statement of Overriding Considerations with respect to the significant unavoidable impacts associated with adoption of the Project as addressed in the EIR, specifically:

1. Agricultural Impacts—Conversion of State Designated Farmland; 2. Agricultural Impacts—Conversion to a Non-Agricultural Use; and
- a. Cumulative Agricultural Impacts 3. Air Quality Impact—Construction Air Pollutant Emissions;
4. Air Quality Impact—Operational Air Pollutant Emissions; and Cumulative Air Pollutant Emissions.
5. Climate Change and GHG Emissions
6. Transportation—Existing and Cumulative Impacts to State Freeway Segments and Freeway Merge/Diverge Areas
(Pages 126-127 of Exhibit A)

April 24, 2024

To: Moreno Valley Planning Commission
re: ProLogis Exolytus Warehouse Project

The developer states that even though a recent court case allows you to require Ag Mitigation which will also serve as a foraging, they are unable to find an Ag mitigation bank in Riverside Co. I believe there will be an Ag mitigation program by occupancy of the project and you could require mitigation at that time. The state does have such programs and the developer could use those - even if the county doesn't have an Ag mitigation program.

Even though ^{the developer} ~~you~~ believes ^{they} ~~you~~ do not need to include the World Logistic Center (WLC) in their cumulative impacts, it is our opinion that the WLC was a foreseeable project based on newspaper articles and conversations in the community.

Caltrans wants a mitigation Bank. Will you require this project to participate in such. I am sure all in the room would appreciate anything you can do to mitigate noise on SR-60.

The WLC will cast a cancer plume over basically all of Moreno Valley - this project as you heard will add to it

This project is being honest - to a point with traffic impacts. Moreno Beach south will be impacted - including a new housing housing tract being build now near the substation. The environmental document also has impacts at Alessandro Blvd at Nason - but not further west because of the city's 5 mile limit which isn't far enough to address full impacts of its traffic.

The city's General Plan is now internally inconsistent with all the changes since its adoption and this project only increases that problem.

George Hague
Sierra Club

Page 2 of 2

Johnson & Sedlack

A T T O R N E Y S at L A W

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April 24, 2014

VIA US MAIL AND EMAIL

Planning Commission
c/o Jane Halstead, City Clerk
City of Moreno Valley
14177 Frederick Street
Moreno Valley, CA 92553
janeh@moval.org

RE: Comments on Prologis Eucalyptus Industrial Park Project (PA07-0081 et al)

Greetings:

On behalf of the Sierra Club, Moreno Valley Group, and Residents for a Livable Moreno Valley, I hereby submit these comments on, and in opposition to, the Prologis Eucalyptus Industrial Park Project, Public Hearing Item 1. I hereby incorporate all comments previously submitted, and ask that the Planning Commission considered those prior comments as those set forth in full herein.

The FEIR has been updated to incorporate an August 31, 2012 letter from Lozeau Drury, LLP. The changes made and responses to comments in the updated FEIR illustrate, rather than resolve, defects of the EIR. For example, response to comment 12 at page 222 fails to address any of the proposed mitigation to further reduce GHG impacts where such effects are many times SCAQMD's proposed quantitative threshold. The addition of MM 4.6.6.1A provides for testing onsite for contamination by agricultural chemicals which should be done in the EIR prior to consideration by the City of Project approval due to the farming which occurred after the Phase 1 assessment and the risk of pesticides onsite not previously addressed. Air quality and health risk impacts are also shown to be understated, yet receive only brief responses in the FEIR. The responses to comments ignore/overlook whole portions of the comments made; for example, the responses made to Letter D-4B and D-4C fail to address the very important issues raised therein. Overall, the responses for this letter does not evidence good faith, reasoned analysis, or resolve the substantial concerns raised.

More importantly, this minor update to the FEIR does not address or resolve the many significant flaws raised in the other comments on the EIR and made previously, which demand the EIR and

its studies be significantly modified, updated, and recirculated prior to consideration of this Project for approval. The City should determine not to approve the Project and not to certify this defective EIR.

It is apparent that this Project is good only for the developer and bad for the environment and people of Moreno Valley. The Project requires City approval of ten applications for development including a General Plan Amendment and Zone Change, undermining future planning for development in the City. The existing General Plan designation and zoning for the project site consists of a balanced collection of land uses to meet a specific need of the City, which this Project would entirely obliterate. (i.e. by converting for Project development land presently designated in the General Plan R15, R5, and R2; Zoning BP, BPX, R15, R5, RA-2, and PAKO-land)

The Project will also result in, as disclosed in the EIR, significant and unmitigated impacts to aesthetics, agricultural resources, air quality, population and housing, and transportation. In addition, many commenters cited a lack of evaluation, disclosure, and adequate mitigation regarding numerous other impacts, including health risks, air quality, GHGs, biology, etc. Given the harm to the community and region expected to be caused by the Project, and the failures of the EIR prepared for the Project, Project denial is well supported. At a minimum, the EIR and its technical studies must be significantly updated and recirculated before this Project is even considered for approval by the City.

Additionally, Caltrans sent a letter to the City dated March 17, 2014 recommending that the City of Moreno Valley coordinate a state sponsored program of collecting transportation mitigation fees from development projects to make improvements to the State Highway System. I concur that such a fee program is essential to ensuring that all feasible traffic mitigation is adopted for this Project and others like it in the City. The City should take Caltrans' request to heart and work with the State in developing a mitigation fee program for highway impacts *prior to* making any approval relative to this Project. Until such a program is adopted, the City ignores its obligations to adopt all feasible mitigation for traffic impacts for this Project and others.

For these reasons and those previously set forth in comments provided on this Project, I respectfully request that you deny the Project and recommend denial of this Project to the City Council.

Sincerely,



Raymond W. Johnson
JOHNSON & SEDLACK



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F 510.836.4205

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Oakland, Ca 94607

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richard@lozeaudrury.com

Via Electronic Mail and Hand-Delivery

April 23, 2014

Jeff Bradshaw
Associate Planner
City of Moreno Valley, Planning Division
14177 Frederick Street
Post Office Box 88005
Moreno Valley, CA 92553
Email: jeffreyb@moval.org

RE: Comment on Final Environmental Impact Report for ProLogis Eucalyptus Industrial Park (State Clearinghouse No. 2008021002)

Dear Mr. Bradshaw:

I am writing on behalf of Laborers International Union of North America, Local Union No. 1184 and its members living in Riverside County (collectively "LIUNA Local 1184") regarding the Final Environmental Impact Report ("FEIR") prepared for the ProLogis Eucalyptus Industrial Park, State Clearinghouse No. 2008021002 ("Project").

LIUNA Local 1184 appreciates the Planning Commission's decision to delay its consideration of the FEIR until staff and the EIR consultant reviewed and prepared responses to our comments of August 2012. Unfortunately, it appears the brief delay was not sufficient time for staff to adequately review and consider those comments as many of the concerns expressed about the DEIR still remain in regard to the FEIR. In addition, LIUNA Local 1184 is particularly concerned that the Commission's staff is proposing not to address the significant new information of the proposed nearby World Logistics Center which, when combined with the ProLogis project, the two projects alone will emit as much greenhouse gasses per year in 2020 as the City has established as its total GHG emission target for that year. In other words, the two projects together will emit as much GHGs as the entire City and will cause the City to emit twice as many GHGs as its announced goal as of 2020. Obviously, this is significant new information regarding a serious significant impact of the ProLogis Project's cumulative GHG emissions that must be addressed in a recirculated EIR for public review. These and other concerns are elaborated upon in the following comments.

In addition, LIUNA Local 1184 has had its consultants who prepared comments in 2012 review the staff's responses to comments. Matthew Hagemann, P.G., C.Hg. and Anders Sutherland, of SWAPE Consulting and Dr. James Clark, Ph.D., have reviewed the FEIR and prepared detailed comments regarding numerous technical shortcomings and omissions in the responses. SWAPE Comments (attached as Exhibit A); Clark Comments (attached as Exhibit B). Although this comment will highlight some of those technical comments below, the Commission should review each of the concerns raised in those expert comments.

LIUNA Local 1184 requests that the Planning Commission not certify the EIR at this time but request staff to reconsider the analyses and require additional mitigation measures in order to address the Project's significant air quality impacts, GHG emissions, health risks, farmland conversion, and hazardous material risks that the Project as proposed will cause in the City of Moreno Valley.

A. The FEIR's Failure To Tackle The Project's Massive GHG Emissions is an Abuse of Discretion.

The total GHG emissions that the City claims it will achieve by 2020 are 798,693 metric tons of CO₂ equivalent per year for the entire City. *See* World Logistics Center DEIR, p. 4.7-9 (excerpts attached as Exhibit C). Yet the Prologis Project alone is projected to emit 79,000 metric tons of CO₂e per year at full build-out – a full ten percent of the City's target. The FEIR basically relies upon a wish and a prayer that a number of air quality mitigations will miraculously reduce the Project by about 70,000 tons of GHGs per year down to 10,000 tons per year, the South Coast Air Quality Management District's ("SCAQMD") threshold of significance for GHG emissions. *See* FEIR, PDF p. 111 ("The mitigation measures discussed in the project-level impact analysis of GHG emissions indicated the measures would substantially reduce the project's emissions of greenhouse gases..."). No effort to rationally quantify or describe a reviewable basis for concluding that the smattering of air quality mitigations will come anywhere close to reducing the Project's GHG emissions by that level is provided or discussed. Moreover, when combined with the nearby World Logistics Center's GHG emissions of about 700,000 metric tons of CO₂ equivalents per year, the City has essentially abandoned any GHG reduction strategy, instead taking steps to almost double its projected GHG emissions.

1. There is no substantial evidence to support the FEIR's remarkable assertion that the air quality mitigations applied to the Project will reduce GHG emissions by 70,000 tons per year.

It is not sufficient under CEQA for the City to pick a few air quality mitigations of unknown efficacy and then simply assume that they will miraculously reduce the Project's 79,000 metric tons of GHG emissions down to less than 10,000 metric tons. As SWAPE explains in its comments, there is nothing precluding the City from estimating quantitative reductions by any claimed mitigations and providing the public, this Commission, and the City Council with a rational means to evaluate whether the currently optimistic predictions have any basis in reality. SWAPE Comments, pp. 2-3. The FEIR must do more than make exaggerated

claims of mitigation effectiveness. *See Friends of Oroville v. City of Oroville* (2013) 219 Cal.App.4th 832. In *Oroville*, the court held that failing to calculate existing air emissions at the project site, and “failing to quantitatively or qualitatively ascertain or estimate the effect of the Project’s mitigation measures on those emissions,” amounted to misapplication of the threshold-of-significance standard. *Id.* at 842-843. Claiming to rely on a qualitative assessment, the City instead applies bald assumptions, assuming that the air quality mitigations will have a dramatic effect on reducing GHG emissions from the project all the way down to a level of insignificance, *i.e.* less than 10,000 metric tons per year. No rational discussion relying on explicable estimates, whether qualitative or quantitative, is provided to explain this unlikely result for this Project that will include upwards of 5,800 vehicle trips per day. *See Clark & Associates Comments*, p. 3 (attached as Exhibit B).

The FEIR all but admits the randomness of its GHG emission discussion, responding at one point to the Sierra Club’s comments that “it is not possible to determine with certainty whether the project’s emissions of greenhouse gases will be cumulatively considerable, within the meaning of CEQA Guidelines Sections 15065(a)(3) and 15130.” FEIR, p. 109. A hundred pages later, that uncertainty appears to have vanished, the FEIR restating its two rationales for discounting the Project’s 79,000 metric tons of GHGs per year. First, the EIR attempts to find solace in the claim that “the project’s impacts alone would not cause or significantly contribute to global climate change...” FEIR, p. 222. This statement is entirely arbitrary given the SCAQMD’s significance threshold of 10,000 metric tons per year. 79,000 metric tons per year is obviously very large compared to the threshold. And nothing in the EIR explains how or which mitigation measures will reduce the Project’s GHG emissions to this level. The second rationale set forth in the EIR is that “the project has no substantial effect on consumption of fuels or other energy resources, especially fossil fuels that contribute to GHG emissions when consumed.” *Id.* How a project that will generate upwards of 5,000 vehicle trips per day would have no substantial effect on consumption of fuels is not further elucidated in the EIR. What these two rationales mean in the end is that the world is already suffering from global warming and because this project’s GHG contribution is small compared to the overall problem, there is no need to grapple with it in any meaningful way. Of course, as *Oroville* recognized, that capitulation renders the SCAQMD’s expert threshold, which is a rational quantification of the point where a project’s GHG emissions are significant and cumulatively considerable, a meaningless number.

2. The Proposed World Logistics Center and its massive GHG emissions is significant new information that must be addressed in the cumulative impact analysis.

The EIR’s mishandling of the Project’s large GHG emissions is exacerbated to a frightening level by the FEIR’s refusal to account for the massive World Logistics Center project (“WLC”). WLC is expected to emit about 700,000 metric tons of GHGs per year from within the City. WLC and Prologis together all but scuttle the City’s GHG reduction target. The FEIR, responding to comments about the WLC’s cumulative impacts on traffic states that, because the WLC project was not proposed at the time of the Notice of Preparation (“NOP”) for the Prologis

Project (in 2008), the EIR need not include WLC's impacts in its baseline. The City claims that the baseline traffic for the previous development proposed for the WLC site was actually higher at the time of the NOP. This response, in addition to steadfastly refusing to provide the City and its residents a realistic assessment of the Project's cumulative impacts, overlooks the City's responsibility to address significant new information that arises after a DEIR is released but prior to certification of the FEIR. Alternatively, it is simply unreasonable for the City to not adjust its baseline to reflect the impacts of the WLC project, especially given the long delay between the Project's 2008 NOP and the FEIR now six years later.

The CEQA Guidelines require recirculation of an EIR when significant new information, such as the processing of a nearby project that will drastically increase the City's GHG contributions inconsistent with its GHG reduction targets, as well as NOx and PM emissions. Section 15088.5 provides:

(a) A lead agency is required to recirculate an EIR when significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public review under Section 15087 but before certification. As used in this section, the term "information" can include changes in the project or environmental setting as well as additional data or other information. New information added to an EIR is not "significant" unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement. "Significant new information" requiring recirculation include, for example, a disclosure showing that:

...

(2) A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.

(3) A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the significant environmental impacts of the project, but the project's proponents decline to adopt it.

(4) The draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded. (*Mountain Lion Coalition v. Fish & Game Com.*(1989) 214 Cal.App.3d 1043).

14 CCR 15088.5. The processing of the WLC is significant new information requiring recirculation. It is plain that the WLC's emission of 700,000 metric tons of GHG per year would largely erase the City's GHG reduction target in 2020 and the additional Prologis GHG emissions will have a more profound cumulative impact on the City's GHG contributions than are evident without considering the WLC project. Likewise, because the DEIR was so basically inadequate and conclusory in asserting without any meaningful estimates that air quality mitigations uncoupled from any detailed information regarding their effectiveness at reducing GHG emissions would reduce the Prologis Project's GHG emissions by 70,000 metric tons per

year, the addition of WLC's 700,000 metric tons of GHG per year makes it imperative that the City revisit and recirculate the EIR's GHG analysis before the City further dooms its supposed GHG reduction targets.

The need to address this new information and/or adjust the baseline for GHGs is also supported by the fact that, unlike traffic levels purportedly included in the baseline, the GHG emissions for WLC increase any conceivable GHG emissions that may have been estimated for that project's location at the time of the WLC project's NOP by at least 60 percent, possibly more. *See* World Logistics EIR, p. 6-16 & Table 6.F (665,321 metric tons of GHG for WLC as compared to zero at site with no project or 228,719 metric tons if built out consistent with previous General Plan) (*see* Exhibit C). This massive addition of GHG emissions to the baseline is new information that must be addressed and recirculated or, alternatively, added to the Project's baseline in order to make sure the City's EIR remains realistic.

3. The substantial evidence in the record establishes that the Project will have a significant impact on GHG emissions, including the sheer volume of its GHG emissions and its adverse impact on the City's ever achieving its GHG reduction targets.

The FEIR confirms that the City has not gathered in any estimate of actual reductions of GHG emissions by any of the mitigation measures it purports will address those emissions. Hence, it is clear that there is no substantial evidence in the record to show that the Project will emit 10,000 metric tons or less per year of CO₂ equivalents. As a result, the EIR cannot substantiate a conclusion that the Project's GHG emissions will result in less than significant impacts and, instead, must conclude that these emissions will result in significant impacts. The EIR must include additional feasible mitigations to address these GHG impacts, including electrified loading docks, mandating the installation of solar panels (rather than the mere possibility of solar panels), on-site industrial solar power storage, additional pollution control equipment on trucks utilizing the facility, and, where other feasible project specific mitigations are exhausted, the use of offset credits through recognized programs. SWAPE describes several mitigation measures in its comments as well as the availability of offset credits. SWAPE Comments, pp. 3-4.

Mitigation measures, including for a project's GHG emissions, must be fully enforceable through permit conditions, agreements or other legally binding instruments. 14 CCR § 15126.4(a)(2). *See Woodward Park Homeowners Assn., Inc. v. City of Fresno* (2007) 150 Cal. App. 4th 683, 730 (project proponent's agreement to a mitigation by itself is insufficient; mitigation measure must be an enforceable requirement). Especially given the uncertainty claimed by the City in measuring GHG reductions from various mitigation measures, the EIR must include a monitoring and verification process to confirm reductions in the Project's overall GHG emissions and include contingencies, *i.e.* additional mitigations including more offsets, if the measures do not achieve expected GHG reductions.

Lastly, because the evidence does not support a finding of no significant impact from the Project's GHG emissions, the City must acknowledge that significant impact and make a finding of overriding considerations that is supported by a showing that all feasible mitigation measures have been required. CEQA Guidelines §§ 15126.4, 15091, 15092(b)(2); Pub. Res. Code § 21002.

B. The EIR Significantly Underestimates the Project's Air Pollution Emissions From Mobile Sources.

The EIR makes a significant error in its air pollution emissions analysis by failing to rely upon substantial evidence regarding the veracity of the estimated truck trips for the Project. According to the review of Dr. James Clark, the EIR relies on an uncorroborated estimate of the Project's daily truck trips of 1.96 daily truck trips per 1,000 square feet. As Dr. Clark explains, "[i]n order to avoid underestimating the number of trips associated with large warehouse/distribution center operations without rail service, the SCAQMD staff recommended that lead agencies utilize a rate of 2.59 trips per TSF [thousand square feet] for large warehouse air quality analyses on a project specific basis." Clark Comments, p. 3. By using a value that is significantly reduced from SCAQMD's recommended value for the CalEEMod model, the EIR significantly understates the Project's air emissions:

Based upon the trip generation rate of 2.59, the total number of trips associated with Project would increase from 4,400 to 5,813 trips per day. The net result is that the air quality analysis performed by the Proponent greatly underestimates the emissions from mobile sources by at least one-third during the operational phase of the Project. Those impacts are likely to lead to a significant impact that will be unmitigated and unaccounted for in the FEIR. Without proper modeling of the emissions from these additional vehicles the impacts on the environment and the citizens of the Moreno Valley are unknown.

Clark Comments, p. 4. Because the EIR fails to disclose the full extent of the Project's air pollution impacts, it should be revised to include an accurate discussion of those impacts and recirculated along with any necessary additional mitigation measures.

C. The EIR Does Not Include Additional Feasible Mitigation Measures to Further Reduce the Project's Significant Impacts From its Emissions of NO_x and PM₁₀ and, Without Requiring Additional Measures, the City Cannot Adopt a Statement of Overriding Considerations.

An agency may adopt a statement of overriding considerations only *after* it has imposed all feasible mitigation measures to reduce a project's impact to less than significant levels. CEQA Guidelines §§ 15126.4, 15091. CEQA prohibits agencies from approving projects with significant environmental impacts when feasible mitigation measures can substantially lessen or avoid such impacts. Pub. Res. Code § 21002. As explained in CEQA Guidelines section 15092(b)(2), an agency is prohibited from approving a project unless it has "[e]liminated or

substantially lessened all significant effects on the environment where feasible.” The EIR states that the Project’s direct and cumulative emissions of NO_x and ROG_s will remain significant after the identified mitigation measures are implemented. *See* DEIR, pp. 1-22, 1-28. As a result, the EIR must require all feasible mitigations to reduce these impacts. As explained by SWAPE, additional mitigation measures are available that are not included by the City. The measures include requiring electrified loading docks for all refrigeration units and the use of fuel cell trucks to reduce NO_x emissions. SWAPE Comments, pp. 4-5. SCAQMD also provided a list of feasible mitigations that must be mandated for the Project. *See* FEIR, Letter B-3, pp. 3-4.

In addition, whether or not to implement several key measures included in the EIR is left to the future discretion of the City. *See, e.g.* DEIR, p. 1-22 (Mitigation Measure 4.3.6.5B) (“Prior to issuance of building permits, the project applicant shall provide evidence to the City that energy-efficient and low-emission methods and features of building construction shall be incorporated into the project design. These methods and features *may include* (but are not limited to) the following...” (emphasis added)). The list of measures included in Mitigation Measure 4.3.6.5B should be mandatory and enforceable in order to be consistent with the CEQA Guidelines.

LIUNA Local 1184 appreciates the change in the FEIR to make the energy efficiency requirement set forth in Measure 4.3.6.5A mandatory rather than voluntary. However, a number of the requirements embedded within the mandatory efficiency standard should also be adjusted to be mandatory requirements or otherwise clarified. For example, there is a requirement that lease/purchase documents shall identify that tenants are merely encouraged to promote a list of air pollution reduction measures. *See* DEIR, 1-27 – 1-28, Table 1.C; FEIR, pp. 58-59, 61-62. The FEIR should be revised to make these feasible tenant/purchaser measures mandatory as well.

Measure 4.3.6.5A also includes a vague requirement to “[i]ncorporate energy efficient space heating and cooling equipment.” This measure should be clarified to require that cooling for the main warehouse spaces at the Project shall be provided through evaporative coolers rather than air conditioners, or use new or different cooling technology that is at least as efficient. In addition, the mitigation should require the warehouse spaces to incorporate automated airflow and ventilation systems designed to minimize need for supplemental heating and cooling within the warehouse spaces. These measures are feasible, having been applied at other warehouse facilities. *See Coalition for Clean Air v. VWR Int’l LLC*, Consent Decree, attached as Exhibit D.

Currently, Measure 4.3.6.5A requires that “[a]ll buildings shall be designed to accommodate renewable energy sources, such as photovoltaic solar electricity systems, appropriate to their architectural design.” FEIR, p. 197. This mitigation measure should be revised to require that photovoltaic, or comparable renewable energy sources, be actually installed on all buildings sufficient to provide all of the energy needs of the Project and, if feasible, surplus energy to help offset the Project’s remaining pollution emissions. Given the size of the buildings’ roofs, this measure is feasible and would reduce or help offset the Project’s emissions of both ROG_s, NO_x, and GHG_s.

Additionally, Mitigation Measure 4.3.6.5B currently appears inconsistent with Mitigation Measure 4.3.6.5A. Unlike Measure 4.3.6.5A, Measure 4.3.6.5B does not increase the improvement over energy efficiency standards to 20 percent as was proposed in the DEIR and which applies to the related Measure 4.3.6.5A. FEIR, pp. 194-201. In order to apply all feasible measures, Measure 4.3.6.5B's list of measures should be made mandatory (replace "may" with "shall") and the measure to exceed statewide energy efficiency requirements by 10 percent restored to a 20 percent exceedance. FEIR, pp. 194-96. In addition, a requirement that the Project use building automation systems to control and optimize the efficiency of its mechanical systems, including lighting, HVAC, exhaust dampers, fans, and ventilation louvers should be added to Measure 4.3.6.5B's list.

Until each of the above mitigation measures as well as those measures identified by SCAQMD are incorporated as enforceable measures into the Project approval, the City will not be in a position to make a finding of overriding considerations for the Project's NOx, ROG, and GHG emissions.

D. The EIR Does Not Include Additional Feasible Mitigation Measures to Further Reduce the Project's Significant Impacts From its Particulate Matter Emissions During Construction and, Without Requiring Additional Measures, the City Cannot Adopt a Statement of Overriding Considerations.

An additional feasible mitigation measure that also would assist in assuring that the Project's air quality pollution mitigations during construction are enforceable is a measure to require monitoring of dust plumes. SWAPE identifies "[m]onitoring for opacity for all construction activities, including grading, not just for "screening" and "turf overseeding" activities" as an additional feasible measure. Without such a measure, it is not clear how the implementation or effectiveness of many of the air pollution control measures during construction will be documented or enforced. SWAPE lays out the following monitoring requirement:

Opacity monitoring should be conducted by qualified personnel using a Ringelmann chart. Monitoring with use of the Ringelmann Chart should be required when construction is occurring when wind speeds exceed 15 miles an hour, as gauged by a wind meter installed at the Project site. When a 20% opacity (Ringelmann 1) standard is exceeded, construction activities should cease until wind speeds drop to below 15 miles per hour. A log should be kept at the Project site to document when wind speeds exceed 15 miles per hour and the Ringelmann readings recorded during those periods, along with actions taken to comply when Ringelmann readings exceed the 20% opacity threshold.

SWAPE Comments, p. 4. Because this mitigation is feasible, would help to prevent any oversight of other mitigation measures, and would further reduce actual excessive emissions of PM10 at the Project site, it must be included in the mitigation requirements for construction-related air pollution.

E. The EIR Fails to Disclose the Project's Serious Cancer Risks to Neighbors and Workers.

a. The Project has significant air quality and health risk impacts because it will expose nearby residents to cancer risks of 22 cancers in one million for adults and 33 excess cancers in a million for children.

The EIR states that nearby residents and on-site workers will not be exposed to any significant health risks by the Project's construction. DEIR, p. 4.3-14. However, the EIR dramatically understates the health risks that will result from the Project's construction phase because the health risk assessment it relies upon assumes construction will only occur for four months rather than the 11.5 months reported in the EIR. SWAPE Comments, pp. 6-10. See DEIR, p. 4.3-13. This is despite the EIR's acknowledgement that "[a]lthough construction of the structures uses different types of equipment on site than during grading periods, similarities do exist in terms of equipment exhaust emissions and fugitive dust emissions." DEIR, p. 4.3-23. SWAPE prepared a screening-level HRA for construction-related DPM air quality impacts using the emissions and phasing data from the EIR and covering the full construction period. As SWAPE concludes, its risk assessment for nearby residences "shows that the adult exposure resulted in an additional 22 cancers in one million while the child exposure resulted in 33 excess cancers in a million. For both adult and child exposure parameters, the CEQA significance threshold of ten in one million excess cancer risk was exceeded during the construction period." SWAPE Comments, p. 9. In contrast to SWAPE's analysis, which fully discloses all of its inputs and models, "no modeling files or cancer risk calculations for the construction impacts analysis were provided in the DEIR or the FEIR" for the EIR's health risk assessment. *Id.*, pp. 9-10. Hence, the substantial evidence available to the Commission and others indicates that cancer risks to the Project's neighbors are significant. This must be acknowledged in the EIR and additional mitigations required. As SWAPE concludes:

An updated HRA should be prepared that incorporates all emissions from construction equipment over the entire duration of Project construction, and addresses the potential for significant air quality impacts to nearby sensitive receptors. Our analysis has demonstrated that by utilizing appropriate U.S. EPA and OEHHA exposure assessment methodologies, excess cancer risks consequent of Project construction have the potential to exceed CEQA thresholds of significance even under mitigated construction scenarios.

SWAPE Comments, p. 10.

b. The Project relied on a flawed health risk assessment in concluding that health risks to workers for the life of the Project would be insignificant.

The EIR also underestimates health risk impacts to workers to be employed at the Project site. SWAPE Comments, pp. 10-11. First, the Project's worker health risk assessment assumes

that trucks will be 87.5 percent diesel, explaining in its response to SCAQMD that the City believed such a number was appropriate because “[i]t is pure guesswork to predict how the diesel emissions will change over this period.” FEIR, p. 66. Acknowledging uncertainty of future actions does not warrant then selecting a number based on the acknowledged guesswork. Rather than use the conditions that the City knows exist currently to prepare a reasonable estimate of future worker health risks, they made a guess that trucks using the Project would be 87.5 percent diesel. That number, by the FEIR’s own admission, is not supported by substantial evidence. Likewise, SWAPE notes that the EIR suggests that a health risk assessment was prepared assuming operations were concentrated in 12-hours of each day rather than 24-hours. No such calculation was made in the health risk assessment for 12-hour days at the Project. SWAPE Comments, p. 11. A revised HRA for workers must be prepared and reviewed to determine if any changes to the EIR should be made prior to the Commission and City taking action on the EIR.

F. The EIR Continues to Fail to Require Feasible Mitigations to the Project’s Destruction of Farmland, Including Requiring the Applicant to Locate and Purchase an Equivalent or More Acreage of Farmland Conservation Easements Outside of the City and Western Riverside County.

In response to LIUNA’s comments noting the absence of any measures to mitigate the Project’s destruction of 82.55 acres of Prime Farmland and 36.4 acres of Farmland of Local Importance, the City continues to claim that it is excused from mitigating this impact simply because it intends to eventually destroy all remaining farmland within the City and because there is no program established by either the City or the County of Riverside for those governmental entities to manage conservation easement or land purchases for mitigation. *See* FEIR, p. 218. Neither of these excuses relieves the City and the Project Applicant from having to mitigate the Project’s significant impacts on farmland. Farmland conservation easements are feasible within Riverside County. The State of California has a program to facilitate such easements, providing grants and easement template applicable anywhere in the State of California, including Riverside County. *See* Exhibit E. There is no need for the City or County to create some bureaucratic program in order for the City to require the Project applicant to mitigate the 119-acres of farmland by purchasing easements or farmland of equivalent quality somewhere in Riverside or even other nearby counties. Private organizations also exist to facilitate the creation of farmland easements, including one located in Riverside County – the Riverside Land Conservancy. *See* Exhibit F.

The City claims that a 2010 Court of Appeal decision – *Building Industry Association of Central California v. County of Stanislaus* (2010) 190 Cal.App.4th 582 – conditioned the use of conservation easements as CEQA mitigation on the presence of a city- or county-wide program. FEIR, p. 218 (“That case concluded that it is appropriate to mitigate at a 1:1 ratio for the loss of prime agricultural land through the acquisition of an offsite agricultural easement if such a program is established by a county or regional governmental entity”). No such rule is found in the case. Instead, the pertinent rule is that the Court of Appeal upheld a requirement included in Stanislaus County’s General Plan requiring either 1:1 mitigation of developed

farmland based primarily on private purchases of farmland conservation easements. *See* 190 Cal.App.4th at 601 (“Under the FMP, although the developer is required to arrange for the granting of a conservation easement in order to obtain a development approval, most likely by a purchase, *no particular landowner* is required to grant the conservation easement”) (emphasis added). The case was not even a CEQA case so it certainly did not preclude mitigation under CEQA of destroyed farmland through a conservation easement unless some governmental program was in place. Nor is there any reason to restrict mitigation farmland to western Riverside County, given the county-wide and indeed statewide problem of farmland conversion. In short, there is no reason the applicant cannot take the steps necessary to purchase one or more farmland conservation easements for farmland of similar quality to that being destroyed by the Project somewhere in Riverside County or other nearby counties in southern California. Because the Project’s destruction of farmland is significant and unavoidable, the City must incorporate all feasible mitigation measures. Requiring the applicant to obtain farmland conservation easements for comparable quality farmland in other areas is plainly feasible and must be included.

G. Additional Details for Sampling Soils for Residual Pesticides Should be Required.

The FEIR has added a mitigation measure to require additional soil sampling prior to issuance of a grading permit. FEIR, p. 222. LIUNA Local 1184 believes that, because the additional information will not be available prior to the certification of the EIR, this change does not cure the baseline concerns raised in their previous comment letter. In addition, unless additional details are added to the mitigation, it amounts to improper deferred mitigation. SWAPE recommends the following additional details:

The mitigation measure (MM 4.6.6.1A) should be revised to include specifics on the number of samples to be collected, the chemical analytes, and to provide for documentation of the sampling and analysis of the results prior to FEIR certification. The mitigation measure should also include a commitment to compare sampling results to health-protective regulatory screening levels such as U.S. EPA Regional Screening Levels and California Human Health Screening Levels, and to mitigate any exceedances of the screening levels through further evaluation of health risks and the removal of any contaminated soil that may pose a risk to human health.

SWAPE Comments, p. 2. LIUNA Local 1184 request that the EIR’s mitigation be changed to address these details.

VI. CONCLUSION

For the foregoing reasons, as well as each of the comments raised in LIUNA Local 1184’s DEIR comments, LIUNA Local 1184 recommends that the Commission continue the matter for future consideration pending completion of a supplemental EIR addressing the above

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concerns. Thank you for your attention to these comments. Please include this letter and all attachments hereto in the record of proceedings for this project.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael Lozeau". The signature is fluid and cursive, with a large initial "M" and a stylized "L".

Michael Lozeau
Lozeau Drury LLP
Attorneys for LIUNA Local Union No. 1184

EXHIBIT A



Technical Consultation, Data Analysis and
Litigation Support for the Environment

Matt Hagemann

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April 21, 2014

Richard Drury
Lozeau | Drury LLP
410 12th Street, Suite 250
Oakland, CA 94607

Subject: Comments on the Final Environmental Impact Report, Prologis Eucalyptus Industrial Park Project, Riverside County, California

Dear Mr. Drury:

We have reviewed the April 2, 2014 Revised Final Environmental Impact Report (FEIR) for the Prologis Eucalyptus Industrial Park Project ("Project"). We have found the FEIR fails to adequately address comments we made in an August 30, 2012 letter on the July 2012 Draft Environmental Impact Report (DEIR). The comments we made focused on issues related to hazardous waste, greenhouse gas emissions and air quality. The FEIR should not be certified until these concerns are adequately addressed.

Hazards and Hazardous Materials

Baseline Conditions Remain Undisclosed

Comments we made on the July 2012 Draft Environmental Impact Report (DEIR) focused on the inadequacy of ten year-old Phase I Environmental Site Assessments (ESAs) to represent conditions at the Project site that may pose risks to workers and the neighboring public. We also noted that the Phase I ESAs that had been completed did not cover the entire Project site and that potential residual pesticide risks had not been satisfactorily addressed.

In response to concerns we expressed about the potential for residual pesticides to be present (Comment 9), the FEIR adds a mitigation measure (MM 4.6.6.1A) to sample for agricultural chemicals prior to issuance of a grading permit. While we applaud the addition of this needed mitigation measure, it does not go far enough in that it does not specify the manner in which the samples will be collected (namely, the number of samples, the depths and the chemical analytes) and the sampling is not to occur until after certification of the project (and prior to grading).

The mitigation measure (MM 4.6.6.1A) should be revised to include specifics on the number of samples to be collected, the chemical analytes, and to provide for documentation of the sampling and analysis of the results prior to FEIR certification. The mitigation measure should also include a commitment to compare sampling results to health-protective regulatory screening levels such as U.S. EPA Regional Screening Levels¹ and California Human Health Screening Levels,² and to mitigate any exceedances of the screening levels through further evaluation of health risks and the removal of any contaminated soil that may pose a risk to human health.

The FEIR should also provide the closure documentation we requested in DEIR comments for a 13,400 gallon underground storage tank (UST) that was reportedly removed from the Project site in 2004. As we requested, the documentation should be produced to disclose if closure for the UST removal was granted by the County.

Greenhouse Gas Emissions

In DEIR comments (Comment 12), we expressed concern that estimates of the Project's operational greenhouse gas (GHG) emissions, following mitigation, were not quantified. We commented that the need to show the efficacy of the mitigation was necessary because pre-mitigation operational GHG emissions were well above any applicable South Coast Air Quality Management District thresholds. The Response to Comment 12 states:

This comment states that the EIR did not show the GHG emissions with mitigation. The reductions with mitigation were not calculated because the GHG-related mitigation measures included in the EIR do not have quantified reduction amounts.

The mitigation in the DEIR, for which emissions reductions were not quantified, included:

- Establishment of a Transportation Management Association (TMA) to encourage and coordinate carpooling among building occupants (p. 1-26).
- Green building and maintenance provisions (MMs 4.13.6.1A, 4.13.6.1B, 4.13.6.1C)

Other measures identified in the DEIR to reduce GHG emissions include recommended actions within the Transportation, Electricity and Natural Gas, Green Buildings, and Water sectors. Again, no effort was made to quantify the reductions in GHG emissions from the incorporation of these measures.

It is simply not good enough for the Responses to assert, qualitatively, that mitigation measures and recommended actions will reduce GHG emissions from 79,000 MTCO₂e/yr to below 10,000 MTCO₂e/yr, the applicable South Coast Air Quality Management District (SCAQMD) threshold. Without quantifying the reductions, there is absolutely no basis to say that reductions will be below the applicable threshold.

Likewise, it is non-responsive to state that mitigation could not be quantified "because the GHG-related mitigation measures included in the EIR do not have quantified reduction amounts" (Response to Comment 12). Numerous means to quantify GHG mitigation emissions reductions are available,

¹ <http://www.epa.gov/region9/superfund/prg/>

² <http://www.calepa.ca.gov/brownfields/documents/2005/CHHSLsGuide.pdf>

including methods as published in an August 2010 guidance document published by the California Air Pollution Control Officers Association (CAPCOA), entitled “Quantifying Greenhouse Gas Mitigation Measures”.³ The CAPCOA document has numerous separate methodologies to quantify GHG mitigation emission reductions for activities related to the project, and for the mitigation measures identified for the Project. The reductions cited below, from the CAPCOA guidance document, are for operational activities relevant to the Project:

Transportation

- Use of electrified loading docks to reduce the need for diesel auxiliary engines to run in order to keep refrigerated transportation units temperature controlled to achieve a 26-71% reduction in GHG emissions;
- Use of electric or hybrid vehicles to achieve a 0.4-20% reduction in GHG emissions; and
- Use of alternative fueled vehicles (reductions vary).

Water Use

- Install low-flow water fixtures (as identified in MM 4.13.6.1A) to achieve a 17-31% reduction in GHG emissions;
- Design water-efficient landscapes (as identified in MM 4.13.6.1C) to achieve up to 70% in GHG emissions reductions; and
- Use reclaimed water for up to 81% GHG emissions reductions.

The need to quantify GHG reductions is critical to show that the Project’s emissions will meet the SCAQMD threshold of 10,000 MTCO₂e/yr. The examples from the CAPCOA guidance, as cited above, are just a few of those measures that can be quantified to estimate GHG emissions reductions, demonstrating that Response to Comment 12 is inadequate when it states mitigation could not be quantified “because the GHG-related mitigation measures included in the EIR do not have quantified reduction amounts.”

The FEIR should not be certified until GHG mitigation measures are quantified to demonstrate estimates that are below the SCAQMD threshold of 10,000 MTCO₂e/yr. If the threshold is not met, additional mitigation or use of credits (offsets) would be necessary, consistent with other Southern California projects where the SCAQMD threshold was exceeded, after mitigation.⁴

If emissions reductions estimates do not demonstrate that the threshold is met, additional measures should be undertaken, to include credits for all GHG emissions generated above the threshold of 10,000 MTCO₂e per year. To ensure GHG emissions reductions are real and verifiable, a GHG reporting and reduction plan should be submitted to the SCAQMD and the City detailing the measures to be implemented to achieve the required reductions. Credits should comply with

³ <http://capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf>

⁴ http://www.hermosabch.org/ftp/oil_docs/_ALL%20DEIR.pdf

- SCAQMD Regulation XXVII protocol;⁵
- CAPCOA GHG Rx program;⁶ and
- Those verified by the Climate Action Reserve or the American Carbon Registry.

Air Quality

Mitigation of Criteria Air Pollutants is Inadequate

The Responses fail to address to the concerns we expressed about the need to employ all available mitigation to address what the FEIR identifies as significant emissions of criteria air pollutants from construction and operation. The specific response to the comment we made on this issue (Letter D-4C, Response to Comment 5) stated:

For a detailed response on comparing construction emissions to daily construction thresholds, see the Responses to Comments D-4A-13 and D-4A-14 in the previous Letter D-4A from Lozeau Drury. For a detailed response on operational impacts of the project, see the Response to Comment D-4A-16 in the previous Letter D-4A from Lozeau Drury.

Responses to Comments D-4A-13, D-4A-14 and D-4A-16 have nothing to do with the issue of the inadequacy of mitigation measures to reduce construction emissions of NO_x and ROG and operational emissions of ROG, NO_x, and PM₁₀ to less-than-significant levels. Some responses to other comments did address the need for additional mitigation (see Responses 1-12, Comment Letter B-3 and Responses 49-60, Comment Letter D-3) but we find these measures do not incorporate all measures that are feasible to reduce criteria air pollutant emissions.

Applicable Construction Mitigation Measures

- Monitoring for opacity for all construction activities, including grading, not just for “screening” and “turf overseeding” activities (as cited in the Air Quality Measure 4.3.6.2M Best Available Control Measures for Fugitive Dust). Opacity monitoring should be conducted by qualified personnel using a Ringelmann chart. Monitoring with use of the Ringelmann Chart should be required when construction is occurring when wind speeds exceed 15 miles an hour, as gauged by a wind meter installed at the Project site. When a 20% opacity (Ringelmann 1) standard is exceeded, construction activities should cease until wind speeds drop to below 15 miles per hour. A log should be kept at the Project site to document when wind speeds exceed 15 miles per hour and the Ringelmann readings recorded during those periods, along with actions taken to comply when Ringelmann readings exceed the 20% opacity threshold.

Applicable Operation Mitigation Measures

⁵ http://www.aqmd.gov/rules/reg/reg27_tofc.html

⁶ <http://www.capcoa.org/>

- Use of electrified loading docks for all refrigeration units;
- Use fuel cell trucks that use hydrogen produced primarily from natural gas show only slightly lower net PM emissions (11 percent) relative to new diesel trucks, largely due to the steam reformation process to produce hydrogen from natural gas; NOx emissions are reduced 84 percent in total and GHGs are cut in half. Greater use of renewable hydrogen or improved hydrogen production methods could cut fuel cell emissions relative to conventional technology.⁷

Cumulative Impacts have not been Adequately Addressed

We commented that the DEIR identified 13 proposed projects within five miles of the Project but failed to identify a construction schedule for the projects. The Responses (Comment D-4A-19) did not provide this schedule and simply states:

The EIR includes a complete cumulative air quality impacts analysis that satisfies all CEQA requirements and that includes the conclusion that the long-term cumulative air quality impacts would be significant and avoidable.

The FEIR does not go far enough to address concerns about emissions of criteria air pollutants. For example, to meet air quality standards required by 2023, NOx emissions must be reduced by approximately two thirds beyond existing rules and regulations. The largest source of NOx emissions in the SCAQMD are heavy duty trucks. Without meeting air quality standards, the Southern California area faces federally mandated sanctions, including possible loss of transportation funding.

Other major projects in Moreno Valley, which involve significant trucking operations, include the WestRidge Commerce Center Project (which will be built adjacent to the proposed Project), the VIP Moreno Valley Project and the March Business Center. Along with the Project, these projects may be constructed simultaneously, highlighting the need for an estimate of the combined emissions of these projects.

Although the FEIR states that cumulative impacts are significant, additional measures are available to mitigate cumulative impacts on air quality. Perhaps most important is to quantify the emissions that will stem from the construction of other projects and, using those emissions estimates, identify how the construction of the projects might be staged to reduce temporal impacts. The US EPA has commented on the benefit of this approach to prevent violations of air quality standards.⁸

The FEIR should not be certified until cumulative emissions data from all projects have been compiled, by month, for construction in a six-mile radius that would overlap with the Project. From use of this data, a phased construction schedule, for projects that will undergo construction concurrently, should be derived so that violations of local, state or federal air quality regulations will not result. Consistent

⁷ http://www.ucsusa.org/assets/documents/clean_vehicles/Moving-California-Forward-Executive-Summary.pdf p. 2

⁸ U.S. Environmental Protection Agency, Comments on the Alta East Wind Project, September 27, 2012 <http://www.epa.gov/region9/nepa/letters/blm/ca/alta-east-wind-project-kern-county-deis.pdf>, p. 2

with US EPA's recommendations, the Project should be scheduled for constructed in light of the other planned construction activities to ensure air quality standards are not exceeded.

Diesel Particulate Matter Emissions have not been Evaluated and Addressed Adequately

Emissions of diesel particulate matter (DPM) associated with activities occurring on the Project site both during construction and operations have not been adequately characterized in estimating risks to human health. We have re-reviewed the DEIR documents, the 2012 LSA Air Quality Analysis (AQA) report, and the FEIR Responses to Comments and determined that impacts of DPM emissions on human health should be reevaluated before certification of the FEIR. Our evaluation has shown that construction of the Project has the potential to result in DPM exposures at nearby residences that exceed CEQA significance thresholds, and DPM exposure to workers on-site during operations warrants additional investigation by the Lead Agency.

Construction of the Project Will Result in Significant Air Quality Impacts

The Project location is situated just south of the Moreno Valley Freeway (SR60), with residential neighborhoods located within 50 feet to the southeast and 200 feet to the north of the Project boundary. The 2012 LSA AQA relied upon several inaccurate assumptions in preparing the Health Risk Assessment (HRA) for off-site residential exposure that accompanied the DEIR:

"The anticipated level of diesel-powered equipment use will, on average for the entire construction period, emit approximately 6.0 lbs/day of diesel exhaust particulate. A screening health risk assessment was performed using this emission rate and assuming the mobile equipment operates for 22 days per month and 4 months continuously at this high rate. This is considered conservative even though the total construction period will be longer than 4 months due to the extreme variation from day to day of heavy-duty construction equipment usage. **All of these values are deliberately higher than expected so that the risk levels will not be underestimated.**⁹ [*emphasis added*]

This statement contradicts itself in saying that even though average daily emissions of DPM were assumed to be 6 pounds, the duration of construction utilized for the exposure model was actually less than half of the total anticipated length. Therefore, it is impossible that all values are deliberately higher than expected, as LSA admits that the Project construction will in fact take longer than 4 months. By a simple calculation, the total pounds of DPM emissions evaluated in the HRA for construction-related activities is: $\frac{6 \text{ lbs}}{\text{day}} \times \frac{22 \text{ days}}{\text{month}} \times \frac{4 \text{ months}}{\text{Project}} = 528 \text{ lbs DPM}$ from construction. We believe that this represents a significant underestimate of actual construction-related DPM emissions, as the total length of Project construction is approximately 11.5 months. We have prepared a revised estimate that more accurately represents the exposures that nearby residents will be subjected to during Project construction.

⁹ LSA Associates, Inc., 2012. Air Quality Analysis, Eucalyptus Industrial Park, City of Moreno Valley, California. March 2012. Page 43.

We extracted only the estimates of mitigated on-site daily construction exhaust emissions provided in the CalEEMod output files (shown in the table below from the FEIR¹⁰), and multiplied the daily emissions estimates for each phase by the number of days given in AQA Table E: Construction Schedule, also shown below. The total pounds of construction-related DPM emissions was calculated to be 934.37 pounds, or 177% of the emissions that LSA incorporated into their HRA for off-site residential exposure. The HRA and FEIR should be revised to include more accurate estimates of total construction-related DPM emissions, as well as the appropriate exposure duration for nearby sensitive receptors in the residential communities.

Construction Phase	Onsite Pollutant Emissions, lbs/day							
	ROG	NO _x	CO	SO ₂	Fugitive PM ₁₀	Exhaust PM ₁₀	Fugitive PM _{2.5}	Exhaust PM _{2.5}
Site Preparation	10.43	84.72	47.82	0.07	7.05	4.27	3.87	4.27
Grading	12.5	103.9	55.13	0.1	3.38	5.01	1.29	5.01
Building Construction	5.63	37.37	23.73	0.04	0	2.54	0	2.54
Architectural Coating	342.39	2.96	1.94	0	0	0.27	0	0.27
Paving	7.91	33.81	20.89	0.03	0	2.93	0	2.93

Table E: Construction Schedule

Phase Name	Phase Start Date	Phase End Date	Number of Days
Site Preparation	9/1/2012	9/26/2012	18
Grading	9/27/2012	11/27/2012	44
Building Construction	11/28/2012	8/16/2013	188
Architectural Coating	1/17/2013	8/16/2013	152
Paving	6/1/2013	8/16/2013	55

Source: Project Plans

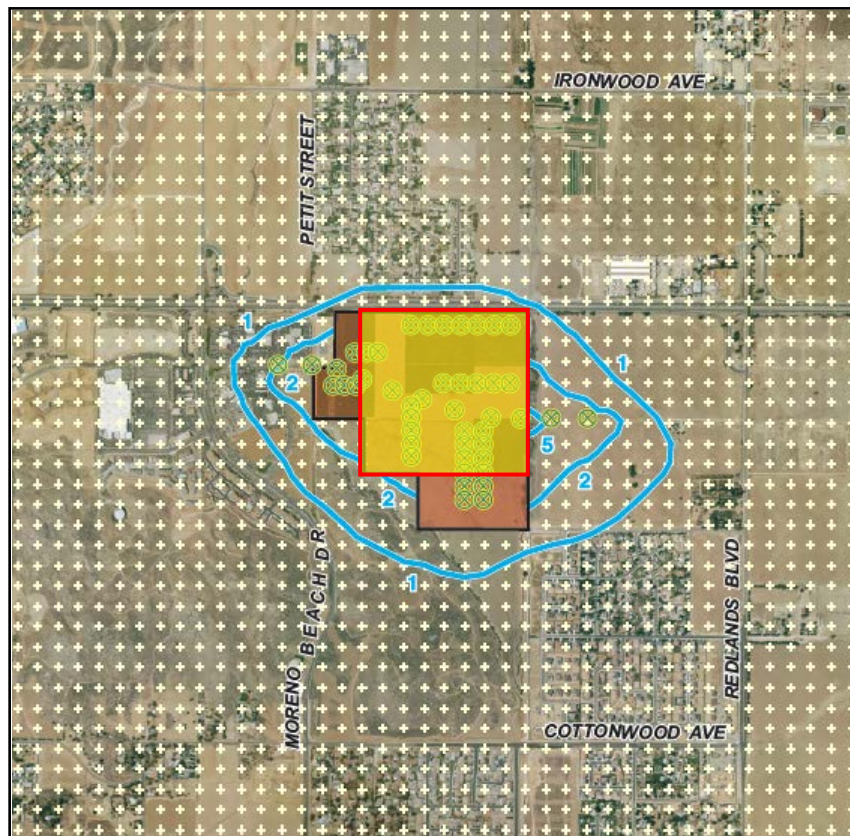
We have prepared our own screening-level HRA for construction-related DPM air quality impacts using the emissions and phasing data from the above tables. From the AQA appendices, we determined that diesel-fueled construction equipment would be operated for no more than 8 hours per day, and 5 days per week. The total number of construction days was 250 (weekdays between 9/1/2012 and 8/16/2013, or 18+44+188 as the last three phases of the Project in Table E overlap entirely). The emission rate derived for our screening model was therefore:

$$Emission\ Rate\ \left(\frac{grams}{second}\right) = \frac{934.37\ lbs \times 453.6\ \frac{grams}{lb}}{250\ days \times 8\ \frac{hours}{day} \times 3600\ \frac{seconds}{hour}} = 0.05886\ g/s$$

This value represents the average DPM emission rate during hours that construction activities are occurring for the entire Project

¹⁰ Response to Letter D-4A, Final EIR - Response to Comments, Prologis Eucalyptus Industrial Park, City of Moreno Valley. Page 223.

We used the EPA-recommended screening model AERSCREEN to evaluate off-site impacts to residential receptors during construction¹¹. As of 2011, AERSCREEN replaced SCREEN3 as the official screening model of the EPA due to its enhanced ability to simulate near-field dispersion from emissions sources. When detailed data pertaining to specific locations of emissions sources are unavailable, it is acceptable to model the average emission rate over the entire area of project construction. However, the Project boundary is geometrically complicated, and so our analysis focused on a subset of the Project site for screening-level modeling and HRA. The figure below depicts the portion of the site that was considered for the screening model. The yellow rectangle measures approximately 570 meters by 600 meters, with an area of approximately 84.51 acres.



The total Project boundary encompasses an area of 122.8 meters. For the purposes of our screening model, we multiplied the emission rate of 0.05886 g/s by the fraction $\frac{84.51}{122.8} = 0.6882$ to arrive at an average emission rate of 0.0405 g/s for the designated area over the course of Project construction. Due to lack of available information describing the anticipated sequencing of Project construction by area within the boundary, we assumed that averaging the emissions over the total duration was the best methodology to prepare this screening-level HRA.

The AERSCREEN model predicts the maximum single-hour concentration of a pollutant downwind of an emissions source. The maximum downwind concentration of DPM will be encountered during hours of

¹¹ U.S. Environmental Protection Agency Air Quality Modeling Group, C439-01 , MEMORANDUM: AERSCREEN Released as the EPA Recommended Screening Model, April 11, 2011.

construction equipment use, during which air quality impacts to sensitive receptors will also be highest. EPA screening methodology states that to estimate the maximum reasonable annualized concentration of an air pollutant, the maximum single-hour concentration can be multiplied by a scaling factor of 0.1¹². The maximum single-hour concentration of DPM produced by the AERSCREEN model during construction hours of the Project was 50.89 µg/m³ at 402 meters (1,319 feet) downwind. Residential receptors in the community to the southeast of the Project boundary are situated at this downwind distance.

The following table provides our estimations for a screening-level HRA for excess cancer risk at downwind residential receptors. The maximum single-hour concentration was multiplied by 0.1 to represent a maximum reasonable estimate of the annualized DPM concentration from construction. 80th percentile breathing rates were obtained from OEHHA guidance on HRA, as utilized in the LSA AQA¹³. Instead of incorporating the 4-month exposure considered by LSA, we utilized an 11.5 month exposure duration based on anticipated start and end dates of Project construction given in the tables presented above.

402-Meter Downwind Exposure

Parameter	Description	Units	Adult Exposure	Child Exposure
CPF	Cancer Potency Factor	1/(mg/kg-day)	1.1	1.1
Cair	Concentration in Air	µg/m ³	5.09	5.09
DBR	Daily Breathing Rate	L/kg-day	302	452
EF	Exposure Frequency	days/year	350	350
ED	Exposure Duration	years	0.95	0.95
AT	Averaging Time	days	25550	25550
	Inhaled Dose		2.0E-05	3.0E-05
	Cancer Risk		2.20E-05	3.29E-05

The table shows that the adult exposure resulted in an additional 22 cancers in one million while the child exposure resulted in 33 excess cancers in a million. For both adult and child exposure parameters, the CEQA significance threshold of ten in one million excess cancer risk was exceeded during the construction period. The maximum calculated inhalation cancer risk estimate provided in Table Q of the AQA report was 0.53 in one million at approximately 50-56 feet downwind. However, there is no modeling files or cancer risk calculations for the construction impacts analysis were provided in the DEIR

¹² U.S. Environmental Protection Agency Office of Air Quality Planning and Standards, Screening Procedures for Estimating the Air Quality Impacts of Stationary Sources, Revised, , October 1992.

¹³ Office of Environmental Health Hazard Assessment, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments, Air Toxics Hot Spots Program Risk Assessment Guidelines, August 2003.

or the FEIR. In fact, the 2012 LSA AQA report references a November 2011 Traffic Impact Study as the source of the information, however this report does not mention cancer risk a single time¹⁴.

There is a considerable discrepancy between the 0.53 in one million calculated by LSA and the 22 in one million calculated in our analysis. An updated HRA should be prepared that incorporates all emissions from construction equipment over the entire duration of Project construction, and addresses the potential for significant air quality impacts to nearby sensitive receptors. Our analysis has demonstrated that by utilizing appropriate U.S. EPA and OEHHA exposure assessment methodologies, excess cancer risks consequent of Project construction have the potential to exceed CEQA thresholds of significance even under mitigated construction scenarios.

A Health Risk Assessment for On-Site Workers Should be Prepared Using Appropriate Parameters

Neither the FEIR, the DEIR, nor the AQA provides a detailed description of the methodologies utilized in arriving at the on-site worker excess cancer risk reported to be 1.5 in one million in Table 4.3.F of the DEIR. Response to Comment 13 of Letter D-2 addresses the lack of available data that made the assessment of operational DPM exposure to workers difficult in making a reference to the AQA:

Due to lack of data, precise evaluation of vehicle exhaust impacts is not feasible; however, based on the limited amount of TAC from vehicle exhaust associated with the project operations in relation to background levels, the impact is not expected to be significant.

This conclusion relied upon several inappropriate assumptions, and a revision to the on-site worker HRA should be prepared. An example of an appropriate HRA for on-site workers can be found in the ENVIRON HHRA for the proposed Stanford University Medical Center¹⁵, which clearly demonstrates that evaluation of vehicle exhaust impacts is indeed feasible.

The fleet of trucks that will be passing through the facility on a daily basis is expected to include 1,246 heavy-duty trailer trucks. In Response to Comment 21 of Letter B-3 the Lead Agency defends its assumption that the heavy-duty trailer trucks will be 87.5% diesel based on fuel use percentages from the URBEMIS model. However, the SCAQMD website clearly states that, "Emissions calculated using URBEMIS are now outdated and SCAQMD staff recommends all projects now evaluate emissions with CalEEMod if they use software for their analysis."¹⁶ Furthermore, the SCAQMD Comment Letter directly asserts that the fleet should be assumed 100% diesel.¹⁷ The FEIR admits that adjusting the fuel use of the fleet will increase the carcinogenic health risks to workers during Project operations (Comment 21, Response to Letter B-3), and this adjustment should be made in a revised iteration of the worker HRA.

¹⁴ LSA Associates, Inc., Draft Traffic Study, Eucalyptus Industrial Park, City of Moreno Valley, California, April 24, 2012.

¹⁵ ENVIRON, Human Health Risk Assessment, Construction and Incremental Operational Emissions, Proposed Stanford University Medical Center, Facilities Renewal and Replacement Project, Palo Alto, California, February 22, 2010.

¹⁶ SCAQMD, Air Quality Modeling. <http://www.aqmd.gov/ceqa/models.html>.

¹⁷ Comment 21, Letter B-3: South Coast Air Quality Management District, Final EIR - Response to Comments, ProLogis Eucalyptus Industrial Park, City of Moreno Valley, p. 54.

Additionally, the methodology by which daily operational emissions associated with the heavy-duty truck fleet were quantified is unclear. In the AQA, page 44 clearly states that, "Deliveries are assumed to occur 24 hours per day and 7 days per week." This was confirmed by reviewing the HRA emission worksheet in Appendix C to the AQA. However, the FEIR claims that, "Modeling the actual number of trucks that are planned to operate over 24 hours as if they operated over 12 hours results in much higher hourly emissions. Thus, the HRA is protective of human health in case there is a change in the project operations to only operate 12 hours per day" (Comment 19, Response to Letter B-3). There is no evidence to suggest that the HRA utilized an emission rate assumed over 12 hours per day instead of 24.

A revised iteration of the HRA during Project operations should be prepared prior to FEIR certification to clearly identify how the emissions generated by truck idling and movement were quantified. Incorporation of the SCAQMD comments regarding the use of a 100% diesel-fueled fleet, as well as the increased idle time per truck of fifteen minutes per trip instead of five, will unquestionably increase the estimates of emissions from Project operations. Adjustment of these parameters will provide a more accurate characterization of air quality impacts to on-site workers during Project operations, as current assumptions may have resulted in underestimated exposures.

Sincerely,

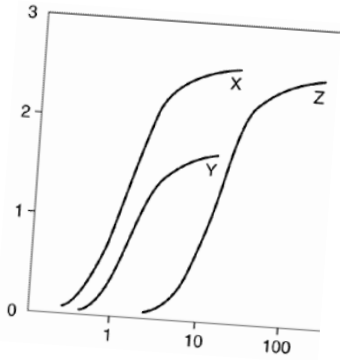


Matt Hagemann, P.G., C.Hg.



Anders Sutherland

EXHIBIT B



Clark & Associates

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April 22, 2014

Lozeau | Drury LLP
410 12th Street, Suite 250
Oakland, CA 94607

Attn: Mr. Richard Drury

Subject: Comment Letter on the Final Environmental Impact Report for the Prologis Eucalyptus Industrial Park, SCH No. 2008021002

Dear Mr. Drury:

At the request of Lozeau | Drury LLP (Lozeau Drury), Clark and Associates (Clark) has reviewed materials related to the above referenced project, including the Final Environmental Impact Report¹ (FEIR) for the Prologis Eucalyptus Industrial Park (hereafter called the Project), SCH No. 2008021002 and its appendices. The proposed project site is located in the eastern portion of the City of Moreno Valley, in Riverside County, California. The 122.8-acre project site is located south of State Route 60 (SR-60) east of the Moreno Valley Auto Mall, and adjacent to and west of the Quincy Channel. According to the FEIR the proposed project would result in the construction and operation of a warehouse facility, consisting of approximately 2,244,638 square feet (sq ft).

¹ LSA. 2014. Final Environmental Impact Report, State Clearinghouse No. 2008021002, Prologis Eucalyptus Industrial Park (formerly Prologis Park Moreno Valley Eucalyptus Project), City of Moreno Valley, Riverside County, California. LSA Associates, Inc. 1500 Iowa Ave, Suite 200, Riverside, CA LAS Project No. PLO1101. Prepared February 12, 2014 and revised April 2, 2014

Clark's review of the materials in no way constitutes a validation of the conclusions or materials contained within the plan. If we do not comment on a specific item this does not constitute acceptance of the item.

Project Description

This FEIR was issued prematurely without considering the serious flaws in the Proponent's analysis of the project by failing to accurately characterize truck traffic at the site

The air quality impacts from the traffic associated with an approximately 2,250,000 square foot facility are significant. The most significant factor used to quantify air quality impacts from project traffic is the vehicle trip rate, or the number of vehicle trips per day. A vehicle trip is one round trip (one trip segment to a site and one trip segment away from a site). In the case of the proposed Project, the primary concern will be the number of truck trips per day.

In the analysis of this Project, the Proponent estimates the vehicle trip rate used a truck trip rate of 1.96 trips per 1,000 square feet of land use to estimate operational air quality impacts instead of the default Cal EEMod land use model trip rate of 2.59 (an underestimation of operational emissions by 32%).

According to SCAQMD², for CEQA purposes, the volume of truck traffic predicted to serve a new large warehouse project has historically been derived using the ITE Trip Generation manual's general rate for warehouse projects (land use type 150), which is 4.96 trips per 1,000

² As reported in Appendix E, p. 10, Technical Source Documentation for the CalEEMod, prepared for the CAPCOA by Environ International Corporation and the California Air Districts, July 2013, available at : <http://www.aqmd.gov/caleemod/doc/AppendixE.pdf>

square feet (TSF). This is the same source of traffic data used in the URBEMIS air quality model.³ This value is from the 7th Edition of the ITE Trip Generation manual, published in 2003. Several developers of high-cube warehouses in recent years have questioned the validity of this value for modern warehousing operations and commissioned local studies to investigate these trip rates⁴. As a result, in the most recent version of the ITE Trip Generation manual (8th Edition, 2008), additional data has been included to provide a new high-cube warehouse (land use type 152) trip rate of 1.44 trips/TSF⁵.

This greatly reduced trip rate has been criticized in California. In order to avoid underestimating the number of trips associated with large warehouse/distribution center operations without rail service, the SCAQMD staff recommended that lead agencies utilize a rate of 2.59 trips per TSF for large warehouse air quality analyses on a project specific basis⁶. According to SCAQMD and based on a review of warehouse studies and operations, this value provides a reasonable default rate for individual new warehouses in the absence of more project-specific data.⁷ This trip rate has been accepted by CAPCOA and incorporated into the CalEEMod model.

Another way to illustrate how the DEIR greatly underestimates truck traffic associated with the Project is to review the estimated number of daily truck trips per 1,000 square feet of warehouse. As described above, the DEIR estimates 1.96 daily truck trips per 1,000 square feet.

³ *Ibid.*

⁴ *Ibid.*

⁵ *Ibid.*

⁶ *Ibid.*

⁷ *Ibid.*

The results of utilizing the CalEEMOD method for estimating the traffic impacts from the Project are substantial. Based upon the trip generation rate of 2.59, the total number of trips associated with Project would increase from 4,400 to 5,813 trips per day.

The net result is that the air quality analysis performed by the Proponent greatly underestimates the emissions from mobile sources by at least one-third during the operational phase of the Project. Those impacts are likely to lead to a significant impact that will be unmitigated and unaccounted for in the FEIR. Without proper modeling of the emissions from these additional vehicles the impacts on the environment and the citizens of the Moreno Valley are unknown.

Conclusion

The facts identified and referenced in this comment letter lead me to reasonably conclude that the Project will result in significant adverse impacts that were not identified in the FEIR and that are not adequately mitigated. Many of the FEIR's conclusions that environmental impacts are not significant or less than significant with mitigation are unsupported or contradicted by the evidence. As a result, several analyses presented in the FEIR, including impacts on air quality, fail to identify or disclose the magnitude of significant adverse impacts. To protect air quality and public health the Proponent must prepare a revised FEIR for the Project.

Sincerely,

A handwritten signature in blue ink, appearing to read "James Clark".

James Clark, Ph.D.

EXHIBIT C

4.7.1.4 Greenhouse Gas Inventories

The City of Moreno Valley estimated greenhouse gas emissions for the community for 2007 and 2010 and projected emissions for 2020 are shown in Table 4.7.B, which shows the reduced 2020 emissions are below the reduction target.

Table 4.7.B: City of Moreno Valley Projected Greenhouse Gas Emissions

Source Category	Moreno Valley Greenhouse Gas Emissions (MTCO ₂ e per year)			
	2007	2010	BAU 2020	Reduced 2020
Transportation	517,098	513,581	788,267	421,561
Energy	287,261	277,230	356,192	251,372
Area	69,390	69,437	84,665	73,046
Water and Wastewater	21,595	16,831	20,216	14,158
Solid Waste	44,294	43,633	49,203	38,000
Total	939,638	920,712	1,298,543	798,137
Reduction Target	—	—	798,693	798,693

Notes: MTCO₂e = metric tons of carbon dioxide equivalents BAU = business as usual
Source: Table 9, City of Moreno Valley Greenhouse Gas Analysis, 2012., MBA 2013

The existing WLC project site is largely vacant with scattered dry farming that generates minimal greenhouse gas emissions. For the purposes of this analysis, a zero baseline will be assumed to identify the “worst case” emissions (i.e., GHG emissions from the entire WLC project without removal of any existing GHG emissions).

4.7.2 Regulatory Setting

4.7.2.1 International Regulation of Climate Change

Intergovernmental Panel on Climate Change (IPCC). In 1988, the United Nations created the IPCC to provide independent scientific information regarding climate change to policymakers. The IPCC does not conduct research itself, but rather compiles information from a variety of sources into reports regarding climate change and its impacts. The IPCC has thereafter periodically released reports on climate change, and in 2007 released its Fourth Assessment Report which concluded most global climate change was the result of human activity, mainly the burning of fossil fuels (see Section 4.7.1.1).

United Nations Framework Convention on Climate Change. On March 21, 1994, the United States joined a number of countries around the world in signing the United Nations Framework Convention on Climate Change (Convention). Under the Convention, governments gather and share information on greenhouse gas emissions, national policies, and best practices; launch national strategies for addressing greenhouse gas emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change.

Kyoto Protocol. The Kyoto Protocol is an international agreement linked to the United Nations Framework Convention on Climate Change. The major feature of the Kyoto Protocol is that it sets binding targets for 37 industrialized countries and the European community for reducing greenhouse gas emissions at average of five per cent against 1990 levels over the five-year period 2008-2012. The Convention (discussed above) encouraged industrialized countries to stabilize emissions; however, the Protocol commits them to do so. Developed countries have contributed more emissions

**World Logistics Center Project
Draft Environmental Impact Report**

Table 4.7.I: Project Operational GHG Emissions (Year by Year with Mitigation)

Source	Emissions with Mitigation and Project Design Features (MTCO ₂ e/year)								
	2014	2015	2016	2017	2018	2019	2020	2021	2022
Vehicles	10,638	21,784	28,283	39,632	52,154	57,836	61,228	65,730	66,329
Trucks	51,111	107,099	141,204	199,737	269,134	304,600	328,592	358,109	366,971
Electricity	14,513	30,387	40,428	58,208	79,917	91,993	101,491	110,174	112,888
Natural gas	177	371	494	711	976	1,124	1,240	1,346	1,379
Water	299	626	833	1,199	1,646	1,895	2,090	2,269	2,325
Waste	12,812	26,826	35,690	51,385	70,550	81,211	89,595	97,261	99,657
Refrigerants	182	380	506	728	1,000	1,151	1,269	1,378	1,412
Construction	37,927	31,634	26,947	94,510	41,743	34,665	26,818	26,818	14,471
Sequestration	-14	-30	-40	-57	-79	-90	-100	-108	-111
Total	127,645	219,077	274,345	446,053	517,041	574,385	612,223	662,977	665,321
Threshold	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Significant?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Reduction summary: local vehicles = 3 percent; waste = 35 percent
Source: Michael Brandman Associates 2013.

-1285-

Item No. E.3

When compared with the proposed project, air quality impacts associated with the No Project/Existing General Plan Alternative would be correspondingly decreased in magnitude. Similar to the proposed project, the generation of these emissions would still result in a cumulative contribution of air pollutants in a nonattainment basin; therefore, impacts remain significant and unavoidable.

Table 6.E: No Project/Existing General Plan Alternative Operational Emissions

Source	Pollutant Emissions, lbs/day					
	CO	VOC	NO _x	SO _x	PM ₁₀	PM _{2.5}
Proposed Project ¹	3,466	729	3,059	21	1,685	153
No Project/Existing General Plan ²	4,853	1,114	1072	14	1,231	86
Net Change	+1,387	+385	-1,987	-7	-454	-67
SCAQMD thresholds	550	55	55	150	150	55
Alternative exceeds thresholds?	Yes	Yes	Yes	No	Yes	Yes

Source: MBA 2013

¹ MBA 2013 Air Quality Assessment for the proposed project

² From Moreno Highlands Specific Plan updated by MBA using CalEEMod software

Global Climate Change: GHG emissions associated with the No Project/Existing General Plan Alternative are correspondingly decreased as this alternative does not include a logistics warehouse component. In addition, the No Project/Existing General Plan Alternative would decrease the amount of water utilized and wastewater generated. As identified in Table 6.F, the No Project/Existing General Plan Alternative would generate 228,719 metric tons of total CO₂ equivalent¹ (mt CO₂e), which is approximately 60 percent less than what was identified for the proposed project.

Table 6.F: Comparison of Greenhouse Gas Emissions

Type of Development	Annual MTCO ₂ e Emissions	Change
Proposed Project	665,321	100%
No Project/No Build ¹	—	0%
No Project/Existing General Plan ²	228,719	35%
Alternative 1: Reduced Density	465,725	70%
Alternative 2: Mixed Use A	794,828	120%
Alternative 3: Mixed Use B	318,808	48%
Alternative Sites	665,321	100%

MTCO₂e is metric tons of carbon dioxide equivalents, which is a standard unit of measure for greenhouse gases.

¹ Estimated based on existing on-site rural residential uses.

² Based on approved Moreno Highland Specific Plan.

Source: MBA 2013 project air quality study, alternatives analysis (see Appendix D).

Hazards and Hazardous Materials: Development of the No Project/Existing General Plan Alternative would still result in the on-site handling of hazardous substances, both during project construction and operation. It is reasonable to assume that, like any current use, these substances would continue to be used in accordance with applicable local, State, and Federal standards. Impacts associated with the transport or use of hazardous materials or potential upsets or accidents would not be increased in magnitude because the intensity of development is still below what is envisioned under the proposed project. Therefore, it is not expected that increased quantities of hazardous materials would be present on site. With the adherence to existing hazardous materials regulations,

¹ Carbon dioxide equivalent (CO₂e) is an internationally accepted measure that expresses the amount of other greenhouse gases (e.g., methane and nitrous oxide) in terms of the amount of carbon dioxide (CO₂). The CO₂e measure is used as a way to measure the warming potential of a greenhouse gas as compared to CO₂, which has the highest global warming potential.

EXHIBIT D

1 DRINKER BIDDLE & REATH LLP
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5 Attorneys for Defendant and Real Party in Interest
VWR International, LLC
6

7
8 UNITED STATES DISTRICT COURT
9 EASTERN DISTRICT OF CALIFORNIA

10 COALITION FOR CLEAN AIR, et al.,

11 Plaintiff,

12 v.

13 VWR INTERNATIONAL, LLC, et al.,

14 Defendant.
15
16

Case No. 1:12-CV-1569-LJO-BAM

CONSENT JUDGMENT

17
18 Pursuant to Rules 54 and 58 of the Federal Rules of Civil Procedure, the Court hereby
19 ORDERS, ADJUDGES AND DECREES as follows:

20 1. Defendant VWR International, LLC (“VWR”) shall install two (2) electric vehicle
21 charging stations at its warehousing and distribution facility located at 8711 West Riggin Avenue
22 in the City of Visalia (the “Project”). VWR shall make said electric vehicle charging stations
23 available to VWR employees and/or customers.

24 2. VWR shall maintain the following features of the Project until June 11, 2022 (10
25 years after the Project became operational), unless VWR ceases to own and operate the Project in
26 its present form and for its present function prior to that time:

27 a. The emergency generator for the Project shall be powered by natural gas and
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- include a catalytic converter.
- b. Ninety percent of the truck carriers contracted to service the Project by VWR shall be Environmental Protection Agency SmartWay partners, provided however, that temporary variances from this percentage due to circumstances not created by VWR shall not be a violation of this order.
- c. The Project shall utilize energy efficient interior lighting, *i.e.*, light-emitting diodes (“LED”), and T5 and T8 fluorescent lamps, provided, however, that this order shall not prohibit VWR from incorporating new or different lighting technology that is at least as efficient.
- d. The Project shall utilize energy efficient exterior lighting, *i.e.*, LED, and T5 and T8 fluorescent lamps, provided, however, that this order shall not prohibit VWR from incorporating new or different lighting technology that is at least as efficient.
- e. The air conditioning system for the management offices at the Project shall use non-chlorofluorocarbon refrigerant.
- f. Cooling for the main warehouse space at the Project shall be provided through evaporative coolers rather than air conditioners, provided, however, that this order shall not prohibit VWR from incorporating new or different cooling technology that is at least as efficient.
- g. The warehouse space at the Project shall incorporate automated airflow and ventilation systems designed to minimize need for supplemental heating and cooling within the warehouse space.
- h. Forklifts and interior vehicles at the Project shall be electric powered.
- i. The Project shall use a building automation system to control and optimize the efficiency of its mechanical systems, including lighting, HVAC, exhaust dampers, fans, and ventilation louvers
- j. Interior lights shall incorporate motion sensors that turn them off when not in use.

- 1 k. The Project shall incorporate a light colored “cool roof” membrane to reduce
2 surface temperature, heat island effect, and heat transfer to the interior of the
3 structure.
- 4 l. The landscape design and irrigation system shall be in compliance with LEED
5 Silver certification standards to reduce water consumption.
- 6 m. The warehouse shall incorporate water-efficient building design with water
7 efficient fixtures and appliances meeting LEED Silver certification standards.
- 8 n. The Project shall have an operational recycling program covering paper,
9 corrugated cardboard, glass, plastics and metals.
- 10 o. A bicycle rack shall be provided at the Project for employees who wish to
11 bicycle commute.
- 12 p. Five (5) premium car/vanpool spaces shall be provided at the Project.

13 3. Notwithstanding the provisions of paragraph 2, above, this order shall not prohibit
14 VWR from incorporating new or different technology at its facility instead of the specific
15 technology specified in paragraph 2, provided that is no less efficient than the technology
16 specified.

17 4. VWR need not take further action to comply with San Joaquin Valley Air
18 Pollution Control District Rule 9510, as incorporated into the California State Implementation
19 Plan under the Clean Air Act (42 U.S.C. Section 7604(a)).

20 5. VWR need not take further action to comply with Visalia Municipal Code Section
21 17.28.040A.

22 6. VWR shall pay no civil penalties.

23 7. Nothing in this judgment shall prohibit VWR from selling, transferring,
24 demolishing, rebuilding, or repurposing the Project, in whole or in part, or the real property upon
25 which it sits.

26 8. Except as may otherwise be provided by written agreement, each party shall bear
27 their own fees and costs.

28 / / /

1 9. This judgment shall be entered by the clerk of the court forthwith. The Clerk is
2 directed to close this action.

3 IT IS SO ORDERED, ADJUDGED, AND DECREED.

4

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6 IT IS SO ORDERED.

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Dated: September 11, 2013

/s/ Lawrence J. O'Neill
UNITED STATES DISTRICT JUDGE

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EXHIBIT E

Recording requested by and when recorded please return to:

[Grantee's name & address]

(Space above this line reserved for Recorder's use)

DEED OF AGRICULTURAL CONSERVATION EASEMENT

This Deed of Agricultural Conservation Easement is granted on this ____ of _____ 2012, by [Landowner's name], [Ownership status], having an address at [Landowner's address] ("Landowner"), to [Grantee's name], a California nonprofit public benefit corporation, having an address at [Grantee's address] ("Grantee"), for the purpose of forever conserving the agricultural productive capacity and open space character of the subject property.

RECITALS

A. The Landowner is the sole owner in fee simple of the [farm/rangeland] property ("Property") legally described in Exhibit A ("Legal Description") and generally depicted in Exhibit B ("Vicinity Map"), attached to and made a part of this Agricultural Conservation Easement ("Easement"). The Property consists of approximately [acres] acres of land and is commonly known as the "[Farm/Ranch name]," together with buildings and other improvements, is located in [County name] County, California, and is identified by assessor's parcel number(s) [parcel numbers]. The existing buildings and improvements on the Property are shown within the Building Envelope as depicted in Exhibit C ("Building Envelope and Existing Improvements"), also attached to and made a part of this Easement. Except as shown in Exhibit C, the Property is open farmland, whose soils have been classified as [prime farmland, farmland of statewide importance, etc.] by the U.S. Department of Agriculture's Natural Resources Conservation Service, and by the California Department of Conservation's Farmland Mapping and Monitoring Program, because this land has the soil quality, growing season, and water supply needed for sustained agricultural production.

B. The agricultural and other characteristics of the Property, its current use and state of improvement, are documented and described in a Baseline Documentation Report ("Baseline Report"), prepared by the Grantee with the cooperation of the Landowner and incorporated herein by this reference. The Landowner and the Grantee acknowledge that the Baseline Report is complete and accurate as of the date of this Easement. Both the Landowner and the Grantee shall retain duplicate original copies of the Baseline Report. The Baseline Report may be used to establish whether or not a change in the use or condition of the Property has occurred, but its existence shall not preclude the use of other evidence to establish the condition of the Property as of the date of this Easement.

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C. The Department of Conservation’s California Farmland Conservancy Program (hereinafter alternatively referred to as the “Department” or “Department of Conservation”) has made a grant of funds to the Grantee to support the acquisition of this Agricultural Conservation Easement. The Department’s funds represent a substantial investment by the people of the State of California in the long-term conservation of valuable agricultural land and the retention of agricultural land in perpetuity. The Property and this Easement have met the California Farmland Conservancy Program’s mandatory eligibility criteria and certain selection criteria and have multiple natural resource conservation objectives. The rights vested herein in the State of California arise out of the State’s statutory role in fostering the conservation of agricultural land in California and its role as fiduciary for the public investment represented by the Department’s funds.

D. The Landowner grants this Easement for valuable consideration to the Grantee for the purpose of assuring that, under the Grantee’s perpetual granteeship, the agricultural productive capacity and open space character of the Property will be conserved and maintained forever, and that uses of the land that are inconsistent with these conservation purposes will be prevented or corrected. The parties agree, however, that the current agricultural use of, and improvements to, the Property are consistent with the conservation purposes of this Easement.

E. The conservation purposes of this Easement are recognized by, and the grant of this Easement will serve, the following clearly delineated governmental conservation policies:

The Farmland Protection Policy Act, P.L. 97-98, 7 U.S.C. section 4201 et seq., whose purpose is “to minimize the extent to which Federal programs and policies contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses, and to assure that Federal programs are administered in a manner that, to the extent practicable, will be compatible with State, unit of local government and private programs and policies to protect farmland;”

California Civil Code at Part 2, Chapter 4, (commencing with section 815), which defines and authorizes perpetual conservation easements;

California Constitution Article XIII, section 8, California Revenue and Taxation Code sections 421.5 and 422.5, and California Civil Code section 815.1, under which this Agricultural Conservation Easement is an enforceable restriction, requiring that the Property’s tax valuation be consistent with restriction of its use for purposes of food and fiber production and conservation of natural resources;

Section 10200 et seq. of the California Public Resources Code, which creates the California Farmland Conservancy Program within the Department;

85 Section 51220 of the California Government Code, which declares a public
86 interest in the preservation of agricultural lands, by providing that “agricultural
87 lands have a definitive public value as open space” and “that the discouragement of
88 premature and unnecessary conversion of agricultural land to urban uses is a matter
89 of public interest”;

90
91 California Food and Agriculture Code Section 821 states that one of the major
92 principles of the State's agricultural policy is "to sustain the long-term productivity
93 of the State's farms by conserving and protecting the soil, water, and air, which are
94 agriculture's basic resources;"

95
96 The California General Plan law section 65300 et seq. and Section 65400 et seq.
97 of the California Government Code, and the [*County name*] County General Plan,
98 as updated on [*Update date*], which includes as one of its goals to protect
99 farmlands designated as prime, of statewide importance, unique, or of local
100 importance from conversion to and encroachment of non-agricultural uses; and,

101
102 Resolution No. [*Resolution number*], approved by the Board of Supervisors of
103 [*County name*] County on the [*day*] of [*month*], [*year*], which expresses support
104 for the acquisition of this Easement and finds that the acquisition is consistent
105 with the County’s General Plan and the Resolution’s findings. (NOTE: If the
106 Property lies within the Sphere of Influence of an incorporated city, both the city
107 and county must pass resolutions of support.)

108
109 F. The Grantee is a California nonprofit organization within the meaning of
110 California Public Resources Code section 10221 and California Civil Code section 815.3
111 and is a tax exempt and “qualified conservation organization” within the meaning of
112 Sections 501(c)(3) and 170(b)(1)(A)(iv) as defined by the United States Internal Revenue
113 Code. Grantee, as certified by a resolution of Grantee's Board of Trustees, accepts the
114 responsibility of enforcing the terms of this Easement and upholding its conservation
115 purposes forever.

116 GRANT OF AGRICULTURAL CONSERVATION EASEMENT

117
118
119 Now, therefore, for the reasons given, and in consideration of their mutual
120 promises and covenants, terms, conditions and restrictions contained herein, and other
121 good and valuable consideration, the receipt and adequacy of which are hereby
122 acknowledged, the Landowner voluntarily grants and conveys to the Grantee, and the
123 Grantee voluntarily accepts, a perpetual conservation easement, as defined by Section
124 815.1 and 815.2 of the California Civil Code and California Public Resources Code
125 section 10211, and of the nature and character described in this Easement for the purpose
126 described below, and agree as follows:

127 1. *Conservation Purpose.*

128 The conservation purpose (“Conservation Purpose” or “Purpose”) of this Easement is to
129
130

131 enable the Property to remain in productive agricultural use in perpetuity by preventing
132 and correcting uses of the Property prohibited by the provisions of this Easement. To the
133 extent that the preservation of the open space character and [*scenic, habitat, natural, or*
134 *historic, etc.*] values of the Property are consistent with such use, it is within the Purpose
135 of this Easement to protect those values.

136
137 *2. Right to Use Property for Agricultural Purposes.*
138

139 The Landowner retains the right to use the Property for agricultural purposes, or to permit
140 others to use the Property for agricultural purposes, in accordance with applicable law and
141 this Easement.

142
143 *3. Prohibited Uses.*
144

145 The Landowner shall not perform, nor knowingly allow others to perform, any act on or
146 affecting the Property that is inconsistent with this Easement. Any use or activity that
147 would diminish or impair the agricultural productive capacity and open space character
148 [*or scenic, habitat, natural, historic etc. values*] of the Property, or that would cause
149 significant soil degradation or erosion, restrict agricultural husbandry practices, or that is
150 otherwise inconsistent with the Conservation Purpose is prohibited (“Prohibited Use”).
151 “Husbandry practices” means agricultural activities, such as those specified in Section
152 3482.5(e) of the California Civil Code, conducted or maintained for commercial purposes
153 in a manner consistent with proper and accepted customs and standards, as established
154 and followed by similar agricultural operations in the same locality. This Easement
155 authorizes the Grantee to enforce these covenants in the manner described herein.
156 However, unless otherwise specified, nothing in this Easement shall require the
157 Landowner to take any action to restore the condition of the Property after any Act of
158 God or other event over which it had no control. The Landowner understands that
159 nothing in this Easement relieves it of any obligation or restriction on the use of the
160 Property imposed by law.

161
162 *4. Permission of the Grantee.*
163

164 Where the Landowner is expressly required to obtain the Grantee’s permission for a
165 proposed use hereunder, said permission (a) shall not be unreasonably delayed or
166 withheld by the Grantee, (b) shall be sought and given in writing, with copies of all
167 documents to be provided to the Department, and (c) shall in all cases be obtained by the
168 Landowner prior to the Landowner's undertaking of the proposed use. The Grantee shall
169 grant permission to the Landowner only where the Grantee, acting in the Grantee's sole
170 reasonable discretion and in good faith, determines that the proposed use is not a
171 “Prohibited Use” per Section 3.

172
173 *5. Construction or Placement of Buildings and Other Improvements.*
174

175 The Landowner may undertake construction, erection, installation, or placement of
176 buildings, structures, or other improvements on the Property only as provided in

177 subsections (a) through (d) below. All other construction, erection, installation, or
178 placement of buildings, structures, or other improvements on the Property is prohibited.
179 Before undertaking any construction, erection, installation or placement that requires
180 permission, the Landowner shall notify the Grantee and obtain prior written permission
181 from the Grantee.

182
183 For purposes of this section, the term “improvements” shall not refer to, and specifically
184 excludes, crops, plants, trees, vines, or other living improvements planted for agricultural
185 purposes, nor shall it refer to irrigation improvements necessary or desirable to irrigate
186 the Property for agricultural purposes, all of which may be made without permission of
187 the Grantee.

188
189 (a) Fences – Existing fences may be repaired and replaced without permission of
190 the Grantee. New fences may be built anywhere on the Property for purposes of
191 reasonable and customary agricultural management, and for security of farm
192 produce, livestock, equipment, and improvements on the Property, without
193 permission of the Grantee.

194
195 (b) Agricultural Structures and Improvements – Existing agricultural structures
196 and improvements as shown in Exhibit C and more fully described in the Baseline
197 Report, may be repaired, reasonably enlarged, and replaced at their current
198 locations within the Building envelope for agricultural purposes without
199 permission from the Grantee. New buildings and other structures and
200 improvements to be used solely for agricultural production on the Property or sale
201 of farm products predominantly grown or raised on the Property, including barns
202 and equipment sheds, but not including any dwelling or farm labor housing, may
203 be built on the Property within the Building Envelope depicted in Exhibit B,
204 without permission of the Grantee. All permissible new agricultural structures
205 may be repaired, reasonably enlarged, and replaced without permission of the
206 Grantee. Any other agricultural production or marketing-related structures may
207 be constructed only with permission of the Grantee pursuant to Section 4.

208
209 (c) Residential Dwellings – The single-family dwelling shown in Exhibit C may
210 be repaired, enlarged or replaced at the current location entirely within the
211 Building Envelope shown in Exhibit C without permission of the Grantee. Said
212 single-family dwelling shall not exceed three thousand square feet (3,000 sq. ft.)
213 of living area. No other residential structures may be constructed or placed on the
214 Property except for agricultural employee housing per Section 5(d).

215
216 *(NOTE: With approval of the funder(s), this section may need to be modified*
217 *depending on the circumstances of the property and other factors)*

218
219 (d) Agricultural Employee Housing – The agricultural employee house shown in
220 Exhibit C may be repaired, enlarged or replaced at the current location entirely
221 within the Building Envelope shown in Exhibit C without permission of the
222 Grantee. No additional agricultural employee housing may be constructed or

223 placed on the Property without permission of the Grantee. Grantee may only
224 grant permission pursuant to Section 4 and only if the Landowner can
225 demonstrate to the Grantee's satisfaction that such additional agricultural
226 employee housing is reasonable and necessary for the agricultural operation of the
227 Property. The aggregate living area of agricultural employee housing shall not
228 exceed two thousand five hundred square feet (2,500 sq ft.). All agricultural
229 employee housing must be located entirely within the Building Envelope shown
230 in Exhibit C.

231

232 *(NOTE: With approval of the funder(s), this section may need to be modified*
233 *depending on the circumstances of the property and other factors)*

234

235 (e) Utilities and Septic Systems. Wires, lines, pipes, cables or other facilities
236 providing electrical, gas, water, sewer, communications, energy generation, or
237 other utility services solely to serve the improvements permitted herein or to
238 transmit power generated on the Property may be installed, maintained, repaired,
239 removed, relocated and replaced. In addition, septic or other underground
240 sanitary systems serving the improvements permitted herein may be installed,
241 maintained, repaired, replaced, relocated or improved, but must be located within
242 the Building Envelope. Power generation and transmission facilities primarily for
243 agricultural and other permitted uses on the Property may be constructed within
244 the Building Envelope. Power generated in excess of requirements on the
245 Property may be sold to appropriate public utilities. Notwithstanding the
246 foregoing, commercial power generation, collection or transmission facilities,
247 including wind or solar farms outside of Building Envelope, and the conveyance
248 of any rights-of-way over, under or on the Property for any such purpose, are
249 prohibited.

250

251 6. *No Subdivision.*

252

253 The division, subdivision, defacto subdivision, or partition of the Property, including
254 transfer of development rights, whether by physical, legal, or any other process, is
255 prohibited.

256

257 The Landowner and Grantee acknowledge and understand that the Property consists of
258 [number] legal parcel(s), and that no additional, separate legal parcels currently exist
259 within the Property that may be recognized by a certificate of compliance or conditional
260 certificate of compliance pursuant to California Government Code section 66499.35
261 based on previous patent or deed conveyances, subdivisions, or surveys. The Landowner
262 will not apply for or otherwise seek recognition of additional legal parcels within the
263 Property based on certificates of compliance or any other authority. The Landowner shall
264 continue to maintain the legal parcels comprising the Property, and all interests therein,
265 under common ownership, as though a single legal parcel.

266

267 Lot line adjustment may be permitted only with the written approval of the Grantee
268 pursuant to Section 4, in conjunction with the approval of the local jurisdiction, and for

269 purposes of maintaining, enhancing or expanding agricultural practices or productivity on
270 the Property.

271

272 *7. Extinguishment of Development Rights.*

273

274 The Landowner hereby grants to the Grantee all development rights except as specifically
275 reserved in this Easement, that were previously, are now or hereafter allocated to,
276 implied, reserved, appurtenant to, or inherent in the Property, and the parties agree that
277 such rights are released, terminated, and extinguished, and may not be used on or
278 transferred by either party to any portion of the Property as it now or later may be
279 bounded or described, or to any other property adjacent or otherwise, or used for the
280 purpose of calculating permissible lot yield of the Property or any other property. This
281 Easement shall not create any development rights.

282

283 *8. Mining.*

284

285 The mining or extraction of soil, sand, gravel, rock, oil, natural gas, fuel, or any other
286 mineral substance, using any method that disturbs the surface of the land, is prohibited.

287

288 *(NOTE: With approval of the funder(s), this section may need to be modified depending*
289 *on the circumstances of the property and other factors)*

290

291 *9. Paving and Road Construction.*

292

293 Other than existing roads shown within the Building Envelope as identified in the Baseline
294 Report, no portion of the Property presently unpaved shall be paved or otherwise covered
295 with concrete, asphalt, or any other impervious paving material, unless such measures are
296 required by air quality laws or regulations applicable to the Property. Except as otherwise
297 permitted herein, no road for access or other purposes shall be constructed without the
298 permission of the Grantee pursuant to Section 4. Notwithstanding the foregoing,
299 construction of unpaved farm roads, as necessary or desirable by agricultural operations,
300 is permitted without permission from the Grantee. The Landowner shall notify the
301 Grantee of any significant net relocation or addition of unpaved farm roads.

302

303 *10. Trash and Storage.*

304

305 The dumping or accumulation on the Property of any kind of trash, refuse, vehicle bodies
306 or parts, or "Hazardous Materials," as defined in Section 25 is prohibited. Farm-related
307 trash and refuse produced on the Property may be temporarily stored on the Property
308 subject to all applicable laws. The storage of agricultural products and byproducts
309 produced on the Property and materials reasonably required for agricultural production
310 on the Property, including Hazardous Materials, is permitted as long as it is done in
311 accordance with all applicable government laws and regulations.

312

313

314 11. *Commercial Signs.*

315

316 Commercial signs (including billboards) unrelated to permitted activities conducted on
317 the Property are prohibited.

318

319 12. *Recreational Uses; Motorized Vehicle Use Off Roadways*

320

321 Resort structures, athletic fields, golf courses, non-residential swimming pools, public or
322 commercial airstrips, commercial equestrian facilities, public or commercial helicopter
323 pads, and any other non-agricultural recreational structures or facilities are prohibited on
324 the Property. Recreational structures or improvements for the personal use of the
325 Landowner and its guests (e.g. swimming pool, tennis court) are permitted only within
326 the Building Envelope. The use of motorized vehicles off roadways and outside of the
327 Building Envelope is prohibited except where used for agricultural production, property
328 maintenance and security, or for the purpose of monitoring this Easement.

329

330 13. *Water Rights.*

331

332 The Landowner shall retain and reserve all ground water, and all appurtenant,
333 prescriptive, contractual or other water rights appurtenant to the Property at the time this
334 Easement becomes effective. The Landowner shall not permanently transfer, encumber,
335 lease, sell, or otherwise separate such quantity of water or water rights from title to the
336 Property itself. Permanent separation of water or water rights is prohibited. All water
337 shall be retained in [*County name*] County for agricultural production and used in
338 conjunction with the improvements permitted by Section 5 of this Easement only. Water
339 may be distributed to a contiguous property or other property owned or leased by the
340 Landowner on an annual basis for agricultural production only. Any temporary
341 distribution of water shall not impair the long-term agricultural productive capacity or
342 open space character of the Property.

343

344 14. *Rights Retained by the Landowner.*

345

346 Subject to Section 7 and to interpretation under Section 22, as owner of the Property, the
347 Landowner reserves all interests in the Property not transferred, conveyed, restricted,
348 prohibited or extinguished by this Easement. These ownership rights include, but are not
349 limited to, the right to sell, lease, or otherwise transfer the Property to anyone the
350 Landowner chooses, as well as the right to privacy, the right to exclude any member of
351 the public from trespassing on the Property, and any other rights consistent with the
352 Purpose of this Easement. Nothing contained herein shall be construed as a grant to the
353 general public of any right to enter upon any part of the Property.

354

355 Nothing in this Easement relieves the Landowner of any obligation or restriction on the
356 use of the Property imposed by law.

357

358

359 15. *Responsibilities of the Landowner and the Grantee Not Affected.*

360
361 Other than as specified herein, this Easement is not intended to impose any legal or other
362 responsibility on the Grantee, or in any way to affect any existing obligation of the
363 Landowner as owner of the Property. Among other things, this shall apply to:

364
365 (a) Taxes – The Landowner shall be solely responsible for payment of all taxes
366 and assessments levied against the Property. If the Grantee ever pays any taxes or
367 assessments on the Property, or if the Grantee pays levies on the Landowner’s
368 interest in order to protect Grantee’s interests in the Property, the Landowner will
369 reimburse the Grantee for the same. It is intended that this Easement constitute an
370 enforceable restriction within the meaning of Article XIII, Section 8 of the
371 California Constitution and that this Easement qualify as an enforceable
372 restriction under the provisions of California Revenue and Taxation Code
373 Sections 402.1(a)(8) and 423.

374
375 (b) Upkeep and Maintenance – The Landowner shall be solely responsible for the
376 upkeep and maintenance of the Property, to the extent it may be required by law.
377 The Grantee shall have no obligation for the upkeep or maintenance of the
378 Property. If the Grantee acts to maintain the Property in order to protect the
379 Grantee’s interest in the Property, the Landowner will reimburse the Grantee for
380 any such costs.

381
382 (c) Liability and Indemnification – In view of the Grantee’s and the Department
383 of Conservation’s negative rights, limited access to the land, and lack of active
384 involvement in the day-to-day management activities on the Property, the
385 Landowner shall indemnify, protect, defend and holds harmless the Grantee, the
386 Department of Conservation, their officers, directors, members, employees,
387 contractors, legal representatives, agents, successors and assigns (collectively,
388 “Agents and Assigns”) from and against all liabilities, costs, losses, orders, liens,
389 penalties, claims, demands, damages, expenses, or causes of action or cases,
390 including without limitation reasonable attorneys’ fees, arising out of or in any
391 way connected with or relating to the Property or the Easement. The Landowner
392 shall be solely liable for injury or the death of any person, or physical damage to
393 any property, or any other costs or liabilities resulting from any act, omission,
394 condition, or other matter related to or occurring on or about the Property,
395 regardless of cause, unless due to the negligence or willful misconduct of the
396 Grantee, the Department of Conservation, and/or their respective Agents and
397 Assigns. The Grantee shall be named as an additional insured on Landowner’s
398 general liability insurance policy.

399
400 Neither the Grantee, the Department of Conservation, nor their Agents and
401 Assigns shall have responsibility for the operation of the Property, monitoring of
402 hazardous conditions on it, or the protection of the Landowner, the public or any
403 third parties from risks relating to conditions on the Property. Without limiting
404 the foregoing, neither the Grantee, the Department, nor their respective Agents

405 and Assigns shall be liable to the Landowner or other person or entity in
406 connection with consents given or withheld, or in connection with any entry upon
407 the Property occurring pursuant to this Easement, or on account of any claim,
408 liability, damage or expense suffered or incurred by or threatened against the
409 Landowner or any other person or entity, except as the claim, liability, damage, or
410 expense is the result of the gross negligence or intentional misconduct of the
411 Grantee, the Department, and/or their respective Agents and Assigns.
412

413 *16. Monitoring.*
414

415 The Grantee shall manage its responsibilities as holder of this Easement in order to
416 uphold the Purpose of this Easement. The Grantee's responsibilities include, but are not
417 limited to, annual monitoring, such additional monitoring as circumstances may require,
418 record keeping, and enforcement of this Easement, for the purpose of preserving the
419 Property's agricultural productive capacity and open space character in perpetuity.
420 Failure of the Grantee to carry out these responsibilities shall not impair the validity of
421 this Easement or limit its enforceability in any way. With reasonable advance notice
422 (except in the event of an emergency circumstance or prevention of a threatened breach),
423 Grantee shall have the right to enter upon, inspect, observe, monitor and evaluate the
424 Property to identify the current condition of, and uses and practices on the Property and
425 to determine whether the condition, uses and practices are consistent with this Easement.
426

427 Grantee shall indemnify, defend with counsel of Landowner's choice, and hold
428 Landowner harmless from, all expense, loss, liability, damages and claims, including
429 Landowner's attorneys' fees, if necessary, arising out of Grantee's entry on the Property,
430 unless caused by a violation of this Easement by Landowner or by Landowner's
431 negligence or willful misconduct.
432

433 The Grantee shall report to the Department of Conservation by June 30 of each year after
434 the annual monitoring visit, describing method of monitoring, condition of the Property,
435 stating whether any violations were found during the period, describing any corrective
436 actions taken, the resolution of any violation, and any transfer of interest in the Property.
437 Failure to do so shall not impair the validity of this Easement or limit its enforceability in
438 any way.
439

440 *17. Enforcement.*
441

442 The Grantee may take all actions that it deems necessary to ensure compliance with the
443 terms, conditions, covenants, and purposes of this Easement. The Grantee shall have the
444 right to prevent and correct violations of the terms, conditions, covenants, and purposes
445 of this Easement. If the Grantee finds what it believes is a violation or potential
446 violation, it may at its discretion take appropriate legal action to ensure compliance with
447 the terms, conditions, covenants, and purposes of this Easement and shall have the right
448 to correct violations and prevent the threat of violations. Except when an ongoing or
449 imminent violation could irreversibly diminish or impair the agricultural productive
450 capacity and open space character of the Property, the Grantee shall give the Landowner

451 written notice of the violation or potential violation, and thirty (30) days to correct it,
452 before filing any legal action.

453

454 If a court with jurisdiction determines that a violation may exist, has occurred, or is about
455 to occur, the Grantee may obtain an injunction, specific performance, or any other
456 appropriate equitable or legal remedy, including (i) money damages, including damages
457 for the loss of the agricultural conservation values protected by this Easement, (ii)
458 restoration of the Property to its condition existing prior to such violation, and (iii) an
459 award for all of the Grantee's expenses incurred in stopping and correcting the violation,
460 including but not limited to reasonable attorney's fees. The failure of the Grantee to
461 discover a violation or potential violation, or to take immediate legal action to prevent or
462 correct a violation or potential violation known to the Grantee, shall not bar the Grantee
463 from taking subsequent legal action. The Grantee's remedies under this section shall be
464 cumulative and shall be in addition to all remedies now or hereafter existing at law or in
465 equity.

466

467 Without limiting the Landowner's liability therefor, the Grantee shall apply damages
468 recovered to the cost of undertaking any corrective action on the Property. Should the
469 restoration of lost values be impossible or impractical for whatever reason, the Grantee
470 shall apply any and all damages recovered to furthering its mission, with primary
471 emphasis on agricultural conservation easement acquisition and enforcement.

472

473 In the event the Grantee fails to enforce any term, condition, covenant or purpose of this
474 Easement, as determined by the Director of the Department of Conservation, the Director
475 of the Department and his or her successors and assigns shall have the right to enforce the
476 Easement after giving notice to the Grantee and the Landowner and providing a
477 reasonable opportunity under the circumstances for the Grantee to enforce any term,
478 condition, covenant, or purpose of the Easement. In the event that the Director of the
479 Department determines that the Grantee has failed to enforce any of the terms,
480 conditions, covenants, or purposes of the Easement, the Director of the Department and
481 his or her successors and assigns shall be entitled to exercise the same right to enter the
482 Property granted to the Grantee, including right of immediate entry in the event of an
483 emergency or suspected emergency where the Director of the Department or his or her
484 successor or assign determines that immediate entry is required to prevent, terminate or
485 mitigate a violation of this Easement.

486

487 Failure or refusal to exercise any rights under the terms of this Easement by the Grantee
488 in the event of a violation by the Landowner of any term herein shall not constitute a
489 waiver or forfeiture of the Grantee's right to enforce any term, condition, covenant, or
490 purpose of this Easement.

491

492 18. *Transfer of Easement.*

493

494 This Easement may only be assigned or transferred to a private nonprofit organization
495 that, at the time of transfer, is a "qualified organization" under Section 170(h) of the
496 United States Internal Revenue Code and meets the requirements of Section 815.3(a) of

497 the California Civil Code and has similar purposes to preserve agricultural lands and
498 open space. If no such private nonprofit organization exists or is willing to assume the
499 responsibilities imposed by this Easement, then this Easement may be transferred to any
500 public agency authorized to hold interests in real property as provided in Section 815.3(b)
501 of the California Civil Code. Such an assignment or transfer may proceed only if the
502 organization or agency expressly agrees to assume the responsibility imposed on the
503 Grantee by the terms of this Easement and is expressly willing and able to hold this
504 Easement for the Purpose for which it was created. All assignment and assumption
505 agreements transferring the Easement shall be duly recorded in <County name> County.

506
507 If the Grantee should desire to assign or transfer this Easement, the Grantee must obtain
508 written permission from the Landowner and the Department of Conservation, which
509 permission shall not be unreasonably withheld.

510
511 If the Grantee or its successors ever ceases to exist or no longer qualifies under Section
512 170(h) of the U.S. Internal Revenue Code, or applicable state law, the Department of
513 Conservation, in consultation with the Landowner, shall identify and select an
514 appropriate private or public entity to whom this Easement shall be transferred.

515
516 *19. Perpetual Duration and No Merger of Title.*

517
518 Pursuant to California Civil Code at Part 2, Chapter 4, (commencing with section 815),
519 which defines and authorizes perpetual conservation easements; this Easement shall run
520 with the land in perpetuity. Every provision of this Easement that applies to the
521 Landowner or the Grantee shall also apply to their respective agents, heirs, executors,
522 administrators, assigns, and all other successors as their interests may appear.

523
524 No merger of title, estate or interest shall be deemed effected by any previous,
525 contemporaneous, or subsequent deed, grant, or assignment of an interest or estate in the
526 Property, or any portion thereof, to the Grantee, or its successors or assigns. It is the
527 express intent of the parties that this Easement not be extinguished by, merged into,
528 modified, or otherwise deemed affected by any other interest or estate in the Property
529 now or hereafter held by the Grantee or its successors or assigns.

530
531 *20. Transfer of Property Interest.*

532
533 Any time the Property itself, or any interest in it, is transferred by the Landowner to any
534 third party, the Landowner shall notify the Grantee and the Department of Conservation
535 in writing at least thirty (30) days prior to the transfer of the Property or interest, and the
536 document of conveyance shall expressly incorporate by reference this Easement. Any
537 document conveying a lease of the Property shall expressly incorporate by reference this
538 Easement. Failure of the Landowner to do so shall not impair the validity of this
539 Easement or limit its enforceability in any way.

540
541

542 21. *Amendment of Easement.*

543

544 This Easement may be amended only with the written consent of the Landowner, the
545 Grantee, and the Director of the Department of Conservation. Any such amendment shall
546 be consistent with the Purpose of this Easement and with the Grantee's easement
547 amendment policies, and shall comply with all applicable laws, including Section 170(h)
548 of the Internal Revenue Code, or any regulations promulgated in accordance with that
549 section, and with Section 815 et seq. of the California Civil Code, and the California
550 Farmland Conservancy Program Act as codified in Section 10200 et seq. of the California
551 Public Resources Code, and any regulations promulgated thereunder. No amendment
552 shall diminish or affect the perpetual duration or the Purpose of this Easement, nor the
553 status or rights of the Grantee under the terms of this Easement.

554

555 This Easement and any amendment to it shall be recorded in [*County name*] County.
556 Copies of any amendments to this Easement shall be provided to the Department of
557 Conservation within 30 days of recordation.

558

559

560 22. *Termination of Easement.*

561 *(NOTE: Landowners may waive the administrative termination provision defined in*
562 *Public Resources Code sections 10270-77, in which case Scenario A shall be used below,*
563 *with potential easement termination shall be governed solely by judicial termination*
564 *proceedings. Otherwise, Scenario B on page 15 shall be used.)*

565

566 ***[Scenario A: Landowner's Administrative Termination Rights Waived]***

567

568 (a) It is the intention of the parties that the Conservation Purpose of this Easement
569 shall be carried out forever as provided in the Section 10211 of the Public
570 Resources Code and Section 815 et seq. of the Civil Code. Accordingly,
571 Landowner hereby waives on behalf of the Landowner and the Landowner's
572 successors and assigns all rights at law or inequity to request a termination of this
573 Easement pursuant to Public Resources Code Sections 10270 et seq.

574

575 Waiver of Right to Request Administrative Termination:

576

577 Landowner's Initials: _____ [*and* _____]

578

579 (b) Other than pursuant to eminent domain or purchase in lieu of eminent
580 domain, no other voluntary or involuntary sale, exchange, conversion, or
581 conveyance of any kind of all or part of the Property, or of any interest in it, shall
582 limit or terminate the provisions of this Easement. This Easement can only be
583 terminated or extinguished, whether in whole or in part, by judicial proceedings in
584 a court of competent jurisdiction. The fact that the land is not in agricultural use
585 is not reason for termination of this Easement.

586

587 Termination of the Easement through condemnation is subject to the requirements

588 of Section 10261 of the Public Resources Code, the eminent domain laws of the
589 State of California, federal law, and this Easement. The Property may not be
590 taken by eminent domain or in lieu of eminent domain if the planned use is more
591 than seven (7) years in the future (California Code of Civil Procedure section
592 1240.220). Grantee shall be paid by the condemnor the value of the Easement at
593 the time of condemnation (Public Resources Code section 10261(a)(2)). Purchase
594 in lieu of condemnation, or settlement of an eminent domain proceeding, shall
595 occur pursuant to applicable laws and procedures, including but not limited to
596 California Government Code sections 7267.1 and 7267.2, and shall require
597 approval of the Grantee, the Director of the Department, and the [match funder].
598 Grantee shall have an opportunity to accompany the appraiser for the condemning
599 agency when the appraiser goes on the Property with Landowner. Should this
600 Easement be condemned or otherwise terminated on any portion of the Property,
601 the balance of the Property shall remain subject to this Easement. In this event,
602 all relevant related documents shall be updated and re-recorded by the Grantee to
603 reflect the modified easement area. Encumbrances junior to this Easement shall
604 remain subordinate to the Easement as amended.
605

606 (c) In the event the Landowner is notified that a public entity intends or proposes
607 to acquire the Easement Area in whole or in part by eminent domain, the
608 Landowner shall provide the Grantee, the Department, and the [match funder]
609 with a copy of the notification within five (5) business days of having received
610 such notification. In the event the Landowner intends to seek termination of the
611 easement pursuant to initiation of a judicial proceeding which is not based on
612 eminent domain, the Landowner shall notify the Grantee, the Department and the
613 [match funder] of such intent no later than sixty (60) days before initiating such
614 proceedings. No inaction or silence by the Grantee, the Department, or the
615 [match funder] shall be construed as abandonment of the Easement.
616

617 (d) The grant of this Easement gives rise to a property right immediately vested in
618 the Grantee. For the purpose of determining the amount to be paid by the
619 Landowner in a repurchase of the Easement pursuant to judicial proceedings, and
620 for the purpose of allocating proceeds from a sale or other disposition of the
621 Property at the time of termination, the Easement and the Grantee's property right
622 therein shall have a value equal to the difference between the current fair market
623 value of the Property as if unencumbered by this Easement and the current fair
624 market value of the Property encumbered by this Easement, each as determined
625 on or about the date of termination. The values shall be determined by an
626 appraisal performed by an appraiser jointly selected by the Landowner and the
627 Grantee. The Landowner shall pay the cost of the appraisal, and it is subject to
628 approval by the Department and the [match funder]. Nothing herein shall prevent
629 the Landowner, the Grantee, the Department, or the [match funder] from having
630 an appraisal prepared at its own expense.
631

632 (e) Upon approval of termination of this Easement or any portion thereof, the
633 Landowner shall reimburse the State of California, Department of Conservation

634 California Farmland Conservancy Program Fund and *[match funder]*, the amount
635 equal to the value of the Easement that is terminated. If the entire Easement is
636 terminated, the amount required to be paid in connection with the Landowner's
637 repurchase shall be distributed as follows: (i) to the State of California,
638 Department of Conservation, California Farmland Conservancy Program Fund,
639 ?%; and (ii) to the *[match funder]*, ?%, representing the proportion of easement
640 value originally contributed by these agencies for the purchase of this Easement.
641 If only a portion of the Easement is so terminated, the reimbursement shall be
642 pro-rated. This Easement shall not be deemed terminated under a judicial
643 termination proceeding until such payment is received by the State of California,
644 Department of Conservation California Farmland Conservancy Program Fund, the
645 *[match funder]* and Grantee *[if any bargain sale occurred]*. Grantee, in using any
646 funds received from the termination of this Easement, shall use the funds in a
647 manner consistent with the Purpose of this Easement.

648
649 *(NOTE: Additional language IRS language may need to be used for landowners*
650 *seeking IRS recognition of a charitable donation)*

651
652 (f) If the Grantee obtains payment on a claim under a title insurance policy
653 insuring this Easement, payment shall be distributed as set forth in Section 22(e).

654
655 ***[Scenario B: Landowner's Administrative Termination Rights NOT Waived]***

656
657 (a) Other than pursuant to eminent domain or purchase in lieu of eminent domain,
658 no other voluntary or involuntary sale, exchange, conversion, or conveyance of
659 any kind of all or part of the Property, or of any interest in it, shall limit or
660 terminate the provisions of this Easement. This Easement can only be terminated
661 or extinguished, whether in whole or in part, by judicial proceedings in a court of
662 competent jurisdiction or by administrative termination pursuant to Section
663 10270-10277 of the Public Resources Code. The fact that the land is not in
664 agricultural use is not reason for termination of this Easement.

665
666 Termination of the Easement through condemnation is subject to the requirements
667 of Section 10261 of the Public Resources Code, the eminent domain laws of the
668 State of California, federal law, and this Easement. The Property may not be
669 taken by eminent domain or in lieu of eminent domain if the planned use is more
670 than seven (7) years in the future (California Code of Civil Procedure section
671 1240.220). Grantee shall be paid by the condemnor the value of the Easement at
672 the time of condemnation (Public Resources Code section 10261(a)(2)). Purchase
673 in lieu of condemnation, or settlement of an eminent domain proceeding, shall
674 occur pursuant to applicable laws and procedures, including but not limited to
675 California Government Code sections 7267.1 and 7267.2, and shall require
676 approval of the Grantee, the Director of the Department, and the *[match funder]*.
677 Grantee shall have an opportunity to accompany the appraiser for the condemning
678 agency when the appraiser goes on the Property with Landowner. Should this
679 Easement be condemned or otherwise terminated on any portion of the Property,

680 the balance of the Property shall remain subject to this Easement. In this event,
681 all relevant related documents shall be updated and re-recorded by the Grantee to
682 reflect the modified easement area. Encumbrances junior to this Easement shall
683 remain subordinate to the Easement as amended.
684

685 (b) In the event the Landowner is notified that a public entity intends or proposes
686 to acquire the Easement Area in whole or in part by eminent domain, the
687 Landowner shall provide the Grantee, the Department, and the [match funder]
688 with a copy of the notification within five (5) business days of having received
689 such notification. In the event the Landowner intends to seek termination of the
690 easement pursuant to administrative termination or judicial proceeding that is not
691 based on eminent domain, the Landowner shall notify the Grantee, the
692 Department and the [match funder] of such intent no later than sixty (60) days
693 before initiating such proceedings. No inaction or silence by the Grantee, the
694 Department, or the [match funder] shall be construed as abandonment of the
695 Easement.
696

697 (c) The grant of this Easement gives rise to a property right immediately vested in
698 the Grantee. For the purpose of determining the amount to be paid by the
699 Landowner in a repurchase of the Easement at the time of a administrative
700 termination or pursuant to judicial proceedings, and for the purpose of allocating
701 proceeds from a sale or other disposition of the Property at the time of
702 termination, the Easement and the Grantee's property right therein shall have a
703 value equal to the difference between the current fair market value of the Property
704 as if unencumbered by this Easement and the current fair market value of the
705 Property encumbered by this Easement, each as determined on or about the date
706 of termination. The values shall be determined by an appraisal performed by an
707 appraiser jointly selected by the Landowner and the Grantee. The Landowner
708 shall pay the cost of the appraisal, and it is subject to approval by the Department
709 and the [match funder]. Nothing herein shall prevent the Landowner, the Grantee,
710 the Department, or the [match funder] from having an appraisal prepared at its
711 own expense.
712

713 (d) Upon approval of termination of this Easement or any portion thereof, the
714 Landowner shall reimburse the State of California, Department of Conservation
715 California Farmland Conservancy Program Fund and [match funder], the amount
716 equal to the value of the Easement that is terminated. If the entire Easement is
717 terminated, the amount required to be paid in connection with the Landowner's
718 repurchase shall be distributed as follows: (i) to the State of California,
719 Department of Conservation, California Farmland Conservancy Program Fund,
720 ?%; and (ii) to the [match funder], ?%, representing the proportion of easement
721 value originally contributed by these agencies for the purchase of this Easement.
722 If only a portion of the Easement is so terminated, the reimbursement shall be
723 pro-rated. This Easement shall not be deemed terminated under a judicial
724 termination proceeding until such payment is received by the State of California,
725 Department of Conservation California Farmland Conservancy Program Fund, the

726 [match funder] and Grantee [if any bargain sale occurred]. Grantee, in using any
727 funds received from the termination of this Easement, shall use the funds in a
728 manner consistent with the Purpose of this Easement.

729
730 (NOTE: Additional language IRS language may need to be used for landowners
731 seeking IRS recognition of a charitable donation)

732
733 (s) If the Grantee obtains payment on a claim under a title insurance policy
734 insuring this Easement, payment shall be distributed as set forth in Section 22(d).

735
736 23. Interpretation.

737
738 (a) This Easement shall be interpreted under the laws of the State of California,
739 resolving any ambiguities and questions of the validity of specific provisions so as
740 to give maximum effect to its conservation purposes.

741
742 (b) References to specific authorities in this Easement shall be to the statute, rule,
743 regulation, ordinance, or other legal provision that is in effect at the time this
744 Easement becomes effective.

745
746 (c) No provision of this Easement shall constitute governmental approval of any
747 improvements, construction or other activities that may be permitted under this
748 Easement.

749
750 24. Notices.

751
752 Any notices to the Landowner and the Grantee required by this Easement shall be in
753 writing and shall be personally delivered or sent by First-Class Mail to the following
754 addresses, unless a party has been notified by the other of a change of address:

755
756 To the Landowner:

757
758 _____
759 _____
760 _____

761
762 To the Grantee:

763
764 _____
765 _____
766 _____

767
768 Any notices required by this Easement to be sent to the Department shall be in writing
769 and shall be personally delivered or sent by first class mail, at the following address,
770 unless a party has been notified by the Department of a change of address:

771

772 To the Department of Conservation:

773

774 Department of Conservation

775 801 K Street, MS 18-01

776 Sacramento, CA 95814

777 Attn: California Farmland Conservancy Program

778

779 25. *The Landowner's Environmental Warranty.*

780

781 (a) Nothing in this Easement shall be construed as giving rise to any right or
782 ability in the Grantee or the Department of Conservation to exercise physical or
783 management control over the day-to-day operations of the Property, or any of the
784 Landowner's activities on the Property, or otherwise to become an "owner" or
785 "operator" with respect to the Property as those words are defined and used in
786 environmental laws, including the Comprehensive Environmental Response,
787 Compensation, and Liability Act of 1980 ("CERCLA"), as amended or any
788 corresponding state and local statute or ordinance.

789

790 (b) The Landowner warrants that it has no actual knowledge of a release or
791 threatened release of any Hazardous Materials on, at, beneath or from the
792 Property. Moreover the Landowner hereby promises to defend and indemnify the
793 Grantee and the Department of Conservation against all litigation, claims,
794 demands, penalties and damages, including reasonable attorneys' fees, arising
795 from or connected with the release or threatened release of any Hazardous
796 Materials on, at, beneath or from the Property, or arising from or connected with a
797 violation of any Environmental Laws. The Landowner's indemnification
798 obligation shall not be affected by any authorizations provided by the Grantee to
799 the Landowner with respect to the Property or any restoration activities carried
800 out by the Grantee at the Property; provided, however, that the Grantee shall be
801 responsible for any Hazardous Materials contributed after this date to the Property
802 by the Grantee.

803

804 (c) The Landowner warrants that it shall remain in compliance with, all applicable
805 Environmental Laws. The Landowner warrants that there are no notices by any
806 governmental authority of any violation or alleged violation of, non-compliance
807 or alleged non-compliance with or any liability under any Environmental Law
808 relating to the operations or conditions of the Property.

809

810 (d) "Environmental Law" or "Environmental Laws" means any and all Federal,
811 state, local or municipal laws, rules, orders, regulations, statutes, ordinances,
812 codes, guidelines, policies or requirements of any governmental authority
813 regulating or imposing standards of liability or standards of conduct (including
814 common law) concerning air, water, solid waste, Hazardous Materials, worker
815 and community right-to-know, hazard communication, noise, radioactive
816 material, resource protection, subdivision, inland wetlands and watercourses,
817 health protection and similar environmental health, safety, building and land use

818 as may now or at any time hereafter be in effect.

819

820 (e) “Hazardous Materials” means any petroleum, petroleum products, fuel oil,
821 waste oils, explosives, reactive materials, ignitable materials, corrosive materials,
822 hazardous chemicals, hazardous wastes, hazardous substances, extremely
823 hazardous substances, toxic substances, toxic chemicals, radioactive materials,
824 infectious materials and any other element, compound, mixture, solution or
825 substance which may pose a present or potential hazard to human health or the
826 environment or any other material defined and regulated by Environmental Laws.

827

828 (f) If at any time after the effective date of this Easement there occurs a release,
829 discharge or other incident in, on, or about the Property of any substance now or
830 hereafter defined, listed, or otherwise classified pursuant to any federal, state, or
831 local law, regulation, or requirement as hazardous, toxic, polluting, or otherwise
832 contaminating to the air, water, or soil, or in any way harmful or threatening to
833 human health or the environment, the Landowner agrees to take any steps that are
834 required of the Landowner with respect thereto under federal, state, or local law
835 necessary to ensure its containment and remediation, including any cleanup.

836

837 26. *The Landowner’s Title Warranty; No Prior Conservation Easements.*

838

839 The Landowner represents and warrants that it owns the entire fee simple interest in the
840 Property, including the entire mineral estate, and hereby promises to defend this
841 Easement against all claims that may be made against it. Any and all financial liens or
842 financial encumbrances with priority over this Easement existing as of the date of the
843 recording of this Easement have been subordinated. Exhibit C (Prior Encumbrances) sets
844 forth all prior encumbrances. The Landowner represents and warrants that the Property
845 is not subject to any other conservation easement whatsoever.

846

847 27. *Granting Subsequent Easements, Interests in Land, or Use Restrictions.*

848

849 With permission of the Grantee pursuant to Section 4, the Landowner may grant
850 subsequent easements, including conservation easements, interests in land, or use
851 restrictions on the Property. Under no circumstances shall the Grantee approve the
852 granting of subsequent easements, interests in land, or use restrictions that might diminish
853 or impair the agricultural productive capacity or open space character of the Property.
854 The Grantee’s written approval shall be obtained at least thirty (30) days in advance of
855 the Landowner’s execution of any proposed subsequent easement, interests in land, or use
856 restriction on the Property, and such subsequent easements, interests in land, and use
857 restrictions shall make reference to and be subordinate to this Easement. The Grantee
858 shall notify the Department immediately upon receipt of request by the Landowner to
859 grant a subsequent easement, interest in land, or use restriction on the Property. The
860 Grantee shall notify the Department in the event that it approves the grant of any
861 subsequent easement, interest in land, or use restriction on the Property.

862

863 28. *Severability.*

864

865 If any term, provision, covenant, condition, or restriction of this Easement is held by a
866 court of competent jurisdiction to be unlawful, invalid, void, unenforceable, or not
867 effective the remainder of this Easement shall remain in full force and effect and shall in
868 no way be affected, impaired, or invalidated.

869

870 29. *Entire Agreement.*

871

872 This Easement is the final and complete expression of the agreement between the parties
873 with respect to the subject matter contained herein. Any and all prior or
874 contemporaneous agreements with respect to this subject matter, written or oral, are
875 merged into and superseded by this written instrument.

876

877 30. *Acceptance.*

878

879 As attested by the signature of its [*Position title*] affixed hereto, as authorized by
880 Grantee's Board of Directors/Trustees, in exchange for consideration, the Grantee hereby
881 accepts without reservation the rights and responsibilities conveyed by this Deed of
882 Agricultural Conservation Easement.

883

884 To Have and To Hold, this Deed of Agricultural Conservation Easement unto the
885 Grantee, its successors and assigns, forever.

886

887 In Witness Whereof, the Landowner and the Grantee, intending to legally bind
888 themselves, have set their hands on the date first written above.

889

890 LANDOWNER

891

892 [*Landowner's Name*].

893

894 By: _____

895

896 Name: _____

897

898 Title: _____

899

900
901
902
903
904
905
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GRANTEE

[*Grantee's Name*],
a California nonprofit public benefit corporation

By: _____

Name: _____

Title: _____

ACKNOWLEDGMENTS

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958

State of California) ss
County of)

On _____ before me, _____, personally appeared
_____, who proved to me on the basis of satisfactory evidence to
be the person(s) whose name is subscribed to the within instrument and acknowledged to
me that he executed the same in his authorized capacity, and that by his signature on the
instrument the person, or the entity upon behalf of which the person acted, executed the
instrument.

I certify under PENALTY of PERJURY under the laws of the State of California that the
foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____

Notary Public

State of California) ss
County of)

On _____ before me, _____, personally appeared
_____, who proved to me on the basis of satisfactory evidence to
be the person(s) whose name is subscribed to the within instrument and acknowledged to
me that he executed the same in his authorized capacity, and that by his signature on the
instrument the person, or the entity upon behalf of which the person acted, executed the
instrument.

I certify under PENALTY of PERJURY under the laws of the State of California that the
foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____

Notary Public

959 Exhibit A (Legal Description) Attached
960 Exhibit B (Vicinity Map) Attached
961 Exhibit C (Building Envelope and Existing Improvements) Attached
962 Exhibit D (Prior Encumbrances) Attached
963
964

965
966
967
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970

Exhibit A
(Legal Description)

971
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973
974
975
976

Exhibit B
(Vicinity Map)

977
978
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980
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Exhibit C
(Building Envelope and Existing Improvements)

983
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987

Exhibit D
(Prior Encumbrances)

EXHIBIT F

News & Events: [Join Riverside Land Conservancy, Mission Inn Foundation and Museum and Friends of Mt. R...](#)

 [Click' Here Subscribe to our New](#)

Conservation Easements

The Riverside Land Conservancy is increasingly making use of conservation easements as a conservation tool. A conservation easement (or conservation restriction) is a legal agreement between a landowner and a land trust or government agency that permanently limits uses of the land in order to protect its conservation value. It allows landowners to continue to own and use their land and to sell it or pass it on to heirs. Future owners continue to be bound by the easement's terms. Currently, RLC holds conservation easements on 801 acres in western Riverside and San Bernardino Counties including a conservation easement on the 150 acre Colton Dehii sands flower-loving fly Conservation Bank. RLC is in active negotiations to accept an additional 375 acres of conservation easements on sensitive open space and natural habitat areas.



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Riverside Land Conservancy
4075 Mission Inn Avenue, Riverside, CA 92501
Phone: (951) 788-0670
[Send Us An Email](#)
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WILL THE WORLD LOGISTIC CENTER TRUCK TRAFFIC IMPACT YOUR HOME OR NEIGHBORHOOD? SOUND WALLS MAY HELP LOWER SOUND LEVELS, BUT THEY DON'T STOP TOXIC DIESEL POLLUTION FROM ENTER YOUR YARDS AND NEIGHBORHOODS. Come to our Saturday April 13th Valley View HS meeting 10 a.m.-12 noon.

PLEASE READ

Locust Avenue between Moreno Beach Drive and Smiley Boulevard (54). Only the 2035 case results in a significant noise increase for this area. In 2035 the project will result in a 3.5 dB increase raising the noise level up to 68.9 CNEL. There are three single-family homes along this roadway and they front onto the roadway. As discussed above, homes that front onto a street cannot be effectively mitigated with a soundwall. ***Therefore, this potentially significant impact feasibly cannot be mitigated.***

Moreno Beach Drive between Locust Avenue and Ironwood Avenue (56). Only the 2035 case results in a significant noise increase for this area. In 2035 the project will result in a 3.3 dB increase raising the noise level up to 66.6 CNEL. There are 18 single-family homes along this roadway. Some homes front onto the roadway, but most backup to the roadway. Currently there are no soundwalls along these homes. The walls would need to be 6 feet tall with respect to the rear yard. **Roughly 2,000 feet of six foot tall barrier** would need to be provided for mitigation for 15 of the 18 impacted homes (Exhibit 18). With the retrofit the noise levels would drop at least 5 dB, with the resultant noise levels around 62 CNEL in rear yard areas. Approximately 3 homes would remain unmitigated, because these homes front onto Moreno Beach.

Ironwood Avenue between Redlands Boulevard and Highland Boulevard (36). A significant noise increase is projected for all four study years on this roadway link. In 2035, the noise level will increase 5 dB to 63.6 CNEL. There are two single-family homes that front onto Ironwood Avenue. There are also two churches along this roadway, however, the churches are setback from the roadway far enough that no significant impacts will occur. Although the noise levels remain below the City's 65 CNEL standard, the noise levels will increase substantially above those without the project. As discussed above, homes that front onto a street cannot be effectively mitigated with a soundwall. ***This potentially significant impact feasibly cannot be mitigated.***

Redlands Boulevard from State Route 60 to San Timoteo Canyon Road (35, 42). The noise analysis shows significant noise increases along this roadway segment for the 2012, 2022, and 2035 cases. The increases in noise are around 2 dB with a resultant noise level in the 71 to 72 CNEL range. There are 28 homes along this roadway that would be affected. The single-family homes are scattered and generally front the roadway. As discussed above, homes that front onto a street cannot be effectively mitigated with a soundwall. ***Therefore, this potentially significant impact feasibly cannot be mitigated.***

San Timoteo Canyon Road from Alessandro Road to Live Oak Canyon Road to Redlands Boulevard (177, 179). The noise analysis shows a significant impact in the existing (2012) to existing plus project comparison. The noise increases by a little over 3 dB with resultant noise levels in the 65 to 66 CNEL range. There are four scattered residences along the roadway that would be impacted. As discussed above, homes that are scattered cannot be effectively mitigated with a soundwall. ***Therefore, this potentially significant impact feasibly cannot be mitigated.***

Theodore Street from State Route 60 to Highland Blvd (38). The noise analysis indicates that the project will cause a 2.9 dB increase in the year 2035 with a resulting noise level of 67.9 CNEL. There are 4 homes on Theodore Street that front onto the roadway. As discussed above, homes that front onto a street cannot be effectively mitigated with a soundwall. ***This potentially significant impact feasibly cannot be mitigated.***

State Route 60 from Moreno Beach Drive to Redlands Boulevard (33). A significant increase is shown for the existing case and for 2035. It is not feasible to modify the existing residential block wall to lower the increase in project generated noise because block walls are designed for the height that they are built. It is also infeasible for the Lead Agency to demolish the existing walls on private property and build new ones of increased height so that the noise level increases are lowered. ***Therefore, this potentially significant impact feasibly cannot be mitigated.***

WILL THE WORLD LOGISTIC CENTER TRUCK TRAFFIC IMPACT YOUR HOME OR NEIGHBORHOOD? SOUND WALLS MAY HELP LOWER SOUND LEVELS, BUT THEY DON'T STOP TOXIC DIESEL POLLUTION FROM ENTER YOUR YARDS AND NEIGHBORHOODS. SOME EXISTING WALLS WILL BE TORN DOWN AND REPLACED. PLEASE READ

Cactus Avenue from Redlands Boulevard to Street D (Towards eastern end of Cactus Avenue)(50). A significant noise increase is project for all four case years. Currently there is no soundwall along these homes. The homes along Cactus Avenue are elevated above the roadway. A soundwall will need to be located at the top of the slope along the residents rear yards. At the top of slope the residents currently have wrought iron fencing. The wrought iron fencing would need to be replaced with a masonry wall or retrofitted with a glass barrier. The walls would need to be 6 feet tall with respect to the rear yard. Roughly 1,000 feet of barrier would need to be provided depending on where Street D intersects Cactus Avenue. With the retrofit the noise levels would drop at least 5 dB, with the resultant noise levels around 63 CNEL in rear yard areas. A new 6 foot high wall at the top of slope for the existing residences that are on the south side of Cactus Avenue between Street D and Redlands Boulevard is needed for mitigation. The 6 foot wall will need to extend roughly 1,000 feet. Prior to the opening of Street D, the soundwall should be in place.

Cactus Avenue West of Redlands Boulevard (32). This area shows noise increases ranging from 1.5 dB to 5.1 dB depending on the study year. Only the 2035 case results in a significant noise increase. Single-family residences back up to this street with rear yards facing Cactus Avenue. Soundwalls are located along the residences that are approximately 6 foot high. Rear yard areas are approximately 60 feet from the centerline of the roadway. In 2035, the noise levels projected for the yard area, including the effects of the soundwall, will be 64.8 CNEL which will be below the City standard of 65 CNEL. The significant impact is not creating noise levels above the noise standard, but rather creating a significant increase in noise levels above the ambient noise level that would not occur without the project. It will be necessary to modify the existing residential block wall, or to remove and replace the wall to lower the increase in project generated noise.

John F. Kennedy Drive South of Cactus Avenue (9). The homes along John F. Kennedy Drive south of Cactus Avenue will experience significant noise increases for all four study years. Similar to the area along Cactus Avenue, this noise increase will be due to cars and light trucks, and not heavy trucks. The homes along the west side of the roadway are generally lower than the adjacent roadway have a roughly 6 foot soundwall. The homes on the east side of the roadway do not have any soundwalls and are elevated with respect to the roadway. Rear yards areas on both sides of the street generally are in the range of 60 to 90 feet from the centerline of the roadway. Without any sound barrier exterior noise levels at the residences along John F. Kennedy Drive will be 67.9 CNEL. The homes on the west side of the roadway have soundwalls and slope conditions that will reduce noise levels 6 to 10 dB, putting these homes well under the City criteria. Homes on the west side of the street will not be impacted. Homes on the east side of the street do not have soundwalls, and there will be a significant impact unless adequately mitigated.

The homes on the east side of John F. Kennedy Drive are elevated with respect to the road. Their rear yard area sits above the roadway, so there is a slope going up to their yards. At the top of slope the residents have wrought iron fencing. The wrought iron fencing would need to be replaced with a masonry wall or retrofitted with a glass barrier. The walls would need to 6 feet tall with respect to the rear yard. Roughly 5,000 feet of barrier would need to be provided. With the retrofit the noise levels would drop at least 5 dB, with the resultant noise levels around 62.6 CNEL in rear yard areas. A new 6 foot high wall at the top of slope for the existing residences that are on the east side of John F. Kennedy Drive between Cactus Avenue and Bay Hill Drive will be needed for mitigation. The 6 foot wall will need to extend roughly 5,000 feet.

Perris Boulevard between John F. Kennedy Drive and Iris Avenue (303). Only the 2035 case results in a significant noise increase for this area. In 2035 the project will result in a 1.7 dB increase raising the noise level to 72.2 CNEL for areas without a soundwall. This is a mixed area in terms of residential land use. There are 36 single-family homes along this roadway, some with a soundwall and some without. There is also a large multi-family development without a soundwall. Most of the homes either back up to the roadway or side-on to the roadway, making a soundwall feasible. Approximately half of the homes along this roadway do have a soundwall in place. For these homes, there would not be a significant noise impact since for the year 2035 the noise would increase by 1.7 dB going up to 66.2 CNEL.

The walls would need to be 6 feet tall with respect to the rear yard. Roughly 1,500 feet of barrier would need to be provided (Exhibit 19). With the retrofit the noise levels would drop at least 5 dB, with the resultant noise levels around 61 CNEL in rear yard areas. A new 6 foot high wall along the property line for the existing residences that are on Perris Boulevard between John F. Kennedy Drive and Iris Avenue is needed for mitigation (Exhibit 19). The 6 foot wall will need to extend roughly 2,000 feet. The impact is not anticipated to occur until sometime after 2022 and before 2035.

Redlands Boulevard from Dracaea Avenue to State Route 60 (12, 13). The noise analysis shows significant noise increases along this roadway segment for the 2012, 2022, and 2035 cases. There are scattered homes in this area that either face Redlands Boulevard (actually on Shubert Street) or are on Redlands Boulevard. As discussed above, homes that front onto a street cannot be effectively mitigated with a soundwall. *Therefore, this potentially significant*

Item No. E.3 *to be mitigated. SPREAD THE WORD- ABOUT THESE AND OTHER NOISE IMPACTS!!!*

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PROJECT MEMORANDUM

Date: June 10, 2014

To: Jeff Bradshaw, City of Moreno Valley

From: Kent Norton, LSA Associates

Project: ProLogis Eucalyptus Industrial Park FEIR

Subject: PC Comment Letters

On April 24, 2014, the City Planning Commission held a continued public hearing on the ProLogis Eucalyptus Industrial Park project, including the Final Environmental Impact Report (FEIR). Just prior to the meeting, the following three additional comment letters were received from: (1) the law firm of Johnson & Sedlack (J&S) dated April 24; (2) George Hague, a local Sierra Club representative; and (3) the law firm of Lozeau Drury LLP dated April 23. It should be noted that these letters are attached for the reader's reference.

While the comments in these letters were similar in nature and scope to those made by these same firms on the Draft EIR, they focused on the responses to their many comments on the DEIR. The following responses are general in nature and mainly intended to clarify the information already provided in the Draft and Final EIR documents. There were no new issues raised by these additional comments as outlined in the California Environmental Quality Act (CEQA). Please let me know if you need any additional information in this regard.

1. Johnson & Sedlack Letter (April 24, 2014)

Comment A (page 1): *The FEIR has been updated to incorporate an August 31, 2012 letter from Lozeau Drury, LLP. The changes made and responses to comments in the updated FEIR illustrate, rather than resolve, defects of the EIR. For example, response to comment 12 at page 222 fails to address any of the proposed mitigation to further reduce GHG impacts where such effects are many times SCAQMD's proposed quantitative threshold.*

Response to Comment A: The response to comment 12 on page 222 of the FEIR does not address any of the proposed mitigation because, as explained in that response, the emissions of greenhouse gases by the proposed project are determined to be less-than-significant and therefore no mitigation is needed.

Comment B (page 1): *The addition of MM 4.6.6.1A provides for testing onsite for contamination by agricultural chemicals which should be done in the EIR prior to consideration by the City of Project approval due to the farming which occurred after the Phase 1 assessment and the risk of pesticides onsite not previously addressed.*

Response to Comment B: Responses 8 and 9 to Letter D-4A in the Final EIR go into great detail about the potential for contamination by agricultural chemicals on the project site, and the conclusion is there is only a low or minor potential. There is no indication that contamination is widespread, and almost of the site was previously surveyed for soil contamination, including soil tests for such chemicals. However, Mitigation Measure 4.6.6.1A was added to address this potential impact, as explained in the responses. There is no evidence that would lead a reasonable person to conclude that the potential for soil contamination by agricultural chemicals on this site was so high as to require soil testing and remediation prior to approval of the project. It is common in this portion of Riverside County to find former agricultural sites that have low or negligible levels of some agricultural chemicals as may be present on the project site. However, as outlined in

the indicated responses, these do not represent a significant environmental impact (i.e., one that would prevent approval of the project), and the additional mitigation measure will assure there will be no significant impacts in this regard as it will be implemented prior to grading or development of the site.

Comment C (page 1): *Air quality and health risk impacts are also shown to be understated, yet receive only brief responses in the FEIR. The responses to comments ignore/overlook whole portions of the comments made; for example, the responses made to Letter D-4B and D-4C fail to address the very important issues raised therein.*

Response to Comment C: The air quality and health risk impacts are all well documented and thoroughly analyzed. Nowhere has either been shown to be understated. In fact, as explained in the health risk assessment, the potential air quality and health risk impacts shown in the FEIR are analyzed using conservative assumptions so that they are intentionally overstated to be protective of the health of any individual affected by the air emissions from the projects construction and/or operation.

Comment D (pages 1 and 2): *Overall, the responses for this letter does not evidence good faith, reasoned analysis, or resolve the substantial concerns raised. More importantly, this minor update to the FEIR does not address or resolve the many significant flaws raised in the other comments on the EIR and made previously, which demand the EIR and its studies be significantly modified, updated, and recirculated prior to consideration of this Project for approval. The City should determine not to approve the Project and not to certify this defective EIR. It is apparent that this Project is good only for the developer and bad for the environment and people of Moreno Valley. The Project requires City approval of ten applications for development including a General Plan Amendment and Zone Change, undermining future planning for development in the City. The existing General Plan designation and zoning for the project site consists of a balanced collection of land uses to meet a specific need of the City, which this Project would entirely obliterate. (i.e. by converting for Project development land presently designated in the General Plan R15, R5, and R2; Zoning BP, BPX, R15, R5, RA-2, and PAKO-land).*

Response to Comment D: The EIR does provide a reasoned and reasonable assessment of the potential impacts of the proposed project, including changes in the General Plan and zoning designations for the site. The EIR identifies the significant environmental impacts that will result from implementation of the project even with the proposed feasible mitigation, as required by CEQA. It will be up to the discretion of the City to take appropriate action on the project in light of the whole record of evidence presented in the Draft and Final EIR documents.

Comment E (page 2): *The Project will also result in, as disclosed in the EIR, significant and unmitigated impacts to aesthetics, agricultural resources, air quality, population and housing, and transportation. In addition, many commenters cited a lack of evaluation, disclosure, and adequate mitigation regarding numerous other impacts, including health risks, air quality, GHGs, biology, etc. Given the harm to the community and region expected to be caused by the Project, and the failures of the EIR prepared for the Project, Project denial is well supported. At a minimum, the EIR and its technical studies must be significantly updated and recirculated before this Project is even considered for approval by the City.*

Response to Comment E: As required by CEQA, the EIR identifies the significant environmental impacts that will result from implementation of the project even with the proposed feasible mitigation. It should be noted that much of the delay in processing the project environmental documents in a timely fashion are due to the City's moratorium on development processing within the eastern SR-60 corridor during 2013, and responding to comments on the CEQA documents raised by conservation groups. There has been no empirical evidence submitted that would indicate updated technical studies would identify any new or different significant impacts of the project.

Comment F (page 2): *Additionally, Caltrans sent a letter to the City dated March 17, 2014 recommending that the City of Moreno Valley coordinate a state sponsored program of collecting transportation mitigation fees from development projects to make improvements to the State Highway System. I concur that such a fee program is essential to ensuring that all feasible traffic mitigation is adopted for this Project and others like it in the City. The City should take Caltrans' request to heart and work with the State in developing a mitigation fee program for highway impacts prior to making any approval relative to this Project. Until such a program is adopted, the City ignores its obligations to adopt all feasible mitigation for traffic impacts for this Project and others.*

Response to Comment F: The EIR outlines mitigation that is needed for project-related impacts, but a number of the recommended improvements are under the jurisdiction of Caltrans, not the City. It would be up to Caltrans to develop a regional mitigation program for freeway-related improvements, and certainly the City can encourage Caltrans to initiate such a program. However, as previously stated, the Caltrans-related improvements are not feasible according to the definition of CEQA since the lead agency (i.e., the City) does not have control over them. Therefore, the mitigation has to be determined to be infeasible at this time and the impacts determined to be significant.

2. George Hague Letter (April 24, 2014)

Comment A (page 1): *The developer states that even though a recent court case allows you to require Ag mitigation which will also serve raptor foraging, they are unable to find an AG mitigation bank in Riverside Co. I believe there will be an AG mitigation program by occupancy of the project and you could require mitigation at that time. The state does have such programs and the developer could use those—even if the county doesn't have an AG mitigation program.*

Response to Comment A: An Appeals Court decision (*Building Industry Association of Central California v. County of Stanislaus*) certified in November 29, 2010 may be more applicable to this situation. That case concluded that it is appropriate to mitigate at a 1:1 ratio for the loss of prime agricultural land through the acquisition of an offsite agricultural easement if such a program is established by a county or regional governmental entity. However, as outlined in the DEIR section, there is no established County or regional program, and active agriculture in western Riverside County is no longer economically viable or feasible. It should be noted that the State provides information on how to establish agricultural easements and mitigation banks, but the State does not fund or maintain such programs in western Riverside County.

Comment B (page 1): *Even though the developer believes they do not need to include the World Logistics Center (WLC) in their cumulative impacts, it is our opinion that the WLC was a foreseeable project based on newspaper articles, and conversations in the community.*

Response to Comment B: According to the procedures identified in CEQA, the list of cumulative projects is established at the time the baseline environmental conditions are set, which is the time the Notice of Preparation (NOP) is issued for the EIR. The NOP for the ProLogis EIR was issued on February 4, 2008 which was four years before the NOP for the World Logistics Center EIR which was issued on February 3, 2012. As much as the commenter would like the ProLogis project and EIR to be connected to the World Logistics Center project, CEQA does not allow the lead agency to “cherry pick” development information that occurs subsequent to issuing the NOP. In addition, the World Logistics Center project is highly controversial and it is not clear or reasonable to conclude at this time that project would be approved.

Comment C (page 1): *Caltrans wants a mitigation Bank. Will you require this project to participate in such? I am sure all in the room would appreciate anything you can do to mitigate noise on SR-60.*

Response to Comment C: The EIR outlines mitigation that is needed for project-related impacts, but a number of the recommended traffic improvements are under the jurisdiction of Caltrans, not the City. It would be up to

Caltrans to develop a regional mitigation program for freeway-related improvements, including noise walls, and certainly the City can encourage Caltrans to initiate such a program. However, as previously stated, the Caltrans-related improvements are not feasible according to the definition of CEQA since the lead agency (i.e., the City) does not have control over them. Therefore, the mitigation has to be determined to be infeasible at this time and the impacts determined to be significant. It should also be noted that there are already sound walls along the SR-60 freeway through much of the City, so it is unclear to what specific noise mitigation on the SR-60 the commenter is referring.

Comment D (page 1): *The WLC will cast a cancer plume over basically all of Moreno Valley. This project as you heard will add to it.*

Response to Comment D: The EIR examined the potential health risks of the ProLogis project which are relatively limited due to the size of the project, and as explained above in Response B, the ProLogis EIR was not able to include any information on potential impacts of the World Logistics Center project. The reader should note however that the World Logistics Center Specific Plan EIR does include an extensive analysis of potential project and cumulative health risks related to that project, which does include the ProLogis project in its cumulative projects list because the ProLogis project was in the City's development review process when the NOP for the World Logistics Center project was issued.

Comment E (page 1): *This project is being honest to a point with traffic impacts. Moreno Beach South will be impacted, including a new housing tract being built now near the substation. The environmental document also has impacts at Alessandro Blvd at Nason but not further west because of the City's 5 mile limit which isn't far enough to address full impacts of its traffic.*

Response to Comment E: The radius for cumulative projects that could contribute traffic to City streets was adequate for determining the significance of traffic impacts from the proposed ProLogis project. The commenter has not provided any empirical evidence that would suggest the traffic study parameters and methodology were not appropriate or not consistent with the City's long-established requirements for such studies.

Comment F (page 1): *The City's General Plan is now internally inconsistent with all the changes since its adoption and this project only increases that problem.*

Response to Comment F: The City has the discretion to determine at what point its General Plan must be updated to incorporate General Plan Amendments that have occurred since the last update of the General Plan. In addition, CEQA requires projects that propose any amendments to the General Plan to evaluate the potential environmental impacts of those changes in their CEQA compliance documents, which was included in the EIR for the ProLogis project. The commenter has provided no empirical evidence to indicate this or other General Plan Amendments would result in significant adverse impacts on the environment that have not either been mitigated to less than significant levels or that cannot be mitigated but the project provides various benefits to the community that outweigh the identified impacts (see the Findings of Fact and Statement of Overriding Considerations for this project).

3. Lozeau Drury Letter (April 23, 2014)

NOTE: This letter was too long to include in its entirety in this brief response memo, but the reader is encouraged to refer to that letter for the specific text of each comment as appropriate.

Comment A (page 2): *There is no substantial evidence to support the FEIR's remarkable assertion that the air quality mitigations applied to the Project will reduce GHG emissions by 70,000 tons per year. It is not sufficient under CEQA for the City to pick a few air quality mitigations of unknown efficacy and then simply assume that*

they will miraculously reduce the Project's 79,000 metric tons of GHG emissions down to less than 10,000 metric tons.

Response to Comment A: The FEIR never claims that the project-related emissions of GHGs will be reduced to an annual rate of 10,000 metric tons of CO₂e. As stated in the FEIR on page 109, “The Draft EIR (Section 4.3) made a determination that the proposed project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases and no mitigation is required. However, it was determined that the proposed project would generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment and mitigation was proposed to reduce these project-specific effects to less than significant (Draft EIR, page 4.3-21 through 4.3-26).” It should also be noted that the 10,000 metric ton “limit” is a guideline and only a threshold used by the SCAQMD for evaluating its own projects – it has not been adopted as a legal standard for the City of Moreno Valley or other cities at this point.

Comment B (pages 2-3): *The FEIR must do more than make exaggerated claims of mitigation effectiveness.*

Response to Comment B: The FEIR does not make any claims related to the effectiveness of mitigation of project-related emissions of GHGs. The significance conclusions are not based on the effectiveness of any mitigation, but rather as described in Section 4.13.6, “...project-related GHG emissions and their contribution to global climate change impacts in the State are less than significant and less than cumulatively considerable because: (1) the project’s impacts alone would not cause or significantly contribute to global climate change, and (2) the project has no substantial effect on consumption of fuels or other energy resources, especially fossil fuels that contribute to GHG emissions when consumed.”

Comment C (page 3): *Claiming to rely on a qualitative assessment, the City instead applies bald assumptions, assuming that the air quality mitigations will have a dramatic effect on reducing GHG emissions from the project all the way down to a level of insignificance, i.e. less than 10,000 metric tons per year.*

Response to Comment C: See the Response to Comment B.

Comment D (page 3): *The second rationale set forth in the EIR is that “the project has no substantial effect on consumption of fuels or other energy resources, especially fossil fuels that contribute to GHG emissions when consumed.” How a project that will generate upwards of 5,000 vehicle trips per day would have no substantial effect on consumption of fuels is not further elucidated in the EIR.*

Response to Comment D: The basis for this assertion in the FEIR is that the project is not manufacturing vehicles, thus the vehicles that will travel to and from the project site are vehicles that already exist and are in use. The project will only cause them to be used in a different location. When analyzing local or even regional impacts this relocation of vehicles is important, however, when analyzing a global impact, the location of vehicles does not matter.

Comment E (page 3): The commenter suggests the cumulative analysis in the ProLogis EIR must include the World Logistics Center project.

Response to Comment E: According to the procedures identified in CEQA, the list of cumulative projects is established at the time the baseline environmental conditions are set, which is the time the Notice of Preparation (NOP) is issued for the EIR. The NOP for the ProLogis EIR was issued on February 4, 2008 which was four years before the NOP for the World Logistics Center EIR which was issued on February 3, 2012. As much as the commenter would like the ProLogis project and EIR to be connected to the World Logistics Center project, CEQA does not allow the lead agency to “cherry pick” development information that occurs subsequent to issuing the NOP. In addition, the World Logistics Center project is highly controversial and it is not clear or reasonable to conclude at this time that project would be approved. Therefore, the World Logistics Center project does not constitute “significant new information” at this time within the definition of CEQA.

Comment F (page 5): *The substantial evidence in the record establishes that the Project will have a significant impact on GHG emissions, including the sheer volume of its GHG emissions and its adverse impact on the City's ever achieving its GHG reduction targets. The FEIR confirms that the City has not gathered in any estimate of actual reductions of GHG emissions by any of the mitigation measures it purports will address those emissions. Hence, it is clear that there is no substantial evidence in the record to show that the Project will emit 10,000 metric tons or less per year of CO₂ equivalents.*

Response to Comment F: The FEIR does not use 10,000 metric tons of CO₂ equivalents as a threshold of significance nor make any claims that GHG emissions would be reduced to that level.

Comment G (page 6): The commenter believes the EIR underestimates the air quality impacts of the project because the project traffic study used the wrong trip generation rates.

Response to Comment G: The commenter is incorrect, the traffic study for the project did use appropriate trip generation rates as described in the Draft EIR Section 4.11 and the project Traffic Impact Assessment (TIA)(DEIR Appendix I). The City requires TIAs to use the latest trip generation rates established by the International Traffic Engineers (ITE) which was done in this case, based on similar kinds of projects in the region. The SCAQMD trip rates have not been vetted through regional traffic modeling maintained by the Southern California Association of Governments (SCAG) or the Western Riverside Council of Governments (WRCOG). Until they are, the City will continue to require the use of appropriate ITE trip rates for TIAs within the City.

Comment H (page 6): *The EIR Does Not Include Additional Feasible Mitigation Measures to Further Reduce the Project's Significant Impacts From its Emissions of NO_x and PM₁₀ and, Without Requiring Additional Measures, the City Cannot Adopt a Statement of Overriding Considerations. The measures include requiring electrified loading docks for all refrigeration units and the use of fuel cell trucks to reduce NO_x emissions.*

Response to Comment H: The FEIR includes all feasible mitigation available to reduce the emissions of NO_x and PM₁₀; however, these are not sufficient to reduce the emissions levels to less than significant. Regarding the two measures cited, the first would not reduce the emissions of trucks driving to and from the project site, only those from trucks while loading or unloading, a very small portion of the overall truck emissions. The second is not feasible until fuel cell trucks become commercially available.

Comment I (page 8): *The list of measures included in Mitigation Measure 4.3.6.5B should be mandatory and enforceable in order to be consistent with the CEQA Guidelines.*

Response to Comment I: The measures listed in Mitigation Measure 4.3.6.5B are intended to be suggestions for the developer to choose from to reduce energy consumption by 10% above Title 24 standards (as described in the FEIR Response to Comment D-3, No. 109).

Comment J (page 8): *LIUNA Local 1184 appreciates the change in the FEIR to make the energy efficiency requirement set forth in Measure 4.3.6.5A mandatory rather than voluntary. However, a number of the requirements embedded within the mandatory efficiency standard should also be adjusted to be mandatory requirements or otherwise clarified. For example, there is a requirement that lease/purchase documents shall identify that tenants are merely encouraged to promote a list of air pollution reduction measures. See DEIR, 1-27 – 1-28, Table 1.C; FEIR, pp. 58-59, 61-62. The FEIR should be revised to make these feasible tenant/purchaser measures mandatory as well.*

Response to Comment J: The measures listed in Mitigation Measure 4.3.6.5A (in the DEIR, the revised mitigation measure in the FEIR is 4.3.6.6.A) are intended to be suggestions for the developer to choose from to reduce energy consumption by 10% above Title 24 standards (as described in the FEIR Response to Comment D-3, No. 109).

Comment K (page 8): *Measure 4.3.6.5A also includes a vague requirement to “[i]ncorporate energy efficient space heating and cooling equipment.” This measure should be clarified to require that cooling for the main warehouse spaces at the Project shall be provided through evaporative coolers rather than air conditioners, or use new or different cooling technology that is at least as efficient. In addition, the mitigation should require the warehouse spaces to incorporate automated airflow and ventilation systems designed to minimize need for supplemental heating and cooling within the warehouse spaces. These measures are feasible, having been applied at other warehouse facilities.*

Response to Comment K: As described in the Response to SCAQMD Comment 1 on page 57 of the FEIR, the City desires to address the District’s recommendations to the extent feasible, so the applicant has agreed to allow the following modifications to Mitigation Measure 4.3.6.6A to incorporate the District’s recommendations to eliminate “encouraged” with stronger enforceable language. This is sufficient to satisfy the SCAQMD. The building HVAC system will be built in compliance with all California building codes resulting in a highly efficient system.

Comment L (page 8): *Currently, Measure 4.3.6.5A requires that “[a]ll buildings shall be designed to accommodate renewable energy sources, such as photovoltaic solar electricity systems, appropriate to their architectural design.” FEIR, p. 197. This mitigation measure should be revised to require that photovoltaic, or comparable renewable energy sources, be actually installed on all buildings sufficient to provide all of the energy needs of the Project and, if feasible, surplus energy to help offset the Project’s remaining pollution emissions.*

Response to Comment L: The GHG emissions resulting from project-related energy demand increases is approximately 2.75% of the total GHG emissions predicted from project operations. While the installation of photovoltaic (or comparable renewable energy sources) would reduce the energy demand somewhat, it would only affect this small percentage of the total project emissions. Thus, adding photovoltaic panels would have a negligible effect on the total GHG emissions.

Comment M (page 8): *Additionally, Mitigation Measure 4.3.6.5B currently appears inconsistent with Mitigation Measure 4.3.6.5A. Unlike Measure 4.3.6.5A, Measure 4.3.6.5B does not increase the improvement over energy efficiency standards to 20 percent as was proposed in the DEIR and which applies to the related Measure 4.3.6.5A. FEIR, pp. 194-201. In order to apply all feasible measures, Measure 4.3.6.5B’s list of measures should be made mandatory (replace “may” with “shall”) and the measure to exceed statewide energy efficiency requirements by 10 percent restored to a 20 percent exceedance. FEIR, pp. 194-96. In addition, a requirement that the Project use building automation systems to control and optimize the efficiency of its mechanical systems, including lighting, HVAC, exhaust dampers, fans, and ventilation louvers should be added to Measure 4.3.6.5B’s list.*

Response to Comment M: These mitigation measures were totally updated in the FEIR, as described in the Response to Comment 14 on page 103 of the FEIR: “Mitigation Measure 4.3.6.6A was modified and Mitigation Measure 4.3.6.6B was added to address construction equipment and vehicles operating for the project (see Final EIR, Section 3.0, *EIR Errata and Additions*).” These updates resolve the apparent inconsistencies.

Comment N (page 8): *The EIR Does Not Include Additional Feasible Mitigation Measures to Further Reduce the Project’s Significant Impacts From its Particulate Matter Emissions During Construction and, Without Requiring Additional Measures, the City Cannot Adopt a Statement of Overriding Considerations. An additional feasible mitigation measure that also would assist in assuring that the Project’s air quality pollution mitigations during construction are enforceable is a measure to require monitoring of dust plumes. SWAPE identifies “[m]onitoring for opacity for all construction activities, including grading, not just for “screening” and “turf overseeding” activities” as an additional feasible measure.*

Response to Comment N: The fugitive emissions of particulate matter (PM₁₀ and PM_{2.5}) during construction was shown to be very small compared to the SCAQMD significance thresholds - 18 lbs/day compared to the 150 lbs/day threshold for PM₁₀, 3.9 lbs/day compared to 55 lbs/day for PM_{2.5}. There is no need to take any actions to further reduce these already small emission rates.

Comment O (page 9): *The EIR dramatically understates the health risks that will result from the Project's construction phase because the health risk assessment it relies upon assumes construction will only occur for four months rather than the 11.5 months reported in the EIR.*

Response to Comment O: The rationale used for the screening-level HRA of construction emissions is that, while the total construction period will be about 11 ½ months, the only portion of that time that will have large diesel-powered construction equipment operating regularly is the 2 month grading phase. Assuming that there will be large diesel-powered construction equipment operating occasionally during the other phases, it was assumed that using 4 months of daily use of the large diesel-powered construction equipment would conservatively characterize the overall construction process.

Comment P (page 9): *In contrast to SWAPE's analysis, which fully discloses all of its inputs and models, "no modeling files or cancer risk calculations for the construction impacts analysis were provided in the DEIR or the FEIR" for the EIR's health risk assessment. Id., pp. 9-10. Hence, the substantial evidence available to the Commission and others indicates that cancer risks to the Project's neighbors are significant.*

Response to Comment P: The commenter is incorrect, the DEIR includes the full Air Quality technical analysis which contains the full documentation of the inputs, modeling and results files in Appendix C. The project HRA is based on recommendations and methodologies established by the SCAQMD for such studies, including reasonable worst case assumptions for project construction and operation. Certainly making other worst case assumptions as SWAPE has done would yield different results, but the City as the lead agency must ultimately make the determination as to what expert information it uses on which to base its evaluation of project impacts.

Comment Q (page 9): *The EIR also underestimates health risk impacts to workers to be employed at the Project site.*

Response to Comment Q: The HRA in the EIR fully documents the projected health risk levels to nearby residents, however, CEQA does require an analysis of impacts to onsite workers as these individuals are protected by OSHA regulations. In addition, CEQA requires an analysis of impacts of a project on the existing or baseline environment, and future workers of the project do not constitute baseline conditions.

Comment R (page 10): The commenter states the EIR fails to recommend feasible mitigation for loss of agricultural land.

Response to Comment R: As documented in Section 4.2 of the Draft EIR, farming is no longer a viable economic activity in this portion of Riverside County, and the General Plans of the County and City both identify land uses that will a transition from historical agricultural land to appropriate suburban land uses. This proposed project represents a step in that anticipated transition. Gail Egenes, Executive Director of the Riverside Land Conservancy, has indicated the agency does not have any established program to purchase agricultural easements or lands. Also, in consultation with the National Conservation Easement Database, Riverside County does not have any established agricultural easements.¹

Contributions to Riverside County Land Conservancy or the San Jacinto Basin Resource Conservation District by private land owners are not required as part of a City or regional mitigation plan for loss of agricultural land. Therefore, the decision whether to make any contributions in this regard would be at the discretion of the

¹ <http://nced.conservationregistry.org/browse/map>, accessed October 4, 2012.

developer in consultation with the City. For additional detailed analysis on this issue, see Responses 22 and 23 in the letter from Johnson & Sedlack (D-3) in the Final EIR. Since there is no feasible mitigation available, the impact has been identified as significant and unavoidable, and the City will have to adopt a Statement of Overriding Considerations as part of its Findings on the EIR prior to action on the project.

Comment S (page 11): The commenter requests additional information regarding soil sampling for residual pesticides.

Response to Comment S: Responses 8 and 9 to Letter D-4A from the same commenter in the Final EIR go into great detail about the potential for contamination by agricultural chemicals on the project site, and the conclusion is there is only a low or minor potential. There is no indication that contamination is widespread, and almost of the site was previously surveyed for soil contamination, including soil tests for such chemicals. However, Mitigation Measure 4.6.6.1A was added to address this potential impact, as explained in the responses. There is no evidence that would lead a reasonable person to conclude that the potential for soil contamination by agricultural chemicals on this site was so high as to require soil testing and remediation prior to approval of the project. It is common in this portion of Riverside County to find former agricultural sites that have low or negligible levels of some agricultural chemicals as may be present on the project site. However, as outlined in the indicated responses, these do not represent a significant environmental impact (i.e., one that would prevent approval of the project), and the additional mitigation measure will assure there will be no significant impacts in this regard as it will be implemented prior to grading or development of the site.

Regarding the proposed additional requirements for Mitigation Measure 4.6.6.1A, the City may adopt one or more of these items at their discretion and incorporate them into the Mitigation Monitoring Plan or Conditions of Approval as appropriate.

Appendix A –SWAPE Letter dated April 21, 2014

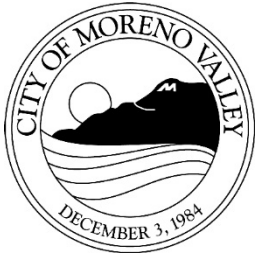
Response to Appendix A: The air quality data in this letter was used to prepare the Lozeau Drury comment letter addressed above. The specific comments made by SWAPE have been addressed in appropriate sections of the Lozeau Drury letter.

Appendix B – Clark & Associates Letter dated April 22, 2014

Response to Appendix B: The trip generation data in this letter was used to prepare the Lozeau Drury comment letter addressed above. The specific comments made by Clark & Associates have been addressed in appropriate sections of the Lozeau Drury letter.

Appendix C –World Logistics Center EIR: Selected excerpts of the air quality analysis were provided as a comparison to the ProLogis project.

Response to Appendix C: The data in this appendix was referred to by the commenter in relation to greenhouse gas emissions (GHG) and the City's GHG inventory. There were no specific comments in this appendix, only background info for certain comments by Lozeau Drury in this letter.



PLANNING COMMISSION STAFF REPORT

Case: PA07-0081 - Zone Change
 PA07-0082 - General Plan Amendment
 PA07-0083 - Master Plot Plan including Building 2
 PA07-0084 - Tentative Parcel Map 35679
 PA07-0158 - Plot Plan for Building 1
 PA07-0159 - Plot Plan for Building 3
 PA07-0160 - Plot Plan for Building 4
 PA07-0161 - Plot Plan for Building 5
 PA07-0162 - Plot Plan for Building 6
 P07-186 - Environmental Impact Report

Date: March 13, 2014

Applicant: Prologis

Representative: Prologis

Location: South of State Route 60 and east of Moreno Valley Auto Mall, at Fir Avenue (Future Eucalyptus Avenue) and between Pettit Street and the Quincy Channel.

Proposal: General Plan Amendment and Zone Change from existing Business Park, Business Park Mixed-use, R15, R5, and RA-2 land use designations to Light Industrial for 122 acres. The land use changes are required for development of six distribution warehouse facilities totaling 2,244,419 square feet with building sizes that range from 160,106 square feet to 862,035 square feet. The applicant also proposes Tentative Parcel Map No. 35679 to subdivide the project site into six parcels. A General Plan Amendment is also required for proposed changes to the City's circulation element and the Master Plan of Trails. Approval of this project will require certification of an EIR.

Recommendation: Approval

SUMMARY

The applicant proposes to develop a 2.2 million square foot industrial park on 122 acres subject to approval of a General Plan Amendment and Zone Change from BP, BPX, R15, R5 and RA-2 to LI, and certification of a Final EIR.

PROJECT DESCRIPTION

The applicant, Prologis, has submitted ten applications for development of the Prologis Eucalyptus Industrial Park Project, which include a General Plan Amendment, Zone Change, Master Plot Plan, related Plot Plans, a Tentative Parcel Map, and an Environmental Impact Report, in order to develop a 2,244,419 square foot industrial park on a 122 acre site (Assessor's Parcel Numbers 488-330-011, 012, -013, -017, -018, -019, -020, and -021) located South of State Route 60 and east of Moreno Valley Auto Mall, at Fir Avenue (Future Eucalyptus Avenue) and between Pettit Street and the Quincy Channel.

General Plan Amendment

The project site has current General Plan land use designations that include approximately 50 acres of Business Park, 36 acres of R15 (Residential – up to 15 units per acre), 23 acres of R5 (Residential – up to 5 units per acre), and 12 acres of RA-2 (Residential/Agriculture – up to 2 units per acre). The applicant proposes to change the land use designation for the entire project site to Business Park. The proposed change would expand the Business Park designation onto approximately 71 acres that is currently designated for residential development.

Land uses to the north include the adjacent freeway with Office Commercial, R2 and RA-2 zoned land north of the freeway. Land uses to the east include a mix of Light Industrial and Community Commercial zoned land and RA-2 zoned land with an approved warehouse facility located immediately to the east and a developed warehouse facility further to the east between Redlands Boulevard and Theodore Street. Land uses to the south include vacant RA-2 zone with developed tract homes across the channel from the project site.

The General Plan Amendment also proposes a change to the Circulation Element that would eliminate the connection from Fir Avenue/Future Eucalyptus Avenue to Eucalyptus Avenue/Future Encilia Avenue to the south. The change ensures that traffic generated by existing and proposed non-residential uses is kept separate from residents that live along Eucalyptus Avenue/Future Encilia Avenue to the southeast.

Additionally, the General Plan Amendment proposes changes to the Master Plan of Trails. The proposed change would remove an existing trail segment that runs north/south along the west side of the Quincy Channel between Fir Avenue/Future Eucalyptus Avenue to State Route 60. This trail segment was originally intended to cross the freeway on an overpass at Quincy Street. This overpass is no longer on the City's General Plan Circulation element. With the loss of the overpass, trail would end in a cul-de-sac at State Route 60.

Staff met with the City's Recreational Trails Board in February 2012 to discuss replacement of the dead end segment of the trail with a new segment of trail on the north side of Fir Avenue/Eucalyptus Avenue that would run from the Quincy Channel west to the site's western boundary ending at the Fire Station #58. The Board was supportive of the change. The applicant has agreed to install the new segment of trail.

Zone Change

The project site has current zoning designations that include approximately 49.5 acres of Business Park, 0.5 acre of Business Park Mixed-use, 36 acres of R15, 23 acres of R5, and 12 acres of RA-2. The applicant proposes to change the Zoning for the entire project site to Light Industrial. The proposed change to Light Industrial is compatible with the 50 acres that is currently within a Business Park General Plan designation but would replace approximately 71 acres of residential zone land with a Light Industrial zone. The proposal would also result in the removal of a portion of the site from the PAKO (Primary Animal Keeping Overlay).

Land uses to the north include the adjacent freeway with Office Commercial, R2 and RA-2 zoned land north of the freeway. Land uses to the east include a mix of Light Industrial and Community Commercial zoned land and RA-2 zoned land with an approved warehouse facility located immediately to the east and a developed warehouse facility further to the east between Redlands Boulevard and Theodore Street. Land uses to the south include vacant RA-2 zone with developed tract homes across the channel from the project site.

Warehouse distribution uses are permitted in both the Business Park and Light Industrial zones, but the size of the buildings proposed by the project requires a Zone Change to Light Industrial to allow for the warehouse facilities over 50,000 square feet.

Plot Plans

Master Plot Plan PA07-0083 proposes the development of an industrial park to include a total of 2,244,419 square feet of warehouse distribution on 122 acres. This application also includes Building #2 on Parcel 2 of TPM 35679 for development of an 862,035 square foot warehouse distribution building on 39.32 acres with 311 required employee parking spaces and 135 required truck parking spaces.

Plot Plan PA07-0158 for Building #1 on Parcel 1 of TPM 35679 proposes development of a 168,342 square foot warehouse distribution building on 8.84 acres with 100 required employee parking spaces and 21 required truck parking spaces.

Plot Plan PA07-0159 for Building #3 on Parcel 3 of TPM 35679 proposes development of a 160,106 square foot warehouse distribution building on 8.5 acres with 98 required employee parking spaces and 20 required truck parking spaces.

Plot Plan PA07-0160 for Building #4 on Parcel 4 of TPM 35679 proposes development of a 339,015 square foot warehouse distribution building on 15.66 acres with 180 required employee parking spaces and 36 required truck parking spaces.

Plot Plan PA07-0161 for Building #5 on Parcel 5 of TPM 35679 proposes development of a 390,102 square foot warehouse distribution building on 19.29 acres with 173 required employee parking spaces and 53 required truck parking spaces.

Planning Commission Staff Report

Page 4

Plot Plan PA07-0162 for Building #6 on Parcel 6 of TPM 35679 proposes development of a 325,038 square foot warehouse distribution building on 17.55 acres with 176 required employee parking spaces and 53 required truck parking spaces.

The loading and truck parking areas have been oriented away from adjacent residential zoned partials and meet/exceed the Municipal Codes minimum buffer distance of 250 feet.

All truck courts are screened by perimeter concrete tilt-up walls with a citrus tree row required along the State Route 60 frontage as an extension of the tree plantings along the rear of Fire Station #58. A tree row is also required along the Quincy Channel and southern property lines.

The project has been conditioned to provide standard parking lot and setback landscape to include ground cover shrubs and trees. Detention/water quality basins will be extensively landscaped. The project's Fir Avenue/Future Eucalyptus Avenue frontage will be developed with curb, gutter, parkway, sidewalk and a segment of multi-use trail. A segment of multi-use trail will also be installed on the west side of the Quincy Channel from Fir Avenue/Future Eucalyptus Avenue south to Eucalyptus Avenue/Future Encilia Avenue.

Tentative Parcel Map

Tentative Parcel Map No. 35679 proposes to re-configure the eight parcels located within the project site into six parcels with lettered lots to convey property to Caltrans for future development and to the City for public streets.

Site

The project site is comprised of vacant land that is mostly level and at grade with Fir Avenue/Future Eucalyptus Avenue and at or below grade of adjacent State Route 60. There are no trees, rock outcroppings or existing structures located within the limits of the project site. The project site includes a portion of the Quincy Channel which includes some riparian vegetation.

Surrounding Area

The project is located in an area that includes a mix of business park, office, commercial, residential and agricultural uses.

Developed land within proximity to the project site includes the Moreno Valley Auto Mall and Moreno Beach Plaza (Walmart) center to the west at Moreno Beach Drive, the 1.8 million square foot Highland Fairview Business Park (Skechers) warehouse facility to the east between Redlands and Theodore and large lot subdivisions in the RA-2 zone across the channel from the project site. Also immediately to the east is the site of the recently approved 800,340 square foot regional headquarters for ALDI Foods.

Access/Parking

The project site will be accessed directly from Fir Avenue/Future Eucalyptus Avenue via Moreno Beach Boulevard or Redlands Boulevard and State Route 60. This portion of Fir Avenue/Future Eucalyptus Avenue, including the bridge crossing at the Quincy Channel would be constructed by the applicant/developer as a condition of the project.

The driveways and interior drive aisles associated with the project have been approved by the Fire Prevention Bureau for fire truck access and turnaround. The site has also been designed for adequate truck maneuvering and turnaround within the designated loading zones. The project as designed satisfies all parking requirements of the City's Municipal Code.

Design/Landscaping

Site design of the proposed warehouse distribution facility is consistent with requirements of the City's Municipal Code.

The architectural design of the buildings is concrete tilt-up construction. Building and wall colors include earthtones, with varying amounts of accent colors and vertical features to break up the architecture of building. Roof top equipment will be screened from public view by parapet walls.

Staff worked with the applicant to ensure that all sides of the buildings include architectural treatment. The loading bays and trailer storage areas have been screened from view. The screen walls are of concrete tilt-up construction which will match the building designs and colors.

Landscaping for the project as proposed is at around 18% of the site area including the water quality/detention basins. The City's Municipal Code does not require a minimum percentage of landscape on a site. Instead, there are requirements for landscape setback areas along perimeter streets, parking lot landscape, street trees and landscape treatments around the perimeter of the buildings where visible from the public right-of-way. The project as designed meets the City's current landscape criteria.

Signs are not a part of this approval and will be reviewed and approved under separate administrative permit.

This project design conforms to all development standards of the Light Industrial zone and the design guidelines for industrial uses as required within the City's Municipal Code.

REVIEW PROCESS

The project was originally reviewed by the Project Review Staff Committee (PRSC) in September 2007. Modifications were required to the plot plan exhibits and preliminary grading plan.

Revised plans were submitted in January and August 2008 and again in July and November 2011 and July and October 2012. Upon review of a final draft of the site plan and completion of the Final Environmental Impact Report in early 2014, a determination was made to schedule this project for a Planning Commission public hearing on March 13, 2014.

Community outreach efforts by the applicant in 2012 included mail distribution of project brochures to area residents, neighborhood walks to pass out brochures and open house invitations for an open house held in August 2012 at the Moreno Valley Ranch Golf Club.

State Route 60 East Corridor Study

The City Council imposed a 45 day moratorium on development for properties located along the State Route 60 corridor on January 23, 2013. The moratorium was later extended for a year by Council through adoption of Ordinance 861.

The moratorium was imposed to allow time for staff to work with a consultant to prepare a highest and best use analysis of the area. The State Route 60 East Corridor Study was prepared to identify land use alternatives for vacant and underutilized parcels within four sub-areas or study areas of the corridor.

The completed study was presented to the City Council as a report item on January 14, 2014. The study presented three alternatives including a preferred alternative. The City Council received the study but took no action to approve the study. The study becomes a resource document for consideration in the review of land use change applications. The City Council also recognized that the moratorium would expire on January 23, 2014. The land use changes proposed by the preferred alternative included expansion of the Auto Mall and warehouse uses.

Automobile dealerships which are a permitted use within the Auto Mall Specific Plan to the west are not a permitted use in existing Business Park zone. A change in zone to Light Industrial as proposed by the project would allow for automobile sales as a permitted use.

In recognition of the guidance provided by the SR 60 East Corridor study and based on discussions with City staff, the applicant has agreed to a condition of approval that would state that no building permits could be issued for the warehouse distribution buildings for plot plans located immediately adjacent to the Auto Mall (Plot Plan PA07-0158 and Plot Plan PA07-0159) during the initial 18 months if approved. This would allow for the potential expansion of the Auto Mall in the short term.

ALTERNATIVES DISCUSSION

The following scenarios or alternatives are presented for the Planning Commissions consideration.

1. Approve the project as proposed. As stated previously, the project has been conditioned to not build the two warehouses (Buildings 1 and 3) located adjacent to the Auto Mall for the first 18 months of the approval. This would allow for the potential expansion of the Auto Mall in the short term. The staff report has been prepared in support of this alternative;
2. Deny the General Plan Amendment and Zone Change for the two sites (Buildings 1 and 2) located adjacent to the Auto Mall but approve the proposed land changes for the remainder of the project site. This would prevent warehouse facilities from being built on potential Auto Mall expansion sites, but would still allow for warehouse development to occur on most of the project site. However, denial of the land use changes would also prevent future development of automobile sales since auto dealerships are not permitted within the BP and R15 zones.
3. Deny the proposed land use changes and thereby deny the proposed industrial park. Denial of the land use changes would prevent the warehouses from being approved. Denial of the land use changes would also prevent future development of automobile sales since auto dealerships are not permitted within the BP and R15 zones.

ENVIRONMENTAL

Initial Study/Notice of Preparation

An Initial Study was completed after all discretionary applications were deemed complete. Based on the information within the Initial Study, an Environmental Impact Report (EIR) was recommended to be prepared. A Notice of Preparation for the EIR was issued on February 4, 2008, with the public comment period beginning on February 4, 2008 and ending on March 4, 2008. A public meeting to receive input on the issues to be covered by the EIR was held at City Hall on February 13, 2008.

Draft Environmental Impact Report

Subsequent to that meeting, draft environmental documents were prepared by the applicant's consultant LSA Associates, Inc. and submitted to the City and its peer consultant for review.

City staff and the peer review consultant reviewed the draft environmental documents for compliance with the California Environmental Quality Act (CEQA) Guidelines and required revisions to address identified questions and concerns. After revisions were incorporated into the document, the Draft EIR was circulated for a 45-day public review period, starting on July 18, 2012, and ending on September 4, 2012.

The Draft EIR was sent to all required State and local agencies and numerous interested parties on July 17, 2012, as well as to the City's Environmental and Historical Preservation Board. Thirteen comment letters were provided during the 45-day review period.

Final Environmental Impact Report

Responses to the thirteen comments received during the 45 day review period are included in the Response to Comments. The Response to Comments and related documents were mailed to all interested parties and responsible agencies on February 26, 2014, to allow for their review prior to the Planning Commission hearing, within the minimum notice period of 10 days required by CEQA. As was the case with the Draft EIR, the draft Final EIR was provided for public review at City Hall, the City Library and posted on the City's website.

Significant and Unavoidable Impacts

Analysis presented in the EIR indicates that the proposed project will have a number of potentially significant impacts. The EIR includes a number of proposed mitigation measures to reduce or eliminate potential significant impacts. Even with proposed mitigation, a number of potential impacts cannot be reduced to a less than significant level. As identified in the Final EIR document, these impacts are considered to be significant and unavoidable.

Where a project's impacts cannot be reduced to less than significant levels, CEQA allows a decision making body to consider a statement of overriding considerations and findings. CEQA requires the decision making agency to balance the economic, legal, social, technological or other benefits of a proposed project against its unavoidable environmental impacts when determining whether to approve the proposed project. This would include project benefits such as the creation of jobs or other beneficial project features versus project impacts that cannot be mitigated to less than significant levels. If the decision making body determines that the benefits of a proposed project outweigh the unavoidable adverse environmental effects, it may approve a statement of overriding considerations and approve the project.

Mitigation Measures

The EIR includes mitigation measures intended to reduce project-specific and cumulative impacts for Air Quality, Biological Resources, Cultural Resources, Hydrology and Water Quality, Noise, Transportation, and Greenhouse Gases and Global Climate Change. All other environmental effects evaluated in the EIR are considered to be less than significant, or can be adequately mitigated below significant thresholds.

Mitigation measures are included to reduce the environmental impacts where possible, even where the impacts could not be reduced to less than significant levels. All mitigation measures have also been included as conditions of approval for the project.

Approval and Certification

The Planning Commission will take public testimony on the EIR and project and forward a recommendation to City Council. Before the proposed project can be acted upon, the City Council will need to review the final environmental document, receive public testimony and either certify or reject the EIR and project Mitigation Monitoring Program.

NOTIFICATION

Public notice was sent to all property owners of record within 300' of the project. The public hearing notice for this project was also posted on the project site and published in the local newspaper. As of the date of report preparation, staff had one comment letter stating opposition to the project.

A copy of the above referenced letter is included in the staff report as part of Attachment #7. Attachment #7 also includes opposition letters submitted in 2012 in response to the circulation of the Draft Environmental Impact Report.

STAFF RECOMMENDATION

Staff recommends that the Planning Commission **APPROVE** Resolution No's. 2014-09 and 2014-10 and thereby recommend that the City Council take the following actions:

1. **CERTIFY** that the Environmental Impact Report (EIR) for the Prologis Eucalyptus Industrial Park Project (Attachments 9 and 10) has been completed in compliance with the California Environmental Quality Act; and
2. **ADOPT** the Findings and Statement of Overriding Considerations regarding the Final EIR for the Prologis Eucalyptus Industrial Park Project, attached hereto as Exhibit A to Attachment 2; and
3. **APPROVE** the Mitigation Monitoring Program for the Final EIR for the proposed Prologis Eucalyptus Industrial Park Project, attached hereto as Exhibit B to Attachment 2; and
4. **APPROVE** General Plan Amendment application PA07-0082 as shown on Exhibit A to Attachment 3; and
5. **APPROVE** Zone Change application PA07-0081 as shown on Exhibit B to Attachment 3; and
6. **APPROVE** Master Plot Plan PA07-0083 and related Plot Plans PA07-0158 through PA07-0162, subject to the attached conditions of approval included as Exhibit C to Attachment 3; and

7. **APPROVE** Tentative Parcel Map 35679 (PA07-0084), subject to the attached conditions of approval included as Exhibit D to Attachment 3.

Prepared by:

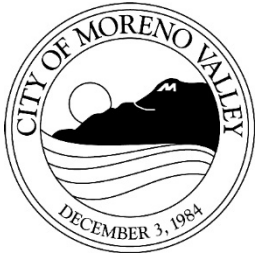
Jeff Bradshaw
Associate Planner

Approved by:

Chris Ormsby, AICP
Interim Planning Official

ATTACHMENTS:

1. Public Hearing Notice
2. Planning Commission Resolution No. 2014-09
Exhibit A – Statement of Overriding Considerations
Exhibit B – Mitigation Monitoring Program
3. Planning Commission Resolution No. 2014-10
Exhibit A – General Plan Amendment Map
Exhibit B – Zone Change Map
Exhibit C – Plot Plan Conditions of Approval
Exhibit D – TPM 35679 Conditions of Approval
4. Architectural Plans
5. Preliminary Grading Plan
6. Tentative Parcel Map 35679
7. Public comment letters
8. Aerial Map
9. Final Environmental Impact Report
10. Draft Environmental Impact Report



PLANNING COMMISSION STAFF REPORT

Cases: PA07-0081 - Zone Change
 PA07-0082 - General Plan Amendment
 PA07-0083 - Master Plot Plan including Building 2
 PA07-0084 - Tentative Parcel Map 35679
 PA07-0158 - Plot Plan for Building 1
 PA07-0159 - Plot Plan for Building 3
 PA07-0160 - Plot Plan for Building 4
 PA07-0161 - Plot Plan for Building 5
 PA07-0162 - Plot Plan for Building 6
 P07-186 - Environmental Impact Report

Date: April 24, 2014 – Continued from the March 13, 2014 meeting

Applicant: Prologis

Representative: Prologis

Location: South of State Route 60 and east of Moreno Valley Auto Mall, at Fir Avenue (Future Eucalyptus Avenue) and between Pettit Street and the Quincy Channel.

Proposal: General Plan Amendment and Zone Change from existing Business Park, Business Park Mixed-use, R15, R5, and RA-2 land use designations to Light Industrial for 122 acres. The land use changes are required for development of six distribution warehouse facilities totaling 2,244,419 square feet with building sizes that range from 160,106 square feet to 862,035 square feet. The applicant also proposes Tentative Parcel Map No. 35679 to subdivide the project site into six parcels. A General Plan Amendment is also required for proposed changes to the City's circulation element and the Master Plan of Trails. Approval of this project will require certification of an EIR.

Recommendation: Approval

SUMMARY

The applicant proposes to develop a 2.2 million square foot industrial park on 122 acres subject to approval of a General Plan Amendment and Zone Change from BP, BPX, R15, R5 and RA-2 to LI, and certification of a Final EIR.

PROJECT DESCRIPTION

The applicant, Prologis, has submitted ten applications for development of the Prologis Eucalyptus Industrial Park Project, which include a General Plan Amendment, Zone Change, Master Plot Plan, related Plot Plans, a Tentative Parcel Map, and an Environmental Impact Report, in order to develop a 2,244,419 square foot industrial park on a 122 acre site (Assessor's Parcel Numbers 488-330-011, 012, -013, -017, -018, -019, -020, and -021) located South of State Route 60 and east of Moreno Valley Auto Mall, at Fir Avenue (Future Eucalyptus Avenue) and between Pettit Street and the Quincy Channel.

Background

A public hearing for this project was held on March 13, 2014. At the meeting information about the project and the related Final Environmental Impact Report (FEIR) was presented to the Planning Commission by Planning Division staff and representatives from LSA Associates, Inc. who prepared the FEIR. Following the staff report, comments were taken from the applicant and interested parties and residents.

The speakers included Gideon Kracov, an attorney representing Laborers International Union of North America (LIUNA). He was concerned that a second of two comment letters submitted by Lozeau Drury, LLP on behalf of LIUNA in response to the Draft Environmental Impact Report was not included in the Final Environmental Impact Report.

It was verified at the meeting that the City had received a second letter dated August 31, 2012, that should have been included in the FEIR. Following discussion with staff, the Planning Commission determined that the most appropriate action was to continue the item to the Commission's April 24, 2014 agenda, to allow for time to update the FEIR to include the August 31, 2012 letter and responses to the letter.

Following the March 13, 2014 meeting it was determined that there was an inadvertent omission in the distribution and tracking of the August 31, 2012 letter. Planning worked with LSA Associates, Inc. to update the FEIR to address the concerns raised in the letter. The FEIR was then redistributed to all agencies and interested parties and published on the City's webpage. Notice of the status of the FEIR and the Planning Commission's April 24, 2014 meeting was published in the newspaper, posted at the project site and sent to all property owners within 300 feet and all interested parties.

ENVIRONMENTAL

Final Environmental Impact Report

Responses to the fourteen comments received during the 45 day review period, including the August 31, 2012 letter from Lozeau Drury, LLP, are included in the Response to Comments. The updated Final Environmental Impact Report (FEIR) was mailed to all interested parties and responsible agencies on April 4, 2014, to allow for their review prior to the Planning Commission hearing on April 24, 2014.

The City issued a press release referencing the updated FEIR and the continued Planning Commission meeting and the updated Final EIR along with the Draft EIR and technical studies were provided for public review at City Hall, the City Library and posted on the City's website.

The concerns raised in the August 31, 2012 letter including segmentation of the project, loss of farmland, hazardous materials and soils, greenhouse gas, and air quality, have been addressed in detail in LSA Associate's response to comments.

Planning worked with LSA Associates, Inc. to provide responses to each of the concerns raised in the letter.

The site was previously surveyed for pesticides and removal of a former underground storage tank was documented and determined to result in no significant impacts in the Draft EIR. The following mitigation measure has been added by LSA Associates, Inc., in response to concerns raised in the letter, even though impacts would remain less than significant without the additional measure:

- **4.6.6.1A** Prior to issuance of a grading permit for the project, a qualified contractor shall test onsite soils for contamination by agricultural chemicals. If present in concentrations above established actionable levels or thresholds, these materials shall be removed and transported to an appropriate landfill by a licensed contractor. This measure shall be implemented to the satisfaction of the Building Division including written documentation of the disposal of any agricultural chemical residue in conformance with all applicable regulations.

The above mitigation measure has also been added to the conditions of approval for the project.

Significant and Unavoidable Impacts

Analysis presented in the EIR indicates that the proposed project will have a number of potentially significant impacts. The EIR includes a number of proposed mitigation measures to reduce or eliminate potential significant impacts. Even with proposed mitigation, a number of potential impacts cannot be reduced to a less than significant level. As identified in the Final EIR document, these impacts are considered to be significant and unavoidable.

Where a project's impacts cannot be reduced to less than significant levels, CEQA allows a decision making body to consider a statement of overriding considerations and findings. CEQA requires the decision making agency to balance the economic, legal, social, technological or other benefits of a proposed project against its unavoidable environmental impacts when determining whether to approve the proposed project. This would include project benefits such as the creation of jobs or other beneficial project features versus project impacts that cannot be mitigated to less than significant levels. If the decision making body determines that the benefits of a proposed project outweigh the unavoidable adverse environmental effects, it may approve a statement of overriding considerations and approve the project.

Mitigation Measures

The EIR includes mitigation measures intended to reduce project-specific and cumulative impacts for Air Quality, Biological Resources, Cultural Resources, Hydrology and Water Quality, Noise, Transportation, and Greenhouse Gases and Global Climate Change. All other environmental effects evaluated in the EIR are considered to be less than significant, or can be adequately mitigated below significant thresholds.

Mitigation measures are included to reduce the environmental impacts where possible, even where the impacts could not be reduced to less than significant levels. All mitigation measures have also been included as conditions of approval for the project.

Approval and Certification

The Planning Commission will take public testimony on the EIR and project and forward a recommendation to City Council. Before the proposed project can be acted upon, the City Council will need to review the final environmental document, receive public testimony and either certify or reject the EIR and project Mitigation Monitoring Program.

NOTIFICATION

Public notice of the April 24, 2014 Planning Commission hearing was sent to all property owners of record within 300' of the project. The public hearing notice for this project was also posted on the project site and published in the local newspaper. As of the date of report preparation, staff received a comment letter from Caltrans which is included as an attachment to the staff report.

STAFF RECOMMENDATION

Staff recommends that the Planning Commission **APPROVE** Resolution No's. 2014-09 and 2014-10 and thereby recommend that the City Council take the following actions:

1. **CERTIFY** that the Environmental Impact Report (EIR) for the Prologis Eucalyptus Industrial Park Project (Attachments 5 and 6) has been completed in compliance with the California Environmental Quality Act; and
2. **ADOPT** the Findings and Statement of Overriding Considerations regarding the Final EIR for the Prologis Eucalyptus Industrial Park Project, attached hereto as Exhibit A to Attachment 2; and
3. **APPROVE** the Mitigation Monitoring Program for the Final EIR for the proposed Prologis Eucalyptus Industrial Park Project, attached hereto as Exhibit B to Attachment 2; and

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4. **APPROVE** General Plan Amendment application PA07-0082 as shown on Exhibit A to Attachment 3; and
5. **APPROVE** Zone Change application PA07-0081 as shown on Exhibit B to Attachment 3; and
6. **APPROVE** Master Plot Plan PA07-0083 and related Plot Plans PA07-0158 through PA07-0162, subject to the attached conditions of approval included as Exhibit C to Attachment 3; and
7. **APPROVE** Tentative Parcel Map 35679 (PA07-0084), subject to the attached conditions of approval included as Exhibit D to Attachment 3.

Prepared by:

Jeff Bradshaw
Associate Planner

Approved by:

Chris Ormsby, AICP
Interim Planning Official

ATTACHMENTS:

1. Public Hearing Notice
2. Planning Commission Resolution No. 2014-09
Exhibit A – Statement of Overriding Considerations
Exhibit B – Mitigation Monitoring Program
3. Planning Commission Resolution No. 2014-10
Exhibit A – General Plan Amendment Map
Exhibit B – Zone Change Map
Exhibit C – Plot Plan Conditions of Approval
Exhibit D – TPM 35679 Conditions of Approval
4. Public comment letters
5. Final Environmental Impact Report – April 2014
6. Draft Environmental Impact Report

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1 Warmington to make sure that happened and unlike what sometimes the Mayor
 2 will try to make people believe, the Sierra Club and Audubon does not receive
 3 any financial benefit from our negotiations on that project or the present
 4 warehouses we're dealing with. It doesn't happen. None of that goes on. In fact
 5 there is a deficit if anything to the environmental community for these
 6 negotiations. I hope you'll take a minute and look through this. Don't bury it
 7 under a pile of papers and if you would like to go on one of these walks or see
 8 this area closer, my name is on enough emails to you that you can contact me,
 9 so please do. I'd appreciate showing them to you. You have a good evening.

10
 11 **CHAIR VAN NATTA** – Thank you very much and it is a beautiful book.

12
 13
 14
 15 **PUBLIC HEARING ITEMS**

- 16
 17 **1. Case Description:** PA07-0081 (Zone Change)
 18 PA07-0082 (General Plan Amendment)
 19 PA07-0083 (Master Plot Plan, incl. Building 2)
 20 PA07-0084 (Tentative Parcel Map 35679)
 21 PA07-0158 (Plot Plan for Building 1)
 22 PA07-0159 (Plot Plan for Building 3)
 23 PA07-0160 (Plot Plan for Building 4)
 24 PA07-0161 (Plot Plan for Building 5)
 25 PA07-0162 (Plot Plan for Building 6)
 26 P07-186 (Environmental Impact Report)

27
 28 **Case Planner:** Jeff Bradshaw

29
 30 **CHAIR VAN NATTA** – Okay we're going on now to our first Public Hearing Item;
 31 well actually the Public Hearing Item for today. Case Description PA07-0081
 32 Zone Change, PA07-0082 General Plan Amendment, PA07-0083 Master Plot
 33 Plan including Building 2, PA07-0084 Tentative Parcel Map 35679, PA07-0158
 34 Plot Plan for Building 1, PA07-0159 Plot Plan for Building 3, PA07-0160 Plot Plan
 35 for Building 4, PA07-0161 Plot Plan for Building 5, PA07-0162 Plot Plan for
 36 Building 6 and P07-186 Environmental Impact Report. The Applicant and Owner
 37 and Representative are all Prologis. The Case Planner is Jeff Bradshaw. Could
 38 we have the report please?

39
 40 **ASSOCIATE PLANNER BRADSHAW** – Thank you. Good evening Chair Van
 41 Natta and members of the Planning Commission. The item before you this
 42 evening is a proposal for a 2.2 million square foot industrial park to be developed
 43 on 122 acres located on the south side of State Route 60 east of the Moreno
 44 Valley Auto Mall at Fir or what is sometimes referred to as future Eucalyptus
 45 Avenue, between Petit and Quincy Street. The net acreage for this site is about
 46 116 acres and I think you see both acreages referred to in the Staff Report.

1 As described in the title of the Agenda, applications for this project include a
2 General Plan Amendment and Zone Change to establish a Business Park,
3 General Plan designation in a Light Industrial Zone for the entire site. Plot Plan
4 applications were also submitted for six warehouse distribution facilities as well
5 as a Tentative Parcel Map to create six parcels for development within the
6 Industrial Park. A General Plan Amendment is also required for proposed
7 changes to the City's General Plan Circulation Element as well as changes to the
8 Master Plan of Trails.

9
10 Approval of this project would require certification of an Environmental Impact
11 Report and the project presented to you this evening is for your review and for
12 recommendation to the City Council. The project site does have a current...
13 includes current General Plan and zoning designations for approximately 50
14 acres of the site are currently designated Business Park or Business Park Mixed
15 Use, 36 acres are designated R15 which is a multi-family zone, 23 acres are
16 designated R5 and 12 acres are designated RA2. Both of those are single family
17 residential zones.

18
19 The proposal would be to replace the 71 acres that is under the residential land
20 use designation with Business Park land use designation over the top. This
21 designation would then be compatible with the City's Industrial Zone categories.
22 The proposed Zone Change for the 50 acres that are BP would be compatible
23 with the General Plan; the proposal for the remaining 71 acres that is a
24 residential zone would be for Light Industrial zoning. This proposal would also
25 result in the removal of a portion of the site from what referred to as the PAKO or
26 the Primary Animal Keeping Overlay Zone. Warehouse distribution uses are
27 currently permitted in both Business Park and Light Industrial Zones. The
28 limitation within a Business Park is size. Structure are not allowed greater than
29 50,000 square feet. In the case of this proposal the structures are larger than
30 that and so the Light Industrial Zone is required in order to accommodate the
31 proposal.

32
33 The change in the General Plan Circulation Element would propose to eliminate
34 what is currently a connection from what is known as Fir or future Eucalyptus
35 Avenue. That road alignment currently curves down and connects through to
36 what is currently called Eucalyptus and would in the future would be Encilia. The
37 proposal here is to remove the connection to ensure that traffic... that either
38 existing traffic or traffic generated by the proposed project would be kept
39 separate from residents living to the southeast of the project. The additional
40 General Plan Amendment I refer to is a change to the Master Plan of Trails.
41 There is currently a trail segment on the west side of the Quincy Channel. That
42 trail segment runs... it is undeveloped that runs from Fir Avenue north to the
43 south side of State Route 60. The idea in the past was to provide a crossing at
44 the freeway. The General Plan Circulation Element has since been updated and
45 that overpass is no longer scheduled to be developed. With the loss of the
46 overpass, the trail would essentially be a dead end or end in a cul-de-sac on the

1 south side of the freeway. Staff met with the Recreational Trails Board in
2 February of 2012 to discuss replacing that segment with a segment of trail that
3 would run across or through the project site, it would tie into an existing trail
4 segment on Fir Avenue and continue across the project on the north side of Fir
5 and ending at the Auto Mall at Fire Station 58. The applicant has agreed to a
6 condition of approval to both remove the trail segment along Quincy and replace
7 that the longer trail segment through the project.

8
9 The Industrial Park itself proposes six warehouse buildings. They range in size
10 from approximately 160,000 square feet up to approximately 860,000 square
11 feet. The total building area upon completion would be approximately 2.2 million
12 square feet for the six buildings. The architectural design for the facility is similar
13 to other warehouse uses that you have reviewed in the past. It's concrete tilt-up
14 construction. The building and the screen wall colors would be earth-tones with
15 varying amounts of accent colors and vertical features to break up the
16 architecture. Staff worked with the applicant to ensure that that all sides of the
17 buildings would include architectural treatment, that the screen walls would be
18 designed in way that is compatible with the main building. We also worked on a
19 design that would ensure that the loading bays and truck storage areas were all
20 screened from view and all turned or oriented from adjacent residential zones.
21 The project as designed conforms to the City standard for Light Industrial Zone
22 as well as for development standards for industrial development here in the City.
23 Staff worked with LSA Associates in preparation of an Initial Study back in
24 February of 2008; through that exercise, identified those issues that needed to be
25 carried into an Environmental Impact Report.

26
27 Notice of preparation was distributed to the public for comment in early 2008.
28 Those comments were then used in the preparation of a Draft Environmental
29 Impact Report. Staff worked with the consultant in the preparation of that
30 document and it was provided to the public for public review for a 45 day period
31 beginning in July of 2012 and ending September 4th, 2012. That was circulated
32 to all State and local agencies, to any interested parties that had asked to be
33 kept informed of the process. In response to that, the City received 13 comment
34 letters during that time period. The consultant worked with Staff in the
35 preparation of responses to those comments that were prepared. Those
36 documents were provided to you. Prior to this evening's meeting, both the Draft
37 and the Final document; the Final including responses to the comments that
38 were submitted during the 45 day review. It is important to note I think that
39 through this process; the analysis; the EIR analysis for this project will have
40 noted a number of potentially significant impacts.

41
42 The document that was prepared includes mitigation measures that are proposed
43 to reduce the impacts or eliminate significant impacts to the extent possible.
44 There are circumstances or even cases with mitigation certain are not reduced to
45 a less than significant level and those are identified in both the Draft and the
46 Final EIR. Where those impacts cannot be reduced, the California

1 Environmental Quality Act does allow decision makers to consider a Statement of
2 Overriding Considerations that has also been provided to you guys for review. It
3 requires the decision making body to balance benefits to the community against
4 those potential environmental impacts when making a decision and if the
5 decision making body does determine that those benefits outweigh the
6 environmental impacts, then a Statement of Overriding Considerations would
7 need to be adopted and certified ultimately by City Council. Again the document
8 does include Mitigations Measures. Those are referenced both in the conditions
9 of approval for the project as well as the Mitigation Monitoring Program and it is
10 included in the documentation before you this evening.

11
12 Public Notice was provided for the Hearing this evening by our standard practice
13 to everyone within 300 feet of the project. The site was posted and notice was
14 also provided in the newspaper. Additionally notices of the hearing as well as
15 preparation of the Final EIR were provided to those that commented on the draft
16 as well as any interested parties that indicated that they wanted to receive copies
17 of those documents. Leading up to this evening, we did receive comment letters
18 which have been provided to you guys I think during the week by email and hard
19 copies available to you again this evening. There is also a memo that has been
20 prepared identifying conditions of approval for the Tentative Parcel Map that are
21 the preferred conditions. The conditions included in the Staff Report for the map
22 are more specific to a Plot Plan and so the replacement conditions are more
23 appropriate for the map and so Staff would be recommending those conditions
24 as the set to approve for Special Districts. Additionally there was another letter
25 provided this evening. I think most of the Commissioners have copies of that and
26 Staff hasn't time really to review the content of that letter. With us this evening is
27 our representatives from LSA Associates, the Consulting firm that prepared the
28 environmental document and with that, that will conclude my part of the
29 presentation. I'd like to turn some time over to Kent Norton with LSA who has
30 something he wanted to present on the environmental side. Additionally the
31 Traffic Consultant has prepared a traffic simulation or model for what the traffic
32 would look like within this facility that they are prepared to show you this evening
33 if you are interested in that and with that, I'll turn the time over to Kent Norton.

34
35 **CHAIR VAN NATTA** – Thank you

36
37 **SPEAKER NORTON** – Thank you Jeff. Good evening Commissioners. My
38 name is Kent Norton. I'm with LSA Associates. We prepared the Environmental
39 Impact Report. I was the Project Manager. The EIR represents 530 pages and
40 dozens of appendices. The Final EIR was 280 pages with additional appendices,
41 so I appreciate the effort you've gone to review that. I wanted to make a few
42 comments about some of the letters that were submitted prior to this hearing.
43 Most of the letters we've already responded to in the Final EIR; the Response to
44 Comments document, but there were a number of emails and brief letters and
45 then a few longer letters that were submitted this week. I would say most of the
46 issues have been dealt with in the EIR and the Final EIR Response to Comments

1 already, but there were a few items that were additional. One is there were a
2 couple of... a number of comments about independent review and the response
3 to comments providing evidence on its comments and we believe the documents
4 we prepared represent the independent judgment of the City and do represent
5 adequate information, that the decision makers such as the Planning
6 Commission can make an informed decision on. There were some comments
7 about the EIR needs to evaluate the cumulative impacts of the World Logistics
8 Center now that that has been put into the CEQA process, but if you'll recall this
9 EIR started its CEQA process far and well in advance of the World Logistics
10 Center document and CEQA... the process basically sets the baseline. When
11 the notice of preparation goes out for the environmental analysis and that was
12 back in 2008, so there is no CEQA requirement to analyze that additional project
13 as part of the cumulative growth. There were a number of comments about
14 mitigation and air quality, energy conservation. As outlined in the Final EIR there
15 were a whole host, almost a dozen mitigation measures in various sections
16 including air quality, traffic and energy that were modified and quite a bit of
17 additional text added to address comments by the AQMD as well as a number of
18 conservation organizations, so we believe we've answered a lot of the comments
19 about additional mitigation.
20

21 We provided documentation of what is feasible and what is infeasible and we've
22 added information about solar. The buildings will be solar ready and the project
23 is going to provide a 10 percent reduction from the green building code, Title 24
24 Energy Conservation Standards and just want to note, in doing some research
25 on solar facilities, Prologis, a lot of their other facilities, when they do these types
26 of buildings, the users that eventually come into them, do install their own solar
27 systems, but because there is no specific users designated for this project at
28 present, that can't be identified at this particular time. Along with energy
29 conservation, there were some comments about making it a LEED certified
30 project. The applicant has indicated they are buildings will and meet the
31 requirements of LEED certified buildings, but again they don't have specific
32 users, so that would be incumbent upon individual users to apply for that
33 process, but they will meet a lot of standards of the LEED process. There were a
34 number of comments and I'll just mention this in passing, a number of articles
35 attached to some of the comments about Sketchers and Walmart warehouses
36 and a lot of the comments were kind of trying to draw a comparison between the
37 two. There is really no comparison. This is a different applicant; and however
38 people feel about those particular warehouse developers, this project stands on
39 its own and we believe the documents we provided give you the information you
40 need to make an informed decision. With me tonight, I have Megan Macias who
41 is head of our Traffic group and Ron Brugger with our Air Quality group and all of
42 us are available to answer any questions you have following your review and
43 discussion of the EIR.
44

45 **CHAIR VAN NATTA** – If it's okay with the Commissioners, I'd like to hear the
46 various different reports and then we can go back and ask questions of the

1 different ones rather than taking them one by one. Is that okay with everybody?
2 Okay yes we would like to see the traffic study next.

3
4 **SPEAKER BRUGGER** – At this time... okay.

5
6 **INTERIM PLANNING OFFICIAL ORMSBY** – While we're switching speakers, I'd
7 just wanted to add that the City completed independent review of the
8 Environmental Impact Report and there was also a peer review completed by
9 Wildan and Associates under their contact with the City.

10
11 **SPEAKER MACIAS** – Good evening. While the simulation plays, I can say a
12 few words about the Traffic Study and if you have any particular questions I could
13 answer those. The traffic simulation that we put together is intended to represent
14 the 2035 traffic volumes. It is the 2035 with the proposed project, so this
15 includes a number cumulative projects that are proposed to be built, both in the
16 vicinity of the project as well as south on Moreno Beach Drive east and west of
17 the project as well. Some of the things you'll notice is on Eucalyptus east of
18 Moreno Beach Drive there is not as much traffic as we have actually coming
19 north on Moreno Beach as well as coming from the west, so the majority of the
20 traffic movements that we were seeing in that area is not necessarily coming
21 from the project, but there is a significant amount of background traffic out there
22 both in the short term cumulative as well as in the 2035 conditions. And then
23 also while the traffic simulation is playing, I could say a words about the findings
24 of the Traffic Study.

25
26 We did look at opening year cumulative. We looked at 2035 which is the build
27 out year or I should say it is the horizon year of RIV (?) Town Traffic Model. We
28 also looked at the build out conditions for the entire City and what we found is
29 that the opening year conditions and the opening year cumulative conditions, the
30 payment of both the City's development impact fee as well as the Regional
31 TUMF fee would mitigate any impacts of the proposed project with the exception
32 of some level of service deficiencies which were on the freeway mainlines.
33 Those were identified in the EIR as significant and unavoidable impacts and the
34 reason being is that the City does not have control over CalTrans facilities, nor is
35 there a mechanism for the applicant to either pay into a program to improve
36 those or to make the improvements on their own. In the 2035 and the build out
37 conditions there were some additional improvements that are required beyond
38 the DIF and the TUMF fees. Those improvements are identified in the 2035.
39 They're minor improvements involving signal modifications and minor changes to
40 striping at a couple of intersections. We've identified the project's fair share of
41 those improvements in the Traffic Study and those are feasible improvements
42 and can be implemented. The simulation goes on for several more minutes, so if
43 you want we can continue to leave this in the background while you continue with
44 the Public Hearing or if you have any specific questions, I can answer them.

1 **VICE CHAIR GIBA** – Is that simulation; can you move that up to the 60 freeway?
2 Is that part of the simulation or is it just...

3
4 **SPEAKER MACIAS** – The 60 freeway is not simulation because the City does
5 not have control over that and we're not proposing improvements to the 60
6 freeway, so therefore we didn't include it in the simulation. Many of the issues
7 that we discussed with Staff had to do with the trip generation of the project and
8 questions about whether local intersections such as at Moreno Beach Drive and
9 Eucalyptus, what the contribution of the project was at those locations, so we did
10 not include the freeway in the simulation.

11
12 **CHAIR VAN NATTA** – Did you include Redlands in the simulation?

13
14 **SPEAKER MACIAS** – We did include Redlands and I think if we hang in there
15 long enough, I could pull up the actual simulation. We could move over to there.
16 This what you are seeing is just a video presentation of it. So what you'll notice
17 is that Redlands looks much less congested in this traffic simulation and as a
18 matter of fact there are many fewer vehicles on Redlands in this condition which
19 is what we reported in the Traffic Study as well. What I can do is I'm going to
20 speed up the simulation because when you are watching it in real time like now,
21 it is sort of like watching grass grow so that way you can see the cars a little bit
22 faster. This is the pm peak hour and of course this includes all improvements
23 that are noted as mitigation measures in the Traffic Study, so that's why it seems
24 better than what you experience today at the intersection because it is
25 significantly improved and there is additional capacity that has been provided
26 which is what will be provided with the improvements that are noted as the
27 mitigation measures of the report.

28
29 **COMMISSIONER LOWELL** – I read in the report that there were upwards of
30 2,000 truck trips a day. Is that true? Is that included in the traffic model?

31
32 **SPEAKER MACIAS** – I'm referencing the trip generation so I can give you the
33 correct numbers. So the total trip generation... the trip generation is looked at in
34 two ways. It's looked at as total vehicles and we also break it out in what we call
35 passenger car equivalence, which recognizes the impact of a truck is much
36 greater than the impact of a passenger car, so the total daily trip generation is
37 4,409 vehicles, so when you ask is there is actually 2,000 trucks per day, there
38 are approximately 2,000 truck trips per day and that's two-way trips, so that
39 would mean 1,000 trucks in and 1,000 trucks out and that is 2, 3 and 4 axle
40 trucks, so that is not 2,000 four axle trucks, it is actually broken out into 2 axle
41 trucks which is 238 and 3 axle is 505 and the large trucks is 1,246 and remember
42 that is one way trucks, so it's really 600 in and out of the project.

43
44 **COMMISSIONER LOWELL** – That compares to a residential development I
45 believe; average residential house and residential development car trips a day.
46

1 **SPEAKER MACIAS** – It actually generates about 9 ½ per unit, for single family
2 residential.

3
4 **COMMISSIONER LOWELL** – For a 150 lot tract like I live in, you are talking
5 about 1,500 car trips, so we're talking this entire development is going to
6 generate about 3 ½ times more traffic than my little housing development.
7

8 **SPEAKER** – Yes but you have to look at it in terms of the size of the...
9

10 **COMMISSIONER LOWELL** – That's what I was implying that this is a larger area
11 and mine is only about 40 acres and we're generating that much trip traffic
12 generation on the 40 acres as opposed to this large proposed project, so the
13 density of trips per acre is a lot less than my housing tract.
14

15 **SPEAKER MACIAS**– Yes that's correct and I was going to point out we also did
16 look at doing a comparison between if the General Plan designation for the
17 project site was built, how many trips would the General Plan generate in
18 comparison to the project and what we found is that the project actually
19 generates 885 fewer and peak hour 939 fewer pm peak hour and 6,702 fewer
20 daily trips, so it is a less intense use of the site than it would be under the
21 General Plan designation, which includes 845 dwelling units and 41 acres of
22 industrial business park.
23

24 **COMMISSIONER LOWELL** – In the Traffic Study, how far of a sphere of
25 influence did you reference?
26

27 **SPEAKER MACIAS** – Well the Traffic Study includes... we did a sensitivity
28 analysis looking at the 215/60 interchange at the request of City Staff just to
29 know what percentage of vehicles would we be adding to the interchange. We
30 didn't analyze that as part of the study. About the farthest we went within...
31 looking at intersections, we looked at Nason Street and Redlands Blvd., so one
32 interchange to the east and west and then in terms of our freeway analysis let me
33 look and make sure I don't tell you the wrong thing...we went from Pigeon Pass
34 Road to Redlands Blvd. looking at the freeways.
35

36 **COMMISSIONER SIMS** – What was the traffic... what was the effect at Pigeon
37 Pass and what was the easterly intersection?
38

39 **SPEAKER MACIAS** – Well there is a lot of different numbers here so... would
40 you like to know... should we be talking about the 2035 condition? Would you
41 like to know existing? We'll talk about the 2035 since that it is the worst case.
42

43 **COMMISSIONER SIMS** – Well I guess what would be current; what is it today
44 and what would it be at 2035?
45

1 **COMMISSIONER LOWELL** – Well 2035 is the ultimate condition. Does that also
2 include World Logistics? Does that include the residential or just this Prologis
3 development in 2035?
4

5 **SPEAKER MACIAS** – Well 2035 is based on the RIV Town Traffic Model so it
6 would include pretty much the General Plan designation for not only land in
7 Moreno Valley but in other cities in the area, so it is kind of considered the
8 General Plan build out. Now there is recognizing that the City of Moreno Valley
9 may not be built out by 2035. We do look at a build out condition but in terms of
10 the horizon year of the RIV Town Model, we're pretty safe to say that that's a
11 build out condition for the area, so that's when we talk about 2035. You asked
12 about existing...
13

14 **COMMISSIONER SIMS** – So my question would be information that I'd like is
15 what would be on the 60 freeway at the most westerly intersection, what would
16 be the current truck traffic or I guess total traffic and then do you have that
17 broken down into truck traffic and then could you then also tell me what it is at
18 the most easterly section of the 60... did you say Theodore?
19

20 **SPEAKER MACIAS** – You know what, unfortunately I don't have it broken down
21 into truck traffic. I can tell you what the total vehicles are and I can tell you what
22 the level of service is.
23

24 **COMMISSIONER SIMS** – That would be perfect. That was going to be my next
25 question is, what the current and then future level of service at those two
26 intersections.
27

28 **SPEAKER MACIAS** – Okay, so the current level of service... this is looking at
29 the freeway segments which is what you wanted; the freeway mainline... okay,
30 so the freeway mainline on Pigeon Pass, we'll say at the am peak hour it is level
31 of service D and the pm peak hour it is level of service E. That is the existing
32 condition. That is going eastbound. In the westbound direction and actually this
33 is at Heacock Street, the am peak hour is F and the pm peak hour is C. That is
34 existing conditions without the project. If we look at existing conditions with the
35 project in the eastbound direction at Pigeon Pass, with the project it is level of
36 service D in the am peak hour and it is level of service E in pm peak hour, so
37 there is no change in the level of service. In the westbound direction in the am
38 peak hour it is still level of service F. There is no change in the westbound
39 direction and in the pm peak hour it is level of service D, so there is one level of
40 service change on the freeway mainline. And then you asked about the east
41 limits as well, so in the east limits...
42

43 **COMMISSIONER SIMS** – What intersection is that?
44

45 **SPEAKER MACIAS** – Well it is a freeway segment, so it's the segment between
46 Pigeon Pass Road and Heacock Street. I'm going to put up the map from our

1 Traffic Study so that I can reference that. Okay, you know what, unfortunately
2 this is our study area intersection, so I don't have a map which is large enough to
3 show the full extent of the freeway analysis on the screen, so I apologize for that.
4 I didn't finish answering your question I believe, so we were on the...you wanted
5 to know the easternmost boundary of our study area. Okay in the existing
6 condition, this is the freeway segment between Moreno Beach Drive and
7 Redlands Blvd. which is the farthest east that we looked, so in the eastbound
8 direction in the am peak hour it is level of service C and in the pm peak hour it
9 is level of service B and in the westbound direction it is same; it's C in the am
10 peak hour and B in the pm peak hour and if we look at it with the project this is
11 still existing with the project, this shows the project's direct impact, eastbound in
12 the am peak it is C and in the pm peak it's B, so there is no change and
13 westbound in the am peak it is C and in the pm peak it is C, so there is one
14 change in the westbound direction in the pm peak hour between Moreno Beach
15 Drive and Redlands Blvd. Does that fully answer your question in regards to
16 freeways?

17
18 **COMMISSIONER SIMS** – Yeah and the other question I have, so the way I
19 understand from the Staff Report in reading through the piles of paper here, is
20 that the notice of preparation for the project went out in 2008 prior to other
21 projects in the area, so the cumulative effects of the project based on the
22 transportation side of it are based on what was current land use planned and
23 General Plan designations at the time the notice of preparation went out.

24
25 **SPEAKER MACIAS** – It is also based on... it is really based on applications that
26 the City had received at the time of the notice of preparation, so for example the
27 full World Logistics Center was not an application at that time, however the full
28 General Plan build out or what we are calling the 2035 analysis, it would not have
29 changed significantly between then and now, because as I said it is based on the
30 RIV Town Traffic Model and so there has not been a major update to the traffic
31 model in the last few years and so therefore the socio economic data and the
32 model has not significantly changed for the build out condition.

33
34 **COMMISSIONER SIMS** – Can you explain to us and everybody that is listening
35 what designations of level of service in a qualitative way what that means, so if
36 I'm sitting on the 60 and I'm going from B to a C or E to a D, what does that
37 mean to me? Am I sitting there going hmmm, I can't get off the freeway for 20
38 minutes or what does that mean?

39
40 **SPEAKER MACIAS** – Okay, generally you'll be experiencing somewhat free flow
41 conditions up through level of service C, I would say. At level of service C you'll
42 start to notice some friction, so between C and F we're going to say that F is
43 where you are stopped... F is you know there is very little through put, so E is
44 that condition before F where you've got some stop and go and D is sort of that
45 transition between stop and go and we're completely stopped, so I think that is
46 something you can kind of you know relate with. F is the condition you

1 absolutely don't want to be in and E is the sort of like this is tolerable and I think I
2 can kind of see I am going to get there at some point. In extreme layman's terms
3 is how I'll put that.

4
5 **COMMISSIONER SIMS** – Yeah can you put up... is there a map that shows the
6 improvements on... when I was looking at this there were so many mitigations
7 and things and kind of hard to get your mind around what each of the
8 improvements are and when they are going to happen, so it does not appear that
9 there is any improvement to the freeway in itself and we heard from Staff that
10 that is because there is no jurisdictional way to acquire and it is through TUMF
11 fees I assume that money would be paid, so you are showing on your traffic
12 simulation, you were showing improvements on the eastbound Redlands off-
13 ramp. How do those fit into the timing and phasing of the improvements?

14
15 **SPEAKER MACIAS** – Okay there are three...

16
17 **COMMISSIONER SIMS** – The timing and phasing of the project, so you know is
18 the off-ramp built or is that an assumption that the off-ramp is built, that the use
19 of the TUMF fees are going to be prioritized to fix that problem in Cal Trans right
20 away or how does that get done?

21
22 **SPEAKER MACIAS** – Well the TUMF fees are based on a priority list that is
23 established by WRCOG and so the priority list is already established and I
24 printed out the latest short term projects before I came here tonight, so for
25 example the Moreno Beach Drive interchange is in two phases. Phase one as
26 you know is already beginning and included and is already built. Phase two, the
27 north side, is still to be programmed; however the money is there in the program.
28 I don't know that the approval of one project you know hastens the
29 implementation of that improvement and an interesting thing to note was I was
30 re-reading the cumulative analysis in the study as I was sitting here and the
31 cumulative projects in this area, so residential projects, there is a Lowe's Center.
32 There are several other projects we've included. Cumulatively, they generate
33 quite a few more trips than this project does, so the question of would the
34 interchange construction be hastened by this project, I think is you have to look
35 at the fact of this project in relation to everything else in the area is I don't want to
36 say it's insignificant because it not, but it is not the majority of the trips that
37 currently have applications into the City.

38
39 **COMMISSIONER SIMS** – I thank you for that explanation, but my question is the
40 improvements on the off-ramps at Redlands Blvd., when would those be
41 implemented as part of phasing of the project?

42
43 **SPEAKER MACIAS** – The improvements to the off-ramps at Redlands Blvd. I
44 believe are part of the TUMF improvements. I believe they are part of TUMF
45 improvements which I do not know when those... I could find out before the end
46 of meeting.

1 **CHAIR VAN NATTA** – That was also a condition of a different project.

2
3 **COMMUNITY & ECONOMIC DEVELOPMENT DIRECTOR TERELL** –
4 Commissioner Sims, is there a particular item?

5
6 **COMMISSIONER SIMS** – I don't have the map in front of me here but I saw it on
7 the simulation. You were showing the off-ramp improvements and so forth. I
8 guess what I'm just kind of... the TUMF fees; the pro rata share of the TUMF
9 fees is going to propose to pay for mitigation improvements, but is there any
10 linkage with the improvements to the project or is it just when the TUMF fees get
11 allocated and programmed to do the work.

12
13 **SPEAKER MACIAS** – It is when the TUMF fees get allocated and the Redlands
14 Blvd. improvements are not programmed in the short term program of the TUMF,
15 so it is going to be some time in the future after Moreno Beach is implemented
16 and I don't know the year, but like I said I could get that information for you, but it
17 doesn't have anything to do with the timing of the project.

18
19 **COMMISSIONER SIMS** – In your analysis of the traffic, so the Traffic Study and
20 the simulation shows traffic based on the situation with the implemented
21 improvements; anticipated implementation of improvements and so if we go;
22 that's only about 15 or 20 years from now if TUMF fees aren't generated and
23 don't get applied here, is there a traffic analysis in the absence of the
24 improvements that shows the level of service for Redlands and Moreno Beach
25 and the freeway?

26
27 **SPEAKER MACIAS** – Yes, with project analysis and the Traffic Study does not
28 include all of the improvements. The improvements are added as mitigation
29 measures because they are both adopted fee programs and so therefore they
30 are available to be considered as project mitigation and quite frankly especially
31 for the DIF, that is the purpose of that program is to mitigate impacts of future
32 development within the City, so our analysis wherein we identify the impacts of
33 the project does not assume that those improvements are in place.

34
35 **COMMISSIONER BARNES** – Excuse me, I have a question regarding going
36 back to the TUMF improvements and schedule. You had mentioned that there
37 weren't improvements currently on the schedule. Is there anything within the
38 sphere of influence of this project on the current TUMF construction schedule
39 that would impact any of your analysis? So are there any TUMF funds being
40 spent in the locale or area of this project?

41
42 **SPEAKER MACIAS** – Yes there are TUMF funds being spent in the area of the
43 project. They are included as part of our project mitigation because the project
44 will pay its fair share of the TUMF fees, so they'll be paying into those
45 improvements which are the Moreno Beach Drive interchange, the Redlands
46 Blvd. interchange.

1 **COMMISSIONER BARNES** – I think what I’m asking is are there any actual
2 projects in the schedule for TUMF that you are aware of? Is there a published
3 schedule of upcoming TUMF funded projects?
4

5 **SPEAKER MACIAS** – There is a published schedule and what I’m holding here
6 is the five year transportation improvement program and included in that is the
7 Nason Street interchange as well as the Moreno Beach Drive interchange.
8

9 **COMMISSIONER BARNES** – Okay so with both of those are in the five year
10 schedule.
11

12 **SPEAKER MACIAS** – Correct. It is the Redlands Blvd. that is farther than five
13 years and I don’t know what the year is.
14

15 **COMMISSIONER BARNES** – Thank you, that was my question.
16

17 **COMMISSIONER LOWELL** – If I’m not mistaken, I believe Nason Street over-
18 crosses... (Inaudible... no sound)
19

20 **COMMISSIONER BARNES** – So the five...that’s right, so what she has
21 mentioned, the five year plan has already been built actually, so there is nothing
22 pending in that five year plan.
23

24 **COMMISSIONER LOWELL** – I believe it’s more of a question for Staff, but I
25 remember hearing at one of the City Council meetings...
26

27 **CHAIR VAN NATTA** – I believe there is still additional improvements yet being
28 worked on Moreno Beach.
29

30 **INTERIM PLANNING OFFICIAL ORMSBY** – There is at Moreno Beach, but we’ll
31 have Michael Lloyd respond to the question.
32

33 **VICE CHAIR GIBA** – Am I reading this correctly, in your mitigation measures...
34 otherwise completed prior to project opening that prior issuance to certificate of
35 occupancy, the applicant shall construct the following improvements installing a
36 traffic signal condition then those are not being finished, you’ll at least put in
37 traffic signals and add a northbound left turn lane, a southbound left turn lanes. If
38 the improvements are constructed by others prior to the certificate of occupancy
39 the applicant shall pay its fair share towards the DIF.
40

41 **SPEAKER MACIAS** – I believe that applies to the intersection of Redlands Blvd.
42 and Fir.
43

44 **VICE CHAIR GIBA** – Redlands Blvd. and Fir Avenue
45

1 **SPEAKER MACIAS** – Eucalyptus... correct and I believe the project applicant
2 has agreed to if... those are also conditions of another project to construct the
3 traffic signal at that location and so whichever project is in first would construct
4 that improvement, so if the applicant of this project does construct the
5 improvement then they would be applying for some reimbursement of that
6 through the City’s Development Impact Fee program since that is programmed in
7 the fee program.

8
9 **CHAIR VAN NATTA** – Okay I have one last question here on the traffic here. I’d
10 like to hear some of the other presentation. We can always come back with
11 additional questions and I’m sure there are other speakers who might have
12 questions on that too, but on this traffic flow and traffic study pattern and so forth,
13 what is the anticipated route that trucks of all sizes would be using to access this
14 project both coming in and going back out. What are you seeing as the route
15 they would take?

16
17 **SPEAKER MACIAS** – Trucks would be using both Redlands Blvd. as well as
18 Moreno Beach Drive. It is anticipated that they are going to be and I’m looking
19 for the trip distribution to make sure that I’m not speaking out of turn here, but
20 they would be mostly using the two interchanges to access the freeway; that
21 there would be very few trucks going south into the City or into residential areas
22 as it would be mostly warehousing facilities to be shipping offsite into more
23 regional areas.

24
25 **CHAIR VAN NATTA** – Okay that was my last question on that. Did we have
26 another presentation by the applicant of any other phase?

27
28 **ASSOCIATE PLANNER BRADSHAW** – I believe that would conclude the Staff
29 Report of the presentation and the applicant is here to speak when you are ready
30 for the Public Hearing portion of the meeting.

31
32 **CHAIR VAN NATTA** – Then we are going to open the Public Hearing portion
33 now and... I think the traffic one was the last one that was... At this point I think
34 who we want to hear from is the applicant so we’re opening the public comment
35 portion and beginning with the applicant.

36
37 **APPLICANT CAVANAGH** – Good evening. My name is Pat Cavanagh. I’m with
38 Prologis and I am joined tonight with other associates of mine from Prologis
39 Tyson Chave, standing next to me who is the Vice President of Prologis
40 responsible for development in the Inland Empire. Additionally we have Kim
41 Snyder with us. Kim is the President of the Southwest Region for Prologis. Jim
42 Jachetta is with us. Jim is the Project Manager who worked with Staff from the
43 beginning on this project and who am I leaving out. I guess that’s all and then we
44 have Dennis Roy, the Architect on the project with RGA. I wanted to thank all of
45 you; the Commissioners and Staff for and I know this is a special meeting and we
46 took you out of your homes and lot more comfortable places than here tonight

1 and we don't take for granted and are very appreciative of that and in particular
2 the Staff. I want to acknowledge them. They have been very responsive. They
3 have been accommodating and very professional in every way to get us to where
4 we are tonight, so John Terrell, Jeff Bradshaw and Chris Ormsby in particular. I
5 wanted to cover four topics tonight and I'll try to be as brief as possible. I wanted
6 to cover a few brief comments on Prologis for those who aren't familiar with us. I
7 want to talk why we are here. I want to talk about project benefits and then I
8 want to respond to some of the common concerns and questions that have been
9 posed to us. I've asked Tyson Chave to cover the first two of those topics.

10
11 **SPEAKER CHAVE** – Thank you Pat. I wanted to briefly talk a little bit about who
12 Prologis is for those of you who may not be familiar with us. Prologis is a publicly
13 traded company with a strong balance sheet, low leverage and a global platform.
14 We have a commitment to develop quality industrial buildings with a long term
15 ownership structure as a public (?). Our focus is on quality, customer retention
16 and corporate responsibility. I don't see the clicker, but just one slide forward.
17 We put together just a brief slide to show a sample of some of our largest
18 customers globally in the form of the logos that you see and there are some brief
19 descriptions more specific to Southern California along the west side, but we've
20 also included customer accounts on that slide as well. Locally Prologis owns 35
21 million square feet of industrial buildings in the Inland Empire and in February,
22 Fortune Magazine named Prologis as one of the world's most admired
23 companies and that was for 2014. Prologis was also ranked as the top real
24 estate company for corporate or social responsibility and then finally I wanted to
25 transition to why we are here.

26
27 In 2007, Prologis made a commitment to Moreno Valley for a variety of reasons
28 but a few of the compelling reasons were that we felt at the time we would have
29 the support of the community and the City for a quality industrial project that
30 would bring jobs to Moreno Valley. We felt that at that time Moreno Valley was
31 underserved and we still feel that Moreno Valley is underserved from an
32 industrial perspective when compared with other cities within the Inland Empire.
33 A lot has changed since 2007. The world has survived an economic disaster and
34 we seem to be slowly recovering from that. Several recent industrial
35 developments in Moreno Valley along the I-60 and I-215 corridor have occurred,
36 but Prologis is here tonight to confirm that we are still committed to the
37 development of a quality industrial project while being very sensitive and
38 responsive to the issues surrounding a project of this magnitude. Now I'm going
39 to have Pat Cavanagh finish the rest of our topics.

40
41 **APPLICANT CAVANAGH** - Thank you Tyson. I wanted to talk briefly about
42 project benefits and also the response to questions and concerns. As it relates
43 to the project benefits, we stated in our community outreach materials, which
44 included the distribution of over 17,600 project brochures in early 2012 in an
45 open house which we conducted in August of 2012 that the Prologis Park in
46 Moreno Valley is expected to provide the capacity for a minimum of 600

1 permanent jobs and perhaps double that number when completed. This is based
2 on a track record on our actual portfolio and not a hypothetical number. We have
3 done research on this and we are comfortable making that representation.

4
5 As far as the fees and the improvements that are anticipated, we expect that the
6 project will generate significant fees and street improvements and by way of
7 example, a full build-out of the total impact fees and street improvements are
8 estimated at 19.3 million dollars. That is just street improvements. That does not
9 include buildings and it includes school fees at 1.1 million dollars, Police and Fire
10 of 800 thousand dollars, nearly 3 million dollars in local flood control and area
11 drainage improvements and street improvements of over 11 million dollars. That
12 also includes a 2.5 million contribution to TUMF fees. The fee breakdown is
13 located on our website. It is project specific and if people are interested in it, they
14 can look at those fees referenced there.

15
16 There was a reference to solar and I wanted to comment that we have installed
17 solar installations on over 12 million feet of buildings in the Inland Empire. There
18 is not an industrial company that can probably come within; I mean it is clearly
19 the most significant solar commitment of any company in the industry and that is
20 a complicated subject that we probably shouldn't spend a lot of time on tonight,
21 but it is something that we are focused on and we would certainly have all of
22 buildings solar ready and LEED certified. That is a commitment that we make on
23 any development project that we have. As far as the response to questions and
24 concerns, the three most common that I hear are land use, job creation and
25 traffic and air. I'm going to leave traffic and air alone because that has been
26 addressed by the LSA Consultants.

27
28 As far as land use is concerned, the current zoning allows for development, so
29 the issue really is the type of development that provides the greatest benefit for
30 the community. Open space; at least in my opinion, when a General Plan has a
31 designation for development is an unrealistic expectation over the long term, so I
32 guess we ask what is the best use of the subject property for the community and
33 I'll refer to the Rami and Associates Study that was done this last year. It was
34 done to prepare a land use study for the City and the City leadership with a tool
35 for future land uses in a defined area that included the Prologis property as well
36 as other properties along the I-60 corridor. The consultant came up with three
37 alternatives for consideration and a recommendation. Their preferred alternative
38 included a suggested best use for the subject Prologis property which was
39 consistent with our proposed plan and allowed for a possible expansion of the
40 Auto Mall along the west side of the Prologis Project.

41
42 As an accommodation in working with Staff, we've come up with what I call the
43 Auto Mall condition, which if we are approved would restrict us from developing
44 the two westerly buildings for a period of 18 months from the approval date to
45 allow us and the City to explore Auto Mall uses on those two properties. Job
46 creation... I'm not going to spend a lot of time on this other than to say that

1 Tyson mentioned that the City seems to be underserved on industrial and to that
2 end, we polled all the cities in the Inland Empire. There are 13 that we looked at.
3 Moreno Valley is the fourth largest in terms of population and they are tenth in
4 terms of industrial base. My interpretation of that is people are going elsewhere
5 to work and they are living here and that I think hurts the City and the community
6 at large. In conclusion, our intention and goal is to create an environment to
7 allow us to grow our customer base in Moreno Valley and along with this will
8 come jobs and increase the tax revenue, a best in class project, a finish to the
9 industrial corridor already created with the Aldi and Sketchers projects on the
10 south side of the 60 freeway, a buffer to future residential, infrastructure
11 improvements and a more favorable impact to traffic compared to the current
12 zoned alternative and an opportunity to expand the Auto Mall if the market
13 supports that expansion. And with that I appreciate your time and we are
14 certainly glad to answer any questions that you might have.

15

16 **CHAIR VAN NATTA** – Thank you

17

18 **VICE CHAIR GIBA** – I was curious. You started this project in 2007. Am I
19 correct?

20

21 **SPEAKER CAVANAGH** – We acquired this property in 2007 and initiated the
22 EIR process and in 2008 the market had virtually collapsed in the Inland Empire
23 on all sectors, industrial included and we decided that if we continued with our
24 entitlement we would get through the entitlement process and perhaps and most
25 likely be in a situation where the entitlements we had would expire before the
26 market recovered, so we stopped the entitlement process and waited for the
27 market to return and in 2011 we started looking more seriously at re-engaging
28 the entitlement process and got going full steam in 2012 and then there was a
29 moratorium as you probably are aware put on a project area so that the City
30 could do the land use study and that delayed us a year and so that expired in
31 January of this year and we are re-engaged in where it gets us to where we are
32 today.

33

34 **VICE CHAIR GIBA** – You referenced the Rami Study, so I'll come back to that at
35 some point. I don't where that would be appropriate, where it is going to be you
36 folks because we kind of jumped around a little bit. It's not the normal process
37 we would do, but I was curious again. You started it in 2007, but that area out on
38 the east side was never specifically zoned for warehouse, but more warehouse
39 was specifically zoned for the 60, 215, Cactus and all that corridor out there,
40 where in 2007 maybe you can answer this, when did Sketchers get built. Was
41 that after 2007? Am I correct?

42

43 **COMMUNITY & ECONOMIC DEVELOPMENT DIRECTOR TERELL** – Yes is
44 was submitted around... it was already known at that time but it wasn't built until
45 later.

46

1 **SPEAKER CAVANAGH** – I think Sketchers probably didn't get completed until...

2
3 **VICE CHAIR GIBA** – 2010... so in 2007 there was no warehousing or any plan,
4 didn't even specify having warehousing out in that area. I remember when I was
5 brought on as a Planning Commissioner and Mr. Terell took me for a ride and
6 said this area over there is considered joint use. We were looking at future
7 housing and apartments and that type of construction, so in 2007 what made you
8 want to purchase land and look at a large 2.2 million warehouse in an area that
9 wasn't specifically designated for that type of housing or that type of building at
10 that time.

11
12 **SPEAKER CAVANAGH** – Well a good question. We looked at a number of
13 things. One is the proximity to the freeway and good access to freeway
14 circulation. The property was already partially zoned for industrial in the form of
15 Business Park, so it appeared the City already had it in their General Plan
16 concept that it would be industrial, so we were presented the opportunity and we
17 came in and met with most of the members of City Council at that time and went
18 through a discussion of what we would need to do to get to the end line of what
19 our concept of the project and it's 2.2 million feet, but it's in six separate
20 buildings, so it's not a Sketchers kind of project. Sketchers is one building and
21 it's a big building and we felt that the location was as good, maybe even better
22 than most of the locations down the 215 corridor because of its proximity to the
23 freeway and the City seemed to agree that it would be a good use and they liked
24 what we were proposing and so we moved forward on it.

25
26 **VICE CHAIR GIBA** – I understand that that was zoned for Business Park and of
27 course what part of your proposal is to change this zoning in the definitions so
28 that we can increase the size of the warehouse. That's not what I would normally
29 call Business Park, that's called warehouse park, so even though it might have
30 been zoned as Business Park, you guys began to still look at it warehouse park
31 instead of business park, but if I may, just for one moment, off of your own
32 website, it just caught my eye, unmatched global platform specializing in infill
33 location, owning and operating logistics facilities near seaports, airports and
34 major highway interchanges. That site doesn't necessarily specify any one of
35 those key elements of what Prologis looks for. That's why it was kind of a
36 curiosity to me when I reviewed your site and went over some of your key
37 elements on where you put facilities and why you put them there, that didn't
38 seem to match very well and I'll stop for now and give my other Commissioners a
39 chance to speak or anybody else, but I would like to come to the Rami Report as
40 well because you mentioned three alternatives and that was something we had
41 discussed last year in conjunction with Prologis and I just want to re-visit that
42 issue because you did make very, very good points that I appreciate; land use
43 and job creation.

44
45 **APPLICANT CAVANAGH** – The only comment I'll make...

1 **VICE CHAIR GIBA** – If they’re going to be using that and you did reference and
2 cite it so I could do the same, and they did say this report was done as a
3 guidance document, it was never approved by the Council was it?
4

5 **INTERIM PLANNING OFFICIAL ORMSBY** – Correct, it was received and filed,
6 so it is a guidance document.
7

8 **VICE CHAIR GIBA** – It was received and filed and never approved, yet if I
9 remember correctly when we were sitting here and discussing that last year, it
10 was a request for us to approve it and approve one of the plans, at least that’s
11 how I interpreted it at the time and I may be in error.
12

13 **CHAIR VAN NATTA** –Yeah, I think the understanding might have been a little
14 twisted there because it was really only for us to review and to except into the
15 record and not as an approval of a specific plan.
16

17 **VICE CHAIR GIBA** – And I understand that and so there were the elements in
18 here that were giving guidance to the direction of the land use in those specific
19 areas and so I think that is important and I think we need to come back to it
20 because I think that is a major element of...
21

22 **APPLICANT CAVANAGH** – The only comment I’ll make and I appreciate your
23 comment about where Prologis wants to locate projects is we look at the Inland
24 Empire in totally. We have projects in Rialto that are off of I-210 freeway that
25 have been very successful. They are comparable somewhat in their proximity to
26 ports and airports and the things that you mentioned and we looked in the
27 Moreno Valley market and you go down the I-215 all the way down to Perris and
28 you look at this site in comparison to those sites and I would stack this site up
29 very well against any of those because of proximity to the freeway, so that is the
30 primary attraction. We try to stay away from going places that are away from
31 freeways because that kind of creates all kinds of issues that cities have and we
32 have and our customers have so the primary driver is comparatively speaking to
33 I-215 corridor. We like the I-60 corridor every bit as much.
34

35 **CHAIR VAN NATTA** – Excuse me, this is not a time for comments from the
36 public in general. When you have your moment to speak it will be when you are
37 at the podium.
38

39 **VICE CHAIR GIBA** – And please, just so you understand, I’m trying to clarify the
40 thinking that went into the land uses in this... I’ve lived here for 30 odd years so I
41 changes. I’m just curious why in 2007 you didn’t have the same level of
42 warehouse building that went on in the I-215 corridor, why Staff didn’t kind of
43 direct you over there saying we have other uses for this over here. Now I’m not
44 saying anything about your project. Your project is beautiful, but I’m concerned
45 about land use and future land use to build out, so I want to understand the value
46 of putting it there versus putting it somewhere else back in 2007 and now. I

1 know the economy had to wait, so I had several other questions, but these guys
2 know I'll ask them and it will take too much time, so I'll come to it. Is that okay
3 with you guys?
4

5 **CHAIR VAN NATTA** – Sure.
6

7 **VICE CHAIR GIBA** – So, everybody else can get their word in edgewise.
8

9 **CHAIR VAN NATTA** – We're going to on to some questions from Commissioner
10 Lowell but I did want to comment on the questions that we're asking, we cannot
11 pre-suppose that somebody has complete autonomy about where they are going
12 to put something. Sometimes it has to do with where the land is available and
13 can be purchased and not just say well wanted to build this, where do we want to
14 put it. Sometimes it has to do with what land is available or owned.
15

16 **VICE CHAIR GIBA** – We want to look at the whole package here. We want to
17 understand the whole package and I'm sure all the folks out there want to know
18 the whole package.
19

20 **CHAIR VAN NATTA** – I'm sure they would and I would like to see more
21 questions that are directed specifically to this project so that we have a good
22 understanding of the project before we begin discussing the advisability of going
23 ahead with it or not, so go ahead Commissioner Lowell.
24

25 **COMMISSIONER LOWELL** – I had a pretty simple question. Do you know what
26 the construction timeline is from breaking ground to completing the project with
27 all the improvements?
28

29 **APPLICANT CAVANAGH** – Well I'll answer it two ways. To build a building
30 takes about seven months. The time that it takes to get to the point where you
31 build the building probably takes an equivalent amount of time, so if you said
32 green light, nothing in your way, get going, probably the earliest you'd see a
33 building there if we built it on spec; speculative development; an empty building,
34 would probably be in the twelve to fourteen month timeframe. Now our intention
35 today is we don't intend to break ground the day you say yes. A lot of what we
36 do is solicit build to suit activity and a lot of what we do is sort create a pipeline of
37 buildings so that we are strategic in when we are building and what we are
38 building and we have other sites that we are involved in and this would... so that
39 is a building. The totally of the project, I would say a project of this size with the
40 number of buildings is five years from start to finish. I would be pleased if we
41 were done in totally in five years; all of it built; all of it leased.
42

43 **COMMISSIONER LOWELL** – One of the options that we have is to basically
44 install a moratorium for 18 months on the westerly portion of the project to allow
45 the Auto Mall to hum and haw and decide what they want to do. What benefit

1 would that be to us if allowed that since Prologis already owns the property and it
2 would be in Prologis' best interest to keep the property for themselves.

3
4 **APPLICANT CAVANAGH** – It would be a benefit if you feel that having an
5 expansion to the Auto Mall benefits the City.

6
7 **COMMISSIONER LOWELL** – But would Prologis be willing to either sublet or
8 sell that property to the Auto Mall if they were interested.

9
10 **APPLICANT CAVANAGH** – We would be open to selling the land to an Auto
11 Mall use if there was demand for it; sure. I mean we've acknowledged that. That
12 is something that we are not opposed to doing. I'll tell you quite honestly. We've
13 explored this and I'm not sure what the demand is. I think 18 months would
14 certainly be enough time to figure out what the demand is. There is still vacant
15 lots over at the Auto Mall that have never been used, so I don't know if the Auto
16 Mall use a realistic expectation or if it's not. I have no idea.

17
18 **COMMISSIONER LOWELL** – That is correct. There is still room over there for
19 expansion. I was just curious what the feasibility was and what the logic was
20 behind the 18 months.

21
22 **APPLICANT CAVANAGH** – It was trying to define a period of time to allow the
23 City and the Auto Mall and Prologis to explore that alternative because it seemed
24 to be part of the Rami Study recommended plan that was of interest to at least
25 some of the people on the Council when it was presented to them.

26
27 **COMMUNITY & ECONOMIC DEVELOPMENT DIRECTOR TERELL** – Yeah the
28 other thing... John Terell, Community and Economic Development Director. The
29 other issues was it was in all three of the alternative, the concept of allowing for
30 the expansion of the Auto Mall, so it was consistent across all the particular
31 alternatives that were presented there and that is why Staff in the report
32 referenced that issue as opposed to any other land use issues that are identified
33 in the study.

34
35 **COMMISSIONER LOWELL** – Is the Auto Mall the only option that we're looking
36 for or is there any other kind of development like say a Jiffy Lube or some kind of
37 small commercial business like development?

38
39 **COMMUNITY & ECONOMIC DEVELOPMENT DIRECTOR TERELL** – The
40 SR60 Corridor Study specifically identified as it went through that process in
41 talking to stakeholders and looking at various things about Auto Mall uses which
42 could be that were loosely defined as dealerships.

43
44 **COMMISSIONER LOWELL** – Correct but the land is currently zoned as
45 Business Park, so I was just curious if there was any interest in a Business Park
46 type development...

1 **COMMUNITY & ECONOMIC DEVELOPMENT DIRECTOR TERELL** – I’m not
2 quite sure...

3
4 **COMMISSIONER LOWELL** – Like Bob’s Big Boy or a strip mall like a Subway
5 sandwich shop or something along those lines that is more business park or
6 more in line with the current zoning.

7
8 **COMMUNITY & ECONOMIC DEVELOPMENT DIRECTOR TERELL** – In any of
9 those major uses that would have been permitted would still be possible. Let’s
10 put it that way. One of the uses that is not possible in a business park zone is an
11 auto dealership.

12
13 **VICE CHAIR GIBA** – John could that at any given time though, just as we would
14 request a zoning change or anything here, could the Auto Mall, even though...
15 and part of this plan that you were specifying is one of reasons we need to
16 change all the zoning is in case the Auto Mall wants to move forward and build a
17 dealership, they would have to have that specific zoning. But a dealership could
18 come forward and request a zoning change for a specific lot of property. Could
19 they not independent of us doing anything with this...
20

21 **COMMUNITY & ECONOMIC DEVELOPMENT DIRECTOR TERELL** – That’s
22 correct yes. I think the point in the Staff Report points out that this proposed use
23 as well as an auto dealership both require the same land use change. I think
24 that’s what really the Staff Report was meant to point out, you know whoever
25 suggests or proposes that.

26
27 **COMMISSIONER LOWELL** – And then I had one more follow-up for the
28 Applicant. I live fairly close to this area and I’m fairly familiar with the orange
29 trees and orange groves that have been there for a long time and I drove by just
30 about a month ago and I noticed that all the trees were gone. Do you know when
31 the trees were removed?
32

33 **APPLICANT CAVANAGH** – We made the decision to remove the trees because
34 there is a time of the year where you allowed to do that and then if you do not do
35 it during that time of the year and the time of the year I think is from...
36

37 **COMMISSIONER LOWELL** – February 1 is the cutoff.

38
39 **APPLICANT CAVANAGH** – I think is September to February I believe it is. If
40 you don’t have them removed by February then you can’t remove them until the
41 following September.
42

43 **COMMISSIONER LOWELL** – That was actually what I was aiming towards; I
44 was curious if you remembered the date they were removed if it was within that
45 timeframe.
46

1 **APPLICANT CAVANAGH** – We had to remove them prior to the date that we
2 were allowed to do it and I think that was February 1st.

3
4 **COMMISSIONER LOWELL** – So all the removals were completed before then?

5
6 **APPLICANT CAVANAGH** – Yeah

7
8 **COMMISSIONER LOWELL** – Did you happen to do any kind analysis that was
9 required for post February 1st removal, if there was a specific environmental
10 analysis and report that you have to do.

11
12 **APPLICANT CAVANAGH** – You have to do a nesting study. It's all related to...

13
14 **COMMISSIONER LOWELL** – Correct I was just curious because it is such a
15 large area of trees that were removed. I was wondering if you did any kind of
16 analysis on that anyway even though...

17
18 **APPLICANT CAVANAGH** – It was outside of the nesting season so there is
19 nothing of that nature required.

20
21 **COMMISSIONER LOWELL** – It was just real close to that February 1st deadline,
22 so just a little bit of a gray area. I was just curious if Prologis went ahead and did
23 that study anyway or if not...

24
25 **APPLICANT CAVANAGH** – Well we were up against that day, so we wanted to
26 be sure to have it done prior to that date so...

27
28 **COMMISSIONER LOWELL** – Just clarifying and I think that was it for my
29 questions for the Applicant so far.

30
31 **COMMISSIONER SIMS** – I have a couple of questions on this. So I was looking
32 through and I think was the Draft EIR and I want to go into the air quality
33 questions, so I was looking at Section 4-4.3, specifically under the Section
34 4.3.1.3. There is a table in there that had data for ambient air quality in the
35 project. Going back in looking at the monitoring station, it is not right at the
36 project but it's in Riverside, Rubidoux area and it shows a listing of the ambient
37 air quality for 2008, 2009 and 2010 and so I was wondering is there an analysis
38 done with the air quality work that you've done supportive of the EIR that shows
39 the delta of air quality between what we would consider pre-project and post-
40 project.

41
42 **APPLICANT CAVANAGH** – I'm going to defer that to the air quality consultant
43 with LSA if you don't mind.

44

1 **SPEAKER BRUGGER** – Good evening. My name is Ron Brugger. I'm with LSA
2 and your question was did we analyze the air quality with and without the
3 project?
4

5 **COMMISSIONER SIMS** – I'm not an air quality expert, so in looking at this I'm
6 just asking the question. There was a table; your table 4.3.c ambient quality in
7 the project and it is reflective of three years of data collected at Riverside
8 Rubidoux monitoring station in Rubidoux I assume and anyhow it's showing a
9 variety of different contaminants that is being monitored. The question is the
10 project; is the ambient; has there been a model conducted showing what the
11 effects to the air quality are and is there a delta plus or minus with or without the
12 project that you could compare. So in essence with this table if you 2016 or you
13 put 2035 what would that column through modelling be?
14

15 **SPEAKER BRUGER** – The simple answer to that is no. What the analysis
16 focused on was several air quality effects primarily emissions. What the table is
17 showing is are measured concentrations of pollutants at that location in Riverside
18 Rubidoux area. That was the closest one. That is considered representative of
19 the region even coming out this far. What you are asking is what the effects to
20 those concentrations would be from adding this project and that analysis isn't
21 done; that isn't really feasible. What we can do is analyze or predict based on
22 the emissions models and so on what the total emission rates of pollutants will be
23 and there are ambient air quality standards that say as long as the emissions
24 stay below emission rates from the project, stay below rate thresholds, that the
25 resulting concentrations at locations and that's what... the concentrations are
26 what matter to health and to people breathing etc. and emissions are an indirect
27 indicator. It depends on the wind. It depends on a variety of dispersion effects in
28 terms of the pollutants getting become translated to concentration levels, so what
29 the air quality analysis does is calculate the emissions from the project
30 operations and says based on the regional thresholds that are set by the Air
31 Quality Management Board for the area, these emission rates from the project
32 are above and below thresholds. If they are above then that is considered a
33 significant impact because their emission rates are high enough that the resulting
34 concentrations will probably be above the ambient air quality standards and you
35 know be significant from that standpoint.
36

37 **COMMISSIONER SIMS** – So in your analysis on the emissions have you
38 exceeded any of the thresholds established by Air Quality Management District.
39

40 **SPEAKER BRUGGER** – Yes the project operations exceeds several I believe. It
41 exceeded the emissions of NOX, CO and I'm sorry there are six criteria
42 pollutants that we consider for which we have these thresholds. ROG is an
43 organic gas and VOC is another name for it. NOX is an ozone precursor and CO
44 is carbon monoxide, THOX is a result of the sulfur in fuel primarily, PM 10 and
45 PM 10 2.5 are both sizes of particulate matter. This project operational

1 emissions are expected to exceed the emission rate thresholds for all of those
2 except the THOX; the sulfur, because the sulfur content is so low these days.

3
4 **COMMISSIONER SIMS** – So with those exceedences of this, further into the
5 report or before, I don't know which there was under 4.3.5.2, the operational
6 acute health risk emissions impacts, there is a graphic that had contours of
7 carcinogenic risk levels, so how does relate or how does a person in layman
8 terms... when I read it I understand there is supposed to be risk of ten in one
9 million people with potential for carcinogenic risk. The threshold in this project is
10 acknowledged less than that in all cases but is there way to put it in layman's
11 terms you know when you have an exceedence of an air quality limit, how is that
12 dealt with, if at all through the mitigations that are proposed for the project and as
13 far as this table 4.3.1 that shows these contours of carcinogenic risk, how does
14 that kind of tie together... well it's too much of an open ended question but you're
15 the expert.

16
17 **SPEAKER BRUGGER** – Well actually the health risk assessment you were
18 referring to now is probably... the best way to answer your original question of
19 how the operational emissions; how the operation of this project will affect the
20 ambient air quality in the region in the area right around the project, so I guess
21 we got sidetracked; I got sidetracked from your original question being based on
22 the criteria pollutants and those ambient concentrations that are measured in
23 Riverside Rubidoux. The health risk assessment is exactly focused on what the
24 health effects to people living around this project will be from the air emissions
25 from the operations of this project and it is focusing on all toxic air contaminants
26 in that case, which is to say is a sort of special category of pollutants. Without
27 getting into all those details the criteria pollutants; the NOX and PM 10 etc. are
28 recognized as indicators of general problems and for the purposes of regional
29 planning and other aspects that have very little to do with the effects of this
30 individual project, that is where all those thresholds and emission rates have to
31 do with is regional planning and regional air pollution.

32
33 The health risk on the other hand focuses exclusively on what the project does to
34 the proximity of the area right around it and that is exactly what it shows is that all
35 health risk assessments incorporate a lot of very conservative assumptions to
36 ensure that they are protective of the health of the people that are in the area that
37 is being analyzed such as the trucks; that the emission rates are expected or that
38 are modelled for the diesel trucks; the big trucks that are going to be operating
39 for this project, do not take advantage of what we truly anticipate to be regulatory
40 improvements to reduce those emissions, so the health risk is assuming those
41 improvements that are likely planned for and are likely to be incorporated but are
42 not actually approved yet, those are ignored, so the health risk is protected in all
43 ways that it can be and it comes up with what you can see in the report a health
44 risk that is less than significant on the order of half of what the threshold being
45 ten in a million, it is less than half of that.

46

1 **COMMISSIONER SIMS** – So that was kind of where I wanted to go, because
2 when you read these numbers and you see carcinogenic risk is five in one
3 million, you sure don't want to be one of the five, so...

4
5 **SPEAKER BRUGGER** – That's the problem with statistics

6
7 **COMMISSIONER SIMS** – Yeah so the pertinent perspective you have right in the
8 heart of the project, there is a five, which is a five in one million and as you get
9 out maybe 1,000 feet or so from the project you are down to one in one million
10 risk. I guess can you put it in perspective what would be the air quality risk for a
11 person just if you take the project away to kind of put in perspective, is a person's
12 risk from emissions and contaminants that would be from emissions and just
13 sitting in a room right here or being outside. If you are driving on the 60 freeway
14 today is your risk one in a million or 20 in a million or is there a way to correlate
15 that.

16
17 **SPEAKER BRUGGER** – Yes the South Coast Air Quality Management District
18 has done three and is now in the process of a fourth study called the Mates
19 Mobile Air Toxic Emission Standard (MATES) study where they in great detail
20 measured monitored actual toxic contaminant concentrations throughout the
21 whole south coast region, but here certainly as well and according to that report,
22 while the toxic air contaminant levels and the health risks associated with those
23 are better now than they were when they did the first study in the late 90's, there
24 is still around 250 in a million cancer risk right ambient or the air we're standing in
25 right here, that's about the health risk level of this ambient air; 250 in a million, so
26 this project is going to affect that by a few, four or five... this isn't really valid but
27 you could say we'll go from 250 to 254 or 255 in a million and that's a small
28 percentage of the ambient health risk levels.

29
30 **COMMISSIONER SIMS** – Thank you

31
32 **CHAIR VAN NATTA** – Do we have any more specific questions about any of the
33 presentation we've seen so far?

34
35 **COMMISSIONER BARNES** – Earlier when we were discussing transportation,
36 there was a reference made to... it's for you, I'll get there in a second. There
37 was a reference made to the impacts of the current land use designation and as
38 it relates to this project, so there was kind of what we currently have and what we
39 will have. Could you give us the same relationship in regards to air quality?

40
41 **SPEAKER BRUGGER** – I did not do that analysis. There wasn't an analysis
42 made of anything other than what the project as proposed might do in the long
43 term.

1 **COMMISSIONER BARNES** – Because there is a proposed use there and it will
2 have an impact, so it's not like we're going from zero to this project, but we don't
3 have quantified.

4
5 **SPEAKER BRUGGER** – Right

6
7 **COMMISSIONER BARNES** – Okay

8
9 **COMMISSIONER SIMS** – I do have one more. I'm switching from air quality. I'm
10 done with air quality. The other one I had is that I live very, very close to this
11 project. In fact my neighborhood touches your southeasterly corner of the
12 project, so out of curiosity I was looking in the EIR on 4.1-10 and it's the view
13 sheds from residents from the southeast of the site and there is and I don't know
14 which... but it's a picture from if you are on Eucalyptus... now currently
15 Eucalyptus looking it would be north and to the west, you no longer can see the
16 hills from those homes. Is that because they are just blotted out, the buildings
17 block the view shed from those property owners that live...basically is would
18 these property owners...

19
20 **APPLICANT CAVANAGH** – Southeast... is that what you're talking about?

21
22 **COMMISSIONER SIMS** – All these people right in here no longer when they are
23 looking out this way all they see is a wall of buildings.

24
25 **APPLICANT CAVANAGH** – Well let me... I don't know how much comfort I can
26 give you in that regard, but I can give you some dimensions and that might tell
27 you something. The distance from end of the cul-de-sac which is the street at
28 the very southeast; the proposed cul-de-sac to the nearest point of the building is
29 366 feet, so if you were back from that it obviously gets further back. The
30 buildings are going to be approximately 40 feet tall. That would be the height of
31 the exterior wall, so I don't know what you would see if you were back 360 feet
32 looking to the north.

33
34 **COMMISSIONER SIMS** – You're analysis shows what it looks like. You have a
35 picture of it showing... you see the building and the pre-picture...you see; of
36 course you see the mountains, the view shed you have out there. Here it's gone.

37
38 **SPEAKER CHAVE** – The line of sight study that you are referencing would be
39 just one point where that was taken from, so the further you would go south
40 along that residential neighborhood you know the building remains the same and
41 so I don't know that it would definitively block the view of the mountains from the
42 entirety of that project. The line of sight that you are looking at is from right on
43 the property line.

44

1 **COMMISSIONER SIMS** – Yeah one specific spot. I get it. That property owner
2 or that person that owns that property that has that current view shed is impacted
3 directly to that property owner.
4

5 **CHAIR VAN NATTA** – Okay, I found that if I say Jeff instead of the last name I'm
6 at least right half of the time. Okay, go ahead
7

8 **VICE CHAIR GIBA** – Just going back to the jobs issue, I just wanted to clarify a
9 couple of things. You said there is anywhere from 600 to 1200 jobs that will be
10 produced. Am I correct on that number that you were giving?
11

12 **APPLICANT CAVANAGH** – We feel real comfortable in that. We own as Tyson
13 mentioned 35 million feet in the Inland Empire and we have polled a number of
14 our buildings and business parks to get head counts on employees in those
15 projects for the very purpose in making these kind of representations and I think
16 600 is conservative, but I don't want to promise something that doesn't happen.
17 It's not one building; it's six buildings. They'll be a variety of uses. Some of the
18 uses might be more intense and some less, but that is the main the project we
19 polled, Prologis Park in San Bernardino County; the Kaiser Commerce Center; is
20 five million plus square feet; nine buildings; Johnson and Johnson, LG
21 Electronics, Sports Authority, Kellogg's, Walmart. Those are tenants in that park
22 and the head count exceeded 600 by a lot in that project.
23

24 **VICE CHAIR GIBA** – All six buildings at final build out which could be as far as
25 five years in the future, the estimate that you were discussing earlier is fairly
26 accurate and are these automated warehouses or they standard types of
27 warehousing.
28

29 **APPLICANT CAVANAGH** – They are very similar to what we are proposing to
30 build here; same concept.
31

32 **VICE CHAIR GIBA** – I mean is level of automation in those warehouses or are
33 these more... there is always a discussion of an automated warehouse versus a
34 physical warehouse where you have the warehouse workers move things around
35 versus... Do you follow me?
36

37 **SPEAKER CHAVE** - I think I understand your question. You know if you look at
38 a snapshot of our 35 million square feet, we have very few on the order of
39 magnitude of maybe five of the 90 buildings that make up that 35 million square
40 feet that we would qualify as kind of highly automated. The vast majority of our
41 projects are very typical warehouse distribution centers. They are automated to
42 the extent that there is forklifts to pull product from the racking but they are not
43 highly mechanized facilities, so I think there is a lot of buzz, talk about the
44 Amazon's of the world and those type of facilities, but they are still a rarity and if
45 you looked at the overall Inland Empire, you know that is 440 million square feet,
46 I would say it's probably less than ten percent or probably less than five percent

1 facilities that are quote unquote highly automated, so if you looked at this project
2 of 2.2 million square feet, I would venture to say that you know if a building was
3 highly automated it would be probably above that kind of percentage of you know
4 buildings that would have level of improvement.

5
6 **VICE CHAIR GIBA** – The labor necessary is not necessarily technical labor that
7 they would have that would work at those sites or facilities. Am I correct in the
8 context that they have to care of robotic equipment and things like that?

9
10 **SPEAKER CHAVE** – I think if you look at the job count that we created, I think
11 you have you know basically every job that would make up that profile of how to
12 run a warehouse distribution center, so you're question is somebody specially
13 that would repair robotics within the facility and I don't know if we can answer that
14 definitely within that job count.

15
16 **VICE CHAIR GIBA** – But do you have any kind of an average pay scale... I know
17 these questions are going to come up at some point so I might as well air them
18 know and get them out in the open so the folks can understand them. Prologis
19 hires a lot of people so if there an average salary structure that people usually
20 get hired at a Prologis facility but I think the better question for that is this may
21 not be Prologis. Are these warehouses speculative type warehouses. You don't
22 have somebody to move into them yet do you?

23
24 **SPEAKER CHAVE** – I guess just to clarify. Within the Inland Empire; you know
25 the 35 million square feet, Prologis only employs 17 people within that 35 million
26 square feet, so the actual employer would be the actual end tenant or customer
27 within the facility, so it would be the...

28
29 **VICE CHAIR GIBA** – You don't have end tenant yet for these buildings that you
30 are building at this point in time.

31
32 **SPEAKER CHAVE** – Correct

33
34 **VICE CHAIR GIBA** – Again referring to your website, there was many of those
35 warehouse logistics buildings you built were built for a specific tenant, much like
36 Sketchers was and Aldi's is going to, but these are not. Am I correct?

37
38 **APPLICANT CAVANAGH** – Well I mentioned earlier our intention initially would
39 be to pursue build to suit opportunities in the market and at some point we would
40 perhaps make the decision to build a speculative building within the project either
41 the first building or maybe a second building in conjunction with the first building
42 and we build, in a big year we might have two or three speculative projects going
43 on. There is probably 15 or 20 speculative projects going on in the market right
44 now that are marketed in its entirety and this market is primarily a speculative
45 market. The companies that do what we do more often than not, would build
46 speculative buildings. We wouldn't build two million feet of speculative buildings.

1 We would build a building and then we would lease it and we would build another
2 one and then we would lease it and we would build another one and if we had a
3 build to suit; fortunate enough to procure a build to suit on one of the buildings,
4 we might do that building in conjunction with the speculative building and so that
5 cycle I would guess would take four to five years to get it built out.

6
7 **VICE CHAIR GIBA** – So if I'm hearing you correctly then your intention is to build
8 six buildings. Hopefully what you are trying to do is build to suit and as you get a
9 tenant you build that next building. Is that your primary intention?

10
11 **APPLICANT CAVANAGH** – Well we would love that but that doesn't always
12 work out that way.

13
14 **VICE CHAIR GIBA** – If that doesn't work can you give me an estimated
15 timeframe that it usually takes for you guys to find a tenant for a speculative
16 building?

17
18 **APPLICANT CAVANAGH** – Well we just finished a building in Redlands; an
19 800,000 square foot building and four months after the building was completed
20 we had at least two; a company called Burlington Coat Factory. That is an
21 example. We leased a building in Ontario. It was a 400,000 square foot building
22 and that took longer. That probably took eight months to get leased. It ebbs and
23 flows. The market is the market. We are in a competitive environment and we
24 understand that but we are comfortable building speculative. We've made an
25 enormous impact in this market doing that and I will tell you sort of one thing that
26 I would... might give you some comfort is we have 35 million square feet and we
27 have 98 percent occupancy. We have 2 percent vacancy, so we run very
28 efficiently. We don't spend our money foolishly. We build it to own it and our job
29 is to get them leased as fast as we can and the good news for us; the good news
30 for you and the good news for the community is that the types of companies that
31 we find gravitating to our projects are the largest companies in the world.

32
33 **VICE CHAIR GIBA** – The reason I bring that up is because there are going to be
34 those that are going to be concerned about an empty warehouse sitting on land
35 use that could have been used for something else while an empty building sits
36 there.

37
38 **APPLICANT CAVANAGH** – Well my boss worries about that a lot more than you
39 will.

40
41 **VICE CHAIR GIBA** – I bet he does. Okay, thank you very much.

42
43 **CHAIR VAN NATTA** – I guess the good news on that is as long as it is sitting
44 there vacant, it's not creating many emissions, right?

45
46 **VICE CHAIR GIBA** – No, not a thing

1 **CHAIR VAN NATTA** – Some of these speculative questions are kind of like
2 asking a girl when she plans to get married when she doesn't even have a
3 boyfriend.

4
5 **APPLICANT CAVANAGH** – That's a good analogy; thank you.
6

7 **CHAIR VAN NATTA** – We don't really know till it happens. When we first saw
8 the Aldi project, they didn't have a tenant, but then they hadn't built either until
9 they had that built to suit tenant to go with it, so a lot of these things we're not
10 necessarily going to have answers for but we are trying to get answers on as
11 many of them as we can.
12

13 **APPLICANT CAVANAGH** – You know in answer to an earlier question you had
14 about why we think this location is a good location and we didn't know in 2007,
15 but I think the fact that Sketchers is out there and the fact that Aldi is out there,
16 more or less support what we knew to be the case, which is the location that
17 users would find acceptable and we feel that's going to be the case with our
18 project as well.
19

20 **CHAIR VAN NATTA** – Okay do we have any other specific questions here?
21

22 **COMMISSIONER RAMIREZ** – Thank you gentlemen for coming out. I think my
23 question might be directed towards Staff and has to do with the truck traffic flow.
24 What measures do have in place to prohibit and prevent truck traffic from
25 travelling south on Redlands Blvd. to Alessandro and Moreno Beach Drive to
26 Alessandro and north to Ironwood?
27

28 **TRANSPORTATION DIVISION ENGINEER LLOYD** – Good evening Chair and
29 Commissioners. This is Michael Lloyd with the Transportation Engineering
30 Division. You're are referring to our truck routes which is governed within the
31 City by our Municipal Code, so currently Redlands south of Eucalyptus is not a
32 truck route, therefore they are prohibited from using the roadway and the
33 enforcement mechanism would be working with the Police Department to enforce
34 that, so they would either issue+ tickets, citations or whatever the means is to
35 deter that from happening.
36

37 **COMMISSIONER RAMIREZ** – Very well, thank you.
38

39 **CHAIR VAN NATTA** – What about Moreno Beach, Alessandro, Cactus
40

41 **TRANSPORTATION DIVISION ENGINEER LLOYD** - Sure, I'll get out my figures
42 so I can kind of expand my view.
43

44 **CHAIR VAN NATTA** – Thank you
45

1 **TRANSPORTATION DIVISION ENGINEER LLOYD** – Currently part of the
2 Municipal Code; Moreno Beach Road is a truck route from the north side of State
3 Route 60; the westbound ramps down to Alessandro Boulevard. Alessandro
4 Boulevard is currently a truck route, all the way from Gilman Springs over to the
5 I-215, so the entire distance across the City and Ironwood. I don't know if you
6 asked about Ironwood, but Ironwood in the eastern part of the City is currently
7 not classified as a truck route. Ironwood is only classified as a truck route
8 between Pigeon Pass Road and Perris Boulevard. That's the extent of Ironwood
9 being classified as a truck route.

10
11 **CHAIR VAN NATTA** – And Cactus

12
13 **TRANSPORTATION DIVISION ENGINEER LLOYD** – Cactus; the only place
14 designed as a truck route is from the I-215 to Perris Boulevard, so once you're
15 east of Perris Boulevard it is not classified as a truck route.

16
17 **CHAIR VAN NATTA** – So then if someone were to take Moreno Beach south,
18 intending to take Cactus across, they would be at least for part of the way not on
19 a truck route.

20
21 **TRANSPORTATION DIVISION ENGINEER LLOYD** – That is correct. They
22 would need to utilize...

23
24 **CHAIR VAN NATTA** – But take Alessandro across which is commercial most of
25 the way.

26
27 **TRANSPORTATION DIVISION ENGINEER LLOYD** – That is correct.

28
29 **COMMISSIONER LOWELL** – How about Nason Street?

30
31 **TRANSPORTATION DIVISION ENGINEER LLOYD** – Nason Street currently is
32 not classified on any of it as a truck route. Now obviously trucks need to go from
33 the freeway to say the shopping center adjacent to it, so they have the right to
34 exit the freeway and go directly into the shopping center, however they do not
35 have the right to say alright I need to go across the City or I need to go to Perris
36 or some other locale and decide to utilize Perris or excuse me Nason to get that
37 next destination.

38
39 **COMMISSIONER LOWELL** – How about long term parking overnight or over the
40 weekends?

41
42 **TRANSPORTATION DIVISION ENGINEER LLOYD** – That would fall under...
43 again we have locations within the City that accommodate commercial vehicle,
44 the larger truck type parking areas. Off of the top of my head I do not recall all of
45 them, however generally they tend to be located in an industrial areas with
46 industrial collectors to provide that and the most immediate one that comes to

1 mind is down near Heacock and Iris. There is an existing collector roadway on
2 the northeast corner and it's Revere Way. There is no buildings there currently,
3 however the roadway is in place. Trucks are allowed to park there overnight.

4
5 **CHAIR VAN NATTA** – Okay, does the Applicant have any other presentations or
6 reports that he wants to give us or if not we are going to move on with our public
7 comments?

8
9 **APPLICANT CAVANAGH** – No I think we have said what we came to say.

10
11 **CHAIR VAN NATTA** – Okay did you have another question?

12
13 **COMMISSIONER SIMS** – What was the amount of TUMF fees that are being
14 paid by the project in its entirety?

15
16 **APPLICANT CAVANAGH** – Approximately two and half million dollars.

17
18 **CHAIR VAN NATTA** – Okay thank you very much. At this point we are going to
19 be open for public comments. I have a couple of pages of them here. Now do
20 we have the timer working now? Okay can you keep the time and let us know
21 because I get distracted if I'm trying to look at my watch, but you know if you can
22 hold up a finger when are within a few seconds of the end and let me know so we
23 can keep moving along. Okay our first speaker is Gideon Kracov.

24
25 **SPEAKER KRACOV** – Good evening Chair Van Natta and Commissioners. My
26 name is Gideon Kracov. I'm an Environmental Lawyer appearing here on behalf
27 of the Labor's Union, Local 1184 and there are 3,500 members who live and
28 work in the County and I'm here respectfully to tell you that you cannot approve
29 this project tonight. You must continue this item. Why... the Union timely
30 submitted on August 31st, 2012, a 350 page comment letter. It included 29
31 pages of legal analysis, 22 pages of expert comments. It was the only letter to
32 include comments from experts. I gave you copies of this letter. You have it
33 tonight. It's not new. It's from 2012.

34
35 Unfortunately and I'm not pointing any fingers, our letter did not make it into the
36 Final EIR as required by CEQA even though in the cover email I gave you and
37 highlighted, it was received by your Staff timely, back in 2012. But a letter is not
38 included and not responded to... nothing. There is a two page information
39 request from us in the Final EIR; that's letter D1, but that is a different letter. It
40 had a different cover email. The big letter of August 31st, 2012 that your Staff
41 got, please look at the email I highlighted and also sent by overnight mail. It's not
42 in your Final EIR. Staff told you tonight that the City received 13 timely Draft EIR
43 comments. That's untrue. You got 14 and our email proves it. We brought this
44 to Staff's attention, but it is very last minute, it's all very confused. We need time
45 Commissioners to straighten this out. The City has to go back and continue this
46 item, reopen the EIR with our letter.

1 CEQA requires that the City shall consider all EIR comments like ours. It shall
2 prepare a written response that describes each issue. Failure to do so is terribly
3 unfair and invalidates this EIR. None of that happened here. Our letter is not in
4 the document. This would certainly invalidate any action, any findings, and any
5 approvals that you take tonight. Now this is not something that can be ignored or
6 punted to the City Council and it can't be sort of be ham and egged here on the
7 fly tonight. On the Tract Map, you Commissioners are the decision makers; not
8 the Council. How can you make that decision with a defective EIR? To sum up,
9 mistakes happen. I don't know how this happened. We're trying to work through
10 this with Staff. We haven't had a lot of time to figure this out. We have to face
11 the facts and deal with it. Please, I know it's procedural. We not trying to play
12 "got you" here and I know its last minute. It's no fun sometimes but in this
13 instance unfortunately it means you have to continue this, reopen the EIR,
14 respond to this very detailed comment letter, recirculate it and then it will come
15 back to you. I'm sorry this is last minute, but we're trying to deal with this too in
16 the most professional way possible and it's very unfortunate. Thank you.

17
18 **CHAIR VAN NATTA** – Thank you. Our next speaker is Tom Thornsley.

19
20 **SPEAKER THORNSLEY** – I'm still writing extra notes. Of course in three
21 minutes I can't get that far; right? Okay I'm going to start out with a quick
22 barrage of some questions. Don't need the answers right now? Will the project
23 widen or pay the fees to widen Moreno Beach just south of the project site? You
24 know all know where that bottleneck is. Also why is there no screen wall
25 proposed along the freeway adjacent to building one? In the Statement of
26 Overriding Considerations they used the economic benefit; the jobs benefit as
27 part of why this project should go forward in light of the impacts that it imposes
28 on the City.

29
30 Nowhere in this is there any form of economic analysis that indicates anything.
31 There is no economic analysis provided to stipulate the economic benefits to the
32 City that the City believes nor realize what source of revenues would be
33 generated by this project. Additionally no analysis has been prepared to show
34 the tax increment generated from this project that will keep up with inflation,
35 increases for services to the property for such things as Police, Fire, sewer,
36 water, road maintenance. Prologis maintains their properties. Prop 13 allows
37 them to keep the tax rate at about one percent a year. Our inflationary rate as
38 we've heard the Mayor mention for our Police alone is five percent, so it won't
39 take too many years before our inflationary rate outstrips our ability to provide
40 services.

41
42 Our City finally wrapped up its update of the General Plan sometime in 2006 and
43 by 2007, one year later it appears now that Staff and Council began entertaining
44 assaulting the General Plan and for the developers; for this developer and for
45 Highland Fairview for considerations of Sketchers. All those areas that have
46 been converted were Business Park. The current mix of land use creates...in this

1 area the current mix of land uses creates a community node with a Commercial,
2 Residential and Business Park. Now we're being asked drastically to change to
3 eliminate the mix which is in violation of our very General Plan goals cited in the
4 EIR's goals number 2.1 and 2.5. They recommend a mix of uses. Over the past
5 six years, the City has continually abandoned all the Business Park land use
6 properties in favor of the Light Industrial for what now appears to be the soul
7 purpose of allowing massive warehouses, completely displacing future
8 opportunities for business development with a higher square foot job ratio.
9 Recently the City analyzed this location with the SR 60 Corridor Study trying to
10 find the highest and best uses that would benefit freeway exposure ergo the Auto
11 Mall... so be it the Auto Mall or the... could utilize the exposure...

12
13 **CHAIR VAN NATTA** – That's the full three minutes. Thank you very much for
14 your comments.

15
16 **SPEAKER THORNSLEY** – You should respect the General Plan at this time.
17 Thank you.

18
19 **CHAIR VAN NATTA** – When we have very few speakers, sometimes we can
20 allow a little bit of latitude, but we have a lot of people who want to speak. Thank
21 you. George Hague is our next speaker. To save travel time, the next one is
22 going to be Tyson Chave so you are aware.

23
24 **COMMUNITY & ECONOMIC DEVELOPMENT DIRECTOR TERELL** – Oh Tyson
25 Chave is the Applicant Representative.

26
27 **CHAIR VAN NATTA** – Well his name is on here, so I didn't know if there was
28 something else he wanted to say. After that would be Scott Thompson. Okay go
29 ahead Mr. Hague.

30
31 **SPEAKER HAGUE** – George Hague, Moreno Valley, Sierra Club. If anybody in
32 the audience wants to speak, please fill out one of these green slips to do so. I'm
33 going to hand this letter in, in a few minutes. It has come to the Sierra Club's
34 attention that the Law Firm of Gideon Kracov submitted a Draft EIR comment
35 letter of several hundred pages on the Prologis project. Originally comments for
36 tonight were based on the Draft EIR comment letters and the responses to those
37 found in the Final EIR. Since the Draft EIR comments are not in the Final EIR
38 which is posted online and over on the table, the Sierra Club believes it has been
39 denied a chance to read these responses. Our comment letter would have been
40 different. The project may have been modified and the Mitigation Monitoring
41 Plan may have been different than what is before you now.

42
43 The Sierra Club strongly recommends that a new Final EIR, which includes their
44 letter with responses with any necessary revisions in the document or plan, then
45 recirculated to the public and a lot of other comments other than that, but that is
46 important for you to decide tonight.

1 You talked a lot about traffic. Imagine yourself trying to go out on Moreno Beach
2 and you are going to pull out right and go east on 60, you go up a grade, you
3 have three trucks there in front of you. Trucks take a lot of time to move. It's not
4 the same as cars. They can't compare what's happening with what was there as
5 supposedly as houses and what is going to be there for trucks. There is a huge
6 difference. You should also be able to condition them to build an acceleration
7 lane on the freeway to deal with this so we don't get stuck behind them and we
8 can pull around them. Their traffic analysis only went three miles. That is why it
9 stopped at Nason. It doesn't stop at Nason. It keeps going on to the 215 or from
10 the 215 to Nason. We should know what's happening at all those other
11 intersections. It should happen. There may need to be additional improvements
12 just as they recommended at Moreno Beach and Nason. That's where they
13 stopped because that's all the study did. You need to push them all the way so
14 you have the knowledge before you actually vote on the project and hopefully
15 you will.

16
17 With all the changes in the General Plan that have come forward and modified, in
18 my opinion now, our General Plan is generally inconsistent and has become
19 even more so and this project is just making this happen. Also our TUMF
20 fees...they are based on our General Plan. Well this project helps change our
21 General Plan and therefore our TUMF fees don't really recognize part of this
22 project as part of what is supposed to happen. That's happened with other
23 projects that are going on. We keep changing. I will submit a letter with all my
24 other comments.

25
26 **CHAIR VAN NATTA** – Okay thank you very much. Okay then our next speaker
27 will be Scott Thompson.

28
29 **SPEAKER THOMPSON** – Good evening. My name is Scott Thompson. I too
30 live over on the east end of town. I'm right off of Redlands Blvd. and I have
31 issues with all the warehouses that are going in over there. I don't know if you
32 guys have been on the road in the morning at 7 o'clock since we put the stop
33 sign in and the signal light in, but the traffic is already backed up clear to the stop
34 light and even further. When I watching that little traffic report there, none of the
35 cars are really stopping and gathering like they normally would today. Now some
36 of that might be yielded because of the signals, but also over on Moreno Beach
37 we have the same issue going on right now. You drive over there. You go all the
38 way up to Alessandro. You've got traffic all the way back; almost to Cottonwood
39 now, so I mean there are a lot of things that aren't happening that should be and
40 I don't think that traffic report really represents what is going to happen. A lot of
41 the flow was going on and it was moving and it wasn't really stopping. It wasn't
42 gathering at the places where it should gather and when you add a truck and two
43 trucks and three trucks, it gets even worse, so I see that as being one of the
44 biggest problems.

45

1 The other problem is we're building warehouses right next to a neighborhood that
2 was already developed. Again, Sketchers, you know and now this and I think
3 that most of this area was meant to be residential, especially up Redlands
4 Boulevard and you are kind of converting it into warehouse space and I don't
5 think this is a great plan; a good idea and I think you can stop making some of
6 these mistakes by stopping this project. Some other things I have is obviously
7 the property values in this area have gone down as everybody's did in the
8 economy. They are just now starting to come back up and then to put
9 warehouses right next to it is not going to help the property values at all. Me
10 trying to sell my house...

11
12 **CHAIR VAN NATTA** – Can you please not interrupt the speaker.

13
14 **SPEAKER THOMPSON** - ...me trying to sell my house in five or ten years if I
15 want to leave or want to leave because of all the warehouses being built and the
16 possibility of the WLC being built you know I don't think I have a chance, so this
17 community and your motto is dreams should soar, well this is becoming a
18 nightmare for me. I'm watching all this stuff happen around me and I feel like
19 even as an individual in this community, it's not getting respected that we have
20 already have lived here and now you're developing these areas that are not for
21 us. I don't know what they're for. Six hundred jobs; really? We have over six
22 hundred homes in that area and all you're saying is one job; six hundred jobs? I
23 know, I'm for jobs. I work for a living. I create jobs too, but six hundred jobs to
24 develop all of this? All these stop signs; all these roads; all these improvements;
25 all this and for what, six hundred jobs. Isn't there a better way to come up with
26 six hundred jobs? We have vacant warehouses over by Lake Perris. We have
27 vacant warehouses over by March Air Force Base. Why don't fill some of those
28 up and those will bring you six hundred jobs. There is many more to say and I
29 too will put my comments in through email, the rest of them and I'll let others
30 speak.

31
32 **CHAIR VAN NATTA** – Thank you very much for your comments. Our next
33 speaker is Hans Wolterbeek followed by Brandon Carne.

34
35 **SPEAKER WOLTERBEEK** – Good evening. Section 8.2 in the EIR asks how
36 this project will affect SR 60 traffic and specifically I ask if WRC impact has been
37 addressed. The response from Prologis states in the document that the 2035
38 analysis includes the evaluation on the effects on the City of a project larger than
39 the WLC. I will assume that this has been done in such areas as trip generation
40 and the associated impacts on air quality and the SR 60 truck traffic. The total
41 impact of this facility and the Aldi facility will be about ten percent of the probable
42 WLC facility in the next fifteen years. Ten percent is not an insignificant impact. I
43 personally think that the traffic study should have included the 215/60 interstates.
44 I think we need this as the current truck point. The 215 and the 215 is a target of
45 Prologis. Daily truck trips will be 2,000 for this project alone. This is higher than
46 my evaluation of the WLC. AQMD states that the result of these trips, the

1 impacts of the air quality of the Prologis project by itself exceeds Federal and
2 State standards, so when we combine the ten percent of Aldi and this facility with
3 the proposed WLC we'll have a real problem. The City states it believes that the
4 trip generation rate for the Prologis is too high. The problem is we don't know the
5 identity of the tenants so it's difficult to verify this assumption, but I tend to agree
6 with the assessment with traffic evaluation based on some other recent studies.
7 However there is no reason to assume that the air quality impacts from trucks will
8 be less than stated in the response. No one knows the true impact on air quality
9 due to trucks in a basin like ours... no one. All we can say is that will have a
10 known degradation in air quality.

11
12 The City will control truck traffic trips from this facility through the City, but how
13 will this prohibition be enforced and who will pay for it and how will various
14 regulations such as idling time be enforced to citizens in the local area can be
15 assured of proper control of the air quality. AQMD has stated they want to
16 cooperate with the City and with the developer. We do not know what we will get
17 in air quality. Will you agree to support and help finance the implementation and
18 operation of an air quality station in the eastern part of Moreno Valley. This
19 facility will provide jobs in Moreno Valley, but will you support and help finance
20 the implementation and operation of a program in Moreno Valley to learn about
21 warehousing so people can actually move up; the people you hire. Thank you.

22
23 **CHAIR VAN NATTA** – Thank you very much for your comments. Brandon Carn
24 following by Darryl Terrell.

25
26 **SPEAKER CARN** – Good evening Planning Commission. I first want to make
27 known that this project seems to be placed at a very silly geographical location in
28 Moreno Valley. I think it was purchased in the short term wildness of cheap land
29 prices during the real estate bubble that ended in 2008 in a national global
30 recession and I don't think it was planned out very well because many of the
31 projects like Walmart and other projects like residences and things were not built
32 or planned at the time, so there was no long term planning when these
33 warehouses were planned. Traffic cannot be mediated now at Moreno Beach
34 Drive. If you don't believe me compare the school traffic, people commuting to
35 San Bernardino County in the early morning hours around 8 o'clock in the
36 morning. The light isn't working property. Sometimes there is construction going
37 there and Nason. Now when they finally finish the Nason Street Bridge after two
38 and half years that was overdue, so traffic realistically is not going to be mediated
39 here or along Redlands Boulevard or any other structure that is going to be built.
40 Another thing is we don't need more warehouses in Moreno Valley that have no
41 tenants.

42
43 These are six buildings the tenth of the size are of what we probably have now
44 available just in square footage in warehouses that have not been filled. People
45 have easily a million to two to three million square footage of warehouses that
46 are being leased out by Lee and Associates. If you don't believe me drive down

1 Frederick to Cactus. There are tons of buildings or land that is vacant lots now
2 that is not yet been developed into warehouses. There is plenty of it. We also
3 should not bring in tenants unless they are bringing in something in the on the
4 retail commercial level. When Aldi is coming its bringing stores to the local area.
5 It's also bringing more logistics and truck facilities in the area. We need to fill in a
6 lot of vacant space that was left over from the urban sprawl from that real estate
7 bubble.

8
9 Another thing is in five years there is going to be... the demand... the economy is
10 going to be a lot more improved and what is going to be in demand then is
11 residential development and retail once again as Moreno Valley is famous for.
12 Warehouses are going to be a thing of the past unless they are supporting a local
13 chain of businesses. There are going to be tons of more homeowners and retail
14 businesses and parks and schools eventually built out there. That is Moreno
15 Valley's end game when development... when build-out is completed in the
16 2030's.

17
18 Also we don't utilize any of the infrastructure that we currently have for
19 warehouses. We have a March Global Port empty with almost no vacancy. We
20 have land that could be annexed by the City from the GPA that could be a
21 logistics facility. We could use... we're building a March... March is building a
22 General Aviation Airport and that could be used for hangar space and logistics.
23 Last month a program for the Perris Valley Line Project; the Metrolink service
24 that is eventually coming to Moreno Valley next year to Perris, Menifee and other
25 communities. The long term goal of that project is to build a freight line for rail
26 back down to San Jacinto and other communities as it used to be many decades
27 ago, so in the long term that's the area that's going to have the most right of way
28 in logistics for logistics. The freeway is wide enough already, but we also need to
29 keep in mind as that with recently President Obama was discussing cutting the
30 budget and the military size. March is not going to be military facility forever. It
31 was eventually downgraded in the 90's to reserve status but eventually it will not
32 be an Air Force Base facility anymore. It is going to close someday.

33
34 **CHAIR VAN NATTA** – Thank you very much for your comments.

35
36 **SPEAKER CARN** – Norton, George and Victorville did the same thing, now their
37 logistics. We need to build and counteract that negativity.

38
39 **CHAIR VAN NATTA** – Could I just comment to the public that if you have
40 something you want to say, turn in a comment card and you can come up and
41 speak, but when you are clapping over what the person is saying, it can
42 sometimes interfere with our ability hear the presentation.

43
44 **SPEAKER TERELL** – My name is Darryl Terrell. I live in Moreno Valley. The
45 Prologis group; this is your land, you can do whatever you want within the
46 confines of the General Plan. I'm not against development, but I'm in favor of

1 responsible development. I'm here tonight because it's time to put our people
2 and our kids and their future first for a change. We all share a common belief
3 that we want our kid's dreams of tomorrow to eclipse our greatest hopes of
4 today. As I said to the City Council Tuesday, Moreno Valley could be much more
5 than a blue collar city. We could be a white, brown collar, green collar or any
6 collar because I believe in our kids and our people and their God given ability to
7 raise the bar and set their sights even higher beyond a blue collar City. There is
8 nothing wrong with blue collar jobs because I have one and my dad as I said
9 before, I've got two of them, but we could be much more than that. Our kids
10 deserve more.

11
12 Our people deserve more for a brighter future and greater economic
13 opportunities. We could be a City where all collars are welcome to our General
14 Plan. We could be a 21st century city. We have all the tools to achieve this in the
15 existing General Plan and diversify our economy and building a (inaudible) a
16 green, a research and development light factory, a biomed (?) economy and
17 creating everlasting prosperity, a sustainable economic growth that will provide
18 our people with a living wage or a career that would lift them out of poverty and
19 keep them off of the freeway and closer to home and most importantly provide a
20 future for our kids to come home to after College. We must give our people hope
21 and raise our kids and their aspirations and their future and their dreams in
22 (inaudible) and not (inaudible).

23
24 It's time to raise the bar now. It's time to put our people; our kids and their future
25 first for a change because we have enough warehouses right now. It's time for
26 us to start thinking about building something. We have never attracted
27 businesses that build, manufactured or building something that can lift people out
28 of poverty because our kids don't want to come back here because there is
29 nothing for them to come back to. It's time to start thinking forward to the new
30 global economic frontier of the 21st century. That's where our future lies right
31 now because we're going to be 21st century city. Then we've got to look forward;
32 not backward. Logistics is going to have its time, but what about beyond that
33 where our kids, if we want to have an establishment like Riverside, then that's
34 what we have to look for bringing our kids home. Thank you.

35
36 **CHAIR VAN NATTA** – Thank you very much Mr. Terrell. Our next speaker is
37 Lindsay Robinson followed by Jaime Moreno.

38
39 **SPEAKER ROBINSON** – I'm not a public speaker so bear with me. I'm not
40 opposed to the business park being built as it zoned. I am opposed to them
41 coming in and asking to change the zoning so more warehouses can go in when
42 it should be residential. I researched the zoning before I purchased my property
43 here. This is someplace I wanted to retire and stay. I don't know if I would be
44 able to afford to leave. I participated in the process with City Staff and other
45 residents to come up with the General Plan to build out the eastern end that was
46 satisfactory to everyone. I think it is unfair that people with money and

1 speculators can come in and get these zone changes in. We had a great
2 General Plan for that area; schools, small business, light industrial, business
3 parks. Schools would have brought better paying jobs, longer term jobs than
4 warehouses, however the zone change that allowed Sketchers to come in has
5 negatively affected the whole area down there. I'm asking... well we know that
6 warehouses; his warehouse in particular did not bring in the promised jobs nor
7 the revenue to the City. We were told that it only brought in 200 thousand when
8 he was telling us it going to bring two million. I'm asking that you please do what
9 is morally right and ethically correct thing and do not permit any more zone
10 changes for warehouses on the eastern end. They are detrimental to our health
11 and wellbeing of the residents and don't bring the jobs and revenue.

12
13 Regarding traffic, she brought up if it was built out residential, how many vehicles
14 it would be versus the trucks. I did not hear that they included for the 600 to 1200
15 employees; their vehicles added to that mix plus any clients, customers etc., we
16 would have all that traffic also and then also the Rami Overlays. I attended that
17 meeting and as we all know from Marcelo Co's testimony, overlays have been
18 used to circumvent the zone change process. The current General Plan was not
19 presented to the people, only these three alternatives that have been kind of
20 crammed down everyone's throat as well as what are the three we can choose
21 from and I still think the original General Plan is the best one for the eastern end
22 of Moreno Valley. Thank you.

23
24 **CHAIR VAN NATTA** – Thank you for your comments. Our next speaker is
25 Debra Coggins Ortiz followed by Melody Lardner.

26
27 **SPEAKER COGGINS ORTIZ** – Hello Commissioners. I love you guys; really I
28 do. You have a lot of power in your hands and I know that a lot of what we are
29 seeing pretty much doesn't have a chance against more warehouses being built
30 in the area, but I love you guys anyway and I love Jeff too, wherever he is. I
31 understand it's his property and he would like to make some money and do
32 business and I'm sure he's a very smart businessman, however I have lived in
33 Moreno Valley almost 30 years and raised my family here. We started out in a
34 little biddy new house and moved to a second house as our family grew and then
35 purchased our house in the east end 16 years ago where we absolutely loved it
36 and I am north of the freeway off of Redlands Boulevard right on the corner of
37 Juniper and Redlands Boulevard and nobody has brought up the fact that that is
38 a truck route that goes through San Mateo Canyon and all the traffic goes
39 through there as a short cut to get to Loma Linda, Redlands, the 10 freeway or
40 whatever.

41
42 Ever since Sketchers has been built, truck traffic has increased past my house
43 and either of you are welcome to come to my house anytime you like. When the
44 trucks go by my windows rattle and I have to stop and think is that an earthquake
45 or a truck and that's a hell of a way to live. If more warehouses get built there,
46 that will increase as well. I keep hearing everyone talk for years about how we

1 all want to put Moreno Valley on the map. What kind of map? The king, world
2 capital of warehouses? Is that what we want for our families and our
3 community? I say no. I say logistics and all of California stinks and warehouses
4 are just because we've lost all business and we're importing all of this junk from
5 other countries that we are filling our stores with.

6 What I would like to see and what I would like the Commission to create is a
7 possibility for making Moreno Valley a haven and have a reputation for being
8 open and encouraging for small businesses to come here; for manufacturing to
9 come here so that American products can be made here and so we don't have to
10 import all this junk from overseas. Thank you.

11
12 **CHAIR VAN NATTA** – Thank you very much. Melody Lardner followed by Bob
13 Palomarez.

14
15 **SPEAKER LARDNER** – I'm Melody Lardner. I live south of this project in
16 Moreno Valley. I'm again concerned our City is trying to change our General
17 Plan. The Plan was a document developed with the City in conjunction with the
18 residents in a vision of how we wanted to City become and this warehouse
19 complex is a far cry from our vision. I'm concerned that the high density housing
20 that was supposed to be there is now going to have to be relocated which
21 happening with every new project that changes our General Plan.

22
23 Truck traffic mixed with cars is a big concern. I commute through the Redlands
24 warehouse area and traffic accidents are increasing between cars and trucks
25 there. Potholes are increasing in the roads out there and this City here doesn't
26 seem to have the money to always fix potholes and there is getting to be more
27 and more of them around our City. I also am concerned about the traffic on
28 Moreno Beach like was pointed out. It's a bottleneck and a truck route. I'm
29 concerned... I won't repeat the Highway 60 stuff. I'm concerned with noise from
30 this project because I read that it was going to be 24 hours operations and at
31 night sound really travels. I can hear the freeway at night, so I'll hear this at night
32 too.

33
34 I am concerned with the diesel exhaust as others have talked about. I am
35 concerned this development may increase run-off into the Quincy Channel
36 because they are taking away a couple of the smaller channels that absorb the
37 water. I don't know if the detention basins can handle some of these storms
38 we've been having. We've seen what the storms can do in just one event, how
39 much soil can move; how much water can move. This project... I am concerned
40 if this does get approved about lighting to make sure that the dark standards are
41 enforced and also if they have skylights that the light is not coming up from those
42 at night if they are operating 24 hours.

43
44 If you do approve this development, the landscaping looked pretty skimpy.
45 Sketchers promised lush us landscaping and if that's the definition of lush
46 landscaping then that's a far cry from what we need to see to screen these

1 buildings from view especially around the perimeter. There are nice apartments
2 that have nice views. Right now they'll just see buildings and a little wimpy
3 landscaping. There are some good examples of some warehouses in Redlands
4 that have nice landscaping and setbacks and built below grade. I'm not sure if all
5 that is going to be done here and then they said they would build them to
6 accommodate solar panels but nowhere did they promise solar panels. I would
7 like to see you know that is a lot of ground being covered with cement and
8 asphalt and it would be nice if we take advantage to help with the climate change
9 and global warming and maybe bring utility costs for residents in the area and
10 make the City a greener City and I would like to see the parcels if you do approve
11 this, closest to the Auto Mall, give the Auto Mall a little more chance than 18
12 months. The economy is just barely picking up and making a centralized Auto
13 Mall makes sense for that area and that what was intended. So anyway, thanks
14 for listening and I have a copy of the letter I can submit.

15
16 **CHAIR VAN NATTA** – Thank you very much. Okay Bob Palomarez is next
17 followed by Craig Givens.

18
19 **SPEAKER PALOMAREZ** – Good evening Commissioners. I'm here to speak on
20 my behalf. I am in support of this project. I am concerned with the size of it
21 because a lot of this stuff that we've heard, even the gentleman who came up
22 here at the last minute and professed that he has the answer to everything, those
23 are the same people that said thing when Sketchers was on the drawing board;
24 you know the same concerns; the bumper to bumper traffic on the 60 freeway. I
25 don't see it. I know there are concerns but you know they just don't want it out
26 there, but I know you'll make the right decision based on everything that you
27 receive; you know paperwork. These people, that's their land and if they meet
28 City, State and Federal guidelines and go beyond it, why should you deny them.
29 They have been denied seven years, but this City has been denied since 1986
30 for these kinds of projects. I am concerned with the size, but I'm looking at the
31 big picture. I mean the City of Riverside, threw their two cents in saying they are
32 concerned with the pollution. I don't think they came to this City and told us
33 we're going to build a lot of warehouses on the south side of the 215. Do you
34 have any concerns? Of course we do. But they didn't give us a courtesy, but yet
35 they'll get in the Press Enterprise and say that they're concerned. They aren't
36 concerned. They just don't want anything here period. You know these people
37 are entitled to their due. Thank you very much.

38
39 **CHAIR VAN NATTA** - Thank you. Craig Givens followed by Jonathan Lipscomb.

40
41 **SPEAKER GIVENS** – Good evening Planning Commission. I'm here to oppose
42 approval of this project. If I can look and just read something that Highland
43 Fairview sent out dated February 28th. It said that it's an opportunity, when they
44 are talking about the World Logistics Center, for our City to meet its potential as
45 one of the nation's leading warehouse centers. Now if that is the only potential
46 that Moreno Valley has is warehouses, that's pathetic. You represent the people

1 of Moreno Valley and the Council. These projects are in the interest of the
2 developers and not in the interest of the people of Moreno Valley.

3
4 The people want more than just warehouses and if we look at our industrial area;
5 the Joint Powers area, we have plenty of warehouses and more room for more to
6 come. The gentleman that came up here talking about the project said that
7 normally they look for ports, freeways, airports and rail lines. Now there is no
8 port here but three of those items are in the Joint Powers area. That's where our
9 industrial section is and to the gentleman who says that he would have to leave.
10 You don't have to leave. You can joint our movement to remove every single
11 appointed and elected leader that believes we should be in an industrial
12 warehouse city. The people out there, you need to support what we're out here
13 doing in the community. You don't have to give up, you have to fight for the type
14 of city you want. They have a view of a warehouse, industrial city. We don't
15 share that view and we have to use our voice and our votes to make the changes
16 that we need in Moreno Valley so that we will be a first rate city; a city that we
17 can be proud of; that our young people can look forward to living in and that we
18 can proposer in. We have a place for warehouses. It's in our industrial section.

19
20 **CHAIR VAN NATTA** – Thank you very much for your comments. Jonathon
21 Lipscomb followed by Debra Craig.

22
23 **SPEAKER LIPSCOMB** – Good evening. I agree with many of the things that
24 have been put forward tonight as far as the concerns with air quality and traffic
25 and such. There were a few things that I'd like to direct my comments to. It
26 came up while Pat Cavanagh was speaking. As mentioned by one of your
27 Councilmembers, Prologis began this project as a warehouse park in 2007 when
28 the property was zoned as a Business Park. Obviously Prologis in 2007 had no
29 concern for the Moreno Valley General Plan or what the vision for the area was,
30 or its business park intentions, but rather was solely concerned with its fiduciary
31 vision for delivering dividends to its shareholders via development of a
32 warehouse park.

33
34 Now obviously warehouses provide lots of jobs; 600 jobs at warehouse pay is not
35 going to give you a whole lot of tax revenue. If the laws have already been
36 structured to reduce tax revenue for large scale businesses and developers of
37 this type, you can't count on that for revenue either, so you're at a loss and taking
38 on a liability for the sake of a well moneyed and possibly well intentioned
39 developer may be counterproductive to the community as a whole. Beyond that,
40 the Sabian (?) site was and is that the ideal site for Prologis' project according to
41 the company's website was spoke earlier today, is a major port or harbor or other
42 sort of hub, which Moreno Valley really isn't, except for perhaps the fact that it
43 does have a potential maybe airport in the future and a lot of highway access and
44 some roads that can be converted over. With that idea then, this project was
45 created to exploit the region as a hub even before the idea of the development or
46 the General Plan was presented.

1 This vision that they wanted to share with us has nothing to do with us except for
2 the fact that we have a potential for an airport and a bunch of highways that they
3 want to exploit. Beyond that strategic hub, perhaps their Moreno Valley vision
4 was seen to be more to exploit us than anything and I would think that you're
5 responsibility to us as a community would be beyond that and that focusing on
6 small business and manufacturing would help get us beyond a short sided goal.
7 Thank you.

8
9 **CHAIR VAN NATTA** – Thank you for your comments. Debra Craig followed by
10 Scott Heveran.

11
12 **SPEAKER CRAIG** – Good evening. I came here just to get information. I didn't
13 plan on speaking tonight, but then when I heard the presentation on the traffic
14 report and they said they didn't include the traffic leading up to the 215 and 60
15 freeway, I had to speak. For the record I live in District 2. I don't even live on the
16 east side but I am against this project. I am teacher in the District. I live a mile
17 from my school. I don't even have to get on the freeways and I'm sure Prologis
18 is a really good company but the City Council they just recently approved Aldi
19 warehouse and they said they might have 250 stores that they will be delivering
20 to and that's already adding truck traffic to our freeways, so I don't know how in
21 good conscientious this City Planning Commission can approve this project.
22 How could you do this to the people who are already sitting on the 60 freeway
23 sitting stuck in traffic? I just don't understand why. It's not worth the 600 jobs we
24 might gain. I've often that the right thing to do is often the hard thing to do, but in
25 this case I think the right thing to do is really easy. You should just say no to this
26 project. It's really a no-brainer. Thank you.

27
28 **CHAIR VAN NATTA** – Thank you for your comments. Okay our next speaker is
29 Scott Heveran followed by Brian Sharrow.

30
31 **SPEAKER HEVERAN** – Good evening. First of all I'd like to thank the
32 Commission and I guess the City Council for televising these things. I watched
33 my first one last week. Chairwoman Natta said Moreno Valley is a beautiful town
34 surrounded on three sides by beautiful views, beautiful mountains and it is and
35 during that meeting that was about possibly bringing in higher end homes. Of
36 course you know it seems to be the motto of this City is aim low. You know it
37 was said that we can't build high end homes because we're not Temecula.
38 We're not 30 miles closer to San Diego and I believe one the Commissioners
39 said we're 30 miles closer to Vegas. What happens in Vegas stays in Vegas, but
40 what I would suggest to you is that we're 30 miles closer to the mountains.
41 We're 30 miles closer to Coachella Valley, to Palm Springs, but the logic of that
42 is anybody closer to San Diego would be a more affluent City and that's just not
43 true. The problem with Moreno Valley is that we don't choose to be; we don't
44 choose to aim high. We choose to aim low. I don't understand why you would
45 go to such trouble of re-branding a section of the City as Rancho Belago and
46 then turning it into warehouses.

1 Nobody I know bought a house in Moreno Valley thinking well one day we'll just
2 have all these warehouses here. How can you turn a bedroom community into a
3 warehouse community and just expect the citizens to go along with it. The whole
4 idea of changing the General Plan is a bad idea. First of all, the City is under a
5 cloud of corruption. Now the Council can blame the citizens for drawing attention
6 to that, but by not looking at that and not trying to show the City and the rest of
7 the community that we are thinking of the citizens. We're not giving the
8 developers whatever they want. That's how you clean up the City's image, not by
9 changing the General Plan at the whim of the developer. Now they say that this
10 project is going to bring in x amount of traffic and pollution. Well that's not
11 cumulative. You have all these warehouses going in with the big monster
12 coming down the road of the World Logistics Center. All of these things are
13 going to brand Moreno Valley as a warehouse City. That's not a good thing.

14
15 **CHAIR VAN NATTA** – Thank you for your comments. Our final speaker is Bryan
16 Sharrow.

17
18 **SPEAKER SHARROW** – Hi, thank you for your time. I'm probably maybe one of
19 the newest residents here. I've lived here for about three months. I've been out
20 here since 1979, grew up in Nuevo, went to Perris High School, moved out to the
21 May Ranch Development out there when it was just nothing more than potato
22 fields all around where I lived and I saw the bigger master plan businesses
23 coming in and it was proposed that they wouldn't be a burden to our community.
24 Well they were. The noise was horrible. I mean you can argue whatever you
25 want on any kind of study, but I was a resident and I sat there listened to these
26 trucks in the middle of the night going beep, beep, beep backing up and what
27 not. Well that wasn't the big problem. The big problem was really the freeways
28 that weren't designed to hold that. Not only the roads and the damage they did
29 to it, but the freeways was really a problem to where I see it's going to be a huge
30 problem where I live now up on Moreno Beach Drive just north of there.

31
32 That exit is designed for two people going left and right and they are night timed
33 properly, especially on the north side. If you guys could do something about that,
34 that would be great, but anyhow the problem that I see that really should be
35 looked into, aside from this whole concept which I'm not a fan of; sorry, is that on
36 the Ramona Expressway where I lived off of, the added truck traffic alone, not to
37 mention all the vehicles that were involved backed up that freeway oh I'd say a
38 good mile and unfortunately there were a lot of accidents caused because people
39 would try to get way up front and dive in there and it wasn't designed ever to hold
40 all the people on the side of the shoulder, which is actually for emergencies not
41 for regular traffic stopped, so then you come up here to where you're out on the
42 freeway, which your study didn't really cover and I'm thinking guys you've got to
43 deal with that because we're merging from Nason onto Moreno Beach to the
44 freeway and then you've got people exiting on Moreno Beach Drive and I see a
45 lot of truck traffic going to be piling that up and I'm trying to get in there as a
46 resident and not to mention there are 600 jobs.

1 I'm for job creation; absolutely fabulous, but how many people are going to
2 suffer. You know when I leave in the morning for traffic purposes, it's a
3 nightmare. So now all the people coming from LA for this 2,000 trucks or
4 whatever, going to be coming in here and creating more traffic in the morning for
5 me and then leaving, more traffic at night. I don't see how that helps us. I think
6 there is maybe better ideas hopefully on putting this location out at March or
7 something like that. I think there are areas that are developed for this. I'm not
8 here to point fingers or to say you guys are doing a bad job or anything, I would
9 just hope that you would take it into consideration what the people here are
10 saying and maybe do due diligence and so thanks.

11
12 **CHAIR VAN NATTA** – Thank you very much for your comments. Seeing no
13 other speaker slips having been handed in, I'm going to close the Public
14 Comment Section and I do have a couple of questions for Staff on a couple of
15 the items that were brought up during the public comment if I may.

16
17 **COMMUNITY & ECONOMIC DEVELOPMENT DIRECTOR TERELL** – Do you
18 want to ask those in advance of the rebuttal by the Applicant?

19
20 **CHAIR VAN NATTA** – Oh, actually I would because there might be something
21 that could be included in their rebuttal. So one of them was and this would be for
22 our Economic Development Director here. There was some comments about all
23 the vacant warehouses we have in town. Do we? Are there a lot of warehouses
24 that haven't been leased or spoken for?

25
26 **COMMUNITY & ECONOMIC DEVELOPMENT DIRECTOR TERELL** – As of
27 today, there are two vacant warehouses in Moreno Valley. One is on Cactus and
28 the other is down in the south industrial area. Together one is about half a
29 million square feet and the other is about 600,000 square feet and those are
30 recently completed and are not leased, so yes there are two vacant buildings in
31 Moreno Valley. That is approximately five percent of the current inventory in
32 town.

33
34 **CHAIR VAN NATTA** – Would that be considered a good percentage of
35 occupancy factors?

36
37 **COMMUNITY & ECONOMIC DEVELOPMENT DIRECTOR TERELL** – Well I'm
38 sure for those people who own those buildings, it's not a good percentage.
39 Across the region the vacancy rate on warehouse logistics, which also includes
40 manufacturing, they all use the same kinds of buildings is right around 10 percent
41 or a little bit less, so the vacancy rate in Moreno Valley is not higher than
42 average. It's somewhat lower than average, so it's not an anomaly.

43
44 **CHAIR VAN NATTA** – The other question that was brought up was about the
45 trucks going north on Redlands and we had asked about truck routes and you

1 had mentioned that south Redlands is not a truck route. Is it still a truck route
2 north?

3
4 **TRAFFIC DIVISION ENGINEER LLOYD** – Yes that is correct.

5
6 **CHAIR VAN NATTA** – And that’s because it goes through to Redlands and...

7
8 **TRAFFIC DIVISION ENGINEER LLOYD** – Correct into the County.

9
10 **CHAIR VAN NATTA** – Okay then at this point the rebuttal from the Applicant if
11 there was anything that they want to address that was brought up in the public
12 comments.

13
14 **APPLICANT CAVANAGH** – There was a couple of things that I wanted to
15 comment and I’m not going to go deep on all the comments. A lot of it is dealt
16 with in the Traffic Study and I’ll leave that alone. There is a couple of things.
17 One is the notion that it would be much better to have business park designation
18 and build business parks as the General Plan allows for and I would tell you that
19 that segment of the market was probably the hardest hit; maybe as bad or worse
20 than the residential market. It’s still slowly recovering. It will take a long time to
21 recover and it’s a different kind of market. We have an average size building in
22 the Inland Empire of about 300,000 feet. That’s our average building size. In
23 Los Angeles our average building size is about 60,000 feet, so we know this
24 market. We know the market for business parks because we own a lot of it in
25 Los Angeles and you generally end up with smaller companies, poor credit and
26 more vacancy. It just comes with some baggage so I guess my only comment is
27 that if we thought that business park was a viable good workable idea in this
28 location, we would be pursuing that and we just don’t think that makes a whole
29 lot of sense in this location for anytime in the near or long term.

30
31 One of the things that was cited in the Traffic Study and I want to just make a
32 point of it is the Traffic Study conducted for the proposed project shows a 47
33 percent reduction in daily trips when the proposed project is compared to the
34 General Plan build out condition. According to the study, it can be reasonable to
35 conclude that air pollution emissions would be correspondingly reduced, so I’m
36 just pointing that out because it seems like I hear a lot of comments that if we just
37 build it to General Plan it will be so much better and what will happen if you build
38 it to the General Plan is that you will have a significantly larger amount of traffic
39 to deal with, so it doesn’t go away, as a matter of fact it gets worse and I wanted
40 to make that point. They were comments about landscaping. I mean I would
41 invite anybody that was interested to be objective to look at the projects in
42 Redlands that we built that’s close by. We own five million feet in Redlands. I
43 think they are beautiful buildings. They are landscaped with a high degree of
44 care and I think the comment was we need more landscaping. Look at what they
45 did in Redlands; not they being us, but I think the buildings that they are talking
46 about are the buildings we own.

1 **COMMISSIONER LOWELL** – Are those buildings typical of your ... sorry
2 Commissioner Lowell up here. Are those buildings typical of the landscaping that
3 you'd be proposing here on this project?
4

5 **APPLICANT CAVANAGH** – Very much so; yes.
6

7 **COMMISSIONER LOWELL** – Could you provide a couple of addresses for now
8 or after the meeting? I'd like check those out?
9

10 **APPLICANT CAVANGH** – I'd be glad to do that. And I stayed away from solar
11 in my earlier discussion because it is a complicated concept and the reason I
12 stayed away from is that generally speaking for you to install solar on a roof there
13 has to be a buyer and the buyer is typically the utility company and Moreno
14 Valley has their own utility company. We have met with your utility company and
15 we've talked about our solar program. There is an opportunity to do something
16 there, but it is more on Moreno Valley's initiative than ours. We just wouldn't
17 build a solar installation for millions of dollars on a roof and not have anybody to
18 use it, so I don't want to get too deep into the weeds on it, but solar is
19 complicated. There is nobody doing more of it than us. We would love to have a
20 further discussion with your utility provider to see if we can incorporate that into
21 what we are doing, but the one thing that we do is we set the buildings up so that
22 they can accommodate solar, so that down the road if the utility decides that they
23 want to have that installation we can do that. And the last comment is there was
24 no subterfuge in 2007. We were not trying to undermine the General Plan. We
25 did not have an agenda that was inconsistent with what the City Council
26 members knew about and bought into at the time and you know a lot of time has
27 gone by and the Council is different and we understand all that. We sat down
28 with the Council members at the time before we made the decision to spend 40
29 million dollars on this site and we had buy in. They felt the plan was good. The
30 concept was good and the product was the right product and here we are today
31 and there is a lot of people pointing fingers at people that I don't think is entirely
32 appropriate, so thank you.
33

34 **CHAIR VAN NATTA** – Thank you very much. Okay at this point normally we
35 would go into our Commissioner Discussion, but I think we have an issue here
36 that we need to talk about and decide what to do and that is that we were given a
37 large piece of information here, five minutes before the meeting started and I'm
38 trying to get some direction as to was this submitted in a timely manner? Do we
39 have... does the email confirm that and if it was, do we have a defective
40 Environmental Impact Report because this information was not addressed and
41 I'm going to ask the Attorney?
42

43 **CITY ATTORNEY CURLEY** – I'm glad you did. Well I'll give you a good lawyerly
44 answer. I can't answer that. The point being because it did just come in; CEQA
45 is a complex law as you well know. We would want to be able to thoughtfully and
46 carefully look at the history of this, look at what their letter covers, look at what

1 our responses have done. Perhaps those items are already addressed and isn't
2 known. The two main issues are was the information received timely? Was the
3 letter received and does the current environmental information address it? If it
4 doesn't; yes the re-circulation reprocessing would be in order. You do it when
5 there is significant new information. That is the CEQA buzz word that you use. If
6 there isn't significant new information, then you don't. You would just augment
7 the Final EIR that you have and move it along. With that amount of paper and
8 the care that we want to attribute to this, shooting from the hip tonight is not what
9 we would recommend. A recommendation is you can continue it to a date
10 certain and I'd say to the next meeting unless Staff thinks otherwise. Let
11 everybody get their arms around the facts and details; give you the right
12 information so that you can make the right decision. That's how we could
13 properly advise you. It may be just hunky dory and it may not; we'll sort that out.

14
15 **CHAIR VAN NATTA** – That was kind of my take on it, that continuing this
16 meeting to a date certain. I didn't want to do this earlier in the meeting because
17 we have a lot of people here who had things they wanted to say and we want to
18 be able to get that information without telling them you came out here for nothing
19 and come back another day, but I think receiving this amount of information, not
20 having any opportunity to even look at it and see if it is something that should
21 have been included, I don't think those of us who got it at the last minute are
22 comfortable with that.

23
24 **CITY ATTORNEY CURLEY** – And Staff echoes that and I echo that.

25
26 **CHAIR VAN NATTA** – Okay, then this particular Agenda item, do we have
27 motion to... would we do it that way... a motion to continue it to a specific date?

28
29 **INTERIM PLANNING OFFICIAL ORMSBY** – Yes but we would recommend it to
30 a date specific which would be your next regular meeting of April 24th.

31
32 **VICE CHAIR GIBA** – I thought it was the 27th?

33
34 **CHAIR VAN NATTA** – Okay, we have another meeting

35
36 **INTERIM PLANNING OFFICIAL ORMSBY** – We do, but that would not be
37 adequate time and if we did need to re-notice the Final EIR it wouldn't be
38 adequate time to that.

39
40 **CHAIR VAN NATTA** – Okay, so then would I ask for a motion to continue this
41 Agenda item to our meeting of April 24th and then we would take action on that?

42
43 **CITY ATTORNEY CURLEY** – That would be in order

44
45 **VICE CHAIR GIBA** – I make that motion that we continue it to April 24th.

46

1 **COMMISSIONER BAKER** – I'll second it.

2
3 **COMMISSIONER LOWELL** – I wanted to second it

4
5 **CHAIR VAN NATTA** – Okay you can third it

6
7 **COMMISSIONER LOWELL** – I third it

8
9 **CHAIR VAN NATTA** – Okay all those in favor and we'll do it by roll call vote.

10
11 **COMMISSIONER SIMS** – Yes

12
13 **COMMISSIONER LOWELL** – In light of the information, I vote yes

14
15 **COMMISSIONER BAKER** – Yes

16
17 **COMMISSIONER RAMIREZ** – Yes

18
19 **COMMISSIONER BARNES** – Yes

20
21 **VICE CHAIR GIBA** – Yes

22
23 **CHAIR VAN NATTA** – Yes. All ayes and the motion passes. This item now
24 goes to our next; not the meeting scheduled for March but the meeting scheduled
25 for April 24th and Staff is requested to give us a report on what has been
26 discovered as far as when this was received and if it should have had an impact
27 on the EIR. Okay so other business.

28
29
30
31 **STAFF COMMENTS**

32
33 **INTERIM PLANNING OFFICIAL ORMSBY** – With regard to Staff Comments I
34 would just mention that for the March 27th meeting you have the same two items I
35 believe I briefed you on last time which is smaller warehouse project not too far
36 from City Hall; Veteran and New Hope area, which is 366,000 square feet
37 approximately and then you have also an Amended CUP for a use on
38 Sunnymead Boulevard. So you'll be seeing that as well and those will be the two
39 items. We're also hoping to bring forward the Study Session to at least begin
40 talking or discussion on the Overlay Zones that we already have in place and
41 introduce the concept of Overlay Zone and so forth at that meeting as well.

42
43 **CHAIR VAN NATTA** – Are there any other Staff Comments?

44
45 **INTERIM PLANNING OFFICIAL ORMSBY** – I didn't have any other Staff
46 Comments?

1 **PUBLIC HEARING ITEMS**

2
3 1. This item is continued from the March 13th, 2014 Agenda

4	Case Description:	PA07-0081	Zone Change
5		PA07-0082	General Plan Amendment
6		PA07-0083	Master Plot Plan including Building 2
7		PA07-0084	Tentative Parcel Map 35679
8		PA07-0158	Plot Plan for Building 1
9		PA07-0159	Plot Plan for Building 3
10		PA07-0160	Plot Plan for Building 4
11		PA07-0161	Plot Plan for Building 5
12		PA07-0162	Plot Plan for Building 6
13		P07-186	Environmental Impact Report

14
15
16 Case Planner: Jeff Bradshaw

17
18 **CHAIR VAN NATTA** – Okay now we’re going into our Public Hearing Items and
19 the first Public Hearing Item is Case Description and this was continued from our
20 March 13th, 2014 Agenda and it’s PA07-0081 Zone Change, PA07-0082 General
21 Plan Amendment, PA07-0083 Master Plot Plan including Building 2, PA07-0084
22 Tentative Parcel Map 35679, PA07-0158 Plot Plan for Building 1, PA07-0159
23 Plot Plan for Building 3, PA07-0160 Plot Plan for Building 4, PA07-0161 Plot Plan
24 for Building 5, PA07-0162 Plot Plan for Building 6 and P07-186 Environmental
25 Impact Report. The Applicant is Prologis. The Case Planner is Jeff Bradshaw
26 and could we have the Staff Report please?
27

28 **ASSOCIATE PLANNER BRADSHAW** – Thank you. Good evening Chair Van
29 Natta and members of the Planning Commission. This item was presented to
30 you as described originally on March 13th, 2014. We were able to provide a Staff
31 Report and information on the project as well as the project Environmental
32 Impact Report. During the Public Hearing portion of the meeting one of the
33 speakers Gideon Kracov representing the Laborers International Union
34 expressed a concern that one of the comment letters prepared on behalf of his
35 client had not made it into the Final Environmental Impact Report nor were there
36 responses. We were able to determine that that in fact was correct, that there
37 had been an error in the preparation of the Final and we used the time between
38 the March 13th meeting and this evening to bring that comment letter into the
39 Final and we worked with LSA Associates to provide appropriate responses to
40 the comments and concerns raised in that letter. That document was
41 recirculated to the public for comment with re-noticing also completed for
42 tonight’s meeting. In response to that we did receive a number of comment
43 letters. Copies of those letters have been made available to you by email
44 originally and then hardcopies were provided for you this evening as well. With
45 us this evening again is the project applicant with his development team and also
46 available is the Environmental Consultant Kent Norton with LSA Associates who

1 has worked with the City to prepare that document. I wanted to keep my portion
2 of this very brief and with that I'll introduce Kent Norton. He had some comments
3 he wanted to be able to present to you as part of the Staff Report on the Impact
4 Report itself.

5
6 **SPEAKER NORTON** – Thank you Jeff. Good evening Madam Chairman and
7 Commissioners. My name is Kent Norton. I'm an Environmental Planner with
8 LSA Associates. We prepared the Environmental Impact Report for the Prologis,
9 Eucalyptus Industrial Park Project. I wanted to bring to your attention and I
10 believe Jeff already indicated you received copies of the correspondence that
11 was transmitted this week regarding additional comments in the Final EIR. I'd
12 like to clarify some of our responses to some of those comments. There were
13 four emails or letters I believe you received. One from Johnson and Sedlak, one
14 from Lozeau Drury, an email from George Hague and I believe a series of emails
15 from Mr. Wolterbeek. I'll address the Johnson and Sedlak letter first. There were
16 four main comments contained in that. That letter was received today. The first
17 comment was about trying to again tie the Prologis project to the World Logistics
18 Center project in terms of cumulative analysis and as much as the commenter
19 would probably like to do that, that's really not allowed under CEQA because the
20 notice of preparation which is when the baseline is set for the Prologis project
21 was circulated in 2008, well before any applications for the World Logistics
22 Center project. The Johnson and Sedlak letter also indicated there were a
23 number of problems with the air quality assessment both for criteria pollutants,
24 for the health risk assessment and greenhouse gases. We believe that we use
25 the most appropriate data assumptions and methodologies, in fact those
26 recommended by the South Coast Air Quality Management District to prepare
27 our analysis, so we are very confident that those are accurate. Those accurately
28 depict the potential impacts of the project. Pesticides were raised, the potential
29 for contamination on the site by hazardous materials. That has been addressed
30 both in the original and the Final or the revised Final EIR. We actually even
31 added mitigation measures to help assure that there wouldn't be any issues
32 regarding pesticides and finally there was a comment about a new fee program
33 supposedly recommended or suggested by Cal Trans to fund freeway
34 improvements, but under CEQA Guidelines if a mitigation program has not been
35 established for a particular purpose or specific improvements, the project is not
36 responsible for contributions to that and we believe that's the case with this
37 project. The second letter was from Lozeau Drury. Their first letter from August
38 12th as Mr. Bradshaw indicated was inadvertently left out of the Final EIR. We
39 have corrected that and responded to all of their specific comments. They
40 primarily focused on... also the cumulative analysis with the World Logistics
41 Center as well as air quality assumptions and pesticides and hazardous
42 materials. Their second letter which was submitted yesterday now focuses also
43 on the World Logistics Center, but also more detail on the health risk
44 assessment, the criteria pollutant assessment of the air quality study and
45 greenhouse gas assessment. As I stated previously we believe that we used the
46 proper assumptions and methodologies for that assessment. Lozeau Drury did

1 their own calculations and hired some independent consultants to help them with
2 that and not surprisingly they got different results than we did, however as I said,
3 we believe we used appropriate guidance and assumptions and methodologies
4 for that analysis and we believe that it accurately represents the potential air
5 quality impacts of the project. The EIR did determine that air quality impacts
6 were significant but not health risk impacts of the project on local residents
7 mainly due to the size and the type of the project that is proposed and the AQMD
8 thresholds that are provided. There were a number of mitigation measures
9 proposed. In fact, eight of the mitigation measures were modified, two of them
10 extensively in response to a number of comments including those from Lozeau
11 Drury and also some of the other environmental organizations in the area and
12 also the project would be required to implement those mitigation measures as
13 well as comply with standard AQMD requirements regarding air pollution. As an
14 example of some of the additional mitigation that was suggested by Lozeau
15 Drury, they said that construction dust emissions should have plume monitoring
16 even though and I can bring up our air quality expert to explain, but quickly that
17 type of monitoring; the efficiency of the effectiveness of that has not been
18 demonstrated in typical air quality monitoring situations. Also there was a
19 concern about long term dust impacts on residents and the health risks of that,
20 but even if construction lasted a year, the assessment period for the health risk
21 assessment is a seventy year period and you can probably easily assume from
22 that that construction during that period of time would not have a cumulative
23 significant effect on individuals living in that area. As I said our health risk
24 assessment was comprehensive and did look at those issues and we feel
25 comfortable that the analysis and the mitigation measures that are recommended
26 in the EIR will effectively reduce pollutants from the project. A couple of other
27 items raised by the Lozeau Drury letter; the greenhouse gases. They brought up
28 a lot of additional information on estimating impacts. There are mitigation
29 measures proposed. The project will have to comply with the latest requirements
30 of the California Green Building Code as well as the latest Title 24 energy
31 requirements. Farm land was indicated as we haven't changed the
32 determination on that. It is a significant impact, but the Final EIR does explain in
33 detail why we concluded that mitigation for that impact is not feasible based on
34 information in the City's General Plan and the decline of farming in Western
35 Riverside County. Finally, their letter brought up as their original letter did the
36 issue of pesticides and potential hazmat contamination. As I indicated, we have
37 proposed mitigation measures. We actually added some measures to help make
38 sure that that would not be a significant impact, but apparently it is probably still
39 not enough for the commenter. I imagine that if this Hearing gets continued, I
40 have no doubt that that commenter will probably continue to submit letters before
41 those hearings as well. The third email communication was from George Hague.
42 In fact he actually mentioned some of his concerns tonight about cumulative
43 noise impacts, but those are directly related to the World Logistics Center project
44 and Mr. Hague and others have continued to try to directly connect the World
45 Logistics Center project to the Prologis Project and it is simply inappropriate
46 under CEQA as I explained. The final issue was some emails I believe Mr.

1 Bradshaw received in the last day or two from Mr. Wolterbeek, a member of the
2 public, regarding SP18 consultation with Native American tribes. The last
3 communication was actually received even today on that. During the circulation
4 of the EIR, prior to that, LSA assisted the City in sending additional notices to
5 Native American Tribes to try and seek or find out if local tribes wanted additional
6 consultation and we believe that the City has met the requirements under SP18
7 for Native American Consultation. Several of the tribes have expressed interest
8 in that and the City is communicating with them and essentially all of the
9 mitigation measures in the Draft EIR were modified to meet the suggestions or
10 the requirements of the Native American Tribes to better define how the
11 monitoring for culture resources would occur during grading. With that I would
12 just conclude and say that we believe the information in the EIR, the Draft EIR
13 and response to comments in the Final EIR are accurate and can be relied upon
14 for decision making purposes and we believe they meet the intent as well as all
15 of the requirements of CEQA. We have several people here tonight to answer
16 questions if you have any regarding air quality, traffic or I can handle any of the
17 other issues if you have questions of our team. Thank you.

18
19 **CHAIR VAN NATTA** – Thank you very much. Are there any more items to the
20 Staff Report?

21
22 **ASSOCIATE PLANNER BRADSHAW** – Not from Staff at this time and the
23 applicant is here as well.

24
25 **CHAIR VAN NATTA** – Okay and I'm going to open the Public Comment and
26 begin with the applicant if there is anything he wants to say prior to hearing from
27 the other speakers.

28
29 **APPLICANT CAVANAGH** – Good evening Madam Chairman and Council and
30 Staff and the group of citizens that have taken the time to come here tonight. I
31 don't want to spend a lot of time talking about what we've already covered in the
32 last month's meeting or restating that, but I did want to touch on a few points that
33 I think are important. In 2007 we acquired this property. After an extensive
34 amount of due diligence, which included measuring the City Council support at
35 that time, the community support and also market demand studies that showed
36 that Moreno Valley was underserved in industrial. What has changed since then
37 is that we've gone through significant economic downturn as everybody in this
38 room knows I'm sure. We have a new City Council and one of the things that
39 has happened that has created a lot of comments and concerns is the
40 introduction of the World Logistics Center and in some fashion people confusing
41 them with us and I will make that point more than once tonight, that we are not
42 connected with the World Logistics Center. I have no involvement with that
43 project or that company and we are totally independent of them. That project
44 happens to be about 18 times larger than ours and I can understand why people
45 raise concerns about a project of that magnitude, but that is not our project. Also
46 during that time period, Prologis merged with A&B, so the two largest companies

1 in the industrial sector merged together to create the company that now exists
2 and continued to be called Prologis and then in 2012 we emerged from the
3 recession and we emerged with a focus on development and growing our
4 platform and in particular in the Inland Empire. I won't talk about Prologis, I've
5 already done that, but the Moreno Valley project is the first sizable project that
6 we are endeavoring in Moreno Valley and it is an important project to us
7 obviously. In regards to land use, I believe that the question that should be
8 asked is what is best for the City and the community and to that end the City
9 contracted with Rami and Associates last year to do a land use study and that
10 study was done for the purpose of giving not only the Planning Commission, but
11 the City Council a guidance tool, not a legislation, but a guidance tool to help
12 them better understand what a third party expert would consider for land uses
13 and they came up with three alternatives and the preferred alternative just
14 happened to be a plan that coincided with the plan that we have been proposing
15 from the beginning. That land use study was a setback in many ways for us
16 because it delayed our project for a full year because a moratorium was put in
17 place and that has been fairly well discussed and I don't need to say more about
18 that, but the preferred alternative is the plan that we are proposing and I think
19 that is meaningful in many respects because that was what the City was after, to
20 find out if there a consistency with the General Plan or maybe there was a better
21 way of looking at it and least to the degree that the consultant that was hired by
22 the City came up with an opinion that our project seemed to be from a land use
23 perspective, the best plan or alternative that they were viewing. In regards to
24 traffic, our proposed project would generate less traffic than the current existing
25 zoning, so there is much discussion about traffic, but I think that is an important
26 point to make and then I touched on it last time, but I'll just mention it again. The
27 fees and street improvements for our project would total approximately 19 million
28 dollars based on the build out that we are anticipating and that includes a lot of
29 fees that don't really accrue to our benefit. That includes over a million dollars in
30 school fees and TUMF fees of two and a half million dollars and 800 for Police
31 and Fire Department and 3 million dollars for flood control and drainage
32 improvements and then the one other piece of this is property tax. The current
33 property tax that is charged this land versus what the property tax that would be
34 generated at the project completion represents about a million and half dollars a
35 year of additional property tax billings. And then I guess lastly, we talked a lot
36 about jobs and the project would be a job generating opportunity for the City and
37 not only for the construction portion of it, but long term permanent jobs which I
38 think are something that everybody seems to have a focus on. Industrial is the
39 primary driver, economic driver in the Inland Empire and right now Moreno Valley
40 is exporting jobs because they're underserving the nature of our business is
41 based on population. Moreno Valley's representation within the industrial sector
42 is low relative to other cities in the Inland Empire. I think industrial would be well
43 served in this location. There was some discussion about that last time and I
44 think that is evidenced by Sketchers locating out here and also Aldi making a
45 commitment to be out here as well, so that has firmed our belief going back to
46 2007 that it's a very good location for building warehouse buildings that we would

1 intend to build. Many of the concerns that have been raised have been in
2 context of the World Logistics Center and we should not be viewed as part of
3 Highland Fairview's proposed project. I believe that most of the concerns that
4 exist regarding the project would be eliminated or greatly reduced if the World
5 Logistics Center had not been introduced after our project had been submitted. It
6 has been a great frustration to us that we've been viewed as part of their project
7 since we are in no way connected to the World Logistics Center project. In
8 closing, Prologis is committed to developing a best in class project. A great deal
9 of thought and time has gone into design, landscaping, the positioning of
10 buildings and providing functionality and aesthetics at the same time. We look
11 forward to bringing our experience, our financial strength and our global
12 customer platform to Moreno Valley. Thank you and I'd be glad to answer any
13 questions.

14
15 **CHAIR VAN NATTA** – Thank you. Does anyone have questions of the
16 applicant? Okay at this time if you'd like to take a seat we will go on to our other
17 speakers. We have several speaker slips here. The first one is Pat Cavanagh.
18 That was you. Of course it was, alright. I'm sorry. The next one is Thomas
19 Jelinec.

20
21 **SPEAKER JELINEC** – Good evening Madam Chairwoman and Planning
22 Commission. Thank you for the opportunity to speak before you this evening.
23 My name is Thomas Jelinec. I'm with Highland Fairview. I am not here so much
24 to speak about this project as much as a comment letter that was submitted on it.
25 As you've already heard today a comment letter was submitted about the noise
26 impacts and truck impacts associated with the World Logistics Center. That
27 information unfortunately is very misleading. As you know trucks in Moreno
28 Valley are restricted to designated truck routes. Most of the streets that were
29 listed in the information that was provided to you are not part of the designated
30 truck routes within Moreno Valley and trucks would not be on any of those streets
31 and in fact the World Logistics Center has been designed in a way that prevents
32 trucks from moving through residential communities. Access at the World
33 Logistics Center would only be through three areas, Theodore via SR60,
34 Redlands north of Eucalyptus via SR60 and Gilman Springs Road and so what
35 you are seeing here, there are noise impacts from the proposed World Logistics
36 Center but those impacts are the result of passenger vehicles. People who would
37 be travelling to the site to work and that is an important distinction to make,
38 because when you look at what the site is currently zoned at and if it was built
39 out as it currently zoned, there would be thousands more vehicle trips from that
40 property than would be under the proposed World Logistics Center and so this is
41 not a matter of trucks moving through the community. The World Logistics
42 Center has been consciously designed to keep trucks out of residential
43 neighborhoods and we just regret that information has not been properly
44 represented to you and we wanted to set the record straight. We provided to the
45 Planning Commission a letter that outlines these facts and we're always available
46 to discuss this information with you. So thank you very much.

1
2 **CHAIR VAN NATTA** – Thank you for your comments. Our next speaker is
3 Michael Lozeau.

4
5 **SPEAKER LOZEAU** – Thank you Madam Chair and Commissioners. Good
6 evening. My name is Mike Lozeau. I'm with the firm Lozeau Drury and I'm here
7 on behalf of LIUNA Local 1184 tonight. We did submit some comments and I'm
8 glad to hear you received the email as well and I dropped off some hardcopies,
9 so I suspect you've not had a chance to look at the hard copy in the few
10 moments you've had, but I'll quickly just go through some of the concerns in our
11 letter. For the greenhouse gas emissions, what we're concerned about is what
12 we perceive as almost as an assumption that somehow the mitigations in there
13 are going to drop the GHG emissions per year from 79,000 metric tons down
14 70,000 to less than 10,000. We just don't think there is any rationale that has
15 been explained in the document; certainly not a quantification nor kind of an
16 objective qualified explanation of how you could possibly with those mitigations
17 go from 79,000 metric tons down to 10. It's just kind of a conclusory assertion.
18 We don't think it is supported by substantial evidence, so that's the main concern
19 we had. The World Logistics concern we had was simply, you heard your
20 consultant say that CEQA prevents you from including it in the baseline. Well
21 that's not true. You certainly have the discretion to include it. It's has been a
22 long time since this project has been on the table, so you should feel comfortable
23 if you desired to update your baseline. The other issue we raised about that is
24 that it qualifies as new information under CEQA. It is significant new information.
25 The context of this project does entirely change with that very large proposed
26 project and just looking at the greenhouse gas emissions and you add those
27 together and the targets that are described in the EIR for that one that apparently
28 the City is hoping to achieve someday. Those two projects alone equal
29 everything the City will be discharging, everything else in 2020, at least according
30 to the numbers that we were looking at. So that's our concern. It's new
31 information. You have to take it into account whether you change your baseline
32 or not. You can change your baseline if you like. Either way you've got to deal
33 with that changed circumstance. In terms of the air emissions, what we were
34 worried about especially NOX, ROG and PM10 is that EIR admits that there is an
35 impact, but all the mitigations you could do aren't there. All the feasible
36 mitigations have not been included and in our letter we go through the EIR and
37 we point out where things aren't mandatory, they are sort of optional, there not
38 enforceable because you aren't even sure they are going to happen. We do list
39 those out hoping that you can affirm those up and do all the feasible mitigation
40 measures to address those and the last thing I'll mention given the time is on the
41 health risk assessments. We did have our consultant re-run the numbers for the
42 construction period and the numbers they got were dramatically different from the
43 EIR... 22 cancers in a million for an adult and 33 in a million for children. And
44 yeah, construction is only expected to occur for 11.5 months; that's almost a
45 year, but in EIR it assumes it is a four month construction period. They only look
46 at the grading period, so when our consultant ran it with the full construction

1 period and the other numbers I think were much from the EIR. The numbers did
2 go up, so whatever the rationales might be from looking out 70 years, applying
3 the air districts methodologies; they certainly don't have the methodologies that
4 says its eleven and a half month construction project, just look at four months.
5 That's not their methodology. Our people did it and got much bigger numbers.
6 This has to be addressed and perhaps mitigation, but I see I'm out of time unless
7 you have a question. Thank you.

8
9 **CHAIR VAN NATTA** – Okay thank you very much. Our next speaker is Hans
10 Wolterbeek.

11
12 **SPEAKER WOLTERBEEK** – Good evening Madam Chair and Councilmen.
13 Basically I looked at the SP18 concerns about documentation in the EIR. There
14 is a table in the EIR, Appendix B in the EIR; not the DEIR and I went through that
15 table you have those tables; I gave those to you, effectively there is a Supreme
16 Court decision Pueblo Vs. United States 50F3D856 of 1995, which basically said
17 that emails or any written documentation really is not enough in communicating
18 with Indian Tribes or Indian Bands and three Indians Bands apparently were not
19 properly contacted according to that criteria. Email contact for the Morongo Band
20 appears to be incorrect in the EIR; at least I was unable to find an email contact
21 to invite them to this meeting, so if that indeed is the truth, then what impact did
22 the lack of notification of this meeting have on behalf of the Morongo Band and
23 what about the delivery of the EIR. Now the document is not complete and
24 needs to be undated. Basically when you look at the table and that's the
25 document and that's what I'm going to be talking about here, it basically says
26 some things and it leaves a lot of conclusions out, so therefore I came up with
27 conclusions and I did coordinate a little bit with one of the Staff and basically I
28 drew what conclusions I could. There were probably more communications. I
29 could not see them and they were not in that table you have in front of you. In
30 addition and I think that is very important. In the EIR by the way states that an
31 archeologist will be on site and Indian Bands will be notified if something is
32 found, which is okay for some Bands when you read through EIR, however again
33 in that magic table that I was talking about, there is Soboba and Cahuilla Bands
34 and I hope that I pronounced that correctly, ask them Indian monitors on the site.
35 Were these concerns fully addressed and documented. I'm sorry, I could not tell
36 that from those two tables. The EIR also states that the City does not require the
37 developer to stay for an Indian monitor from the Indian Bands. Okay I can see
38 that for a small development; a small project, but this is not a small project, so
39 why not. Just because it wasn't done before, doesn't mean we cannot do that
40 now and impose that on the developer. It is not that high an expense. It is at
41 most basically it seems to me when they are digging up the ground, which as
42 everybody says seems to be one man; one year, so one man year is not that
43 expensive for a company the size of Prologis.

44
45 **CHAIR VAN NATTA** – Thank you very much for your comments.
46

1 **SPEAKER WOLTERBEEK** – I’m already out of time.

2
3 **CHAIR VAN NATTA** – Your time is up. Our next speaker is Deanna Reeder.
4 Hello again.

5
6 **SPEAKER REEDER** – Hello. Um, two things. One; the moratorium and
7 Prologis, they should have never done that moratorium, that was dumb and they
8 did it based on an emergency ordinance, which means it should have been a
9 threat to the health, safety or welfare of the community and I can’t see how
10 building or not building could have done that, so that was a pile of crap. You’re
11 right, you were put on hold for a year, however, let’s go talk about when you
12 bought that piece of property and why. Prologis is the company that Sketchers
13 was leasing from before they moved here. In 2007 is when Benzeevi signed that
14 deal with Sketchers, which means in 2007 Prologis knew that Sketchers was
15 moving there and that they were going to put a warehouse there and it was in
16 2007 that Benzeevi started formulating his plan for the World Logistics Center
17 because it was in the Sketchers EIR and Draft EIR as a logistics modified
18 General Plan, so Prologis you knew about the World Logistics Center when you
19 made your application. You knew exactly what the plan was, so that’s probably
20 and I’ll say probably why you bought the property because you are in the
21 warehouse business and you knew that Benzeevi was going to talk the City
22 Council into it because after all his money buys what he wants. So no, you don’t
23 get a pass on skipping over what the World Logistics Center affects are going to
24 be. You knew it was going there when you bought that property and you knew
25 what it was going to be when you made your application, so you need to take
26 those affects into consideration in your EIR. Thank you.

27
28 **CHAIR VAN NATTA** – Thank you for your comments. Our next speaker is Tom
29 Thornsley.

30
31 **SPEAKER THORNSLEY** – I see you have a bigger timer now. I can see it.
32 Thank you although it’s not running.

33
34 **CHAIR VAN NATTA** – It will when you start talking.

35
36 **SPEAKER THORNSLEY** – Hi, good evening. I’m happy to be here. My name is
37 Tom Thornsley. I’m a resident of Moreno Valley. I’m one of those folks who is
38 definitely not in favor of this City’s constant conversion of land uses to now permit
39 warehousing. This location was designated as a community node which had
40 housing, commercial and Business Park which had a more diverse range of
41 employment opportunities. You as the Commission have seen over the last five
42 years a multitude of proposals coming in to you where the request has been to
43 change the land use from Business Park to Light Industrial so that it can convert
44 to warehouse use; we’re talking the mega warehouse use and not the small
45 business park type use, so therefore we are moving farther and farther away
46 from what had been the General Plan’s goals and objectives which this project

1 cites as there rationale for doing that. Objective 2.5 promote a mix of industrial
2 uses which provide sound and diverse economic base and ample employment
3 opportunities for City's and the goals it says, a well-organized designed high
4 quality functional balance of urban and rural land uses that meet the need of a
5 diverse population and promote the degree of health, safety and well-being. The
6 way this land is currently designated, meets all those criteria when that area was
7 designated and the land uses were established. All that was taken into account
8 and it was set forward to be that way. Why the City went for a moratorium and
9 wants to change it, wants to look at it, is way beyond me other than somebody is
10 trying to scratch somebody's back. I feel for the developer that he bought the
11 property at one time under a different tenure for the City, but it's like when I buy
12 stock. If I don't get out of it in time I lose my money. You know this isn't what we
13 should be going after right now. We did the corridor study. We did not do it on a
14 macro analysis, we did a micro analysis of just this particular area. You have to
15 look at what has been changed throughout the City over the course of the last
16 five to six years and analyze just where we are going with our land use changes.
17 We are not following the General Plan design. We are letting our City be
18 designed piecemeally by these constant changes and I think it's time that we...
19 well when they did the moratorium it should have been Citywide and it should
20 have been a full size assessment on it and I think that's what we need to do in
21 the future. Thank you very much.

22

23 **CHAIR VAN NATTA** – Thank you for your comments. Our next speaker is
24 George Hague. Can we take a brief recess? We have a Commissioner that left
25 the room and he'll be back in a minute. I didn't want anybody to miss your
26 comments.

27

28 **SPEAKER HAGUE** – George Hague, Moreno Valley, Sierra Club. The
29 developer states in their response to comments that there was a recent court
30 case that allows for mitigation of AG. This project destroys 80 acres of AG;
31 prime AG. You know the thousands of citrus that disappeared and they're saying
32 they can't do that here locally because there isn't an AG mitigation program here
33 in the County. I would say that by the time there is occupancy of this project
34 there will be one and you could condition this project based on that, but even if
35 that didn't happen there are State AG Programs for conservation of AG that we
36 could make sure that they apply for, so just because there isn't one in the County
37 doesn't mean there isn't one that they could actually use. The developer also
38 believes the cumulative impacts... this is also handled already. The World
39 Logistics Center was out there and they knew it; other people knew it. Their
40 impacts needs to be included. Cal Trans... you received a letter late probably at
41 the last hearing saying we need a mitigation bank here for Highway 60; State
42 Route 60. All of us who use State Route 60, please have such a thing. Please
43 make this developer be part of that. We need it. We can't just allow thousands
44 and thousands of additional trucks and traffic to impact State Route 60 without
45 any mitigation. The World Logistics Center will cast a toxic plume. You can go
46 to their documents. They have wonderful pictures of the toxic plume of cancer

1 that is going to cover this City. It goes out over Lake Perris even. It goes in
2 places it was never before seen east of San Bernardino almost all the way out to
3 Palm Springs. This is significant. This project will add to that as you heard a few
4 minutes ago from another speaker that this project will add to the cancer
5 problems of our area and actually beyond our area. That is why some people
6 are concerned about the warehousing in Moreno Valley because they know the
7 plumes and toxicity of these projects does not stop at the border of Moreno
8 Valley. At least this project is being somewhat honest with its traffic and trucks
9 and so forth. They mentioned that south on Moreno Beach this project will have
10 an impact. There is a housing development going in near the substation. This
11 project will go by that now. It says there is an impact at Alessandro and Moreno
12 Beach. It continues on to Nason and Moreno Beach there will be a significant
13 impact. For some reason it all disappears because the City has this kind of
14 bogus idea that beyond 5 miles there are no impacts. Well you know that Nason
15 is going to continue on all the way to 215 and vice versa, so at Heacock and
16 Perris and these other intersections there is going to be impacts, but this City
17 doesn't require those mitigations.

18
19 **CHAIR VAN NATTA** – Okay, your time is up now Mr. Hague.

20
21 **SPEAKER HAGUE** – So Alessandro is a truck route. Cactus is a truck route.
22 World Logistics Center isn't going stop them.

23
24 **CHAIR VAN NATTA** – Thank you for your comments. Our next speaker is
25 Monique Gordon. It's for Item 2 she says. Excuse me, oh for item 2. It was on
26 this list so we'll take it off. Okay, thank you. Seeing no more speaker slips for
27 the public comments and nobody else approaching the microphone there, I'm
28 going to close the public comment and we'll have questions from the
29 Commissioners.

30
31 **COMMUNITY & ECONOMIC DEVELOPMENT DIRECTOR TERELL** – Excuse
32 me Chair. The applicant would have an opportunity to rebut if they choose to do
33 so.

34
35 **CHAIR VAN NATTA** – Exactly, thank you. Did you have anything else you wish
36 to comment on? Okay, seeing no request from the applicant for rebuttal then we
37 will go on. Were there any questions from the Commissioners of either Staff or
38 the applicant regarding the presentations?

39
40 **COMMISSIONER RAMIREZ** – Yes for me one of the biggest issues is traffic,
41 especially traffic along Highway 60. Now it is evident that eventually this entire
42 Highway 60 corridor is going to have to be redeveloped from approximately
43 where Frederick and Pigeon Pass is all way throughout to the east end. We
44 received this letter dated March 17th, 2014 recommending the City of Moreno
45 Valley coordinate a State sponsored program of collecting transportation
46 mitigation fees from development projects to make improvements to the State

1 highway system. My first question is have we started this program? If so can we
2 ask Prologis to contribute to the fees of this program?

3
4 **TRANSPORTATION DIVISION ENGINEER LLOYD** – Good evening Chair and
5 Commissioners. I'm Michael Lloyd with Transportation Engineering Division. I'm
6 aware of that letter and we have received similar letters for other projects from
7 Cal Trans making a similar statement and if you'll notice in that it states a State
8 sponsored program, so we've been in a position where any type of fair share
9 payment program from developers to the State would need to be established by
10 the State even though the State is asking the City to take the initiative, so it's a
11 little confusing. We have had conversations ever since I've been at the City for
12 approximately seven to eight years now with Cal Trans and this topic comes up
13 regularly, however the State has made no movement. To put it into maybe a little
14 more perspective, the State really needs to initiate the dialogue with a regional
15 type of agency such as WRCOG or RCTC because it would make no sense for
16 Moreno Valley to collect developer impact fees and give it to the State when
17 other jurisdictions around us aren't doing so, so this was a regional effort and I'm
18 guessing why we haven't seen any movement from Cal Trans is there just hasn't
19 been any momentum on a regional basis. So to answer your question a little
20 more directly, yes we are aware of this and we've had conversations with Cal
21 Trans and my guess is those conversations will continue to occur, but as I
22 mentioned, it really needs to be focused on a regional basis very similar to our
23 TUMF program so that those regional impacts, where part of a regional effort to
24 address them and not just on city basis.

25
26 **COMMISSIONER RAMIREZ** – Very well, thank you.

27
28 **COMMUNITY & ECONOMIC DEVELOPMENT DIRECTOR TERELL** – Yeah
29 Michael is it correct to say that the current TUMF system actually does provide
30 some improvements related to the freeway?

31
32 **TRANSPORTATION DIVISION ENGINEER LLOYD** – That is correct. We do
33 collect fees as part of the TUMF program to address the ramp terminals at the
34 arterials. I believe Cal Trans' focus is really more on establishing a program to
35 establish a fee collection system for the actual mainline of the freeway, but John
36 you're correct. The fees that are collected as part of the TUMF regional program,
37 some of those monies are geared towards the ramps; the connections with
38 arterial streets.

39
40 **CHAIR VAN NATTA** – Okay any questions of the Commissioners?

41
42 **COMMISSIONER SIMS** – I do have some... I looked over the EIR and the Traffic
43 Impact Analysis Report and it is clear to me when I was reading through the
44 Traffic Impact Analysis that the cumulative analysis at build out with the
45 improvements does not include the World Logistics Center and so when you look
46 through the tables, specifically Table 4.11.j of the Traffic Impact Analysis it shows

1 that most intersections with the Prologis project with improvements will be at a
2 level of service C and D, but I repeat that those levels of service projections are
3 made without knowing the cumulative impacts of the World Logistics Center,
4 which is just within a mile of this facility and as we heard earlier today it is
5 eighteen times the size of the Prologis project. I think in the spirit of transparency
6 and care for the entire City, based on some of the City leadership support of the
7 World Logistics project, that in the absence of this project; the Prologis project
8 doing a cumulative traffic analysis that includes the World Logistics Center, I
9 believe the City should initiate a traffic study that includes an overall traffic impact
10 analysis for all of this magnitude of change in the land use for the warehouses. It
11 just seems like it's a piecemeal effect of unknown traffic impacts that we just
12 don't know about and so I would... I just think at this point it just seems like it's
13 hard to make a decision. I mean it seems like a good project; the Prologis.
14 We've heard about it. We've read about it, but there's just unknown in the
15 cumulative effect. We're making a big decision. You know we're opening the
16 gates to more and more warehouse reuse of land that wasn't speculated.

17
18 **CHAIR VAN NATTA** – At this point though we're kind of into asking questions
19 and not up for discussion and so do have questions or anything?
20

21 **COMMISSIONER SIMS** – So my first question is am I clear that the Prologis EIR
22 Traffic Impact Analysis does not include the cumulative effects of the World
23 Logistics Center?
24

25 **INTERIM PLANNING OFFICIAL ORMSBY** – That's correct and from a CEQA
26 standpoint it wouldn't be typically required because of the fact that the cumulative
27 impact list would be established during that notice of preparation period, which
28 occurred several years before the World Logistics project was submitted.
29

30 **COMMISSIONER SIMS** – Okay so my next question is in the EIR there is a
31 generation factor for jobs, so it's on page 4.10.5 of the EIR and there is a formula
32 in there that says one employee; the generation factor for employees for
33 warehouse use is one employee per 1,465 square feet of warehouse and in the
34 document it states that this equates to 1,532 jobs which I assume are permanent
35 jobs that would be expected to be created, so my question to Staff or the
36 applicant would be does this factor come from? Is it a Southern California
37 number? Is it a national average? You know how do we reconcile that? The
38 second question is how does that factor compare with actual job creation in
39 warehouses within the City of Moreno Valley?
40

41 **INTERIM PLANNING OFFICIAL ORMSBY** – The applicant would best address
42 that and I'll defer to them as which member of their team would like to address
43 that.
44

45 **COMMUNITY & ECONOMIC DEVELOPMENT DIRECTOR TERELL** – Yeah I'll
46 address your second question. On a warehouse facility by facility it varies quite a

1 bit. I would suggest that the average is close to that on a project. There are
2 projects that have one job for every 3,000 square and there are projects that
3 have one job for every seven or eight hundred square feet, but on average
4 something similar to one for every 1,500 square feet is probably not off the mark
5 on actual averages.

6
7 **SPEAKER NORTON** – Kent Norton with LSA. Again, Mr. Terell is correct. That
8 was an area wide average. The information was averaged over the Southern
9 California regional projects and so yes, a lot of projects would vary, but that
10 number appears to be fairly representative of warehouse projects in Western
11 Riverside County. Actually, the comments about the cumulative traffic, if I may
12 just very quickly answer that. Our traffic people indicated that the build out
13 analysis for Prologis even though it doesn't include the World Logistics Center
14 specifically, as I said the reason for that is the NOP was issued well before
15 Prologis was issued, well before any application for the World Logistics project
16 which is the time when the baseline is set for studies such as traffic, but the
17 Prologis traffic study does look at General Plan build out and there were more
18 trips... the existing land use I believe was mentioned earlier; the existing land
19 use for the project would actually generate more trips than this proposed Prologis
20 project, so the cumulative analysis for the General Plan EIR analysis actually
21 would show more trips than this project would actually generate, so I just wanted
22 to clarify that.

23
24 **COMMISSIONER SIMS** – But that is just for the Prologis area?

25
26 **COMMUNITY & ECONOMIC DEVELOPMENT DIRECTOR TERELL** – Kent, if I
27 can... you are talking about General Plan build out on a City-wide basis?

28
29 **SPEAKER NORTON** – Right

30
31 **COMMUNITY & ECONOMIC DEVELOPMENT DIRECTOR TERELL** – Yeah, so
32 that would have allocated whatever the current land use is in the General Plan
33 city-wide and not just this property. That would be typically how the build out
34 would be done.

35
36 **SPEAKER NORTON** – If you'd like, Megan Macias, the Director of our Traffic
37 Group is here and she can answer any specific questions you have about the
38 traffic analysis if you like.

39
40 **COMMISSIONER LOWELL** - I had a question while you are still standing up
41 here. One of the public speakers beforehand, I believe his name was Michael
42 Lozeau... I forgot...

43
44 **SPEAKER NORTON** – Lozeau
45

1 **COMMISSIONER LOWELL** - He said there are new CEQA requirements that
2 would be in effect if the project went in today versus when the project was
3 conditioned in 2007. Could you enlighten us on what that would be if the project
4 went into the new set of conditions today?

5
6 **SPEAKER NORTON** – I don't have notes on that... I didn't... Could you expand
7 on that a little bit? I don't have that in my note.

8
9 **COMMISSIONER LOWELL** – That was from one of the public speakers. He
10 came up and he said that there would be new CEQA requirements if the project
11 went through today versus in 2007 when the project was presented to the City.

12
13 **SPEAKER NORTON** – Well you mean the requirements; the development
14 requirements on projects changed throughout time. The 2007 and 2008 period
15 was when the environmental baseline was set for the analysis in the EIR,
16 however when development comes on line when Prologis comes to pull building
17 permits for example, they would be required to meet the current development
18 requirements of the City as well as items like the California Green Building Code,
19 Title 24. Does that answer your question?

20
21 **COMMUNITY & ECONOMIC DEVELOPMENT DIRECTOR TERELL** – Oh Kent,
22 as I recall the comment and obviously the person that still in the audience, they
23 could probably correct that if I have it wrong, that there other projects that have
24 been submitted after this project, therefore they should be reviewed because the
25 development landscape in the City is different. That's true, but there is a reason
26 why when projects are submitted and the baseline is submitted, it's not
27 constantly changed because theoretically a project... this is not what happened
28 in this case, but a project could have been submitted yesterday and somehow
29 because it was submitted yesterday before a decision on this project was made,
30 it has to be assessed, so it's kind of what I call an expose facto. At some point in
31 time there has to be a scope of work and that is what is reviewed so that the
32 applicant can rely on that and not constantly having to redo their studies as they
33 get closer and closer to a decision on their project. So there is a reason for the
34 rationale of not going back and adding additional projects after that baseline and
35 I believe that the comment was talking about that, that conditions have changed
36 which they have as far as what projects have been submitted to the City.

37
38 **COMMISSIONER LOWELL** – I appreciate that. Thank you very much but I
39 really kind of concerned; well not concerned but just curious how the CEQA
40 requirements... have they made dramatic changes between 2007 and 2014 or
41 are they pretty much standard.

42
43 **SPEAKER NORTON** – The CEQA requirements... the CEQA requirements have
44 changed incrementally other than since then greenhouse gases have been
45 added and some changes to the environmental checklist in the State CEQA
46 Guidelines have changed but the overall CEQA process remains the same and

1 just remember that development has to meet the current development
2 requirements of the City and that my reference to 2007 and 2008 is only
3 regarding the environmental baseline against which certain impacts are
4 measured; the existing conditions in 2007 and 2008 are used as the baseline in
5 the EIR to determine impacts.

6
7 **COMMISSIONER LOWELL** – Okay, thank you, I appreciate it.

8
9 **CHAIR VAN NATTA** – Okay Commissioners, does anybody else have any
10 questions?

11
12 **VICE CHAIR GIBA** – I may have missed this but could you I think Jeff, could you
13 respond to Mr. Wolterbeek’s concern about the Native American contact record?
14 I’m very concerned about it and I have that little sheet.

15
16 **ASSOCIATE PLANNER BRADSHAW** – The email exchange from earlier this
17 afternoon...what I can say with confidence is that the Tribal groups that the City
18 coordinated with, mitigation has been imposed on the project that the applicants
19 agreed to that would include tribal monitors per the request of those groups that
20 asked for such. The specifics in terms of what is summarized in Appendix B, I
21 would defer I think to Kent and I hate to make him walk back up again, but I think
22 he is going to be a little familiar with the content and the preparation of the
23 summary data than I am. I would defer to him.

24
25 **VICE CHAIR GIBA** – Thank you

26
27 **SPEAKER NORTON** – The information in Appendix B that Mr. Wolterbeek
28 referred to was some additional notifications that LSA assisted the City with by
29 notifying the Native American Tribes that are listed on the Native American
30 Heritage Commission’s list. We have a person who helps us coordinate those in
31 our Irvine office. It was an additional level of trying to reach out to the Tribes on
32 the City’s behalf and let them know about the project continuing on and as far as
33 I know all of the Tribes that were indicated were contacted. We used various
34 methods of contacting and Mr. Wolterbeek referred to a 1995 Federal case,
35 however remember that this is... we’re talking about CEQA of the CEQA process
36 and actually the SP18 notification process and consultation process between the
37 City and the Native American Groups is a separate State requirement, actually
38 even separate from the CEQA process, but I believe the City’s fulfilled all of its
39 requirements regarding SP18 and has consulted with tribes that indicated that
40 they would like to do that as evidenced by the substantial changes to the
41 mitigations measures in response to their comments on the Draft EIR.

42
43 **VICE CHAIR GIBA** – The last time we all met we had a lot of speakers and I
44 don’t know if this will affect you so...

45
46 **SPEAKER NORTON** – Maybe I should stay

1
2 **VICE CHAIR GIBA** – There was one in particular that really caught my eye and
3 so I wanted to... Michael this is probably going to be one of your questions
4 because you know me and traffic right... This was from Ms. Coggins... through
5 San Mateo Canyon and all the traffic goes through there as a short cut to Loma
6 Linda and Redlands; the 10 freeway or whatever. Ever since Sketchers has
7 been built truck traffic has increased past my house and either of you are
8 welcome to come by. When the trucks go by my windows rattle. I have
9 stopped... that's her comments and I did take a little trip up there and that road is
10 not exactly in the best of shape. Last time you mentioned that that is considered
11 an artery for truck traffic. It appears to me that when we looked at the traffic
12 mitigations there was nothing basically north of the 60. Everything dealt with
13 intersections and south of the 60. Was there any consideration at all for the
14 Redlands Boulevard traffic going through there because if this is starting to be a
15 big concern just with one warehouse in there, Aldi's is going to be building theirs
16 and if Prologis gets approved that adds to that and I'm not even going to talk
17 about the World Logistics Center. So is there anything that can be done about
18 that Redlands Boulevard? Can it be changed so that it is no longer a truck traffic
19 artery or can the streets and the roads be improved such that they will take some
20 pressure off of the homes and stuff going up? It is a beautiful route up that way
21 but it doesn't look like it should be a truck route.

22
23 **TRANSPORTATION DIVISION ENGINEER LLOYD** – Michael Lloyd again with
24 Transportation Engineering. Yes Commissioner, action could be taken at the...
25 truck routes are established within the Municipal Code and action by City Council
26 could certainly change that, so it is something if Council took that up and directed
27 Staff, we would investigate and make a proposal to make a change to the truck
28 routes. I would note that Redlands does cross out of the City of Moreno Valley
29 into the County. The County portion of Redlands Boulevard is an established
30 truck route, so the City could certainly take action and say it is not a truck route,
31 however as soon as you cross into the County it is a truck route, so we now have
32 an enforcement problem, so it's not inconceivable or insurmountable to change
33 the designation, it would require a cooperative effort between the City and
34 County to have it removed as a truck route. So it is a possibility, however to my
35 knowledge, there has been no conversations to change that current designation.

36
37 **VICE CHAIR GIBA** – Is there any reason why we can't pursue that
38 conversation... it seemed to me that there were a couple of residents who
39 brought that concern up and that was the first time I've had an opportunity to
40 hear that and again if we are pursuing that direction what would we do? There is
41 your question what would we do as a City, a Commission and a Staff and how
42 would that affect the outcome of what we're doing this evening?

43
44 **TRANSPORTATION DIVISION ENGINEER LLOYD** – If Staff were directed to
45 investigate this and pursue it, Staff would contact the County and begin the
46 dialogue on how to remove the County's portion so that we're working in concert.

1 Assuming the County was amicable to the request we would then move forward
2 to work collectively I guess to have the portions removed; the designation
3 removed from the City as well as the County and it would require action as I
4 mentioned by our City Council and it would require action I believe at the County
5 level and I don't know to what level that would need to occur. I don't know if it is
6 handled administratively or if it would need to go to the Board of Supervisors. I'm
7 not familiar on how the County makes their designations on truck routes, so it
8 would require a little investigation on my part and certainly that dialogue with the
9 County would establish very clearly and quickly what needs to occur.

10
11 **VICE CHAIR GIBA** – So with that recommendation to the Council, could that
12 come from the Commission, but not necessarily effect the outcome of what we
13 determine here but also add that as a mitigation measure down the road?

14
15 **COMMUNITY & ECONOMIC DEVELOPMENT DIRECTOR TERELL** – Vice
16 Chair Giba, I don't think it would be a mitigation measure on this project.

17
18 **VICE CHAIR GIBA** – okay

19
20 **COMMUNITY & ECONOMIC DEVELOPMENT DIRECTOR TERELL** – I don't
21 think it would be appropriate, because I would suggest that this project didn't
22 allocate any truck traffic onto Redlands Boulevard.

23
24 **VICE CHAIR GIBA** – That's going to be the natural flow as we've been seeing
25 and we may not have anticipated that I'm sure.

26
27 **COMMUNITY & ECONOMIC DEVELOPMENT DIRECTOR TERELL** – And not
28 to discount the public comments, because I don't live on Redlands Boulevard,
29 but I drive it quite often. It's very rare that I see a truck on Redlands Boulevard
30 and usually when I see it, it is a Coke truck or a Pepsi truck. I've seen others but
31 they don't have markings on them, but I know I've seen the Pepsi truck and the
32 Coke truck on there and they are making local deliveries in essence. But yes, it
33 would certainly... I don't know that it's appropriate to make that recommendation
34 to the Council as part of this action, but certainly separately the Commission
35 could suggest that and I would hope that if this project goes forward to the City
36 Council that those residents that are concerned about it will express those
37 concerns again directly to the City Council. But yes, it would be appropriate
38 probably separate from this project.

39
40 **VICE CHAIR GIBA** – Thank you John. Thank you Michael.

41
42 **COMMISSIONER LOWELL** – I have a question for Staff. The project proposes
43 a General Plan Amendment; I remember just recently that we approved the
44 Housing Element where we had to verify and look at where different types of
45 housing; residential, apartments, mixed use, all that was located. How would this
46 General Plan effect what we just recently approved?

1
2 **COMMUNITY & ECONOMIC DEVELOPMENT DIRECTOR TERELL** – It doesn't
3 affect it. This particular residential zoning was not counted as required to meet
4 the State guidelines. The State guidelines require that you have a certain
5 capacity in low, moderate and above moderate. In the low and moderate, this
6 was not counted towards that so it doesn't affect compliance with those
7 regulations. In the above moderate, the City was substantially over the regional
8 housing needs assessment that was provided to us. As I recall it was by a factor
9 or three or four times, so removal of residential in this particular area would not
10 impact a compliance of the Housing Element.

11
12 **COMMISSIONER LOWELL** – Even though there is some R15 that is going to be
13 removed, I would envision that would be apartments and...

14
15 **COMMUNITY & ECONOMIC DEVELOPMENT DIRECTOR TERELL** – For the
16 low and moderate income categories, the only ones that could be counted were
17 either specific projects; affordable housing projects that were under review or
18 R30, so R20, R15, R10, none of those were counted towards the regional
19 housing needs assessment.

20
21 **COMMISSIONER LOWELL** – I appreciate it, thank you.

22
23 **CHAIR VAN NATTA** – Any other questions? Yes go ahead.

24
25 **COMMISSIONER BARNES** – I have a question for Staff. Could you give me a
26 little background on the General Plan? When was it adopted and is it scheduled
27 for regular revision or is it cast in stone?

28
29 **INTERIM PLANNING OFFICIAL ORMSBY** – The General Plan was last updated
30 in totality in 2006 and it would be due to be updated roughly 10 years from then,
31 so we're looking at a few years still.

32
33 **COMMUNITY & ECONOMIC DEVELOPMENT DIRECTOR TERELL** – Yeah the
34 General Plan is not set in stone and the first General Plan was adopted in 1988
35 or 89.... 88, so it was 18 years from the first one to the first update and not to
36 cast aspersions on other communities, in Riverside they just updated their
37 General Plan a couple of years ago. Previous to that the latest update was in
38 1973; comprehensive. So General Plans can change up to four times a year.
39 Each element of a General Plan can be modified up to four times a year under
40 State law, so obviously you wouldn't make wholesale changes four times a year,
41 but it is not intended to be a... it is intended to be a living document, but
42 obviously the framework you need to look at comprehensively. They recommend
43 10 years. Sometimes it's a little bit longer than that.

44
45 **COMMISSIONER BARNES** – And I guess that's the point of my question, not
46 specific to this project, but the fact that we are considering making a change to it,

1 but it's an old document and we all know that a lot has happened in the
2 intervening time, so even discounting this project, it would be subject to review
3 and probably some substantial changes, so I think we need to keep that in mind
4 when consider making a change to it that it's dated.

5
6 **COMMISSIONER LOWELL** – Piggybacking on that last comment Mr. Terell, you
7 said the General Plan can be amended up to four times a year. Is this
8 amendment considered one of those four times?

9
10 **COMMUNITY & ECONOMIC DEVELOPMENT DIRECTOR TERELL** – Yes. I
11 believe we had... did we have one this year already? I don't believe so.

12
13 **INTERIM PLANNING OFFICIAL ORMSBY** – I don't believe we've had one this
14 year, but there are a couple perhaps in the pipeline, but this would be the first
15 one this year.

16
17 **COMMISSIONER LOWELL** – Thank you.

18
19 **COMMISSIONER SIMS** – Are there any general triggers of best practice in a city
20 planning department of when there is known development activity that is not
21 consistent with the current General Plan where there would be a stop in the
22 jurisdiction say maybe it is time to do a comprehensive General Plan
23 amendment? Perhaps a trigger such that x percent of the total city is being
24 redeveloped to a certain other type of land use?

25
26 **INTERIM PLANNING OFFICIAL ORMSBY** – There isn't any guidance in the
27 State General Plan Guidelines that I'm aware of and John might have some other
28 thoughts on that. I mean the other thing that should be considered is the General
29 Plan was updated in 2006, but we did go through a recession period. In some
30 respects there hasn't been as much change as there would generally be in that
31 same number of years as during a more active time period. Certainly there was
32 in the first couple of years but during the recession things were slower.

33
34 **COMMUNITY & ECONOMIC DEVELOPMENT DIRECTOR TERELL** – Chris is
35 correct. There is no guidance that I'm aware of in planning literature on a set
36 percentage, because if you were looking at a substantial project you'd always
37 want to look at the impacts on the adjacencies anyways and I think as you
38 requested on this project some information perspective on you know what other
39 vacant land is available for this use, I think that's a reasonable question to ask
40 when any major change is made to the General Plan. How does this affect the
41 overall composition of the City as far as uses and how might that compare to
42 other communities? I think that is a reasonable question to ask whenever a
43 major change comes forward.

44
45 **CHAIR VAN NATTA** – I get to ask questions now? One question Planner
46 Bradshaw... was there any communication back and forth from the Auto Mall

1 about the increase of traffic going along Eucalyptus through the middle of the
2 mall there?

3
4 **ASSOCIATE PLANNER BRADSHAW** – I'm not aware of any such
5 communication.

6
7 **COMMUNITY & ECONOMIC DEVELOPMENT DIRECTOR TERELL** – Maybe I
8 can answer that. When talking about a different subject I did talk to Glen Moss
9 who is the owner of the current dealerships in the Auto Mall and he was looking
10 forward to the concept of having more traffic come through the Auto Mall and he
11 did not express any concerns about this project. Then I asked him specifically do
12 you have any concerns and he said no. He is looking forward to that road going
13 through.

14
15 **CHAIR VAN NATTA** – Okay. Another question I think at our last meeting, we
16 were talking about the flow of traffic going through there and that this would
17 complete Eucalyptus over to Redlands Boulevard which would make from this
18 project probably as much traffic up getting onto the freeway on Redlands as on
19 Moreno Beach and had a concern about whether or not that intersection would
20 be able to handle it and is there anything going towards that area to improve the
21 access or traffic flow on and off of Redlands Boulevard.

22
23 **TRANSPORTATION DIVISION ENGINEER LLOYD** – You're correct that the
24 analysis did assume a split between the two interchanges. I don't recall off the
25 top of my head the exact split but it was roughly speaking about 50/50 utilizing
26 Redlands versus Moreno Beach Drive and the analysis did not find any direct
27 impacts at the Moreno Beach Drive interchange. It did identify some cumulative
28 impacts. Some of the mitigation measures identified for those cumulative
29 impacts have actually been implemented with the recent completion of the
30 Capital Improvement Project where Eucalyptus was connected to Moreno Beach
31 Drive and the southerly or eastbound ramps were reconstructed. So we are in
32 the process of getting those improvements in. The first phase of improvements
33 to the Moreno Beach interchange have been implemented and the second phase
34 I believe the design is wrapping up and should be done in the next year and it's a
35 matter of identifying a full funding package so it can go out to construction, so it is
36 in the process for Moreno Beach Drive.

37
38 **CHAIR VAN NATTA** – Okay how about Redlands?

39
40 **TRANSPORTATION DIVISION ENGINEER LLOYD** – Redlands, I'm not aware
41 of any improvements at this point in time to actually reconstruct the interchange.
42 Just as a reminder, the Aldi project was conditioned to put in a traffic signal as
43 well as turn lane improvements for the westbound ramps or the ramps on the
44 north side of the interchange. This project is conditioned similarly. This project
45 was also conditioned as well as Aldi to install a traffic signal where Eucalyptus
46 will intersect with Redlands, so those were identified for both projects as direct

1 impacts and there were mitigation measures imposed on the project to address
2 those impacts.

3
4 **CHAIR VAN NATTA** – Does that mean they are going to be done?

5
6 **TRANSPORTATION DIVISION ENGINEER LLOYD** – Yes

7
8 **CHAIR VAN NATTA** – When these are completed then there will be lights there.
9 There will be traffic signals, an additional off ramp from the freeway to Redlands
10 etc.

11
12 **TRANSPORTATION DIVISION ENGINEER LLOYD** – That is correct. Neither
13 project would receive a Certificate of Occupancy allowing them to utilize the
14 building until those improvements are complete and accepted by the City.

15
16 **CHAIR VAN NATTA** – Okay, then the other question of course, we know
17 Redlands Boulevard is a major artery going northbound up towards the Redlands
18 area; Loma Linda area, San Bernardino and so forth, because to get to the 10
19 freeway otherwise you would either have to go through the badlands and meet
20 up with the 10 there or go all the way to the 215 interchange, so it's not realistic
21 to expect that that is not going to continue to be a truck route as you said, only a
22 portion of it is within the City, so are there any plans to upgrade the road bed
23 there to make it more safe for truck traffic?

24
25 **TRANSPORTATION DIVISION ENGINEER LLOYD** – The roadway per our
26 General Plan is designated as a divided arterial, so that would mean an
27 additional lane in the northbound as well as the southbound direction so that we
28 would have a four lane facility with a median. So we'd have two lanes in each
29 direction. As of this time, funding has not been identified to move forward with
30 designer construction, so it is part of our Capital Improvement Program, so that
31 we've identified it as a need, however it is what is referred to as an unfunded
32 project.

33
34 **CHAIR VAN NATTA** – Are funds for that possibly going...are any funds going
35 towards that going to come from this project; from the Aldi project or from the
36 World Logistics Center?

37
38 **TRANSPORTATION DIVISION ENGINEER LLOYD** – That would be established
39 based upon the yearly update or the yearly approval of the CIP; the Capital
40 Improvement Program where Staff works with Council to establish priorities and
41 identify funding, so the possibility is out there. When this project is complete and
42 has paid their DIF and TUMF the fees would be paid to the City. It would go into
43 the pool of funds for that.

44
45 **CHAIR VAN NATTA** – Does it come from DIF and TUMF fees?
46

1 **TRANSPORTATION DIVISION ENGINEER LLOYD** – It is a possibility and there
2 are other funding sources that the City utilizes to build roadways that would
3 include gas tax monies, Measure A monies. We pursue grant monies through
4 the State and the Federal Government, so we often to get a project out to bid in
5 construction, it's generally a pool or several funding sources to get it out to
6 construction.

7
8 **CHAIR VAN NATTA** – Well I can't see telling the people who live along
9 Redlands Boulevard which has always been an arterial that okay now we're not
10 going to make it not an arterial because the trucks are making noise, but I can
11 see where right now it is a hazard and there have been accidents on that road
12 because of the heavy traffic and there are trucks besides the Pepsi and Coke
13 trucks. I was coming down south on Redlands Boulevard from Redlands about
14 two weeks ago and a truck coming up the other way hit debris that was... asphalt
15 debris that was on the road and it went straight through my bumper, so I see that
16 happening. It could have gone through my windshield just as easily. It went
17 through my bumper instead. That is a hazardous road because of the conditions
18 that it is in and should be addressed sooner rather than later.

19
20 **COMMUNITY & ECONOMIC DEVELOPMENT DIRECTOR TERELL** – Yeah I
21 think one of things though and I don't know where you had that incident happen,
22 within the City limits is what... Redlands Boulevard within the City limits is part of
23 the City's development impact fee program and I'm not sure if it is a TUMF road
24 as well. It is okay, so fees are part of the system on which fees from any
25 development are collected and then it is a policy decision both the WRCOG level
26 as well as the City and County level of how to spend those monies and I'm
27 assuming if it is on the TUMF network inside the City, it is in the County as well.
28 So I understand...

29
30 **CHAIR VAN NATTA** – The funds from these project are going to go into that
31 fund which could be used there at the discretion of the City's planning...

32
33 **COMMUNITY & ECONOMIC DEVELOPMENT DIRECTOR TERELL** – Well it
34 would be the City Council or the County Board of Supervisors

35
36 **CHAIR VAN NATTA** - ...deciding that that is an impact area?

37
38 **COMMUNITY & ECONOMIC DEVELOPMENT DIRECTOR TERELL** – Correct;
39 yes

40
41 **CHAIR VAN NATTA** – Okay, another questions?

42
43 **COMMISSIONER BARNES** – Yeah I have a question of Staff. In the resolution
44 that would go to the City Council should this project be approved, one of the, or
45 the primary consideration to override the impacts that aren't sufficiently mitigated
46 is overriding considerations and it lists four of them. On page 126, the project will

1 provide development consistent of Municipal standards, codes and policies. This
2 project provides development, improves and maximizes economic viability of a
3 vacant site by transitioning the project to productive light industrial and there are
4 two more, but in reading through the documentation that we've been given I don't
5 find a lot of substance that supports those overriding considerations. If we are
6 going to elect to do that, what is the basis for those comments and what makes
7 them significant enough to override them.

8
9 **INTERIM PLANNING OFFICIAL ORMSBY** – I didn't see the information on that
10 particular page number, so I'm not actually able to take a look at that. I'm
11 thinking we might want to have the applicant...

12
13 **VICE CHAIR GIBA** – 227, just right next door... the bullet point. There are four
14 bullet points Chris.

15
16 **INTERIM PLANNING OFFICIAL ORMSBY** – Oh 227... okay, I'm think we may
17 want to have the applicant address that and the Environmental Consultant. They
18 prepared the overriding findings.

19
20 **APPLICANT CAVANAGH** – I'll let Kent address that. The one thing I would say
21 though it gets back to what is the right land use for the property and what is the
22 right use for the community and this sort of gets back to, is the current General
23 Plan designation the best use. I guess that's a soft answer to the question and
24 you know I have to... I was very disappointed when the City took the position that
25 they wanted to have a land use study done somewhat at our expense because I
26 thought we were kind of targeted in some ways because there was a lot of other
27 properties that could have been included in that, that weren't, but that aside, I
28 think the findings of the consultant that did the land use study somewhat answers
29 your question as to what is the best; the highest and best use for that land and it
30 is in conformance with what our proposed project is and that gets back to a lot of
31 the things that I said earlier that relate to job creation, traffic impacts that as Kent
32 said I believe are lessened by our proposed use than the current existing plan,
33 the fees that are created and more specifically on the fees, I would say that a lot
34 of the fees that are paid are fees that we don't get the benefit of. We don't
35 directly get the benefit of school fees, the taxing of the Police Department and
36 Fire Department is drastically less than compared to the current zoning, so there
37 are some hidden benefits and it sort of a bundled answer and Kent wrote that so
38 I'll let him respond to it, but that was a few things that I wanted to cover.

39
40 **SPEAKER NORTON** – As you are aware, the CEQA process is balancing act of
41 looking at the adverse impacts of a project and seeing if any benefits of that
42 project are outweighed by those benefits, so in the findings the statement of
43 overriding considerations as the Commissioner identified, there are four primary
44 ones and I'm not sure if you had a specific question about a specific one, but in
45 general as I'm sure you're aware, the new industrial uses would generate short
46 term as well as long term employment. They would make a considerable

1 infrastructure improvements to the area. They would develop the site in a
2 productive manner for light industrial uses and that development would have to
3 be consistent with the City's development guidelines for those uses. Those are
4 the benefits that have been identified for the project and those benefits have to
5 be weighed against the adverse impacts that the EIR identifies and that's the
6 City's; that's the heart of the CEQA process for the City.

7
8 **COMMUNITY & ECONOMIC DEVELOPMENT DIRECTOR TERELL** – Yeah and
9 to add onto that, that is one of the things that the policymakers; you have the
10 opportunity to override. Obviously it is not required, the opportunity based on
11 what you would see as the beneficial; whether it is economic, social or other
12 benefits you see of the project that outweigh the potential impact; the
13 environmental impact. So it's an opportunity; to some extent a value judgment,
14 but you've been provided with identifying some potential items that the
15 Consultant and Staff has concurred that would provide that benefit.

16
17 **COMMISSIONER BARNES** – Right, and I didn't ask the question with any pre-
18 judgment, it just seems like we're going through hundreds and hundreds of
19 pages of analysis and some of it negative and we're going to make a ruling
20 based on four sentences. To help me make the decision, I would like to see
21 some specific substance to those and again this is just a general observation. It
22 would help me to have some specifics of those things that basically explain those
23 to me in more detail as they relate to this project.

24
25 **SPEAKER NORTON** – I would say the EIR document in various places provides
26 quite a bit of that information. The project description itself describes in detail
27 the kinds of infrastructure improvements that will be required and the project will
28 install. It talks about the employment benefits that the project will generate. It
29 identifies the transition of the land uses from vacant to the proposed uses; yes
30 different than what it is designated for now, but that's where the General Plan
31 Amendment and Zone Change process and then indicating especially in a
32 number of mitigation measures that the City's development codes and
33 requirements will be followed and then the mitigation typically identifies actions
34 that have to be taken over and above simple compliance with established laws
35 and regulations, including the City's development or review process. So it is in
36 there; yes it's not all in this document as part of this. The findings are more
37 designed to outline the extent of the impacts and how those or to what degree
38 those are mitigated. We could certainly provide additional documentation as a
39 supplement to this for the statement of overriding considerations, but you
40 probably had enough to read regarding this project already, but we can certainly
41 provide that clarification if the Commission so desires.

42
43 **COMMISSIONER BARNES** – Thank you.

44
45 **CITY ATTORNEY CURLEY** – And if I might... lawyers have trouble being quiet.
46 Putting it in context your point is very well taken and let me walk you through just

1 a very few minor but critical elements. In the EIR, the CEQA process... if you
2 have unmitigated or problems that you haven't solved, you can't recommend
3 approval. That's basic, but and this is as you've heard the concept of balancing
4 or the concept of what is called overriding considerations and I'm going to go just
5 straight to the statute, because it's probably most convenient. If specific
6 economic, legal, social, technological or other benefits of a proposed project
7 outweigh the unavoidable adverse environmental impacts, you may then
8 consider that project acceptable. The key is, as it goes on and this is called the
9 statement of overriding considerations, which means what it says, those
10 statements must be supported by substantial evidence in the record. Substantial
11 evidence is defined in there as fact; fact backed by expert opinion or fact based
12 on in essence the circumstances, so you need meat on the bones. You
13 mentioned four sentences; that's pretty thin meat. We would need as was
14 offered to augment that to say the factors that are presented that allow you to say
15 the impacts that are there, while real in the balance are outweighed by the
16 benefits, that needs to be augmented in the statement of overriding
17 considerations, so it is clear to the world what you were thinking when you said
18 we will trump those defects or those problems if you will. The environmental
19 document again as was noted will state in it the objectives that this project is
20 trying to accomplish; bringing jobs. It is bringing development. It's bringing many
21 positives, so that is the objective they were aiming at. You then measure did
22 they hit those objectives. Did they carry off those good things and do those good
23 things outweigh the identified non-mitigated or just broadly stated bad things. If
24 you go back to elementary school where the teacher said show your work, two
25 plus two may be four, but they wanted to see you actually write that formula,
26 that's what you want to augment this with, your four sentences. Show the work,
27 put the meat on to support that legal, economic, social, technological or other
28 benefit. If you do that you've conformed to CEQA. You haven't left people
29 scratching their head. Why did Jeffrey Barnes say this was better than not, so
30 your point is well taken and that should be augmented. Keep in mind you are
31 recommending to the Council. Your recommendation can be augmented that
32 statement of overriding considerations; put some more meat on those bones.

33

34 **COMMISSIONER BARNES** – Thank you.

35

36 **CHAIR VAN NATTA** – Okay you had a question also?

37

38 **VICE CHAIR GIBA** – Yes. I wondered if... well I actually have two but this is the
39 more important one. Would it be appropriate Jeff and Chris for you to just briefly
40 and don't go away, briefly go over the project alternatives so that we kind of have
41 a good idea of what those alternatives are on this EIR and its thing. Would that
42 be an appropriate question for you to do or too much to go into or...

43

44 **ASSOCIATE PLANNER BRADSHAW** – No I just want to make sure I'm
45 understanding the question.

46

1 **VICE CHAIR GIBA** – There are six alternatives to this project.

2
3 **ASSOCIATE PLANNER BRADSHAW** – There are alternatives that are
4 discussed in the EIR and then there also some alternatives suggested as actions
5 that the Planning Commission, and ultimately Council could take, so there is
6 some discussion of alternatives in the Staff Report that are distinct from
7 alternatives in the EIR. I just want to make sure that I'm responding to you with
8 the correct information.

9
10 **VICE CHAIR GIBA** – You know just clarify both of them if you would like very
11 briefly, but I was looking at page 215... adequacy of the range of project
12 alternatives... alternative 1 through 6. In other words you said alternative 1, no
13 project existing zoning and so on. And I ask that for a couple of reasons, as I
14 read through it, sometimes my brain just doesn't really digest it properly, but on
15 the other hand we've also got people here that might like to have better
16 understanding. Now before you address that, I do have one for Mr. Cavanagh
17 real quick if I may. Because in the EIR and you yourself invoked the 60
18 document; the State Route 60 Corridor Study as one reason or consideration
19 why this project should be approved, I went back to the document and on page
20 30 if I may just for the record says, the alternatives received mixed reviews from
21 the community and here are the bullet points... concerns about how new
22 development along corridor would lead to a loss of the existing rural lifestyle,
23 concerns about how residential adjacent to the freeway can impact the health,
24 desire for high and large lot homes, mixed input on whether additional family, a
25 broad desire for more realistic planning that reflects current market conditions,
26 support for utilizing future detention basins, concerns about the negative effects
27 of additional logistics warehouses and concerns about over-saturating the
28 corridor with retail uses. Then it goes on to say the City Staff and the consultant
29 team used the community's comments to refine the land use alternatives and
30 select a preferred alternative. I read that over five times. I couldn't see anything
31 in there that said we wanted a warehouse out in that location nor could I
32 understand how we could come to that conclusion selecting that alternative with
33 that warehouse there, because there were three or four more. So my question to
34 you if would help me please better understand this as this is... I would consider
35 this substantial evidence of the community's involvement in how they feel about
36 what should be out here. How do you draw your conclusions as to why we
37 should put a warehouse out there, especially the size of the warehouse that you
38 are suggesting?

39
40 **SPEAKER CAVANAGH** – Your question is interesting. I didn't write the land use
41 study, so I'm speaking absent their input here, but I would answer that in a
42 couple ways. One is that we looked at this property as an ideal location for the
43 product that we have proposed to build and the reason for that is its proximity to
44 the freeways and the population base that would provide labor and the amenity
45 base that would provide places for people to go eat and experience things
46 outside the workplace. Those are all key ingredients for what makes a good

1 location for building what we build. The other is the market demand and if you
2 looked at the existing zoning for business park that runs along the freeways not
3 only from our property but all the way east out through the Highland Fairview
4 project, that product type has struggled in good times and failed horribly in bad
5 times and so I would just suggest that the General Plan that was originally
6 created, perhaps got it wrong. I don't know the thought process that went into it
7 back into 2006 or prior to that, but it is not where the economy has gone in the
8 Inland Empire and what has driven our market and driven our entire economic
9 base in the Inland Empire has been warehouse distribution and that has been
10 documented and studied ad nauseam and I think we looked at that location and
11 felt it was an ideal location for what we wanted to do and I think that has been
12 proven out by Aldi wanting to be there and Sketchers wanting to be there and it is
13 a similar location going down the 215 corridor. I don't really differentiate the two
14 very much, also I would say I think it's better in some respects because it is right
15 on the freeway and most of the opportunities down the 215 corridor are away
16 from the freeway and that makes those less desirable in that regard. And then
17 the residential, you know that is sort of a decision that you make... does Moreno
18 Valley need more rooftops or does Moreno Valley need more jobs and I think that
19 answer has been proven out pretty clearly at least in my opinion and I have
20 heard that over and over again and you know the other piece of this that probably
21 doesn't get said but I'll say it is that most of the comments that get made at these
22 forums and the land use study and those opportunities for the public to come
23 forward, the people that come and state their opinion are usually the people that
24 have strong feelings against what is going on. The people that are supportive
25 usually are at home on their couch and that's just a fact of life and I don't know
26 what you'd do about that, but it is what it is and people experience that every
27 time you get together. It is very rare that I sit here and hear anybody come up
28 and say what a great job you are doing, so I mean that's just the life or the
29 experience that you have and we have when we are proposing something. I
30 don't know if that answers your question, but I think that... I'm trying to be Rami
31 and Associates in their absence.

32
33 **VICE CHAIR GIBA** – Thank you very much

34
35 **CHAIR VAN NATTA** – Unless we have any other questions let's go into our
36 Commissioner discussion. Thank you very much. Okay who would like to talk
37 about their conclusions first? Who wants to go first? Well I usually go last but I
38 can go first. I don't have a problem with that. My outlook on all of these things
39 when they come up is a little bit different than the experiences than the rest of the
40 Commission. I have a tendency to be very practical. Since I'm not an
41 Engineer... how many of them are up here... I don't always expect everything to
42 come out with all the perfect answers and with everything being exactly right. I
43 look at things in terms of alternatives and so we're looking here at highest and
44 best use perhaps of the land and highest and best use for the community and I'm
45 thinking really what we have is we have three options. We can either say leave
46 the land vacant, don't do anything with it, you know let's protect the little birds

1 and other creatures that are on the land and not disturb their habitat and you
2 know let's just go back and plant some more trees on it, which really isn't going
3 to help the community very much. We could look at what would happen if we just
4 developed it the way that it is already zoned to be developed; business park,
5 offices, some more residential and so forth and has been very correctly brought
6 up right now we don't need more rooftops. We need jobs. We need the
7 infrastructure that would be paid for by development that would increase the tax
8 base, put money in for schools, for Fire Department, for the TUMF fees, improve
9 the traffic flow by putting traffic lights and additional off-ramps and this sort of
10 thing and so that's what I'm looking at this in terms of it may not be a perfect
11 project. I don't think we'll ever see a perfect project, but I don't think there is any
12 demand in today's economy for Business Park, offices and so forth. We're
13 already seeing retail that is closing down. We lost the Best Buy a couple of years
14 ago. We are now losing the Office Max out there in that area because people
15 are not going to stores to buy things. They are going online. They're buying
16 things and what is needed in order to support that kind of an economy is
17 someplace to store, warehouse and distribute those items for people that are
18 buying them and so I see this type of a project as being something that is coming
19 along with our digital age, our information age and so forth as being something
20 that is meeting a need. If there was a need for what was originally zoned for that
21 area then we would probably have applicants saying you know we want to build a
22 business park. We want to build some offices there. We want to build more
23 houses. We don't have applicants for those things because there is not a
24 demand for them and so with the demand comes the need for them, with the
25 need comes the development and it's kind of where the money flows and so I'm
26 looking at this and thinking there is a lot that this project brings to the community.
27 There are some challenges of course and yes it is going to increase traffic, but
28 anything you put there is going to increase traffic. The original project as was
29 mentioned; the original zoning that was there, if it was built out that way it would
30 be even more traffic than what this particular project is, so I think it is an
31 attractive project. I think it fits well where it is. It is close to the freeway. It will
32 bring good things to Moreno Valley including jobs and even though there may be
33 some challenges to it, I think that the benefits outweigh the challenges and those
34 are my comments.

35
36 **COMMISSIONER SIMS** – I think the... a lot of this going through right now is
37 you... the warehouses on the east end is a big decision. The project end itself
38 seems to be a good project. I do have concerns. We're coming out of a steep
39 economic recession and the current thought is we don't need new rooftops and
40 maybe so. But I look at the commercial development that we have, especially as
41 we move out into the east end. I sometimes ponder with what would help
42 support Moreno Valley commercial. You know there is a lot of businesses that
43 have gone out of business. We have indoor swap meets and 99 cent stores and
44 different things and is that a function of the demographics of the City or is it a
45 function that we've been in a series of... we don't have the rooftops and we don't
46 have the population to support more restaurants, to support more service

1 oriented. We're losing businesses in Stonegate. The Best Buy moved out. The
2 Office Depot is closing. I happened to be in Office Depot the other day and it is
3 not because of the lack of business, it is because it is a tenant landlord
4 relationship that they are intending to change the occupancy because that space
5 is directly adjacent to a Best Buy or the former Best Buy. So what I worry about
6 is when we commit to such a large area within the City towards a warehouse;
7 warehousing, that's cast in stone. The City will seal its fate that that is what it is
8 going to be and you know I'm not an Economist. I don't understand long term
9 what that means, but there is a lot of change. The General Plan; a
10 comprehensive General Plan Amendment coming out of the recession and not
11 doing overlays and piecemeal fashion seems a more appropriate approach and
12 as far as the traffic study goes, you know I appreciate the comments made and
13 I'm not a Traffic Engineer per say. I did take a little bit of it in College and so
14 forth, but at the end of the day I just think the City; the leadership in the City has
15 come out in support of the World Logistics Center. It's a no commodity. The Aldi
16 project has gone through. Now the Prologis is here in front of us today. We
17 have 3,000 acres sitting just directly to the east and we don't have a cumulative
18 traffic impact analysis and it just seems inappropriate; it would seem appropriate
19 for transparency for the City at large to understand what the overall traffic impact
20 is and I think the City could fund and would do it quickly based on take the
21 cumulative work from the EIR for the World Logistics and the Prologis and do a
22 comprehensive look at that and perhaps even do a comprehensive General Plan
23 Amendment taking into account that we're moving out of a recession. So
24 anyhow, this is kind of a big decision tonight, so I would encourage just some
25 more comprehensive looks. We're coming out of something that was bad. The
26 economy is moving better in pockets. Is this the pocket... is this the hotbed of
27 what Moreno Valley will forever be is warehouse?
28

29 **COMMISSIONER LOWELL** – I echo Mr. Sims comments also. I echo Ms. Van
30 Natta's comments. My concerns are as a personal note, I like to evaluate
31 projects not only on their legality, meeting zoning and General Plan and what not.
32 I also like to look at the project on its entirety; if it's a good project in the right
33 location. I personally really like this project. I think the layout of the buildings; I
34 think the tenant; I think the property owner is a fantastic project. I do believe it is
35 in the wrong location. I believe it is too close to the residential developments. I
36 believe that the people that moved into the east end of the City did not anticipate
37 large warehouses coming in. I would approve this project if it were farther away
38 but I'm very hesitant to establish this large complex. It will add a book end to
39 that end of our City that will essentially allow the way for more and more
40 warehouses between this project and the World Logistics Center. I personally
41 think that we need to evaluate the grand scheme of things of basically reevaluate
42 our General Plan and see what the future of the City should hold and not amend
43 the General Plan tonight.
44

45 **CHAIR VAN NATTA** – Who would like to comment next?
46

1 **VICE CHAIR GIBA** – Well everything that everybody said is very relevant. It's
2 very important. I'm one of those that believes that we should have the proper
3 project in the proper place. It's always been my feelings. When we did the study
4 on the 60 Corridor, I was probably the most vocal about the fact that we didn't get
5 enough weigh in from the entire community as to how that area of our community
6 should be built up at all. I think there is a lot that the other people had spoken in
7 the previous meeting that we had and what Mr. Sims and Mr. Lowell said as well
8 as what Meli has said that all these things are very difficult to take into
9 consideration. This is a very nice project. It really is. When I looked at all the
10 plans and all the layouts, Prologis knows what they're doing. They build a very
11 nice facility. If they had built just Building 1 and just Building 2 with Eucalyptus
12 coming down underneath and not Buildings 3, 4, 5 and 6 going down into the
13 residential area it probably would be much more appealing considering we
14 already have Aldi's and Sketchers all along that 60 freeway corridor, but it's a
15 very large area covering dropping down into the residential neighborhood. The
16 traffic studies; absolutely correct Meli. If we put in the other types of facilities,
17 apartments, restaurants and whatever the original plan would have specified, we
18 may have more traffic. Yes, Prologis is putting a lot of money into upgrades and
19 repairs of our area, but I think what we need to start doing in this City is we need
20 to start getting a better vision for who we are and what we are. Sometimes we
21 take the easy way out. I'll give you an analogy. When I was a recruiter in the
22 Navy, Cat 4's were easy to come by. Those are the guys that were very low on
23 the scope but they really wanted to go into the Navy, but the Navy didn't need
24 Cat 4's academically, educationally and test score wise, but they were easy to
25 come by so every recruiter had a whole bunch of Cat 4's ready to go into the
26 Navy. The hard part was to go out there and find those Cat 1's and Cat 2's.
27 They were the high scoring people that they could put into the nuclear programs.
28 I think sometimes we're hurting ourselves. We're shooting ourselves in the foot
29 by not going out and searching for the proper projects for the proper locations
30 any more. We're changing this as there have been other comments made. We
31 have been changing. We're no longer the same City we were in 1984 when we
32 first incorporated and we also have a change of Councilmembers and we are a
33 whole different Commission here. Mr. Cavanagh I apologize to you that I was
34 not here in 2007. I don't know why that area was chosen. I don't know why the
35 decisions were made back then. They were difficult decisions to make I'm sure
36 on your part because you guys are builders of wonderful warehouses. I'm not
37 going to dispute that, but I'm having a very, very, very difficult time with this one
38 in that much like Mr. Lowell said a wonderful facility, but possibly in the wrong
39 location and back in 2007 you had a choice of a lot of other locations in the City
40 that you could have built that at and you chose to come to the east side for
41 whatever reasons. So it is a difficult one Mr. Sims; you're right and it is a
42 decision; I think a pivotal moment right now where we have to make a very hard
43 decision as to what we are going to do on that east side and so that's as one
44 individual would say, that's all I've got to say about that.
45

1 **COMMISSIONER BARNES** – I think the comment I'd like to add is that at least in
2 my perspective a decision on this project tonight does not in my mind cast the
3 dye for everything in the east half of Moreno Valley. The quality of the Prologis
4 project I think stands on its own merit and in the location that it's at, given the
5 surroundings and the things that have changed in the economy and the
6 development in that area, it deserves to be analyzed by itself and to lump it
7 together with what may happen in the east end, I think is not necessarily fair to
8 this project and I know that whichever way I vote on this project, does not mean
9 that I will vote the same way on what might come down the pike at some point,
10 so I agree with the Chairperson that I think at this point in time, knowing what we
11 know about the quality of the project and what their proposal is that I think it's a
12 good project and should stand on its own merits and I think that it does and
13 should something else east of it come down the pike, it will be reviewed on its
14 own merits at whatever point in time it comes before us and I don't think we
15 should penalize this project for what that project might be. So I think this is a
16 quality project that deserves consideration.

17
18 **COMMISSIONER RAMIREZ** – Well I think everybody made some valid points.
19 You know the bottom line is does the benefit outweigh the environmental impact
20 and the impact for the entire community. You know there is a lot of economic
21 impacts with this project. We're talking 19 million dollars in fees; 1.5 million
22 dollars a year in tax revenue. You know that is revenue that we can use to
23 support our public safety, our Police Department, you know hire crossing guards
24 and things of that nature. Yeah the project is relatively close to some
25 neighborhoods, but logistically it is located in an ideal spot which is close to the
26 freeway. If we can address the traffic issues such as making a recommendation
27 of that Redlands Boulevard corridor; truck corridor north of the freeway so that
28 can be eliminated, enhancing other truck routes such as Moreno Beach Drive
29 south from Eucalyptus as soon as you're going southbound past those apartment
30 homes. That is a very dangerous area. It is a very dangerous corridor. We're
31 talking about big trucks driving south or maybe even north and at some times
32 pedestrians are fighting for their lives just trying to walk or ride their bikes through
33 there, so I don't know if that is something that we can make as a
34 recommendation to our Capital Improvement Plan or what have you, but I think
35 it's a good project. Seeing no two jobs is very difficult. You know I have a job
36 and I'm sure most of you out there have a job too and coming from a family
37 whose dad used to leave at three in the morning to drive all the way to LA for
38 work and sit two hours in traffic on the way there and two hours in traffic on the
39 way back and didn't have a dad that was really very motivated to support the
40 family emotionally, so any time you can keep residents close to their job and
41 close to home that's a good thing. It means they'll be able to spend more quality
42 time with their families, so I like this project and I'm ready to vote yes for this.

43
44 **COMMISSIONER BAKER** – I guess I'll bring up the rear on this. I've really
45 thought a lot about this last month we've been on this and the deal is here the
46 economics of the whole United States and California has changed a hundred

1 percent. Like Meli was saying it's an ecommerce deal, that's why we have that
2 Amazon; what is that, a million plus square foot warehouse out here, the one
3 over in San Bernardino. People are just not going to the Best Buy's and Circuit
4 City's or even Office Max to buy their products anymore. If they can it online or
5 in the mail, that's what they're doing, so the number one thing we've got here is
6 there's a lot of things here that maybe we look at that aren't a hundred percent
7 where they need to be, but I think overall we've got to look at what's good for the
8 economic base for Moreno Valley and hopefully we can work through some of
9 the mitigation problems on the transportation. I know I'll do all I can to help on
10 that, but I think it's a good project. I've reviewed these people online and other
11 projects they've had. It's a top notch company we're dealing with here, so I'm for
12 it. It's a good project. I think need to move forward with this and like you said, if
13 there is some things we need to do on the transportation; I don't know how we
14 build that into a motion here, but I'd like to see the project move forward, okay.

15
16 **CHAIR VAN NATTA** – I do want to come back with just one little comment here
17 and a little bit of rebuttal. I'm looking at this and I've heard a couple of the
18 Commissioners say oh it's the right project but it's in the wrong place and I'm
19 looking at the map here and I'm seeing that this is bounded on the north by State
20 Route 60, on the west by the Auto Mall, on the east by Aldi and most of the south
21 border is that row of rocky hills that goes through there. It only abuts residential
22 area on the corner and yet it's separated by the Quincy Street Channel there, so
23 I don't really see that it is effecting existing residential all that much in this project.
24 I don't see anything that I would think would make a better fill for that spot than a
25 project of this type. What else are you going to put there? If you put residential
26 there, you're going to have residential in between the Auto Mall and Aldi. I mean
27 that doesn't make any sense to put anything there other than some sort of a
28 commercial development and as I mentioned earlier and as Commissioner Baker
29 acknowledged, this is the wave of the future. It's not turning Moreno Valley into a
30 City of warehouses. It's opening us up to what's happening for now and for the
31 future which is the distribution type centers and so forth and as another
32 Commissioner mentioned also, it does not mean that if we're approving this that
33 we're saying yes to warehousing all over the east side. Each project deserves
34 and each applicant deserves consideration for their project and for what it offers
35 and it needs to be weighed on its own merit. Yes, you have to look at the
36 cumulative effect, but there are other projects that have been proposed that have
37 not even come before us yet and I don't think we can say, oh let's hold off on
38 making a decision on this until we see what this other project is going to do. I
39 don't think that would be fair to the applicant and I don't think that would be fair to
40 the City of Moreno Valley. We can certainly use as Commissioner Ramirez
41 commented, we can certainly use the revenue that it's going to bring to the City
42 to improve things and the jobs that it will bring and I think it's a good project.

43
44 **COMMISSIONER SIMS** – I like to note here. I tend to agree with Commissioner
45 Giba that I'd be more supportive. I think the Prologis is a good project. I
46 checked them out as well and did my research on it and the project end itself is a

1 nice looking project. I tend to agree that part of the project south of what would
2 be Eucalyptus is what disturbs me most about it. I think along the freeway
3 seems reasonable but anyhow... those houses are you know Sand Wedge; the
4 back end of the property is directly adjacent to existing residential homes and
5 more likely than not over time you'll see more warehouse goes up to between
6 Redlands Boulevard and this project all along Eucalyptus, so that whole
7 neighborhood will be impacted. But anyhow needless to say, you know the right
8 place for the right kind of development. There are 1504... I asked City Staff the
9 commercial brokerage provided. There are 1504 acres within the City of Moreno
10 Valley and Perris available that is already zoned for industrial warehouse. You
11 drive along the 215 freeway. There is a bunch of vacant land already there with
12 railroad, freeway. It's all warehouse, so you know is this the right place. We
13 have all the south entry into the City that's warehouse. You have Alessandro
14 and Cactus bound with warehouse and distribution, its proximity to large
15 industrial with the March Air Reserve Base. This just seems kind of moving
16 warehouses into the east end. It's our last entry portal into the City. That's what
17 we're going to be seen as is as people coming out from a nice weekend and nice
18 areas out in the desert, they're going to be coming into warehouses. There is
19 going to be a fly-in Pilot station with Subway at the intersections, so anyhow I
20 know this project stands on its own and it's a nice project. It is a pivotal decision
21 I personally believe as a Commissioner.

22

23 **VICE CHAIR GIBA** – No I never implied that it had anything to do with any other
24 warehousing. My concern was is... as a matter of fact I think I even stated that
25 for you. If this warehouse was Building 1 and Building 2 with Eucalyptus then
26 you have these warehouses along the 60 and that's great, but as Mr. Sims said
27 and I don't know if Mr. Lowell mentioned it as well, it's the extension down into an
28 area that makes it very difficult. It begins to see warehouse tops. That area to
29 me could be better developed for other reasons.

30

31 **CHAIR VAN NATTA** – For example?

32

33 **VICE CHAIR GIBA** – To stay within the same context is what you originally. It
34 might take us awhile Ms. Meli. It might take us a lot of work, but to use some
35 vision as to who you can go out and actually bring to those locations rather than
36 sit around and wait for the only answer we seem to find, which is a warehouse
37 project and we do have good warehouse projects and this is a beautiful
38 warehouse project. There is no argument whatsoever. I never said that it wasn't
39 well done, but there is probably a better location for it and I don't believe the east
40 side is the best location, at least that location originally was some of the plans
41 that were put forward from this document. There were other alternatives for
42 building small light industrial, which what it was originally; mixed use facilities.
43 The vision was given to me John Terrell when I first came on in 2011 and he took
44 me through there. He said this is mixed use and there should be some
45 apartments. There should be some houses there. There should be some light
46 industrial there, restaurants, hotels. That's the kind of vision and that's the kind

1 of thing that will support the east side and its growth and not only that, support
2 that hospital corridor back behind it, so as you come in, you come into
3 warehouses and you still have a hospital corridor that they will build, but not right
4 away, so I too feel that it's probably not the... I honestly say if you just build
5 Buildings 1 and 2, you'd probably have the perfect fit there you know, but that's
6 just my opinion.

7
8 **CHAIR VAN NATTA** – No and discussing this here, but if you only put buildings
9 north of Eucalyptus then what are going to put south of Eucalyptus? You're not
10 going to put other types of properties facing Eucalyptus that are going to be
11 different than what you've put on the north side. I mean you are looking at this
12 here and you're saying okay just complete this area here with those and leave
13 this something else. Well what else would you put other than going on both
14 sides of Eucalyptus with a similar...?

15
16 **VICE CHAIR GIBA** – What's wrong with hotels? What's wrong with restaurants?

17
18 **CHAIR VAN NATTA** – Because there's no hotels or restaurants that want to
19 come out there right now and there are other places that will be available for
20 them.

21
22 **VICE CHAIR GIBA** – If you show them what you can do with it Meli, they can do
23 it, but your premise is usually very different from mine and you say... you know I
24 kinda say if... you say you can't build it they won't come and you've got to have a
25 market for it. If you don't go out and actually go for that market, you take your
26 vision and you go and you try to actually sell what you have. Look I use the
27 recruiter example. I put in over 126 people in this area in five years. I had to go
28 to a lot of kids. I had to talk on a lot of telephones, meet a lot of parents, test and
29 evaluate a lot of people to get those kids into the service. We have to do the
30 same thing with our City. We may have to go out and do a little bit of work.

31
32 **CHAIR VAN NATTA** – But when you are looking at a project of this type. Okay
33 let's say for example you want to have a hotel come in. I don't know of any
34 hotels that come in and build next to an Auto Mall. That's not the kind of area
35 that they would come to. You know if we want to attract the higher end retail and
36 we want to attract the hotels and so forth, we have to have the jobs and other
37 things that are going to attract them to the area and when you are looking at it
38 here, all of this along here along this side, it's all those hills and everything and
39 you've got commercial there, you've got the freeway there, you've got
40 commercial here, so you only have this one corner here that abuts the
41 residential, which may or may not stay residential in the future.

42
43 **VICE CHAIR GIBA** – To the east of that there is still open land that you continue
44 to grow and I go back to their document. I think one person said the State Route
45 60 Study was a good start and within this study they talked about key guidance

1 for future development; pedestrian bicycle connectivity, neighborhood
2 connectivity and all kinds of potential futures right next to that Auto Mall.

3
4 **CHAIR VAN NATTA** – But it wasn't all in this section right here necessarily.
5 There was also some talk...

6
7 **VICE CHAIR GIBA** – Exactly

8
9 **CHAIR VAN NATTA** - ... about the other side north of the 60 and other areas
10 too. I think once you start in this area here, it's like this whole thing goes
11 together. It's all in a square there basically and developing it all together just
12 makes sense because they brought together a comprehensive plan that brings it
13 all together that it does not look... when you look at the pictures of the project;
14 the concepts of the project, it doesn't look like a bunch of big square box
15 warehouses, it looks like a commercial development. There is a mix of sizes. A
16 mix of different layouts of the buildings and so forth. It's not like one big box
17 warehouse after another. It's laid out attractively.

18
19 **VICE CHAIR GIBA** – Good points.

20
21 **CHAIR VAN NATTA** – Thank you.

22
23 **VICE CHAIR GIBA** – We just agree to disagree agreeably

24
25 **CHAIR VAN NATTA** – That's fine. If we all agree, then most this wouldn't be
26 necessary. We could just have one person up here if we were just saying the
27 same thing.

28
29 **VICE CHAIR GIBA** – Thank you Meli.

30
31 **CHAIR VAN NATTA** – Okay, any other comments from... further discussion?

32
33 **COMMISSIONER BAKER** – One thing I would like to add. On these big
34 projects... you know we talk about the streets, but the infrastructure that it's
35 going to provide in that end of town; like I'm talking the water, the sewer and the
36 electric. I don't know how much of that is there, but it has to be a definite
37 improvement that they are going to bring into that area. It is isn't probably there
38 right now. Am I correct there? I mean is that bringing in water, sewer and
39 electric... or electric is probably there, but...

40
41 **COMMISSIONER SIMS** – I live out there towards that area and we have water
42 and sewer at our house.

43
44 **COMMISSIONER BAKER** – I mean up and down Redlands Boulevard?

45
46 **COMMISSIONER SIMS** – Somehow we struggle through... we make it.

1
2 **CHAIR VAN NATTA** – No, we’re talking about Quincy

3
4 **COMMISSIONER BAKER** – I’m talking about...

5
6 **COMMUNITY & ECONOMIC DEVELOPMENT DIRECTOR TERELL** –
7 Commissioner Baker, yes there is sewer and water extended to that general
8 vicinity. This project would... the major infrastructure that this project if it were
9 approved would provide is extending Eucalyptus Avenue from the Auto Mall to
10 the Aldi site, so it would continue that road, so you could go I guess almost from
11 one end of the City to the other on Eucalyptus once that area is developed. And
12 then underneath that road would be the water, sewer and electric lines that would
13 connect a gap. So it exists in that area, they would just be closing that gap. If I
14 had to say what is the major infrastructure this will provide is? It is most likely the
15 road improvements.

16
17 **CHAIR VAN NATTA** – Okay through here all the way through to... giving an
18 alternative to driving on the 60. Also if somebody wanted to get from this side to
19 that side without getting on the freeway, they could.

20
21 **COMMISSIONER SIMS** – I do want to have one last poke at this thing. You know
22 the east end of the area, there are people that have moved out to the east end.
23 Those are larger lots; half acre; you know larger kind of things and does have the
24 potential for making... in fact the development that this... the housing that’s
25 directly that this project now abuts and Meli as you suggest as it goes east that it
26 will logically fill in and then that’s where that Adam Hall Nursery is. That will all
27 become a big box or boxes or something like that. Those are all half acre
28 homes. Those people who moved out there 20 years ago, based on the
29 investment they made and based on the trust of the City for the General Plan to
30 be rural residential out there, now will have big boxes right next to it. There are
31 significant amount of areas within the City where projects like this could coexist in
32 an area that’s not intrusive on residential areas and anyhow, we are going to
33 disagree on this and that’s fine. I get it, but it’s just people make investments.
34 The investor in Stonegate I’m sure when they went and did their thing, they didn’t
35 anticipate a five or six year economic downturn, but rooftops are what support it.
36 Why is the Canyon Springs area so well? There’s obviously problems in Moreno
37 Valley with the commercial when you look at the Moreno Valley Mall. That is a
38 very under-utilized, under-whelming commercial center. Why is that? Why is
39 Stonegate having trouble? Why are things right in the heart of the City get
40 boarded up and they go pretty ratty; our commercial development? I don’t why.
41 I’m not an economist, but I just think there is reason we need... there’s not a bad
42 thing having more residential in a well thought out, well planned residential and
43 we can set our mark and have parks. You know look at the City of Eastvale.
44 That’s one of the most affluent City’s in all of Southern California. It’s not by the
45 coast. It’s pierced by major freeways. It’s probably located... it does very well.
46 There’s like 500 or 600 hundred thousand dollar home is the median price in that

1 thing. They don't have warehouses. They commercial supporting a very higher
2 end, but they planned it that way. There were very conscientious. They set very,
3 very strict limits. They created some community service districts. They have an
4 abundance of parks. The residents pay dearly for that. We could do stuff like
5 that here, but we have to have the vision and we have to go for it and set that.

6
7 **CHAIR VAN NATTA** – I'll give you a reason why we're having problems with our
8 retail and part of it is that people have to drive through Eastvale area to get to
9 jobs. Eastvale is thriving because they are closer to jobs and they are closer to
10 the higher paying jobs, so when people have to drive as you were mentioning,
11 your father. When people have to drive an hour or two to get to work, they quite
12 often stop and do their shopping where it is that they are working. If we bring
13 more jobs here, we will also by bringing the jobs, enhance the retail and enhance
14 the shopping and everything else like that. House tops don't work if you don't
15 work if you don't have jobs for the people who live in them. Okay, well we're
16 definitely split on this. It will be interesting to see how it goes, but we will need a
17 motion before we can take a vote on it.

18
19 **COMMISSIONER LOWELL** – I have one quick question of Staff. Last time this
20 came before us there were options that we had to vote on yes or no. I don't see
21 that in here. One of the recommendations is just to approve everything blanketly.
22 Do we have the option of voting option A, B or C like we did last time?

23
24 **ASSOCIATE PLANNER BRADSHAW** – Those alternatives are in the March 13th
25 Staff Report and they are still available there for reference.

26
27 **COMMISSIONER LOWELL** – I don't have that in front of me unfortunately.

28
29 **ASSOCIATE PLANNER BRADSHAW** – We can provide a copy to you. We still
30 have them for reference here. The recommendation in that same March report is
31 the same recommendation we carried into tonight's report. We didn't try and
32 provide all those alternatives in formal recommendation language, but we do
33 have the alternatives for reference. The first was to approve the project as it's
34 proposed, but to condition two of the warehouse buildings to not be built for the
35 first 18 months of approval. That was one of the options. Alternative two of
36 those suggested was to deny the General Plan Amendment and Zone Change
37 for the two sites; Buildings 1 and 2 which are the two sites located immediately
38 adjacent to the Auto Mall, but approve the proposed land use changes for the
39 remainder of the project site. This would prevent warehouse facilities from
40 developing along those two sites immediately adjacent to the Auto Mall and the
41 third alternative was to deny the land use changes and through that denial, deny
42 the project as presented to you this evening.

43
44 **COMMISSIONER LOWELL** – But there is no option to deny the General Plan
45 Amendment but approve the balance of the project as it stands?
46

1 **ASSOCIATE PLANNER BRADSHAW** – The project as proposed... we didn't
2 suggest that alternative.

3
4 **COMMUNITY & ECONOMIC DEVELOPMENT DIRECTOR TERELL** – Yeah can
5 you clarify... the General Plan Amendment affects most of the property, so are
6 you saying approve part of the General Plan Amendment and not another part?

7
8 **COMMISSIONER LOWELL** – I don't have last month's information in front of me,
9 so there was a map on there that showed where the zoning would change and
10 I'm not familiar with exactly how those zones lay out because I don't have that
11 map in front of me today.

12
13 **COMMUNITY & ECONOMIC DEVELOPMENT DIRECTOR TERELL** – The quick
14 answer is if you wanted to only approve part of the project, for example the part
15 north of Eucalyptus. The project would...we'd need to take that back and revise
16 the exhibits, because the General Plan Amendment didn't match up exactly to
17 Eucalyptus Avenue. So if a majority of the Commission wanted to pursue what I
18 call an alternative to the project as proposed, we would need to revise that and
19 bring that back to you.

20
21 **VICE CHAIR GIBA** – How do we do that John? I mean is there some kind of a
22 motion you'd make for saying can we look at another alternative for this project?

23
24 **CHAIR VAN NATTA** – I don't think we should.

25
26 **CITY ATTORNEY CURLEY** – If I might... what is before you is the applicant's
27 request that is for you to recommend to the Council. You know you are not
28 deciding it. Under the statute, you have the duty as the Planning Advisory Body
29 to give the Council the decision maker, your thoughts on it, so you could go
30 through the one through seven and certify the EIR, but if it was your pleasure to
31 augment the statement of overriding considerations that would be a
32 recommendation. I'm just dropping down here. Number four, General Plan
33 Amendment. A recommendation would be to approve part of it; you know lot one
34 and two or however you want to designate it and not the rest and go on... Zone
35 Change, we recommend you approve part or not. The Council will get that. They
36 will consider your advice. They have the privilege to say thank you, we're going
37 to do just that. Thank you but we're not going to listen to you at all. Thank you
38 somewhere in between.

39
40 **CHAIR VAN NATTA** – That's happened before

41
42 **CITY ATTORNEY CURLEY** – So they will take your advice as their land use
43 advisors, but you're not the bottom line, so in each one of these, depending on
44 how creative you want to be on your recommendation, but you could give Staff
45 here the narrative; you know, approve lot one and two or this or that. That's what
46 would get written up in the recommendation for the Council's consideration.

1
2 **CHAIR VAN NATTA** – I think what we have here is a proposal that has been
3 brought after much work between Staff and the applicant and after much delay of
4 time and everything like that. We have a project that’s their vision of what they
5 would like to do with the property and I think we should make a decision whether
6 we’re going to say yes go ahead to the City Council and this is our
7 recommendation or whether we’re going to say no we don’t like it and let them
8 make their decision on that. But I think as it stands, is how we should vote on it
9 because all we’re doing is making a recommendation.

10
11 **COMMISSIONER LOWELL** – I agree. I think we’ve been leading them on a little
12 too long so we need to make a decision, yes or no.

13
14 **VICE CHAIR GIBA** – I agree and I think I’ve already made my recommendations.

15
16 **COMMISSIONER LOWELL** – When we vote on this are we going to vote on
17 items one through seven blanketly or are we going to vote on item 1 by itself, 2
18 by itself, 3 by itself and so on.

19
20 **CHAIR VAN NATTA** – No, let’s just read the whole thing; the recommendation,
21 approve, read the whole seven and then we’ll yeah or nay.

22
23 **COMMISSIONER LOWELL** – I understand.

24
25 **CHAIR VAN NATTA** – Commissioner Baker would you make the motion.

26
27 **COMMISSIONER BAKER** - Okay I move that we **APPROVE** Resolution No’s.
28 2014-09 and 2014-10 and thereby **RECOMMEND** that the City Council take the
29 following actions:

- 30
31 1. **CERTIFY** that the Environmental Impact Report (EIR) for the Prologis
32 Eucalyptus Industrial Park Project (Attachments 5 and 6) has been
33 completed in compliance the California Environmental Quality Act;
34
35 2. **ADOPT** the Findings and Statement of Overriding Considerations
36 regarding the Final EIR for the Prologis Eucalyptus Industrial Park Project
37 attached hereto as Exhibit A to Attachment 2;
38
39 3. **APPROVE** the Mitigation Monitoring Program for the Final EIR for the
40 proposed Prologis Eucalyptus Industrial Park Project attached hereto as
41 Exhibit B to Attachment 2;
42
43 4. **APPROVE** General Plan Amendment application PA07-0082 as shown for
44 Exhibit A to Attachment 3;
45

- 1 **5. APPROVE** Zone Change application PA07-0081 as shown on Exhibit B to
2 Attachment 3;
3
4 **6. APPROVE** Master Plot Plan PA07-0083 and related Plot Plans PA07-
5 0158 through PA07-0162, subject to the attached conditions of approval
6 included as Exhibit C to Attachment 3;
7
8 **7. APPROVE** Tentative Parcel Map 35679 (PA07-0084), subject to the
9 attachment conditions of approval included as Exhibit D to Attachment 3.

10
11 **CITY ATTORNEY CURLEY** – And if I might add, does that include the
12 augmented conditions that were on your dais this evening? I assume it did, but
13 so the record is complete. You have two colored sheets, a purple and a blue
14 one. I think your intent was to include that. It was part of the second? Alright
15 disregard me. Never mind.

16
17 **COMMISSIONER BARNES** – Second

18
19 **CHAIR VAN NATTA** – Okay we have a motion and a second. We will go to a
20 roll call vote please.

21
22 **COMMISSIONER SIMS** – No

23
24 **COMMISSIONER LOWELL** – With all due respect I vote no

25
26 **COMMISSIONER BAKER** – Yes

27
28 **COMMISSIONER BARNES** – Yes

29
30 **COMMISSIONER RAMIREZ** – Yes

31
32 **VICE CHAIR GIBA** – No

33
34 **CHAIR VAN NATTA** – Yes

35
36 **CHAIR VAN NATTA** – Okay so we have 4 yesses and 3 no's and the motion
37 passes. And could somebody do something about the air conditioning.

38
39 **COMMISSIONER LOWELL** – I agree

40
41 **COMMISSIONER BARNES** - I'll second that

42
43 **INTERIM PLANNING OFFICIAL ORMSBY** – We will try to take care of that.

44
45 **CHAIR VAN NATTA** – And Staff...
46

1 **INTERIM PLANNING OFFICIAL ORMSBY** - Just a wrap up for this item, the
2 Planning Commission recommendation will be referred to the City Council for
3 final action.

4
5 **CHAIR VAN NATTA** – And I’m doing nothing until somebody turns the air
6 conditioner back up a little. Yeah 5 minutes.

7
8 (RECESS)
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**Facts, Findings and Statement of Overriding Considerations
Regarding the Environmental Effects and the Approval of the
ProLogis Eucalyptus Industrial Park
(State Clearinghouse No. 2008021002)**

I. INTRODUCTION

The City Council of the City of Moreno Valley (this “Council”), in certifying the EIR for the Prologis Eucalyptus Industrial Park and approving Tentative Parcel Map 35679 and a Site Plan authorizing the construction of up to approximately 2,244,638 square feet of distribution warehouse space (the “Project”), makes the Findings described below and adopts the Statement of Overriding Considerations presented at the end of the Findings. The Environmental Impact Report (“EIR”) was prepared by the City of Moreno Valley (“City”) acting as lead agency pursuant to the California Environmental Quality Act (“CEQA”). Hereafter, unless specifically identified, the Notice of Preparation (“NOP”), Notice of Availability & Completion (“NOA/NOC”), Draft EIR (“DEIR”), Technical Studies, Final EIR containing Responses to Comments and textual revisions to the Draft EIR (“FEIR”), and the Mitigation Monitoring and Reporting Program (“MMRP”) will be referred to collectively herein as the “EIR.” These Findings are based on the entire record before this Council, including the EIR. This Council adopts the facts and analyses in the EIR, which are summarized below for convenience. The omission of some detail or aspect of the EIR does not mean that it has been rejected by this Council.

II. PROJECT SUMMARY

A. PROJECT DESCRIPTION

1. Site Location

The Project is located in the eastern portion of the City of Moreno Valley. The Project site consists of ten parcels totaling approximately 122.8 net acres located south of and adjacent to SR-60, east of Moreno Valley Auto Mall, and adjacent to and west of the Quincy Channel.

The Project site is vacant and supports mainly weedy vegetation. The major road that provides access to the Project site is Eucalyptus Avenue. Land adjacent to the Project site includes vacant land east and south of the proposed Project site, SR-60 to the north, and the Moreno Valley Auto Mall and the City

of Moreno Valley Fire Station No. 58 northwest of the Project site. Existing single-family residential uses are located approximately 50 feet southeast of the southeastern corner of the Project site.

2. Project Description

The Project site is approximately 122.8 acres in size. The proposed Project includes the construction and operation of a warehouse facility comprising six buildings consisting of a total of approximately 2,244,638 square feet. The Project site is divided into northern and southern areas. The northern area, north of the future Eucalyptus Avenue, would contain approximately 1,030,377 square feet of warehouse uses divided between two buildings (No. 1 and 2). Development in the southern area, south of the future Eucalyptus Avenue, would consist of approximately 1,214,261 square feet of warehouse uses divided among four separate buildings (No. 3 through 6). The master and individual building plans, including grading, landscaping, elevations, and selected line of sight plans. The proposed Project includes the construction of asphalt/concrete surfaces in parking and driving areas, and landscaping along the perimeter and roadway frontages.

The Project site is currently designated Residential in the City's General Plan. The site is zoned as Business Park (BP), Business Park/Mixed Use (BPX), Residential 15 District (R15), Residential 5 District (R5), and Residential Agriculture 2 (RA-2). The zoning is not consistent with the existing General Plan land use and the Project is not consistent with the General Plan and zoning. Therefore the Project will require a General Plan Amendment which would change the designation to Business Park and a Zone Change that would change the zoning of the site to Light Industrial (LI).

3. Actions Covered by the EIR

The EIR will support the following discretionary and non-discretionary approvals:

- General Plan Amendment to amend the Land Use Element resulting in a change of land use designations for the southern portion of the project site (approximately 71.3 acres) from Residential 15, Residential 5, and Residential Agriculture to Business Park.
- General Plan Amendment to amend the Circulation Element including (1) elimination of undeveloped Quincy Street from Eucalyptus Avenue to Encilia Avenue; and (2) realignment of Encilia Avenue from its current alignment such that its westerly terminus is located at Moreno Beach Drive instead of the current General

Plan westerly terminus at Eucalyptus Avenue. The segment between Quincy Channel and Moreno Beach Drive would be classified as a Collector.

- Change of Zone resulting in a change from Business Park (BP), Business Park Mixed-Use (BPX), Residential 15 (R15), Residential 5 (R5), and Residential Agriculture (RA-2) to Light Industrial (LI) on the project site.
- Modification of the Primary Animal Keeping Overlay (PAKO) zone district per the recommended change of zone.
- Modification of the Master Plan of Trails to eliminate trail segment along the west side of the Quincy Channel north of the future Eucalyptus Avenue and add a segment along the north side of Eucalyptus Avenue from the Quincy Channel to the west boundary of the project site.
- Approval of a Master Plot Plan and five related Plot Plans.
- Tentative Parcel Map approval.
- Certification of the Environmental Impact Report.
- Final Parcel Map, public improvement agreement, and related securities approval.
- Issuance of an encroachment permit for any construction work done in any City-controlled ROW. Encroachment permit issuance requires approval of improvement plans, public improvement agreement execution with securities posted, and satisfying those conditions of approval required prior to grading.
- Approval of a Storm Water Pollution Prevention Plan (SWPPP) to accommodate site runoff during construction.
- Approval of a Preliminary Water Quality Management Plan (P-WQMP) and Final Water Quality Management Plan (F-WQMP) to mitigate for post-construction runoff flows (non-discretionary).
- Issuance of a Grading Permit that requires approval of a grading plan, approval of the final drainage study, approval of the F-WQMP, obtaining an Notice of Intent and Water Discharge Identification Number, obtaining a WQMP#, and satisfying those conditions of approval required prior to grading (non-discretionary).

- Issuance of a Building permit. The comprehensive building permit includes building, plumbing, mechanical, and electrical permits (non-discretionary).

Approvals and permits required by other agencies include:

- Approval from the City and Riverside County Flood Control and Water Conservation District (RCFCWCD) to ensure that construction site drainage velocities are equal to or less than the pre-construction conditions and downstream water quality is not worsened
- Approval of Quincy Channel improvements from the RCFCWCD
- A Section 404 Permit from the U.S. Army Corps of Engineers (USACE)
- A Section 401 Water Quality Certification from the Regional Water Quality Control Board (RWQCB)
- A Section 1602 Streambed Alteration Agreement from the California Department of Fish and Wildlife (CDFW)
- Encroachment permits from Caltrans for any construction work done in any State-controlled right of way(i.e., SR-60)

B. PROJECT OBJECTIVES

The Project Objectives include the following:

- Provide industrial warehouse facilities that meet the substantial and unmet demands of businesses located in the City and County;
- Provide new industrial development that is attractive and minimizes conflicts with the surrounding existing uses;
- Provide a variety of new employment opportunities for the citizens of Moreno Valley and surrounding communities;
- Encourage warehouse distribution services that take advantage of the area's close proximity to various freeways and transportation corridors;
- Encourage new development consistent with the capacity and municipal service capabilities;

- Provide infrastructure improvements to meet phased Project needs in an efficient and cost-effective manner;
- Cluster industrial warehouse uses near access points to the state highway system to reduce traffic congestion on surface streets and to reduce air pollutant emissions from vehicle sources;
- Develop land uses that provide the City with a positive revenue/cost ratio and provide needed infrastructure in a timely fashion;
- Address community circulation, both vehicular and pedestrian, utilizing available capacity within the existing circulation system, and provide fair share improvements to various future-year deficient intersection or road segments; and
- Reduce peak hour vehicle trips, energy and water consumption compared to existing General Plan land uses.

III. ENVIRONMENTAL REVIEW AND PUBLIC PARTICIPATION

The City has conducted an extensive review of this Project which included the DEIR, FEIR and supporting technical studies, along with a public review and comment period first during the circulation of the Notice of Preparation/Initial Study and then through the circulation of the DEIR. The following is a summary of the environmental review of this Project:

- On February 4, 2008, the City circulated a Notice of Preparation (“NOP”) and the Initial Study that identified the environmental issues that the City anticipated would be analyzed in the Project’s DEIR to the State Clearinghouse, responsible agencies, and other interested parties.
- On February 13, 2008, the City conducted a public scoping meeting to allow members of the public to provide comments and input regarding the scope and content of the DEIR.
- The NOP public review period ran for 30 days, from February 4 to March 4, 2008. Written comments on the NOP were received from 22 different agencies, organizations, and individuals. The scope of the issues identified in the comments expressing concern included potential impacts associated with:

- Change in use from established General Plan and zoning designations. This issue was discussed in Section 4.1, Aesthetics, and Section 4.8, Land Use, of the DEIR;
 - Short-term and long-term air pollutant emissions including dust and diesel particulates from truck exhaust that could negatively affect nearby residential uses. This issue was discussed in Section 4.3, Air Quality, of the DEIR;
 - Short-term and long-term noise impacts that could affect nearby residential uses. These issues were discussed in Section 4.9, Noise, of the DEIR;
 - Potential impacts to future planned school sites were addressed in Section 4.8, Land Use, of the DEIR;
 - Potential water-related impacts (drainage, water quality of runoff from the project) were addressed in Section 4.7, Hydrology and Water Quality, in the DEIR;
 - Project truck traffic causing congestion on local roads, intersections, and freeway ramps, primarily on Redlands Boulevard, and impacts to vehicular, bicycle, and pedestrian safety. These issues were discussed in Section 4.11, Transportation, of the DEIR;
 - Impacts to aesthetics from loss of views, loss of neighborhood character, and increased night lighting as this area transitions from previously planned residential and business park uses to industrial uses along the south side of SR-60. These issues were discussed in Section 4.1, Aesthetics, and 4.8, Land Use, of the DEIR; and
 - Potential loss of biological or cultural (archaeological) resources by grading and development of the site, and suggestions to consult with local Native American tribes per SB 18. These issues were discussed in Section 4.4, Biological Resources, and 4.5, Cultural Resources, of the DEIR.
- Based on the Initial Study, included in the DEIR in Appendix A, and comments received pursuant to the NOP, it was determined that some issues need not be addressed in depth in the DEIR because previous studies of other analyses provided sufficient information,

analysis, and mitigation to conclude that there was little or no potential for significant impacts. These environmental topics included: (1) Geology and Soils; (2) Mineral Resources; (3) Public Services; (4) Recreation; and, (5) Forest Resources.

- As required by the California Environmental Quality Act (CEQA) Guidelines Section 15087, a Notice of Completion (NOC) of the Draft EIR State Clearinghouse No. 2008021002 for the Eucalyptus Industrial Park project was filed with the State Clearinghouse on July 17, 2012, and the Notice of Availability (NOA) of the Draft EIR was filed with the Riverside County Clerk on July 18, 2012.
- The Draft EIR was circulated for public review for a period of 48 days, from July 18, 2012 to September 4, 2012. Copies of the Draft EIR were distributed to all Responsible Agencies and to the State Clearinghouse in addition to various public agencies, citizen groups, and interested individuals. Copies of the Draft EIR were also made available for public review at the City Planning Department, at one area library, and on the internet. A total of thirteen (13) comment letters were received on the DEIR. Ten of the comment letters received were from Federal, State, regional, or local agencies. Three comment letters were received from private organizations or conservation groups – no letters were received from individuals. The City prepared specific responses to all comments. The responses to comments are included in Section 2.0 of the FEIR.
- On (date) in accordance with *Public Resources Code* Section 21092.5, the City provided written responses to public agencies that commented on the DEIR.
- On (date), Notice of the City Council hearing to consider the Project was provided in the following newspaper(s) of general and/or regional circulation: Press Enterprise.
- On (date), this Council held a public hearing to consider the Project and staff recommendations. The City, after considering written comments and oral testimony on the EIR, determined that no new information was presented that would require recirculation of the EIR. Following public testimony, submission of additional written comments, and staff recommendations, this Council certified the EIR, adopted these Facts, Findings and the Statement of Overriding Considerations, and the further recommendations in the Staff Report, and approved the Project (collectively the “Approvals”).

IV. INDEPENDENT JUDGMENT FINDING

The Applicant retained the independent consulting firm of LSA Associates, Inc. (“LSA”) to prepare the EIR for the Project. LSA has prepared the EIR under the supervision, direction and review of the City with the assistance of an independent peer review (Willdan Engineering). The City of Moreno Valley is the Lead Agency for the preparation of the EIR, as defined by CEQA CPRC Section 21067 as amended. The City Council has received and reviewed the EIR prior to certifying the EIR and prior to making any decision to approve or disapprove the Project.

Finding: The EIR for the Project reflects the City’s independent judgment. The City has exercised independent judgment in accordance with *Public Resources Code* Section 21082.1(c) (3) in directing the consultant in the preparation of the EIR, as well as reviewing, analyzing, and revising material prepared by the consultant.

A. GENERAL FINDING ON MITIGATION MEASURES

In preparing the Approvals for this Project, City staff incorporated the mitigation measures recommended in the EIR as applicable to the Project. In the event that the Approvals do not use the exact wording of the mitigation measures recommended in the EIR, in each such instance, the adopted Approvals are intended to be identical or substantially similar to the recommended mitigation measure. Any minor revisions were made for the purpose of improving clarity or to better define the intended purpose.

Finding: Unless specifically stated to the contrary in these findings, it is this Council’s intent to adopt all mitigation measures recommended by the EIR which are applicable to the Project. If a measure has, through error, been omitted from the Approvals or from these Findings, and that measure is not specifically reflected in these Findings, that measure shall be deemed to be adopted pursuant to this paragraph. In addition, unless specifically stated to the contrary in these Findings, all Approvals repeating or rewording mitigation measures recommended in the EIR are intended to be substantially similar to the mitigation measures recommended in the EIR and are found to be equally effective in avoiding or lessening the identified environmental impact. In each instance, the Approvals contain the final wording for the mitigation measures.

V. ENVIRONMENTAL IMPACTS AND FINDINGS

City staff reports, the EIR, written and oral testimony at public meetings or hearings, these facts, findings, and statement of overriding considerations, and other information in the administrative record, serve as the basis for the City's environmental determination.

The detailed analysis of potentially significant environmental impacts and proposed mitigation measures for the Project is presented in Section 4.0 of the DEIR and Section 3.0 of the FEIR. Responses to comments on the DEIR, along with copies of the comments, are provided in Chapter 2.0 of the FEIR.

The EIR evaluated thirteen major environmental categories for potential impacts including Aesthetics, Agricultural Resources, Air Quality, Biological Resources, Cultural Resources, Hazards and Hazardous Materials, Hydrology and Water Quality, Land Use, Noise, Population and Housing, Transportation, Utilities and Service Systems, and Greenhouse Gases and Global Climate Change. Both Project-specific and cumulative impacts were evaluated. Of these thirteen major environmental categories, this Council concurs with the conclusions in the EIR that the issues and sub issues discussed in Sections V.A and V. B below either are less-than-significant without mitigation or can be mitigated below a level of significance. For the remaining potential environmental impacts that cannot feasibly be mitigated below a level of significance discussed in Section V.C, overriding considerations exist which make these potential impacts acceptable to this Council.

A. LESS-THAN-SIGNIFICANT ENVIRONMENTAL IMPACTS NOT REQUIRING MITIGATION

The Moreno Valley City Council hereby finds that the following potential environmental impacts of the Project are less-than-significant and therefore do not require the imposition of mitigation measures.

1. Aesthetics

a. Light and Glare

Potential Significant Impact: Whether the Project would create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

Findings: Potential impacts of the Project related to light and glare are discussed in detail in Section 4.1 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will

not result in significant impacts related to light and glare with the adherence to established City ordinances and development guidelines, therefore, no mitigation is required.

Facts in Support of the Findings: Section 4.1 identifies no sources of light or glare on the Project site. Development of the Project site would introduce new sources of light and glare into the area in the form of street lighting, parking lot lighting, and security lighting for the buildings. Lighting within loading areas (areas within the public view include the loading areas of Buildings 1, 2, and 3) will be directed downward so as to not Project lighting into the sky. The overall increase in ambient light in the area is expected to be incremental with compliance with the City’s development standards for lighting. The proposed Project will incrementally increase the amount of daytime glare in the Project area from introducing windows and metal fixtures into the area. All development in the City, which includes light generated from warehouse buildings and parking lots, is required to adhere to lighting requirements contained in the City’s Municipal Code. The Project is consistent with General Plan policies and Municipal Code requirements regarding light and glare, therefore, no impacts associated with this issue would occur and no mitigation is required (DEIR, pgs. 4.1-8 to 4.1-9).

b. Light and Glare

Potential Significant Impact: Whether the Project would create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

Findings: Potential impacts of the Project related to light and glare are discussed in detail in Section 4.1 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to light and glare with the adherence to established City ordinances and development guidelines, therefore, no mitigation is required.

Facts in Support of the Findings: Section 4.1 identifies no sources of light or glare on the Project site. Development of the Project site would introduce new sources of light and glare into the area in the form of street lighting, parking lot lighting, and security lighting for the buildings. Lighting within loading areas (areas within the public view include the loading areas of Buildings 1, 2, and 3) will be directed downward so as to not Project lighting into the sky. The overall increase in ambient light in the area is expected to be incremental with compliance with the City’s development standards for lighting. The proposed Project will incrementally increase the amount of daytime glare in the Project area from introducing windows and metal fixtures into the area. All development in the City, which includes light generated from warehouse buildings and parking lots, is required to adhere to lighting requirements contained in the City’s Municipal Code. The Project is consistent with General Plan policies and

Municipal Code requirements regarding light and glare, therefore, no impacts associated with this issue would occur and no mitigation is required (DEIR, pgs. 4.1-8 to 4.1-9).

2. Air Quality

a. Construction-Chronic Health Risk Impacts

Potential Significant Impact: Whether the Project would expose sensitive receptors to substantial pollutant concentrations.

For Maximum Individual Cancer Risk (MICR), the applicable thresholds are:

- An increased cancer risk greater than 10 in 1 million (1.0×10^{-5}) at any receptor location; or
- A cancer burden greater than 0.5.

For non-cancer chronic Hazard Index (HI); the applicable threshold is:

- A cumulative increase for any target organ system exceeding 1.0 at any receptor location.

Findings: Potential impacts of the Project related to construction-chronic health risks are discussed in detail in Section 4.3 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to sensitive receptor health risks and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.3 of the DEIR, the only toxic air pollution emissions in any significant quantity associated with the construction of the Project occur from diesel-powered equipment exhaust. A screening health risk assessment was performed according to the published Office of Environmental Health Hazard Assessment (OEHHA) health risk techniques.¹ According to the health risk assessment, the cancer risk due to construction of the Project is less than the threshold of 10 in 1 million. Therefore, health risks would be less than significant and no mitigation is required. (DEIR, pgs. 4.3-13 to 4.3-14)

b. Operational-Acute Health Risk Emission Impacts

Potential Significant Impact: Whether the Project would expose sensitive receptors to substantial pollutant concentrations.

For MICR, the applicable thresholds are:

¹ OEHHA, *Air Toxics Hot Spots Program Risk Assessment Guidelines*, August 2003, Appendix D, *Risk Assessment Procedures to Evaluate Particulate Emissions from Diesel-Fueled Vehicles*.

- An increased cancer risk greater than 10 in 1 million (1.0×10^{-5}) at any receptor location; or

For non-cancer chronic and acute HI; the applicable threshold is:

- A cumulative increase for any target organ system exceeding 1.0 at any receptor location.

Findings: Potential impacts of the Project related to operational-acute health risks are discussed in detail in Section 4.3 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to operational-acute health risks and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.3 of the DEIR, a screening level health risk assessment was performed for the operational emissions associated with the proposed Project based on the SCAQMD's *Health Risk Assessment Guidance for Analyzing Cancer Risk from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis* guidance. The operations expected to occur at this facility will not emit any toxic chemicals in any significant quantity other than vehicle exhaust. According to the health risk assessment the nearest residences would experience a cancer risk of 4.33 in 1 million, which is below the 10 in 1 million threshold. The nearest residences would also experience a chronic HI of 0.0016 and an acute HI of 0.0000088. Both the chronic and acute HI would be below the chronic and acute HI threshold of 1.0. Since the operational phase of the proposed Project would not exceed any of the long-term acute health risk assessment thresholds, a less than significant impact would occur. No mitigation is required. (DEIR, pgs. 4.3-14 to 4.3-18)

c. **Operational-Carcinogenic and Chronic Health Risk Emission Impacts**

Potential Significant Impact: Whether the proposed Project would expose sensitive receptors to substantial pollutant concentrations.

For MICR, the applicable thresholds are:

- An increased cancer risk greater than 10 in 1 million (1.0×10^{-5}) at any receptor location; or

For non-cancer health risk HI; the applicable threshold is:

- A cumulative increase for any target organ system exceeding 1.0 at any receptor location.

Findings: Potential impacts of the Project related to operational-carcinogenic and chronic health risk emission impacts are discussed in detail in Section 4.3 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to health risks related to operational emissions and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.3 of the DEIR, the closest residences to the Project would be exposed to a lifetime inhalation cancer risk of no more than 4.33 in 1 million, a 30-year inhalation cancer risk of no more than 3.88 in 1 million, and nearby workers a 40-year career inhalation cancer risk of no more than 1.5 in 1 million. The chronic health risk index is significantly less than the threshold of 1.0, in this case 0.0016 for residents and workers. No significant carcinogenic or chronic health risks would occur from Project-related traffic. No significant health risk would occur from Project-related truck traffic, and no mitigation is necessary. (DEIR, pg. 4.3-18)

d. Air Quality Impacts to Adjacent Future Development

Potential Significant Impact: Whether the proposed Project would expose sensitive receptors to substantial pollutant concentrations.

Findings: Potential impacts of the Project related to air quality impacts to adjacent future developments are discussed in detail in Section 4.3 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to air quality impacts to adjacent future development and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.3 of the DEIR, based on the land use assumptions for the future L-Aquila D’Pietra (LADP) Project, residential development would be located along the southern Project boundary between the proposed Project and the proposed LADP. It is anticipated that the proposed Project site would be fully developed prior to the occupation of any dwelling units in LADP; therefore, no construction-related air quality impacts to adjacent sensitive receptors would result from development of the proposed Project.

The primary health risk is from heavy-duty truck emissions is diesel particulate exhaust. According to the screening-level assessment, the future residential units south of the Project site would be exposed to an unmitigated inhalation cancer risk of approximately 4.3 in 1 million, which is less than the threshold of 10 in 1 million. The corresponding chronic and acute hazard indices would be approximately 0.0016 and 0.000088, which is less than the threshold of 1.0 for the chronic hazard index and acute hazard index. Since the screening-level analysis overall Project health risks are below established thresholds, any

detailed assessment would also produce less than significant health risk levels. Therefore, a less than significant impact associated with future uses that may occupy adjacent properties subsequent to development of the proposed Project would occur. No mitigation is required. (DEIR, pgs. 4.3-18 to 4.3-19)

e. Long-Term Microscale (CO Hotspot) Impacts

Potential Significant Impact: Whether the proposed Project would violate any air quality standard or contribute substantially to an existing or projected air quality violation. For CO, the applicable thresholds are:

- California State one-hour CO standard of 20.0 ppm; and
- California State eight-hour CO standard of 9.0 ppm.

Findings: Potential impacts of the Project related to long-term microscale emissions are discussed in detail in Section 4.3 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to long-term microscale emissions and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.3 of the DEIR, the highest one-hour CO concentration experienced at any of the intersections in the Project vicinity would not exceed the one hour CO State standard of 20 ppm. Based on the *Air Quality Analysis* prepared for the proposed Project, the proposed Project would contribute, at most, a 0.1 ppm increase to the one-hour CO concentrations for all scenarios. This is below the 1.0 ppm increase threshold. Also the highest eight-hour CO concentration experienced at any of the intersections in the Project vicinity would not exceed the eight-hour CO state standard of 35 ppm. Based on the *Air Quality Analysis* prepared for the proposed Project, the proposed Project would contribute, at most, a 0.1 ppm increase to the eight-hour CO concentrations for all scenarios. This is below the 0.45 ppm increase threshold. Since the proposed Project would not exceed the one-hour or eight-hour CO concentration standards, it is reasonable to conclude that no CO hot spots would occur. Therefore, the proposed Project would not have a significant impact on local air quality for CO and no mitigation measures would be required. (DEIR, pgs. 4.3-19 to 4.3-20)

f. Odors

Potential Significant Impact: Whether the Project would create objectionable odors affecting a substantial number of people.

Findings: Potential impacts of the Project related to objectionable odors are discussed in detail in Section 4.3 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts due to objectionable odors and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.3 of the DEIR, the Project does not propose land uses typically associated with emitting objectionable odors. Potential odors during Project construction may result from heavy equipment exhaust and the application of asphalt and architectural coatings. Standard construction requirements would minimize odor impacts from construction. The construction odor emissions would be temporary, short-term, and intermittent in nature and would cease upon completion of the respective phase of construction and is thus considered less-than-significant. Project-related operational odor sources such as vehicle exhaust and routine painting/ maintenance activities are typical of industrial/commercial activities and would be localized to the immediate Project vicinity, with little or no off-site effects. Accordingly, impacts related to objectionable odors will be less-than-significant and no mitigation is required. (DEIR, pg. 4.3-20)

3. Biological Resources

a. Habitat Fragmentation/Wildlife Movement

Potential Significant Impact: Whether the Project would interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

Findings: Potential impacts of the Project related to habitat fragmentation and wildlife movement are discussed in detail in Section 4.4 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts to habitat and wildlife movement and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.4 of the DEIR, the proposed Project site is isolated from regional wildlife corridors by existing barriers including urban development, agricultural uses, and roadways. Land uses adjacent to the Project site include fallow agricultural land to the south and east, commercial uses to the west, and residential uses to the north across SR-60. Due to the nature of development occurring in the Project area and the current condition of the Project site, it is highly unlikely that the Project site is utilized as a wildlife movement corridor, with the exception of the Quincy Channel. The proposed Project will not affect the majority of Quincy Channel, thus allowing wildlife to continue using the existing channel to traverse the site. The quality of on-site habitat has been diminished

due to the previous and frequent ground disturbance and past agricultural activities. In addition, the existing roadways and infrastructure features further isolate the Project site from natural areas. Due to the disturbed condition of the Project site, the nature of development to the southeast and west, the intervening presence of roadways and infrastructure, and adherence to City development standards identified in the Municipal Code, development of the proposed Project will not result in significant habitat fragmentation or substantially affect established wildlife corridors or wildlife movement. A less than significant impact would result and no mitigation is required. (DEIR, pg. 4.4-23)

b. Adopted Policies and Ordinances

Potential Significant Impact: Whether the Project would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Findings: Potential impacts of the Project related to adopted policies and ordinances are discussed in detail in Section 4.4 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in conflict with local policies or ordinances and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.4 of the DEIR, city policies or ordinances identified in the General Plan protecting biological resources include: mitigation of impacts to riparian areas or other natural sensitive communities (Policy 7.4.1), preservation of natural drainage courses in their natural hydrological state (Policy 7.4.3), and City fulfillment of obligations set forth within any agreements and permits related to the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) implementation (Policy 7.4.5).

The Quincy Channel, located adjacent and to the east of the proposed Project site, is considered a sensitive natural habitat due to the value it provides as nesting sites and foraging sites for migratory birds. The proposed Project would be designed to minimize encroachment into this natural area through setback requirements established in Sections 9.16.120 and 9.05.040 of the City's Municipal Code, thus preserving this habitat area in its natural state pursuant to the City's General Plan. At the northeast corner of Building 2, the development plans call for a minimum setback from Quincy Channel due to the topography and alignment of the creek. From that point, the plan provides a setback and landscaped buffer area between the drainage area and the structures proposed on the site that widens and varies from 25 to 50 feet (including the flood control access road). Therefore, the proposed Project would not conflict with local policies or ordinances protecting biological resources and a less than significant impact would occur. No mitigation is required. (DEIR, pg. 4.4-24)

c. Adopted Habitat Conservation Plans

Potential Significant Impact: Whether the Project would conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Findings: Potential impacts of the Project related to adopted habitat conservation plans are discussed in detail in Section 4.4 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in conflicts with local habitat conservation plans and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.4 of the DEIR, the Project site is located within the Western Riverside County MSHCP, however, the Project site is not within any MSHCP criteria cell or habitat linkage. Furthermore, the Project site is not located within an MSHCP mammal or amphibian survey area; a Narrow Endemic Plant Species Survey Area or Criteria Area Plant Species Survey Area; or a riparian, wetland, or vernal pool habitat/species survey area. A habitat assessment for the burrowing owl is required under the MSHCP. While the Project site is not within any MSHCP conservation areas, the Project is still subject to provisions of the MSHCP. In particular, the Project applicant will be required to provide payment of mitigation fees and adhere to the requirements established in the MSHCP. Pursuant to agreements with the USFWS and the CDFG, the payment of the mitigation fee prior to the issuance of a building permit by the City, and compliance with applicable provisions of the MSHCP provides full mitigation under CEQA, FESA, and CESA for impacts to the species and habitats covered by the MSHCP. Therefore, development of the proposed Project will not conflict with the provisions of the MSHCP. A less than significant impact would occur and no mitigation is required.

In addition to the MSHCP, the Project site is within the boundaries of the Stephens Kangaroo Rat Habitat Conservation Plan (SKR HCP) established by the County of Riverside. Development of the proposed Project will not conflict with the provisions of the SKR HCP. The payment of a local mitigation fee prior to issuance of a grading permit by the City will be required. There are no other requirements for the Project under the SKR HCP and a less than significant impact would occur with payment of the fee and no further mitigation is required. (DEIR, pg. 4.4-24)

d. Endangered and Threatened Species

Potential Significant Impact: Whether the Project would have a substantial adverse effect, either directly or through habitat modifications, on any species identified as endangered or threatened in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or U.S. Fish and Wildlife Service (USFWS).

Findings: Potential impacts of the Project related to endangered and threatened species are discussed in detail in Section 4.4 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts to endangered or threatened species and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.4 of the DEIR, no species listed by the State and/or Federal Government as Endangered or Threatened was identified on site during the field surveys; however, Swainson's hawk, a State-listed species, and Stephens' kangaroo rat, a federally and State-listed species, have a low potential to occur on the site.

The Project site is not located within any USFWS designated critical habitat. Swainson's hawk would be expected to occur on the site, if at all, only during migration as foraging individuals. Swainson's hawk is covered by the MSHCP. Mitigation for covered species consists of participation in the MSHCP.

The Project site is also within the SKR HCP Fee Area. The proposed Project site is not within an SKR Core Area. The SKR HCP provides Take Authorization for the SKR within its boundaries, and no surveys or additional measures are required other than paying a development fee prior to issuance of a grading permit by the City. In the absence of a significant impact, no mitigation is warranted. (DEIR, pg. 4.4-25)

e. Cumulative Biological Impacts

Potential Significant Impact: Whether the Project in connection with past, current, and probably future projects would incrementally effect biological resources.

Findings: Potential impacts of the Project related to cumulative biological impacts are discussed in detail in Section 4.4 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant cumulative impacts to biological resources and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.4 of the DEIR, the proposed Project would not make a cumulatively considerable contribution to impacts on endangered or threatened species, riparian

habitat or natural plant communities, jurisdictional waters, habitat fragmentation, wildlife movement, local policies and ordinances, or habitat conservation plans. There are no projects that would, in combination with the proposed Project, produce a significant impact to non-listed sensitive species. Therefore, there are no significant cumulative impacts anticipated to occur that are associated with biological resources. With implementation of Project-level Mitigation Measures 4.4.6.1 through 4.4.6.3, the Project's contribution to cumulative biological impacts will not be cumulatively considerable and no additional mitigation is required. (DEIR, pgs 4.4-30 to 4.4-31)

4. Cultural Resources

a. Historical Structures and Features

Potential Significant Impact: Whether the Project would cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5.

Findings: Potential impacts of the Project related to historical structures and features are discussed in detail in Section 4.5 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts to historical structures and features and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.5 of the DEIR, no structures or unique features are currently located within the Project limits. An online title search was conducted and historic maps were reviewed to determine the potential for structures and/or the remains of former sites of buildings or resources within the Project limits. No evidence of past structures or historic features was identified, nor was evidence of such structures identified during the on-site cultural resource survey or the records search. As no evidence has been identified to suggest the presence of past or current structures on site, no impacts related to historic structures or features will occur. In the absence of a significant impact, no mitigation is warranted. (DEIR, pg.4.5-5)

b. Human Remains

Potential Significant Impact: Whether the Project would disturb any human remains, including those interred outside of formal cemeteries.

Findings: Potential impacts of the Project related to human remains are discussed in detail in Section 4.5 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts to human remains and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.5 of the DEIR, the Project site was utilized for agricultural production. No evidence suggesting the Project site has been utilized in the past for human burials has been identified.² In the unlikely event human remains are discovered during grading or construction activities, State law (Health and Safety Code §7050.5) requires that no further disturbance shall occur until the County Coroner has made determination of the origin and disposition pursuant to Public Resources Code 5097.98. Because adherence to provisions of Health and Safety Code §7050.5 is required of all development projects, and because adherence to the requirements in State law sufficiently mitigates for potential impacts to human remains, no significant impact related to this issue will occur. Because potential impacts associated with this issue are less than significant, no mitigation is required. (DEIR, pg. 4.5-5)

c. Cumulative Cultural Resources

Potential Significant Impact: Whether the Project in connection with past, current, and probable future projects would have a cumulative significant impact on cultural resources.

Findings: Potential impacts of the Project related to cumulative cultural resources are discussed in detail in Section 4.5 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant cumulative impacts to cultural resources and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.5 of the DEIR, on-site sediments and cumulative archaeological and paleontological discoveries elevate the potential for the on-site presence of archaeological and paleontological resources. The proposed Project includes measures to identify, recover, and/or record any archaeological or paleontological resource that may occur within the Project limits. Although unlikely to occur, potential impacts associated with human remains would be reduced to a less than significant level through adherence to existing State law. There are no projects that would, in combination with the proposed Project, result in any significant cumulative impacts on historical, archaeological, or paleontological resources, or cumulative impacts to human remains. Therefore, the Project will not make a significant contribution to any cumulatively considerable impacts associated with cultural resources, and no mitigation is required. (DEIR, pg. 4.5-8)

5. Hazards and Hazardous Materials

² Chapter 5.10 Cultural Resources, City of Moreno Valley General Plan Final EIR, July 2006.

a. Routine Transport, Use, or Disposal of Hazardous Materials and Reasonable Foreseeable Upset and Accident Conditions

Potential Significant Impact: Whether the Project would create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Also, whether the Project would create a significant hazard to the public through the routine transport, use, or disposal of hazardous materials.

Findings: Potential impacts of the Project related to routine transport, use or disposal of hazardous materials and/or the risk of upset or accidental release of hazardous materials into the environment are discussed in detail in Section 4.6 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to routine transport, use or disposal of hazardous materials and, therefore, no mitigation is required.

Facts in Support of the Findings: Two *Phase I Environmental Site Assessments* (ESAs) were prepared for the proposed Project site. During the on-site inspection, no hazardous materials handling, storage, or disposal areas were observed. Additionally, no evidence of stressed vegetation, discolored water, or pools of liquid was observed during the on-site reconnaissance. However, because the Project site has been historically utilized for agricultural production and because of the close proximity to SR-60, soil samples were taken in various parts of the Project site to further evaluate the potential contamination on the site. Laboratory results indicated no detectable concentrations of hydrocarbon compounds in the samples collected. However, there were detectable concentrations of organochlorine pesticides and PCBs in samples collected from possible drainage accumulation and pesticide usage on site. These concentrations were within the allowable Preliminary Remedial Goals (PRGs) for the Project.

During the Project's construction and operation, it is likely that materials such as fuels, lubricants, solvents, cleansers, and paints will be transported to and from the site. The use and transport of these materials and all potentially hazardous materials would be handled according to the appropriate State and Federal regulations. Adherence to existing regulations as they relate to the handling and transport of potentially hazardous materials during construction would reduce impacts associated with this issue to a less than significant level and no mitigation is required. (DEIR, pgs. 4.6-6 through 4.6-11)

b. Hazardous Material Sites

Potential Significant Impact: Whether the Project would be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.

Findings: Potential impacts of the Project related to hazardous material sites are discussed in detail in Section 4.6 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts due to hazardous material sites and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.6 of the DEIR, a database review was conducted for both of the Phase 1 ESAs conducted for the Project site. Based on the database review, the Project site is not included on the State of California Hazardous Waste and Substances Site List (Cortese list) pursuant to the California Code (Section 65962.5). The Project site is not listed in the NPL; Corrective Action Order Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) list; Emergency Response Notification System (ERNS) list; Resource Conservation and Recovery Act System; Toxic Release Inventory System (TRIS); CAL-SITES Database for Annual Work Plan; California Department of Toxic Substances Control (DTSC); Regional Water Quality Control Board (RWQCB); California Waste Management Board (CWMB); Solid Waste Information System (SWIS); Waste Management Units Database System (WMUDS); California Border Zone Properties (Deed Restriction Properties); DTSC Hazardous Waste and Substances Site List (Cortese list); or any Leaking Underground Storage Tank (LUST) database.

Because the Project site is not identified on a list of hazardous materials sites, the potential that the development of the site would create a significant hazard to the public or environment is less than significant. In addition, the results of the site investigations performed by RM Environmental indicate that no significant amount of any hazardous material exists on site. Therefore, impacts associated with this issue are less than significant and no mitigation would be required. (DEIR, pgs. 4.6-11 through 4.6-12)

c. Existing or Proposed Schools

Potential Significant Impact: Whether the Project would create hazardous emissions or handle acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

Findings: Potential impacts of the Project related to existing or proposed schools are discussed in detail in Section 4.6 of the DEIR. Based on the entire record before us, this Council finds that development of

the Project will not result in significant impacts related to existing or proposed schools and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.6 of the DEIR, at the time the NOP for the proposed Project was released, the Moreno Valley Unified School District (MVUSD) had identified three potential school sites within the Project vicinity. Of these potential school sites, High School #5 was the closest planned school to the Project site as it was to be located on the adjacent parcel east of the Project site. Due to MVUSD concerns regarding the placement of schools in areas that may be rezoned with warehousing uses, MVUSD has made a decision to abandon the development of these school facility projects on the identified sites.³ Therefore, no planned school facilities would be located adjacent to or within 0.25 mile of the Project site. Since there are no schools planned, proposed, or operating within 0.25 mile of the Project site, no impacts associated with this issue would occur and no mitigation is required. (DEIR, pgs. 4.6-12 through 4.6-13)

³ *Resolution No. 2007-08-8*, Board of Education of the Moreno Valley Unified School District, April 15, 2008.

d. Emergency Response Plan

Potential Significant Impact: Whether the Project would impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Findings: Potential impacts of the Project related to emergency response plans are discussed in detail in Section 4.6 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to emergency response plans and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.6 of the DEIR, in February 2006, the County of Riverside, in cooperation with the cities and special districts, completed its Emergency Operations Plan (EOP). The EOP establishes the emergency organization, assigns tasks, specifies general procedures, and provides for coordination of planning efforts of the various emergency staff and resources.

Construction activities that may temporarily restrict vehicular traffic would be required to implement adequate measures to facilitate the passage of people and vehicles through/around any required road closures. During the operational phase of the proposed Project, on-site access for fire and emergency vehicles would be required to comply with standards established by the City Public Works Department. The size and location of fire suppression facilities (e.g., hydrants) and fire access routes would be required to conform to Fire Department standards. As required of all development in the City, the operation of the proposed Project would be required to conform to applicable Uniform Fire Code standards. The submittal of such plans would be considered a condition of approval, which would be part of the permitting process initiated by the applicant and approved by the City in accordance with City standards. As with any development, access to and through the Project would be required to comply with the required street widths, as determined in the General Plan Circulation Element, and the Uniform Fire Code. Therefore, implementation of the proposed Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. No significant impact would occur and no mitigation is required. (DEIR, pg. 4.6-13)

e. Wildland Fires

Potential Significant Impact: Whether the Project would expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildland.

Findings: Potential impacts of the Project related to wildland fires are discussed in detail in Section 4.6 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to wildland fires and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.6 of the DEIR, the Project site is not located within a “High Fire Hazard Area” or within an area susceptible to wildfires identified by the City of Moreno Valley. Areas surrounding the Project site consist of urban, built, and open space. Because of lack of abundant vegetation and the extensive amount of development within the vicinity of the Project site, on-site and adjacent areas do not have the capability to support a wildfire. The proposed uses on site do not typically create a fire hazards nor are they subject to wildland fire hazards due to the type of construction materials used. The Project will be designed and constructed to comply with adopted standards and guidelines for fire protection. Irrigated landscaping will surround Project buildings, and are required to include fire suppression features by law. Due to the location of the fire station adjacent to the Project in the northwest corner and the low probability that the Project site would be subject or susceptible to wildland fires, no significant impact related to this issue would occur. No mitigation is required. (DEIR, pgs. 4.6-13 through 4.6-14)

f. Cumulative Impacts from Hazards and Hazardous Materials

Potential Significant Impact: Whether the Project in connection with past, current, and probable future projects would cumulatively increase the risk of hazardous materials and exposure to hazardous materials.

Findings: Potential impacts of the Project related to cumulative hazardous materials impacts are discussed in detail in Section 4.6 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to cumulative hazardous materials and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.6 of the DEIR, the proposed Project would not result in significant cumulative impacts associated with the routine transport, use, and disposal of hazardous materials; or the emission or handling of hazardous substances. As areas of the eastern portion of Moreno Valley continue to develop, the amount of truck traffic is expected to increase in proportion to the amount of industrial or commercial development that take place in the area. The trucks traveling in the area of the Project and the surrounding areas may contain hazardous materials as well as contribute to emission in the cumulative area. Accidental spills and leaks are unplanned occurrences. It is impossible to predict the occurrences of such events and the likelihood of such events occurring in close proximity to

each other at the same time is very small; therefore, such events cannot be considered cumulatively significant.

As anticipated in the City's General Plan, demographic increases, continued retail and service demands, and the availability of vacant property will lead to the new residential, commercial, and industrial development in the City and surrounding area. While the project-specific hazardous material impacts of individual development projects will be addressed separately in future CEQA documents, anticipated future development will contribute, through increases in the number of locations that sell, store, transport, or dispose of hazardous materials, to a cumulative increase in risk for hazardous material incidents. As with the proposed Project, it is anticipated that future development projects will be required to adhere to applicable local, State, and Federal requirements that regulate the use, release, storage, sale, and transport of hazardous materials. Such compliance would ensure that the proposed Project will not make a significant contribution to a cumulatively considerable impact in this regard, and no mitigation measures for cumulative impacts are required. (DEIR, pg. 4.6-14)

6. Hydrology, Drainage, and Water Quality

a. Groundwater

Potential Significant Impact: Whether the Project would substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level

Findings: Potential impacts of the Project related to groundwater are discussed in detail in Section 4.7 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to groundwater and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.7 of the DEIR, the proposed Project would obtain water service from the EMWD. It is anticipated that the proposed Project would primarily utilize imported water purchased from Metropolitan. In the event that imported water is not available, this imported water would be supplemented by local groundwater sources.

The implementation of the existing West San Jacinto Groundwater Basin Management Plan would ensure that local groundwater resources are conserved and groundwater overdraft does not occur. If the use of groundwater supplies was necessary, the proposed Project would be required to comply with any future water use restricting regulations further minimizing impacts to groundwater supply.

As identified in the City's General Plan, the proposed Project would not interfere with groundwater recharge as the Project site is not identified as a groundwater recharge area.⁴ Therefore, the proposed Project would not interfere with groundwater recharge activities. Impacts associated with this issue are less than significant and no mitigation measure is required. (DEIR, pg. 4.7-14)

b. Flooding-Related Impacts

Potential Significant Impact: Whether the Project would place within a 100-year flood hazard area structures that would impede or redirect flood flows.

Findings: Potential impacts of the Project related to flooding are discussed in detail in Section 4.7 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to flooding and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.7 of the DEIR, flooding in the City of Moreno Valley could result from intense storms resulting in rapid runoff. The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) identify areas subject to flooding during the 100-year storm.⁵ Based on these FIRMs and the Project site does not fall within a 100-year flood zone.⁶ The proposed Project is industrial in nature and the implementation of the proposed Project would not result in the placement of housing within a 100-year floodplain. Because the Project site does not lie within a 100-year floodplain and does not include housing, impacts related to this issue are less than significant. No further discussion or mitigation is required. (DEIR, pgs. 4.7-14 through 4.7-17)

c. Drainage Pattern-Related Impacts

Potential Significant Impact: Whether the Project would substantially alter the existing local drainage patterns of the site and substantially increase the rate or amount of surface runoff in a manner which would result in substantial erosion, siltation, or flooding on or off site.

Findings: Potential impacts of the Project related to drainage patterns are discussed in detail in Section 4.7 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to drainage patterns and, therefore, no mitigation is required.

⁴ Section 5.7 *Hydrology/Water Quality*, City of Moreno Valley General Plan Final Program EIR, City of Moreno Valley, July 2006.

⁵ The term "100-year" is a measure of the size of the flood, not how often it occurs. The "100-year flood" is a flooding event that has a one percent chance of occurring in any given year.

⁶ FEMA DFIRM Data, 2008.

Facts in Support of the Findings: According to Section 4.7 of the DEIR, the proposed Project would alter the existing drainage patterns and affect surface runoff; however, several BMPs would be designed and installed on site to minimize these alterations, resulting in a less than significant impact. Development of the Project site would result in increased impervious surfaces in the form of roadways, parking lots, and industrial warehouse buildings. The proposed Project incorporates six detention/sedimentation basins for both water quality and quantity control purposes. The Project would also include vegetated swales, detention/sedimentation basins, and sand filters.

Under post-development conditions, all on-site flows would be routed to Quincy Channel. This drainage pattern would mimic the existing drainage pattern, which has flows draining to the Quincy Channel and the unnamed dry wash to the south. Since the unnamed dry wash connects to Quincy Channel farther south of the Project, all flows under existing conditions drain into Quincy Channel. Flows in Quincy Channel are routed to the Perris Valley Storm Drain where flows continue onto the San Jacinto River and eventually reach Lake Elsinore.

Increased runoff from the site could result in substantial erosion of local drainage ways and siltation of downstream receiving waters. However, with the proposed drainage system installed on site, the proposed Project would not produce any post-development peak flow leaving the site larger than the pre-development peak flows leaving the site for the analyzed storms. In addition, because the implementation of various BMPs will reduce off-site flow velocity and volume, erosional runoff and silt volumes would be minimized to the greatest extent practical. Because the proposed Project would maintain existing drainage patterns on site and implement BMPs that would minimize erosion and generation of silt on site, impacts associated with this issue are less than significant and no mitigation measures are required. (DEIR, pg. 4.7-17)

d. Hydrology and Water Quality Cumulative Impacts

Potential Significant Impact: Whether the Project in connection with past, current, and probable future projects would have significant cumulative impacts on hydrology and water quality.

Findings: Potential impacts of the Project related to cumulative hydrology and water quality impacts are discussed in detail in Section 4.7 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant cumulative impacts to hydrology and water quality and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.7 of the DEIR, increases in the amount and extent of development in the City and surrounding areas will increase the potential for pollutants in runoff, which in turn would affect water quality. The Project's water quality impacts will be mitigated through on-site detention/sedimentation basins and other water pollution control mechanisms such as vegetated swales, sand filters, and storm drain inlet filters. Similar requirements will be placed on all other development in the Project vicinity by the City and the RWQCB, further reducing the potential for cumulative impacts. Since all development within the City is required to account and mitigate for their individual water quality impacts before runoff leaves each individual site, it is reasonable to conclude that water quality would be maintained throughout the cumulative area. Adherence to NPDES, SWPPP, and WQMP requirements will reduce any such cumulative water quality impact to a less than significant level.

Groundwater recharge policies and practices implemented by the RWQCB and local agencies will ensure groundwater supplies are maintained at appropriate levels. As such, no significant cumulative groundwater supply impacts are anticipated to occur with the development of the proposed Project.

The drainage system for the proposed Project would be designed so that runoff from the Project site after Project development is directed to on-site treatment BMPs and flow volumes would be equal to or less than historic conditions at any given discharge location. This same requirement will be placed on all other development in the vicinity of the Project site by the City of Moreno Valley. Therefore, the proposed Project will not make a significant contribution to any cumulatively considerable impacts related to drainage or water quality and no mitigation is required. (DEIR, pgs. 4.7-28 through 4.7-29)

8. Land Use and Planning

a. Physically Divide an Established Community

Potential Significant Impact: Whether the Project would physically divide an established community.

Findings: Potential impacts of the Project related to the physically dividing an established community are discussed in detail in Section 4.8 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts due to a physical divide of an established community and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.8 of the DEIR, land uses adjacent to the Project site include residential uses to the southeast, vacant land to the south, commercial uses to the west, SR-60 and residential uses to the north, and active hay/alfalfa production uses to the east. The Project site

does not contain any existing housing, nor does the site complement or constitute part of a community or neighborhood. Based on this information, the proposed Project will physically divide an existing established community. No impact related to this issue would occur; therefore, no mitigation is required. (DEIR, pgs. 4.8-4 through 4.8-5)

b. Conflict with Any Applicable Habitat or Natural Community Conservation Plan

Potential Significant Impact: Whether the Project would conflict with any applicable habitat conservation plan or natural community conservation plan.

Findings: Potential impacts of the Project related to the conflict with any applicable habitat conservation plan are discussed in detail in Section 4.8 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts due to a conflict with any applicable habitat or natural community conservation plan and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.8 in the DEIR, the Project site is located within the MSHCP area.⁷ The Project site is not within an MSHCP criteria cell or habitat linkage. Furthermore, the Project site is not located within an MSHCP mammal or amphibian survey area, Narrow Endemic Plant Species Survey Area (NEPSSA), Criteria Area Plant Species Survey Area (CAPSSA), or a riparian, wetland, or vernal pool habitat/species survey area.⁸

While the Project site is not within any conservation area delineated in the MSHCP, the Project is still subject to provisions of the MSHCP. In particular, the Project proponent will be required to provide payment of mitigation fees and adhere to the requirements established in the MSHCP. Pursuant to agreements with the USFWS and the CDFW, the payment of the mitigation fees and compliance provisions of the MSHCP provides full mitigation under the CEQA, FESA, and CESA for impacts to the species and habitats covered by the MSHCP. Since the City has adopted the MSHCP and its requirements and provisions, and since the Project is within the City, the proposed Project would be required to adhere to applicable MSHCP requirements and fees. Therefore, the proposed Project would not conflict with any applicable HCP and no significant impact associated with this issue would occur. No mitigation would be required. (DEIR, pg. 4.8-4)

c. Cumulative Land Use Impacts

Potential Significant Impact: Whether the Project in connection with past, current, and foreseeable future projects would incrementally affect biological resources.

Findings: Potential impacts of the Project related to cumulative land use impacts are discussed in detail in Section 4.8 of the DEIR. Based on the entire record before us, this Council finds that development of

⁷ City of Moreno Valley General Plan Final Program EIR, Figure 5.9-4 Reche Canyon/Badlands Area.

⁸ <http://www.rctlma.org/gis/rciprepgen.html>, site accessed December 4, 2007.

the Project will not result in significant cumulative impacts related to land uses and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.8 of the DEIR, implementation of the proposed Project represents establishment of new land uses within the currently undeveloped Project site that would result in an intensification of permitted land uses associated with a land use change from Business Park and Residential to Light Industrial uses, changes to the General Plan Circulation Element, and the loss of the Primary Animal Keeping Overlay (PAKO) associated with the RA-2 zone. However, the proposed Project is generally consistent with regional plans and planning efforts, although it is not fully consistent with the SCAG's RTP and Compass Blueprint Plan because it eliminates some housing in favor of industrial employment uses. It will incrementally improve the City's long-standing jobs/housing ratio, which is also a regional goal of the various SCAG plans. It is also not consistent with existing General Plan land use designations, objectives and policies, nor is it consistent with existing zoning designations on the site. For these reasons, a General Plan Amendment and Zone Change are proposed for consideration by the City.

The proposed changes in land use will also result in a loss of up to 584 (R-15) multi-family residential units, many of which could have contributed to the City's affordable housing supply at some point in the future. However, this was determined to be a less than significant Project impact on local housing because the City's Housing Element identifies over twice as much potential affordable housing as the City's RHNA allocation, so it will not make a significant contribution to a cumulatively considerable impact on regional housing.

The Project would also not make a similar cumulatively considerable land use impact relative to dividing an established community or conflicting with an approved habitat conservation plan and no mitigation is required. (DEIR, pgs. 4.8-17 to 4.8-18)

8. Noise

a. **Airport Noise**

Potential Significant Impacts: Whether a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would result in exposure of people residing or working in the Project area to excessive noise levels. Or if a Project within the vicinity of a private airstrip, would expose people residing or working in the Project area to excessive noise levels.

Findings: Potential impacts of the Project relating to airport noise are discussed in detail in Section 4.9 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to airport noise will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.9 of the DEIR, the proposed Project site is located approximately 5 miles northeast of the March Air Reserve Base. Aircraft operations from the airport currently contribute intermittent single-event noise. However, the proposed Project is not identified as being within the noise or safety contours delineated for the MARB Airport. The proposed Project is not located within two miles of a public or private airport; therefore, the proposed Project would not have the potential to expose people to excessive noise levels from airport operations and no impact regarding this issue would occur with implementation of the proposed Project. No mitigation is required. (DEIR, pg. 4.9-10)

b. Ground-Borne Vibrations

Potential Significant Impact: Whether the Project would result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

Findings: Potential impacts of the Project relating groundborne vibration and groundborne noise are discussed in detail in Section 4.9 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to ground-borne vibration and groundborne noise will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.9 of the DEIR, the Project site is not located near steel-wheeled trains. Additionally, roadways in the Project area are either paved or would be paved and would not result in traffic driving over rough roads. Construction activities for the Project site do not include blasting or pile driving. The primary vibratory source during the construction of the proposed Project would be large bulldozers. Based on published data, typical bulldozer activities generate an approximate vibration level of 0.089 in/sec at a distance of 25 feet. At the distance of the nearest residence to the Project boundary (about 50 feet) the estimated vibration level will be 0.0415 in/sec. While heavy-duty earthmoving equipment would be used during the construction phase of the Project, the level of vibration would not be excessive or permanent, nor would it exceed the level at which building damage typically occurs. Therefore, impacts from construction-related groundborne vibration construction would be less than significant and no mitigation is required. (DEIR, pg. 4.-11)

c. Long-Term Traffic Noise

Potential Significant Impact: Whether the Project would result in a substantial temporary, periodic, and/or permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project.

Findings: Potential impacts of the Project related to long-term noise are discussed in detail in Section 4.9 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to long-term noise will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.9 of the DEIR, the *Noise Impact Analysis* (Appendix H) indicates that implementation of the proposed Project would result in relatively minor changes in traffic noise levels except along Eucalyptus Avenue between Moreno Beach Drive and Driveway A. The largest Project-related increase in traffic noise would be along Eucalyptus Avenue/Fir Avenue between Auto Mall Drive and Redlands Boulevard. This segment would experience a 13.6 dBA increase over the baseline (with the Project) scenario and a 13.3 dBA increase over the baseline (with the Project) scenario in opening year (2012). In addition, the roadway segment along Eucalyptus Avenue between Moreno Beach Drive and Auto Mall Drive would experience a 4.5 dBA increase over the baseline scenario in 2012. However, no noise-sensitive uses exist or are planned near either roadway segment.

For the Project build out year (2035) analysis, the greatest increase in noise levels is along Eucalyptus Avenue between Auto Mall Drive and Redlands Boulevard, where an increase of up to 1.3 dBA is predicted, with the ambient noise level predicted to be 71.6 dBA at 50 feet from the centerline of the street. In addition, the greatest increases in noise levels associated with the General Plan Build Out Year is along Eucalyptus Avenue between Auto Mall Drive and Redlands Boulevard, where an increase of up to 0.9 dBA is predicted, with the ambient noise level predicted to be 73.0 dBA at 50 feet from the centerline of the street. However, no noise-sensitive uses exist or are planned near the roadway segment. Therefore, noise impacts at the roadway segments where an increase of more than 3.0 dBA would occur are considered less than significant because there are no sensitive receptors located along the roadway segments that would be affected. All other roadway segments would have an increase in noise of less than 3.0 dBA, which would not be perceptible to the human ear in an outdoor environment. Therefore, impacts would be less than significant and no mitigation measures would be required for off-site areas. (DEIR, pgs. 4.9-11 to 4.9-19)

d. Long-Term Operational Noise

Potential Significant Impact: Whether the Project would cause exposure of persons to or generation of noise levels in excess of standards established in the City of Moreno Valley General Plan, Moreno Valley Municipal Code, or applicable standards of other agencies.

Findings: Potential impacts of the Project related to long-term operational noise are discussed in detail in Section 4.9 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to long-term operational noise will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.9 of the DEIR, potential long-term stationary noise impacts would primarily be associated with operations at the proposed warehouse and the light industrial uses. The proposed on-site uses would generate noise from truck delivery, loading/unloading activities at the loading areas, and other noise-producing activities within the parking lot. Through distance divergence, attenuation, and building shielding these sources of noise would be reduced to less than significant levels; and no mitigation is required. (DEIR, pgs. 4.9-20 to 4.9-22)

e. Noise Impacts to Adjacent Future Development

Potential Significant Impact: Whether the Project would result in a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project.

Findings: Potential impacts of the Project related to noise impacts to adjacent future development are discussed in detail in Section 4.9 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to noise impacts to adjacent future development and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.9 of the DEIR, based on the land use assumptions for the future LADP Project, residential development would be located along the southern Project boundary between the proposed Project and the proposed LADP. It is anticipated that the proposed Project site would be fully developed prior to the occupation of any dwelling units in LADP; therefore, no construction-related noise impacts to future adjacent sensitive receptors would result from development of the proposed Project. Also, the proposed on-site uses would generate noise from truck delivery, loading/unloading activities at the loading areas, and other noise-producing activities within the parking lot. Through distance divergence, attenuation, and building shielding these sources of noise

would be reduced to less than significant levels. Therefore, a less than significant impact would occur to adjacent future development and no mitigation is required. (DEIR, pgs. 4.9-23 to 4.9-24)

f. Cumulative Noise Impacts

Potential Significant Impact: Whether the Project in connection with past, current, and probable future Project would cause cumulative noise impacts within the City of Moreno Valley.

Findings: Potential impacts of the Project related to cumulative noise are discussed in detail in Section 4.9 of the DEIR. Based on the entire record before us, this Council finds that no significant cumulative impacts related to noise will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: Construction crew commutes and the transport of construction equipment, materials, and fill to the site for the proposed Project would incrementally increase noise levels on access roads leading to the site. Secondary sources of noise would include noise generated during excavation, grading, and building erection on the Project site. Although it is unlikely that adjacent properties will be developed at the same time as the proposed Project, if adjacent properties are developed at the same time as the proposed Project, implementation of the stated mitigation measures in Section 4.9 of the DEIR would render the cumulative impacts of the proposed Project to less than significant levels.

Section 4.9 of the DEIR compared cumulative noise levels that would occur both with and without the Project. According to the analysis the proposed Project would not expose sensitive uses located adjacent to area roadways to excessive noise levels. The future roadway noise assessment concludes that there will be no significant roadway noise impacts associated with cumulative and cumulative plus Project conditions. Therefore, there are no projects that would, in combination with the proposed Project, produce significant noise impacts to sensitive land uses from on-site operational noise. Thus, no cumulatively considerable noise impacts are expected to occur in this area, and the proposed Project will not make a significant contribution to cumulative noise impacts, so no mitigation measures are required. (DEIR, pg. 4.9-27)

9. Population and Housing

a. Population Growth

Potential Significant Impact: Whether the Project would induce substantial population growth in an area, either directly (e.g., new homes and businesses) or indirectly (e.g., extension of roads and infrastructure).

Findings: Potential impacts of the Project related to population growth are discussed in detail in Section 4.10 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to population growth will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.10 of the DEIR, the development of the proposed on-site warehouse distribution uses would create new jobs in the local economy. The proposed Project would generate up to 1,532 job opportunities.⁹ The new employment opportunities resulting from development of the proposed warehouse uses would improve the City's current jobs-to-housing ratio by providing jobs to local residents. While the places of residence of the persons accepting employment provided by the proposed uses is uncertain, due to the City's projected jobs-to-housing ratio, it is reasonable that a large percentage of these jobs would be filled by persons already living within the City or Project area; therefore, no significant increase in population of the City would result from the development or operation of the proposed on-site uses. In the absence of a significant impact, no mitigation is required. (DEIR, pgs. 4.10-3 to 4.10-5)

b. Displace Substantial Housing/People

Potential Significant Impact: Whether the Project would displace substantial numbers of people or existing housing, necessitating the construction of replacement housing elsewhere.

Findings: Potential impacts of the Project related to displacement of housing or people are discussed in detail in Section 4.10 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to displacement of housing or people will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.10 of the DEIR, the Project site has not been historically utilized for residential uses, and no residential structures are currently located within the Project limits. The construction and operation of the proposed on-site uses would neither displace existing housing or residents nor require the construction of replacement housing elsewhere in the City. However, the areas currently zoned for residential uses on the site could support up to 681 units. Approximately 80

⁹ 1 employee/1,465 square feet of warehouse use × 2,244,419 square feet of warehouse uses = 1,532 employees.

percent of that potential new housing was in the R15 category, which is considered high enough density to support affordable housing programs. In addition, a portion of the Project site is shown in the latest Housing Element for the City (2008–2014) as a potential location for affordable housing in the future (2011 Housing Element, Vacant Properties Inventory). Development of the site as proposed could eliminate as many as 681 housing units from the site, with 80 percent of those units (548) at a density that is generally accepted as helping to promote housing affordability (15 units per acre) on a regional level. These changes may incrementally hinder the City’s ability to achieve its affordable housing goals in the future. However, the proposed Project would not reduce the City’s potential pool of affordable housing to below its RHNA number; therefore, it would not create a significant impact related to the City’s Housing Element, and no mitigation is required. (DEIR, pg. 4.10-6)

c. Cumulative Population and Housing Impacts

Potential Significant Impact: Whether the Project could cause an increase in population that is substantial in relation to the past, current, and probable future projects.

Findings: Potential impacts of the Project related to cumulative impacts of the proposed Project on housing or population are discussed in detail in Section 4.10 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to cumulative impacts on housing or population will occur as a result of development of the Project and, therefore, no mitigation is required.

Fact Supporting the Findings: The project includes development of 2.2 million square feet of new industrial uses, but would eliminate the potential for up to 681 new residential units, most of which would be in the R15 category, which can support affordable housing programs. The proposed industrial uses would provide additional employment opportunities for City and area residents. The proposed project, together with the other developments identified in Chapter 3, will serve existing and future cumulative demands for both housing and employment within the City. The proposed uses would not induce significant population or housing growth in areas where growth was not previously anticipated.

10. Transportation

a. Air Traffic Patterns

Potential Significant Impact: Whether the Project would result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

Findings: Potential impacts of the Project related to air traffic patterns are discussed in detail in Section 4.11 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to air traffic patterns will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.11 of the DEIR, the proposed Project site is located approximately 5.5 miles northwest of the March Air Reserve Base and is not within the designated safety zones or the flight paths established for this facility.¹⁰ The proposed Project does not consist of any uses that would cause changes to air traffic volumes or otherwise affect air traffic patterns. Additionally, the proposed Project does not include any visual, electronic, or physical hazards to aircraft in flight and is not anticipated to disrupt or alter air traffic patterns, including either an increase in traffic levels or a change in location. As such, no impacts associated with this issue would occur and no mitigation is required. (DEIR, pg. 4.11-16)

b. Design Features or Incompatible Uses

Potential Significant Impact: Whether the proposed Project would substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

Findings: Potential impacts of the Project related to design features or incompatible uses are discussed in detail in Section 4.11 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to design features or incompatible uses will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.11 of the DEIR, roadway improvements in and around the Project site would be designed and constructed to satisfy all City requirements for street widths, corner radii, intersection control as well as incorporate design standards tailored specifically to site access requirements.

The final design of all roadways and intersections within the Project site access would be reviewed by a licensed professional civil engineer to ensure adequate safety when traveling to and from the Project site. The proposed Project does not include any sharp curves or dangerous intersections in its design. Adherence to applicable existing requirements of the City of Moreno Valley consistent with the City's

¹⁰ March Air Reserve Compatibility Plan, December 29, 2004. [http://www.rcaluc.org/filemanager/plan/old//March%20Air%20Reserve%20Base%20\(MARB\).pdf](http://www.rcaluc.org/filemanager/plan/old//March%20Air%20Reserve%20Base%20(MARB).pdf). Accessed June 3, 2008.

Circulation Element Objectives 5.1 (create a safe, efficient, and neighborhood-friendly street system), 5.5 (maximize efficiency of the local circulation system by using appropriate policies and standards to design, locate, and size roadways), and 5.11 (eliminate obstructions that impede safe movement of vehicles, bicyclists, and pedestrians) and other agencies would reduce impacts associated with this issue to a less than significant level and no mitigation is required. (DEIR, pgs. 4-17)

c. Inadequate Emergency Access

Potential Significant Impact: Whether the Project would result in inadequate emergency access.

Findings: Potential impacts of the Project related to emergency access are discussed in detail in Section 4.11 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to emergency access will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.11 of the DEIR, the developers of the proposed Project would be required to design, construct, and maintain structures, roadways, and facilities to provide for adequate emergency access and evacuation. Construction activities, which may temporarily restrict vehicular traffic, would be required to implement adequate and appropriate measures to facilitate the passage of persons and vehicles through/around any required road closures. The proposed Project design would be submitted to and approved by the City's Fire and Police Departments prior the issuance of building permits. Adherence to applicable existing requirements of the City of Moreno Valley and other agencies would reduce impacts associated with this issue to a less than significant level and no further discussion is required. (DEIR, pgs. 4.11-17 to 4.11-18)

d. Inadequate Parking Capacity

Potential Significant Impact: Whether the Project would result in inadequate parking capacity.

Findings: Potential impacts of the Project related to parking capacity are discussed in detail in Section 4.11 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to parking capacity will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.11 of the DEIR, the preliminary site plan indicates that 1,091 automobile parking spaces are provided, which includes spaces for employees, drivers, and handicap spaces, and is well above the minimum requirement of 562 spaces. The design of

the proposed Project would be required to comply with parking standards prior to final site plan approval. Adherence to parking standards contained in the Zoning Code would ensure that the proposed Project would not result in inadequate parking capacity. Impacts associated with parking capacity are less than significant and no mitigation is required. (DEIR, pg. 4.11-18)

e. Alternative Transportation

Potential Significant Impact: Whether the proposed Project would conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

Findings: Potential impacts of the Project related to alternative transportation are discussed in detail in Section 4.11 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to alternative transportation will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.11 of the DEIR, the design of the Project would be required to adhere to applicable City of Moreno Valley standards that support and/or facilitate alternative modes of transportation, including but not limited to pedestrian pathways and sidewalks consistent with the City's Circulation Element Objective 5.8. Through the City's Project review process, policies, plans, and/or programs supporting alternative transportation would be reviewed and incorporated as applicable. Consequently, a less than significant impact would occur as a result of the proposed Project and no mitigation is required. (DEIR, pg. 4.11-18)

11. Utilities and Service Systems

a. Solid Waste Facilities

Potential Significant Impact: Whether the Project would be served by a landfill with insufficient permitted capacity to accommodate the Project's solid waste disposal needs.

Findings: Potential impacts of the Project related to solid waste facilities are discussed in detail in Section 4.12 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to solid waste facilities will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.12 of the DEIR, based on a solid waste generation of 0.006 pound per square foot per day for industrial uses, the proposed Project is anticipated

to generate approximately 6.73 tons of solid waste per day (2,456 tons/year). Solid waste from the proposed Project would be hauled by Waste Management of Inland Valley and transferred to the Badlands Sanitary Landfill, located in Moreno Valley, northeast of the Project site. The volume of solid waste generated by the proposed Project per day represents 0.17 percent of the current permitted throughput and 0.29 percent of the current surplus capacity at the Badlands Sanitary Landfill. As adequate daily surplus capacity exists at the receiving landfill, development of the proposed Project would not significantly affect current operations or the expected lifetime of the landfill serving the Project area. No significant solid waste disposal impact would occur and no mitigation is required. (DEIR, pgs. 4.12-3 to 4.12-4)

b. Solid Waste Reduction

Potential Significant Impact: Whether the Project would fail to comply with applicable Federal, State, and local statutes and regulations related to solid waste.

Findings: Potential impacts of the Project related to solid waste reduction are discussed in detail in Section 4.12 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to solid waste reduction will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.12 of the DEIR, the proposed Project would be required to coordinate with the waste hauler to develop collection of recyclable materials for the Project on a common schedule as set forth in applicable local, regional, and State programs. Recyclable materials that would be recycled by the Project include paper products, glass, aluminum, and plastic.

Additionally, the proposed Project would be required to comply with applicable elements of AB 1327, Chapter 18 (California Solid Waste Reuse and Recycling Access Act of 1991) and other applicable local, State, and Federal solid waste disposal standards, thereby ensuring that the solid waste stream to the Badlands Sanitary Landfill is reduced in accordance with existing regulations. Impacts are considered less than significant and require no mitigation. (DEIR, pg. 4.12-4)

c. Solid Waste Cumulative Impacts

Potential Significant Impact: Whether the Project in connection with past, current, and probable future projects would have an incremental impact on solid waste.

Findings: Potential impacts of the Project related to cumulative solid waste are discussed in detail in Section 4.12 of the DEIR. Based on the entire record before us, this Council finds that no significant cumulative impacts related to solid waste will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.12 of the DEIR, the Badlands Sanitary Landfill has an estimated closure date of 2016, the City's waste hauler will also use other County landfills in the area (e.g., Lamb Canyon Landfill and El Sobrante Landfill). The estimated closure date of the Lamb Canyon Landfill is 2023 and the estimated closure date of the El Sobrante Landfill is 2030. With planned expansion activities of landfills in the Project vicinity and projected growth rates contained

within the City's General Plan EIR, sufficient landfill capacity would exist to accommodate future disposal needs through City build out in 2030. Therefore, build out of the City General Plan would not create demands for solid waste services that would exceed the capabilities of the County's waste management system. Consequently, cumulative impacts associated with solid waste within the City would be considered less than significant and no mitigation is required. (DEIR, pg. 4.12-5)

d. Construction or Expansion of Water Treatment Facility

Potential Significant Impact: Whether the Project would require the construction of new water treatment facilities or expansion of existing facilities, the construction of which would cause significant environmental effects.

Findings: Potential impacts of the Project related to construction or expansion of water treatment facilities are discussed in detail in Section 4.12 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts that would cause the construction or expansion of water treatment facilities will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.12 of the DEIR, the water demand required for the proposed Project totals 0.04 and 0.03 percent of the 2015 and 2035 projected Eastern Municipal Water District (EMWD) supplies. The amount of water demand would be within the existing available supply even with a reduction in deliveries from the State Water Project (SWP). Imported sources of water will be supplemented by an increase in desalination of brackish groundwater, recycled water use, and water use efficiency, and implementation of aggressive conservation measures by the EMWD. The proposed Project would not require the construction of new water treatment facilities or expansion of existing facilities, which could cause significant environmental effects. Impacts related to this issue would be less than significant and no mitigation is required. (DEIR, pgs. 4.12-15 to 4.12-16)

e. Adequate Water Supply

Potential Significant Impact: Whether the Project would have sufficient water supplies available to serve the Project from existing entitlements and resources, or are new or expanded entitlements needed.

Findings: Potential impacts of the Project related to adequate water supply are discussed in detail in Section 4.12 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to adequate water supply will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.12 of the DEIR, the anticipated water demand for the proposed Project is substantially less than what is identified for the General Plan land uses and what was used in the formulation of the 2010 Urban Water Management Plan. The water demand required for the proposed Project would total 0.05 and 0.04 percent of the EMWD's 2015 and 2035 supplies. The Project's water consumption represents substantially less than 1 percent of the consumption yearly capacity and because the EMWD indicates that water to service the Project's proposed industrial uses is available, no significant water supply impacts would occur with implementation of the industrial use, and no mitigation would be necessary. (DEIR, pg. 4.12-17 to 4.12-22)

f. Cumulative Impacts to Water Supply Services

Potential Significant Impact: Whether the Project in connection with past, current, and probable future projects would have a cumulative impact to water supply services.

Findings: Potential impacts of the Project related to cumulative water supply services are discussed in detail in Section 4.12 of the DEIR. Based on the entire record before us, this Council finds that no significant cumulative impacts related to water supply services will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.12 of the DEIR, the projected demand for the EMWD service area for the year 2015 is 213,900 acre-feet per year (AFY). The cumulative projects including the proposed Project would make up approximately 0.11 percent of the projected demand for 2015. For the year 2035, the EMWD service area projected demand is 302,200 AFY. The proposed Project would consist of 0.63 percent of the Project water demand. As the cumulative projects including the proposed Project constitute less than one percent of the projected water demand in both 2015 and 2025, the cumulative impact of the proposed Project would be less than significant.

Metropolitan Water District (Metropolitan) will continue to rely on the plans and policies outlined in its Regional Urban Water Master Plan (RUWMP) and Integrated Regional Water Plan (IRP) to address water supply shortages and interruptions (including potential shut downs of SWP pumps) to meet water demands. Metropolitan has also analyzed the reliability of water delivery through the SWP and the Colorado River Aqueduct. Metropolitan's IRP and RUWMP conclude that, with the storage and transfer programs developed by Metropolitan, there will be a reliable source of water to serve its member agencies' needs through 2035. The EWMD is a member agency of Metropolitan and would have water supplies for projected growth through 2035 in wet, dry, and multiple-dry years, so cumulative impacts to water supply would be less than significant. The proposed Project would connect to existing conveyance

infrastructure and adequate treatment capacity is available, so the proposed Project would not make a significant contribution to any cumulatively considerable impacts on water supply or infrastructure and no mitigation is required. (DEIR, pg 4.12-22)

g. Wastewater Treatment Requirements

Potential Significant Impact: Whether the Project would exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board (RWQCB).

Findings: Potential impacts of the Project related to wastewater treatment requirements are discussed in detail in Section 4.12 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to wastewater treatment requirements will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.12 of the DEIR, the proposed Project would result in a connection to the sewer line underlying the future Eucalyptus Avenue. The EMWD expects this sewer to be in service once it is necessary for demand expected from the proposed Project. It is anticipated that all wastewater generated by the proposed Project would be routed to and treated by the Moreno Valley Regional Water Reclamation Facility (MVRWRF). The MVRWRF is a Publically Owned Treatment Works (POTW), so operational discharge flows treated at the MVRWRF would be required to comply with the Waste Discharge Requirements (WDRs) for that facility. Compliance with condition or permit requirements established by the City and WDRs at the MVRWRF would ensure that discharges into the wastewater treatment facility system from the operation of the proposed Project would not exceed applicable Santa Ana RWQCB wastewater treatment requirements. Expected wastewater flows from the proposed Project will not exceed the capabilities of the serving treatment plant, so no significant impact related to this issue would occur and no mitigation would be required. (DEIR, pg. 4.12-24)

h. Wastewater Treatment Capacity and/or New or expanded Wastewater Treatment Facilities

Potential Significant Impact: Whether the Project would result in a determination by the wastewater treatment provider, which serves or may serve the Project, that it lacks adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments.

Also, whether the proposed Project would require the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Findings: Potential impacts of the Project related to wastewater capacity are discussed in detail in Section 4.12 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to wastewater capacity will occur as a result of development of the Project and no new wastewater treatment facilities or expansion of existing facilities would be required, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.12 of the DEIR, the proposed Project would result in a connection to the sewer line underlying the future Eucalyptus Avenue. The EMWD expects this sewer to be in service once it is necessary for demand expected from the proposed Project. It is anticipated that all wastewater generated by the proposed Project would be routed to and treated by the MVRWRF. The MVRWRF is a POTW, so operational discharge flows treated at the MVRWRF would be required to comply with the WDRs for that facility. Compliance with condition or permit requirements established by the City and WDRs at the MVRWRF would ensure that discharges into the wastewater treatment facility system from the operation of the proposed Project would not exceed applicable Santa Ana RWQCB wastewater treatment requirements. Expected wastewater flows from the proposed Project will not exceed the capabilities of the serving treatment plant, so no significant impact related to wastewater would occur and no mitigation would be required. (DEIR, pg. 4.12-25)

i. Cumulative Impacts to Wastewater Facilities

Potential Significant Impact: Whether the Project in connection with past, current, and probable future projects would result in cumulative impacts to wastewater facilities.

Findings: Potential impacts of the Project related to cumulative wastewater facilities are discussed in detail in Section 4.12 of the DEIR. Based on the entire record before us, this Council finds that no significant cumulative impacts related to wastewater facilities will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.12 of the DEIR, the proposed Project would not have a cumulatively significant impact on wastewater infrastructure because the proposed Project would not require the expansion of existing infrastructure; only connections to existing infrastructure would be required by the Project. By adhering to the wastewater treatment requirements established by the Santa Ana RWQCB through the NPDES permit, wastewater from the Project site that is processed through the MVRWRF would meet established standards. As the wastewater from all development within the service area of the MVRWRF would be similarly treated under the NPDES, no cumulatively significant exceedance of Santa Ana RWQCB wastewater treatment requirements would occur.

The proposed Project would not result in significant impacts to wastewater treatment or wastewater treatment facilities. The MVRWRF also plans expand the capacity of the wastewater facility. The ultimate expansion of the MVRWRF will allow it to process 41 mgd of wastewater. The wastewater generation of the listed cumulative projects represents 4.8 percent of the future capacity of the 2013 expansion and 2.5 percent of the ultimate expansion of the MVRWRF. The projected wastewater generation of the cumulative projects represents a small percentage of the average wastewater capacity and, because there are no projects that would, in combination with the proposed industrial uses, result in any significant impact related to wastewater treatment or cause significant environmental effects, the Project will not make a significant contribution to any cumulatively considerable impacts associated with wastewater and no mitigation is required. (DEIR, pg. 4.12-26)

11. Global Climate Change

a. Greenhouse Gas Plan, Policy, Regulation Consistency

Potential Significant Impact: Whether the Project would conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

Findings: Potential impacts of the Project related to greenhouse gas plans, policies, or regulation consistency are discussed in detail in Section 4.13 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related greenhouse gas plans, policies or regulations will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.13 of the DEIR, the proposed Project includes a variety of physical attributes and operational programs that would generally contribute to a reduction in operational-source pollutant emissions including GHG emissions. Future development that would occur under the proposed Project would be consistent with state and local greenhouse gas emission reduction strategies and policies. The Project would implement appropriate GHG reduction strategies and would ensure that it does not conflict with or impede implementation of reduction goals identified in AB 32, Governor’s Executive Order S-3-05, and other strategies to help reduce GHGs to the level proposed by the Governor. In addition, the Project would also be subject to all applicable regulatory requirements, which would also reduce the GHG emissions of the Project. Therefore, the proposed Project would not conflict with any applicable plan, program, policy, or regulation related to the reduction of GHG emissions. Impacts are considered less than significant and no mitigation is required. (DEIR, pgs. 4.13-10 to 4.13-17)

B. ENVIRONMENTAL IMPACTS MITIGATED TO A LEVEL OF LESS-THAN-SIGNIFICANT

Public Resources Code Section 21081 states that no public agency shall approve or carry out a project for which an EIR has been completed which identifies one or more significant effects unless the public agency makes one or more of the following findings:

- I. Changes or alterations have been required in, or incorporated into, the Project which mitigate or avoid the significant effects on the environment.
- II. Those changes or alterations are within the responsibility and jurisdiction of another public agency and have been, or can and should be, adopted by that other agency.
- III. Specific economic, legal, social, technological, or other considerations make infeasible the mitigation measures or alternatives identified in the EIR, and overriding economic, legal, social, technological, or other benefits of the Project outweigh the significant effects on the environment.

Certain of the following issues from the environmental categories analyzed in the EIR, including biological resources, cultural and paleontological resources, hydrology, drainage, and water quality, noise (short-term construction), transportation (local intersections), utilities, and global climate change (individually and cumulatively) were found to be potentially significant, but can be mitigated to a less-than-significant level with the imposition of mitigation measures. This Council hereby finds pursuant to *Public Resources Code* Section 21081 that all potentially significant impacts listed below can and will be mitigated to below a level of significance by imposition of the mitigation measures in the EIR; and that these mitigation measures are included as Conditions of Approval and set forth in the Mitigation Monitoring and Reporting Program (MMRP) adopted by this Council. Specific findings of this Council for each category of such impacts are set forth in detail below.

1. Air Quality

a. Localized Construction Equipment Exhaust Emissions Impacts

Potentially Significant Impact: The EIR evaluated and concluded that the Project has the potential to exceed short-term construction thresholds.

Finding: Implementation of the following mitigation measures will reduce the potential adverse impacts to sensitive or special status species to less than significant:

4.3.6.3A *Prior to the issuance of grading permits, the project applicant shall require by contract specifications that all trucks hauling dirt, sand, soil, or other loose materials are to be covered or shall maintain at least 2 feet of freeboard in accordance with the requirements of California Vehicle Code (CVC) Section 23114 (freeboard means vertical space between the top of the load and top of the trailer).*

4.3.6.3B *Prior to the issuance of grading permits, the project applicant shall provide evidence to the City that construction access roads shall be paved at least 100 feet onto the site from the main road.*

4.3.6.3C *Prior to the issuance of grading permits, the project applicant shall require by contract specifications that all streets within the construction site shall be swept once per day if visible soil materials are carried to adjacent streets.*

Facts in Support of the Finding: SCAQMD has developed LST methodology that can be used to determine whether or not a project may generate significant adverse localized air quality impacts. LSTs represent the maximum emissions from a project that would not cause or contribute to an exceedance of the most stringent applicable Federal or State ambient air quality standard and are developed based on the ambient concentrations of that pollutant for each source receptor area. The emissions of concern from construction activities are NOX, CO, PM₁₀, and PM_{2.5} resulting from on-site combustion emissions from construction equipment and on-site fugitive PM₁₀ dust from construction site preparation activities.

According to Section 4.3 of the DEIR, the air pollutant emission rates for the proposed construction activities are below the localized construction thresholds at the nearest sensitive receptor for CO, NO_x, PM₁₀, and PM_{2.5}. Thus, no mitigation is required. However, implementation of **Mitigation Measures 4.3.6.2A through 4.3.6.2M** and the incorporation of these additional requirements as **Mitigation Measures 4.3.6.3A through 4.3.6.3C** are designed to track both standard requirements and mitigation measures as part of the project's Mitigation Monitoring and Reporting Program (MMRP). Therefore, impacts related to construction exhaust emissions are less than significant. (DEIR, pgs. 4.3-29 to 4.3-30)

2. Biological Resources

a. Candidate, Non-listed Sensitive, or Other Special Status Species

Potential Significant Impact: The EIR evaluated and concluded that the Project has the potential to affect migratory bird species and 15 non-listed special status species, including burrowing owl.

Finding: Implementation of the following mitigation measures will reduce the potential adverse impacts to sensitive or special status species to less than significant:

4.4.6.1A *If tree removal or clearing and grubbing activities must take place during the general nesting season (February 1 through August 31), a nesting bird survey shall be conducted within seven (7) days prior to any vegetation disturbance activities. If passerine birds are found to be nesting or there is evidence of nesting behavior inside the impact area, an exclusion buffer, to be determined by the appropriate agency (e.g. the City, County, and/or CDFG), shall be set in place around the nest where no vegetation disturbance will be permitted. For raptor species, such as hawks and owls, this buffer may be as large as 500 feet. A qualified biologist shall closely monitor nests until it is determined that they are no longer active, at which time construction activity in the vicinity of nests may continue.*

4.4.6.1B *Prior to site grading, a pre-construction survey shall be required for the burrowing owl to confirm the presence/absence of this species from the site. The survey shall be conducted by a qualified biologist within 30 days prior to ground disturbance, and in accordance with MSHCP survey requirements, to avoid direct take of burrowing owls. If burrowing owls are determined to occupy the project site or immediate vicinity, the City of Moreno Valley Planning Department shall be notified and avoidance measures as identified in Mitigation Measure 4.4.6.1C shall be implemented. Implementation of avoidance measures shall be executed pursuant to the MSHCP, the California Fish and Game Code, and the MBTA, and according the Burrowing Owl Survey Protocol and Mitigation Guidelines (CBOC 1993) and reviewed the City of Moreno Valley, the County of Riverside, and/or by the CDFG.*

4.4.6.1C *As recommended in the BUOW Survey and Mitigation Guidelines prepared by the CBOC, no disturbance to an occupied burrow shall occur within approximately 160 feet*

of an occupied burrow during the non-breeding season (September 1 through January 31), or within approximately 250 feet of an occupied burrow during the breeding season (February 1 through August 31). For unavoidable impacts, passive relocation of burrowing owls shall be implemented. Passive relocation shall be conducted by a qualified biologist in accordance with procedures set forth by the MSHCP and California Burrowing Owl Consortium. Passive relocation of occupied burrows supporting a breeding pair of burrowing owls shall be conducted outside of the breeding season pursuant to the California Fish and Game Code and the MBTA.

Facts in Support of the Finding: According to Section 4.4 of the DEIR, one non-listed special status species, grasshopper sparrow, was observed on the site during the burrowing owl survey. Fourteen other non-listed special status species, including burrowing owl, have a low to moderate potential to occur on the site based on existing habitat quality. None of these species is listed as Threatened or Endangered under State or Federal law, all are relatively widespread, and the site does not contain high quality habitat for any of them. Therefore, any impacts to these species by the Project would not be considered significant. Neither additional surveys nor additional conservation measures for these species will be required for the proposed Project, with the exception of burrowing owl.

The planning area may support habitat for bird species protected under the California Fish and Game Code and Migratory Bird Treaty Act (MBTA). If clearing and grubbing activities take place during the general bird nesting season (February 1 through August 31), potential impacts to bird species protected under the California Fish and Game Code and MBTA may occur, therefore **Mitigation Measure 4.4.6.1A** is required.

The Project site also contains habitat suitable to support the burrowing owl. Although burrowing owl was not found on the site during the focused survey, the species is highly mobile, so there is a potential that at some future date prior to Project development, this species may occupy the site. This is a potentially significant impact requiring **Mitigation Measures 4.4.6.1B and 4.4.6.1C**. Implementation of the above-listed mitigation measures would reduce impacts to migratory bird species and non-listed sensitive species to a less than significant level. (DEIR, pgs. 4.4-25 to 4.4-27).

b. Riparian Habitat or Other Sensitive Natural Communities

Potential Significant Impact: The EIR evaluated and concluded that the Project has the potential to permanently affect 0.36 acre of riparian/riverine habitat and to temporarily affect 0.35 acre of riparian/riverine habitat.

Finding: Implementation of the following mitigation measures will reduce the potential adverse impacts to riparian habitat or other sensitive natural communities to less than significant:

4.4.6.2A *As outlined in the project's Determination of a Biologically Equivalent or Superior Preservation (DBESP) report, the project applicant shall compensate for the temporary and permanent impact on and loss of jurisdictional waters and streambeds by providing a minimum 2:1 off-site replacement of equivalent riverine/riparian habitat prior to project construction. Offsite restoration, enhancement, and/or land purchase mitigation for the drainage impacts will occur at an offsite location through one or more of the following: an USACE approved mitigation bank, through an in lieu fee mitigation program, and/or land purchase and conservation. CDFW and USFWS will need to provide concurrence that this mitigation is equivalent or superior to that proposed for impact through their review and acceptance of the DBESP.*

4.4.6.2B *Riparian/riverine resources that are temporarily impacted by project construction shall be returned to their preconstruction contours and hydroseeded, as outlined in the DBESP.*

Facts in Support of the Findings: According to Section 4.4 of the DEIR, the Project site consists of highly disturbed land from which most natural vegetation has been removed by regular disking for weed abatement and historical citrus cultivation. No special status species plants were recorded on site within the southern and western drainages due to the site's long-standing disturbances and the fact that on-site soils may not be capable of supporting most sensitive plant species.

However, implementation of the proposed Project would result in permanent impacts on 0.36 acre of riparian/riverine areas as a result of the construction of the detention basins, and drain outlets. In addition to permanent impacts, the proposed Project would result in temporary impacts on 0.35 acre of riparian/riverine areas associated with construction activities. Minimal intrusion into the drainages would be necessary and no construction is anticipated in the drainages themselves.

Following construction, temporary impact areas would be restored to their pre-construction contours and revegetated per a Habitat Mitigation and Monitoring Plan (HMMP) to be written for the Project site. The HMMP would be developed to address temporary impacts on riverine/riparian areas subject to jurisdiction under the MSHCP, waters of the United States subject to jurisdiction under Section 404 of the Clean Water Act (CWA), waters of the state subject to jurisdiction under Section 401 of the CWA, and

jurisdictional streambeds subject to jurisdiction under Sections 1600–1616 of the California Fish and Game Code. Therefore, the proposed mitigation design is directed at providing adequate mitigation based on impacts on the largest jurisdictional area (namely, CDFW jurisdictional streambeds). Because implementation of the proposed Project would have impacts on riparian/riverine areas on site, mitigation would be required. Implementation of the **Mitigation Measures 4.4.6.2A and 4.4.6.2B** would reduce impacts to riparian habitat to a less than significant level. (DEIR, pgs. 4.4-29 to 4.4-27)

c. Jurisdictional Waters/Wetlands

Potential Significant Impact: The EIR evaluated and concluded that the Project has the potential to permanently affect 0.051 non-wetland waters of the United States (US) and 0.362 acre of CDFW jurisdictional area, and to temporarily affect 0.054 acre of non-wetland waters of the U.S. and 0.33 acre of CDFW jurisdictional area.

Findings: Implementation of the following mitigation measures will reduce the potential adverse impacts to jurisdictional waters and wetlands to less than significant:

4.4.6.3A *The project applicant shall obtain a Section 404 Nationwide or Individual Permit, as appropriate, from the USACE, a Section 401/Porter-Cologne Water Quality Certification from the RWQCB, and a Section 1602 Streambed Alteration Agreement from the CDFW. Offsite restoration, enhancement, and/or land purchase mitigation of jurisdictional drainage impacts will occur at an off-site location through one or more of the following: an USACE approved mitigation bank, through an in-lieu fee mitigation program, and/or land purchase and conservation.*

Facts in Support of the Findings: According to Section 4.4 of the DEIR, there is a clear connection to drainages associated with the San Jacinto watershed, and all three drainages (western, southern, and eastern) located on or adjacent to the Project site are determined to be jurisdictional waters of the United States. Implementation of the proposed Project would result in permanent impacts to 0.051 acre (354 linear feet) of non-wetland waters of the US and waters of the State and 0.362 acre (440 linear feet) of state streambed associated with the eastern, southern, and western drainages. In addition to permanent impacts, the proposed Project would result in temporary impacts to 0.054 acre (332 linear feet) of non-wetland waters of the US and waters of the State and 0.33 acre (547 linear feet) of State streambed associated with construction activities. This is a significant impact requiring mitigation.

The proposed on-site restoration of temporary impact areas and the long-term enhancement of off-site riparian/riverine habitat managed by Santa Ana Water Authority provides adequate mitigation for identified impacts to on-site jurisdictional areas. Implementation of the recommended **Mitigation Measure 4.4.6.3A** would reduce impacts to jurisdictional waters to less than significant levels. (DEIR, pgs. 4.4-29 to 4.4-30)

3. Cultural Resources

a. Prehistoric Cultural Resources

Potential Significant Impact: The EIR evaluated and concluded that the Project could have an adverse effect on significant archaeological resource pursuant to Section 15064.5.

Finding: Implementation of the following mitigation measures will reduce the impact to unique archaeological resources to less than significant:

4.5.6.1A *Prior to the issuance of a grading permit, the Project Applicant shall provide evidence to the City of Moreno Valley that a Cultural Resources Monitoring Agreement has been secured for qualified Tribal representatives, and that a professional archaeological monitor meeting Secretary of Interior standards has been retained by the Applicant to conduct monitoring of all mass grading and trenching activities and has the authority to temporarily halt and redirect earthmoving activities in the event that suspected archaeological resources are unearthed during Project construction. The Project Archaeologist and Tribal representatives shall attend the pre-grading meeting with the City and contractors to explain and coordinate the requirements of the monitoring program.*

4.5.6.1B *Prior to the issuance of a grading permit, the Applicant shall provide evidence to the City of Moreno Valley that appropriate Native American representative(s), Project Archaeologist, and the Tribal representative(s) shall be allowed to monitor and have received a minimum of 30 days advance notice of all mass grading and trenching activities. During grading and trenching operations, the Tribal representatives and the project archaeological monitor shall observe all mass grading and trenching activities per the Cultural Resources Monitoring Agreement. If the Tribal representatives suspect that an archaeological resource may have been unearthed, the archaeologist, in consultation with the tribal representative, shall immediately halt and redirect grading operations in a 100-foot radius around the find to allow identification and evaluation of the suspected resource. In consultation with the appropriate Native American Tribe(s), the archaeological monitor shall evaluate the suspected resource and make a*

determination of significance pursuant to California Public Resources Code Section 21083.2.

4.5.6.1C *If a significant archaeological resource(s) is discovered on the property, ground disturbing activities shall be suspended 100 feet around the resource(s). The archaeological monitor and representatives of the appropriate Native American Tribe(s), the Project Applicant, and the City Planning Division shall confer regarding mitigation of the discovered resource(s). A treatment plan and/or preservation plan shall be prepared and by the archaeological monitor and reviewed by representatives of the appropriate Native American Tribe(s), the Project Applicant, and the City Planning Division and implemented by the archaeologist to protect the identified archaeological resource(s) from damage and destruction. The landowner shall relinquish ownership of all archaeological artifacts that are of Native American origin found on the Project site to the culturally affiliated Native American tribe(s) for proper treatment and disposition. A final report containing the significance and treatment findings shall be prepared by the archaeologist and submitted to the City Planning Division, the appropriate Native American tribe(s), and the Eastern Information Center at the University of California, Riverside. All cultural material, excluding sacred, ceremonial, grave goods and human remains, collected during the grading monitoring program and from any previous archaeological studies or excavations on the project site shall be curated, as determined by the treatment plan, according to the current professional repository standards and may include the Pechanga Bands curatorial facility.*

4.5.6.1D *Prior to grading permit issuance, the City shall verify that the following note is included on the Grading Plan:*

"If any suspected archaeological resources are discovered during ground-disturbing activities and the archaeological monitor or Tribal representatives are not present, the construction supervisor is obligated to halt work in a 100-foot radius around the find and call the project archaeologist and the Tribal representatives to the site to assess the significance of the find."

4.5.6.1E *If human remains are encountered, California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the Riverside County Coroner has made the necessary findings as to origin. Further, pursuant to California Public*

Resources Code Section 5097.98(b), remains shall be left in place and free from disturbance until a final decision as to the treatment and disposition has been made by the Coroner. If the Riverside County Coroner determines the remains to be Native American, the California Native American Heritage Commission must be contacted within 24 hours. The Native American Heritage Commission must then immediately notify the “most likely descendant(s)” of receiving notification of the discovery. The most likely descendant(s) shall then make recommendations within 48 hours, and engage in consultations concerning the treatment of the remains as provided in Public Resources Code §5097.98.

Facts in Support of the Finding: Based on Section 4.5 of the DEIR, a reconnaissance pedestrian-survey for the Project site was conducted in November 2007. Although the Project site is located within the Moreno Hills Complex, no archaeological resources were identified on the Project site during the field survey, and the cultural resource assessment concluded the Project would have no significant impacts; however, there is a potential for Project grading to disturb previously undiscovered cultural resources. While there is no recorded or surface evidence that archaeological resources are present on site, the Project is located in an area with a high potential of containing prehistoric archaeological resources. Therefore, a potential exists that excavation and construction activities may uncover previously undetected prehistoric or historic cultural resources. This is a potentially significant impact under CEQA and requires mitigation. Adherence to the above **Mitigation Measures 4.5.6.1A** through **4.5.6.1E** would reduce potential impacts to archaeological resources to a less than significant level. (DEIR, pgs. 4.5-6 to 4.5-7)

b. Paleontological Resources

Potential Significant Impact: The EIR evaluated and concluded that the Project could have an adverse effect on significant paleontological resource or site or unique geologic feature.

Findings: Implementation of the following mitigation measures will reduce the impact to unique paleontological resource or unique geologic feature to less than significant:

4.5.6.2A *Prior to the issuance of grading permits, the project applicant shall submit to and receive approval from the City, a Paleontological Resource Impact Mitigation Program (PRIMP). The PRIMP shall include the provision of a trained paleontological monitor during on-site soil disturbance activities. The monitoring for paleontological resources shall be conducted during the rough-grading phase of the project. In the event that*

paleontological resources are unearthed or discovered during excavation, Mitigation Measure 4.5.6.2C shall apply. Conversely, if no paleontological resources are unearthed or discovered on site during excavation, no additional action is required.

4.5.6.2B *The paleontological monitor shall be equipped to rapidly remove any large fossil specimens encountered during excavation. During monitoring, samples of soil shall be collected and processed to recover microvertebrate fossils. Processing shall include wet screen washing and microscopic examination of the residual materials to identify small vertebrate remains.*

4.5.6.2C *If paleontological resources are unearthed or discovered during excavation of the project site, the monitoring for paleontological resources shall be conducted on a full-time basis for the duration of the rough-grading of the project site. The following recovery processes shall apply:*

- *Upon encountering a large deposit of bone, salvage of all bone in the area shall be conducted with additional field staff and in accordance with modern paleontological techniques.*
- *All fossils collected during the project shall be prepared to a reasonable point of identification. Excess sediment or matrix shall be removed from the specimens to reduce the bulk and cost of storage. Itemized catalogs of all material collected and identified shall be provided to the museum repository along with the specimens.*
- *A report documenting the results of the monitoring and salvage activities and the significance of the fossils shall be prepared.*
- *All fossils collected during this work, along with the itemized inventory of these specimens, shall be deposited in a museum repository for permanent curation and storage.*

4.5.6.2D *Prior to grading permit issuance, the City shall verify that the following note is included on the Grading Plan:*

“If any suspected paleontological resources are discovered during ground-disturbing activities, the construction supervisor is obligated to halt work in a 100-foot radius

around the find and call a qualified paleontologist to the site to assess the significance of the find. A qualified paleontologist shall evaluate the suspected resource. If the paleontologist determines that the find is not unique, construction shall be permitted to proceed. However, if the paleontologist determines that further information is needed to evaluate significance, the City of Moreno Valley shall be notified and a treatment plan shall be prepared and implemented in consultation with the City to protect the identified paleontological resource(s) from damage and destruction.”

Facts in Support of the Findings: According to Section 4.5 of the DEIR, the proposed Project site is located within an area that has a high potential to contain near-surface Pleistocene fossils.¹¹ The paleontological literature search indicated that there is potential for significant, nonrenewable resources that to encountered during onsite construction activities. Therefore, a paleontological resources impact mitigation program (PRIMP), including excavation monitoring by a qualified paleontologist, is recommended for earthmoving activities in Pleistocene sediments on the Project site with potential to contain significant, nonrenewable paleontological resources. Although no paleontological resources were identified on site during the field survey, because of the location of the Project site and associated sensitivity for paleontological resources, the potential exists that paleontological resources maybe uncovered during construction. Adherence to the **Mitigation Measures 4.5.6.2A through 4.5.6.2D** will reduce potential impacts to paleontological resources to a less than significant level. (DEIR, pgs. 4.5-7 to 4.5-8)

4. Hydrology, Drainage, and Water Quality

a. Construction-Related Water Quality Impacts

Potential Significant Impact: The EIR evaluated and concluded that the Project could violate water quality standards or waste discharge requirements during construction phases of the Project in form of increased soil erosion, sedimentation, or storm water discharges.

Findings: Implementation of the following mitigation measures will reduce the impact to construction-related water quality to less than significant:

4.7.6.1A *Prior to grading plan approval and the first issuance of a grading permit by the City, the project applicant shall provide evidence to the City that a Notice of Intent (NOI) has been filed with the Regional Water Quality Control Board for coverage under the State*

¹¹ Ibid.

NPDES General Construction Permit for discharge of storm water associated with construction activities.

4.7.6.1B

Prior to grading plan approval and the first issuance of a grading permit by the City, the project applicant shall submit to the City of Moreno Valley a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP shall include a surface water control plan and erosion control plan citing specific measures to control on-site and off-site erosion during the entire grading and construction period. Additionally, the SWPPP shall identify structural and nonstructural BMPs to control sediment and nonvisible discharges from the site. BMPs to be implemented in the SWPPP may include (but shall not be limited to) the following:

- Sediment discharges from the site may be controlled by the following: sandbags, silt fences, straw wattles and temporary debris basins (if deemed necessary), and other discharge control devices. The construction and condition of the BMPs will be periodically inspected during construction, and repairs will be made when necessary as required by the SWPPP.*
- No materials of any kind shall be placed in drainage ways.*
- Materials that could contribute nonvisible pollutants to storm water must be contained, elevated, and placed in temporary storage containment areas.*
- All loose piles of soil, silt, clay, sand, debris, and other earthen material shall be protected per RWQCB standards to eliminate any discharge from the site. Stockpiles will be surrounded by silt fences.*
- The SWPPP will include inspection forms for routine monitoring of the site during the construction phase to ensure NPDES compliance.*
- Additional BMPs and erosion control measures will be documented in the SWPPP and utilized if necessary.*
- The SWPPP will be kept on site for the entire duration of project construction and will also be available to the local RWQCB for inspection at any time.*

In the event that it is not feasible to implement the above BMPs, the City of Moreno Valley can make a determination that other BMPs will provide equivalent or superior treatment either on or off site.

4.7.6.1C *Prior to the issuance of grading permits, the project applicant shall provide evidence to the City that the following provisions have been added to construction contracts for the project:*

- *The Construction Contractor shall be responsible for performing and documenting the application of BMPs identified in the SWPPP. Weekly inspections shall be performed on sediment control measures called for in the SWPPP. Monthly reports shall be maintained by the Contractor and submitted to the City for inspection. In addition, the Contractor will also be required to maintain an inspection log and have the log on site to be reviewed by the City of Moreno Valley and the representatives of the Regional Water Quality Control Board.*

Facts in Support of the Findings: According to Section 4.7 of the DEIR, the construction and grading phases of the project site would require the disturbance of surface soils and removal of existing orange groves and vegetative cover. During the construction period, grading and excavation activities would result in exposure of soil to storm runoff, potentially causing erosion and sediment in runoff. If not managed through Best Management Practices (BMPs), the runoff could cause erosion and increased sedimentation in local drainage ways such as the Quincy Channel. The potential for chemical releases is present at most construction sites in the form of fuels, solvents, glues, paints, and other building construction materials. However, implementation of construction practices and adherence to existing water quality regulations and **Mitigation Measures 4.7.6.1A** through **4.7.6.1C** would reduce these impacts to a less than significant level. (DEIR, pgs. 4.7-21 to 4.7-23)

b. Operational-Related Water Quality Impacts

Potential Significant Impact: The EIR evaluated and concluded that the Project could violate water quality standards or waste discharge requirements during the operational phases of the project in the form of increased soil erosion, sedimentation, or urban runoff.

Findings: Implementation of the following mitigation measure will reduce the impact to operational-related water quality to less than significant:

4.7.6.2A *Prior to grading plan approval and the first issuance of a grading permit by the City, the project applicant shall receive approval from the City of Moreno Valley for a Final Water Quality Management Plan (F-WQMP). The F-WQMP shall specifically identify*

pollution prevention, site design, source control, and treatment control BMPs that shall be used on site to control predictable pollutant runoff in order to reduce impacts to water quality to the maximum extent practicable. BMPs to be implemented in the F-WQMP may include (but shall not be limited to) the following:

- *Required landscaped areas shall not use decorative concrete or impervious surfaces.*
- *Landscape plans shall incorporate native and drought-tolerant plants, trees, and shrubs. Landscaping shall be maintained weekly and maintenance contractor will properly dispose of all landscape wastes.*
- *Irrigation systems shall be inspected monthly by the landscape contractor to check for overwatering, leaks, or excessive runoff to paved areas. Timers will be used to prevent overwatering.*
- *Signage will be inspected and maintained twice a year for legibility.*
- *Outdoor Loading/Unloading truck docks shall be kept in a clean and orderly condition with weekly inspections, continuous monitoring and immediate clean up of spills.*
- *Parking area maintenance shall be swept or vacuumed at least quarterly, if there is any trash or debris in between the routine sweeping, it shall be swept or vacuumed immediately.*
- *Trash enclosures will be inspected and maintained weekly or as needed by maintenance contractor.*
- *On-site extended detention/sedimentation basins and sand filters will treat all of the site's runoff via vegetated swales and will be maintained and inspected at least twice a year and prior to October 1.*
- *Additional BMPs will be documented in the WQMP and utilized if necessary.*

In the event that it is not feasible to implement the above BMPs, the City of Moreno Valley can make a determination that other BMPs will provide equivalent or superior treatment either on or off site.

Facts in Support of the Findings: According to Section 4.7 of the DEIR, the proposed Project would result in the conversion of existing on-site permeable surfaces to impermeable surfaces, thereby altering the current drainage pattern. Upon development of the proposed on-site uses, storm runoff from the roadways, parking lots, and buildings may carry a variety of pollutants such as sediment, pathogens, petroleum products, commonly utilized construction materials, landscaping chemicals, and (to a lesser extent) trace metals such as zinc, copper, lead, cadmium, and iron, which may lead to the degradation of storm water in downstream channels. These impacts to water quality are considered significant impacts that require mitigation. **Mitigation Measure 4.7.6.2A** has been identified to reduce impacts to water quality to less than significant.

The proposed Project would also incorporate on-site drainage that would have hydrodynamic infrastructure components that would meet City and County water quality requirements. Through the use of site design BMPs, source control BMPs, and treatment control BMPs, the resulting pollutant loads coming from the proposed Project would be reduced thereby ultimately reducing pollutants discharged from urban storm water runoff to surface water bodies. Because adherence to the requirements of the NPDES permit, which include implementation of the BMPs outlined in the WQMP, would be required by the City during the operation of the proposed Project, potential water quality impacts resulting from storm water and urban runoff would be reduced to a less than significant level. (DEIR, pgs. 4.7-23 to 4.7-26)

c. **Drainage Capacity-Related Impacts**

Potential Significant Impact: The EIR evaluated and concluded that the Project could create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.

Findings: Implementation of the following mitigation measure will reduce the impact to drainage to less than significant:

4.7.6.3A *Prior to the approval of a rough grading plan, the project proponent shall receive approval on a project-specific Final Hydrology Study, with supporting engineering calculations, from the City Engineer. The Final Hydrology Study shall incorporate relevant requirements identified by the City, and/or site-specific geotechnical investigations.*

Facts in Support of the Findings: According to Section 4.7 of the DEIR, development and operation of the proposed Project would result in the generation of the additional storm water flows that would be

above those generated in existing site conditions. With the construction and maintenance of adequate storm water drainage systems, through the adherence of **Mitigation Measure 4.7.6.3A**, impacts would be less than significant. In addition, the design and installation of the proposed drainage improvements will be required to adhere to applicable City and County standards. (DEIR, pgs. 4.7-26 to 4.7-28)

5. Noise

a. **Short-Term Construction Noise**

Potential Significant Impact: The EIR evaluated and concluded that noise levels from grading and other construction activities for the proposed Project may range up to 91 dBA at the closest residences southeast of the Project site for very limited times when construction occurs near the Project's boundary. Construction-related noise impacts from the proposed Project would be potentially significant.

Finding: Implementation of the following mitigation measures will reduce potential short-term construction noise impacts to less than significant:

4.9.6.1A *During all project site excavation and grading on site, the project contractor shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards.*

4.9.6.1B *The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest to the project site.*

4.9.6.1C *The construction contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise sources and noise-sensitive receptors nearest to the project site during all project construction.*

4.9.6.1D *During all project site construction activities at Building 6 (i.e., closest to existing residences), the construction contractor shall limit all construction-related activities that would result in high noise levels to between the hours of 6:00 a.m. and 8:00 p.m. on weekdays and between the hours of 7:00 a.m. to 8:00 p.m. on weekends and holidays, unless written approval is obtained from the City Building Official or City Engineer for specific construction activities that must be conducted outside of the permitted time periods.*

Facts in Support of the Finding: According to Section 4.9 of the DEIR, two types of short-term noise impacts could occur during the construction of the Project. First, construction crew commutes and the

transport of construction equipment and materials to the site for the proposed Project would incrementally increase noise levels on access roads leading to the site. The second type of short-term noise impact is related to noise generated during excavation, grading, and building erection on the Project site. Construction of the proposed Project is expected to require the use of scrapers, bulldozers, and water and pickup trucks. The site preparation phase, which includes excavation and grading of the site, tends to generate the highest noise levels, because the noisiest construction equipment is earthmoving equipment. Earthmoving equipment includes excavating machinery such as backfillers, bulldozers, draglines, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve one or two minutes of full-power operation followed by three to four minutes at lower power settings. The maximum noise level generated by each scraper on the proposed Project site is assumed to be approximately 87 dBA L_{max} at 50 feet from the scraper. Each bulldozer would generate approximately 85 dBA L_{max} at 50 feet. The maximum noise level generated by water and pickup trucks is approximately 86 dBA L_{max} at 50 feet from these vehicles. Each doubling of the sound sources with equal strength increases the noise level by three (3) dBA. Assuming that each piece of construction equipment operates at some distance from the other equipment, the worst-case composite noise level during this phase of construction would be 91 dBA L_{max} at a distance of 50 feet from the active construction area.

The nearest noise-sensitive receptor locations to the Project site are existing residences approximately 50 feet to the southeast. These nearest residents may be subject to short-term, intermittent, maximum noise reaching 91 dBA L_{max} , generated by construction activities on the Project site. This noise level would exceed the City's exterior noise standard of 60 dBA¹² CNEL for residential uses. However, no significant construction noise impacts would occur if construction of the proposed Project would occur within the permitted hours of 6:00 a.m. to 8:00 p.m. of any working day, and within the permitted hours of 7:00 a.m. and 8:00 p.m. on Sundays and Federal holidays. Compliance with the construction hours specified in the City's Municipal Code would result in construction noise impacts that are less than significant. While impacts would be considered less than significant as long as construction activities occur within the designated hours identified in the City's Municipal Code, mitigation measures have been identified to reduce the noise levels that would expose nearby sensitive receptors to noise levels in excess of the City's noise standards.

¹² Chapter 11.80.030 Table 11.80.030-2, City of Moreno Valley Municipal Code, City of Moreno Valley.

With adherence to the City’s designated construction hours and with implementation of the proposed **Mitigation Measures 4.9.6.1A through 4.9.6.1D**, potential short-term construction noise impacts would be reduced below the level of significance. (DEIR, pgs. 4.9-25 to 4.9-27)

6. Transportation

a. Future Year 2035 with Project Conditions (Intersection) Traffic and Level of Service

Potential Significant Impact: The EIR evaluated and concluded that the Project could cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system.

Findings: Implementation of the following mitigation measures will reduce the impact related to future traffic LOS to less than significant:

4.11.6.4A. *Prior to issuance of a Certificate of Occupancy the project applicant shall construct the following traffic improvements:*

- *Redlands Boulevard/SR-60 Westbound Ramps. Install a traffic signal. This improvement is currently approved, and permitted by Caltrans. If not otherwise completed prior to project opening, the required traffic signal shall be constructed by the Applicant prior to issuance of the first Certificate of Occupancy.*
- *Redlands Boulevard/Fir Avenue/Eucalyptus Avenue. If not otherwise completed prior to project opening, prior to issuance of the first Certificate of Occupancy, the Applicant shall construct the following improvements: Install a traffic signal and add a northbound left-turn lane and a southbound left-turn lane.*

If the improvements are constructed by others prior to the Certificate of Occupancy, the applicant shall pay its fair share towards the improvements through the City’s DIF program.

4.11.6.4B *Prior to issuance of building permits, the project applicant shall pay the fair-share contribution toward the following traffic improvements through fees paid to the City of Moreno Valley based on the City’s DIF system and the County’s TUMF program:*

- **Moreno Beach Drive/SR-60 Eastbound Ramps.** *The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the*

design phase. Therefore, payment of the TUMF would mitigate the significant impact at this location. This project is scheduled to go into construction by the end of this year and completed by the end of 2013.

- ***Redlands Boulevard/SR-60 Westbound Ramps.** Install a traffic signal. This improvement is currently approved, and permitted by Caltrans. If not otherwise completed prior to project opening, the required traffic signal shall be constructed by the Applicant prior to issuance of the first Certificate of Occupancy.*
- ***Redlands Boulevard/Fir Avenue/Eucalyptus Avenue.** If not otherwise completed prior to project opening, prior to issuance of the first Certificate of Occupancy, the Applicant shall construct the following improvements: Install a traffic signal. This improvement is listed in the City's DIF program. Add a northbound left-turn lane and a southbound left-turn lane.*

4.11.6.4C *Prior to issuance of building permits, the project applicant shall pay the fair-share contribution toward the following traffic improvements through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program:*

- ***Moreno Beach Drive/SR-60 Eastbound Ramps.** The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF would mitigate the significant impact at this location.*
- ***Moreno Beach Drive/Cottonwood Avenue.** Add a southbound through lane. This improvement is listed in the City's DIF program. Therefore, payment of the DIF would mitigate the significant impact at this location.*
- ***Moreno Beach Drive/Alessandro Boulevard.** Add a southbound through lane. This improvement is listed in the City's DIF program. Therefore, payment of the DIF would mitigate the significant impact at this location.*
- ***Redlands Boulevard/SR-60 Westbound Ramps.** Install a traffic signal. This improvement is listed in the City's DIF program and will be installed before building occupancy since it was identified as a direct project impact. Add a northbound through lane. The Redlands Boulevard/SR-60 Interchange reconstruction would implement the*

northbound through lane. The interchange reconstruction project is programmed in the TUMF. Therefore, payment of the DIF and TUMF would mitigate the significant impact at this location.

- **Redlands Boulevard/SR-60 Eastbound Ramps.** The Redlands Boulevard/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF. Therefore, payment of the TUMF would mitigate the significant impact at this location.
- **Redlands Boulevard/Fir Avenue/Eucalyptus Avenue.** Install a traffic signal. Add a westbound right-turn lane and provide overlap phasing for the westbound right turns. Add a westbound left-turn lane and an eastbound left-turn lane. These improvements are programmed in the City's DIF program. Add a northbound left-turn lane a southbound through lane and a southbound left-turn lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF would mitigate the significant impact at this location.
- **Redlands Boulevard/Eucalyptus Avenue.** Add a southbound right-turn lane. This improvement is programmed in the TUMF. Therefore, payment of the TUMFs would mitigate the significant impact at this location.
- **Redlands Boulevard/Alessandro Boulevard.** Add a southbound left-turn lane. This improvement is programmed in the TUMF. Therefore, payment of the TUMFs would mitigate the significant impact at this location.

4.11.6.4D *Prior to issuance of building permits, the project applicant shall pay the fair-share contribution toward the following traffic improvements through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program. At some locations, the DIF and TUMFs would not fully mitigate the projects impact. For these locations, additional improvements shall be implemented by the project applicant prior to the issuance of a certificate of occupancy for the project:*

- **Nason Street/Eucalyptus Avenue.** Add a northbound right-turn lane. This improvement is programmed in the City's DIF; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. In addition, the project shall contribute a fair

share (calculated to be 1.76%) toward restriping the westbound approach to provide dual left-turn lanes

- **Nason Street/Alessandro Boulevard.** Add an eastbound through lane and a westbound through lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. In addition, the project shall contribute a fair share (calculated to be 1.4%) toward modification of the traffic signal to provide overlap phasing for the eastbound right-turn lane.
- **Moreno Beach Drive/SR-60 Westbound Ramps.** The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF would mitigate the significant impact at this location.
- **Moreno Beach Drive/SR-60 Eastbound Ramps.** The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF would mitigate the significant impact at this location.
- **Moreno Beach Drive/Eucalyptus Avenue.** Convert the existing eastbound through lane to a left-turn lane and the eastbound right-turn lane to a shared through/right-turn lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. In addition, the project shall contribute a fair share (calculated to be 8.63%) toward modification of the traffic signal to provide right-turn overlap phasing for the westbound right turn.
- **Moreno Beach Drive/Cottonwood Avenue.** Add a southbound through lane. This improvement is programmed in the City's DIF program. Therefore, payment of the DIF would mitigate the significant impact at this location.
- **Moreno Beach Drive/Alessandro Boulevard.** Add 2 southbound through lanes, 2 northbound through lanes, an eastbound through lane, and a westbound through lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would mitigate the significant impact at this location.

- **Redlands Boulevard/SR-60 Westbound Ramps.** Install a traffic signal. This improvement is programmed in the City's DIF program and will be installed before building occupancy since it was identified as a direct project impact.
- **Redlands Boulevard/SR-60 Eastbound Ramps.** The Redlands Boulevard/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF. Therefore, payment of the TUMF would mitigate the significant impact at this location.
- **Redlands Boulevard/Fir Avenue-Eucalyptus Avenue.** Install a traffic signal and add a westbound left-turn lane, eastbound through lane, eastbound left-turn lane, and a westbound right-turn lane with overlap phasing. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. In addition, add a southbound through lane, southbound left-turn lane, northbound through lane, northbound left-turn lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF would mitigate the significant impact at this location.
- **Redlands Boulevard/Eucalyptus Avenue.** Install a traffic signal and add a westbound left-turn lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. In addition, add a northbound left-turn lane and a southbound left-turn lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF would mitigate the significant impact at this location.
- **Redlands Boulevard/Alessandro Boulevard.** Install a traffic signal. This improvement is programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. In addition, add a southbound left-turn lane, a northbound left-turn lane, a westbound left-turn lane, an eastbound left-turn lane, a westbound right-turn lane, and a southbound through lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF would mitigate the significant impact at this location.

4.11.6.4E Prior to issuance of building permits, the project applicant shall implement the following improvements, either through fees paid to the City of Moreno Valley based on the City's DIF

system and the County's TUMF program, or through a fair-share contribution to the City of Moreno Valley as noted below:

- **Nason Street/Eucalyptus Avenue.** Add a northbound right-turn lane and an eastbound right-turn lane. These improvements are programmed in the City's DIF; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. Implementation of the improvements identified for this intersection in **Mitigation Measure 4.11.6.4D** would also partially mitigate the significant impact at this intersection. In addition, the project shall pay a fair share (calculated to be 1.6%) toward modification of the traffic signal to provide right-turn overlap phasing for the eastbound and northbound right turns.
- **Nason Street/Alessandro Boulevard.** Add an eastbound through lane and westbound through lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. Implementation of the improvements identified for this intersection in **Mitigation Measure 4.11.6.4D** would also partially mitigate the significant impact at this intersection. In addition, the project shall pay a fair share (calculated to be 1.35%) toward the addition of an eastbound left-turn lane and modification of the traffic signal to provide overlap phasing for the westbound right-turn lane.
- **Moreno Beach Drive/SR-60 Westbound Ramps.** The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF would mitigate the significant impact at this location.
- **Moreno Beach Drive/SR-60 Eastbound Ramps.** The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF would mitigate the significant impact at this location.
- **Moreno Beach Drive/Eucalyptus Avenue.** Restripe eastbound approach to dual left-turn lanes and add a northbound through lane, a westbound through lane, and a southbound right-turn lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this

intersection. Implementation of the improvements identified for this intersection in **Mitigation Measure 4.11.6.4D** would also partially mitigate the significant impact at this intersection. In addition, the project shall pay a fair share (calculated to be 5.17%) toward modification of the traffic signal to provide right-turn overlap phasing for the southbound right-turn lane.

- **Moreno Beach Drive/Cottonwood Avenue.** Add a southbound through lane, a northbound through lane, an eastbound left-turn lane, an eastbound through lane, a westbound through lane, and a westbound left-turn lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would mitigate the significant impact at this location.
- **Moreno Beach Drive/Alessandro Boulevard.** Add 2 southbound through lanes, add 2 northbound through lanes, an eastbound through lane, and a westbound through lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would mitigate the significant impact at this location.
- **Auto Mall Drive/Eucalyptus Avenue.** Install a traffic signal. This improvement is programmed in the City's DIF program; therefore, payment of the DIF would mitigate the significant impact at this location.
- **Redlands Boulevard/SR-60 Westbound Ramps.** Install a traffic signal. This improvement is programmed in the City's DIF program and will be installed before building occupancy since it was identified as a direct project impact. Therefore, payment of the DIF would mitigate the significant impact at this location.
- **Redlands Boulevard/SR-60 Eastbound Ramps.** The Redlands Boulevard/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF. Therefore, payment of the TUMF would mitigate the significant impact at this location.
- **Redlands Boulevard/Fir Avenue-Eucalyptus Avenue.** Install a traffic signal and add a westbound left-turn lane, eastbound through lane, eastbound left-turn lane, a westbound right-turn lane with overlap phasing, and a southbound right-turn lane with overlap phasing. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. In addition, add a southbound through lane, a southbound left-turn lane, a northbound

through lane, a northbound left-turn lane, and a northbound right-turn lane. These improvements are programmed in the TUMF. Therefore, payment of the TUMF would also partially mitigate the significant impact at this location. In addition, the project shall pay a fair share (calculated to be 10.44%) of the cost of adding a southbound left-turn lane.

- **Redlands Boulevard/Eucalyptus Avenue.** Install a traffic signal and add a westbound left-turn lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. In addition, add a northbound left-turn lane, a northbound through lane, a southbound left-turn lane, and a southbound through lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF would mitigate the significant impact at this location.
- **Redlands Boulevard/Cottonwood Avenue.** Add an eastbound through lane and westbound through lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. In addition, add a northbound through lane, and a southbound through lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF would mitigate the significant impact at this location.
- **Redlands Boulevard/Alessandro Boulevard.** Install a traffic signal. This improvement is programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. In addition, add a southbound left-turn lane, a northbound left-turn lane, a westbound left-turn lane, an eastbound left-turn lane, a westbound right-turn lane, a southbound through lane, a westbound through lane, and an eastbound through lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF would mitigate the significant impact at this location.

4.11.6.4F *If the Encilia Avenue and Quincy Street Connection plan is implemented as part of the proposed project, then prior to issuance of building permits, the project applicant shall implement the following improvements: In addition to those identified in **Mitigation Measure 4.11.6.4E**, either through fees paid to the City of Moreno Valley based on the City's DIF*

system and the County's TUMF program, or through a fair-share contribution to the City of Moreno Valley as noted below:

- **Moreno Beach Drive/Eucalyptus Avenue.** Restripe the southbound shared through/right-turn lane to a southbound through lane. This improvement is programmed in the City's DIF program; therefore, payment of the DIF would mitigate the impacts of the project at this intersection.
- **Redlands Boulevard/Fir Avenue-Eucalyptus Avenue.** Pay the fair share (calculated to be 10.84%) to add a southbound right-turn lane.
- **Redlands Boulevard/Encilia Avenue-Eucalyptus Avenue.** Install a traffic signal and add a westbound left-turn lane. These improvements are programmed in the City's DIF program. In addition, add a northbound left-turn lane, northbound through lane, southbound left-turn lane, and a southbound through lane. These improvements are programmed in the TUMF program. Therefore, payment of the DIF and TUMF would fully mitigate the impact of the project at this intersection.
- **Moreno Beach Drive/Encilia Avenue.** Install a traffic signal, add a northbound through lane, southbound left-turn lane, and a southbound through lane. This improvement is programmed in the City's DIF program; therefore, payment of the DIF would mitigate the impacts of the project at this intersection.

Facts in Support of the Findings: Future Year (2035) with Project conditions considers the addition of traffic generated by the proposed project to Future Year (2035) Baseline conditions. The addition of project traffic to the Future Year (2035) scenario would result in conditions exceeding City and Caltrans LOS standards at twelve intersections.

All of the intersections that are forecast to experience a deficient LOS with the proposed project would also operate with a deficient LOS without the proposed project. Although the proposed project does not cause these intersections to operate at an unsatisfactory LOS, it does contribute to the worsening of the intersections' LOS and therefore mitigation would be required to offset the cumulative impact of the project.

Freeway mainline and ramp junctions were evaluated in the Future Year 2035 plus Project condition. Nine segments are forecast to operate at an unsatisfactory level of service in the Future Year 2035 Cumulative plus Project condition. The Traffic Study for the proposed Project also analyzes the Future

Year 2035 plus Project conditions a.m. and p.m. peak hour ramp merge-diverge volumes and levels of service for the freeway segments on SR-60. Nine ramp junctions are forecast to operate at an unacceptable level of service in the future Year 2035 plus Project condition. (DEIR pgs. 4.11-25 to 4.11-27)

According to Section 4.11 in the DEIR, with the implementation of the recommended improvements, the minimum level of service standards would be maintained for the Future Year (2035) with Project scenario and impacts would be reduced to a less than significant level for all identified intersections. In addition, reconstruction of the interchanges at the location of the deficient freeway ramp intersections identified in **Mitigation Measure 4.11.6.2D** are already programmed into the TUMF program. It is anticipated that by future year (2035) improvement to the identified freeway ramps and intersections would be built through the TUMF process and coordination by Caltrans, WRCOG, and the City of Moreno Valley. Because the project would pay its fair-share cost associated with these improvements and because such improvements are anticipated to be constructed by the future year (2035), impacts associated with this issue are less than significant after the identified mitigation measures have been implemented. (DEIR, pg. 4.11-35)

**b. General Plan Build Out With Project Conditions (Intersection)
Traffic and Level of Service Impacts**

Potential Significant Impact: The EIR evaluated and concluded that the Project could cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system.

Findings: Implementation of **Mitigation Measure 4.11.6.4E** will reduce the impact related to General Plan buildout to less than significant.

Facts in Support of the Findings: General Plan Build Out with project conditions considers the addition of traffic generated by the proposed project to General Plan Build Out baseline conditions. An intersection LOS analysis was conducted to determine General Plan Build Out intersection performance. The addition of project traffic to the General Plan Build Out scenario would result in conditions exceeding City and Caltrans LOS standards at 13 intersections.

All of the intersections that are forecast to experience a deficient LOS with the proposed project would also operate with a deficient LOS without the proposed project. Although the proposed project does not cause these intersections to operate at an unsatisfactory LOS, it does contribute to the worsening of the intersections' LOS and therefore mitigation would be required to offset the cumulative impact of the project. (DEIR, pg. 4.11-28)

According to Section 4.11 of the DEIR, with the implementation of the recommended improvements, the minimum level of service standards would be maintained for the General Plan Build Out with Project scenario and impacts would be reduced to a less than significant level for all identified intersections. However, as noted previously, improvements to the freeway intersections and infrastructure are under the authority of Caltrans. In addition, the deficient freeway ramp intersections identified in **Mitigation Measure 4.11.6.2E** are already programmed into the TUMF program. It is anticipated that by the General Plan Build Out, improvements to the identified freeway ramps and intersections would be built through the TUMF process and coordination by Caltrans, WRCOG, and the City of Moreno Valley. Because the project would pay its fair-share cost associated with these improvements and because such improvements are anticipated to be constructed by the future year (2035), impacts associated with this issue are less than significant after the identified mitigation measures have been implemented. (DEIR, pg. 4.11-37)

7. Utilities and Service Systems

a. Storm Water Drainage Requirements

Potential Significant Impact: The EIR evaluated and concluded that the Project could result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Findings: Implementation of the following mitigation measures will reduce the impact to storm water drainage to less than significant:

4.7.6.3A *Prior to the approval of associated project rough grading plan, the project proponent shall receive approval on a project-specific Final Hydrology Study, with supporting engineering calculations, from the City Engineer. The Final Hydrology Study shall incorporate relevant requirements identified by the City, and/or site-specific geotechnical investigations.*

Facts in Support of the Findings: According to Section 4.12 of the DEIR, the proposed Project would route storm water flows from the Project site into Quincy Channel after flows are routed through a combination of water quality basins and sand filters. Due to the installation of impervious surfaces on the Project site, the post-development flows would be higher than the pre-development flows. To avoid a significant impact to the existing drainage capacity, the post-development flows coming from the

proposed Project site are required to be equal to or less than pre-development flows.¹³ To reduce flows to below or equal to pre-development conditions, the on-site storm water flows would be routed to the on-site detention basins¹⁴ before flows are routed off site. While the increase in impervious surfaces attributable to the proposed Project would contribute to a greater volume and higher velocity of storm water flows, the proposed Project's water quality basins would accept and accommodate runoff that would result from project construction at pre-project conditions.

As identified in the Preliminary Hydrology Calculations¹⁵ prepared for the Project, to adequately contain and store the greatest volume that would be generated, the Project site would require a minimum storage volume of 13.6 acre-feet. The proposed amount of storage area (20.3 acre-feet) is greater than the required amount of storage area. Based on this, it appears there is excess capacity of 6.7 acre-feet (20.3 acre-feet – 13.6 acre-feet = 6.7 acre-feet) of storage area available from the on-site detention basins; therefore, the proposed Project appears to have adequate drainage capacity that would result in post-development flows being reduced to pre-development flows before leaving the Project site. However, to ensure that impacts associated with on-site drainage capacity are reduced to a less significant level, the **Mitigation Measure 4.7.6.3A** has been identified to reduce potential impacts to less than significant levels. (DEIR, pgs. 4.12-16 to 4.12-17)

8 Global Climate Change

a. Greenhouse Gas Emissions

Potential Significant Impact: The EIR evaluated and concluded that the Project could have an adverse effect due to the generation of greenhouse gas emissions (GHGs).

Findings: Implementation of the following mitigation measures will reduce the impact related to greenhouse gas emissions to less than significant:

4.13.6.1A *Prior to the issuance of building permits, the project applicant shall provide evidence to the City of Moreno Valley that building features have been incorporated in building*

¹³ As part of the MS4 Permit issuance requirements, projects must identify any Hydrologic Conditions of Concern and demonstrate that changes to hydrology are minimized to ensure that post-development runoff rates and velocities from a site do not adversely affect downstream erosion, sedimentation, or stream habitat.

¹⁴ A detention basin is an area where excess storm water is stored or held temporarily and then slowly drains when water levels in the receiving channel recede. In essence, the water in a detention basin is temporarily detained until additional room becomes available in the receiving channel.

¹⁵ *Preliminary Hydrology Calculations for ProLogis Park Moreno Valley-Eucalyptus TPM 35679*, Thienes Engineering, November 4, 2008.

plans as required by Title 24 of the California Code of Regulations. These features include but are not limited to the following:

- *Exterior windows shall utilize window treatments for efficient energy conservation.*
- *Per CALGreen Code requirements, water-efficient fixtures and appliances, including but not limited to low-flow faucets, dual-flush toilets minimizing water consumption by 20 percent from the Building Standards Code baseline water consumption shall be used.*
- *Per CALGreen Code requirements, a Commissioning Plan shall be prepared and all building systems (e.g., heating, ventilation, and air-conditioning [HVAC], irrigation systems, lighting, and water heating) shall be commissioned by the Commissioning Authority.*
- *Per CALGreen Code, restrict watering methods (e.g., prohibit systems that apply water to non-vegetated surfaces) and control runoff.*

4.13.6.1B *Prior to the issuance of building permits, the project applicant shall provide evidence to the City of Moreno Valley that the following measures have been incorporated into the design and construction of the project:*

- *Use of locally produced and/or manufactured building materials for at least 10 percent of the construction materials used for the project.*
- *Use of “Green Building Materials,” such as those materials that are resource efficient, and recycled and manufactured in an environmentally friendly way, for at least 10 percent of the project.*
- *Limit unnecessary idling of construction equipment. A reduction in equipment idling would reduce fuel consumption, and therefore, GHG emissions.*
- *Maximize the use of electricity from the power grid by replacing diesel- or gasoline-powered equipment. This would reduce GHG emissions because electricity can be produced more efficiently at centralized power plants.*
- *Design the project building to exceed the California Building Code’s (CBC) Title 24 energy standard, including, but not limited to, any combination of the following:*

- *Increase insulation such that heat transfer and thermal bridging is minimized.*
- *Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption.*
- *Incorporate ENERGY STAR or better rated windows, space heating and cooling equipment, light fixtures, appliances, or other applicable electrical equipment.*
- *Provide a landscape and development plan for the project that takes advantage of shade, prevailing winds, and landscaping.*
- *Install efficient lighting and lighting control systems. Use daylight as an integral part of the lighting systems in buildings.*
- *Install light-colored “cool” roof and cool pavements.*
- *Install energy-efficient heating and cooling systems, appliances and equipment, and control systems.*
- *Install solar or light-emitting diodes (LEDs) for outdoor lighting for auto parking areas.*

4.13.6.1C *Prior to the issuance of occupancy permits, the project applicant shall provide evidence to the City of Moreno Valley that the following measures have been incorporated into the operation of the project:*

- *The project applicant shall use less than 3,900 Global Warming Potential (GWP) hydrofluorocarbon (HCF) refrigerants or natural refrigerants (ammonia, propane, carbon dioxide [CO₂]) for refrigeration and fire suppression equipment.*
- *Provide vegetative or man-made exterior wall shading devices for east-, south-, and west facing walls with windows.*
- *Devise a comprehensive water conservation strategy appropriate for the project and its location. The strategy may include the following, plus other innovative measures that may be appropriate:*
 - *Install drought-tolerant plants for landscaping.*

- *Use reclaimed water for landscape irrigation within the project. Install the infrastructure to deliver and use reclaimed water.*
- *Install water-efficient irrigations systems, such as weather-based and soil-moisture-based irrigation controllers and sensors for landscaping according to the California Department of Water Resources Model Efficient Landscape Ordinance.*
- *Provide employee education about reducing waste and available recycling services.*

Facts in Support of the Findings: Future development that could occur on the proposed Project site could generate GHG emissions during construction and operation activities. It is anticipated that the majority of energy consumption (and associated generation of GHG emissions) would occur during the project’s operation (as opposed to its construction). The total GHG emissions over the entire construction process are expected to be 2,700 metric tons. Based on a comparison of the proposed Project to the South Coast Air Quality Management District tiered interim GHG significance criteria, the most applicable screening threshold listed is the Industrial at 10,000 ton per year (tpy) CO₂e. The long-term project operational GHG emissions for the proposed Project are 79,000 tpy CO₂e and exceed this threshold; therefore, the project operational GHG emissions are significant. In order to ensure that the proposed Project complies with and would not conflict with or impede the implementation of reduction goals identified in AB 32, the Governor’s EO S-3-05, and other strategies to help reduce GHGs to the level proposed by the Governor, **Mitigation Measures 4.13.6.1A** through **4.13.6.1C** shall be implemented. The mitigation measure would contribute to a reduction in GHG emissions from energy, mobile, and water usage sources. With implementation of the identified mitigation measures, the proposed Project’s GHG emissions would be reduced to less than significant levels.

C. ENVIRONMENTAL IMPACTS NOT FULLY MITIGATED TO A LEVEL OF LESS-THAN-SIGNIFICANT

The Moreno Valley City Council finds the following environmental impacts identified in the EIR remain significant even after application of all feasible mitigation measures: aesthetics (individually and cumulative), agricultural resources (individually and cumulative), air quality (individually and cumulative), cumulative population and housing, and transportation. In accordance with CEQA Guidelines Section 15092(b)(2), the City Council of the City of Moreno Valley cannot approve the Project unless it first finds (1) under *Public Resources Code* Section 21081(a)(3), and CEQA Guidelines Section 15091(a)(3), that specific economic, legal, social technological, or other

considerations, including provisions of employment opportunities to highly trained workers, make infeasible the mitigation measures or Project alternatives identified in the EIR; and (2) under CEQA Guidelines section 15092(b), that the remaining significant effects are acceptable due to overriding concerns described in the CEQA Guidelines Section 15093 and, therefore, a statement of overriding considerations is included herein.

1. Aesthetics (Individual and Cumulative Impacts)

a. Scenic Vistas

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project could have adverse effects on one or more scenic vistas, notably views of the Box Springs Mountains, the Badlands, Moreno Peak, and the Russell Mountains.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant as there are no known feasible mitigation measures that could reduce this impact to a level of less than significant. Accordingly, Project-related impacts to scenic vistas will remain significant and unavoidable.

Facts in Support of the Finding: According to Section 4.1 of the DEIR, the nearest sensitive permanent visual receptor to the Project would be the existing single-family residences to the southeast across future Encilia Avenue. In general, views for the residences southeast of the site will change from vacant land to industrial buildings with extensive landscaping including rows of citrus trees to help provide a visual buffer. Permanent views for residences north of SR-60 and transient views for travelers on SR-60 will change as the tops of the proposed industrial buildings will partially block views of the mountains to the south. Despite the provision of ornamental landscaping and citrus trees along the northern, western, and southern boundaries, implementation of the proposed Project would obstruct background views of the distant Box Springs Mountains for residences southeast of the Project, foreground and midground views of travelers on SR-60, and background views of the Mount Russell Range for residences north of SR-60 and along Pettit Street. This obstruction of views is a significant visual impact of the proposed Project. The sizes, heights, and general locations of buildings on the site are limited by the types of uses being proposed as part of this Project. Therefore, there is no feasible mitigation available to reduce impacts related to the loss of this viewshed. Since there is no feasible mitigation available to reduce adverse effects on scenic vistas, impacts associated with this issue would remain significant and unavoidable. (DEIR, pgs. 4.1-9 to 4.1-17)

b. Scenic Resources and Scenic Highways

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project could have adverse effects on one or more scenic vistas, including views of the Box Springs Mountains and the Badlands for both residents and travelers on SR-60.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant as there are no known feasible mitigation measures that could reduce this impact to a level of less than significant. Accordingly, Project-related impacts to scenic vistas and scenic highways will remain significant and unavoidable.

Facts in Support of the Finding: According to Section 4.1 of the DEIR, the City of Moreno Valley identifies SR-60 as a local scenic road.¹⁶ According to the City's General Plan, the man-made environment is equally important as natural landforms in terms of scenic values (e.g., buildings, landscaping and signs). Agricultural uses, such as citrus groves, are one example of a man-made environment that constitutes a visually pleasing feature.

Existing views for motorists traveling eastbound and westbound on SR-60 consist of noise attenuation walls, commercial and residential development, landscaping, parking lots, open space, and orange groves in addition to the mountains and badlands in the distance. Development of the proposed Project would alter the existing view by introducing large industrial buildings adjacent to the freeway. Existing eastbound views on SR-60 would be altered with the development of the proposed Project. Motorists would still view noise attenuation walls, urban development, landscaping, and scattered trees as they look to the south, although these views would be of short duration for motorists traveling at normal freeway speeds.

The proposed Project would have highly reflective surfaces at the taller (43 feet) glass veneered office towers, but would not result in development along ridge lines. The proposed Project would result in an increased number of large bulk structures, but would include colors and materials that are compatible with the existing environment. The proposed ornamental landscaping and citrus trees would provide some visual screening. However, the proposed Project would result in the obstruction of most of the Mount Russell Range for motorists traveling on SR-60, so the proposed buildings would obstruct the view of a scenic feature. The proposed Project meets criteria in both the moderate and major visual intrusion categories. In an overabundance of caution, the worst-case scenario is utilized. Therefore, it is anticipated that based on Project design features, the proposed Project would have a major visual intrusion (i.e., significant impact) for motorists traveling on SR-60. Incorporation of the proposed building façades and

¹⁶ *Conservation Element, Figure 7-2 Major Scenic Resources, City of Moreno Valley General Plan, adopted July 11, 2006.*

ornamental landscaping design features will soften the visual appearance of the buildings from SR-60; however, the obstruction of local views will still be significant, and there are no feasible mitigation measures available that would reduce these impacts to less than significant levels. Therefore, impacts associated with this issue would remain significant and unavoidable. (DEIR, pgs. 4.1-17 to 4.1-19)

c. Existing Visual Character or Quality of Site and its Surroundings

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project could have adverse effects that change the general character of the Project site (e.g., loss of open area), the components of the visual settings (e.g., landscaping and architectural elements), and the visual compatibility between proposed site uses and adjacent land uses.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant as there are no known feasible mitigation measures that could reduce this impact to a level of less than significant. Accordingly, Project-related impacts to the existing visual character of the site will remain significant and unavoidable.

Facts in Support of the Finding: The significance of visual impacts is inherently subjective as individuals respond differently to changes in the visual characteristics of an area. Development of the proposed Project would change the existing character of the Project site from open space to a more urbanized setting with large industrial buildings. The change in the character of the site would constitute a significant alteration of the existing visual character of the Project site.

According to Section 4.1 of the DEIR, the proposed Project features a variety of architectural elements including façade accents such as corner treatments and roof trim. The Project also provides variation in wall planes that serve to avoid an institutional appearance and break up the bulk of the buildings. This variation would create shadow lines at various times of the day. The proposed ornamental landscaping would replace the scattered weedy vegetation. Landscaping on the site would be provided in accordance with City Municipal Code Chapter 9.17, which requires the installation of landscaping on site and the planting of one tree for every 30 linear feet of building dimension that is visible from the parking lot or public right-of-way. As part of conditions of approval for the proposed Project, orange trees would be planted on the northern portion of the Project site adjacent to SR-60 and along the perimeter of the proposed Project site adjacent to the public right-of-way or residential zoning.

Since the Project site is currently vacant, suburban development of any type would cause a fundamental change in the visual characteristics of the Project site. In addition, the site is currently planned for industrial, business park, single-family, and multifamily uses, which would be different in appearance from the proposed industrial warehouse buildings. Of these uses, the lower density housing (R2) is currently designated adjacent to the existing residences southeast of the Project site.

The proposed Project would replace the existing vacant parcel and citrus groves with development that is visually compatible with the existing commercial development to the west and the existing and the approved Ridge industrial development to the east, but it will not be compatible with the residential uses to the southeast or farther to the north across SR-60.

Incorporation of the proposed building façades and landscaping design features will soften the visual appearance of the buildings from both SR-60 and nearby residences; however, the fundamental change in visual character of the area will still be significant. Even with compliance with the City's General Plan and Municipal Code development guidelines for industrial development, including the 250-foot buffer between industrial and residential land uses, the anticipated fundamental change in views expected in this area will be significant. Due to the heights and masses of buildings needed to accommodate the proposed land uses, no feasible mitigation is available that would reduce these potential impacts to less than significant levels. Therefore, impacts associated with this issue would remain significant and unavoidable. (DEIR, pgs. 4.1-19 to 4.1-21)

d. Cumulative Aesthetics Impacts

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project could in connection with past, present, and probable future projects adversely affect one or more scenic vistas.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant as there are no known feasible mitigation measures that could reduce this cumulative impact to a level of less than significant. Accordingly, Project-related cumulative impacts to scenic vistas will remain significant and unavoidable.

Facts in Support of the Finding: The development of the proposed Project would partially obstruct views of surrounding mountain ranges from current vantage points near the Project structures. However, vistas would not be completely obstructed from viewpoints through parking circulation areas, openings between rows of buildings or trees, or at the end of vehicular rights-of-way. Development of lands within the City, particularly along SR-60, would result in the cumulative conversion from open space to a more urbanized land use. The proposed Project would continue a recent development trend in the City to expand industrial uses along the south side of SR-60 east of the City's Auto Center. This development trend has not yet been incorporated into the City's General Plan. The proposed Project, in conjunction with other cumulative projects, would be developed in a manner consistent with existing development trends in the City. Since other cumulative projects in the area would include similar distribution uses, it can be anticipated that such uses would have a similar design and massing as the proposed Project. Since

the proposed Project would obstruct views of the surrounding mountains, it can be reasonable to conclude that similar warehouse distribution uses would also obstruct views of the surrounding mountains. In addition, General Plan Policy 7.7.4 in the Conservation Element requires the designation of SR-60 as a local scenic roadway. Therefore, the proposed Project, in combination with other cumulative projects in the eastern portion of the City and along SR-60 would have a cumulatively significant and unavoidable impact on aesthetics (i.e., views and scenic resources) in this portion of the City. (DEIR, pgs. 4.1-21 to 4.1-22)

2. **Agricultural Resources (Individual and Cumulative Impacts)**

a. **Conversion of State Designated Farmland**

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project could impact 82.5 acres of Prime Farmland.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant as there are no known feasible mitigation measures that could reduce this impact to a level of less than significant. Accordingly, Project-related impacts to state designated farmland will remain significant and unavoidable.

Facts in Support of the Finding: Section 4.2 of the DEIR identifies several potential agricultural conservation measures contained in the City's General Plan that include: enrolling productive agricultural land into a Williamson Act Contract; providing protection to ongoing agricultural operations from complaints and nuisance complaints from adjacent new development; protecting productive agricultural land subject to conversion through the purchase of or transfer of its development rights; purchasing conservation easements on existing agricultural land to ensure that the land is never converted to urban uses; and donating funds to a regional or statewide program that promotes and implements the use of agricultural land conservation easements.

The potential agricultural conservation measures identified in the DEIR are not considered to be feasible by the City for the following reasons:

Williamson Act Contracts: Williamson Act contracts are entered into voluntarily by property owners and the City cannot force owners to participate in this program. In addition, Williamson Act contracts will result only in temporary preservation of agricultural land since property owners have the option of non-renewal of these contracts at any time after the ten-year contract period ends.

Protecting Existing Agricultural Operations: Providing protection for ongoing agricultural activities from new developments, such as buffers between agricultural operations and new development or requiring the notification and disclosure of agricultural activities to the purchasers adjacent properties, will not permanently protect agricultural land.

Transfer of Development Rights, Conservation Easements, or Agricultural Conservation Bank: The purchase or transfer of development rights, purchase of conservation easements, or donation of funds to assist in the conservation of agricultural land would need to be implemented to ensure the preservation of agricultural land. As stated previously, the City anticipates the conversion of agricultural land within the City and does not set aside land for permanent preservation. The current General Plan does not include any agricultural designations. The City allows agricultural uses in all land use designations as an interim use until such time as the land is developed per the vision identified in the General Plan. One of the goals stated in the City's recent General Plan is the "...orderly conversion of agricultural lands." For this reason, the City expects that the majority of the land within the City will be converted to urban uses, although some agriculture will continue as interim uses, as allowed by the City's Development Code for all zoning categories. The existing and continued reduction in productive agricultural operations within the City is produced by several factors including; urbanization in the City and Inland Empire resulting in dramatically increasing land prices; high water and labor costs; environmental regulation (e.g., insects, odors, groundwater contamination, and solid waste removal); and competition from Kern County and the Central Valley with lower land costs and reduced regulations. (DEIR, pgs. 4.1-10 to 4.1-14)

The City has determined that these measures are economically infeasible and that they are contrary to the City's vision (as stated in its General Plan) for the Project site and alternative mitigation has not been identified, and impacts related to this issue remain significant and unavoidable. (DEIR, pgs. 4.2-6 to 4.2-9)

b. Conversion of Farmland to a Non-Agricultural Use

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project would result in the development of industrial uses on land that has historically been utilized for citrus production.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant as there are no known feasible mitigation measures that could reduce this impact to a level of less than significant. Accordingly, Project-related impacts from the conversion of farmland to a non-agricultural use will remain significant and unavoidable.

Facts in Support of the Finding: According to Section 4.2 of the DEIR, the Project site has historically been in agricultural production and was most recently used to grow citrus. The conversion of the Project site to a non-agricultural use is a result of various economic and demographic factors. Increased cost for water and a continuing demand for housing and other development in the City and region are the primary reasons for this agricultural land conversion. A LESA model was also used to evaluate the site. It was determined that the Project LESA score is 85.3, which is considered significant. The Project does not include design features that would prevent the existing agricultural operations in the area from continuing. The Project would convert land that was previously used for agriculture and the development of the proposed Project may contribute to the conversion of adjacent lands. However, the Project is a logical extension of development in the City and does not create leapfrog development or islands of agricultural land that would be difficult to farm. The City recognizes development pressures within the City, and that these pressures will increase as the City continues to build out. Additionally, while the Project would not directly cause the conversion of adjacent agricultural land to non-agricultural uses because in has lied fallow for several years, it would contribute to development pressure within the City that could potentially lead to the conversion of agricultural land off site. However, as stated in the previous discussion of these Findings regarding the conversion of state designated farmland, the City has determined the agricultural conservation measures identified by the City are economically infeasible and that they are contrary to the City’s vision (as stated in its General Plan) for the Project site and alternative mitigation has not been identified. Therefore, impacts associated with this issue remain significant and unavoidable. (DEIR, pgs. 4.1-9 to 4.1-10)

c. Cumulative Agricultural Resource Impacts

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project would have a significant cumulative impact on agricultural resources in Riverside County.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant as there are no known feasible mitigation measures that could reduce this impact to a level of less than significant. Accordingly, Project-related impacts to cumulative state designated farmland will remain significant and unavoidable.

Facts in Support of the Finding: According to Section 4.2 of the DEIR, the Project-related impacts to Prime Farmland and the conversion of agricultural land to a non-agricultural use cannot be mitigated through a local or regional program to mitigate impacts to agricultural resources. As stated previously, the City does not maintain a General Plan or zoning designation for agricultural uses and there are no Project-

level feasible mitigation measures that would help reduce cumulative impacts. The cumulative effect of development in the region will continue to result in the conversion of agricultural lands to non-agricultural uses. Because agricultural land, including Prime Farmland, Farmland of Statewide Importance, and Farmland of Local Importance are finite resource, the conversion of approximately 122.8 acres of farmland to industrial uses, combined with planned and future development in the City and region, represents a significant cumulative impact to agricultural operations and resources. As stated in the previous discussion of these Findings regarding the conversion of state designated farmland and conversion of agricultural land to a non-agricultural land use, the City has determined the agricultural conservation measures identified by the City are economically infeasible and that they are contrary to the City's vision (as stated in its General Plan) for the Project site and alternative mitigation has not been identified. Therefore, cumulative impacts to agricultural resources are considered significant and unavoidable. (DEIR, pg. 4.1-11)

2. Air Quality (Project-Specific and Cumulative Impact)

a. Air Quality Management Plan Consistency

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project has the potential to conflict with implementation of regional Air Quality Management Plan and the SIP.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant but will be reduced to the extent feasible through mitigation measures. The Council finds that **Mitigation Measures 4.3.6.2A through 4.3.6.2M and 4.3.6.3A through 4.3.6.3C** are incorporated into the MMRP for the Project, and will be implemented as specified therein. However, the Council finds that even with application of these mitigation measures, the proposed Project will not be consistent with AQMP and the SIP and therefore impacts are considered significant and unavoidable.

Facts in Support of the Finding: An Air Quality Management Plan (AQMP) describes air pollution control strategies to be taken by counties or regions classified as nonattainment areas. The AQMP's main purpose is to bring the area into compliance with the requirements of Federal and State air quality standards. The AQMP uses the assumptions and projections by local planning agencies to determine control strategies for regional compliance status. Therefore, any projects causing a significant impact on air quality would impede the progress of the AQMP. CEQA requires that projects resulting in a General Plan Amendment be analyzed for consistency with the AQMP.

For a Project in the Basin to be consistent with the AQMP, the pollutants emitted from the Project must not exceed the South Coast AQMD significant threshold or cause a significant impact on air quality. One measurement tool in determining consistency with the AQMP is to determine how a Project accommodates the expected increase in population or employment. The proposed Project site is located in an urbanizing area of the City of Moreno Valley along SR-60, which accommodates traffic in the area. In addition, the proposed warehouse uses would be within walking distance of existing homes and commercial areas in the local vicinity. The proposed Project would add jobs resulting from the development of the warehouse uses to the City, with the potential to minimize the VMT traveled within the Project site and community.

The SCAQMD also has the following consistency criteria: the proposed Project cannot result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay the timely attainment of air quality standards or the interim emissions reductions specified in the AQMP; and the proposed Project cannot exceed the assumptions in the AQMP in 2010 or increments based on the year of Project build-out phase.

Implementation of the proposed Project would require a zone change from Business Park (BP), Business Park Mixed Use (BPX), Multi-Family Residential (R-15), Suburban Residential (R-5), and Residential Agriculture (RA-2) to Light Industrial for the entire 122.8 acres. Since the proposed Project will require a General Plan Amendment, the Project has not been considered in preparation of the General Plan and therefore it is uncertain if it is consistent with the AQMP.

Because the Project site is located in a nonattainment air basin for ozone, PM₁₀ and PM_{2.5}, the proposed Project's emission of ozone precursors (CO, ROG, and NO_x), PM₁₀ and PM_{2.5} would contribute to the existing nonattainment status in the Basin. Thus, according to the SCAQMD Consistency Criterion No. 1, the proposed Project is not consistent with the AQMP.

The proposed Project would have significant impacts. **Mitigation Measures 4.3.6.2A** through **4.3.6.2M** and **Mitigation Measures 4.3.6.3A** through **4.3.6.3C** shall be implemented as part of the proposed Project. The proposed Project would be considered to be consistent only after the City of Moreno Valley General Plan Amendment is approved. Once the City's General Plan Amendment and the required zoning changes are approved, the proposed Project would be included in the next SCAG and SCAQMD AQMP projections. When that occurs, the proposed Project would be consistent with the regional AQMP and the SIP. However, until that occurs, the Project is inconsistent with the regional AQMP and the impacts are considered significant and unavoidable. (DEIR, pgs. 4.3-21 to 4.3-22)

b. Equipment Exhaust from Construction-Related Activities

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project has the potential to exceed applicable daily thresholds that may affect sensitive receptors.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant but will be reduced to the extent feasible through mitigation measures. The Council finds that Mitigation Measures 4.3.6.2A through 4.3.6.2M are incorporated into the MMRP for the Project, and will be implemented as specified therein. However, the Council finds that even with application of these mitigation measures, the proposed Project will have a significant impact due to equipment exhaust from construction related activities and therefore impacts are considered significant and unavoidable.

4.3.6.2A *Prior to the issuance of a grading permit, the Project developer shall require by contract specifications that contractors shall place construction equipment staging areas at least 200 feet away from sensitive receptors. Contract specifications shall be included in the proposed Project construction documents, which shall be reviewed by the City.*

4.3.6.2B *Prior to the issuance of a grading permit, the Project developer shall require by contract specifications that contractors shall utilize power sources (e.g., power poles) or clean-fuel generators. Contract specifications shall be included in the proposed Project construction documents, which shall be reviewed by the City.*

4.3.6.2C *Prior to the issuance of a grading permit, the Project developer shall require by contract specifications that contractors shall utilize California Air Resources Board (CARB) Tier II Certified equipment or better during the rough/mass grading phase for the following pieces of equipment: rubber-tired dozers and scrapers. Contract specifications shall be included in the proposed Project construction documents, which shall be reviewed by the City.*

Project start to December 31, 2014: All off-road diesel-powered construction equipment greater than 50 horsepower shall meet Tier 3 off-road emission standards. In addition, all construction equipment shall be outfitted with Best Available Control Technology (BACT) devices certified by CARB. Any emission control devices used by the contractor shall achieve emission reductions that are no less than what would be achieved by a Level 3 diesel emission control strategy for a similarly sized engine as defined by CARB regulations.

Post January 1, 2015: All off-road diesel-powered construction equipment greater than 50 horsepower shall meet Tier 4 emission standards, where available. In addition, all construction equipment shall be outfitted with Best Available Control Technology (BACT) devices certified by CARB. Any emission control devices used by the contractor shall achieve emission reductions that are no less than what would be achieved by a Level 3 diesel emission control strategy for a similarly sized engine as defined by CARB regulations.

A copy of each unit's certified tier specifications, BACT documentation, and CARB or SCAQMD operating permit shall be provided at the time of mobilization of each applicable unit of equipment.

4.3.6.2D *All clearing, grading, earthmoving, or excavation activities shall cease when winds (as instantaneous gusts) exceed 25 mph per SCAQMD guidelines in order to limit fugitive dust emissions.*

4.3.6.2E *The contractor shall ensure that all disturbed unpaved roads and disturbed areas within the Project are watered at least three times daily during dry weather. Watering, with complete coverage of disturbed areas, shall occur at least three times a day, preferably in the mid-morning, afternoon, and after work is done for the day.*

4.3.6.2F *The contractor shall ensure that traffic speeds on unpaved roads and Project site areas are reduced to 15 miles per hour or less to reduce PM₁₀ and PM_{2.5} fugitive dust haul road emissions. Speed limit signs (15 mph maximum) shall be posted at entry points to the Project site, and along any unpaved roads providing access to or within the Project site and/or any unpaved designated on-site travel routes.*

4.3.6.2G *Groundcover shall be replaced, and/or non-toxic soil stabilizers shall be applied (according to manufacturers' specifications) to any inactive construction areas (previously graded areas inactive for ten days or more).*

4.3.6.2H *The contractor shall minimize pollutant emissions by maintaining equipment engines in good condition and in proper tune according to manufacturer's specifications and by not allowing construction equipment to be left idling for more than five minutes (per California law).*

4.3.6.2I *The contractor shall ensure use of low-sulfur diesel fuel in construction equipment as required by the California Air Resources Board (CARB) (diesel fuel with sulfur content of 15 ppm by weight or less).*

4.3.6.2J *Grading plans, construction specifications and bid documents shall also include the following requirements:*

- *Off-road construction equipment shall utilize alternative fuels where feasible e.g., biodiesel fuel (a minimum of B20), natural gas (CNG), liquefied natural gas (LNG), propane, except for equipment where use of such fuels would void the equipment warranty;*
- *Gravel pads shall be provided at all access points to prevent tracking of mud onto public roads;*
- *Install and maintain trackout control devices at all access points where paved and unpaved access or travel routes intersect;*
- *The contractor or builder shall designate a person or person(s) to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust off site;*
- *The contractor or builder shall post a publicly visible sign with the telephone number and person to contact regarding dust complaints. The contact person shall take corrective action within 24 hours;*
- *High-pressure injectors shall be provided on diesel construction equipment if feasible;*
- *Engine size of construction equipment shall be limited to the minimum practical size;*
- *Substitute gasoline-powered for diesel powered construction equipment where gasoline powered equipment is available;*
- *Use electric construction equipment where it is practical to use such equipment;*
- *Install catalytic converters on gasoline-powered equipment where this type of equipment is available;*

- *Ride-sharing program for the construction crew shall be supported by contractor(s) via incentives or other inducement;*
- *Documentation shall be provided to the City of Moreno Valley indicating that construction workers have been encouraged to carpool or otherwise reduce VMT to the greatest extent practical, including providing information on available park and ride programs;*
- *Lunch vendor services shall be allowed on site during construction to minimize the need for off-site vehicle trips; and*
- *All forklifts used during construction and in subsequent operation of the Project shall be electric or natural gas powered.*

4.3.6.2K *Throughout Project construction, a construction relations officer/community liaison, appointed by the Applicant, shall be retained on site. In coordination and cooperation with the City, the construction relations officer/community liaison shall respond to any concerns related to PM₁₀ (fugitive dust) generation or other construction-related air quality issues.*

4.3.6.2L *All Project entrances shall be posted with signs which state:*

- *Truck drivers shall turn off engines when not in use;*
- *Diesel delivery trucks servicing the Project shall not idle for more than three (3) minutes; and*
- *Telephone numbers of the building facilities manager and CARB, to report violations.*

These measures shall be enforced by the on-site facilities manager (or equivalent).

4.3.6.2M *During Project grading and construction, the various Project contractors shall adhere to the control measures listed in Tables 1 and 2.*

Air Quality Measure 4.3.6.2M Table 1: Best Available Control Measures for Fugitive Dust (Applicable to All Construction Activity Sources)

<i>Source Category</i>	<i>Control Measures</i>	<i>Guidance</i>
<i>Backfilling</i>	<ul style="list-style-type: none"> • <i>Stabilize backfill material when not actively handling; and</i> • <i>Stabilize backfill material during handling; and</i> • <i>Stabilize soil at completion of activity.</i> 	<ul style="list-style-type: none"> • <i>Mix backfill soil with water prior to moving; and</i> • <i>Dedicate water truck or high capacity hose to backfilling equipment; and</i> • <i>Empty loader bucket slowly so that no dust plumes are generated; and</i> • <i>Minimize drop height from loader bucket.</i>
<i>Clearing and grubbing</i>	<ul style="list-style-type: none"> • <i>Maintain stability of soil through pre-watering of site prior to clearing and grubbing; and</i> • <i>Stabilize soil during clearing and grubbing activities; and</i> • <i>Stabilize soil immediately after clearing and grubbing activities.</i> 	<ul style="list-style-type: none"> • <i>Maintain live perennial vegetation where possible; and</i> • <i>Apply water in sufficient quantity to prevent generation of dust plumes.</i>
<i>Clearing forms</i>	<ul style="list-style-type: none"> • <i>Use water spray to clear forms; or</i> • <i>Use sweeping and water spray to clear forms; or</i> • <i>Use vacuum system to clear forms.</i> 	<ul style="list-style-type: none"> • <i>Use of high pressure air to clear forms may cause exceedance of Rule requirements.</i>
<i>Crushing</i>	<ul style="list-style-type: none"> • <i>Stabilize surface soils prior to operation of support equipment; and</i> • <i>Stabilize material after crushing.</i> 	<ul style="list-style-type: none"> • <i>Follow permit conditions for crushing equipment; and</i> • <i>Pre-water material prior to loading into crusher; and</i> • <i>Monitor crusher emissions</i>

Air Quality Measure 4.3.6.2M Table 1: Best Available Control Measures for Fugitive Dust (Applicable to All Construction Activity Sources)

<i>Source Category</i>	<i>Control Measures</i>	<i>Guidance</i>
		<p><i>opacity; and</i></p> <ul style="list-style-type: none"> <i>Apply water to crushed material to prevent dust plumes.</i>
<i>Cut and fill</i>	<ul style="list-style-type: none"> <i>Pre-water soils prior to cut and fill activities; and</i> <i>Stabilize soil during and after cut and fill activities.</i> 	<ul style="list-style-type: none"> <i>For large sites, pre-water with sprinklers or water trucks and allow time for penetration; and</i> <i>Use water trucks/pulls to water soils to depth of cut prior to subsequent cuts.</i>
<i>Demolition – mechanical/manual</i>	<ul style="list-style-type: none"> <i>Stabilize wind erodible surfaces to reduce dust; and</i> <i>Stabilize surface soil where support equipment and vehicles will operate; and</i> <i>Stabilize loose soil and demolition debris; and</i> <i>Comply with AQMD Rule 1403.</i> 	<ul style="list-style-type: none"> <i>Apply water in sufficient quantities to prevent the generation of visible dust plumes.</i>
<i>Disturbed soil</i>	<ul style="list-style-type: none"> <i>Stabilize disturbed soil throughout the construction site; and</i> <i>Stabilize disturbed soil between structures.</i> 	<ul style="list-style-type: none"> <i>Limit vehicular traffic and disturbances on soils where possible; and</i> <i>If interior block walls are planned, install as early as</i>

Air Quality Measure 4.3.6.2M Table 1: Best Available Control Measures for Fugitive Dust (Applicable to All Construction Activity Sources)

<i>Source Category</i>	<i>Control Measures</i>	<i>Guidance</i>
		<p><i>possible; and</i></p> <ul style="list-style-type: none"> • <i>Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes.</i>
<i>Earthmoving activities</i>	<ul style="list-style-type: none"> • <i>Pre-apply water to depth of proposed cuts; and</i> • <i>Re-apply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 100 ft in any direction; and</i> • <i>Stabilize soils once earthmoving activities are complete.</i> 	<ul style="list-style-type: none"> • <i>Grade each Project phase separately, timed to coincide with construction phase; and</i> • <i>Upwind fencing can prevent material movement on site; and</i> • <i>Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes.</i>
<i>Importing/exporting of bulk materials</i>	<ul style="list-style-type: none"> • <i>Stabilize material while loading to reduce fugitive dust emissions; and</i> • <i>Maintain at least 6 inches of freeboard on haul vehicles; and</i> • <i>Stabilize material while transporting to reduce fugitive dust emissions; and</i> • <i>Stabilize material while unloading to reduce fugitive dust emissions; and</i> 	<ul style="list-style-type: none"> • <i>Use tarps or other suitable enclosures on haul trucks; and</i> • <i>Check belly-dump truck seals regularly and remove any trapped rocks to prevent spillage; and</i> • <i>Comply with track-out prevention/mitigation requirements; and</i>

Air Quality Measure 4.3.6.2M Table 1: Best Available Control Measures for Fugitive Dust (Applicable to All Construction Activity Sources)

<i>Source Category</i>	<i>Control Measures</i>	<i>Guidance</i>
	<ul style="list-style-type: none"> • <i>Comply with CVC Section 23114.</i> 	<ul style="list-style-type: none"> • <i>Provide water while loading and unloading to reduce visible dust plumes.</i>
<i>Landscaping</i>	<i>Stabilize soils, materials, slopes</i>	<ul style="list-style-type: none"> • <i>Apply water to materials to stabilize; and</i> • <i>Maintain materials in a crusted condition; and</i> • <i>Maintain effective cover over materials; and</i> • <i>Stabilize sloping surfaces using soil binders until vegetation or ground cover can effectively stabilize the slopes; and</i> • <i>Hydroseed prior to rain season.</i>
<i>Road shoulder maintenance</i>	<ul style="list-style-type: none"> • <i>Apply water to unpaved shoulders prior to clearing; and</i> • <i>Apply chemical dust suppressants and/or washed gravel to maintain a stabilized surface after completing road shoulder maintenance.</i> 	<ul style="list-style-type: none"> • <i>Installation of curbing and/or paving of road shoulders can reduce recurring maintenance costs; and</i> • <i>Use of chemical dust suppressants can inhibit vegetation growth and reduce future road shoulder maintenance costs.</i>

Air Quality Measure 4.3.6.2M Table 1: Best Available Control Measures for Fugitive Dust (Applicable to All Construction Activity Sources)

<i>Source Category</i>	<i>Control Measures</i>	<i>Guidance</i>
<i>Screening</i>	<ul style="list-style-type: none"> • <i>Pre-water material prior to screening; and</i> • <i>Limit fugitive dust emissions to opacity and plume length standards; and</i> • <i>Stabilize material immediately after screening.</i> 	<ul style="list-style-type: none"> • <i>Dedicate water truck or high capacity hose to screening operation; and</i> • <i>Drop material through the screen slowly and minimize drop height; and</i> • <i>Install wind barrier with a porosity of no more than 50 percent upwind of screen to the height of the drop point.</i>
<i>Staging areas</i>	<ul style="list-style-type: none"> • <i>Stabilize staging areas during use; and</i> • <i>Stabilize staging area soils at Project completion.</i> 	<ul style="list-style-type: none"> • <i>Limit size of staging area; and</i> • <i>Limit vehicle speeds to 15 miles per hour; and</i> • <i>Limit number and size of staging area entrances/exits.</i>
<i>Stockpiles/ bulk material handling</i>	<i>Stabilize stockpiled materials, and stockpiles within 100 yards of off-site occupied buildings must not be greater than 8 ft in height; or must have a road bladed to the top to allow water truck access or must have an operational water irrigation system that is capable of complete stockpile coverage.</i>	<ul style="list-style-type: none"> • <i>Add or remove material from the downwind portion of the storage pile; and</i> • <i>Maintain storage piles to avoid steep sides or faces.</i>
<i>Traffic areas for construction</i>	<ul style="list-style-type: none"> • <i>Stabilize all off-road traffic and parking areas; and</i> 	<ul style="list-style-type: none"> • <i>Apply gravel/paving to all haul routes as soon as possible to</i>

Air Quality Measure 4.3.6.2M Table 1: Best Available Control Measures for Fugitive Dust (Applicable to All Construction Activity Sources)

<i>Source Category</i>	<i>Control Measures</i>	<i>Guidance</i>
<i>activities</i>	<ul style="list-style-type: none"> • <i>Stabilize all haul routes; and</i> • <i>Direct construction traffic over established haul routes.</i> 	<p><i>all future roadway areas; and</i></p> <ul style="list-style-type: none"> • <i>Barriers can be used to ensure vehicles are only used on established parking areas/haul routes.</i>
<i>Trenching</i>	<ul style="list-style-type: none"> • <i>Stabilize surface soils where trencher or excavator and support equipment will operate; and</i> • <i>Stabilize soils at the completion of trenching activities.</i> 	<ul style="list-style-type: none"> • <i>Pre-watering of soils prior to trenching is an effective preventive measure. For deep trenching activities, pre-trench to 18 inches, soak soils via the pre-trench and resuming trenching; and</i> • <i>Washing mud and soils from equipment at the conclusion of trenching activities can prevent crusting and drying of soil on equipment.</i>
<i>Truck loading</i>	<ul style="list-style-type: none"> • <i>Pre-water material prior to loading; and</i> • <i>Ensure that freeboard exceeds 6 inches (CVC 23114).</i> 	<ul style="list-style-type: none"> • <i>Empty loader bucket such that no visible dust plumes are created; and</i> • <i>Ensure that the loader bucket is close to the truck to minimize drop height while loading.</i>
<i>Turf overseeding</i>	<ul style="list-style-type: none"> • <i>Apply sufficient water immediately prior to conducting turf vacuuming activities to meet opacity and</i> 	<ul style="list-style-type: none"> • <i>Haul waste material immediately off site.</i>

Air Quality Measure 4.3.6.2M Table 1: Best Available Control Measures for Fugitive Dust (Applicable to All Construction Activity Sources)

<i>Source Category</i>	<i>Control Measures</i>	<i>Guidance</i>
	<p><i>plume length standards; and</i></p> <ul style="list-style-type: none"> <i>Cover haul vehicles prior to exiting the site.</i> 	
<i>Unpaved roads/parking lots</i>	<ul style="list-style-type: none"> <i>Stabilize soils to meet the applicable performance standards; and</i> <i>Limit vehicular travel to established unpaved roads (haul routes) and unpaved parking lots.</i> 	<ul style="list-style-type: none"> <i>Restricting vehicular access to established unpaved travel paths and parking lots can reduce stabilization requirements.</i>
<i>Vacant land</i>	<p><i>In instances where vacant lots are 0.10 ac or larger and have a cumulative area of 500 sf or more that are driven over and/or used by motor vehicles and/or off-road vehicles, prevent motor vehicle and/or off-road vehicle trespassing, parking and/or access by installing barriers, curbs, fences, gates, posts, signs, shrubs, trees, or other effective control measures.</i></p>	

ac = acre(s) AQMD = Air Quality Management District
CVC = California Vehicle Code ft = feet sf = square feet

Air Quality Measure 4.3.6.2M Table 2: Contingency Control Measures for Fugitive Dust (During High Winds in Excess of 25 mph)

<i>Fugitive Dust Source Category</i>	<i>Control Measures</i>
<i>Earthmoving</i>	<ul style="list-style-type: none"> • <i>Cease all active operations; or</i> • <i>Apply water to soil not more than 15 minutes prior to moving such soil.</i>
<i>Disturbed surface areas</i>	<ul style="list-style-type: none"> • <i>On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than 4 consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than $\frac{1}{20}$ of the concentration required to maintain a stabilized surface for a period of 6 months; or</i> • <i>Apply chemical stabilizers prior to wind event; or</i> • <i>Apply water to all unstabilized disturbed areas 3 times per day. If there is any evidence of wind driven fugitive dust, watering frequency is increased to a minimum of 4 times per day; or</i> • <i>Establish a vegetative ground cover within 21 days after active operations have ceased. Ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter; or</i> • <i>Utilize any combination of these control actions such that, in total, these actions apply to all disturbed surface areas.</i>
<i>Unpaved roads</i>	<ul style="list-style-type: none"> • <i>Apply chemical stabilizers prior to wind event; or</i> • <i>Apply water 2 times per hour during active operation; or</i> • <i>Stop all vehicular traffic.</i>
<i>Open storage piles</i>	<ul style="list-style-type: none"> • <i>Apply water 2 times per hour; or</i> • <i>Install temporary coverings.</i>
<i>Paved road track-out</i>	<ul style="list-style-type: none"> • <i>Cover all haul vehicles; or</i> • <i>Comply with the vehicle freeboard requirements of Section 23114 of the CVC</i>

Air Quality Measure 4.3.6.2M Table 2: Contingency Control Measures for Fugitive Dust (During High Winds in Excess of 25 mph)

<i>Fugitive Dust Source Category</i>	<i>Control Measures</i>
	<i>for both public and private roads.</i>
<i>All categories</i>	<ul style="list-style-type: none"> • <i>Executive Officer and the USEPA as equivalent to the methods specified in this table may be used.</i>

CVC = California Vehicle Code

USEPA = United States Environmental Protection Agency

Facts in Support of the Finding: Grading and other construction activities produce combustion emissions from various sources such as site grading, utility engines, on-site heavy-duty construction vehicles, equipment hauling materials to and from the site, asphalt paving, and motor vehicles transporting the construction crew. The use of construction equipment on site would result in localized exhaust emissions. Activity during peak grading days typically generates a greater amount of air pollutants than other Project construction activities.

Section 4.3 of the DEIR indicates construction equipment/vehicle emissions during proposed on-site grading periods would exceed the SCAQMD daily thresholds for ROG and NO_x. Although construction of the structures uses different types of equipment on site than during grading periods, similarities do exist in terms of equipment exhaust emissions and fugitive dust emissions. While it is anticipated that total emissions during construction would be below the peak grading day emissions, construction emissions of ROG and NO_x would still exceed the SCAQMD daily threshold. This is a significant impact requiring **Mitigation Measures 4.3.6.2A through 4.3.6.2M**. The use of low-NO_x diesel fuel in construction equipment typically reduces NO_x emissions by 16 percent.¹⁷ Use of this fuel would reduce NO_x emissions but not below SCAQMD thresholds. However, there is no reasonable way to ensure that retrofitted diesel-powered equipment, low- NO_x diesel fuel, and alternative fuel sources would be available during the construction period; therefore, it is not possible to quantify reductions in NO_x emissions that would result from **Mitigation Measures 4.3.6.2A through 4.3.6.2M**. Because no additional feasible mitigation is available to reduce construction-related NO_x emissions, this impact remains significant and unavoidable. Furthermore, there is no feasible mitigation to reduce the ROG

emissions during architectural coating phase to less than the daily threshold. Thus, the emissions during construction of NO_x and ROG will remain significant. (DEIR, pgs. 4.3-22 to 4.3-29)

c. Architectural Coating Impacts

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project could potentially exceed applicable daily thresholds for VOC.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant but will be reduced to the extent feasible through mitigation measures. The Council finds that Mitigation Measure 4.2.6.4A is incorporated into the MMRP for the Project, and will be implemented as specified therein. However, the Council finds that even with application of this mitigation measures, impacts related to architectural coatings are considered significant and unavoidable.

4.3.6.4A *The Project applicant shall use “Low-Volatile Organic Compounds” paints, coatings, and solvents with a VOC content lower than required under Rule 1113 (not to exceed 150 grams/liter; 1.25 pounds/gallon). High Pressure Low Volume (HPLV) applications of paints, coatings, and solvents shall be consistent with South Coast Air Quality Management District Rule 1113. Alternatively, the Project applicant shall use materials that do not require painting or are pre-painted.*

Facts in Support of the Finding: Architectural coatings contain volatile organic compounds (VOC) that are similar to ROG and are part of the O₃ precursors. Rule 1113 is applicable to any person who applies or solicits the application of any architectural coating within the Basin. Rule 1113 sets limits on the amount of VOC emissions allowed for all types of architectural coatings, along with a time table for tightening the emissions standards in the future.

According to Section 4.3 of the DEIR, approximately 344 pounds of ROG would be generated during the architectural coating phase of the Project. Manual applications such as paintbrush, hand roller, trowel, spatula, dauber, rag, or sponge have 100 percent transfer efficiency. Construction of the Project using the required HVLP spray method reduces the daily VOC emissions to 224 pounds per day during the architectural coatings application period. The amount of VOC generated per day from the application of architectural coating even with the use of the required HVLP spray method (224 pounds) during the application of architectural coatings would exceed the SCAQMD VOC threshold of 75 lbs/day. Emissions associated with architectural coatings can be reduced by using pre-coated/natural-colored

¹⁷ <http://www.aqmd.gov/ceqa/igr/2006/feb/10-01.pdf>, site accessed December 30, 2011.

building materials, water-based or low VOC coating or by using coating transfer or spray equipment with high transfer efficiency. Adherence to SCAQMD Rule 1113 and **Mitigation Measure 4.3.6.4A** would reduce the Project’s architectural coatings emissions impact. However, even with adherence to SCAQMD Rule 1113, the SQAQMD VOC threshold would still be exceeded. Therefore, impacts associated with this issue would remain significant and unavoidable. (DEIR, pg. 4.3-31)

d. Long-Term Project-Related Emissions Impacts

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project could potentially exceed applicable daily thresholds for operational activities.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant but will be reduced to the extent feasible through mitigation measures. The Council finds that Mitigation Measures 4.3.6.5A and 4.3.6.5B are incorporated into the MMRP for the Project, and will be implemented as specified therein. However, the Council finds that even with application of these mitigation measures, long term construction emissions-related air quality impacts are considered significant and unavoidable.

4.3.6.5A *Prior to issuance of building permits, the Project applicant shall provide evidence to the City that applicable (as determined by the City) Transportation Demand Management (TDM)/Transportation Control Measure (TCM) strategies such as preferential parking for employee vanpooling/carpooling, bicycle parking facilities (such as bicycle lockers and racks), bus turnouts, and other strategies are incorporated into the design of the proposed Project.*

4.3.6.5B *Prior to issuance of building permits, the Project applicant shall provide evidence to the City that energy-efficient and low-emission methods and features of building construction shall be incorporated into the Project design. These methods and features may include (but are not limited to) the following:*

- *Construction of buildings that exceed statewide energy requirements beyond 20_10 percent of that identified in Title 24, Part 6 Energy Efficiency Standards:*
 - *Use of low-emissions water heaters;*
 - *Use of central water-heating systems;*
 - *Use of energy-efficient appliances;*

- *Use of increase insulation;*
- *Use of automated controls for air conditioners;*
- *Use of energy-efficient parking lot lighting; and*
- *Use of lighting controls and energy-efficient lighting.*
- *Utilize low-VOC interior and exterior coatings during Project repainting.*
- *Provide on-site improvements such as sidewalks or pedestrian walkways to promote pedestrian activity and reduce the amount of vehicle trips.*
- *Installation of skylights and energy-efficient lighting that exceeds California Title 24 standards where feasible, including electronic dimming ballasts and computer-controlled daylight sensors in the buildings.*
- *Shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and building shall be planted at the proposed Project site. These strategies will minimize the heat island effect and thereby reduce the amount of air conditioning required.*
- *Strategies to be considered include fans to assist natural ventilation, centralized water and space conditioning systems, high efficiency individual heating and cooling units, and automatic setback thermostats.*
- *Reduction of energy demand associated with potable water conveyance through the following methods:*
 - *Incorporating drought-tolerant plants into the landscaping palette; and*
 - *Use of water-efficient irrigation techniques.*
- *Energy-efficient low-pressure sodium parking lot lights or lighting equivalent as determined by the City, shall be used;*
- *Buildings shall be oriented north-south where feasible;*
- *Implement an on-site circulation plan in parking lots to reduce vehicle queuing;*

- *Develop a trip reduction plan to achieve 1.5 average vehicle ridership (AVR) for businesses with fewer than 250 employees or multitenant worksites;*
- *Include bicycle parking facilities such as bicycle lockers and racks;*
- *Include showers for bicycling employees use; and*
- *Construct on-site pedestrian facility improvements such as building access that is physically separated from street and parking lot traffic and walk paths.*

Facts in Support of the Finding: Although implementation of **Mitigation Measures 4.3.6.5A** through **4.3.6.5B** may reduce vehicle trips associated with the proposed Project, it is not possible to quantify the reduction in the amount of emissions that may occur. Considering the volume of emissions generated and current commuter habits, it is unlikely the implementation of TDMs/TCMs will result in a reduction of operational Project emissions to below existing SCAQMD thresholds. Application of Leadership in Energy and Environmental Design (LEED) standards and green building design principles could reduce emissions from building operations such as heating and cooling; however, such standards and principles would not reduce emissions of CO, ROG, NO_x, PM₁₀, and PM_{2.5} to below SCAQMD thresholds. No other feasible mitigation measures have been identified to reduce the operational emissions of CO, ROG, NO_x, PM₁₀, and PM_{2.5} to a less than significant level. Because the Project site is located in a nonattainment air basin for criteria pollutants, the addition of air pollutants resulting from operation of the proposed Project would contribute to the continuation of nonattainment status in the Basin. In the absence of mitigation to reduce the proposed Project's emission of contribution of CO, ROG, NO_x, PM₁₀, and PM_{2.5} to below SCAQMD thresholds, long-term air quality impacts resulting from the operation of the proposed Project would remain significant and unavoidable. (DEIR, pgs. 4.2-26 to 4.2.28)

e. Project-Related Localized Operational Emissions Impacts

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project could potentially exceed applicable long-term operational daily thresholds.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant but will be reduced to the extent feasible through mitigation measures. The Council finds that **Mitigation Measures 4.3.6.6A** and **4.3.6.6B** are incorporated into the MMRP for the Project, and will be implemented as specified therein. However, the Council finds that even with application of these mitigation measures, long term operational-related emission impacts are considered significant and unavoidable.

4.3.6.6A *Prior to issuance of the first building permit, building and site plan designs shall ensure that the Project's energy efficiencies surpass applicable 2008 California Title 24, Part 6 Energy Efficiency Standards by a minimum of 10 percent until January 1, 2014. For building permits issued after that date, new state energy standards require a 20 percent reduction from 2008 Title 24, Part 6 Energy Efficiency Standards. Verification of increased energy efficiencies shall be documented in Title 24 Compliance Reports provided by the Applicant, and reviewed and approved by the City. The following design features shall be used to fulfill this requirement:*

- *Buildings shall exceed California Title 24 Energy Efficiency performance standards for water heating and space heating and cooling, as deemed acceptable by the City.*
- *Increase in insulation such that heat transfer and thermal bridging is minimized.*
- *Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption.*
- *Incorporate dual-paned or other energy efficient windows.*
- *Incorporate energy efficient space heating and cooling equipment.*
- *Interior and exterior energy efficient lighting which exceeds the California Title 24 Energy Efficiency performance standards shall be installed, as deemed acceptable by the City. Automatic devices to turn off lights when they are not needed shall be implemented.*
- *To the extent that they are compatible with landscaping guidelines established by the City, shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and buildings shall be planted at the Project site.*
- *Paint and surface color palette for the Project shall emphasize light and off-white colors which reflect heat away from the buildings.*
- *All buildings shall be designed to accommodate renewable energy sources, such as photovoltaic solar electricity systems, appropriate to their architectural design.*
- *To reduce energy demand associated with potable water conveyance, the Project shall implement the following:*
 - *Landscaping palette emphasizing drought-tolerant plants;*
 - *Use of water-efficient irrigation techniques; and,*

- *U.S. EPA Certified WaterSense labeled for equivalent faucets, high-efficiency toilets (HETs), and water-conserving shower heads.*
- *The Project shall provide secure, weather-protected, on-site bicycle storage/parking.*
- *The Project shall provide on-site showers (one for males and one for females). Lockers for employees shall be provided.*
- *The Project will establish a Transportation Management Association (TMA). The TMA will coordinate with other TMAs within the City to encourage and coordinate carpooling among building occupants. The TMA will advertise its services to building occupants, and offer transit and/or other incentives to reduce greenhouse gas (GHG) emissions. A plan will be submitted by the TMA to the City within two months of Project completion that outlines the measures implemented by the TMA, as well as contact information.*
- *The Project shall provide preferential parking for carpools and vanpools. Locations and configurations of proposed preferential parking for carpools and vanpools are subject to review and approval by the City. Prior to final site plan approval, preferential parking for carpools and vanpools shall be delineated on the Project site plan.*
- *The Project shall provide at least two electric vehicle charging stations. Locations and configurations of proposed charging stations are subject to review and approval by the City. Prior to issuance of the first building permit, stub outs for charging stations shall be indicated on the Project building plans.*
- *Lease/purchase documents shall identify that tenants are encouraged to promote the following:*
 - *Implementation of compressed workweek schedules.*
 - *SmartWay partnership;*
 - *Achievement of at least 20 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of consolidated trips carried by SmartWay carriers until it reaches a minimum of 90 percent of all long-haul trips carried by SmartWay 1.0 or greater carriers.*
 - *Achievement of at least 15 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of long-haul trips carried by SmartWay carriers until it reaches a minimum of 85 percent of all consolidator trips carried by*

SmartWay 1.0 or greater carriers.

- *Use of fleet vehicles conforming to 2010 air quality standards or better.*
- *Installation of catalytic converters on gasoline-powered equipment.*
- *Inclusion of electric powered and/or compressed natural gas fueled trucks and/or vehicles in fleets.*
- *Establishment and use of carpool/vanpool programs, complemented by parking fees for single-occupancy vehicles.*
- *Provision of preferential parking for EV and CNG vehicles.*
- *Use of electrical equipment (instead of gasoline-powered equipment) for landscape maintenance.*
- *Use of electric (instead of diesel or gasoline-powered) yard trucks.*
- *Use of SmartWay 1.25 rated trucks.*
- *Each facility operator shall provide regular sweeping of onsite parking and drive areas using street sweepers that comply with applicable SCAQMD Rules.*
- *Each facility operator shall maintain a log of all trucks entering the facility to ensure that, on average, the daily truck fleet meets applicable air quality emission standards. This log shall be available for inspection by City staff at any time.*
- *Each facility operator shall prohibit all vehicles from idling in excess of five minutes in all onsite areas.*
- *Each facility operator shall ensure that onsite staff in charge of keeping the daily log and monitoring for excess idling will be trained and certified in diesel health effects and technologies, such as by requiring attendance at CARB-approved courses.*
- *Each facility operator which upon occupancy does not already operate 2077 and newer trucks shall in good faith be required to apply for funding to replace or retrofit their trucks such as Carl Moyer, VIP, Prop 1B or similar funds. Should funds be awarded, the tenant shall be required to accept and use them.*

4.3.6.6B *The Project shall be designed to facilitate the reduction of waste generated by building occupants that is hauled to and disposed of in landfills by providing easily accessible areas that are dedicated to the collection and storage of recyclable materials including*

paper, cardboard, glass, plastics, and metals. Locations of proposed recyclable materials collection areas are subject to review and approval by the City. Prior to Final Site Plan approval, locations of proposed recyclable materials collection areas shall be delineated on the Project site plan.

f. Cumulative Air Quality Impacts

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project could potentially result in a cumulatively considerable net increase of criteria pollutants for which the Project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant as there are no known feasible mitigation measures that could reduce this impact to a level of less than significant. Accordingly, Project-related impacts cumulative air quality impacts will remain significant and unavoidable.

Facts in Support of the Finding: Included in Section 4.3 of the DEIR, the Project would contribute criteria pollutants to the area during Project construction. A number of individual projects in the area may be under construction simultaneously with the proposed Project. Depending on construction schedules and actual implementation of projects in the area, generation of fugitive dust and pollutant emissions during construction would result in substantial short-term increases in air pollutants. This would be a contribution to short-term cumulative air quality impacts.

The traffic study included vehicular trips from all present and future projects in the Project vicinity; therefore, the CO hot spot concentrations calculated at these intersections include the cumulative traffic effect. Based on this, no significant cumulative CO impacts would occur.

Long-term operation of the Project would exceed the standards for CO, ROC, NO_x, PM₁₀, and PM_{2.5}. The Basin is in nonattainment for PM₁₀ and ozone at the present time; therefore, the construction and operation of the proposed Project would exacerbate nonattainment of air quality standards for PM₁₀ and ozone within the Basin and contribute to cumulative air quality impacts. Therefore, long-term cumulative air quality impacts are considered to be significant and unavoidable.

The Health Risk Assessment (HRA) conducted for the proposed Project identified the increase in health risks to the nearby sensitive receptors from the proposed Project's air pollutant emissions. This HRA identified that the Project's incremental increase is only a very small fraction of the ambient condition.

Therefore, the concentration of diesel particulates at the Project site is below the established risk threshold. Individuals living and working in southern California may be exposed to levels of diesel emissions that are cumulatively significant; however, that circumstance is not created by the Project.

It is reasonable to anticipate that advancements in truck/transportation technology would reduce the amount of particulate matter in future years. However, a determination of the amount and extent of that reduction in diesel particulate matter from these types of activities is not available at this time. Therefore, in an overabundance of caution, because other cumulative projects in the area would also contribute diesel particulates in the area and because the Riverside area has a level of particulate matter that is above the SCAQMD's recommended cancer risk threshold of 10 in one million, regional impacts associated with diesel particulate matter are considered cumulatively considerable and the proposed Project will make a significant contribution to that cumulative impact. (DEIR, pgs. 4.3-37 to 4.3-38)

4. Land Use and Planning (Individual and Cumulative)

b. Conflict with Applicable Land Use Plans, Policies, or Regulations

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project would potentially conflict with various land use plans, policies, or regulations.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant as there are no known feasible mitigation measures that could reduce bring the Project into compliance with all land use plans. Accordingly, Project-related conflicts with land use plans will remain significant and unavoidable.

Facts in Support of the Finding: According to Section 4.8 of the DEIR, a discussion of the proposed Project's consistency with the 2007 AQMP has been analyzed in Section 4.3 (Air Quality) of this EIR. "Since the proposed Project will require a General Plan Amendment, the Project has not been considered in preparation of the City's General Plan and therefore is inconsistent with the AQMP. Amendments to the City of Moreno Valley General Plan, zoning reclassification, and plan approval are required before the affected portion of the proposed Project can be implemented. This is a significant impact requiring mitigation." That section of this EIR concluded that, despite the recommended mitigation, Project air quality impacts related to the AQMP would remain significant.

The Project proposes the development of warehouse uses, which would result in an inconsistency with the existing residential zoning on the southern portion of the site, and the BP zone on the northern portion of the site. The development that would occur with the zone change has the potential to create indirect

environmental impacts since the zone change would permit more intense and larger industrial/warehousing uses on the Project site, requiring a discretionary action based on an environmental determination of the Project. These environmental impacts are analyzed through this EIR for each of the environmental topics. The baseline for comparative analysis of environmental impacts would be the existing condition of the Project site. Currently, there is no existing development on the Project site, which represents the worst-case scenario on which the EIR analysis is based. With implementation of the zone change, the proposed Project would be consistent with zoning requirements identified by the City.

According to the latest development plans, the closest loading and unloading operations of the proposed Project (e.g., truck courts) would be located 395 feet northwest of the nearest single-family residence (see plans in Appendix K). In addition, the reconfigured roadways surrounding the Project site would discourage industrial traffic through the residential areas to the southeast. Despite these design characteristics, the fundamental change from residential/business park uses to industrial adjacent to residential represents an incremental adverse effect on the “quality of life” of existing residents in this area, which represents a potentially significant land use compatibility impact. This impact requires the City Council to approve a Zone Change to bring the proposed zoning designations into consistency with the Zoning Map and Municipal Code.

The Compass Growth Vision plan provides a framework for local and regional decision-making regarding growth, transportation, land use, and economic development. The main objective of the Compass Growth Vision is to manage the forecast growth while improving future living conditions for all people within the SCAG area, including live, work, and play activities.

The proposed Project may not be fully consistent with the growth principles of the Compass Growth Vision plan. The nature of the proposed Project allows the transport of commodities from a single area rather than multiple areas, minimizing vehicle trip generation. Conversely, trucks from the proposed Project may increase localized and freeway congestion. The Project eliminates a planned transition of land uses that may incrementally reduce livability in this portion of the City. The proposed Project does support increased prosperity by providing additional (mainly “blue collar”) employment opportunities close to existing housing within the City of Moreno Valley. The proposed Project is located in an area where existing infrastructure (freeway, sewer, electrical, water, etc.) is present. The development of the proposed Project will augment existing services available in the City and region. In these ways, the Project is only partially consistent with the principles of the Compass Growth Vision. (DEIR, pgs. 4.8-5 to 4.8-17)

a. Cumulative Land Use and Planning

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project would have a cumulative impact to land use and planning issues.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant as there are no known feasible mitigation measures that could reduce this impact to a level of less than significant. Accordingly, Project-related cumulative impacts to land use and planning will remain significant and unavoidable.

Facts in Support of the Finding: Implementation of the proposed Project represents establishment of new land uses within the currently undeveloped Project site that would result in an intensification of permitted land uses associated with a land use change from Business Park and Residential to Light Industrial uses, changes to the General Plan Circulation Element, and the loss of the Primary Animal Keeping Overlay (PAKO) associated with the RA-2 zone. The proposed Project is generally consistent with regional plans and planning efforts, although it is not fully consistent with the SCAG's RTP and Compass Blueprint Plan because it eliminates some housing in favor of industrial employment uses. However, it will incrementally improve the City's long-standing jobs/housing ratio, which is also a regional goal of the various SCAG plans. It is also not consistent with existing General Plan land use designations, objectives and policies, nor is it consistent with existing zoning designations on the site. For these reasons, a General Plan Amendment and Zone Change are proposed for consideration by the City.

In addition, the proposed Project represents a fundamental change in community character for this portion of the City (i.e., mixed residential and business park to industrial warehouse buildings), which can represent an incremental adverse change in terms of public perception. This change would be particularly acute if both the proposed Project and the approved West Ridge Commerce Centre (an industrial Project just east of the proposed Project) were built within a relatively short period of time, as they would both follow relatively closely the completion of the Sketchers Logistics Center (another warehouse Project) east of both the proposed Project and the West Ridge Project, on the east side of Redlands Boulevard. Furthermore, the addition of industrial space from the proposed Project and the adjacent West Ridge (industrial) Project may create an over-supply of warehousing space in the City, based on current economic conditions.

The proposed changes in land use will also result in a loss of up to 584 (R-15) multi-family residential units. However, this was determined to be a less than significant Project impact on local housing because the City's Housing Element identifies over twice as much potential affordable housing as the City's

RHNA allocation, so it will not make a significant contribution to a cumulatively considerable impact on regional housing.

Similar to the proposed Project, some of the cumulative projects within the Project vicinity would also require amendments to the existing General Plan and zoning, which may in turn cause additional cumulative impacts. Therefore, planned industrial development in the City may contribute to a cumulatively considerable impact or change in the overall character of the surrounding area, and the proposed Project would make a significant contribution to that change in terms of consistency with adopted land use plans. No feasible mitigation is available to reduce this significant contribution. However, the Project would not make a similar cumulatively considerable land use impact relative to dividing an established community or conflicting with an approved habitat conservation plan. (DEIR, pgs. 4.8-17 to 4.8-18)

5. Transportation

a. Existing (2011) With Project Conditions (Intersection) Traffic and Level of Service Impacts

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project would cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant but will be reduced to the extent feasible through mitigation measures. The Council finds that **Mitigation Measure 4.11.6.4A** is incorporated into the MMRP for the Project, and will be implemented as specified therein. However, the Council finds that even with application of these mitigation measures, existing (2011) with Project LOS impacts are considered significant and unavoidable.

Facts in Support of the Finding: As indicated in Section 4.11 of the DEIR, with the addition of Project traffic, the following intersections are forecast to operate at unsatisfactory levels of service: Redlands Boulevard/SR-60 Westbound Ramps (a.m. and p.m. peak hours); and Redlands Boulevard/Eucalyptus Avenue-Fir Avenue (p.m. peak hour).

The Project would contribute to the worsening of the already unsatisfactory LOS at the intersection of Redlands Boulevard/SR-60 Westbound Ramps and would create a significant impact at the intersection of Redlands Boulevard/Eucalyptus Avenue-Fir Avenue. Therefore, mitigation is required at both intersections.

Also, the following segments are forecast to operate at an unsatisfactory level of service in the Existing plus Project condition: SR-60 Eastbound: Pigeon Pass Road to Heacock Street (a.m. and p.m. peak hours); SR-60 Westbound: Heacock Street to Perris Boulevard (a.m. peak hour); and SR-60 Westbound: Perris Boulevard to Nason Street (a.m. peak hour).

The Project would add to the existing unsatisfactory LOS on these three freeway segments; therefore, the addition of Project traffic would be considered a cumulative impact. Neither the Project applicant nor the City has jurisdiction over Caltrans facilities; therefore, implementation of improvements to the freeway mainline cannot be guaranteed. Review of the SCAG Regional Transportation Improvement Plan (RTIP) indicates that there are no projects programmed on SR-60 within the study area. Furthermore, Caltrans does not have a mechanism for development projects to contribute to improvements on State Highways. Therefore, the cumulative impact to these three segments of SR-60 would be significant and unavoidable. (DEIR, pgs. 4.11-19)

b. Opening Year 2016 With Project Conditions (Intersection) Traffic and Level of Service Impacts

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project would cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant but will be reduced to the extent feasible through mitigation measures. The Council finds that **Mitigation Measure 4.11.6.4B** is incorporated into the MMRP for the Project, and will be implemented as specified therein. However, the Council finds that even with application of these mitigation measures, existing (2016) with Project LOS impacts are considered significant and unavoidable.

Facts in Support of the Finding: Opening Year (2016) with Project conditions considers the addition of traffic generated by the proposed Project to Opening Year (2016) without Project conditions. Section 4.11 of the DEIR indicates that the following intersections would operate at unsatisfactory LOS: Moreno Beach Drive/SR-60 Westbound Ramps (p.m. peak hour); Redlands Boulevard/SR-60 Westbound Ramps (a.m. and p.m. peak hours); and Redlands Boulevard/Eucalyptus Avenue-Fir Avenue (p.m. peak hour). The Project would have a significant impact at all three intersections, and therefore mitigation would be required.

Freeway mainline and ramp junctions were evaluated in the Opening Year (2016) plus Project condition. The following segments are forecast to operate at an unsatisfactory level of service in the Opening Year (2016) plus Project condition: SR-60 Eastbound: Pigeon Pass Road to Heacock Street (a.m. and p.m. peak hours); SR-60 Eastbound: Heacock Street to Perris Boulevard (p.m. peak hour); SR-60 Westbound: Heacock Street to Perris Boulevard (a.m. peak hour); and SR-60 Westbound: Perris Boulevard to Nason Street (a.m. peak hour).

The Project would add to the existing unsatisfactory LOS on these four freeway segments; therefore, the addition of Project traffic would be considered a cumulative impact. Neither the Project applicant nor the City has jurisdiction over Caltrans facilities; therefore, implementation of improvements to the freeway mainline cannot be guaranteed. Review of the RTIP indicates that there are no projects programmed on SR-60 within the study area. Furthermore, Caltrans does not have a mechanism for development projects to contribute to improvements on State Highways. Therefore, the cumulative impact to these three segments of SR-60 would be significant and unavoidable.

**c. Opening Year 2016 Cumulative With Project Conditions
(Intersection) Traffic and Level of Service Impacts**

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project would cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant but will be reduced to the extent feasible through mitigation measures. The Council finds that **Mitigation Measure 4.11.6.4C** is incorporated into the MMRP for the Project, and will be implemented as specified therein. However, the Council finds that even with application of these mitigation measures, existing (2016) cumulative with Project LOS impacts are considered significant and unavoidable.

Facts in Support of the Finding: According to Section 4.11 of the DEIR, an intersection LOS analysis was conducted to determine Opening Year (2016) Cumulative intersection performance. The addition of Project traffic to the Opening Year (2016) Cumulative scenario would result in conditions exceeding the established LOS standard at the following intersections: Moreno Beach Drive/SR-60 Eastbound Ramps (p.m. peak hour); Moreno Beach Drive/Cottonwood Avenue (p.m. peak hour); Moreno Beach Drive/Alessandro Avenue (p.m. peak hour); Redlands Boulevard/SR-60 Westbound Ramps (a.m. and p.m. peak hours); Redlands Boulevard/SR-60 Eastbound Ramps (a.m. and p.m. peak hours); Redlands Boulevard/Fir Avenue-Eucalyptus Avenue (a.m. and p.m. peak hours); Redlands Boulevard/Encilia

Avenue-Eucalyptus Avenue (p.m. peak hour); and Redlands Boulevard/Alessandro Boulevard (p.m. peak hour).

While these intersections are forecast to exceed satisfactory levels of service in Opening Year (2016) Cumulative with Project conditions, with the exception of the intersection of Redlands Boulevard/Eucalyptus Avenue-Fir Avenue and Redlands Boulevard/Encilia Avenue-Eucalyptus Avenue, these intersections already exceeded established LOS standards in the Opening Year (2016) Cumulative without-Project condition. Because the proposed Project would contribute to and would cause intersections to operate at unsatisfactory levels, mitigation is required.

Freeway mainline and ramp junctions were evaluated in the Opening Year 2016 Cumulative plus Project condition. The following segments are forecast to operate at an unsatisfactory level of service in the Opening Year 2016 Cumulative plus Project condition: SR-60 Eastbound: Pigeon Pass Road to Heacock Street (a.m. and p.m. peak hours); SR-60 Eastbound: Heacock Street to Perris Boulevard (a.m. and p.m. peak hours); SR-60 Eastbound: Perris Boulevard to Nason Street (a.m. and p.m. peak hours); SR-60 Westbound: Heacock Street to Perris Boulevard (a.m. and p.m. peak hours); SR-60 Westbound: Perris Boulevard to Nason Street (a.m. and p.m. peak hours); and SR-60 Westbound: Nason Street to Moreno Beach Drive (a.m. peak hour).

The Project would add to the existing unsatisfactory LOS on these six freeway segments; therefore, the addition of Project traffic would be considered a cumulative impact. Review of the RTIP indicates that there are no projects programmed on SR-60 within the study area. Furthermore, neither the Project applicant nor the City has jurisdiction over Caltrans facilities; therefore, implementation of improvements to the freeway mainline cannot be guaranteed. Furthermore, Caltrans does not have a mechanism for development projects to contribute to improvements on State Highways. Therefore, the cumulative impact to these segments of SR-60 would be significant and unavoidable.

d. Cumulative Transportation Impacts

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project would have a cumulative significant impact to transportation.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant but will be reduced to the extent feasible through mitigation measures. The Council finds that Mitigation Measure 4.11.6.4C is incorporated into the MMRP for the Project, and will be implemented as specified

therein. However, the Council finds that even with application of these mitigation measures, cumulative transportation impacts are considered significant and unavoidable.

Facts in Support of the Finding: Cumulative impacts associated with traffic volumes are determined based the addition of traffic volumes from approved and pending projects in the area and projected traffic growth to existing traffic volumes. The cumulative analysis forecasts that, with the development of the proposed Project and the cumulative projects, eight intersections would require improvements in order to maintain the City's LOS standard of D.

Those intersections are as follows: Moreno Beach Drive/SR-60 Eastbound Ramps (p.m. peak hour); Moreno Beach Drive/Cottonwood Avenue (p.m. peak hour); Moreno Beach Drive/Alessandro Avenue (p.m. peak hour); Redlands Boulevard/SR-60 Westbound Ramps (a.m. and p.m. peak hours); Redlands Boulevard/SR-60 Eastbound Ramps (a.m. and p.m. peak hours); Redlands Boulevard/Fir Avenue-Eucalyptus Avenue (a.m. and p.m. peak hours); Redlands Boulevard/Encilia Avenue-Eucalyptus Avenue (p.m. peak hour); and Redlands Boulevard/Alessandro Boulevard (p.m. peak hour).

Although the suggested improvements are consistent with the City's General Plan, the Project will be responsible for contributing its fair share toward the funding of the future improvements via payment of the City's DIF. Of these eight affected intersections, five intersections are under the jurisdiction of the City of Moreno Valley.

Three intersections are under the jurisdiction of Caltrans. The improvements identified in **Mitigation Measure 4.11.6.4C** would reduce impacts at these intersections to a less than significant level. However, since the affected freeway ramp intersections are under the jurisdiction of Caltrans, neither the Project proponent nor the City has control over the specific timing of when the improvements would be constructed. It is anticipated that by opening year (2016), improvements at these intersections would not be constructed, as they are not currently planned for near-term construction. Therefore, this cumulative impact in opening year (2016) remains significant and unavoidable until such time as the improvements to this interchange are constructed by Caltrans, WRCOG, and the City of Moreno Valley through the TUMF process.

Because TUMF provides a mechanism for collecting fees from all development projects in the area that would contribute traffic to the existing roadway network, fees for the improvements to the affected freeway intersections would be collected. Therefore, it is anticipated that since these freeway intersection improvements are programmed into the TUMF program, such improvements would be constructed by

future year (2035) and would be able to accommodate future year (2035) traffic levels, resulting in a less than significant cumulative impact.

D. ADEQUACY OF THE RANGE OF PROJECT ALTERNATIVES

The EIR analyzed four alternatives to the Project as proposed, and evaluated these alternatives for their ability to meet the Project’s objectives as described in Section II.B above. CEQA requires the evaluation of a “No Project Alternative” to assess a maximum net change in the environment as a result of implementation of the Project. The No Project Alternative, referred to as the No Project/Existing Zoning Alternative, makes a reasoned assessment as to the future development of the subject site should the Project under consideration not be developed yet the site would be developed in a similar manner to the proposed Project and consistent with existing zoning for the site. A Reduced Intensity Alternative, a Commercial Center (mixed retail/office) Alternative, and an Off-site Alternative were also selected for analysis. CEQA requires the evaluation of alternatives that can reduce the significance of identified impacts and “feasibly attain most of the basic objectives of the proposed Project.” Thus, in order to develop a range of reasonable alternatives, the Project Objectives must be considered when this Council is evaluating the alternatives.

1. Alternative 1 – No Project/Existing Zoning Alternative

Description: The No Project/Existing Zoning Alternative (hereinafter referenced as the “No Project” Alternative), considers the environmental conditions that would occur if the subject site were developed consistent with its existing Specific Plan 208 zoning designation, consisting of an underlying land use of Business Park/Industrial. To allow for quantified comparison of potential impacts, the No Project Alternative was assumed to result in the development of approximately 1,420,000 square feet of industrial warehouse uses on approximately 63 acres and approximately 180,000 square feet of commercial service uses on approximately 8 acres as would be allowed under the existing zoning and land use designations. The commercial service component of this alternative would be located along the frontage of Perris Boulevard while the industrial warehouse uses would occupy the remaining portion of the site. (DEIR, pg. 6-12)

Impacts: The No Build Alternative, as referenced in Section 6.0 of the DEIR, would result in similar impacts when compared to the proposed Project. Similar to the Project, the No Build Alternative would result in less than significant impacts in the following areas: Aesthetics; Williamson Act Contracts/Agricultural Zoning and Forestry Resources; Biological Resources; Cultural Resources; Geology and Soils; Hazards and Hazardous Materials; Hydrology and Water Quality; Land Use; Mineral Resources; Noise; Population and Housing; Public Services; Recreation and Parks; and Utilities and Service Systems. The Project’s significant and unavoidable agricultural impacts, air quality impacts,

climate change and GHG impacts, and transportation impacts would also occur in the same manner as the proposed Project. However, under the No Build Alternative, potential air quality, climate change, and traffic/transportation impacts would be greater than the proposed Project because of the higher trip generation potential of the commercial uses.

Objectives: Under the No Build Alternative, the subject site would develop in a similar manner as the proposed Project, and most of the Project Objectives would be achieved. However, the objectives specifically oriented towards warehouse and industrial uses would be met at a reduced level due to the commercial component included in this Alternative.

Finding: Under the No Build Alternative, the Project site would be developed with approximately 1,420,000 square feet of industrial warehouse uses on approximately 63 acres and approximately 180,000 square feet of commercial service uses on approximately 8 acres. This Alternative would result in the same significant and unavoidable impacts associated with agricultural resources, air quality, climate change and greenhouse gases, and traffic that have been identified within the DEIR. However, potential air quality, climate change, and traffic/transportation impacts would be greater than the proposed Project because of the higher trip generation potential of the commercial uses. Because the No Build Alternative results in an increase in potential significant and unavoidable impacts in comparison to the proposed Project, the City Council hereby rejects the No Build Alternative.

2. Alternative 2 – Reduced Intensity Alternative

Description: The Reduced Intensity Alternative assumes the same general land use type as the Project, but at a development intensity scoped to reduce the extent of regional threshold exceedances for air pollution and greenhouse gas emissions that would otherwise result from the Project. In that the same type of development is proposed, most if not all the Project Objectives would be achieved to a certain extent but at a reduced level. Implementation of the Reduced Intensity Alternative would yield approximately 1,212,100 square feet of development, a reduction of approximately 25 percent or approximately 434,033 square feet, when compared to the approximately 1,616,133 square-foot Project analyzed in the EIR.

Impacts: Under the Reduced Intensity Alternative, impacts related to agricultural resources would be similar to the proposed Project as the same amount of land would be disturbed. Similarly, impacts related to short-term construction-related air quality would be similar to the proposed Project as the same amount of land would be disturbed and the same mix of equipment would be utilized. Because of the decrease in vehicle trips achieved under this alternative, impacts to the operation of local roadways and intersections

would be proportionally reduced from what was identified for the proposed Project; however, long-term traffic impacts to state freeway segments and merge/diverge areas would remain significant and unavoidable. Long-term operational-related air quality impacts would be reduced in magnitude when compared to the Project but would remain significant and unavoidable. Impacts associated with the generation of greenhouse gas emissions would also be reduced proportionate to the reduction in building area in comparison to the proposed Project, but would remain significant and unavoidable.

Objectives: The Reduced Intensity Alternative would, to some degree, realize the Project Objectives. However, because the scale of the development would be diminished under this Alternative, the resulting generation of sales tax, the number of jobs created, and potential second tier economic benefits to the City and region (e.g. wholesale/retail support sales; temporary and long-term construction jobs, and facilities maintenance employment opportunities) would likely be reduced when compared to the Project.

Finding: Under the Reduced Intensity Alternative, a light industrial warehouse/ distribution facility reduced by approximately 25 percent (or 434,033 square feet) would be realized as compared to the Project. The City Council hereby finds that the Reduced Intensity Alternative will not avoid or substantially reduce the significant and unavoidable agricultural resources impacts, construction and operational air quality impacts, and cumulative greenhouse gas impacts identified in the EIR. This Alternative would not meet Project Objectives to the same extent as the Project. Furthermore, the scale of the reduction in intensity would not maximize or realize the economic potential of the site. Based on the reduced scope of development, the Reduced Intensity Alternative would diminish capacities and capabilities to satisfy existing and projected unmet market demands within the trade area. The Reduced Intensity Alternative would also result in comparatively fewer opportunities to provide jobs, as compared to the Project. Therefore, the City Council rejects the Reduced Intensity Alternative on the basis that it fails to avoid or substantially reduce the significant and unavoidable impacts of the Project and does not meet the Project Objectives as well as the Project. The City Council also finds that each of these considerations constitutes a ground for rejecting this alternative that is independently sufficient to support the City Council's rejection of this alternative.

3. Alternative 3 - Commercial Center (Mixed Commercial/Office)

Description: As identified in Section 6.0 of the DEIR, the Commercial Center Alternative would result in the development of commercial service and office uses on the Project site. Although business and professional offices, financial institutions, and medical clinics are permitted in SP208, they are permitted only in the industrial support areas while commercial service-oriented uses are permitted throughout the

SP208 Industrial designation. For this reason, the General Plan and zoning designations for the site would need to be amended to accommodate the business and professional offices. Permitted commercial service uses include, but are not limited to, Automotive Sales/Rental/Leasing & Accessories, Automotive/Truck Repair, Business Supply/Equipment Sales/Rental & Services, and Repair Services. Approximately 760,000 square feet of commercial service uses would be developed on approximately 35 acres. The balance of the site (35 acres) would be developed with up to approximately 760,000 square feet of office uses.

Impacts: As identified in Section 6.0 of the DEIR, the Commercial Center Alternative would result in similar impacts for the following eight environmental issues: Agriculture and Forestry Resources; Biological Resources; Cultural Resources; Geology and Soils; Hazards and Hazardous Materials; Hydrology and Water Quality; Land Use and Planning; and Mineral Resources. Because of the increase in vehicle trips under this alternative, impacts to the operation of local roadways and intersections would be proportionally greater than what was identified for the proposed Project. Long-term traffic impacts to state freeway mainline segments and merge/diverge areas would remain significant and unavoidable. Under the Commercial Center Alternative, impacts related to short-term construction emissions would be similar to the proposed Project as the same amount of land would be disturbed and the same mix of equipment would be utilized. Long-term operational-related air quality emissions would be increased in magnitude because of the increase in vehicle trips when compared to the Project and would remain significant and unavoidable. Traffic-related noise would be increased in magnitude but would be similarly mitigated like the proposed Project and would remain less than significant.

Objectives: Under this alternative, some of the proposed Project objectives are not met as warehouse uses would not be built. However, development of this alternative would provide new employment opportunities for residents of Moreno Valley, but not within the industrial employment sector.

Findings: Under the Commercial Center Alternative, development of commercial service and office uses would occur. This Alternative would have similar impacts that have been identified within the DEIR. However, the Commercial Center Alternative would result in an increase in trip generation in comparison to the proposed Project, and would result in an increase in the severity of the significant and unavoidable impacts to construction and operational air pollution emissions, climate change and greenhouse gas emission, and traffic. The City Council finds that the Commercial Center Alternative would fulfill some but not all of the Project Objectives. Moreno Valley residents would have more opportunities for employment but a warehouse would not be built. Because the Commercial Center Alternative will not fulfill the primary objective of the Project and the severity of significant and unavoidable impacts would

be increased in comparison to the proposed Project, the Council hereby rejects the Commercial Center Alternative.

4. Alternative 4 - Off-Site Location

Description: As identified in Section 6.0 of the DEIR, this alternative would result in the same intensity of development of approximately 1,616,133 square feet of warehouse uses on approximately 70.3 acres. The alternative Project site identified by the City is bounded by Kramaria Street (extended) to the north, vacant and partially developed property and March Air Reserve Base to the west, Indian Street to the east, and the Perris Valley Storm Drain and vacant land to the south. The off-site location is approximately 1.0 miles northwest of the Project site and is within the same Industrial Area Specific Plan as the proposed Project. This alternative off-site property is not owned or under the control of the applicant. The off-site location is currently zoned SP 208 I and is designated Business Park in the City's General Plan, identical to the proposed Project development of this site would not require soil import, inherently reducing impacts from air pollution emissions during construction.

Impacts: Section 6.0 of the DEIR, identifies nine environmental issues that would have similar impacts as the proposed Project. These issues are: Cultural Resources; Geology and Soils; Hydrology and Water Quality; Land Use and Planning; Mineral Resources; Population and Housing; Public Services; Recreation; and Utilities and Service Systems. With the Off-Site Location Alternative, impacts related to air quality and traffic impacts would be similar to those identified with the proposed Project. Short-term construction and long-term air quality operational and climate change/greenhouse gas emissions impacts under this alternative would remain significant and unavoidable and would result in similar conditions as identified for the proposed Project. Additionally, due to adjacent sensitive receptors, potential impacts to these receptors would be greater in magnitude when compared to the proposed Project. Similarly, noise impacts would be greater in magnitude due to the adjacent sensitive receptors. Operational traffic would result in increased traffic on vanity roadways and may impact different intersection and roadways in comparison to the proposed Project. Under this Alternative, impacts to agricultural resources would be eliminated.

Objectives: The Off-Site Alternative would meet most of the Project objectives. The location of the Off-Site Alternative further north of Harley Knox Boulevard would not meet the Project objectives of locating distribution services near transportation corridors and clustering such uses near the state highway system.

Finding: Under the Off-Site Alternative, development of the warehouse would occur in a different location. This Alternative would have similar impacts that have been identified within the DEIR. And most of the objectives of the proposed Project would be met, would not meet the Project objectives of locating distribution services near transportation corridors and clustering such uses near the state highway

system. The Council finds that the Off-Site Alternative would have similar impacts to all environmental issues except for agriculture because this Alternative would eliminate the significant and unavoidable impacts to agricultural resources.. Because the Off-Site Alternative will not substantially reduce the environmental impact of the Project and it would not meet the Project objectives of locating distribution services near transportation corridors and clustering such uses near the state highway system, the Council hereby rejects the Off-Site Alternative.

5. Alternatives Considered and Rejected

A variety of additional alternatives were considered as part of the DEIR's Alternatives Analysis. (DEIR, pgs. 6-3 through 6-5) Three possible alternatives were considered and rejected because they could not accomplish the basic objectives of the Project or they were considered infeasible. Per the *CEQA Guidelines* (Section 15126.6(c)), factors that may be considered when addressing the feasibility of alternatives include failure to meet most of the stated Project objectives, infeasibility, or inability to avoid significant environmental effects. The purpose of the proposed Project is to provide for and expand employment and revenue opportunities within the City of Moreno Valley. The proposed Project would expand employment options in a location that is convenient to existing transportation corridors, convenient to existing and future City residents and would augment the City's economic base. The following provides and discussion of the three development scenarios that were considered and rejected as potential alternatives to implementation of the proposed Project based on Section 15126.6 of the *CEQA Guidelines* because they did not feasibly attaining most of the basic objectives of the Project while reducing or avoiding any of the significant effects of the proposed Project:

- No Build Alternative: No development would take place within the Project limits and no impacts would occur. However, disallowing development of the site, as suggested by this alternative, would not fulfill the primary objectives of the proposed Project and the site would likely be developed in accordance with existing zoning should the Project not move forward. Retention of the Project site in its current condition would not expand employment opportunities to residents of the City. Retaining the site in its current undeveloped condition would not generate the revenue (e.g., property tax) that could augment the City's current revenue stream. Therefore, the No Build Alternative was rejected from further consideration in the EIR.
- Residential Alternative: The Residential Alternative would develop the 71-acre Project site with approximately 355 single-family units based on the City's R5 zone. The R5 zone was utilized as this is the zoning designation of the nearest residential uses to the north along Perris Boulevard

and north of the Perris Valley Storm Drain channel. A zone change, General Plan Amendment, and Specific Plan Amendment would be required for this alternative to change the Project site from its existing Business Park/Light Industrial (BP) General Plan designation and Industrial Area Plan (SP208 I) zoning designation to a residential R5 designation. Furthermore, a Specific Plan Amendment would be required to remove the Project site from the underlying Industrial Specific Plan 208. Since the Residential Alternative consists only of residential uses, employment-generating opportunities would not occur aside from temporary construction work, which would be filled predominantly by those already residing in the area. The residential uses would produce demand for public services that would exceed the amount of municipal revenues it would generate. The Project's full potential to utilize the area's close proximity to various freeways and transportation corridors would not be realized as only residential uses would occur under the Residential Alternative. Additionally, the development of the entire 71-acre Project site under this alternative would result in the placement of the residential uses within an area planned for industrial uses which could result in additional adverse impacts such as exposure to air pollutants, noise, and land use incompatibilities. This alternative has been rejected because it would result in greater impacts and would not satisfy the basic City employment generating objectives for development of the Project site.

- Mixed Commercial/Residential Alternative: The Mixed Commercial/Residential Alternative would develop the 71-acre Project site with approximately 690,000 square feet of Community Commercial uses and 532 multiple-family units. A zone change, General Plan Amendment, and Specific Plan Amendment would be required for this alternative to change the Project site from its existing Business Park/Light Industrial (BP) General Plan designation and SP208 I zoning designation to a residential designation and commercial designation. Additionally, a Specific Plan Amendment would be required to remove the Project site from the underlying Industrial Specific Plan 208. While the commercial component of this Alternative would utilize the Project site's close proximity to nearby transportation corridors, the development of the remainder of the site with residential uses would not provide the varied employment and service uses and revenue associated with the proposed Project. The development of approximately half of the Project site under this alternative with residential uses would result in the placement of the residential uses adjacent to SP208 I industrial/business park uses which could potentially result in additional adverse impacts such as exposure to air pollutants, noise, and land use incompatibilities. The residential component of this alternative would produce demand for public services that would exceed the amount of municipal revenues it would generate, and there would be little to no

employment opportunities created. Therefore, the mixed commercial/residential alternative would not meet the Project objectives of providing new employment and revenue generation options in close proximity to local consumers to the same degree as the proposed Project. The employment opportunities and economic benefits derived from the proposed Project are superior to the Mixed Commercial/Residential Alternative. This alternative has been rejected because it would result in greater impacts and would not satisfy the basic City employment generating objectives for development of the Project site.

6. Environmentally Superior Alternative

As explained by Section 6.0 in the DEIR, Alternative 2 (Reduced Intensity Alternative) reduces the severity of Project related air quality impacts. However, long-term air quality impacts, would remain significant after mitigation for this alternative for ROG, NO_x, PM₁₀ and PM_{2.5}. In a similar manner, Alternative 2 would reduce the volume of daily traffic trips when compared to the proposed Project; however, such impacts to state freeway mainline segments and merge/diverge areas would remain significant and unavoidable until freeway improvements are completed by the state. Alternative 2 would also reduce the quantity of greenhouse gas emission when compared to the proposed Project; however, impacts to Climate Change would remain significant and unavoidable. The remaining environmental issues would ultimately be similar to the proposed Project through adherence to existing standards and mitigation measures. Based on the analysis in Section 6.0 and the summary contained in Table 6.K, Alternative 2, the Reduced Intensity Alternative, is the environmentally superior alternative. The amount of development under this alternative would be reduced when compared to the proposed Project; however, the Alternative 2 would not satisfy several of the Project objectives because it would reduce the level at which it meets the employment generating Project objectives. Because the Reduced Intensity Alternative allows the development of warehouse uses and the provision of new employment opportunities, it meets many of the City's stated Project objectives, while at the same time reduces the impacts associated with the proposed Project. However, because of the lower industrial density, the Alternative fails to meet several key employment generating objectives related to density efficiencies in the same manner as the proposed Project.

E. GROWTH-INDUCING IMPACTS

CEQA requires a discussion of ways in which the proposed Project could be growth inducing. Specifically, CEQA Guidelines Section 1512602(d) states that an EIR must describe the ways

in which the proposed Project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment.

Section 5.0 of the DEIR identifies the extent to which the new jobs created by a Project are filled by existing residents is a factor that tends to reduce the growth inducing effect of a Project. Construction of the proposed Project will create short-term construction jobs. Due to the existing high unemployment levels that exist in the City, the potential exists for these short-term positions to be filled by workers who, for the most part, reside in the City or neighboring communities to the Project area. Therefore, construction of the proposed Project will not generate a permanent increase in population within the Project area.

As previously identified, the proposed Project is expected to employ 646 people. These full-time positions are also anticipated to be filled by workers who, for the most part, reside in the Project area due to high unemployment levels that exist in the City. Operations of the proposed Project will not generate a permanent increase in population within the Project area.

The area surrounding the Project site is governed by the City of Moreno Valley General Plan and the area is guided by Specific Plan 208. Specific Plan 208 guides land use within the Project area to ensure that new development and redevelopment is implemented consistent with the land use policies, controls, and standards contained in Specific Plan 208. Any development of remaining undeveloped land adjacent to the Project site would require its own discretionary approvals and is not reliant on the proposed Project. However, development of the Project site may lead to indirect growth in the Specific Plan area by making available the extension of infrastructure such as water, sewer, drainage, etc. This growth has been planned for and is guided by Specific Plan 208.

The proposed Project would occur within an area currently designated for industrial uses. The proposed Project would not require a General Plan Amendment nor does it require a change in the underlying zoning designation. In addition, the Project reflects the City of Moreno Valley's vision for the area and is consistent with Specific Plan 208. Land uses surrounding the Project site would be in conformance with the City's General Plan and Specific Plan 208. Impacts to population and housing are less than significant; see Section 13 Population and Housing of the Initial Study (Appendix A of the DEIR).

The proposed Project would not eliminate a constraint for development of an approved Project within the City of Moreno Valley. There are no projects in the City of Moreno Valley or surrounding cities that have been approved but are conditioned or dependent on additional improvements

at the Project site. Specific Plan 208 guides land uses surrounding the Project site to ensure compatibility between existing operations and adjacent surrounding development. Additionally, the proposed Project would not add capacity to urban services or infrastructure that would be utilized by other Project proponents in the surrounding area.

The proposed Project would not result in any significant pressure to redevelop the area around the Project site at a higher density. As previously stated, the development of remaining undeveloped land adjacent to the Project site is independent and not reliant on the proposed Project. Therefore, implementation of the proposed Project would not result in redevelopment of adjacent lands at a higher intensity than already prescribed in the City of Moreno Valley's General Plan and Specific Plan 208.

F. SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

Public Resources Code Section 21100(b)(2)(B) and CEQA Guidelines Sections 15126(c), 15126.2(c), and 15127, require that for certain types or categories of projects, an EIR must address significant irreversible environmental changes that would occur should the Project be implemented. As presented at CEQA Guidelines Section 15127, the topic of Significant Irreversible Environmental Changes needs to be addressed in EIRs prepared in connection with any of the following activities:

- (a) The adoption, amendment, or enactment of a plan, policy, or ordinance of a public agency;
- (b) The adoption by a local agency formation commission of a resolution making determinations; or
- (c) A Project which will be subject to the requirements for preparing of an environmental impact statement pursuant to the requirements of the National Environmental Policy Act of 1969, 42 U.S.C. Sections 4321-4347.

The Project does not trigger any of the conditions cited in Guidelines §15127. Nonetheless, this EIR analysis addresses any significant irreversible environmental changes which would be involved in the proposed action should it be implemented [Guidelines, Sections 15126(e) and 15127]. An impact would fall into this category if:

- The Project would involve a large commitment of nonrenewable resources;

- The primary and secondary impacts of the Project would generally commit future generations of people to similar uses;
- The Project involves uses in which irreversible damage could result from any potential environmental incidents associated with the Project; and/or
- The proposed consumption of resources is not justified (e.g., the Project could waste energy).

Determining whether the proposed Project may result in significant irreversible effects requires a determination of whether key resources would be degraded or destroyed in such a way that there would be little possibility of restoring them. The Project site is generally fallow agricultural land with the site historically used for sod farming operations. However, as identified within the City's General Plan, the City anticipates the eventual conversion of agricultural uses to urban uses and the proposed Project would permanently alter the site by converting predominantly agricultural uses to urban uses. This is a significant irreversible environmental change that would occur as a result of Project implementation. Because no significant mineral resources were identified within the Project limits, no significant impacts related to these issues would result from development of the Project site. Natural resources in the form of construction materials would be utilized in the construction of the proposed Project and energy resources in the form of electricity and natural gas would be used during the long-term operation of the Project; however, their use is justified in supporting the City's planned use of the site and is not expected to negatively impact the availability of these resources.

In addition, this industrial warehouse Project, in concert with the other built or approved industrial warehouse projects, will fundamentally change the character and land use pattern of this portion of the City. Many of the Project-specific impacts are addressed, as outlined above, but the change in the use of the land from agricultural to industrial represents a substantial irreversible change for this area. However, this is an intended change as verified by the City's General Plan land use designations and zoning for the area. (DEIR pgs. 5-2 and 5-3)

VI. STATEMENT OF OVERRIDING CONSIDERATIONS

The Moreno Valley City Council adopts this Statement of Overriding Considerations with respect to the significant unavoidable impacts associated with adoption of the Project as addressed in the EIR, specifically:

1. Aesthetics - Scenic Vistas;
2. Aesthetics - Scenic Resources and Scenic Highways;
3. Aesthetics - Existing Visual Character or Quality of Site and its Surroundings;
4. Aesthetics – Cumulative;
5. Agricultural Impacts - Conversion of State Designated Farmland;
6. Agricultural Impacts - Conversion of Farmland to a Non-Agricultural Use;
7. Agricultural Impacts - Cumulative;
8. Air Quality Impact - Air Quality Management Plan Consistency;
9. Air Quality Impact - Equipment Exhaust from Construction-Related Activities;
10. Air Quality Impact - Architectural Coatings;
11. Air Quality Impact - Long-Term Project-Related Emissions;
12. Air Quality Impact - Project-Related Localized Operational Emissions;
13. Air Quality Impact - Cumulative;
14. Land Use and Planning Impact - Conflict with Applicable Land Use Plans, Policies, or Regulations;
15. Land Use and Planning - Impact Cumulative;
16. Transportation Impact - Existing With Project Conditions (Intersection) Traffic and Level of Service;

17. Transportation Impact - Opening Year With Project Conditions (Intersection) Traffic and Level of Service;
18. Transportation Impact - Opening Year 2016 Cumulative With Project Conditions (Intersection) Traffic and Level of Service; and
19. Transportation Impact – Cumulative.

The Moreno Valley City Council hereby declares that, pursuant to CEQA Guidelines Section 15093, the City Council has balanced the benefits of the proposed Project against any significant and unavoidable environmental impacts in determining whether to approve the proposed Project. If the benefits of the proposed Project outweigh the unavoidable adverse environmental impacts, those impacts are considered “acceptable.”

The City Council hereby declares that the EIR has identified and discussed significant effects that may occur as a result of the Project. With the implementation of the mitigation measures discussed in the EIR, these impacts can be mitigated to a level of less than significant except for the unavoidable and significant impacts discussed in Section V(C) herein.

The City Council hereby declares that it has made a reasonable and good faith effort to eliminate or substantially mitigate the potential impacts resulting from the Project.

The City Council hereby declares that to the extent any mitigation measures recommended to the City are not incorporated, such mitigation measures are infeasible because they would impose restrictions on the Project that would prohibit the realization of specific economic, social, and other benefits that this City Council finds outweigh the unmitigated impacts.

The City Council further finds that except for the Project, all other alternatives set forth in the EIR are infeasible because they would prohibit the realization of the Project objectives and/or specific economic, social or other benefits that this City Council finds outweigh any environmental benefits of the alternatives or the other alternatives do not substantively reduce the severity of unavoidable and significant impacts.

The City Council hereby declares that, having reduced the adverse significant environmental effects of the Project, to the extent feasible by adopting the proposed mitigation measures, having considered the entire administrative record on the Project and having weighed the benefits of the Project against its unavoidable significant impact after mitigation, the City Council has determined that the social,

economic and environmental benefits of the Project outweigh the potential unavoidable significant impacts and render those potential significant impacts acceptable based on the following considerations:

- The Project will provide development consistent municipal standards, codes and policies;
- The Project provides development that improves and maximizes economic viability of a vacant site by transitioning the Project site into a productive light industrial use;
- The Project creates additional employment-generating opportunities for the City of Moreno Valley and surrounding communities; and
- The Project provides adequate infrastructure and public amenities, including upgrading and widened streets, signal upgrades and utility improvements.

As the CEQA Lead Agency for the proposed action, the City of Moreno Valley has reviewed the Project description and the alternatives presented in the EIR, and fully understands the Project and Project alternatives proposed for development. Further, this Council finds that all potential adverse environmental impacts and all feasible mitigation measures to reduce the impacts from the Project have been identified in the Draft EIR, the Final EIR and public testimony. This Council also finds that a reasonable range of alternatives was considered in the EIR and this document, Section V(E) above, and finds that approval of the Project is appropriate.

This Council has identified economic and social benefits and important policy objectives, Section V above, which result from implementing the Project. The Council has balanced these substantial social and economic benefits against the unavoidable significant adverse effects of the Project. Given the substantial social and economic benefits that will accrue from the Project, this Council finds that the benefits identified herein override the unavoidable environmental effects.

California Public Resource Code 21002 provides: “In the event specific economic, social and other conditions make infeasible such Project alternatives or such mitigation measures, individual projects can be approved in spite of one or more significant effects thereof.” Section 21002.1(c) provides: “In the event that economic, social, or other conditions make it infeasible to mitigate one or more significant effects of a Project on the environment, the Project may nonetheless be approved or carried out at the discretion of a public agency...” Finally, California Administrative Code, Title 4, 15093 (a) states: “If the benefits of a proposed Project outweigh the unavoidable adverse environmental effects, the adverse environmental effects may be considered „acceptable.□”

The City Council hereby declares that the foregoing benefits provided to the public through approval and implementation of the Project outweighs the identified significant adverse environmental impacts of the Project that cannot be mitigated. The City Council finds that each of the Project benefits outweighs the unavoidable adverse environmental impacts identified in the EIR and, therefore, finds those impacts to be acceptable.

Facts in Support of the Finding (Overriding Considerations). The ProLogis project has four overriding considerations: (1) development consistent with City standards; (2) economic viability; (3) employment generation; and (4) infrastructure improvements.

(1) Consistency with City Goals. The City's Development Review process will assure the proposed development is consistent with the City's General Plan, zoning, and Municipal Code upon approval of the requested General Plan Amendment, Zone Change, and other development applications. The analysis in the DEIR indicates the ProLogis project is generally consistent with the following development goals of the City's General Plan and the requirements of the City zoning code and municipal code for the five environmental issues that were determined to be significant even after implementation of proposed mitigation:

- **DEIR Section 4.1 Aesthetics - Consistency with General Plan Policies.** The project is consistent with Objective 2.5 and Policy 2.5.1 by providing industrial uses near SR-60 and within the FAR limits outlined. The project does not appear to be fully consistent with Policies 2.5.2 and 2.5.3 because it places industrial uses adjacent to lower density residential uses without the typical buffering land uses (e.g., higher density residential or business park). The project is consistent with Policy 2.5.4 as it precludes industrial traffic through residential areas by eliminating Quincy Street south of the new Eucalyptus Avenue road alignment and eliminating the new Encilia Avenue (old Eucalyptus Avenue) west of the Quincy Channel. The project is generally consistent with Objective 2.10 and Policies 2.10.1 through 2.10.5 by providing detailed architectural and landscaping themes for the proposed buildings and grounds, including adjacent to SR-60. The project is consistent with Policies 2.10.7 and 2.10.8 relative to lighting, although the tower accent features at the corners of the buildings may produce new off-site glare. The project appears to be consistent with Policy 2.10.9 as its fences and walls will incorporate landscaping and materials designed to reduce graffiti (see design details in DEIR Appendix K). The project may not be fully consistent with Policy 2.10.11 in terms of buffering for nearby residential uses, although it does comply with the new Municipal Code requirement of a 250-foot

buffer between industrial and residential uses. Policies 2.10.12 and 2.10.13 require screening for parking areas and the project is consistent with that policy.

- **DEIR Section 4.1 Aesthetics -Consistency with Municipal Code Requirements.** The previous analysis indicates the project is not consistent with Objective 7.7 and Policies 7.7.4 and 7.7.5 as it does not fully preserve significant views and vistas, including those along SR-60. Signage will be consistent with Municipal Code requirements so it is consistent with Policy 7.7.3. Finally, the project appears to be consistent with the various Municipal Code requirements for the proposed land uses outlined in Section 4.1.2 related to landscaping, setbacks, parking, storage, etc.
- **DEIR Section 4.2 Agriculture – Consistency with General Plan Policies -** The Moreno Valley General Plan policies and zoning designations support agriculture only as an interim use, and no land in the City is designated solely for agricultural use or for agricultural preservation. Despite this, the proposed zone change would conflict with the existing zone and Primary Animal Keeping Overlay (PAKO) designation for this portion of the project site; however, this change would remove less than one percent of the PAKO-designated land and would not represent a significant loss of land under this overlay designation. Based on the recent trends of urban development in the City, development pressures will eventually lead to the conversion of agricultural land in the City to suburban uses.

The City’s General Plan recognizes that these conversions will eventually occur, and the proposed project is a demonstration of that trend. The proposed project would result in the conversion of Prime Farmland, development of this site and the surrounding area is consistent with the long-term vision of the City as outlined in the General Plan. The Moreno Valley General Plan policies support agriculture as an interim use, and no land in the City is designated for agricultural preservation.

- **DEIR Section 4.3 Air Quality – Consistency with General Plan Policies –** Chapter 9 of the City’s General Plan defines goals and policies related to air quality within the City of Moreno Valley. The specific policies of the General Plan that are relevant to the proposed project are as follows:
 - **Objective 6.7:** *Reduce mobile and stationary source air pollutant emissions.*

- **Policy 6.7.1:** *Cooperate with regional efforts to establish and implement regional air quality strategies and tactics.*
- **Policy 6.7.5:** *Require grading activities to comply with South Coast Air Quality Management District's Rule 403 regarding the control of fugitive dust.*
- **Policy 6.7.6:** *Require building construction to comply with the energy conservation requirements of Title 24 of the California Administrative Code.*

The proposed project site is located in an urbanizing area of the City along SR-60 which accommodates traffic in the area. In addition, the proposed warehouse uses would be within walking distance of existing homes and commercial areas in the local vicinity. The proposed project will incrementally reduce overall vehicle miles traveled (VMT) in the region by introducing employment into an area (i.e., the City of Moreno Valley) with a low jobs/housing ratio as monitored by the Southern California Association of Governments (SCAG). This reduction in VMT will consequently reduce air pollutant emissions so the project is consistent with City General Plan Objective 6.7 and Policies 6.7.1. Mitigation Measures 4.3.6.2A through 2M to control dust, and Mitigation Measure 4.3.6.5B requires the project to exceed Title 24 energy conservation requirements, so the project is consistent with General Plan Policies 6.7.5 and 6.7.6.

- **DEIR Section 4.8 Land Use and Planning – Consistency with General Plan Policies – Section 9.2.2 Community Development of the General Plan contains the following goals and objectives;**
 - *Goal 2.1: A pattern of land uses which organizes future growth, minimizes conflicts between land uses, and which promotes the rational utilization of presently underdeveloped and undeveloped parcels.*
 - *Goal 2.2: An organized, well-designed, high quality, and functional balance of urban and rural land uses that will meet the needs of a diverse population, and promote the optimum degree of health, safety, well-being, and beauty for all areas of the community, while maintaining a sound economic base.*
 - *Objective 2.1: Balance the provision of urban and rural lands within Moreno Valley by providing adequate land for present and future urban and economic development needs, while retaining the significant natural features and the rural character and lifestyle of the northeastern portion of the community.*
 - *Objective 2.5: Promote a mix of industrial uses which provide a sound and diversified economic base and ample employment opportunities for the citizens of Moreno Valley with the establishment of industrial activities that have good access to the regional*

transportation system, accommodate the personal needs of workers and business visitors; and which meets the service needs of local businesses.

- *Policy 2.5.1: The primary purpose of areas designated Business Park/Light Industrial is to provide for manufacturing, research and development, warehousing and distribution, as well as office and support commercial activities. The zoning regulations shall identify the particular uses permitted on each parcel of land. Development intensity should not exceed a Floor Area Ratio of 1.00 and the average floor area ratio should be significantly less.*
- *Policy 2.5.2: Locate manufacturing and industrial uses to avoid adverse impacts on surrounding land uses.*
- *Policy 2.5.3: Screen manufacturing and industrial uses where necessary to reduce glare, noise, dust, vibrations and unsightly views.*
- *Policy 2.5.4: Design industrial development to discourage access through residential areas.*

In addition, General Plan Section 9.6.2 Safety Element contains the following applicable objective:

- *Objective 6.6: Promote land use patterns that reduce daily automotive trips and reduce trip distance for work, shopping, school, and recreation.*

The City's adopted General Plan Land Use Map designations for the existing project area largely reflect the existing land use pattern. The northern portion of the proposed project site is designated Business Park/Light Industrial, while the southern area, south of proposed Eucalyptus Avenue, is designated Residential in the City's General Plan. The primary purpose of areas designated Business Park/Light Industrial is to provide for manufacturing, research and development, warehousing and distribution, as well as office and support commercial activities.¹⁸ The proposed project is not consistent with the current General Plan and zoning, and includes a General Plan Amendment (and related Zone Change) so the project will be consistent with the General Plan. Impacts relative to the City's Primary Animal Keeping Overlay (PAKO) are addressed in the discussion of DEIR Section 4.2 Agriculture.

General Plan Objective 2.1 and Policy 2.5.1 require a transition of buffer of land uses between residential and industrial uses. In this area, the R5 and R15 zone areas in the southern portion of the site act

¹⁸ Moreno Valley General Plan. Chapter 9 Goals and Objectives. Policy 2.5.1. Pg. 9-7.

as a buffer from the BP uses near the freeway and the RA2 residential uses. It should be noted that, while there is an existing transition of land uses from BP to R2 in the vicinity of the project site, it is not the function of either the R-5 or R-15 zones to act as a buffer between non-residential land uses and low density residential uses.

The project provides light industrial uses close to freeway access that will generate short- and long-term employment for the City while minimizing conflicts with existing residential land uses to the southeast through planned changes in the circulation network, so it is consistent with Land Use Goals 2.1 and 2.2, Objectives 2.1 and 2.5, Policies 2.5.1 through 2.5.4, and Safety Objective 6.6. In addition, the proposed project is generally consistent with SR-60 East Corridor Study and can accommodate limited expansions of the Moreno Valley Auto Mall if necessary in the next two years.

- Relative to the City’s Housing Element, the proposed project would result in the loss of potential housing units as the General Plan Amendment (GPA) and Zone Change (ZC) request a change to industrial uses. Development of the site as proposed could eliminate as many as 681 housing units from the site, with 80 percent of those units (548) at a density that is generally accepted as helping to promote housing affordability (15 units per acre) on a regional level. The loss of the (max) potential 548 units (R-15 land) from the proposed project would reduce the total potential affordable units from 20,894 to 20,346 or still 2.7 times the RHNA number. The proposed project would not reduce the City’s potential pool of affordable housing to below its RHNA number; therefore, it would not create a significant impact related to the City’s Housing Element.
- **DEIR Section 4.8 Land Use and Planning – Consistency with the Municipal Code.** Section 9.05, Industrial Districts, of the City Municipal Code requires a minimum 250-foot buffer between residential uses and truck activity areas of industrial uses. The site plan of the proposed project provides a buffer of almost 400 feet from the closest residence to the southeast, so the project is consistent with this adopted land use buffer requirement.
- **DEIR Section 4.11 Transportation – Consistency with General Plan Policies** – The project is consistent with Community Development Policy 2.2.17 because the proposed amendment to the Circulation Element will prevent industrial traffic from traveling through existing residential areas southeast of the site. The project is also consistent with most of the relevant policies of the

Circulation Element, including: providing adequate emergency access (Policy 5.1.1); minimizing traffic conflicts (Policies 5.1.2, 5.5.3, and 5.5.4); providing adequate off-street parking (Policy 5.1.3), ADA and Title 24 consistency (Policy 5.1.5); promoting through access (Policies 5.1.6, 5.2.2, 5.3.1, and Objective 5.5); mitigating project-related traffic impacts (Policy 5.5.8); allow for bicycle, pedestrian, and non-vehicular access options (Objective 5.8 and Policy 5.8.4, Objective 5.10 and Policy 5.10.1, Objective 5.11 and Policies 5.11.1 and 5.11.2); and using safe project design procedures (Policies 5.5.5, 5.5.9, and 5.5.10) plus applicable Municipal Code requirements.

The project is not fully consistent with Objective 5.2 which requires Level of Service C or roadways or Level of Service D on local freeway segments, but will make improvements, pay City Development Impact Fees, and make contributions to the County's Traffic Uniform Mitigation Fee (TUMF) program to offset project impacts, which is consistent with City Policies 5.3.5, 5.3.6, and 5.3.7).

(2) Economic Viability. ProLogis estimates the project would result in a property tax increase from \$282,058 in 2013 to \$1.4 million at project buildout, representing an increase of \$1.2 million. Although a fiscal/economic study was not prepared for the ProLogis project, a comprehensive fiscal study was recently prepared by David Taussig and Associates (DTA¹⁹) for 41 million square feet of logistics warehousing proposed east of the ProLogis project site. This study indicated that logistics warehousing in Moreno Valley generates a surplus of City revenues versus costs. Since the ProLogis project is also logistics warehousing, it is reasonable to assume similar ratios of revenues and costs as outlined in the DTA study. Based on data in the DTA study, the ProLogis project could be expected to generate a surplus of approximately \$330,000 per year to the City at buildout.²⁰ This estimate is supported by data from a similar fiscal study prepared for a recent warehouse project in the City of Perris²¹. That study estimated 1.7 million square feet of warehousing would generate an annual surplus of \$216,500 which would equal \$331,000 if a similar cost/revenue ratio was applied to the proposed ProLogis project²².

¹⁹ "Fiscal and Economic Impact Study for the World Logistics Center Specific Plan." David Taussig and Associates, Inc. January 15, 2013.

²⁰ The DTA 2013 study estimated a surplus of \$6 million for 41 million square feet of logistics warehousing in the City, so the ProLogis project (2.25 million square feet) would generate a surplus of approximately \$330,000 using similar data and assumptions.

²¹ Andrew Chang and Company, LLC. Stratford Ranch Industrial Development. Fiscal and Economic Impacts, City of Perris. September 2012.

²² \$216,500 for 1.7 million square feet (Stratford Ranch) is equal to \$331,000 for 2.6 million square feet (ProLogis).

(3) Employment Generation. ProLogis estimates the project would generate a need for approximately 1,400 temporary construction—related workers²³ and approximately 600 permanent full-time employee positions at buildout of the proposed warehousing.

(4) Traffic and Infrastructure Improvements. The DEIR²⁴ indicated that the ProLogis project would produce an estimated 4,408 or 37 percent fewer Passenger Car Equivalent or PCE trips per day compared to the site as presently zoned (7,527 trips for ProLogis compared to 11,935 trips under current zoning). Note the PCE calculation takes into account large trucks in the vehicle mix.

ProLogis estimates the proposed project would pay approximately \$4.5 million for onsite road improvements including mainly Eucalyptus Avenue as an arterial street. In addition, ProLogis will provide \$9.2 million in Development Impact Fees (DIFs) to the City and other agencies in the following categories:

- * Moreno Valley Unified School District school impact fees
- * Arterial Streets
- * Traffic Signals
- * Interchange Improvements
- * Fire Facilities
- * Police Facilities
- * City Hall
- * Corporate Yard
- * Maintenance Equipment
- * Transportation Uniform Mitigation Fee (TUMF-separate from DIF)(see below)
- * Multi-Species Habitat Conservation Plan (MSHCP-County)
- * Riverside County Area Drainage Fee
- * Stephen’s Kangaroo Rat Habitat Conservation Plan Fee (SKR HCP)
- * SR-60/Moreno Beach Drive/Redlands Blvd. Improvement Fee
- * Fair Share for DIF and TUMF improvements per project traffic study
- * Santa Ana Watershed Authority (SAWA) mitigation for Quincy Channel impacts
- * Eastern Municipal Water District (various – water, sewer, landscaping, etc.)

²³ Estimate of construction-related employees generated by the ProLogis Ontario project, May 2014.

²⁴ ProLogis trip generation on DEIR Table 4.11.E, page 4.11-15, and existing zoning trip generation outlined on Table 6.B, page 6-9.

The ProLogis project will also make a variety of improvements (e.g., utilities, streets) both onsite and in the surrounding area, and offsite improvements, or contributions to needed roadway and intersection improvements, are shown below as summarized from the project Traffic Impact Assessment²⁵ and as outlined in Mitigation Measures 4.11.6.4A-4F:

Make Improvements or Fully Fund Before Project Opening

- Redlands Boulevard/SR-60 Westbound Ramps – Install traffic signal.
- Redlands Boulevard/Fir Avenue/Eucalyptus Avenue – Install a traffic signal, add a northbound left-turn lane, and add a southbound left-turn lane.
- Moreno Beach Drive/SR-60 Eastbound Ramps – TUMF fee includes interchange.

Make a Fair Share Contribution (Year 2016 Impacts)

- Moreno Beach Drive/SR-60 Eastbound Ramps – TUMF fee contributes to a planned interchange upgrade.
- Moreno Beach Drive/Cottonwood Avenue – DIF fee contributes to the addition of a southbound through lane.
- Moreno Beach Drive/Alessandro Blvd. – DIF fee contributes to the addition of a southbound through lane.
- Redlands Blvd./SR-60 Westbound Ramps – DIF and TUMF fees contribute to installation of a traffic signal and add a northbound through lane.
- Redlands Blvd./SR-60 Eastbound Ramps – TUMF fee contributes to improvement costs.
- Redlands Blvd./Fir Avenue/Eucalyptus Avenue – DIF fee contributes to installation of a traffic signal, adding a westbound right-turn lane, and adding an eastbound left-turn lane. TUMF fee will cover installation of a northbound left-turn lane and a southbound through lane.
- Redlands Blvd./Eucalyptus Avenue – TUMF fee contributes to the addition of a southbound right-turn lane.
- Redlands Blvd./Alessandro Blvd. – TUMF fee contributes to the addition of a southbound left-turn lane.

Make a Fair Share Contribution (Year 2035 Impacts)

- Nason Street/Eucalyptus Avenue – DIF fee will contribute to installation of a northbound right-turn lane and restriping the westbound approach to provide dual left-turn lanes.

²⁵ LSA Associates, Inc. April 24, 2012 as summarized in the ProLogis Draft EIR Section 4.15, Transportation and Traffic.

- Nason Street/Alessandro Blvd. – DIF fee will contribute to installation of an eastbound through lane, westbound through lane, and overlap phasing for the eastbound right-turn lane.
 - Moreno Beach Drive/SR-60 Westbound Ramps – TUMF fee contributes to improvements.
 - Moreno Beach Drive/SR-60 Eastbound Ramps – TUMF fee contributes to improvements.
 - Moreno Beach Drive/Eucalyptus Avenue – DIF fee contributes to traffic signal and various lane improvements/restriping.
 - Moreno Beach Drive/Cottonwood Avenue – DIF fee contributes to addition of a southbound lane.
 - Moreno Beach Drive/Alessandro Blvd. – DIF fee contributes to various lane improvements and restriping.
 - Redlands Blvd./SR-60 Westbound Ramps – DIF fee contributes to installation of a traffic signal.
 - Redlands Blvd./SR-60 Eastbound Ramps – TUMF fee contributes to various interchange improvements at this location.
 - Redlands Blvd./Fir Avenue/Eucalyptus Avenue – DIF and TUMF fees contribute to installation of a traffic signal and various lane improvements.
 - Redlands Blvd./Eucalyptus Avenue – DIF and TUMF fees contribute to installation of a traffic signal and various lane improvements.
 - Redlands Blvd./Alessandro Blvd. - DIF and TUMF fees contribute to installation of a traffic signal and various lane improvements.
- **Make a Fair Share Contribution (General Plan Buildout Impacts)(In addition to 2035)**
 - Nason Street/Eucalyptus Avenue – DIF fee will contribute to installation of a northbound right-turn lane and eastbound right-turn lane.
 - Nason Street/Alessandro Blvd. – DIF fee will contribute to installation of an eastbound left-turn lane and traffic signal improvements,
 - Moreno Beach Drive/Eucalyptus Avenue – DIF fee contributes to various lane improvements/restriping.
 - Moreno Beach Drive/Cottonwood Avenue – DIF fee contributes to addition of a southbound lane.
 - Moreno Beach Drive/Alessandro Blvd. – DIF fee contributes to various lane improvements and restriping.

- Auto Mall Drive/Eucalyptus Avenue – DIF fee contributes to installation of a traffic signal.
- Redlands Blvd./Alessandro Blvd. - DIF and TUMF fees contribute to installation of various lane improvements.

If the Encilia Avenue/Quincy Street Connection is Approved, the project will make the following improvements:

- Moreno Beach Drive/Eucalyptus Avenue – DIF fee will contribute to installation of various lane improvements and restriping.
- Redlands Blvd./Fir Avenue/Eucalyptus Avenue – Fair share contribution toward the addition of a southbound right-turn lane.
- Redlands Blvd./Encilia Avenue/Eucalyptus Avenue – DIF and TUMF fees contribute to installation of a traffic signal and various lane improvements.
- Moreno Beach Drive/Encilia Avenue - DIF fee contributes to installation of a traffic signal and various lane improvements.

VII. CERTIFICATION OF THE FINAL ENVIRONMENTAL IMPACT REPORT

The Moreno Valley City Council finds that it has reviewed and considered the FEIR in evaluating the Project, that the FEIR is an accurate and objective statement that fully complies with CEQA and the CEQA Guidelines, and that the FEIR reflects the independent judgment of the City Council.

The City Council declares that no new significant information as defined by CEQA Guidelines Section 15088.5 has been received by the City Council after the circulation of the DEIR that would require recirculation. All of the information added to the FEIR merely clarifies, amplifies or makes insignificant modifications to an already adequate DEIR pursuant to CEQA Guidelines Section 15088.5(b).

The City Council hereby certifies the EIR based on the following findings and conclusions:

A. Findings

1. CEQA Compliance

As the decision-making body for the Project, the City Council has reviewed and considered the information contained in the Findings and supporting documentation. The City Council

determines that the Findings contain a complete and accurate reporting of the environmental impacts and mitigation measures associated with the Project, as well as complete and accurate reporting of the unavoidable impacts and benefits of the Proposed Project as detailed in the Statement of Overriding Considerations. The City Council finds that the EIR was prepared in compliance with CEQA and that the City Council complied with CEQA's procedural and substantive requirements.

2. Significant Unavoidable Impacts/Statement of Overriding Considerations

The Project will have significant adverse impacts even following adoption of all feasible mitigation measures which are required by the City Council. The following significant environmental impacts have been identified in the FEIR and will require mitigation but cannot be mitigated to a level of insignificance as set forth in Section V(C) of these Findings:

- *Aesthetics Impacts (Scenic Vistas; Scenic Resources and Scenic Highways; Existing Visual Character or Quality of Site and its Surroundings; and Cumulative Impacts)* as a result of substantial change in visual characteristics of the proposed project compared to the existing site and the fact that the site was planned for Business Park and Residential uses and no feasible mitigation measures are available.
- *Agricultural Impacts (Conversion of State Designated Farmland; Conversion of Farmland to a Non-Agricultural Use; and Cumulative Impacts)* due to loss of 82.5 of Prime Farmland and Former Agriculture Activities and there is not an established regional mitigation program available.
- *Air Quality Impacts (Air Quality Management Plan Consistency; Equipment Exhaust from Construction-Related Activities; Architectural Coatings; Long-Term Project-Related Emissions; Project-Related Localized Operational Emissions; and Cumulative Impacts;)* due to the size and type of project, the proposed project would exceed SCAQMD thresholds and available mitigation would not reduce impacts to less than significant levels.
- *Land Use and Planning Impacts (Conflicts with Applicable Land Use Plans, Policies, or Regulations; and Cumulative Impacts)* due to the proposed project not being consistent with current General Plan land use and zoning designation

- *Transportation Impacts (Existing With Project Conditions (Intersection) Traffic and Level of Service; Opening Year With Project Conditions (Intersection) Traffic and Level of Service; Opening Year Cumulative With Project Conditions (Intersection) Traffic and Level of Service; and Cumulative Impacts.)* due to various mitigation measures being under the jurisdiction of Caltrans and so implementation cannot be guaranteed by the Lead Agency (City).

The City Council has eliminated or substantially reduced environmental impacts where feasible as described in the Findings, and the City Council determines that the remaining unavoidable significant adverse impacts are acceptable due to the reasons set forth in the preceding Statement of Overriding Considerations.

3. Conclusions

- a. All potentially significant environmental impacts from implementation of the proposed Project have been identified in the EIR and, with the implementation of the mitigation measures defined herein and set forth in the MMRP, will be mitigated to a less-than-significant level, except for the impacts identified in Section V(C) above.
- b. Other reasonable alternatives to the proposed Project that could feasibly achieve the basic objectives of the proposed Project have been considered and rejected in favor of the proposed Project.
- c. Environmental, economic, social and other considerations and benefits derived from the development of the proposed Project override and make infeasible any alternatives to the proposed Project or further mitigation measures beyond those incorporated into the proposed Project.

VII. ADOPTION OF MITIGATION MONITORING AND REPORTING PROGRAM

Pursuant to *Public Resources Code* Section 21081.6, the City Council hereby adopts, as conditions of approval of the Project, the Mitigation Monitoring and Reporting Plan (MMRP) set forth in Section 4.0 of the Final EIR. In the event of any inconsistencies between the mitigation measures as set forth herein and the MMRP, the MMRP shall control, except to the extent that a mitigation measure contained herein is inadvertently omitted from the MMRP, in which case such mitigation measure shall be deemed as if it were included in the MMRP.

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COMMENT LETTERS

CITY COUNCIL MEETING
JUNE 24, 2014

June 24, 2014

Moreno Valley City Council:

The attached information is submitted regarding Agenda item E.6 on the June 24, 2014 City Council agenda for the ProLogis Eucalyptus Industrial Park (Case Numbers PA07-0081, 0082, 0083, 0084, 0158, 0159, 0160, 0161 and 0162).

These comments focus on deficiencies with the approval findings found in the resolutions for approval of the General Plan Amendment, Parcel Map and Plot Plan applications and the ordinance for approval of the Change of Zone application, all included with tonight's agenda package as attachments to the staff report. A summary of observations regarding deficiencies in the larger project record is also attached – these are items that became evident as a result of reviewing the project record relative to the project approval findings. As demonstrated in the attached comments, the findings are substantially deficient and the record before you strongly demonstrates that approval of the applications is not in the long-term best interest of the City of Moreno Valley, or surrounding communities.

For members of the public, these materials were only made available late Thursday afternoon. It is simply unconscionable to ask people to digest these materials in a mere four-day period. With the release late Thursday afternoon and City Hall closure on Friday, members of the public only have Monday and Tuesday to attempt to resolve questions with staff – assuming they have been able to pour over the thousands of pages of documents so that any questions are apparent by then.

I would ask each of you to HONESTLY disclose to the public whether you have reviewed the staff report and attachments IN THEIR ENTIRETY. Affirmative action on these applications will substantially alter the City's land use policy and will result in unmitigated impacts throughout the City and surrounding areas that will adversely affect the public health, safety and welfare. A decision of this magnitude deserves your full attention and due consideration of the entire record before you.

If you have truly considered the entire record before you and if you have listened to the citizens who have taken time to express their views to you tonight, the only responsible action is to DENY the applications before you. If this is your intent, please DO NOT CERTIFY THE EIR. A certified EIR could be used at a later date for a similar project – here or at another site. The community deserves a full disclosure and participation process if another proposal of this nature comes forward at a later time.

If you are inclined to ignore the overwhelming evidence before you and approve the actions, then it is necessary to defer that action to a later date to substantially enhance the findings within the approval ordinance and resolutions.

Respectfully submitted,

Kathleen Dale

Resident of Moreno Valley since 1958

B.S Environmental Science, UC Riverside

Planner and environmental consultant for more than 33 years

ProLogis Eucalyptus Industrial Park
Case Numbers PA07-0081, 0082, 0083, 0084, 0158, 0159, 0160, 0161 and 0162
June 24, 2014 City Council

Comments on Proposed Approval Findings

PA07-0082 - General Plan Amendment (Resolution 2014-57)

1. The resolution erroneously identifies the existing General Plan Land Use designations. RA-2 is not a valid General Plan land use designation. It appears this is intended to be Residential 2 (or R2). See General Plan Policy 2.2.5 and the General Plan Land Use Map available at http://www.moreno-valley.ca.us/city_hall/general_plan.shtml.
2. The resolution erroneously identifies the proposed General Plan land use designation. The official designation indicated in the General Plan is Business Park/Industrial (General Plan Policy 2.5.1).
3. The resolution misstates the second finding required under Municipal Code Section 9.02.040F which requires an affirmative finding that “The proposed amendment will not adversely affect the public health, safety or general welfare”.
4. The supporting statements for each finding are conclusory, incomplete and inaccurate. To the contrary, the record demonstrates that the proposed General Plan Amendment(s) are not consistent with several aspects of the General Plan and that the project would result in unmitigated significant adverse impacts that would be detrimental to public health, safety and general welfare. The following provides one example for each finding demonstrating the failings of the resolution findings as presented:
 - a. **General Plan Consistency.** Community Development Element Objective 2.4 calls for provision of commercial areas within the City that are conveniently located, efficient, attractive, and have safe and easy pedestrian and vehicular circulation in order to serve the retail and service commercial needs of Moreno Valley residents and businesses.
 - i. The proposed General Plan Amendment would establish truck traffic on Eucalyptus Avenue (not a designated truck route per truck route map currently posted to City website at http://www.moreno-valley.ca.us/city_hall/departments/pub-works/transportation/pdfs/truckroutes.pdf, copy also provided with these comments). Eucalyptus Avenue west of the project site to Moreno Beach Drive is fronted on both sides by automobile dealerships within the Moreno Valley Auto Center. Customers utilize on-street parking and there is regular pedestrian activity along and across Eucalyptus Avenue. Approval of the proposed General Plan land use designation amendment will increase truck activity along this section of Eucalyptus Avenue. The associated intensity of truck trips would be inconsistent with the expressed General Plan objectives for safe and easy pedestrian access and vehicular circulation for this important retail commercial area.
 - b. **Public Health, Safety and Welfare.** The second finding merely cites preparation of a Final EIR as supporting evidence that the General Plan Amendment(s) would not be detrimental to the public health, safety and general welfare. To the contrary, the EIR findings in Resolution 2014-56 (beginning on page 88) identify unavoidable significant impacts related to aesthetics, air quality, and traffic, which would occur as a result of implementing the proposed General Plan Amendment(s), and which would clearly be detrimental to the public health, safety and general welfare.

5. A listing of all applicable provisions from the General Plan Objectives, Goals, Policies and Programs (General Plan Chapter 9) is also provided with these comments. The proposed General Plan Amendment(s) also conflict with: Ultimate Goals I, IV, VI and VII; Community Development Element Goals 2.1, 2.2; Community Development Element Policies 2.2.5, 2.2.17, 2.5.2, 2.10.7, and 2.10.11; Community Development Objective 2.5; Circulation Element Policies 5.1.2, 5.2.3, and 5.5.2; Circulation Element Program 5-16; Safety Element Program 6-3; Conservation Element Objective 7.7; and Conservation Element Policies 7.4.3, 7.7.4 and 7.7.5. The findings must address the project's relationship to each applicable General Plan goal, policy, program and objective, provide a statement supported by substantial evidence as to the project's consistency with each applicable General Plan provision, or provide a statement of the specific location in the project record where such substantial evidence can be found – a global reference to the thousands of pages that constitute the Final EIR and supporting documents is not sufficient.
6. The map (Exhibit A) attached to the Resolution 2014-57 as posted for public review identifies only the land use designation change. Text and attachments depicting the nature of the trail and circulation element revisions are required as well.
7. As presented, the approval resolution does not sufficiently characterize the action being approved and the required findings (Municipal Code Section 9.02.040F) are not affirmatively supported by substantial evidence in the record before you. The General Plan Amendment approval resolution cannot be adopted as presented.

PA07-0081 - Change of Zone (Ordinance 880)

1. The supporting statements for Findings 1 and 3 are conclusory, incomplete and inaccurate. To the contrary, the record demonstrates that the proposed Change of Zone is not consistent with several aspects of the General Plan and that the project would result in unmitigated significant adverse impacts that would be detrimental to public health, safety and general welfare. The following provides one example for each finding demonstrating the failings of the resolution findings as presented:
 - a. **General Plan Consistency.** Community Development Element Policy 2.2.5 identifies the purpose of areas designated Residential 2 is to provide for suburban lifestyles on residential lots larger than commonly available in suburban subdivisions and to provide a rural atmosphere.
 - i. The proposed Change of Zone would establish an industrial land use designation where adjoining lands to the west and south are designated for future Residential 2 uses and where existing residences within the Residential 2 land use designation are within immediate proximity to the east across the Quincy Channel. The massive concrete structures, parades of big rigs, and commotion of loading dock activity that would be accommodated with the proposed Change of Zone are not consistent with the average individual's concept of "rural atmosphere".
 - b. **Public Health, Safety and Welfare.** The second finding merely cites preparation of a Final EIR as supporting evidence that the Change of Zone would not be detrimental to the public health, safety and general welfare. To the contrary, the EIR findings in Resolution 2014-56 (beginning on page 88) identify unavoidable significant impacts related to aesthetics, air quality, and traffic, which would occur as a result of implementing the proposed Change of Zone, and which would clearly be detrimental to the public health, safety and general welfare.
 - c. **Conformance with Moreno Valley Municipal Code Title 9.** The finding as presented erroneously refers to a pre-zoning action that is not an element of the entitlements before you. The resolution also misstates the finding as required under Municipal Code Section

9.02.050.D.3. The finding in item 3 under Section 2.1 of the ordinance should address the required affirmative finding that “The proposed amendment is consistent with the purposes and intent of this title”. The supporting text as presented is an unsupported conclusion that the zone change has satisfied the Municipal Code and other regulations associated with a change of zone. This “finding” does not refer to any supporting documentation in the record and, in fact, does not address the substantive requirement of the finding. For example, Municipal Code Sections 12.36.030 (Designation of Truck Routes) and 9.05.050.B.2 (Good Neighbor Guidelines for warehouse distribution facilities) require enforcement of the City’s designated truck routes. Eucalyptus Avenue east of Moreno Beach Drive is not a designated truck route (per truck route map currently posted to City website at http://www.moreno-valley.ca.us/city_hall/departments/pub-works/transportation/pdfs/truckroutes.pdf, copy also provided with these comments) and a change to this effect is not disclosed to be part of this project. The project would not be in compliance with Municipal Code Sections 12.36.030 and 9.05.050. The ordinance should at a minimum acknowledge and address the City’s practices for ensuring implementation of Municipal Code Section 9.05.050.

2. A listing of all applicable provisions from the General Plan Objectives, Goals, Policies and Programs (General Plan Chapter 9) is also provided with these comments. The proposed Zone Change also conflicts with: Ultimate Goals I, IV, VI and VII; Community Development Element Goals 2.1, 2.2, and 2.2.17; Community Development Element Objectives 2.4 and 2.5; Community Development Element Policies 2.5.2, 2.5.4, 2.10.7, and 2.10.11; Circulation Element Policies 5.1.2, 5.2.3, and 5.5.2; Circulation Element Program 5-16; Safety Element Program 6-3; Conservation Element Objective 7.7; and Conservation Element Policies 7.4.3, 7.7.4 and 7.7.5.
3. As presented, the required findings (Municipal Code Section 9.02.050.D) are not affirmatively supported by substantial evidence in the record before you. The Change of Zone approval ordinance cannot be introduced or adopted as presented.

PA07-0084 – Tentative Parcel Map (Resolution 2014-59)

Time simply did not permit close assessment of the findings for Resolution 2014-59. The required findings for subdivision maps are detailed in Municipal Code Section 9.14.070. The stipulated findings include requirements that a land division map be denied (1) if it is not consistent with the General Plan and (2) if it would cause serious public health problems. For the same reasons as noted above for Resolution 2014-57 and Ordinance 880, the findings provided with the staff report do not address all aspects of General Plan consistency, do not address significant public health impacts disclosed in the EIR, and do not provide substantial evidence to support the findings. The resolution as presented for your consideration is not adequate to support affirmative action on the

Two additional findings appear to warrant a closer look, namely those related to conformance with applicable City ordinances (Resolution 2014-59, Section 1, Item B.8) and regional housing needs (Resolution 2014-59, Section 1, Item B.10).

PA07-0083 - Master Plot Plan (including Building 2), PA07-0158 - Plot Plan (Building 1), PA07-0159 - Plot Plan (Building 3), PA07-0160 - Plot Plan (Building 4), PA07-0161 - Plot Plan (Building 5), PA07-0162 - Plot Plan (Building 6) (Resolution 2014-58)

Time simply did not permit close assessment of the findings for Resolution 2014-58. The required findings for plot plans are detailed in Municipal Code Section 9.02.070. The stipulated findings include requirements

that plot plans (1) are consistent with the General Plan and (2) would not be detrimental to the public health, safety, or welfare or materially injurious to improvements or properties in the vicinity. For the same reasons as noted above for Resolution 2014-57 and Ordinance 880, the findings provided with the staff report do not address all aspects of General Plan consistency, do not address significant public health impacts disclosed in the EIR, and do not provide substantial evidence to support the findings. The resolution as presented for your consideration is not adequate to support affirmative action on the plot plans.

The two remaining findings (conformance with zoning regulations and compatibility with existing and planned land uses in the vicinity) also appear to warrant a closer look.

Additional Points

Aesthetics Impacts – the General Plan identifies both State Route 60 and Moreno Beach Drive as scenic roads with protection of views of the surrounding mountains being the scenic resource (Conservation Element Policies 7.7.4 and 7.7.5). The EIR is silent to project impacts upon vistas along Moreno Beach Drive.

Biological and Hydrological Impacts –an omitted impact related to diversion of flows currently discharged to an off-site natural drainage feature was brought to staff’s attention last week. Coordination with staff and the EIR consultant has identified new information (November 2012 revision of DBESP report) that was not included in the Draft or Final EIR or supporting technical studies. This new information is necessary to characterize and assess the significance of this impact. Mr. Ormsby Mr. Bradshaw and Mr. Norton are all aware of this issue and to this point have not indicated an intent to make the necessary addition to the project record.

Wildland Fire Hazards – the EIR erroneously characterizes the project setting relative to wildland fire hazard. The cited General Plan reference (Draft EIR Section 4.6.5.5, page 4.6-13) for mapped hazard areas is outdated. The project site adjoins lands designated as subject to Very High Fire Hazard (VHFHS) Severity per the Cal Fire maps (available at http://frap.fire.ca.gov/webdata/maps/riverside_west/fhszl_map.60.pdf), with VHFHS zone applied to adjacent lands to the south, extending to the nearby hills. The record should be updated to correct this error and to address the resultant impacts.

Plot Plan Conditions of Approval

- Condition P3 establishes an 18-month moratorium on issuance of building permits for Buildings 1 and 3. The record does not explain the intent of this condition. Please ask staff to explain.
- Condition P51 requires screening of rooftop equipment from SR-60 and Eucalyptus/Fir Avenues. Moreno Beach Drive is also a designated scenic route (per General Plan Conservation Element Policy 7.7.4). The condition should also require screening from views along this street.
- Condition TE15 requires a traffic calming plan for Eucalyptus Avenue through the Auto Mall. There is nothing readily apparent in the record to explain the intent of this condition. Please ask staff to explain. Further, such a study should be prepared prior to project approval; at this juncture there is no indication whether reasonably feasible measures are available to achieve whatever the intended purpose of this study may be.

Basin Emergency Overflow Outlets - the plot plan and preliminary grading plan identify overflow outlets from the basins at the south edge of the development site. The means of access and nature of required maintenance activities is not readily found in the project record. Please ask staff to explain.

SOOC Revisions – the Staff report refers to an Attachment 15 which is to provide a strike-out/underline version of the Statement of Overriding Considerations (which was revised from the version considered by the Planning Commission). It appears this may be intended to be Attachment 17; however, there is no discernible strike-out/underline text in the posted attachment. The Council and the public should have a better understanding of the revisions to this important document before any action is taken.

Significant and Unavoidable Impacts and Mitigation Measures Sections of Staff Report – the content under these headings on pages 8 and 9 of the staff report is incomplete, misleading and inaccurate. The record should provide a concise summary of the impact determinations without requiring the public to delve through thousands of pages of attachments.

Projected Employment – the approximately 1,500 jobs for approximately 2 million square feet of warehouse space are not realistic. The verifiable employment figures for many existing warehouse developments in Moreno Valley indicate that more realistic figures would be approximately 20% to 30% of this figure. If these inflated employment figures are used to support the Statement of Overriding Considerations, the project record should be revised to reflect more reasonable projections. If the Council accepts these employment estimates, the project should be subject to a performance standard and reporting requirements to verify such numbers are achieved.

Business Park General Plan Designation – The single General Plan land use designation for all intensities of industrial development is proving ineffective in moderating appropriate siting and intensity of industrial development. The City should consider reestablishing multiple industrial land use designations.

Future Park Needs – the project site is within a “Recommended Future Parkland Acquisition Area” (General Plan Figure 4-4; Parks, Recreation and Open Space Element Program 4-9). A determination as to whether the project site was evaluated relative to future park needs is not readily apparent in the project record.

Project Objectives – the project itself does not seem to meet, nor is it clear how it would be regulated to meet, several of the applicant’s project objectives as stated in the Draft EIR (Section 3.7, page 3-14), for example:

- Provide industrial warehouse facilities that meet the substantial and unmet demands of businesses located in the City and County
- Provide new industrial development that is attractive and minimizes conflicts with the surrounding existing uses
- Provide a variety of new employment opportunities for the citizens of Moreno Valley and surrounding communities
- Cluster industrial warehouse uses near access points to the state highway system to reduce traffic congestion on surface streets and to reduce air pollutant emissions from vehicle sources

Planning Commission Public Comments – 16 individuals spoke during the two Planning Commission hearings. Fifteen spoke in opposition to the project, citing evidence of significant adverse environmental impacts, objections to the wholesale abandonment of the adopted General Plan for this area, and objections to the proliferation of warehouse uses throughout the City. The Planning Commission majority ignored the public comments as an element of the public record.

Posted Documents – particularly with a record of this magnitude, the posted documents should be bookmarked and searchable. Also, the way the agenda materials are posted, it is necessary to open each individual document before it can be saved to a local drive. It took approximately 90 minutes just to download the staff report and attachments (not including the massive DEIR and FEIR files, which fortunately I had previously downloaded). Documents should be posted so that the entire report can be downloaded as a single file or a zipped folder. If posting of multiple files is the only option, then ability to download with simple right-click should be provided.

General Plan Goals, Policies Program and Objectives
for which the ProLogis Eucalyptus Industrial Park is in Conflict
(excerpts from General Plan Chapter 9¹)

Ultimate Goal I

Exhibits an orderly and balanced land use pattern that accommodates a range of residential, cultural, recreational, business and employment opportunities.

Ultimate Goal IV

Enjoys a healthy economic climate that benefits both residents and businesses.

Ultimate Goal VI

Enjoys a circulation system that fosters traffic safety and the efficient movement of motor vehicles, bicycles and pedestrians.

Ultimate Goal VII

Emphasizes public health and safety, including, but not limited to, police, fire, emergency and animal services and protection from floods and other hazards.

Community Development Element Goal 2.1

A pattern of land uses, which organizes future growth, minimizes conflicts between land uses, and which promotes the rational utilization of presently underdeveloped and undeveloped parcels.

Community Development Element Goal 2.2

An organized, well-designed, high quality, and functional balance of urban and rural land uses that will meet the needs of a diverse population, and promote the optimum degree of health, safety, well-being, and beauty for all areas of the community, while maintaining a sound economic base.

Community Development Element Policy 2.2.5

The primary purpose of areas designated **Residential 2** is to provide for suburban lifestyles on residential lots larger than commonly available in suburban subdivisions and to provide a rural atmosphere. The maximum allowable density shall be 2.0 dwelling units per acre.

Community Development Element Policy 2.2.17

Discourage nonresidential uses on local residential streets that generate traffic, noise or other characteristics that would adversely affect nearby residents.

Community Development Element Objective 2.4

Provide commercial areas within the City that are conveniently located, efficient, attractive, and have safe and easy pedestrian and vehicular circulation in order to serve the retail and service commercial needs of Moreno Valley residents and businesses.

Community Development Element Objective 2.5

Promote a mix of industrial uses which provide a sound and diversified economic base and ample employment opportunities for the citizens of Moreno Valley with the establishment of industrial activities that have good

¹ Staff was contacted to confirm that document posted on City's website is current. Indication that this is the case was provided in e-mail from Case Planner Bradshaw date June 17, 2014

access to the regional transportation system, accommodate the personal needs of workers and business visitors; and which meets the service needs of local businesses.

Community Development Element Policy 2.5.2

Locate manufacturing and industrial uses to avoid adverse impacts on surrounding land uses.

Community Development Element Policy 2.5.4

Design industrial developments to discourage access through residential areas.

Community Development Element Policy 2.10.7

On-site lighting should not cause nuisance levels of light or glare on adjacent properties.

Community Development Element Policy 2.10.11

Screen and buffer nonresidential projects from adjacent residential property and other sensitive land uses when necessary to mitigate noise, glare and other adverse effects on adjacent uses.

Parks, Recreation and Open Space Element Program 4-9

Acquire land and develop neighborhood and community parks in the “Recommended Future Parkland Acquisition Areas” shown in Figure 4-4.

Circulation Element Policy 5.1.2

Plan the circulation system to reduce conflicts between vehicular, pedestrian and bicycle traffic.

Circulation Element Policy 5.2.3

Encourage the incorporation of traffic calming design into local and collector streets to promote safe vehicle speeds.

Circulation Element Policy 5.5.2

Provide dedicated left-turn lanes at all major intersections on minor arterials and higher classification roadways.

Circulation Element Program 5-16

Implement programs that mitigate on-street hazards for bicyclists.

Safety Element Program 6-3

Reevaluate designated truck routes in terms of noise impact on existing land uses to determine if those established routes and the hours of their use

Conservation Element Policy 7.4.3

Preserve natural drainage courses in their natural state and the natural hydrology, unless the protection of life and property necessitate improvement as concrete channels.

Conservation Element Objective 7.7

Where practical, preserve significant visual features significant views and vistas.

Conservation Element Policy 7.7.4

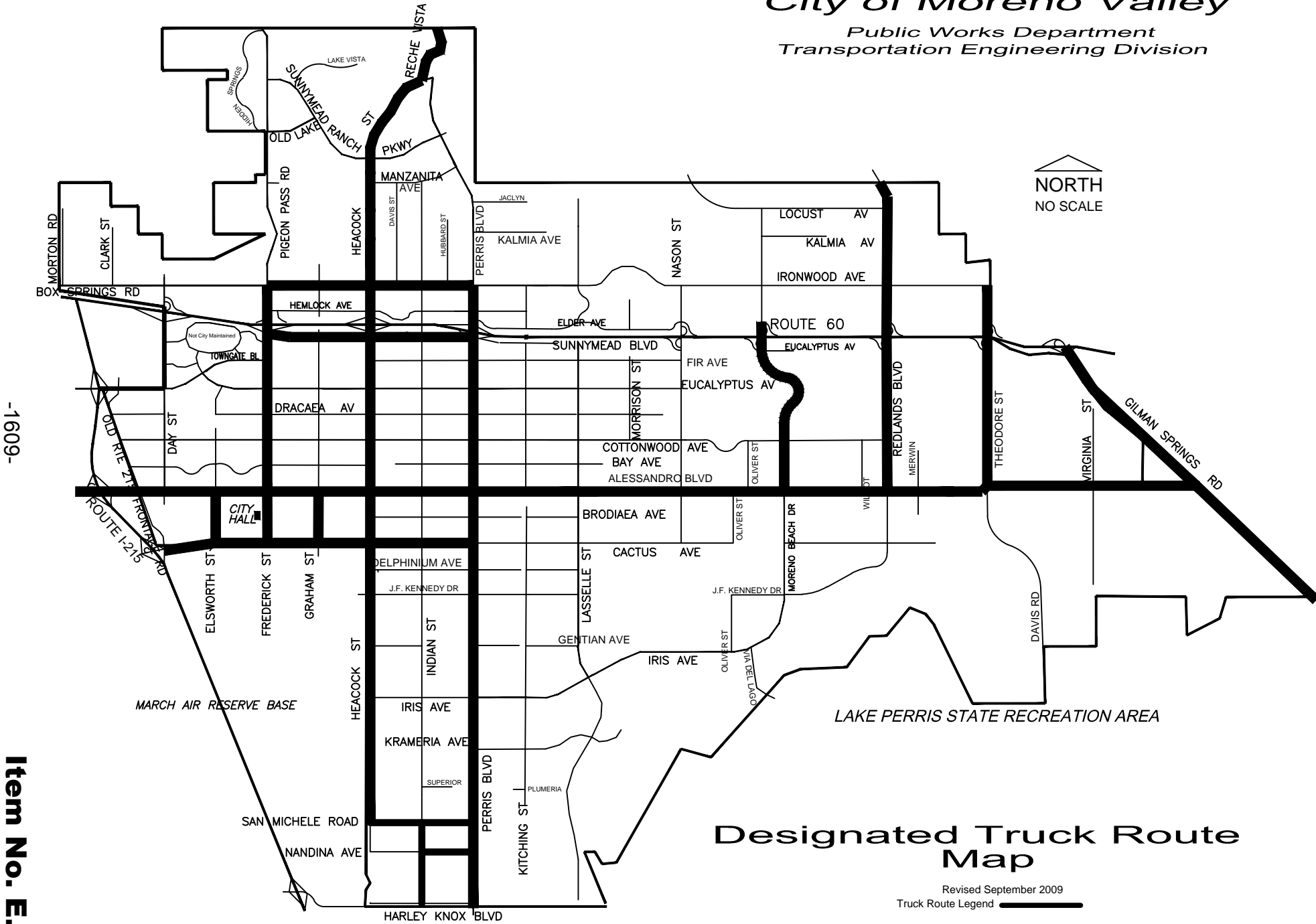
Gilman Springs Road, Moreno Beach Drive, and State Route 60 shall be designated as local scenic roads.

Conservation Element Policy 7.7.5


Require development along scenic roadways to be visually attractive and to allow for scenic views of the surrounding mountains and Mystic Lake.

City of Moreno Valley

Public Works Department
Transportation Engineering Division



Designated Truck Route Map

Revised September 2009
Truck Route Legend 

-1609-

Item No. E.3

Darisa Vargas

From: George Hague <gbhague@gmail.com>
Sent: Tuesday, June 24, 2014 9:58 AM
To: Jeff Bradshaw
Cc: Chris Ormsby
Subject: ProLogis Eucalyptus warehouse comments

Good morning Mr Bradshaw,

The fact that the ProLogis Eucalyptus warehouse developer in the response to comments about AG agrees that it is legally possible for the City to require mitigation for loss of all those Prime AG acres, then the Sierra Club expects you to do so. The State has AG mitigation programs and ways to have conservation easements and therefor it is possible to use those for what the Courts are saying can be imposed. Just because the City now downplays AG in its future, it is still regionally important and needs to be mitigated. You could also require the developer to use a local AG mitigation program if ones is developed before occupancy of the entire project. This is quite possible with the current Riverside County General Plan Update. This is also very important for loss of raptor foraging and local AG decreases GHG as well as climate change or as Sierra Club now calls it Climate Disruption. Mitigation for AG near publicly owned lands, like the San Jacinto Wildlife Area, is very important and this project needs to step up with this mitigation.

The developer of the WLC put together a proposed plan for the Moreno Highlands lands that would have been mainly warehousing at the time Skechers was being proposed. He even put together a documents which compared the Moreno Highlands land uses with his proposed warehouse use on mainly the same lands -- plus some additional acreage. It is wrong for Prologis to continually claim they did not know about what we now call the World Logistic Center (WLC) for it was very foreseeable. The WLC waited until the 20 year Development Agreement on Moreno Highlands expired to formally put their project forward, but everyone knew for years prior, exactly what was going to be proposed. Prologis must include the WLC in its cumulative impacts or all its environmental documents and analysis are inadequate. It is also sad that the ProLogis developer waited only one year after the City and its residents approved a new General Plan to purchase the acreage for this project. It would not surprise the Sierra Club if they were watching during our General Plan process and knew they could get the City Council to change the land use later.

The City has limited amount of freeway frontage and we should not continue to use it for for cement boxes. It does not benefit the City economically in the long term to give away these prime acreages to warehouses instead of for businesses that could truly use the exposure along the SR-60.

Toxic diesel pollution is going to cover our entire city with all these warehouse approvals. When are the decision makers going to realize that the health of the young and old as well as the warehouse workers are being compromised by these approvals? Since it has been shown that one must be 500 meter or about 1500 feet away form these toxic diesel warehouses to significantly lessen their impacts, how can the City allow this project on lands zoned for homes and also adjacent to land zoned for homes as well as close to existing homes? The decision makers must know the choices that they must make in the future on lands adjacent to this project which should no longer permit housing, prior to approving this project. The full cumulative, growth inducing impacts as well as direct and indirect impacts have not been fully shown and analyzed for this project. The ProLogis Eucalyptus warehouse project does not protect the Health, Safety or Welfare of Moreno Valley residents.

Thank you,

George Hague
Sierra Club
Moreno Valley Group
Conservation Chair

Darisa Vargas

From: Tntross <tntross@aol.com>
Sent: Tuesday, June 24, 2014 4:43 PM
To: Jeff Bradshaw
Subject: City Projects

Good Afternoon,

Thank you so much for returning my call this afternoon. I am writing to the city council because I am very concerned about the future of the neighborhood in which I purchased my home. I purchased this home because I loved the location. Now I am fearful that this neighborhood is going to turn into an industrial center with warehouses, pollution, traffic from huge trucks, not a residential neighborhood where it is safe to raise children. Also, large trucks will cost the city more funds because they will destroy the roads.

I am also concerned because we pay more taxes in this neighborhood than other parts of the city. So if the plan is as I have been told, we will be paying large exorbitant taxes and will be living in an industrial environment. When I purchased my home this area was zoned for more homes not warehouses and logistic centers. Please consider the city and its citizens.

Darisa Vargas

From: atmckibben@roadrunner.com
Sent: Monday, June 23, 2014 6:36 PM
To: Jeff Bradshaw
Subject: ProLogis Public Hearing

Dear Mr. Bradshaw --

I e-mailed this letter to each city councilmember. I am forwarding to you as I am unable to attend the city council meeting on the ProLogis project.

Thank you, Ann McKibben

23 June 2014

Moreno Valley City Hall
14177 Frederick Street
PO Box 88005
Moreno Valley, CA 92552

Dear Councilmember

Re: ProLogis Final Environmental Impact Report (P07-186) for the ProLogis Eucalyptus Industrial Park Project. The project case numbers: PA07-0081 through PA07-0084 and PA07-0158 through PA07-0162

I am writing to ask that you vote 'no' on the ProLogis Eucalyptus Industrial Park Project.

I am concerned about:

- 1) The continuing decline in our air quality; the increase in microfine particulates that cause health problems such as asthma, heart disease, lung disease & more
- 2) increase in truck traffic (2,000 trucks per day for this project alone) on highways that are not designed to accommodate that number of trucks;
- 3) placing warehouses next to lands zoned for housing
- 4) the erosion of our quality of life
- 5) the high number of warehouses in our city

It would be helpful to know and have the city council members discuss:

- 1) how many warehouses (total square footage) are currently approved by the city
- 2) how many of these approved warehouses have been built
- 3) how many are occupied or vacant

At this point in time I think the city council needs to ask itself and more specifically it really needs to ask its residents (the taxpayers) just what is their vision for the future?

Are we going to have a diverse economy or are we going to continue our 'boom town' mentality that describes the 1980s & 1990s where excessive numbers of homes were built, recessions nuked our tax base and the city and its residents suffered economic losses.

If the city cannot see beyond approving unlimited housing and mega-warehouses, if it can not create a diverse economy of variety of employers, then I would ask, why are we here?

I do not support the ProLogis project and I would ask you to vote 'no'.

Sincerely,
Ann Turner McKibben
23296 Sonnet Drive
Moreno Valley, CA 92557

Ann Turner McKibben
e-mail: atmckibben@roadrunner.com

Thomas Thornsley
29177 Stevens Avenue, Moreno Valley, CA 92555

June 24, 2014

Mr. Jeffery Bradshaw
City of Moreno Valley
14177 Frederick Street/P.O. Box 88005
Moreno Valley, California 92552

Via e-mail: JefferyB@moval.org

Dear Mr. Gross:

Re: Comments to the Final Environmental Impact Report for the ProLogis Eucalyptus Industrial Park.

As a concerned resident who lives on the east end I have great interest and concerns about development in our area. Therefore, I have taken an extensive amount of time to review the Final Environmental Impact Report and the Statement for Overriding Consideration. I cannot agree with some of the conclusions because this project goes beyond good planning recommending the replacement of viable land uses that it should never have been encouraged by the City to the developer.

Once again the City and a Developer are collectively agreeing to change the General Plan to justify a project. It appears that a number of impacts are being written off because the City simply will not take a strong stand on potential development impacts or adopt stricter mitigation measures to assure that development impacts are brought down to the lowest feasible point versus no mitigation if the impacts are not significantly above set thresholds.

One of the hardest losses I find in the whole concept of this project is the lost viability of financially valuable land with freeway exposure. It is in the best economic interest of all cities to place the highest and best uses adjacent to the freeways where those businesses can promote themselves and draw in customers. At the very least the city should be designating the land along the south side of SR-60 for such commercial use. It is noted that the staff report makes no mention of the option to expand the auto mall although it was discussed with the Planning Commission. Further to my dismay is the continued quest to give approval for land use changes that do not gain us new or unique job opportunities. There is plenty of available land designated for warehouse development and we do not need to be hopscotching that use all over the city.

In review of the project objectives and the Statement of Overriding Consideration it is clear that objectivity was not always utilized or expressed. Since I do profess to be in opposition to the project my comments could be considered biased but I have prepared comments none the less.

The following contains italicized text straight from the Final EIR followed by standard text of my comments and concerns.

Here is the list of Project Objectives as found in the Draft Environmental Impact Report followed by an independent evaluation of their stated goal as follows:

B. PROJECT OBJECTIVES

- *Provide industrial warehouse facilities that meet the substantial and unmet demands of businesses located in the City and County;*

- Moreno Valley may be in need more businesses however there is not an “unmet” demand for warehouses by any operations within this City or surrounding area. In all likelihood, these proposed warehouses will be utilized by companies outside of our region that must import their products and take them to a location where they can be distributed to other distant locations.
- In the past few years the City has added millions of square feet of warehouse space intended to serve the same purpose and meeting the demand for the area.

- *Provide new industrial development that is attractive and minimizes conflicts with the surrounding existing uses;*

- Although this developer proposes building with aesthete features little is done along the highway or the residential properties to provide sufficient landscaping to screen the huge buildings.
- At the very least this project will create air quality, traffic, noise, and lighting conflicts with the surrounding residential property both built and unbuilt.
- The project’s truck and vehicular traffic will now take access to the west through the City’s Auto Mall ultimately increasing traffic volumes and conflicts with their operations and customer access to those economically beneficial businesses. We cannot afford to have our auto sales diminish because of undue truck traffic impacts scaring off customers.

- *Provide a variety of new employment opportunities for the citizens of Moreno Valley and surrounding communities;*

- This proposal more of what we have been getting the past few years and thus fails to provide a “variety” of new employment opportunities. Its development of warehouses and the jobs associated with that industry only increases the same type of employment opportunity already in high supply through the numerous warehouses already built or approved for construction within the City and the surrounding area.

- *Encourage warehouse distribution services that take advantage of the area’s close proximity to various freeways and transportation corridors;*

- This project can only claim its proximity to SR-60. It is neither adjacent nor near any rail service corridors.

- *Encourage new development consistent with the capacity and municipal service capabilities;*

- *Provide infrastructure improvements to meet phased Project needs in an efficient and cost-effective manner;*

- This is a “must do” with any development. However, highway improvements are not tied to development timetables or percentage of constructed building square footage to preclude development operational impacts that reduce roadway levels of service below acceptable levels for indefinite period of time. Remember that paying into the TUMF program has no guarantee as to when those needed improvements will be made.

- *Cluster industrial warehouse uses near access points to the state highway system to reduce traffic congestion on surface streets and to reduce air pollutant emissions from vehicle sources;*

- Traffic intensity at the state highway systems' intersecting points with project site will be highly impacted as will the commercial and residential use adjacent to the project location. This will further impede others accessing the community at these highway intersections.
- With the change of land use to permit warehouses you are also changing the vehicle types coming into the area. The air quality analysis needs to show whether the reduction of car exhaust over the increase in trucks and diesel exhaust truly reduces the health risk associated with one over the other.

- *Develop land uses that provide the City with a positive revenue/cost ratio and provide needed infrastructure in a timely fashion;*

- This objective simply points out the known bias for industrial and commercial land uses which are the only land uses that have a positive ratio. This could be argued at any time to justify the elimination of residential uses and it meets no unique criteria for development.
- As the environment stands today we are unaware of any "needed" infrastructure to meet current conditions. However, development of the project site, as with any development type, would require the installation of necessary infrastructure to off-set the impacts of said development. Again, not unique.

- *Address community circulation, both vehicular and pedestrian, utilizing available capacity within the existing circulation system, and provide fair share improvements to various future-year deficient intersection or road segments; and*

- Although this project will pay into the TUMF program for major highway improvements, construction of those improvements is not tied to any timetable of the development. Should the facilities be in operation prior to the completion of roadway improvements the impacted roadways will operate at substantially reduced rates of service until such time that improvements are made. This timetable is indeterminable.

- *Reduce peak hour vehicle trips, energy and water consumption compared to existing General Plan land uses.*

DEIR - FEIR

Although the analysis in the DEIR has concluded that there will be no impacts relevant to some issues it is surprising to find the following questionable judgment in just the first assessment made about impacts.

1. Aesthetics

a. Light and Glare

Potential Significant Impact: Whether the Project would create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

This project with its high intensity of on-site lighting will substantially increase the ambient night light in the surrounding area than would not have otherwise been created at this intensity if the developed were developed as currently designated. The obvious "light glow" from the Skechers facility would appear to necessitate a reconsideration of this item and the need to address the excessive lighting.

The following are excerpts from the ProLogis Draft Environment Impact Report's Land Use and Planning section relevant to the changes and impacts that this project will have on the surrounding area and the community. Some underlining has been added to highlight the major issues of concern. It is more than obvious that there are impacts that should have been used to justify recommending the denial of this project as follows:

4.8.6 Significant Impacts

The following significant land use and planning impacts were identified for the proposed project, and no feasible mitigation measures are available that would reduce these impacts to less than significant levels. Approval of the proposed General Plan Amendment and Zone Change would be required to make the proposed project consistent with the City's General Plan and zoning designations for the project site. However, the following analysis is based on the project as proposed compared to the existing General Plan land use designations, applicable General Plan objectives and policies, and the existing zoning designations for the project site.

Although the proposed project would introduce a type of land use not historically associated with the rural character and lifestyle of the northeastern portion of the City, it would provide an opportunity for the City to provide adequate land for present and future urban and economic development needs. (DEIR pg. 4.8-16)

The project proposes the development of warehouse uses, which would result in an inconsistency with the existing residential zoning on the southern portion of the site, and the BP zone on the northern portion of the site. The development that would occur with the zone change has the potential to create indirect environmental impacts since the zone change would permit more intense and larger industrial/warehousing uses on the project site, requiring a discretionary action based on an environmental determination of the project. (DEIR pg. 4.8-16)

4.8.7 Cumulative Impacts

Implementation of the proposed project represents establishment of new land uses within the currently undeveloped project site that would result in an intensification of permitted land uses associated with a land use change from Business Park and Residential to Light Industrial uses, changes to the General Plan Circulation Element, and the loss of the PAKO associated with the RA-2 zone. As outlined in the analysis in Section 4.8.6.1, the proposed project is generally consistent with regional plans and planning efforts, although it is not fully consistent with the SCAG's RTP and Compass Blueprint Plan because it eliminates some housing in favor of industrial employment uses. (DEIR pg. 4.8-17)

The project proposes more intense land uses (i.e., from residential and business park uses to industrial uses) which will result in significant air quality and traffic impacts (see Sections 4.3 and 4.11, respectively), and both were found to be cumulatively considerable even after implementation of all project-specific mitigation. (DEIR pg. 4.8-18)

In addition, the proposed project represents a fundamental change in community character for this portion of the City (i.e., mixed residential and business park to industrial warehouse buildings), which can represent an incremental adverse change in terms of public perception. This change would be particularly acute if both the proposed project and the approved West Ridge Commerce Centre (an industrial project just east of the proposed project) were built within a relatively short period of time, as they would both follow relatively closely the completion of the Skechers Logistics Center (another

warehouse project) east of both the proposed project and the West Ridge project, on the east side of Redlands Boulevard. Furthermore, the addition of industrial space from the proposed project and the adjacent West Ridge (industrial) project may create an over-supply of warehousing space in the City, based on current economic conditions. (DEIR pg. 4.8-18)

Similar to the proposed project, some of the cumulative projects within the project vicinity would also require amendments to the existing General Plan and zoning, which may in turn cause additional cumulative impacts. Therefore, planned industrial development in the City may contribute to a cumulatively considerable impact or change in the overall character of the surrounding area, and the proposed project would make a significant contribution to that change in terms of consistency with adopted land use plans. No feasible mitigation is available to reduce this significant contribution. (DEIR pg. 4.8-18)

VI. STATEMENT OF OVERRIDING CONSIDERATIONS pg 136

Fact in Supporting of the Finding (Overriding Considerations)

Objective 2.5

Promote a mix of industrial uses which provide a sound and diversified economic base and ample employment opportunities for the citizens of Moreno Valley with the establishment of industrial activities that have good access to the regional transportation system, accommodate the personal needs of workers and business visitors; and which meets the service needs of local businesses.

“The first portion of this Objective to promote a mix of industrial uses for a sound economic base and employment opportunities is not met. This project fails to offer a mix and for the past several years the primary business growth in the city has been in the same industry sector of warehousing. Since this project offers more of the same it fails to meet this objective and it is not an economically sound decision to continue expansion. Elsewhere in the DEIR it states: ‘the addition of industrial space from the proposed project and the adjacent West Ridge (industrial) project may create an over-supply of warehousing space in the City, based on current economic conditions.’” (FEIR-Facts & Findings pg. 143).

The GP indicates that BP and its permitted uses are the proper buffer between industrial and residential and not as stated in the paragraph above.

General Plan Objective 2.1 and Policy 2.5.1 require a transition of buffer of land uses between residential and industrial uses. In this area, the R5 and R15 zone areas in the southern portion of the site act as a buffer from the BP uses near the freeway and the RA2 residential uses. It should be noted that, while there is an existing transition of land uses from BP to R2 in the vicinity of the project site, it is not the function of either the R-5 or R-15 zones to act as a buffer between nonresidential land uses and low density residential uses. (DEIR pg. 4.8-18).

Comments are provided to the General Plan Goals and Policies stated in the FEIR in an attempt to justify the project. Comments are in standard text.

• DEIR Section 4.8 Land Use and Planning – Consistency with General Plan Policies –

Section 9.2.2 Community Development of the General Plan contains the following goals and objectives:

- *Goal 2.1: A pattern of land uses which organizes future growth, minimizes conflicts between land uses, and which promotes the rational utilization of presently underdeveloped and undeveloped parcels.*

The project site as currently designated by the General Plan Land Uses represent this areas plan for “organized” future growth. To date land to the west has been developed with commercial services which are dependent on the residential uses for expansion of their customer base. The location of the higher density residential is in line with city and regional policies for their placement in proximity to service and transportation corridors. Pursuit of the proposed project will eliminate this rational arrangement of use and will bring the conflict of adjacent land use incompatibility.

- *Goal 2.2: An organized, well-designed, high quality, and functional balance of urban and rural land uses that will meet the needs of a diverse population, and promote the optimum degree of health, safety, well-being, and beauty for all areas of the community, while maintaining a sound economic base.*

The placement of the most impactive urban use (industrial) within the area of rural land uses cannot be considered “an organized, well-designed...balance.” As stated in the EIR this project will have adverse health and traffic impacts that cannot be mitigated which will obviously diminish the well-being of the community. And the continued pursuit and expansion of only one sector of jobs fails to provide a “sound economic base” or opportunities for the city’s residents.

- *Objective 2.1: Balance the provision of urban and rural lands within Moreno Valley by providing adequate land for present and future urban and economic development needs, while retaining the significant natural features and the rural character and lifestyle of the northeastern portion of the community.*

The proposed project changes the character of the rural lands within the city and further depletes land that could offer more divers form of future economic development. The project site contains land designated for Business Park uses which are significantly different from the massive warehouses proposed by this project. Although the current economy does not favor immediate development of Business Park uses maintaining this use provides for the “future urban and economic development needs” as stated in Objective 2.1.

- *Objective 2.5: Promote a mix of industrial uses which provide a sound and diversified economic base and ample employment opportunities for the citizens of Moreno Valley with the establishment of industrial activities that have good access to the regional transportation system, accommodate the personal needs of workers and business visitors; and which meets the service needs of local businesses.*

This project may be viewed an meeting the desire for employment opportunities but this project does not offer a mix of uses nor can in claimed that more of the same development type provides a sound and diversified economic base and employment opportunities for the citizens. Base on the size and likely operational demand for large-scale warehouses workers will likely spend their entire day within the facility rarely patronizing other business in the area. Since the project proposes warehouses they will be few “visitors” beyond those having as association with the warehouse tenant and these warehouses will offer little or nothing to meet the service need of local business. Objective 2.5 is not adequately addressed for the full scope of its objective.

- *Policy 2.5.1: The primary purpose of areas designated Business Park/Light Industrial is to provide for manufacturing, research and development, warehousing and distribution, as well as office and support*

commercial activities. The zoning regulations shall identify the particular uses permitted on each parcel of land. Development intensity should not exceed a Floor Area Ratio of 1.00 and the average floor area ratio should be significantly less.

Although this project will be in compliance with the 1.0 FAR it does not meet the other elements of the objective for providing uses other than warehousing. Again, this project proposes to construct the same type of development being proposed elsewhere in the city and the outlying areas and thus not creating any diversity of business types.

- *Policy 2.5.2: Locate manufacturing and industrial uses to avoid adverse impacts on surrounding land uses.*

Since this project will place large warehouse adjacent to residential property without a buffer of other uses it cannot be considered an attainable policy.

- *Policy 2.5.3: Screen manufacturing and industrial uses where necessary to reduce glare, noise, dust, vibrations and unsightly views.*

From review of the site plan it would appear that minimal area along the perimeter is provided to sustain substantial landscape buffer to offset the lost vista and the unsightly view of loading areas and parking lots. Additionally, the landscape areas adjacent to the extremely tall (40+ feet) buildings are of insufficient size to sustain any form of significant tall tree growth or other vertical landscaping to aid in screening and softening the view of these large buildings.

- *Policy 2.5.4: Design industrial development to discourage access through residential areas.*

This has been achieved on site but there is no way to preclude truck traffic from traveling on the local surface street in search of service or alternative routes when traffic levels appear burdensome to the drivers.

In addition, General Plan Section 9.6.2 Safety Element contains the following applicable objective:

- *Objective 6.6: Promote land use patterns that reduce daily automotive trips and reduce trip distance for work, shopping, school, and recreation.*

Thank you for the opportunity to comment on the Final EIR for this project. I request to be informed of any future meetings and public hearings related to this project or other consideration for projects on east end of Moreno Valley. Feel free to contact me if you have any questions regarding my comments.

Sincerely,

Thomas Thornsley
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RESPONSE TO COMMENT LETTERS

CITY COUNCIL MEETING
JUNE 24, 2014



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PROJECT MEMORANDUM

Date: June 24, 2014
To: Jeffrey Bradshaw, City of Moreno Valley
From: Kent Norton, LSA Associates
Project: ProLogis Eucalyptus Industrial Park EIR
Subject: Johnson & Sedlack Comment Letter

On June 24, 2014, the law firm of Johnson & Sedlack submitted an additional comment letter on the ProLogis Eucalyptus Industrial Park EIR. The following responses address the comments in that letter.

Comment 1 (paragraphs 1 & 2, page 1): The commenter asks the City to deny the project because it is not consistent with the General Plan.

Response 1: State Law allows the General Plan to be amended up to 4 times per year, and landowners are allowed to submit development proposals to change General Plan and zoning designations for their property, with the appropriate documentation that the proposed uses will not be in conflict with the goals of the General Plan. This information was provided in the EIR for the ProLogis project.

Comment 2 (paragraph 3, page 1): The commenter questions the condition of approval from the Planning Commission giving 18 months before the developer can build buildings 1 or 3 (the two adjacent to the auto mall).

Response 2: This condition of approval was recommended by the Planning Commission to allow time for the economic market to dictate the highest and best use of the site consistent with the SR-60 Corridor Study.

Comment 3 (paragraph 2, page 2): The commenter says the World Logistics Center project must be considered in the cumulative impacts of the ProLogis EIR.

Response 3: According to the procedures identified in CEQA, the list of cumulative projects is established at the time the baseline environmental conditions are set, which is the time the Notice of Preparation (NOP) is issued for the EIR. The NOP for the ProLogis EIR was issued on February 4, 2008 which was four years before the NOP for the World Logistics Center EIR which was issued on February 3, 2012. The slowdown in the economy that occurred resulted in a slowdown in development activity in the region so there were not that many projects to be considered as cumulative projects when the NOP was issued. As much as the commenter would like the ProLogis project and EIR to be connected to the World Logistics Center project, CEQA does not allow the lead agency to “cherry pick” development information that occurs subsequent to issuing the NOP.

It has also been argued that the World Logistics Center project represents “significant new information.” It should be noted the extensive EIR prepared for the World Logistics Center project included the ProLogis project in its list of cumulative projects for its traffic study, which is appropriate under CEQA as explained above. The commenter is therefore referred to that document and analyses to see the effects of both projects. It is also important to note that the World Logistics Center project is highly controversial and it is not reasonable to conclude at this time that project would be approved, therefore, it cannot be included as “significant new information” in this EIR analysis.

Comment 4 (paragraph 3, page 2): The commenter indicates the traffic report does not adequately address traffic impacts.

Response 4: The project traffic study was prepared using appropriate trip generation rates, trip distribution, and methodologies long established by the City for these types of studies. The area circulation has been proposed to be modified specifically to reduce cut through traffic or truck traffic on residential streets south of the site. Regarding freeways, the project identifies traffic impacts on local freeways that are already impacted by regional traffic. It should be noted that this project will add jobs in an area with an historically poor jobs/housing ratio, which will incrementally improve (i.e., reduce) commute distances and times of local workers over time after the project is built out.

Comment 5 (paragraph 4, page 2): The commenter encourages additional air quality mitigation.

Response 5: The EIR does address feasible mitigation for this project. The Final EIR notes that a number of mitigation measures were modified from the Draft to Final EIR as a result of many comments received from the commenter and related groups, including for air quality. IT should be noted however, that the project does not own the trucks, thus they would have no trucks to “phase-in”. It is not feasible for an individual warehouse operator to control the age or emissions controls on the trucks since that is regulated by CARB and the U.S. EPA.

Comment 6 (paragraph 4, page 2): The commenter mentions agricultural mitigation.

Response 6: An Appeals Court decision (*Building Industry Association of Central California v. County of Stanislaus*) certified in November 29, 2010 concluded that it is appropriate to mitigate at a 1:1 ratio for the loss of prime agricultural land through the acquisition of an offsite agricultural easement if such a program is established by a county or regional governmental entity. However, as outlined in the DEIR section, there is no established County or regional program, and active agriculture in western Riverside County is no longer economically viable or feasible. It should be noted that the State provides information on how to establish agricultural easements and mitigation banks, but the State does not fund or maintain such programs in western Riverside County.

Comment 7 (paragraph 1, page 3): The commenter indicates the City must adopt the Reduced Intensity Alternative. The EIR fully evaluates alternatives to the proposed project, including the Reduced Intensity Alternative. The EIR states...

6.3.3.20 Conclusion

Under the Reduced Intensity Alternative, impacts related to short-term construction-related air quality would be similar to the proposed project as the same amount of land would be disturbed and the same mix of equipment would be utilized. Long-term operational-related air quality impacts would be reduced in magnitude when compared to the project but would remain significant and unavoidable. Because this alternative would require a Zone Change and General Plan Amendment, land use impacts would be similar to the proposed project. The decrease in warehouse uses would result in a reduction of permanent jobs that would be created. This alternative would have a reduced demand on public services, recreation, and water use. However, similar to the proposed project, the payment of fees, dedication of parkland, and adherence to utility requirements would reduce these impacts to a less than significant level. This alternative reduces the impact associated with the loss of prime farmland to a less than significant level.

Because of the decrease in vehicle trips achieved under this alternative, impacts to the operation of local roadways and intersections would be proportionally reduced from what was identified for the proposed project; however, long-term traffic impacts would remain significant and unavoidable. Traffic-related noise would be reduced in magnitude but would be similarly mitigated like the proposed project and would remain less than significant. Water use for this alternative would be less than the proposed project and

would generate less wastewater and solid waste. Under this alternative, the proposed project objectives are met and warehouse uses would still be built, but on a smaller scale.

Response 7: This alternative was determined to be environmentally superior to the proposed project, however, it does not achieve the objectives of the project to nearly the same degree as the project, so it was rejected in favor of the proposed project, as allowed under CEQA.

Comment 8 (paragraph 2, page 3): The commenter says the economic benefits of the project have not been substantiated.

Response 8: The supporting data provided with the Findings does in fact support the contention that the proposed ProLogis project, which is logistics warehousing, will have similar economic impacts to the World Logistics Center project, but on a reduced scale based on the square footage of the two projects. The economic and fiscal study prepared for the World Logistics Center project demonstrates that costs and revenues of a logistics warehouse project are directly proportional to the square footage of the project. The ProLogis project has substantially fewer improvements required to develop the site, so there should be no higher long-term inflationary rate of service for the ProLogis project compared to the World Logistics Center project.

Comment 9 (paragraph 3, page 3): The commenter says the GPA and zone change findings are not supported.

Response 9: The EIR provides substantial evidence that do support the GPA and zone change requests, as outlined in Section 4.7, Land Use and Planning, of the EIR.

Comment 10 (paragraph 4, page 3): The commenter says the burrowing owl mitigation should be 500 feet per current Fish and Wildlife requirements.

Response 10: The mitigation measure can be modified at the City's discretion to reflect current agency requirements.



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PROJECT MEMORANDUM

Date: June 24, 2014
To: Jeffrey Bradshaw, City of Moreno Valley
From: Kent Norton, LSA Associates
Project: ProLogis Eucalyptus Industrial Park EIR
Subject: Lozeau Drury Comment Letter

On June 20, 2014, the law firm of Lozeau Drury LLP submitted an additional comment letter on the ProLogis Eucalyptus Industrial Park EIR. The following responses address the comments in that letter.

Comment 1: *The Project's GHG Emissions Remain Significant. ...the EIR continues to fail to explain or justify how the vague greenhouse gas ("GHG") emission mitigations will reduce the Project's 79,000 metric tons of GHG emissions to a level less than the South Coast Air Quality Management District's ("SQAQMD") threshold of significance of 10,000 metric tons. Indeed, the referenced mitigation measures do not even address the Project's GHG emissions from about 5,000 daily truck trips. Nor do the mitigation measures incorporated into the building's design exhaust the available mitigation measures to reduce the Project's GHG emissions to below the SQAQMD 10,000 metric tons per day significance threshold, including an enforceable requirement to install solar panels and purchasing offset credits for any remaining significant emissions. If the City is serious about meeting its 2020 goal of limiting GHG emissions to 798,693 metric tons of CO₂ equivalent per year for the entire City, the Project should include mitigations that result in a net reduction of GHG emissions.*

Response 1: The FEIR never claims that the project-related emissions of GHGs will be reduced to an annual rate of 10,000 metric tons of CO₂e. As stated in the FEIR on page 109, "The Draft EIR (Section 4.3) made a determination that the proposed project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases and no mitigation is required. However, it was determined that the proposed project would generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment and mitigation was proposed to reduce these project-specific effects to less than significant (Draft EIR, page 4.3-21 through 4.3-26)." However, the mitigation measures proposed do not lead to easily quantifiably emissions reductions. The analysis in the FEIR chose to avoid using very rough estimates of emissions reductions to show small reductions in emissions that would still be significant. The significance conclusions are not based on the effectiveness of any mitigation, but rather as described in Section 4.13.6, "...project-related GHG emissions and their contribution to global climate change impacts in the State are less than significant and less than cumulatively considerable because: (1) the project's impacts alone would not cause or significantly contribute to global climate change, and (2) the project has no substantial effect on consumption of fuels or other energy resources, especially fossil fuels that contribute to GHG emissions when consumed."

Comment 2: *The EIR's cumulative GHG and traffic analyses must include the World Logistics Center Project...*

Response 2: This comment has been made several times by the commenter and others during the EIR review process. According to the procedures identified in CEQA, the list of cumulative projects is established at the time the baseline environmental conditions are set, which is the time the Notice of Preparation (NOP) is issued for the EIR. The NOP for the ProLogis EIR was issued on February 4, 2008 which was four years before the NOP for the World Logistics Center EIR which was issued on February 3, 2012. As much as the commenter

would like the ProLogis project and EIR to be connected to the World Logistics Center project, CEQA does not allow the lead agency to “cherry pick” development information that occurs subsequent to issuing the NOP.

Regarding the argument that the World Logistics Center project represents “significant new information”, it should be noted the extensive EIR prepared for the World Logistics Center project included the ProLogis project in its list of cumulative projects for its traffic study, which is appropriate under CEQA as explained above. The commenter is therefore referred to that document and analyses to see the effects of both projects. It is also important to note that the World Logistics Center project is highly controversial and it is not reasonable to conclude at this time that project would be approved, therefore, it cannot be included as “significant new information” in this EIR analysis.

Comment 3a: *The EIR’s Discussion of the Project’s NO_x, ROG_s, and PM₁₀ and Accompanying Mitigations are Inadequate. The EIR also does not cure or adequately explain its use of a 1.96 daily truck trip per 1,000 square feet estimate in its modeling of the Project’s air pollution emissions rather than the truck estimate figure of 2.59 truck trips per 1,000 square feet identified by the SCAQMD.*

Response 3a: The traffic study for the project did use appropriate trip generation rates as described in the Draft EIR Section 4.11 and the project Traffic Impact Assessment (TIA)(DEIR Appendix I). The City requires TIAs to use the latest trip generation rates established by the International Traffic Engineers (ITE) which was done in this case, based on similar kinds of projects in the region. The SCAQMD trip rates have not been vetted through regional traffic modeling maintained by the Southern California Association of Governments (SCAG) or the Western Riverside Council of Governments (WRCOG). Until they are, the City will continue to require the use of appropriate ITE trip rates for TIAs within the City.

It is also useful to note that the diesel truck emission regulation passed by the California Air Resources Board in 2008 is now be phased into effect. As of January 1st, 2016 heavy truck diesel engines manufactured in 1995 or before must be off the road (these engines are the worst polluters). As of January 1st, 2014 heavy truck diesel engines manufactured between 1996 and 2006 must now have an exhaust Particulate Matter Filter. As of January 1st, 2023 all heavy truck diesel engines must meet the low “2010 year” engine emission requirements. All heavy diesel truck engines manufactured since 2010 meet this requirement. The California Air Resources Board 2008 report indicates diesel truck regulation is already having a significant impact in reducing diesel truck emissions. The end result will be a substantial reduction in air pollution from diesel trucks.

Comment 3b (con’t.): *In addition, the mitigation measures to address the acknowledged significant air impacts of the Project are in many cases not enforceable, or are deferred to the future. See LIUNA April 2014 Comment, pp. 6-8. The mitigation measures should be made enforceable and any deferrals need to specify the clear standards to be achieved by each specific mitigation measure. For example, requiring solar panels, rather than merely designing the building for their future potential installation is plainly feasible and would assist in offsetting the Project’s emissions of both ROG_s, NO_x, and GHG_s.*

Response 3b: The FEIR includes all feasible mitigation available to reduce the emissions of NO_x and PM₁₀; however, these are not sufficient to reduce the emissions levels to less than significant. Requiring solar panels would only reduce the electrical demand from the project, reducing the emissions from electrical power plants. It would not have any effect on the truck emissions, which are the majority of the operational emissions.

Comment 3c (con’t.): *LIUNA is concerned that, as currently proposed, the Project’s mitigation measures will not prevent large amounts of particulate matter and dust emissions during construction. Given the proximity to residential neighborhoods, the City Council should make sure that the PM₁₀ mitigations are fully enforceable by requiring edge of site air monitoring.*

Response 3c: The fugitive emissions of particulate matter (PM₁₀ and PM_{2.5}) during construction was shown to be very small compared to the SCAQMD significance thresholds - 18 lbs/day compared to the 150 lbs/day

threshold for PM₁₀, 3.9 lbs/day compared to 55 lbs/day for PM_{2.5}. There is no need to take any actions to monitor these already small emission rates.

Comment 4a: *The EIR's discussion of health risks to nearby residents and workers significantly underestimate the exposures and cancer risks. The EIR and its mitigation measures also fail to protect the adjacent residents by obviously understating the health risks from toxic air contaminants that will be released by the Project during its construction. The only reason the EIR claims to justify its conclusion that nearby residents and on-site workers will not be exposed to any significant health risks by the Project's construction is by making believe that the Project's construction phase will only last four months rather than the 11.5 months reported in the EIR. Nor does the EIR reference or provide the actual data and assumptions that went into the health risk assessment relied upon by the EIR. Applying the actual construction period and disclosing all of the inputs to their assessment, SWAPE calculates the risk assessment and demonstrates that the adult exposure in nearby residences resulted in an additional 22 cancers in one million while the child exposure resulted in 33 excess cancers in a million during the construction period, well above the CEQA significance threshold of ten in one million excess cancer risk.*

Response 4a: The rationale used for the screening-level HRA of construction emissions is that, while the total construction period will be about 11 ½ months, the only portion of that time that will have large diesel-powered construction equipment operating regularly is the 2 month grading phase. Assuming that there will be large diesel-powered construction equipment operating occasionally during the other phases, it was assumed that using 4 months of daily use of the large diesel-powered construction equipment would conservatively characterize the overall construction process. The DEIR includes the full Air Quality technical analysis which contains the full documentation of the inputs, modeling and results files in Appendix C.

Comment 4b (con't.): *The EIR's handling of health risks to workers takes additional liberties to the incorrect assumptions applied generally to residences, including the unsubstantiated assumption that only 87.5 percent of trucks used for constructing the Project will be diesel-fuel and, based on the available documents, averaging the exposures over 24-hours rather than the duration of the work day.*

Response 4b: The HRA in the EIR fully documents the projected health risk levels to nearby residents, however, does not include onsite workers, as these individuals are protected by OSHA regulations.

Comment 5: *Even if the City is Intent on Destroying Remaining Farmland Within its Borders Does Not Relieve the City of Mitigating Impacts From the Loss of Prime Farmland. In terms of the Project's proposed conversion of prime farmland, the City does not get a pass on CEQA's mitigation requirements simply because the City believes that it is inevitable that all farmland within the City will eventually be destroyed. LIUNA April 2014 Comment, pp. 10-11. Farmland conservation easements are feasible within Riverside County. Id., p. 10. The case relied upon by staff is easily distinguished and does not exempt a city from mitigating a project's destruction of farmland simply because a city or some other governmental entity has not established a bureaucratic program to facilitate such easements. See id., pp. 10-11, discussing Building Industry Association of Central California v. County of Stanislaus (2010) 190 Cal.App.4th 582. In any event, the State of California has a state-wide program to facilitate the establishment of farmland conservation easements.*

Response 5: An Appeals Court decision (*Building Industry Association of Central California v. County of Stanislaus*) certified in November 29, 2010 concluded that it is appropriate to mitigate at a 1:1 ratio for the loss of prime agricultural land through the acquisition of an offsite agricultural easement if such a program is established by a county or regional governmental entity. However, as outlined in the DEIR section, there is no established County or regional program, and active agriculture in western Riverside County is no longer economically viable or feasible. It should be noted that the State provides information on how to establish agricultural easements and mitigation banks, but the State does not fund or maintain such programs in western Riverside County.

Comment 6: *The Additional Soil Sampling for Pesticides Must be More Specific. Lastly, the Council should clarify the criteria for the applicant to conduct additional soil sampling for residual pesticides prior to obtaining construction approval from the City. LIUNA April 2014 Comment, p. 11. Right now, the prior soil sampling was insufficient to rule out the likelihood that pesticide applications at the site during the many decades of agricultural operations have not contaminated the soil with pesticide residuals that may pose health hazards to workers. Id.; SWAPE DEIR Comment, pp. 1-3 (Aug. 30, 2012) (LIUNA August 2012 Comment, Exhibit).*

Response 6: As part of the response to the commenter's previous comments on the EIR, a mitigation measure was added to provide additional soil testing even though there is no substantial evidence that such contamination actually exists. In fact, the EIR concluded that existing soil testing was sufficient to determine there were no significant impacts in this regard. However, in an effort to respond to the commenter's concern and comment, the mitigation measure for additional soil testing was added. The same comment has been addressed in the Final EIR (Response to Comments).

In addition, Responses 8 and 9 to Letter D-4A in the Final EIR go into great detail about the potential for contamination by agricultural chemicals on the project site, and the conclusion is there is only a low or minor potential. There is no indication that contamination is widespread, and almost of the site was previously surveyed for soil contamination, including soil tests for such chemicals. However, Mitigation Measure 4.6.6.1A was added to address this potential impact, as explained in the responses. There is no evidence that would lead a reasonable person to conclude that the potential for soil contamination by agricultural chemicals on this site was so high as to require soil testing and remediation prior to approval of the project. It is common in this portion of Riverside County to find former agricultural sites that have low or negligible levels of some agricultural chemicals as may be present on the project site. However, as outlined in the indicated responses, these do not represent a significant environmental impact (i.e., one that would prevent approval of the project), and the additional mitigation measure will assure there will be no significant impacts in this regard as it will be implemented prior to grading or development of the site.

Comment 7: For all of these reasons, as well as other issues set forth in LIUNA's and its consultants' previous comments, LIUNA does not believe the City Council is fully informed about the environmental impacts of the ProLogis Project. In order to comply with CEQA, the Council must send the Project back to the Planning Department and Planning Commission to supplement and recirculate the EIR to address the shortcomings identified by LIUNA and others. LIUNA appreciates this opportunity to comment on the Project. LIUNA's counsel intends to appear at the City Council meeting and will be available to respond to any Council Member or staff questions.

Response7: The Draft and Final EIR documents do provide sufficient impartial and objective information upon which the City Council can base its findings and determinations regarding this project. The EIR is supported by substantial evidence in the record, and provides the level of analysis and public input required by CEQA. There has been no substantial evidence submitted that significant new information requires the recirculation of the DEIR for additional public comment.

Exhibit A – Tom Brochard Associates Letter

Response: The commenter again makes the statement that the ProLogis EIR needs to include the World Logistics Center EIR in its cumulative analysis. According to the procedures identified in CEQA, the list of cumulative projects is established at the time the baseline environmental conditions are set, which is the time the Notice of Preparation (NOP) is issued for the EIR. The NOP for the ProLogis EIR was issued on February 4, 2008 which was four years before the NOP for the World Logistics Center EIR which was issued on February 3, 2012. As much as the commenter would like the ProLogis project and EIR to be connected to the World Logistics Center project, CEQA does not allow the lead agency to "cherry pick" development information that occurs subsequent to issuing the NOP.

Regarding the argument that the World Logistics Center project represents “significant new information”, it should be noted the extensive EIR prepared for the World Logistics Center project included the ProLogis project in its list of cumulative projects for its traffic study, which is appropriate under CEQA as explained above. The commenter is therefore referred to that document and analyses to see the effects of both projects. It is also important to note that the World Logistics Center project is highly controversial and it is not reasonable to conclude at this time that project would be approved, therefore, it cannot be included as “significant new information” in this EIR analysis.

Finally, the issue of trip generation rates has been addressed in the Final EIR. The traffic study for the project did use appropriate trip generation rates as described in the Draft EIR Section 4.11 and the project Traffic Impact Assessment (TIA)(DEIR Appendix I). The City requires TIAs to use the latest trip generation rates established by the International Traffic Engineers (ITE) which was done in this case, based on similar kinds of projects in the region.

Exhibit B – SWAPE Analysis of the World Logistics Center

Response: For the reasons outlined above, it is not appropriate to include the World Logistics Center in the cumulative projects list for the ProLogis project. Therefore, this letter does not apply to the ProLogis EIR.

Exhibit C – Tom Brochard Assoc. Analysis of the World Logistics Center

Response: For the reasons outlined above, it is not appropriate to include the World Logistics Center in the cumulative projects list for the ProLogis project. Therefore, this letter does not apply to the ProLogis EIR.

Darisa Vargas

From: Kent Norton <Kent.Norton@lsa-assoc.com>
Sent: Tuesday, June 24, 2014 3:10 PM
To: Jeff Bradshaw
Subject: FW: ProLogis RTC

This goes with the responses to the Lozeau Drury LLP letter dated 6-2-14...

From: Meghan Macias
Sent: Tuesday, June 24, 2014 3:01 PM
To: Kent Norton
Subject: RE: ProLogis RTC

I would add the following:

It should be noted, that the General Plan Build Out Traffic Volumes were developed using the City of Moreno Valley's General Plan Build Out Traffic Model. As a result, the Build Out traffic volumes are based on the General Plan land uses for the World Logistics Center, which the commenter confirms generate more traffic than the World Logistics Center. As a result, the Build Out analysis is actually more conservative than if the World Logistics Center were specifically evaluated.

Also

The commenter disagrees with the trip distribution which assumes that 70 percent of passenger car trips will be generated within Moreno Valley but does not provide substantial evidence to warrant changing the distribution. In fact, this distribution results in a conservative analysis of local traffic impacts, as additional traffic distributed to the freeway would lessen the project's impacts on City streets. In addition, the commenter states that 55 percent of truck trips have been assigned to local streets. This is incorrect. Figures 9 and 11 clearly show that 85 percent of truck traffic was assigned to SR-60.

Meghan Macias, T.E.
LSA Associates, Inc.
1500 Iowa Avenue, Suite 200
Riverside, CA 92507
(951) 781-9310 (phone)
(951) 781-4277 (fax)
meghan.macias@lsa-assoc.com

From: Kent Norton
Sent: Tuesday, June 24, 2014 2:48 PM
To: Meghan Macias ([Meghan.Macias@lsa-assoc.com](mailto: Meghan.Macias@lsa-assoc.com))
Subject: ProLogis RTC

Take a look, thanks...

LSA

Kent Norton, AICP, REA
Associate/Senior Project Manager
LSA Associates, Inc.
1500 Iowa Avenue, Suite 200
Riverside, CA 92507
(951) 781-9310 phone
(951) 781-4277 fax
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AEP

*Director-At-Large & Immediate Past State President
Association of Environmental Professionals (AEP)*

 *Please consider the environment before printing this email*

Darisa Vargas

From: Kent Norton <Kent.Norton@lsa-assoc.com>
Sent: Tuesday, June 24, 2014 1:19 PM
To: Jeff Bradshaw; JJACHETT@prologis.com
Cc: Lynn Hayes
Subject: RE: ProLogis Eucalyptus warehouse comments

Here are our responses to this email (LSA responses follow each specific comment)....

LSA
Kent Norton, AICP, REA
Associate/Senior Project Manager
LSA Associates, Inc.
1500 Iowa Avenue, Suite 200
Riverside, CA 92507
(951) 781-9310 phone
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-----Original Message-----

From: Jeff Bradshaw [mailto:jeffreyb@moval.org]
Sent: Tuesday, June 24, 2014 10:00 AM
To: Jachetta, Jim (JJACHETT@prologis.com)
Cc: Kent Norton
Subject: FW: ProLogis Eucalyptus warehouse comments

See below for comment letter on Prologis project.

Jeff Bradshaw
Associate Planner
Community & Economic Development
City of Moreno Valley
p: 951.413.3224 | e: mailto:jeffreyb@moval.org w: www.moval.org
14177 Frederick St., Moreno Valley CA 92553 -----Original Message-----
From: George Hague [mailto:gbhague@gmail.com]
Sent: Tuesday, June 24, 2014 9:58 AM
To: Jeff Bradshaw
Cc: Chris Ormsby
Subject: ProLogis Eucalyptus warehouse comments

Good morning Mr Bradshaw,

The fact that the ProLogis Eucalyptus warehouse developer in the response to comments about AG agrees that it is legally possible for the City to require mitigation for loss of all those Prime AG acres, then the Sierra Club expects you to do so. The State has AG mitigation programs and ways to have conservation easements and therefor it is possible to use those for what the Courts are saying can be imposed. Just because the City now downplays AG in its future, it is still regionally important and needs to be mitigated. You could also require the developer to use a local AG mitigation program if ones is developed before occupancy of the entire project. This is quite possible with the current Riverside County General Plan Update.

LSA Response: An Appeals Court decision (Building Industry Association of Central California v. County of Stanislaus) certified in November 29, 2010 concluded that it is appropriate to mitigate at a 1:1 ratio for the loss of prime agricultural land through the acquisition of an offsite agricultural easement if such a program is established by a county or regional governmental entity. However, as outlined in the DEIR section, there is no established County or regional program, and active agriculture in western Riverside County is no longer economically viable or feasible. It should be noted that the State provides information on how to establish agricultural easements and mitigation banks, but the State does not fund or maintain such programs in western Riverside County.

This is also very important for loss of raptor foraging and local AG decreases GHG as well as climate change or as Sierra Club now calls it Climate Disruption. Mitigation for AG near publicly owned lands, like the San Jacinto Wildlife Area, is very important and this project needs to step up with this mitigation.

LSA Response: The project will pay the established MSCHP mitigation fee which includes thousands of acres of open space land supporting a variety of habitats, and much of the open space land will provide continued foraging for raptors. There is no unusual impact caused by the ProLogis project itself that would trigger an independent and additional assessment for raptor foraging beyond the MSHCP fee.

The developer of the WLC put together a proposed plan for the Moreno Highlands lands that would have been mainly warehousing at the time Skechers was being proposed. He even put together a documents which compared the Moreno Highlands land uses with his proposed warehouse use on mainly the same lands -- plus some additional acreage. It is wrong for Prologis to continually claim they did not know about what we now call the World Logistic Center (WLC) for it was very foreseeable. The WLC waited until the 20 year Development Agreement on Moreno Highlands expired to formally put their project forward, but everyone knew for years prior, exactly what was going to be proposed. Prologis must include the WLC in its cumulative impacts or all its environmental documents and analysis are inadequate. It is also sad that the ProLogis developer waited only one year after the City and its residents approved a new General Plan to purchase the acreage for this project. It would not surprise the Sierra Club if they were watching during our General Plan process and knew they could get the City Council to change the land use later.

LSA Response: The commenter is incorrect according to established CEQA procedures. According to the procedures identified in CEQA, the list of cumulative projects is established at the time the baseline environmental conditions are set, which is the time the Notice of Preparation (NOP) is issued for the EIR. The NOP for the ProLogis EIR was issued on February 4, 2008 which was four years before the NOP for the World Logistics Center EIR which was issued on February 3, 2012. As much as the commenter would like the ProLogis project and EIR to be connected to the World Logistics Center project, CEQA does not allow the lead agency to "cherry pick" development information that occurs subsequent to issuing the NOP. It has also been argued that the World Logistics Center project represents "significant new information." It should be noted the extensive EIR prepared for the World Logistics Center project included the ProLogis project in its list of cumulative projects for its traffic study, which is appropriate under CEQA as explained above. The commenter is therefore referred to that document and analyses to see the effects of both projects. It is also important to note that the World Logistics Center project is highly controversial and it is not reasonable to conclude at this time that project would be approved, therefore, it cannot be included as "significant new information" in this EIR analysis.

The City has limited amount of freeway frontage and we should not continue to use it for for cement boxes. It does not benefit the City economically in the long term to give away these prime acreages to warehouses instead of for businesses that could truly use the exposure along the SR-60.

LSA Response: It is up to the City's discretion based on the General Plan and other guidance documents as to what is developed along the freeway corridors within the City. The proposed uses are in fact consistent with the recommendations of the SR-60 Corridor Study prepared for the City during 2013. Certainly it is advantageous to place commercial uses in locations with freeway visibility, but it should be noted there are other land uses within the City along the freeways, including office, light industrial, and residential.

Toxic diesel pollution is going to cover our entire city with all these warehouse approvals. When are the decision makers going to realize that the health of the young and old as well as the warehouse workers are

being compromised by these approvals? Since it has been shown that one must be 500 meeter or about 1500 feet away form these toxic diesel warehouses to significantly lessen their impacts, how can the City allow this project on lands zoned for homes and also adjacent to land zoned for homes as well as close to existing homes? The decision makers must know the choices that they must make in the future on lands adjacent to this project which should no longer permit housing, prior to approving this project. The full cumulative, growth inducing impacts as well as direct and indirect impacts have not been fully shown and analyzed for this project. The ProLogis Eucalyptus warehouse project does not protect the Health, Safety or Welfare of Moreno Valley residents.

LSA Response: The air quality and health risk assessments in the EIR and supporting technical studies were prepared using the most current data and methodologies recommended by the SCAQMD. They concluded there were significant air quality impacts from criteria pollutants but not from health risks mainly associated with diesel exhaust.

Thank you,

George Hague
Sierra Club
Moreno Valley Group
Conservation Chair

PUBLIC RESPONSE TO LSA'S RESPONSES

CITY COUNCIL MEETING
JUNE 24, 2014

Thomas Thornsley
29177 Stevens Avenue, Moreno Valley, CA 92555

With LSA Responses in Red Below (6/24)...

June 24, 2014

Mr. Jeffery Bradshaw
City of Moreno Valley
14177 Frederick Street/P.O. Box 88005
Moreno Valley, California 92552

Via e-mail: JefferyB@moval.org

Dear Mr. Gross:

Re: Comments to the Final Environmental Impact Report for the ProLogis Eucalyptus Industrial Park.

As a concerned resident who lives on the east end I have great interest and concerns about development in our area. Therefore, I have taken an extensive amount of time to review the Final Environmental Impact Report and the Statement for Overriding Consideration. I cannot agree with some of the conclusions because this project goes beyond good planning recommending the replacement of viable land uses that it should never have been encouraged by the City to the developer.

Once again the City and a Developer are collectively agreeing to change the General Plan to justify a project. It appears that a number of impacts are being written off because the City simply will not take a strong stand on potential development impacts or adopt stricter mitigation measures to assure that development impacts are brought down to the lowest feasible point versus no mitigation if the impacts are not significantly above set thresholds.

LSA Response: State Law allows the General Plan to be amended up to 4 times per year, and landowners are allowed to submit development proposals to change General Plan and zoning designations for their property, with the appropriate documentation that the proposed uses will not be in conflict with the goals of the General Plan. This information was provided in the EIR for the ProLogis project.

One of the hardest losses I find in the whole concept of this project is the lost viability of financially valuable land with freeway exposure. It is in the best economic interest of all cities to place the highest and best uses adjacent to the freeways where those businesses can promote themselves and draw in customers. At the very least the city should be designating the land along the south side of SR-60 for such commercial use. It is noted that the staff report makes no mention of the option to expand the auto mall although it was discussed with the Planning Commission. Further to my dismay is the continued quest to give approval for land use changes that do not gain us new or unique job opportunities. There is plenty of available land designated for warehouse development and we do not need to be hopscotching that use all over the city.

LSA Response: The proposed uses are in fact consistent with the recommendations of the SR-60 Corridor Study prepared for the City during 2013. Certainly it is advantageous to place commercial

uses in locations with freeway visibility, but it should be noted there are other land uses within the City along the freeways, including office, light industrial, and residential.

In review of the projects objectives and the Statement of Overriding Consideration it is clear that objectivity was not always utilized or expressed. Since I do profess to be in opposition to the project my comments could be considered biased but I have prepared comments none the less.

The following contains italicized text straight from the Final EIR followed by standard text of my comments and concerns.

Here is the list of Project Objectives as found in the Draft Environmental Impact Report followed by an independent evaluation of their stated goal as follows:

B. PROJECT OBJECTIVES

• *Provide industrial warehouse facilities that meet the substantial and unmet demands of businesses located in the City and County;*

- Moreno Valley may be in need more businesses however there is not an “unmet” demand for warehouses by any operations within this City or surrounding area. In all likelihood, these proposed warehouses will be utilized by companies outside of our region that must import their products and take them to a location where they can be distributed to other distant locations.

LSA Response: Studies of regional logistics and goods mobility indicate that much of the truck traffic within the Southern California area are to move goods that are purchased within this area, while much of the material bound for the mid-west or east coast is often sent by rail.

- In the past few years the City has added millions of square feet of warehouse space intended to serve the same purpose and meeting the demand for the area.

LSA Response: Although the exact square footage added within the City is not known by the author at this time, local market conditions for now and in the foreseeable future favor logistics warehousing. Local land use decisions often change in response to changes in regional and national market conditions.

• *Provide new industrial development that is attractive and minimizes conflicts with the surrounding existing uses;*

- Although this developer proposes building with aesthete features little is done along the highway or the residential properties to provide sufficient landscaping to screen the huge buildings.

LSA Response: The EIR appendices include landscaping plans for both the freeway frontage and that faces the residential uses to the southeast, and eventually the planned landscaping will help buffer views of the warehouses from the freeway and residential areas.

- At the very least this project will create air quality, traffic, noise, and lighting conflicts with the surrounding residential property both built and unbuilt.

LSA Response: The EIR acknowledges the various impacts of the project regarding these environmental issues, and proposes mitigation to reduce those impacts the extent feasible.

- The project's truck and vehicular traffic will now take access to the west through the City's Auto Mall ultimately increasing traffic volumes and conflicts with their operations and customer access to those economically beneficial businesses. We cannot afford to have our auto sales diminish because of undue truck traffic impacts scaring off customers.

LSA Response: The EIR examines the traffic circulation impacts of the project, and the owner of the auto sales area west of the project did not object to the proposed land uses and the resulting traffic. It is expected that only a portion of the project traffic would travel west through the auto sales area.

• *Provide a variety of new employment opportunities for the citizens of Moreno Valley and surrounding communities;*

- This proposal more of what we have been getting the past few years and thus fails to provide a "variety" of new employment opportunities. Its development of warehouses and the jobs associated with that industry only increases the same type of employment opportunity already in high supply through the numerous warehouses already built or approved for construction within the City and the surrounding area.

LSA Response: Although the specific users are not known at this time, ProLogis has indicated that its experience with similar development with different building sizes is that this project will attract a variety of light industrial uses/users that require warehousing space.

• *Encourage warehouse distribution services that take advantage of the area's close proximity to various freeways and transportation corridors;*

- This project can only claim its proximity to SR-60. It is neither adjacent nor near any rail service corridors.

LSA Response: The site also has access to Gilman Springs Road and routes to the south via SR-60 east, but yes there is no rail service proximate to the project site.

• *Encourage new development consistent with the capacity and municipal service capabilities;*

• *Provide infrastructure improvements to meet phased Project needs in an efficient and cost-effective manner;*

- This is a "must do" with any development. However, highway improvements are not tied to development timetables or percentage of constructed building square footage to preclude development operational impacts that reduce roadway levels of service below acceptable levels for indefinite period of time. Remember that paying into the TUMF program has no guarantee as to when those needed improvements will be made.

LSA Response: Payment of fees to an established traffic mitigation program is considered acceptable mitigation for regional traffic impacts.

• *Cluster industrial warehouse uses near access points to the state highway system to reduce traffic congestion on surface streets and to reduce air pollutant emissions from vehicle sources;*

- Traffic intensity at the state highway systems' intersecting points with project site will be highly impacted as will the commercial and residential use adjacent to the project location. This will further impede others accessing the community at these highway intersections.

LSA Response: The project will increase truck and vehicular traffic on SR-60 and the I-215 freeways, but what has not been estimated is the traffic benefits this project will have by introducing

employment into the City which has been historically jobs poor and housing rich, which will help incrementally reduce the overall commute times for local workers as the project is built out and occupied, and employs local workers.

- With the change of land use to permit warehouses you are also changing the vehicle types coming into the area. The air quality analysis needs to show whether the reduction of car exhaust over the increase in trucks and diesel exhaust truly reduces the health risk associated with one over the other.

LSA Response: The traffic and air quality analyses in the EIR (and their associated technical studies) did take these changes into account, and the health risk screening analysis does evaluate potential health risks of the diesel emissions from the trucks.

• Develop land uses that provide the City with a positive revenue/cost ratio and provide needed infrastructure in a timely fashion;

- This objective simply points out the known bias for industrial and commercial land uses which are the only land uses that have a positive ratio. This could be argued at any time to justify the elimination of residential uses and it meets no unique criteria for development.
- As the environment stands today we are unaware of any “needed” infrastructure to meet current conditions. However, development of the project site, as with any development type, would require the installation of necessary infrastructure to off-set the impacts of said development. Again, not unique.

LSA Response: It is not the goal of the analysis to show why a project may be unique but rather if or to what degree it is consistent with the stated goal. This project will produce a positive revenue to cost ratio and thus provide the City with a surplus of revenue as its uses build out.

• Address community circulation, both vehicular and pedestrian, utilizing available capacity within the existing circulation system, and provide fair share improvements to various future-year deficient intersection or road segments; and

- Although this project will pay into the TUMF program for major highway improvements, construction of those improvements is not tied to any timetable of the development. Should the facilities be in operation prior to the completion of roadway improvements the impacted roadways will operate at substantially reduced rates of service until such time that improvements are made. This timetable is indeterminable.

LSA Response: The TUMF program does have an implementation timing plan, although not every planned improvement is scheduled but only those in the upcoming 5-year time period. The County can only reasonably plan improvements over that timeframe so that actual revenues do not exceed estimates of revenues and result in planned improvements becoming infeasible.

• Reduce peak hour vehicle trips, energy and water consumption compared to existing General Plan land uses.

DEIR - FEIR

Although the analysis in the DEIR has concluded that there will be no impacts relevant to some issues it is surprising to find the following questionable judgment in just the first assessment made about impacts.

1. Aesthetics

a. Light and Glare

Potential Significant Impact: Whether the Project would create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

This project with its high intensity of on-site lighting will substantially increase the ambient night light in the surrounding area than would not have otherwise been created at this intensity if the developed were developed as currently designated. The obvious “light glow” from the Skechers facility would appear to necessitate a reconsideration of this item and the need to address the excessive lighting.

LSA Response: The EIR examines potential impacts of the project regarding lighting and compliance with the City’s nightlighting ordinance will assure impacts to the residential neighborhood to the south are not significantly impacted. It should be noted the Skechers facility is not proximate to residential uses so it is an inaccurate comparison.

The following are excerpts from the ProLogis Draft Environment Impact Report’s Land Use and Planning section relevant to the changes and impacts that this project will have on the surrounding area and the community. Some underlining has been added to highlight the major issues of concern. It is more than obvious that there are impacts that should have been used to justify recommending the denial of this project as follows:

4.8.6 Significant Impacts

The following significant land use and planning impacts were identified for the proposed project, and no feasible mitigation measures are available that would reduce these impacts to less than significant levels. Approval of the proposed General Plan Amendment and Zone Change would be required to make the proposed project consistent with the City’s General Plan and zoning designations for the project site. However, the following analysis is based on the project as proposed compared to the existing General Plan land use designations, applicable General Plan objectives and policies, and the existing zoning designations for the project site.

Although the proposed project would introduce a type of land use not historically associated with the rural character and lifestyle of the northeastern portion of the City, it would provide an opportunity for the City to provide adequate land for present and future urban and economic development needs. (DEIR pg. 4.8-16)

The project proposes the development of warehouse uses, which would result in an inconsistency with the existing residential zoning on the southern portion of the site, and the BP zone on the northern portion of the site. The development that would occur with the zone change has the potential to create indirect environmental impacts since the zone change would permit more intense and larger industrial/warehousing uses on the project site, requiring a discretionary action based on an environmental determination of the project. (DEIR pg. 4.8-16)

4.8.7 Cumulative Impacts

Implementation of the proposed project represents establishment of new land uses within the currently undeveloped project site that would result in an intensification of permitted land uses associated with a land use change from Business Park and Residential to Light Industrial uses, changes to the General Plan Circulation Element, and the loss of the PAKO associated with the RA-2 zone. As outlined in the analysis in Section 4.8.6.1, the proposed project is generally consistent with regional plans and planning efforts,

although it is not fully consistent with the SCAG's RTP and Compass Blueprint Plan because it eliminates some housing in favor of industrial employment uses. . (DEIR pg. 4.8-17)

The project proposes more intense land uses (i.e., from residential and business park uses to industrial uses) which will result in significant air quality and traffic impacts (see Sections 4.3 and 4.11, respectively), and both were found to be cumulatively considerable even after implementation of all project-specific mitigation. (DEIR pg. 4.8-18)

In addition, the proposed project represents a fundamental change in community character for this portion of the City (i.e., mixed residential and business park to industrial warehouse buildings), which can represent an incremental adverse change in terms of public perception. This change would be particularly acute if both the proposed project and the approved West Ridge Commerce Centre (an industrial project just east of the proposed project) were built within a relatively short period of time, as they would both follow relatively closely the completion of the Skechers Logistics Center (another warehouse project) east of both the proposed project and the West Ridge project, on the east side of Redlands Boulevard. Furthermore, the addition of industrial space from the proposed project and the adjacent West Ridge (industrial) project may create an over-supply of warehousing space in the City, based on current economic conditions. (DEIR pg. 4.8-18)

Similar to the proposed project, some of the cumulative projects within the project vicinity would also require amendments to the existing General Plan and zoning, which may in turn cause additional cumulative impacts. Therefore, planned industrial development in the City may contribute to a cumulatively considerable impact or change in the overall character of the surrounding area, and the proposed project would make a significant contribution to that change in terms of consistency with adopted land use plans. No feasible mitigation is available to reduce this significant contribution. (DEIR pg. 4.8-18)

VI. STATEMENT OF OVERRIDING CONSIDERATIONS pg 136

Fact in Supporting of the Finding (Overriding Considerations)

Objective 2.5

Promote a mix of industrial uses which provide a sound and diversified economic base and ample employment opportunities for the citizens of Moreno Valley with the establishment of industrial activities that have good access to the regional transportation system, accommodate the personal needs of workers and business visitors; and which meets the service needs of local businesses.

"The first portion of this Objective to promote a mix of industrial uses for a sound economic base and employment opportunities is not met. This project fails to offer a mix and for the past several years the primary business growth in the city has been in the same industry sector of warehousing. Since this project offers more of the same it fails to meet this objective and it is not an economically sound decision to continue expansion. Elsewhere in the DEIR it states: 'the addition of industrial space from the proposed project and the adjacent West Ridge (industrial) project may create an over-supply of warehousing space in the City, based on current economic conditions.'" (FEIR-Facts & Findings pg. 143).

The GP indicates that BP and its permitted uses are the proper buffer between industrial and residential and not as stated in the paragraph above.

LSA Response: The proposed warehouses would provide a buffer greater than that identified in the City's Municipal Code in that there would be almost 400 feet between the existing residences and the closest point of Building 6, which well exceeds the City's recommended 250 feet buffer.

General Plan Objective 2.1 and Policy 2.5.1 require a transition of buffer of land uses between residential and industrial uses. In this area, the R5 and R15 zone areas in the southern portion of the site act as a buffer from the BP uses near the freeway and the RA2 residential uses. It should be noted that, while there is an existing transition of land uses from BP to R2 in the vicinity of the project site, it is not the function of either the R-5 or R-15 zones to act as a buffer between nonresidential land uses and low density residential uses. (DEIR pg. 4.8-18).

Comments are provided to the General Plan Goals and Policies stated in the FEIR in an attempt to justify the project. Comments are in standard text.

• DEIR Section 4.8 Land Use and Planning – Consistency with General Plan Policies –

Section 9.2.2 Community Development of the General Plan contains the following goals and objectives:

• Goal 2.1: A pattern of land uses which organizes future growth, minimizes conflicts between land uses, and which promotes the rational utilization of presently underdeveloped and undeveloped parcels.

The project site as currently designated by the General Plan Land Uses represent this areas plan for “organized” future growth. To date land to the west has been developed with commercial services which are dependent on the residential uses for expansion of their customer base. The location of the higher density residential is in line with city and regional policies for their placement in proximity to service and transportation corridors. Pursuit of the proposed project will eliminate this rational arrangement of use and will bring the conflict of adjacent land use incompatibility.

• Goal 2.2: An organized, well-designed, high quality, and functional balance of urban and rural land uses that will meet the needs of a diverse population, and promote the optimum degree of health, safety, well-being, and beauty for all areas of the community, while maintaining a sound economic base.

The placement of the most impactful urban use (industrial) within the area of rural land uses cannot be considered “an organized, well-designed...balance.” As stated in the EIR this project will have adverse health and traffic impacts that cannot be mitigated which will obviously diminish the well-being of the community. And the continued pursuit and expansion of only one sector of jobs fails to provide a “sound economic base” or opportunities for the city's residents.

LSA Response: The City's Municipal Code requires a minimum setback of 250 feet between residential uses and warehousing or light industrial uses, which would apply to this or any other types of projects in this area. Yes the existing General Plan designations do allow for more of a transition from warehousing to residential uses, but that does not mean that other land use arrangements will result in significant land use or other environmental impacts. That is the purpose of the CEQA process, to identify those potential impacts and mitigate them as much as feasible. The EIR did not identify significant health risks from this project on nearby residential uses. It must be remembered that the “balance” to which the commenter refers is a City-wide goal and cannot be applied to each individual

project within the City, otherwise many projects would not be consistent with the current zoning (i.e., they would all have to be mixed use projects).

• *Objective 2.1: Balance the provision of urban and rural lands within Moreno Valley by providing adequate land for present and future urban and economic development needs, while retaining the significant natural features and the rural character and lifestyle of the northeastern portion of the community.*

The proposed project changes the character of the rural lands within the city and further depletes land that could offer more diverse form of future economic development. The project site contains land designated for Business Park uses which are significantly different from the massive warehouses proposed by this project. Although the current economy does not favor immediate development of Business Park uses maintaining this use provides for the “future urban and economic development needs” as stated in Objective 2.1.

LSA Response: The City Council must weigh the various impacts and benefits of each project through the CEQA process, and determine if the proposed uses are consistent with the goals of the General Plan and if changes are needed to respond to current economic conditions. State law allows for a City to make changes to its General Plan if it determines those changes are consistent with the intent of the General Plan and would provide benefits to the City.

• *Objective 2.5: Promote a mix of industrial uses which provide a sound and diversified economic base and ample employment opportunities for the citizens of Moreno Valley with the establishment of industrial activities that have good access to the regional transportation system, accommodate the personal needs of workers and business visitors; and which meets the service needs of local businesses.*

This project may be viewed as meeting the desire for employment opportunities but this project does not offer a mix of uses nor can it be claimed that more of the same development type provides a sound and diversified economic base and employment opportunities for the citizens. Based on the size and likely operational demand for large-scale warehouses workers will likely spend their entire day within the facility rarely patronizing other business in the area. Since the project proposes warehouses they will be few “visitors” beyond those having an association with the warehouse tenant and these warehouses will offer little or nothing to meet the service need of local business. Objective 2.5 is not adequately addressed for the full scope of its objective.

LSA Response: The mix to which the commenter refers is from a City-wide goal, and thus should be applied in a City-wide view instead of for each individual project, as outlined above.

• *Policy 2.5.1: The primary purpose of areas designated Business Park/Light Industrial is to provide for manufacturing, research and development, warehousing and distribution, as well as office and support commercial activities. The zoning regulations shall identify the particular uses permitted on each parcel of land. Development intensity should not exceed a Floor Area Ratio of 1.00 and the average floor area ratio should be significantly less.*

Although this project will be in compliance with the 1.0 FAR it does not meet the other elements of the objective for providing uses other than warehousing. Again, this project proposes to construct the same type of development being proposed elsewhere in the city and the outlying areas and thus not creating any diversity of business types.

LSA Response: The goal of this project is to change the General Plan and zoning designations to accommodate warehousing which may also involve some assembly, so the project is consistent with portion of this policy. However, that is why a General Plan Amendment and Zone Change are being processed for this project.

- *Policy 2.5.2: Locate manufacturing and industrial uses to avoid adverse impacts on surrounding land uses.*

Since this project will place large warehouse adjacent to residential property without a buffer of other uses it cannot be considered an attainable policy.

LSA Response: The commenter is incorrect, this project will have a buffer (in excess of that outlined in the City's Municipal Code) between it and the residential uses to the south, and the circulation plan is being changed to preclude project truck traffic from the residential areas to the south.

- *Policy 2.5.3: Screen manufacturing and industrial uses where necessary to reduce glare, noise, dust, vibrations and unsightly views.*

From review of the site plan it would appear that minimal area along the perimeter is provided to sustain substantial landscape buffer to offset the lost vista and the unsightly view of loading areas and parking lots. Additionally, the landscape areas adjacent to the extremely tall (40+ feet) buildings are of insufficient size to sustain any form of significant tall tree growth or other vertical landscaping to aid in screening and softening the view of these large buildings.

LSA Response: The EIR does evaluate the impact on views that would result from the new warehouse buildings. In addition, the EIR appendices include landscaping plans for both the freeway frontage and that faces the residential uses to the southeast, and eventually the planned landscaping will help buffer views of the warehouses from the freeway and residential areas.

- *Policy 2.5.4: Design industrial development to discourage access through residential areas.*

This has been achieved on site but there is no way to preclude truck traffic from traveling on the local surface street in search of service or alternative routes when traffic levels appear burdensome to the drivers.

LSA Response: The circulation plan for the area will be modified so that project truck traffic will not travel through the residential areas to the south.

In addition, General Plan Section 9.6.2 Safety Element contains the following applicable objective:

- *Objective 6.6: Promote land use patterns that reduce daily automotive trips and reduce trip distance for work, shopping, school, and recreation.*

LSA Response: The proposed project will help improve the City's jobs/housing balance which will in turn incrementally reduce overall commute times and trip distances for work-related trips as project uses are occupied and local workers are employed.

Thank you for the opportunity to comment on the Final EIR for this project. I request to be informed of any future meetings and public hearings related to this project or other consideration for projects on east end of Moreno Valley. Feel free to contact me if you have any questions regarding my comments.

Sincerely,

Thomas Thornsley
909-797-1397
e-mail: tomthornsley@msn.com

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July 3, 2014

VIA E-MAIL jeffreyb@moval.org

VIA MAIL

Mr. Jeffrey Bradshaw
14177 Frederick Street
Moreno Valley, CA 92552

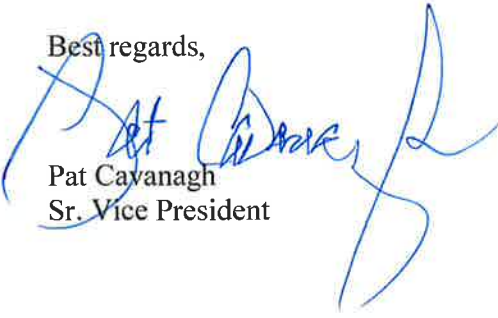
Re: Prologis Eucalyptus Industrial Park
Case No. PA07-0081, 0082, 0083, 0084, 0158, 0159, 0160, 0161 and 0162

Dear Mr. Bradshaw:

I am writing to supplement my June 30, 2014 letter requesting that the above-referenced case be continued to August 26, 2014. Prologis has decided to propose some substantial modifications to the project in order to respond to the concerns that have been expressed by the community. We believe that continuing this matter will benefit all concerned because we will have additional time to refine our proposal and to allow the city staff to evaluate the proposal before it is considered for approval by the City Council.

As always, please do not hesitate to call me if you have any questions.

Best regards,


Pat Cavanagh
Sr. Vice President

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June 30, 2014

Sent by Fax: Jeffrey Bradshaw jeffreyb@moval.org

Mr. Jeffrey Bradshaw
City of Moreno Valley
14177 Fredrick Street
Moreno Valley, CA 92552

Dear Mr. Bradshaw:

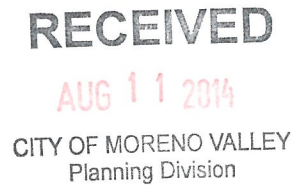
Prologis is requesting a continuance of the City Council vote on the Prologis Eucalyptus Industrial Park Case No. PA07-0081, 0082, 0083, 0084, 0158, 0159, 0160, 0161 and 0162 that was presented to Council on June 24th and delayed until July 8th. We feel we need for more time to review and determine the need to respond to comments and letters received at the June 24th hearing regarding our proposed project. We respectfully request a continuance until the next City Council meeting of August 26th, or if time is not available at that date, the earliest date thereafter.

Best regards,


Pat Cavanagh

Sr. Vice President

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August 5, 2014

Mayor Jesse Molina
Moreno Valley City Council
14177 Frederick Street
Moreno Valley, CA

RE: Prologis Park Eucalyptus

Dear Mayor Molina:

Thank you for taking the time to meet with me to discuss our proposed Prologis Park Eucalyptus. In addition to meeting with you, we have now met with each of the other Council members and had the opportunity to discuss the modifications to the project. Based on the favorable feedback we have received to the proposed modifications, we are planning on moving forward with the changes discussed.

Although the proposed project was approved at the Planning Commission Meeting with a 4-3 margin, we recognize that there were 3 no votes, each with various concerns about the project. We also have listened to the comments coming from the public at the Planning Commission meeting as well as the City Council meeting.

In an attempt to be responsive to these concerns, Prologis has revisited our proposed plan and decided to request that the City Council, rather than voting on the Proposed Project on August 26th, consider instead what we are referring to as the "Less Intensive Modified Plan" that we outlined for you in our meeting. We are requesting that Council review these modifications by Prologis and provide input and direction in our efforts to resolve as many of the stated concerns that we have heard. Prologis is prepared to formalize the "Less Intensive Modified Plan", by updating and revising the EIR document as needed and resubmitting to Council for a vote. We have met with Planning Staff and they are familiar with this change in direction and have provided us with guidance in the process. With your approval, we will target getting back to Council on the Tuesday, October 14th scheduled meeting.

The "Less Intensive Modified Plan" will require considerable expense to redo the various studies in the EIR and we are prepared to undertake this based on the positive feedback we have received from Council. I have attached a site plan showing the original "Proposed Project" that has been presented to you at the City Council Meeting and a revised site plan showing the "Less Intensive Modified Plan". Additionally, I have enclosed an exhibit labeled "Comparison of Average Daily Vehicle Trips" to demonstrate how much traffic is generated from the two alternatives as well as the traffic counts based on the current General Plan.



I wanted to restate some of the benefits to the "Less Intensive Modified Plan" are:

- A 32% reduction in the overall project square footage, eliminating 718,655 square feet in the 2 buildings (No. 5 & 6) that are located in the SEC, nearest the residential community to the south.
- Although the total traffic is only slightly reduced, there would be a 32% reduction in truck traffic and related air quality and noise generated by trucks.
- A buffer of 250' will be created from the nearest truck court to future residential
- A distance of 1,636 feet from the nearby existing neighborhood at the SEC of the project area to the closest truck court.
- Preserves the auto mall expansion parcels (bldg. 1 & 3), a condition previously provided.
- Even with the reduction in square feet, the project would still represent and estimated 4-500 new full time permanent jobs and approximately 1,000 construction jobs over the build out period for just the industrial portion of the project.
- The ultimate build-out of industrial and residential would still represent significant fees, infrastructure improvements and incremental tax revenue to the City.

We appreciate your time and input on this project. This modification is a significant change to our original plan but we feel that it will soften a great deal of the concerns that have been raised. We can't do anything to satisfy the concerns the community has about Highland Fairview's plans, but we do feel that the changes we are prepared to make will improve those concerns raised regarding proximity to residential, truck traffic, air quality and preservation of residential that will eventually support the nearby retail centers.

I would welcome your comments and am more than willing to meet with you if you have additional questions.

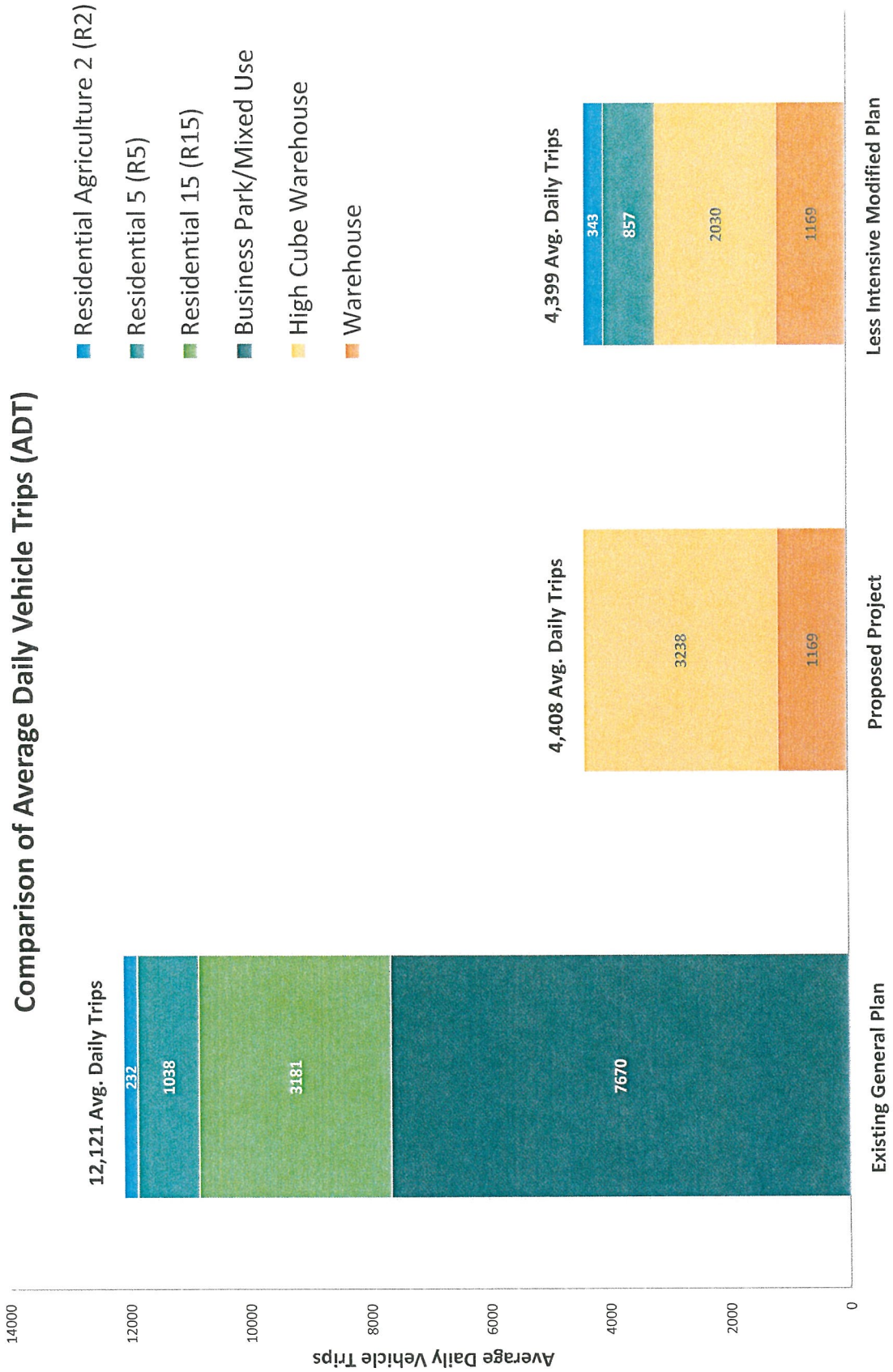
Best Regards,

Pat Cavanagh
Senior Vice President
(909) 673-8710

cc: John Terrell
Chris Ormsby
Jeff Bradshaw ✓
Moreno Valley City Council
Michelle Dawson – City Manager
Tyson Chave-Prologis

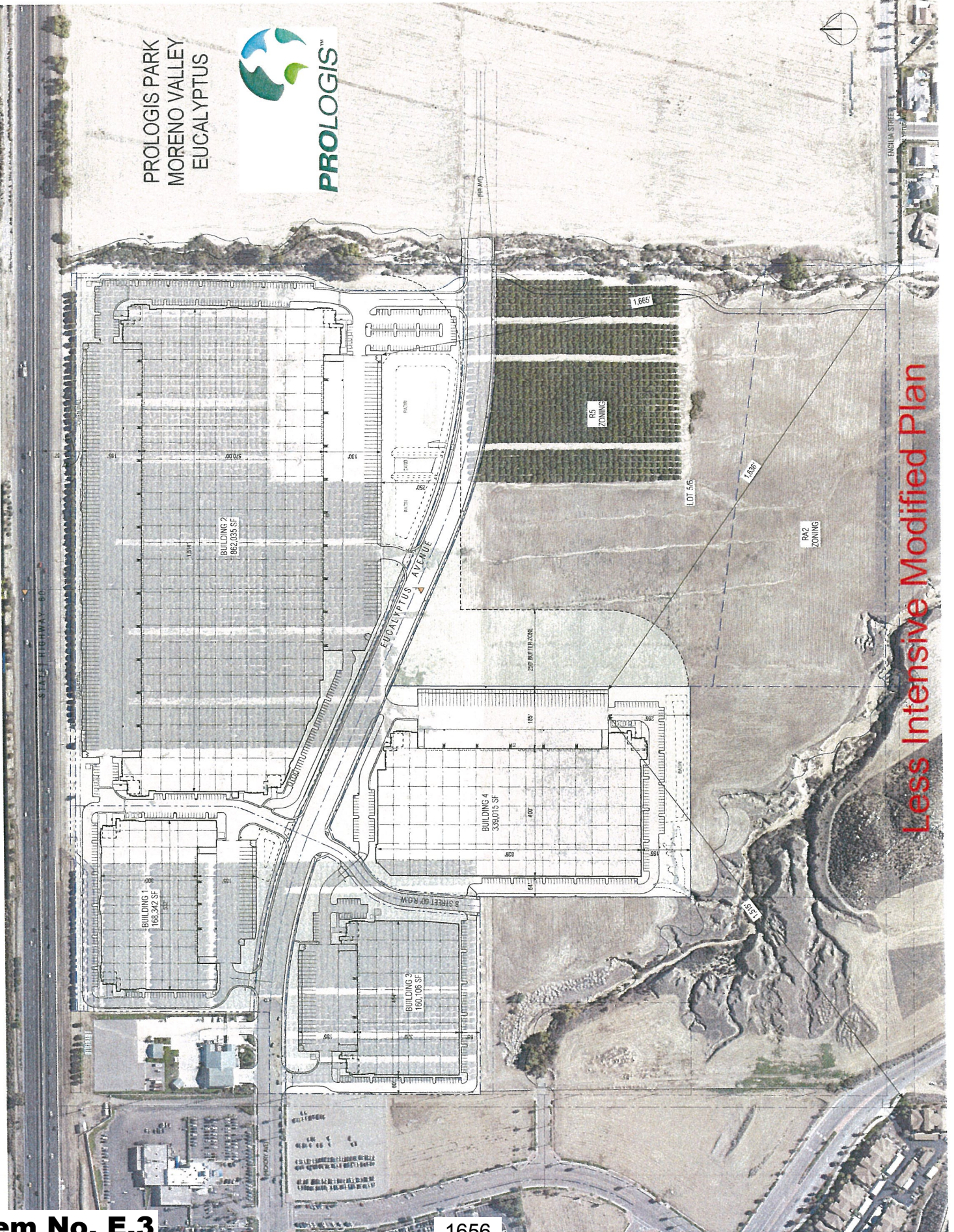
Enclosures

Comparison of Average Daily Vehicle Trips (ADT)



Vehical trips are based on Passenger Car Equivalent (PCE) which combines trucks and cars into a total trip count.

PROLOGIS PARK
MORENO VALLEY
EUCALYPTUS



Less Intensive Modified Plan



-1657-



January 26, 2012 / Job #12018

Prologis Park - Moreno Valley Eucalyptus

Eucalyptus Avenue Moreno Valley, California

Conceptual Colored Master Site Plan



Irvine, CA 92612
54170 www.ipaarch.com

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Revised Final
ENVIRONMENTAL IMPACT REPORT

**PROLOGIS EUCALYPTUS INDUSTRIAL PARK
STATE CLEARINGHOUSE NO. 2008021002
(former "ProLogis Moreno Valley Eucalyptus Project")
CITY OF MORENO VALLEY
RIVERSIDE COUNTY, CALIFORNIA**

LSA

Original February 12, 2014
Revised April 2, 2014
Second Revision September 24²⁶, 2014

**Revised Final
ENVIRONMENTAL IMPACT REPORT**

**PROLOGIS EUCALYPTUS INDUSTRIAL PARK
STATE CLEARINGHOUSE NO. 2008021002
(former “ProLogis Moreno Valley Eucalyptus Project”)
CITY OF MORENO VALLEY
RIVERSIDE COUNTY, CALIFORNIA**

Lead Agency:

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Comm. & Econ. Dev. Department
Planning Division
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Attn: Jeff Bradshaw, Associate Planner
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Prepared by:

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LSA Project No. PLO1101

LSA

Original February 12, 2014
Revised April 2, 2014
Second Revision September 24~~26~~, 2014

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1. INTRODUCTION

The Final Environmental Impact Report (EIR) for the proposed ProLogis Eucalyptus Industrial Park (formerly known as the “ProLogis Moreno Valley Eucalyptus Project”) project is composed of the Draft EIR State Clearinghouse No. 2008021002 and Appendices; the Response to Comments; and the Findings, Statement of Overriding Considerations, Staff Reports, and Resolutions. Specifically, this document portion of the EIR includes the Comments and Responses volume of the Final EIR, EIR modifications or errata, and the Mitigation Monitoring and Reporting Program (MMRP). The purpose of this document is to respond to all comments received by the City of Moreno Valley (City) regarding the environmental information and analyses contained in the Draft EIR. Additionally, any corrections to the text and figures of the Draft EIR, generated either from responses to comments or independently by the City, are stated in this volume of the Final EIR. The Draft EIR text has not been modified to reflect these clarifications. The reason for the delay of more than a year in processing the Final EIR is that the City enacted an entitlement moratorium on new development along the SR-60 corridor in the eastern portion of the City, including the ProLogis site, while the City completed a land use alternatives study of this corridor. That report was officially received by the City on January 14, 2014, and the City rescinded the entitlement moratorium as of January 23, 2014.

IMPORTANT NOTE: Section 4.0 of this document has been added to evaluate the Reduced Intensity Density Alternative in more detail. To that end, the applicant has proposed a “Less Intensive Modified Plan” to address concerns expressed about the Proposed Project (i.e., its environmental impacts). The applicant is requesting the City consider adopting the Reduced Intensity Alternative as evaluated in the Draft EIR in the form of this Less Intensive Modified Plan that would reduce the size of the project by 32% by removing buildings 5 and 6 which are the two buildings proposed in the southeast corner of the project site (i.e., the buildings that are closest to the existing residences). This modified plan would allow development of future residential uses in the southeast portion of the project site, consistent with the existing R-5 and RA-2 zoning, adjacent to the existing residential neighborhood to the southeast. The modified plan also has a 250-foot setback from the project warehouses to the future residential uses, consistent with the City’s municipal code requirements.

1.1 CONTENT AND FORMAT

Subsequent to this introductory section, Section 2.0 contains copies of each comment letter received on the Draft EIR, along with annotated responses to each comment contained within the letters. Section 3 of this document contains corrections and errata to the Draft EIR. Section 4.0 evaluates a Reduced Intensity Alternative (Less Intensive Modified Plan) as described above, while Section 5.0 contains the MMRP.

1.2 PUBLIC REVIEW OF THE DRAFT EIR

As required by the California Environmental Quality Act (CEQA) Guidelines Section 15087, a Notice of Completion (NOC) of the Draft EIR State Clearinghouse No. 2008021002 for the Eucalyptus Industrial Park project was filed with the State Clearinghouse on July 17, 2012, and the Notice of Availability (NOA) of the Draft EIR was filed with the Riverside County Clerk on July 18, 2012.

The Draft EIR was circulated for public review for a period of 48 days, from July 18, 2012 to September 4, 2012. Copies of the Draft EIR were distributed to all Responsible Agencies and to the State Clearinghouse in addition to various public agencies, citizen groups, and interested individuals. Copies of the Draft EIR were also made available for public review at the City Planning Department, at one area library, and on the internet.

A total of fourteen (14) comment letters were received. Ten of the comment letters received were from Federal, State, regional, or local agencies. Four comment letters were received from private organizations or conservation groups – no letters were received from individuals. All 14 letters have been responded to within this document. In particular, comments that address environmental issues are responded to in Section 2.0.

It should be noted that one of the comment letters submitted by a private organization, Lozeau Drury LLP dated August 31, 2012, was inadvertently left out of the original Final EIR document issued on February 12, 2014. This letter has been added to the Final EIR and the document has been revised as of March 31, 2014 including responses to the Lozeau Drury letter.

1.3 POINT OF CONTACT

The Lead Agency for this Project is the City of Moreno Valley. Any questions or comments regarding the preparation of this document, its assumptions, or its conclusions, should be referred to:

Jeff Bradshaw, Associate Planner
City of Moreno Valley, Planning Division
14177 Frederick Street
Moreno Valley, California 92553
Phone: (951) 413-3224
e-mail: jeffreyb@moval.org

1.4 PROJECT SUMMARY

The following information is summarized from the Project Description in the Draft EIR. For additional detail in regard to Project characteristics and Project-related improvements, along with analyses of the Project's potential environmental impacts, please refer to Draft EIR Sections 3.0 and 4.0, respectively.

1.4.1 Project Location/Existing Conditions

The project site is located in the City of Moreno Valley, Riverside County. The approximately 122.8-acre site is generally located south of the Sr-60 Freeway between Redlands Boulevard and Moreno Beach Drive in the eastern portion of the City. The Quincy Channel forms the eastern boundary of the site. During preparation of the Draft EIR, one of the existing onsite conditions was the presence of hundreds of citrus trees in the central and northern portions of the site, which were left over from historical agricultural use of the property. During the entitlement moratorium described before Section 1.1, ProLogis decided to remove the citrus trees due to the high ongoing cost of maintaining and harvesting them, and the potential fire danger if the trees became too dry from not enough watering. This minor change in existing conditions is being documented in this FEIR and does not change any of the conclusions of the DEIR regarding significant impacts or mitigation measures. The trees were removed in the winter of 2013 so it was not during the spring breeding season for bird species in the area. This will be described in more detail in Section 4.4 of this document,

1.4.2 Proposed Project

The proposed development would result in the construction and operation of approximately 2,244,638 square feet of distribution warehouse uses in 6 buildings on an approximately 122.8-acre site. The buildings range in size from 106,106 to 862,035 square feet. The buildings will be constructed with a total of 326 vertical-lift dock-high roll up doors on the long sides of each building to allow access for

the loading and unloading of products from diesel truck/trailers. Each building also includes business office space for the management of each warehouse. A total of 372 truck trailer parking stalls and 1,110 vehicle parking stalls will be provided, with truck and vehicle parking provided at each warehouse sufficient for the anticipated trucks and vehicles for that particular building, in accordance with City standards for light industrial uses. The project provides 15 to 24 percent landscaping for each warehouse building area, with a total average of 18 percent compared to 10 percent minimum required by the City's Municipal Code.

1.4.3 Project Objectives

The purpose of the proposed project is to provide a new facility specializing in warehouse distribution services. Upon development, the proposed project will achieve the following:

- Provide industrial warehouse facilities that meet the substantial and unmet demands of businesses located in the City and County;
- Provide new industrial development that is attractive and minimizes conflicts with the surrounding existing uses;
- Provide a variety of new employment opportunities for the citizens of Moreno Valley and surrounding communities;
- Encourage warehouse distribution services that take advantage of the area's close proximity to various freeways and transportation corridors;
- Encourage new development consistent with the capacity and municipal service capabilities;
- Provide infrastructure improvements to meet phased project needs in an efficient and cost-effective manner;
- Cluster industrial warehouse uses near access points to the state highway system to reduce traffic congestion on surface streets and to reduce air pollutant emissions from vehicle sources;
- Develop land uses that provide the City with a positive revenue/cost ratio and provide needed infrastructure in a timely fashion;
- Address community circulation, both vehicular and pedestrian, utilizing available capacity within the existing circulation system, and provide fair share improvements to various future-year deficient intersection or road segments; and
- Reduce peak hour vehicle trips, energy and water consumption compared to existing General Plan land uses.

1.4.4 Required Permits and Discretionary Actions

The following discretionary actions are anticipated to be taken by the City of Moreno Valley as part of the proposed project:

- General Plan Amendment to amend the Land Use Element resulting in a change of land use designations for the southern portion of the project site (approximately 71.3 acres) from Residential 15, Residential 5, and Residential Agriculture to Business Park.
- General Plan Amendment to amend the Circulation Element including (1) elimination of undeveloped Quincy Street from Eucalyptus Avenue to Encilia Avenue; and (2) realignment of Encilia Avenue from its current alignment such that its westerly terminus is

located at Moreno Beach Drive instead of the current General Plan westerly terminus at Eucalyptus Avenue. The segment between Quincy Channel and Moreno Beach Drive would be classified as a Collector.

- Change of Zone resulting in a change from Business Park (BP), Business Park Mixed-Use (BPX), Residential 15 (R15), Residential 5 (R5), and Residential Agriculture (RA-2) to Light Industrial (LI) on the project site.
- Modification of the Primary Animal Keeping Overlay (PAKO) zone district per the recommended change of zone.
- Modification of the Master Plan of Trails to eliminate trail segment along the west side of the Quincy Channel north of the future Eucalyptus Avenue and add a segment along the north side of Eucalyptus Avenue from the Quincy Channel to the west boundary of the project site.
- Approval of a Master Plot Plan and five related Plot Plans.
- Tentative Parcel Map approval.
- Certification of the Environmental Impact Report.
- Final Parcel Map, public improvement agreement, and related securities approval.
- Issuance of an encroachment permit for any construction work done in any City-controlled ROW. Encroachment permit issuance requires approval of improvement plans, public improvement agreement execution with securities posted, and satisfying those conditions of approval required prior to grading.
- Approval of a Storm Water Pollution Prevention Plan (SWPPP) to accommodate site runoff during construction.
- Approval of a Preliminary Water Quality Management Plan (P-WQMP) and Final Water Quality Management Plan (F-WQMP) to mitigate for post-construction runoff flows (non-discretionary).
- Issuance of a Grading Permit that requires approval of a grading plan, approval of the final drainage study, approval of the F-WQMP, obtaining an Notice of Intent and Water Discharge Identification Number, obtaining a WQMP#, and satisfying those conditions of approval required prior to grading (non-discretionary).
- Issuance of a Building permit. The comprehensive building permit includes building, plumbing, mechanical, and electrical permits (non-discretionary).

The following approvals and permits are required by other agencies:

- Approval from the City and Riverside County Flood Control and Water Conservation District (RCFCWCD) to ensure that construction site drainage velocities are equal to or less than the pre-construction conditions and downstream water quality is not worsened.
- Approval of Quincy Channel improvements from the RCFCWCD.
- A Section 404 Permit from the U.S. Army Corps of Engineers (USACE).
- A Section 401 Water Quality Certification from the Regional Water Quality Control Board (RWQCB).
- A Section 1602 Streambed Alteration Agreement from the California Department of Fish and Game (CDFG).

- Encroachment permits from Caltrans for any construction work done in any State-controlled ROW (i.e., SR-60).

2. RESPONSE TO COMMENTS

A total of thirteen (13) comment letters on the Draft EIR were received with 10 of them from Federal, State, regional, or local agencies and 3 letters from private organizations or individuals. All 13 letters have been responded to within this document. Comments that address environmental concerns have been specifically addressed. Comments that (1) do not address the adequacy or completeness of the Draft EIR; (2) do not raise environmental issues; or (3) do request the incorporation of additional information not relevant to environmental issues, do not require a response, pursuant to Section 15088(a) of the State CEQA Guidelines.

Section 15088 of the State CEQA Guidelines, Evaluation of and Response to Comments, states:

- a) The lead agency shall evaluate comments on environmental issues received from persons who reviewed the draft EIR and shall prepare a written response. The lead agency shall respond to comments received during the noticed comment period and any extensions and may respond to late comments.
- b) The written response shall describe the disposition of significant environmental issues raised (e.g., revisions to the proposed project to mitigate anticipated impacts or objections). In particular, major environmental issues raised when the lead agency's position is at variance with recommendations and objections raised in the comments must be addressed in detail, giving the reasons that specific comments and suggestions were not accepted. There must be good faith, reasoned analysis in response. Conclusory statements unsupported by factual information will not suffice.
- c) The response to comments may take the form of a revision to the draft EIR or may be a separate section in the final EIR. Where the response to comments makes important changes in the information contained in the text of the draft EIR, the lead agency should either:
 1. Revise the text in the body of the EIR; or
 2. Include marginal notes showing that the information is revised in the responses to comments.

Information provided in this volume of the Final EIR clarifies, amplifies, or makes minor modifications to the Draft EIR. No significant changes have been made to the information contained in the Draft EIR as a result of the responses to comments, and no significant new information has been added that would require recirculation of the document.

An Errata section to the EIR (Section 3.0) has been prepared to make minor corrections and clarifications to the Draft EIR as a result of City review and comments received during the public review period. Therefore, this Response to Comments document, along with the Errata is included as part of the Final EIR for consideration by the Planning Commission prior to a vote to certify the Final EIR.

2.1 LIST OF PERSONS, ORGANIZATIONS, AND PUBLIC AGENCIES COMMENTING ON THE DRAFT EIR

The persons, organizations, and public agencies that submitted comments regarding the Draft EIR through September, 2012, are listed below. A total of thirteen (13) comment letters were received. Ten of the comment letters were from Federal, State, regional, or local agencies, while three were from private organizations or individuals. Each comment letter received is indexed with a letter and number below.

Comment Letters Received Regarding the Draft EIR

A FEDERAL AND STATE AGENCIES

- A-1 California Office of Planning and Research, State Clearinghouse (September 4, 2012)**
Scott Morgan, Director State Clearinghouse
- A-2 California Department of Fish and Game (August 28, 2012)**
Jeff Brandt, Senior Environmental Specialist
- A-3 California Native American Heritage Commission (July 20, 2012)**
Dave Singleton, Program Analyst
- A-4 Pechanga Band of Luiseno Indians (September 4, 2012)**
Anna Hoover, Cultural Analyst
- A-5 Morongo Band of Mission Indians (September 10, 2012)**
Franklin Dancy, Director of Planning

B. REGIONAL AND COUNTY AGENCIES

- B-1 Eastern Municipal Water District (September 4, 2012)**
Jayne Joy, Director of Environmental and Regulatory Compliance
- B-2 Eastern Municipal Water District (September 4, 2012)**
Maroun El-Hage, Senior Civil Engineer, New Business Development
- B-3 South Coast Air Quality Management District (September 4, 2012)**
Ian McMillan, Program Supervisor, Intergovernmental Review
- B-4 Riverside County Flood Control and Water Conservation District (September 17, 2012)***
Henry Olivo, Engineering Project Manager

C. LOCAL AGENCIES

- C-1 City of Riverside (September 4, 2012)**
Steve Hayes, City Planner

D. PRIVATE ORGANIZATIONS AND INDIVIDUALS

- D-1 Lozeau Drury LLP (August 29, 2012)**
Richard Drury et al, Attorneys for LIUNA Local Union 1184

D-2 Sierra Club, San Geronio Chapter (September 4, 2012)
George Hague, Conservation Chair
Moreno Valley Chapter

D-3 Johnson & Sedlack (September 4, 2012)
Ray Johnson, AICP, Esq.

D-4 Lozeau Drury LLP (August 31, 2012)
Richard Drury et al, Attorneys for LIUNA Local Union 1184

It should be noted that this letter actually consists of four related documents, one main letter from Mr. Drury, two supporting memoranda from other individuals (Dr. Clark and Mr. Hageman), and a number of appendices as attached materials. Each of these has a separate response.

2.2 FORMAT OF RESPONSES TO COMMENTS

Aside from the courtesy statements, introductions, and closings, individual comments within the body of each letter have been identified and numbered. A copy of each comment letter and the City's responses are included in this section. Brackets delineating the individual comments and an alphanumeric identifier have been added to the right margin of the letter. Responses to each comment identified are included on the page(s) following each comment letter. Responses to comments were sent to the agencies that provided comments.

In the process of responding to the comments, there were minor revisions to the Environmental Impact Report. None of the comments or responses constitutes "significant new information" (*CEQA Guidelines* Section 15073.5) that would require recirculation of the Environmental Impact Report.

A. LETTERS FROM FEDERAL AND STATE AGENCIES

LETTER A-1: CALIFORNIA STATE CLEARINGHOUSE

Letter A-1



EDMUND G. BROWN JR.
GOVERNOR

STATE OF CALIFORNIA
GOVERNOR'S OFFICE of PLANNING AND RESEARCH
STATE CLEARINGHOUSE AND PLANNING UNIT



KEN ALEX
DIRECTOR

September 4, 2012

Jeff Bradshaw
City of Moreno Valley
14177 Frederick Street
PO Box 88005
Moreno Valley, CA 92552

Subject: ProLogis Eucalyptus Industrial Park EIR (formerly Prologis Park Moreno Valley Eucalyptus Project)
SCH#: 2008021002

Dear Jeff Bradshaw:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on August 31, 2012, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

"A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Enclosures
cc: Resources Agency

1400 10th Street P.O. Box 3044 Sacramento, California 95812-3044
(916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

OPR
(PAGE 2 OF 2)

RESPONSE TO LETTER A-1

California Governor's Office of Planning and Research, State Clearinghouse

Response to Comment A-1. The City recognizes the receipt of comments from State agencies and the State Clearinghouse's acknowledgement that it has complied with review requirements for environmental documents.

LETTER A-2: CALIFORNIA DEPARTMENT OF FISH AND GAME

AUG-29-2012 14:02 FROM:DEPT OF FISH GAME 9094812945 TO:919514133210 P.2/6

Letter A-2



State of California - The Natural Resources Agency
DEPARTMENT OF FISH AND GAME
3602 Inland Empire Boulevard, Suite C-220
Ontario, CA 91764
(909) 484-0459
<http://www.dfg.ca.gov>

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director



August 28, 2012

Mr. Jeff Bradshaw
City of Moreno Valley
14177 Frederick St.
P.O. Box 88005
Moreno Valley, CA 92552

Re: ProLogis Eucalyptus Industrial Park Draft Environmental Impact Report
City of Moreno Valley, County of Riverside, SCH# 2008021002

Dear Mr. Bradshaw:

The Department of Fish and Game (Department) appreciates this opportunity to comment on the ProLogis Eucalyptus Industrial Park Draft Environmental Impact Report (DEIR). The Department is responding as a Trustee Agency for fish and wildlife resources [Fish and Game Code sections 711.7 and 1802 and the California Environmental Quality Act Guidelines (CEQA) section 15388] and as a Responsible Agency regarding any discretionary actions (CEQA Guidelines section 15381), such as a Lake and Streambed Alteration Agreement (California Fish and Game Code Sections 1600 *et seq.*), and/or a California Endangered Species Act (CESA) Incidental Take Permit (Fish and Game Code Sections 2080 and 2080.1).

Project Description and Location

The Proposed Project involves the construction of a six building warehouse facility covering an area of 2,244,635 square feet (sf). The project requires a change of land use of 71.2 acres from residential to business park and an overall zone change of 122.8 acres to light industrial. Also included in the Project is the elimination of Quincy Street from State Route 60 (SR-60) south to Cottonwood Avenue, and the completion of Eucalyptus Avenue east to Fir Avenue. The Project site is located in the eastern portion of the City of Moreno Valley, south of SR-60, east of Moreno Valley Auto Mall, and adjacent to and west of the Quincy Channel. The major cross streets are Moreno Beach Drive to the west and Redlands Boulevard to the east. A Notice of Preparation for the Project was submitted to the State Clearinghouse in 2008.

Western Riverside Multiple Species Habitat Conservation Plan (MSHCP)

The Department is responsible for ensuring appropriate conservation of fish and wildlife resources including rare, threatened, and endangered plant and animal species, pursuant to the CESA, and administers the Natural Community Conservation Plan Program (NCCP Program). On June 22, 2004, the Department issued NCCP approval and Take Authorization for the Western Riverside County MSHCP per Section 2800, *et seq.*, of the California Fish and Game Code. The MSHCP establishes a multiple species conservation program to minimize and mitigate habitat loss and the incidental take of covered species in association with activities covered under the permit.

Conserving California's Wildlife Since 1870

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RESPONSE TO LETTER A-2

California Department of Fish and Game

Response to Comment 1. The commenter accurately characterizes the responsibilities of the Department and the characteristics of the proposed project.

Response to Comment 2. The commenter accurately summarizes both the CEQA requirement for an analysis of the proposed project's consistency with the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) and the MSHCP policies and procedures applicable to the proposed project. The commenter also outlines the MSHCP requirement for a burrowing owl survey, and that the surveys conducted for the project showed no burrowing owl sign or observations, but the site was determined to contain suitable habitat.

Response to Comment 3. The commenter provides the definition for significant impact under CEQA but then applies it incorrectly to the project site. The detailed biological surveys prepared for the project site, as well as the Section 4.4 of the EIR on biological resources, concludes that the proposed project would not have significant impacts on the species listed by the commenter due to the lack of existing native vegetation on the site, the fact that the has been regularly disturbed by disking for weed abatement (i.e., fuel modification for fire protection), and a substantial portion of the site supports citrus trees that are not commercially harvested. Development of this site would remove an incremental amount of land that now provides foraging for the two raptor species (i.e., Cooper's hawk and red-tailed hawk) but the site does not contain any large trees that are suitable for raptor roosting or perching (i.e., the citrus trees make these activities difficult for raptors). Impacts to cottontail, bladder pod, and mule fat must be considered only incremental as a result of the loss of 122.8 acres of vacant disturbed land that supports mainly weedy non-native vegetation. The commenter provided no empirical evidence or data to support the contention that impacts to these species should be considered significant under CEQA. Finally, impacts to the drainages that support southern California black walnut were assessed and appropriate onsite and offsite mitigation will be provided, as outlined in Mitigation Measure 4.4.6.3A on 4.4-30 of the Draft EIR. These conclusions are supported by the technical studies prepared by ICF International based on the proposed warehouse development project.

ICF International also reviewed this comment and wished to add the following:

"Cooper's hawk, coyote, and southern California black walnut are fully covered species under the MSHCP and as such any potential impacts to them would be fully mitigated through the project being consistent with the MSHCP. Red-tailed hawk, desert cottontail, bladder pod, and mule fat are all widely distributed species with no threat to their continued existence in western Riverside County. The removal of 121.29 acres of foraging habitat for red-tailed hawk is judged to be less than significant under CEQA. The nesting bird mitigation measure will ensure no direct take of individuals would occur. The removal of 121.29 acres of occupied habitat for desert cottontail is judged to be a less than significant impact under CEQA. This species is widely distributed throughout western Riverside County, including many areas of development. The removal of a few bladder pod and less than an acre of occupied mule fat habitat is also judged to be a less than significant impact given these species' wide distribution w/in the county. Agreed, the project site occurs within the survey area of burrowing owl and a survey following MSHCP protocol was performed and the species was absent."

Response to Comment 4. ICF International has prepared and is processing a Determination of Biologically Equivalent or Superior Preservation (DBESP) report for review and approval by Riverside Conservation Authority (RCA) and California Department of Fish and Game (CDFG), according to the

procedures established by the MSHCP. The applicant will be preserving the Quincy Channel along the east side of the project, and will mitigate for the loss of the two minor drainage features along the western and southern portions of the site, as outlined on page 4.4-30 of the Draft EIR.

As outlined in Mitigation Measures 4.4.6.1A through C in the Draft EIR, a pre-construction survey for burrowing owl will be prepared and processed through CDFG prior to grading the site.

Response to Comment 5. As required by law, the developer will pay the established SKR mitigation and MSHCP development impact fee. ICF International adds that this is for those species covered by both the SKR HCP and the MSHCP. For species with potential for occurrence and/or confirmed present, the proposed impacts were judged less than significant under CEQA and no mitigation was necessary.

Response to Comment 6. It is understandable CDFG is concerned about impacts to stream and riparian vegetation and burrowing owl. However, the commenter does not explain why the CDFG, which is a responsible and trustee agency for biological resources in the state, is concerned with traffic issues or the traffic study. However, we believe Response 8 adequately addresses the CDFG's concerns.

In addition, ICF International adds the following information to this response:

- 1) Stream and riparian vegetation impacts – the project will impact stream and riparian vegetation that is protected under the WRC MSHCP, Clean Water Act Sections 401 and 401, and CDFG 1600 code. The project must, under the WRC MSHCP, provide mitigation for impacts (permanent and temporary) such that the compensation is equivalent or superior in preservation to that proposed for impact. A Determination of Equivalent or Superior Preservation (DBESP) report will be submitted to USFWS and CDFG to ensure the compensatory mitigation is at a minimum adequate per the WRC MSHCP. This is stated in the EIR. Under CEQA it is judged that a minimum mitigation ratio at 2:1 would provide equivalent or superior mitigation for that being impacted. Under the MSHCP, USFWS and CDFG concurrence is necessary and the mitigation ratio may be determined to be higher than 2:1. In addition, it is stated in the CEQA document that impacts to federal and state jurisdictional waters/streambeds would require permits/agreements under CWA 401 and 404 and CDFG 1600 code and that under CEQA, impacts would need to be mitigated at a 2:1 ratio to make impacts less than significant. The mitigation ratio determined during the permit/agreement processing may be determined to be higher or lower and the project proponent would be required to fulfill the higher mitigation ratio. Mitigation Measure 4.4.6.3 will be revised to read “...shall be mitigated at a minimum of a 2:1 ratio.”
- 2) The potential presence of burrowing owl – as indicated in the EIR, a focused survey was performed for this species and the species was found absent. A pre-construction survey for burrowing owl is required and stated in the EIR and is to occur within 30 days prior to ground disturbance activities. This is consistent with the WRC MSHCP. Additionally, the EIR states that if burrowing owl is found that the species would be excluded from the site through appropriate measures that USFWS and CDFG approve. These measures ensure that burrowing owl is not directly impacted by the project, that the project is consistent with the WRC MSHCP and that the project is consistent with USFWS and CDFG protocol.

Response to Comment 7. The commenter summarizes the results of the jurisdictional delineation prepared for the project by ICF International. The project will protect in place the entire Quincy Channel along the eastern boundary of the project site. The City is aware the Department opposes the elimination of minor drainage channels, as outlined in their comment, but there are times when small eroded ephemeral drainage courses must be channelized or incorporated into the overall drainage management of a site to provide effective erosion and flood control. The two smaller

ephemeral drainages along the eastern and southwestern portions of the site will be removed, but their loss will be compensated by offsite mitigation as outlined in Mitigation Measure 4.4.6.3A in the Draft EIR. The Department's subsequent Streambed Alteration Agreement process will allow for the effective transition and ultimate loss of these small drainages with minimum offsite compensation of 2:1 (note: subsequent regulatory permitting may require a different compensation ratio).

ICF International would like to add the following information to this response:

- 1) The project proponent plans on submitting an application to CDFG in the near future to ensure CDFG is involved early on in the permitting process.
- 2) The measures indicated in the CDFG comment are being incorporated into the revised DBESP. Finally, the EIR indicates that impacts to stream and riparian habitat will be mitigated at a ratio of 2:1 to provide sufficient mitigation under CEQA. The project has attempted to reduce impacts to all jurisdictional waters/streambeds. The project will install two storm drains and a bridge. The storm drains are necessary to continue supporting water volumes reaching the natural streams and the bridge is a requirement to maintain appropriate movement into and out of the project site. The ability to support on-site mitigation is limited due to the small amount of Quincy Channel that is owned by the project proponent and which is to be dedicated to the City of Moreno Valley as a condition of project approval. As such, all compensatory mitigation will occur off-site at a minimum ratio of 2:1. It is understood that further coordination with CDFG through the Streambed Alteration Agreement program will be necessary and that under the Streambed Alteration Agreement; the mitigation ratio may be higher or lower than 2:1 (as noted above).
- 3) Based on a pre-application MSHCP project meeting with CDFG, USFWS, RCA, and RWQCB that occurred on October 10, 2012, the following minor changes and clarifications will be added to the indicated mitigation measures, mainly to incorporate temporary impacts into the compensation for permanent impacts:

4.4.6.2A *As outlined in the project's Determination of a Biologically Equivalent or Superior Preservation (DBESP) report, the project applicant shall compensate for the temporary and permanent impact on and loss of jurisdictional waters and streambeds by providing a minimum 2:1 off-site replacement of equivalent riverine/riparian habitat prior to project construction. (0.36 acre impact = 0.72 acre replacement). This off-site replacement shall be accomplished through the contribution of in-lieu fees to the Santa Ana Watershed Association (SAWA) for its efforts in removal of invasive plants and restoration of riparian habitat adjacent to the tributaries of the San Jacinto River or within the Santa Ana River watershed. Documentation of acceptance of the SAWA contribution shall be provided to the City prior to issuance of a grading permit. Offsite restoration, enhancement, and/or land purchase mitigation for the drainage impacts will occur at an offsite location through one or more of the following: an USACE approved mitigation bank, through an in lieu fee mitigation program, and/or land purchase and conservation. DFG and USFWS will need to provide concurrence that this mitigation is equivalent or superior to that proposed for impact through their review and acceptance of the DBESP.*

4.4.6.2B *The project applicant shall retain qualified personnel to prepare and implement a Habitat Mitigation and Monitoring Plan (HMMP) to oversee restoration of temporarily affected areas (0.35 acre of riverine/riparian habitat) to their pre-construction contours and vegetation. The HMMP will be approved by USACE and CDFG prior to the City issuing any occupancy permits. Riparian/riverine resources that are temporarily impacted by project construction shall be returned to their preconstruction contours and hydroseeded, as outlined in the DBESP.*

NOTE: The DBESP replaces the need for a separate Habitat Mitigation and Monitoring Plan.

4.4.6.3A ~~The project applicant shall obtain a Section 404 Nationwide or Individual Permit, as appropriate, from the USACE and a Section 1602 Streambed Alteration Agreement from the CDFG. Direct temporary impacts to more than 0.1 acre of jurisdictional area that are regulated by the USACE, CDFG, and RWQCB shall be mitigated at a 2:1 ratio, including enhancement and/or creation of wetlands or the contribution of in-lieu fee to the Santa Ana Watershed Association (SAWA) for its efforts in removal of invasive plants and restoration of off-site riparian habitat, as outlined in Mitigation Measure 3.3.6.2A.~~ The project applicant shall obtain a Section 404 Nationwide or Individual Permit, as appropriate, from the USACE, a Section 401/Porter-Cologne Water Quality Certification from the RWQCB, and a Section 1602 Streambed Alteration Agreement from the CDFG. Offsite restoration, enhancement, and/or land purchase mitigation of jurisdictional drainage impacts will occur at an off-site location through one or more of the following: an USACE approved mitigation bank, through an in-lieu fee mitigation program, and/or land purchase and conservation.

NOTE: These mitigation measures have been revised to be consistent with the revised DBESP report, and so there will not be any conflicts between the implementation measures of the DBESP and the mitigation measures of the EIR.

Response to Comment 8. This comment states that the Traffic Impact Analysis (TIA) only looks at projects within a 5-mile radius. The 2035 conditions analyzed in the TIA were based on the RivTAM model, which includes General Plan land uses for Cities in Riverside County and SCAG forecasts outside Riverside County. Therefore, the comment that the Draft EIR only evaluates projects within a 5-mile radius is incorrect.

The commenter is interested in how the project and other proposed development will affect traffic flow on the SR-60. The analysis of 2035 conditions is based on reasonable absorption rates for General Plan Buildout of the County and based on SCAG forecasts. The background without project conditions for Year 2035 includes potential projects that are consistent with the approved General Plans.

The commenter notes that the World Logistics Center is not included as a cumulative project. Please note that the baseline used to prepare the cumulative conditions analysis in the EIR is based on the past, present and reasonably foreseeable projects at the time the Notice of Preparation (NOP) for the Draft EIR is issued. The NOP was distributed to state, regional, and local agencies on February 4, 2008. At that time, the World Logistics Center was not a planned project, so this project was not included directly as a cumulative project for opening year conditions. However, the traffic model utilized to prepare the traffic analysis does include the approved Moreno Highlands Specific Plan, which is located on the same site as the currently proposed World Logistics Center project. Furthermore, the Moreno Highland Specific Plan generates more trips than the World Logistics Center. As a result, although the World Logistics Center is not included as a cumulative project, as noted in the comment, the 2035 analysis does evaluate the effects of a larger project than the World Logistics Center.

Similarly, although the analysis does not include the Villages at Lakeview as a cumulative project directly, it is included as a Community Development zone in the RIVTAM model, which was used to forecast future volumes. The Community Development land use designation includes all uses proposed in the now rescinded EIR for the Villages at Lakeview project. The commenter also mentions a residential development near the intersection of Lamb Canyon Road and SR-60. It should be noted that Lamb Canyon Road does not intersect SR-60 and therefore it is unclear exactly where this developed uses is located or the exact size of the developed uses. However, LSA believes that the commenter is referring to a development off of SR-79 in the City of Beaumont. It is unlikely that a

residential development located approximately 16 miles from the proposed project would add cumulatively considerable trips to the project study area. Therefore inclusion of the referenced project in the cumulative project list would not be required.

The commentator is concerned about traffic on surface streets due to increased congestion on the SR-60, especially on Gilman Springs Road and Ramona Expressway. As noted in previous comments, the 2035 conditions analyzed in the TIA were based on the RivTAM model, which includes General Plan land uses for cities in Riverside County and SCAG forecasts outside Riverside County. Traffic models route trips based on available capacity and traffic volumes on roadways using the least cost approach. Using this approach, the RivTAM model also forecasts potential diversion of trips due to congested conditions on freeways. Therefore, the 2035 conditions analyzed in the DRAFT EIR accurately represent the future traffic that could be expected on area surface streets, including Gilman Hot Springs Road and the Ramona Expressway. The commenter also states that these two roadways provide access to the San Jacinto Wildlife Area (SJWA), but are not included in the traffic study. Based on local agency guidelines, intersections where the project would add more than 50 peak hour trips were included in the study area. The project would add fewer than 10 peak hour trips to Gilman Hot Springs Road and Ramona Expressway and as a result, these facilities were not included in the study area. The comment claims that potential cumulative impacts on nearby conserved lands, particularly potential direct and indirect effects of the project on the adjacent SJWA, Lake Perris Recreation Area, and Badlands Area, and potential increased use of Davis Road are not discussed in the DRAFT EIR because the project would add an insignificant number of vehicle trips in these areas. It should be noted that Davis Road is not on the City's Circulation Plan or the County of Riverside's Circulation Element. The road is not open to through traffic, and is currently gated. The gate is controlled/maintained by the California Department of Fish and Game. Even if Davis Road were open to through traffic, the small number of trips that would likely be added by the project or diverted from other facilities is minimal and is therefore not required to be analyzed.

Response to Comment 9. The commenter provides brief information on the SJWA and the resources with which the Department is concerned. This comment provides factual information about the Badlands area and the SJWA and does not require a response. The Badlands and the SJWA will not be significantly adversely impacted by the proposed project, as it is not proximate to either of these areas and only a small amount of project-related traffic is expected to use Gilman Springs Road which is adjacent to both areas.

Response to Comment 10. Based on the information in Responses to Comments A-2, Nos.7-9 above, the analysis of traffic impacts provided in the Draft EIR is based on local agency standards, relevant provisions of CEQA, data obtained the most recent version of RivTAM, and standard traffic engineering principles. The comment does not provide any additional information to reinforce the claim that the Draft EIR is inadequate in describing project related traffic impacts and in identifying mitigation measures.

LETTER A-3: CALIFORNIA NATIVE AMERICAN HERITAGE COMMISSION

Letter A-3

STATE OF CALIFORNIA

Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION

915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390
Web Site www.nahc.ca.gov
ds_nahc@pacbell.net

RECEIVED

JUL 23 2012



CITY OF MORENO VALLEY
Planning Division

July 20, 2012

Mr. Jeff Bradshaw, Associate Planner

**City of Moreno Valley Community Development Department:
Planning Division**

14177 Frederick Street; P.O. Box 88005
Moreno Valley, CA 92552

Re: SCH#2008021002; CEQA Notice of Completion: draft Environmental Impact Report (DEIR) for the PROLOGIS EUCALUPTUS INDUSTRIAL PARK; located in the City of Moreno Valley; Riverside County, California.

Dear Mr. Bradshaw:

The Native American Heritage Commission (NAHC), the State of California 'Trustee Agency' for the protection and preservation of Native American cultural resources pursuant to California Public Resources Code §21070 and affirmed by the Third Appellate Court in the case of EPIC v. Johnson (1985: 170 Cal App. 3rd 604).

This letter includes state and federal statutes relating to Native American historic properties of religious and cultural significance to American Indian tribes and interested Native American individuals as 'consulting parties' under both state and federal law. State law also addresses the freedom of Native American Religious Expression in Public Resources Code §5097.9

The California Environmental Quality Act (CEQA – CA Public Resources Code 21000-21177, amendments effective 3/18/2010) requires that any project that causes a substantial adverse change in the significance of an historical resource, that includes archaeological resources, is a 'significant effect' requiring the preparation of an Environmental Impact Report (EIR) per the CEQA Guidelines defines a significant impact on the environment as 'a substantial, or potentially substantial, adverse change in any of physical conditions within an area affected by the proposed project, including ... objects of historic or aesthetic significance.' In order to comply with this provision, the lead agency is required to assess whether the project will have an adverse impact on these resources within the 'area of potential effect (APE), and if so, to mitigate that effect. The NAHC recommends that the lead agency request that the NAHC do a Sacred Lands File search as part of the careful planning for the proposed project.

The NAHC "Sacred Sites," as defined by the Native American Heritage Commission and the California Legislature in California Public Resources Code §§5097.94(a) and 5097.96. Items in the NAHC Sacred Lands Inventory are confidential and exempt from the Public Records Act pursuant to California Government Code §6254 (r).

Early consultation with Native American tribes in your area is the best way to avoid unanticipated discoveries of cultural resources or burial sites once a project is underway. Culturally affiliated tribes and individuals may have knowledge of the religious and cultural significance of the historic properties in the project area (e.g. APE). We strongly urge that you



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NAHC
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NAHC
(PAGE 5 OF 5)

RESPONSE TO LETTER A-3

California Native American Heritage Commission

Introduction to Responses. The City has implemented the guidance received from the Native American Heritage Commission (NAHC) regarding the structure of the relationship with concerned Native American tribes and individuals during project development. In particular, the relationship with the tribes and the City regarding this project site have been ongoing since 2008, beginning with a request for a Sacred Lands File Search, and continued by providing copies of reports and other documents to interested tribes. Most recently, the City met with the Pechanga Tribe's Cultural Resources Analyst on October 9, 2012 to further discuss the SB 18 consultation process.

Response to Comment 1. The comment is introductory and states that the NAHC is the State "trustee agency" pursuant to Public Resources Code Section 21070 for the protection and preservation of the State's Native American resources. The comment also states that the letter contains state and federal statutes relating to Native American historic properties of religious and cultural significance. The second paragraph is also introductory in nature and outlines the NAHC's authority and role as a commenting agency. The NAHC's introduction in this comment is noted, and no further response is required.

Response to Comment 2. The comment states that CEQA requires that any project that causes a substantial adverse change in the significance of a historical resource, which includes archaeological resources, is a "significant effect" requiring the preparation of an EIR. A Draft EIR was prepared for the proposed project and circulated for public review on July 18, 2012. Based on the *Phase I Cultural Resources Assessment* prepared for the proposed project (Draft EIR Appendix D), the site contained no cultural or historic resources. Consequently, construction and grading of the proposed project site will not affect significant cultural or paleontological resources, resulting in less than significant impacts.

In the second part of the paragraph, the commenter recommends the NAHC Sacred Lands File (SLF) be searched, and such a search was conducted during the Cultural Resource Assessment and found that no Native American cultural resources were identified within the project area. Similarly, the Draft EIR determined that there were no cultural resources (historic or prehistoric) identified on the project site as a result of records searches or during on site reconnaissance. The comment does not contain any substantive statements or questions about the Draft EIR or the analysis therein. Therefore, no further response is necessary.

Response to Comment 3. The comment states that NAHC Sacred Sites are confidential and exempt from the Public Records Act pursuant to California Government Code Section 6254. The City acknowledges the sensitivity and confidentiality of the information contained in the cultural resources report. No records maps have been made public nor will they be made public in association with the City's consideration of the proposed project.

In the second paragraph, the comment states that pursuant to California Public Resources Code Section 5097.95, the NAHC requests that pertinent project information be provided to Native American consulting parties, and that Native American consultation is a matter of environmental justice. The comment letter states that early consultation with Native American Tribes in the area of the project site is the best way to avoid unanticipated discoveries once a project is underway. The letter includes a list of Native American contacts and recommends obtaining their recommendations concerning the proposed project.

Appendix D of the Draft EIR contains the *Phase I Cultural Resource Assessment* prepared for the proposed project in which Native American consultation was conducted. The NAHC was contacted to

determine whether any sacred sites were listed on the Sacred Lands Files for this area of Moreno Valley containing the project site. In response to the Sacred Land Record Search request, the NAHC identified fourteen Native American contacts that may have knowledge of cultural resources in the project area.

Letters were sent to all the Native American contacts provided by the NAHC in 2008. The letters notified the parties of the proposed project and requested that the tribes respond with information concerning cultural resources that might be affected.

Response to Comment 4. The comment states that consultation with Tribes and interested Native American consulting parties on the NAHC list should be conducted in compliance with the requirements of federal National Environmental Policy Act (NEPA), Sections 106 and 4(f) of the National Historic Preservation Act, and the Native American Grave Protection and Repatriation Act (NAGPRA), as appropriate.

Although the project is not a federal undertaking as defined under Section 106 of the National Historic Preservation Act (NHPA) or 36 Code of Federal Regulations (CFR) Part 800 regulations implementing Section 106, and does not use federal funds, it will require a federal Clean Water Act Section 404 permit. Therefore, the project falls under the regulatory oversight of Section 106. As described in Response to Comment A-3, No. 3 above, the City conducted consultation with thirteen local tribes and interested Native American individuals for the project. Consultation included providing those parties with pertinent project and location information.

The project is not a federal transportation project, so it also does not fall under the jurisdiction of Section 4(f) of the Department of Transportation Act of 1966. There is also no federal involvement in the project that would trigger the requirements of NAGPRA.

Response to Comment 5. The comment states that historic properties of religious and cultural significance are confidential and protected by California Government Code Section 6254. The comment further states that the confidentiality of such resources may also be protected by section 304 of the NHPA. The City acknowledges the sensitivity and confidentiality of any identified resources. The SLF and any associated records maps are not for public distribution. In addition, because the project is not a federal undertaking, it is not regulated under Section 304 of the NHPA.

Response to Comment 6. The comment identifies State laws regarding the accidental discovery of human remains. In compliance with these laws, in the unlikely event human remains are encountered during project grading, the County Coroner and the City Planning Division would be notified immediately, and no further disturbance would occur until the County Coroner makes a determination of origin and disposition. If the remains are determined to be Native American, the County Coroner would notify the NAHC, which will determine and notify the most likely descendant (MLD). Implementation of state law reduces potential impacts related to the discovery of human remains on the proposed project site to a less than significant level, and no additional mitigation is required.

Response to Comment 7. The comment states that effective consultation, in the opinion of the NAHC, is the result of an ongoing relationship between Native American tribes and lead agencies, project proponents and their contractors. The City agrees that effective consultation is desired. The City has reached out to Native American tribes through the consultation process (as detailed in the Draft EIR in Appendix D). The comment does not contain any substantive statements or questions about the Draft EIR or the analysis therein. Therefore, no further response is necessary.

Response to Comment 8. The comment states that the NAHC recommends avoidance when a project would damage or destroy Native American cultural resources. The comment further states that documentation and data recovery of such resources is required pursuant to the CEQA Guidelines. Based on the *Phase I Cultural Resources Assessment* (Draft EIR Appendix D) prepared

for the proposed project, the site has a low potential for containing archeological resources due to the lack of such resources previously discovered in the surrounding area and the disturbed nature of the project site. Consequently, construction and grading of the proposed project site will have a low probability of damaging archeological resources. Impacts to archeological resources are considered to be less than significant.

LETTER A-4: PECHANGA BAND OF LUISEÑO INDIANS



PECHANGA CULTURAL RESOURCES
Temecula Band of Luiseño Mission Indians

Post Office, Box 2183 • Temecula, CA 92593
Telephone (951) 308-9295 • Fax (951) 506-9491

September 4, 2012

VIA E-MAIL and USPS

Mr. Jeff Bradshaw
Associate Planner
City of Moreno Valley
Community Development Department
14177 Frederick Street
Moreno Valley, CA 92552

Re: Pechanga Tribe Comments on the Draft EIR for the Prologis Park Moreno Valley Eucalyptus Project

Dear Mr. Bradshaw:

This comment letter is written on behalf of the Pechanga Band of Luiseño Indians (hereinafter, "the Tribe"), a federally recognized Indian tribe and sovereign government. The Tribe formally requests, pursuant to Public Resources Code §21092.2, to be notified and involved in the entire CEQA environmental review process for the duration of the above referenced project (the "Project"). The Tribe requests to be directly notified of all public hearings and scheduled approvals concerning this Project. Please also incorporate these comments into the record of approval for this Project.

The Tribe submits these comments concerning the Project's potential impacts to cultural resources in conjunction with the environmental review of the Project. The Tribe has reviewed the Cultural Resources Section of the Draft Environmental Impact Report and is very concerned that the City did not address any of the Tribes comments and seems to have ignored the other comments provided by Native American tribes. Both Pechanga and Soboba requested monitoring during grading activities as the City itself in the Initial Study indicated that the possibility of uncovering cultural resources during earthmoving activities was high. Further, the Tribe was not afforded the opportunity to consult with the City per SB18 requirements and as we had requested in our March 4, 2008 comment letter. This violates state law. Additionally, as written, the proposed mitigation measures are inadequate and insufficient to mitigate for unanticipated discoveries of cultural resources. Additional information is provided in our comments below.

Letter A-4

Chairperson:
Germaine Arenas

Vice Chairperson:
Mary Bear Magee

Committee Members:
Evie Gerber
Darlene Miranda
Bridgett Barcello Maxwell
Aurelia Marruffo
Richard B. Scearce, III

Director:
Gary DuBois

Coordinator:
Paul Macarro

Cultural Analyst:
Anna Hoover

Sacred Is The Duty Trusted Unto Our Care And With Honor We Rise To The Need

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Page 5 of 6

Pechanga
Page 6 of 6

RESPONSE TO LETTER A-4

PECHANGA BAND OF LUISEÑO INDIANS

Response to Comment 1. The City acknowledges the Pechanga Band (“Tribe”) is a federally recognized Indian Tribe. The City will continue to notify the Tribe regarding the CEQA process for this project, and the Tribe will be notified of any hearings regarding this project. As requested, the Tribe’s comments and the City’s responses are incorporated into this Final EIR document and administrative record.

Response to Comment 2. According to its records, the City did contact the Tribe for consultation under SB 18 when the applicant first started processing the project in 2007-08, and the City sent a copy of the project cultural resources report at that time. The City received no further correspondence or emails regarding the project, so it believed the SB 18 consultation process for the ProLogis project was completed at that time. On July 25, 2011 a letter inquiring about additional consultation was sent to Mark Macarro and the commenter with Pechanga and no response was received (Paul Macarro is the Director of Cultural Resources). A second letter was sent on August 9, 2011 to which the commenter responded that she would work directly with the City regarding further consultation. Jeff Bradshaw with the City contacted Ms. Hoover (“commenter”) but received no follow-up from the Tribe for additional input or consultation. The revised cultural resources study was mainly an update of the original study to “bring it current” and contained no new additional information. At that time, Mr. Bradshaw considered this second round of SB 18 communication with the tribe completed as well. Separate from the SB 18 process, the Tribe has provided comments to the City during the Notice of Preparation (NOP) period and the Notice of Completion (NOC) sent out for the project under CEQA. The commenter is incorrect that the City has not incorporated concerns and comments from the Tribe into the CEQA document, or has somehow neglected the SB 18 consultation process. The City met with the Anna Hoover, Cultural Analyst for the Tribe regarding SB 18 on October 9, 2012 to address any pending questions regarding the City’s participation in the SB 18 consultation process on this project (see Appendix B in this document).

Response to Comment 3. Although there appears to be some confusion regarding the actual completion of the SB 18 consultation process, the City and the Tribe can still continue to consult effectively on the proposed project, following the guidance from the NAHC which states that “To be effective, consultation on specific projects must be the result of an ongoing relationships between the Native American tribes and lead agencies, project proponents, and their contractors.” The City believes the EIR reflects the intent and desire of the Tribe regarding monitoring of grading activities on the project site, as outlined in the tribe’s comment letter received during the Notice of Preparation (NOP) period and included in Appendix A of the Draft EIR. Mitigation Measures 4.5.6.1A through 4.5.6.1E in the Draft EIR state the following:

- 4.5.6.1A** *If cultural resources are found during grading, the applicant shall immediately retain a qualified archaeological monitor to oversee subsequent ground-altering activities (e.g., removal of debris, de-vegetation, and grading). This monitor shall ensure that any buried or previously unidentified resources are adequately identified, recorded, and evaluated in accordance with applicable standards. The archaeological monitor shall be trained in both prehistoric and historic archaeology and have the authority to temporarily redirect any ground disturbing activities affecting potentially significant cultural resources.*
- 4.5.6.1B** *Prior to the issuance of a grading permit, the local Native American representatives (Soboba, Morongo, and Pechanga) shall be notified in writing of the pending activities. If any evidence of Native American resources is discovered during grading, the archaeological monitor identified in **Mitigation Measure 4.5.6.1A** shall invite one or more Native American monitors to participate in the monitoring program. The Native American*

monitor shall work with the archaeological monitor to aid in the identification of resources and assist in the preliminary evaluation of any Native American resources.

- 4.5.6.1C** *If cultural artifacts and resources are discovered during ground disturbance activities and are historic in nature (not Native American in origin), the archaeological monitor shall make recommendations for the appropriate handling and evaluation of the resources. If cultural artifacts and resources are discovered during ground disturbance activities are determined to be of Native American origin (but not involving burials or grave goods), the archaeological monitor/consultant shall notify the applicant, City, and local Native American representatives and complete consultation for the handling of the resources. All archaeological decisions shall be at the discretion of the professional archaeologist, taking the Native American concerns into account. Work may continue on other parts of the project site while historic or unique archaeological mitigation takes place (14 Cal. Code Regs. 15065.5(f)).*
- 4.5.6.1D** *As a condition of approval, the property owner shall make all cultural resources (e.g., artifacts) discovered on site available for curation at a facility identified by the City (e.g., the UCR Archaeological Research Unit, the Western Center for Archaeology and Paleontology, or the Ya'i Heki' Regional Indian Museum). All artifacts shall be inventoried and prepared for curation per standard professional requirements. If neither repository is available to accept the collections, the cultural resources shall be temporarily curated at a facility identified through consultation with all stakeholders.*
- 4.5.6.1E** *Should resources determined to be of sacred or religious significance to Native Americans be identified within the project area, the resources shall be protected from adverse impacts until consultation between the applicant, City, the Most Likely Descendant (MLD) as determined by the Native American Heritage Commission, and the archaeological consultant, occurs. At that time, the responsibility for the care and disposition of the cultural resources shall be determined and recorded to the satisfaction of all parties involved.*

These measures are consistent with the information provided in the Pechanga NOP comment letter. However, the City desires to work cooperatively with the tribe to the greatest extent possible. Therefore, the wording of all these mitigation measures will be modified as shown below:

- 4.5.6.1A** *Prior to the issuance of a grading permit, the Project Applicant shall provide evidence to the City of Moreno Valley that a Cultural Resources Monitoring Agreement has been secured for qualified Tribal representatives, and that a professional archaeological monitor meeting Secretary of Interior standards has been retained by the Applicant to conduct monitoring of all mass grading and trenching activities and has the authority to temporarily halt and redirect earthmoving activities in the event that suspected archaeological resources are unearthed during Project construction. The Project Archaeologist and Tribal representatives shall attend the pre-grading meeting with the City and contractors to explain and coordinate the requirements of the monitoring program.*
- 4.5.6.1B** *Prior to the issuance of a grading permit, the Applicant shall provide evidence to the City of Moreno Valley that appropriate Native American representative(s), Project Archaeologist, and the Tribal representative(s) shall be allowed to monitor and have received a minimum of 30 days advance notice of all mass grading and trenching activities. During grading and trenching operations, the Tribal representatives and the project archaeological monitor shall observe all mass grading and trenching activities per the Cultural Resources Monitoring Agreement. If the Tribal representatives suspect that an archaeological resource may have been unearthed, the archaeologist, in consultation with the tribal representative, shall immediately halt and redirect grading operations in a*

100-foot radius around the find to allow identification and evaluation of the suspected resource. In consultation with the appropriate Native American Tribe(s), the archaeological monitor shall evaluate the suspected resource and make a determination of significance pursuant to California Public Resources Code Section 21083.2.

4.5.6.1C If a significant archaeological resource(s) is discovered on the property, ground disturbing activities shall be suspended 100 feet around the resource(s). The archaeological monitor and representatives of the appropriate Native American Tribe(s), the Project Applicant, and the City Planning Division shall confer regarding mitigation of the discovered resource(s). A treatment plan and/or preservation plan shall be prepared and by the archaeological monitor and reviewed by representatives of the appropriate Native American Tribe(s), the Project Applicant, and the City Planning Division and implemented by the archaeologist to protect the identified archaeological resource(s) from damage and destruction. The landowner shall relinquish ownership of all archaeological artifacts that are of Native American origin found on the Project site to the culturally affiliated Native American tribe(s) for proper treatment and disposition. A final report containing the significance and treatment findings shall be prepared by the archaeologist and submitted to the City Planning Division, the appropriate Native American tribe(s), and the Eastern Information Center at the University of California, Riverside. All cultural material, excluding sacred, ceremonial, grave goods and human remains, collected during the grading monitoring program and from any previous archaeological studies or excavations on the project site shall be curated, as determined by the treatment plan, according to the current professional repository standards and may include the Pechanga Bands curatorial facility.

4.5.6.1D Prior to grading permit issuance, the City shall verify that the following note is included on the Grading Plan:

"If any suspected archaeological resources are discovered during ground-disturbing activities and the archaeological monitor or Tribal representatives are not present, the construction supervisor is obligated to halt work in a 100-foot radius around the find and call the project archaeologist and the Tribal representatives to the site to assess the significance of the find."

Based on input from the tribe, the City believes these modifications will better protect any potential undiscovered cultural resources if they are present on the site. In addition, Measure 4.5.6.1B clearly allows tribal monitors to be present onsite during grading if they so desire, consistent with the City's current practices for allowing such monitoring.

In addition, although DEIR Section 4.5.5.2, *Human Remains*, concludes potential impacts of the project will be less than significant with compliance with state law, Mitigation Measure 4.5.6.1E has been added at the request of the tribe to help assure there will be no significant impacts related to the potential discovery of human remains during grading:

4.5.6.1E If human remains are encountered, California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the Riverside County Coroner has made the necessary findings as to origin. Further, pursuant to California Public Resources Code Section 5097.98(b), remains shall be left in place and free from disturbance until a final decision as to the treatment and disposition has been made by the Coroner. If the Riverside County Coroner determines the remains to be Native American, the California Native American Heritage Commission must be contacted within 24 hours. The Native American Heritage Commission must then immediately notify the "most likely descendant(s)" of receiving notification of the discovery. The most likely descendant(s) shall then make recommendations within 48

hours, and engage in consultations concerning the treatment of the remains as provided in Public Resources Code §5097.98.

Finally, the commenter is correct that the CEQA process cannot be completed before the SB 18 process is completed. However, the City believes the SB 18 consultation process can still be completed prior to final action on the project as specified by state law.

It should also be noted the tribe requested the following language be added to the mitigation for potential impacts to paleontological resources, so the City has agreed to add the following as Mitigation Measure 4.5.6.2D:

4.5.6.2D Prior to grading permit issuance, the City shall verify that the following note is included on the Grading Plan:

"If any suspected paleontological resources are discovered during ground-disturbing activities, the construction supervisor is obligated to halt work in a 100-foot radius around the find and call a qualified paleontologist to the site to assess the significance of the find. A qualified paleontologist shall evaluate the suspected resource. If the paleontologist determines that the find is not unique, construction shall be permitted to proceed. However, if the paleontologist determines that further information is needed to evaluate significance, the City of Moreno Valley shall be notified and a treatment plan shall be prepared and implemented in consultation with the City to protect the identified paleontological resource(s) from damage and destruction."

Response to Comment 4. The City acknowledges that the tribe has legitimate legal and cultural interests in the project site and surrounding areas, and appreciates the tribal history upon which these interests are based. The City believes it did participate in the SB 18 consultation process in good faith on this project twice, but the City is willing to consider additional input from the tribe regarding this property integral to the CEQA process at this point in time. On October 9 2012, Jeff Bradshaw met with Anna Hoover, Cultural Analyst with the tribe, to receive additional input from the tribe relative to this project. In any case, all of this information will be presented to the City Council for their review prior to any final action on the project, consistent with the requirements of SB 18 and CEQA.

Response to Comment 5. The project cultural resource assessment, and Section 4.5 of the Draft EIR, both acknowledge the existence of Native American resources and sites in the surrounding area. However, the study did not identify any resources actually on the project site, and the site has been previously and regularly disturbed by agricultural and weed abatement activities. In an effort to respond to remaining concerns expressed by the tribe, and based on evidence from mitigation at site on other projects in the region, the City has modified the text of Mitigation Measures 4.5.6.1A through 4.5.6.1E as shown in Response 3 above. The City understands the Tribe's ongoing and currently stated desire to have private development fund Native American monitoring on construction sites. However, the City's repeated position on this issue is not to require private funding of such monitoring, but rather to encourage private landowners to collaborate with Native American tribes regarding monitoring (i.e., private funding is not required but optional). In addition, the revised mitigation measures cited above do require ongoing coordination with the local tribes, including Pechanga.

Response to Comment 6. As outlined in the previous Response to Comment A-4, No.3, the City believes the mitigation measures included in the Draft EIR do reflect the concerns raised by the tribe during the SB 18 and EIR Notice of Preparation processes. In addition, the City believes it has participated in the SB 18 process to an appropriate degree, as described in the previous Responses to Comments A-4, No. 2 and 4 above. Appendix B of this Final EIR includes additional

correspondence and documentation from the City regarding the SB 18 process with the Pechanga tribe on this project.

Response to Comment 7. In response to the tribe's concerns about excavation of the project site, the City has modified the wording of Mitigation Measures 4.5.6.1A through 4.5.6.1E to provide for monitoring of all grading activities. In addition, the modified measures provide a way for local tribes to participate in the monitoring process.

Response to Comment 8. In response to the tribe's concerns, the City has modified the wording of Mitigation Measure 4.5.6.1A to provide for monitoring of all grading activities, and Mitigation Measure 4.5.6.1B provides a way for local tribes like Pechanga to participate in the monitoring process.

Response to Comment 9. As previously explained in Responses 2 and 4 above, the City has participated twice in the SB 18 process on this project, but is certainly willing to accept additional input from the tribe regarding potential impacts and mitigation language within the context of the CEQA process. The mitigation in the EIR, including the text changes to Measures 4.5.6.1A through 4.5.6.1E, do not defer mitigation and are clear as to what will be done and when during the development process if the project is approved. The City believes the tribes have provided input on this project under both SB 18 and CEQA, and the City will strive to implement the project mitigation as outlined.

Response to Comment 10. Section 4.5 of the EIR does evaluate the direct, indirect, and cumulative impacts of the project on cultural resources, and did incorporate information from the City's SB 18 consultation process and the letter from the Pechanga tribe received during the EIR's Notice of Preparation period (see Draft EIR Appendix A). In addition, Appendix B of this Final EIR includes additional correspondence and documentation from the City regarding the SB 18 process with the Pechanga tribe on this project.

Response to Comment 11. The City believes Section 4.5 of the EIR adequately addresses potential impacts of the project on cultural resources, and recommends mitigation measures commensurate with the level of impact expected. In addition, Mitigation Measures 4.5.6.1A through 4.5.6.1E provide additional protection for any undiscovered cultural resources that may exist on the site. The City believes the revised measures are specific, implementable, and do not defer mitigation. It is the City's long-standing policy to encourage but not require private developers to allow and/or fund monitoring of grading by Native American tribal representatives. That continues to be the City's policy on this project as well.

Response to Comment 12. As outlined in the previous responses above, the City believes it has and is participating in the SB 18 and CEQA processes as required by state law, and in a reasonable and fair manner with the Tribe. Please see Response to Comment A-4, No. 11 for additional information in this regard. However, it would not be in the interest of the Tribe to withhold additional comment on the EIR, expecting the City to delay action on the proposed project, based solely on its contention that the City had somehow failed to complete the SB 18 process – the City disagrees with that conclusion. The City encourages the Tribe to provide additional comments if necessary on the EIR and mitigation measures, noting that Measures 4.5.6.1A through 4.5.6.1E have been modified in response to concerns expressed by the Tribe.

Response to Comment 13. The City encourages the Tribe to participate fully in the CEQA process, and see Responses to Comments A-4, Nos. 11 and 12 regarding the related SB 18 process.

Response to Comment 14. The City also looks forward to continuing discussion with the tribe on this project. It should be noted that the City met with the Anna Hoover, Cultural Analyst with the tribe, on October 9 2012 regarding SB 18 which should address any lingering questions about the City's participation in the SB 18 consultation process on this project.

LETTER A-5: MORONGO BAND OF MISSION INDIANS

Letter A-5

MORONGO
BAND OF
MISSION
INDIANS



A SOVEREIGN NATION

RECEIVED
SEP 12 2012
CITY OF MORENO VALLEY
Planning Division

September 10, 2012

Jeff Bradshaw, Associate Planner
City of Moreno Valley
Community & Economic Development Department
14177 Frederick Street
Moreno Valley, CA 92553

**SUBJECT: Notice of Availability
ProLogis Eucalyptus Industrial Park Project)
Draft Environmental Impact Report**

Dear Mr. Bradshaw:

Thank you for contacting the Morongo Band of Mission Indians regarding the above referenced project. The Tribe greatly appreciates the opportunity to review the project and, respectfully, offer the following comments.

The project is outside of the Tribe's current reservation boundaries but within an area that may be considered a traditional use area or one in which the Tribe has cultural ties (e.g. Cahuilla/Serrano territory). Because the project involves a Zone Change, General Plan Amendment, master Plot Plan, Tentative Parcel Map, Plot Plans, and Environmental Impact Report for the Prologis Eucalyptus industrial Park Project the Morongo Band of Mission Indians asks that you impose specific conditions regarding cultural and/or archaeological resources and buried cultural materials on any development plans or entitlement applications as follows:

- If human remains are encountered during grading and other construction excavation, work in the immediate vicinity shall cease and the County Coroner shall be contacted pursuant to State Health and Safety Code §7050.5.
- In the event that Native American cultural resources are discovered during project development/construction, all work in the immediate vicinity of the find shall cease and a qualified archaeologist meeting Secretary of Interior standards shall be hired to assess the find. Work on the overall project may continue during this assessment period.

If significant Native American cultural resources are discovered, for which a Treatment Plan must be prepared, the developer or his archaeologist shall contact the Morongo Band of Mission Indians

12700 PUMARRA ROAD - BANNING, CA 92220 - 951-849-4697 - FAX: 951-849-4425

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LETTER A-5
MORONGO
(PAGE 2 OF 2)

RESPONSE TO LETTER A-5

MORONGO BAND OF MISSION INDIANS

Response to Comment 1. The Draft EIR contained measures the City believes are sufficient to protect undiscovered cultural resources, including Native American artifacts. However, the City wishes to cooperate with the tribe to the extent practical, so the language of the mitigation measures related to archaeological and paleontological resources, have been modified to better address the tribe's concerns as outlined in Response to Comment A-4-3 in the previous letter from the Pechanga Tribe.

Response to Comment 2. This action is required under State law, but the City understands the tribe's desire to have the requirement reiterated in the mitigation measure. Therefore, Mitigation Measure 4.5.6.1E has been modified to address this concern as outlined in Response to Comment 3 in Letter A-4 from the Pechanga Band.

Response to Comment 3. All of the cultural mitigation measures were modified as shown to respond to this and similar comments by the Pechanga Band (see Response to Comment 3 in Letter A-4).

Response to Comment 4. The text of Mitigation Measure 4.5.6.1C was changed as shown in Response to Comment 3 in Letter A-4 from the Pechanga Band to better address the tribe's concerns.

B. LETTERS FROM REGIONAL AGENCIES

LETTER B-1: EASTERN MUNICIPAL WATER DISTRICT

Letter B-1



September 4, 2012

Board of Directors

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Vice President
Philip E. Paule

Ronald W. Sullivan
Randy A. Record
David J. Slawson

General Manager
Paul D. Jones II, P.E.

Director of The Metropolitan Water District of So. Calif.
Randy A. Record

Board Secretary and Assistant to the General Manager
Rosemarie V. Howard

Legal Counsel
Lemieux & O'Neill

City Of Moreno Valley
14177 Frederick Street
Moreno Valley, CA 92553

Re. NOA of DEIR, Prologis Eucalyptus Industrial Park
PA07-0081,82,83,84,142,158,159,160,161,162,&186

Attn: Jeff Bradshaw, Associate Planner, City Of Moreno Valley

Dear Mr. Bradshaw:

Thank you for the opportunity to review the Notice of Availability (NOA) for the above referenced project. The project is generally described as General Plan Amendment and Zone Change from existing Business Park, to Business Park Mixed-Use, R15, R5, and RA-2 land use designations to Light Industrial for 116.99-net acres. The land use changes are required for development of six distribution warehouse facilities totaling 2,244,419 square feet with building sizes that range from 160,106 square feet to 862,035 square feet. The applicant also proposes Tentative Parcel Map No. 35679 to subdivide the project into six parcels corresponding to the six warehouse facilities. Eastern Municipal Water District (EMWD) offers the following comments:

The subject project requires water, sewer and recycled water services from EMWD. The details of said service connection points will be further detailed in a separate document, known as EMWD's Plan of Service, which is still not yet developed by the project proponent. To that end, EMWD requires dialog with the project proponent, to develop the EMWD Plan of Service, as clarified in the attached letter.

Again, EMWD appreciates the opportunity to comment on this project. Please forward the Final Environmental Impact Report to the attention of Helen Stratton at the mailing address shown on page one. If you have questions concerning these comments, please feel free to contact Helen Stratton at 951 928-3777, Ext. 4545, or Maroun El-Hage Ext. 4468.

Sincerely,

Jayne Joy
Director of Environmental and Regulatory Compliance

JJ:hs
Cc: Maroun El-Hage
Encls.

Mailing Address: Post Office Box 8300 Perris, CA 92572-8300 Telephone: (951) 928-3777 Fax: (951) 928-6177
Location: 2270 Trumble Road Perris, CA 92570 Internet : www.emwd.org

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RESPONSE TO LETTER B-1

EASTERN MUNICIPAL WATER DISTRICT #1

Response to Comment 1. The EIR acknowledges that the project requires water, sewer, and recycled water service from EMWD. The City and the developer are aware that a Plan of Service will be needed if the project receives entitlement approval from the City.

Response to Comment 2. The Final EIR document, including the Response to Comments, will be sent to the EMWD since they commented on the Draft EIR, in accordance with CEQA Guidelines Section 15088(b).

LETTER B-2: EASTERN MUNICIPAL WATER DISTRICT

Letter B-2



September 4, 2012

Board of Directors
City Of Moreno Valley
14177 Frederick Street
Moreno Valley, CA 92553

President and Treasurer
Joseph J. Kuebler, CPA

Vice President
Philip E. Paule

Ronald W. Sullivan
Randy A. Record
David J. Slawson

General Manager
Paul D. Jones II, P.E.

Director of The Metropolitan Water District of So. Calif.
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Board Secretary and Assistant to the General Manager
Rosemarie V. Howard

Legal Counsel
Lemieux & O'Neill

Re. NOA of DEIR, Prologis Eucalyptus Industrial Park
PA07-0081,82,83,84,142,158,159,160,161,162,&186

Attn. Jeff Bradshaw, Associate Planner, City Of Moreno Valley

In order to receive water, sewer or recycled water service(s) from Eastern Municipal Water District (EMWD), the following information will be helpful to the project proponent:

EMWD requires beginning dialogue with the project proponent at an early stage in site design and development, via a one-hour complimentary Due Diligence meeting. To set up this meeting, the project proponent should complete a Project Questionnaire (form NBD-058) and submit to EMWD. To download this form or for additional information, please visit our "New Development Process" web page, under the "Businesses" tab, at www.emwd.org. This meeting will offer the following benefits:

1. Describe EMWD's development work-flow process
2. Identify project scope and parameters
3. Preliminary, high level review of the project within the context of existing infrastructure
4. Discuss potential candidacy for recycled water service

Following the Due Diligence meeting, to proceed with this project, a Plan Of Service (POS) will need to be developed by the developer's engineer, and reviewed/approved by EMWD prior to submitting improvement plans for Plan Check. The POS process will provide the following:

- 1- Technical evaluation of the project's preliminary design
- 2- Defined facility requirements, i.e. approved POS
- 3- Exception: for feasibility evaluation of a purchase acquisition, only a conceptual facilities assessment may be developed.

If you have questions or concerns, please do not hesitate to contact me.

Sincerely,

Maroun El-Hage, M/S., P.E.
Senior Civil Engineer
New Business Development
(951) 928-3777 x4468
El-hagem@emwd.org

Mailing Address: Post Office Box 8300 Perris, CA 92572-8300 Telephone: (951) 928-3777 Fax: (951) 928-6177
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RESPONSE TO LETTER B-2

EASTERN MUNICIPAL WATER DISTRICT

Response to Comment 1. The developer will prepare a Project Questionnaire (NDB-058) and contact the District to schedule a “due diligence” meeting.

Response to Comment 2. As indicated in the responses to the District’s first letter (B-1), the City and the developer are aware that a Plan of Service will be needed if the project receives entitlement approval from the City.

LETTER B-3: SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT



South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4182
(909) 396-2000 www.aqmd.gov

Letter B-3

E-MAILED: September 4, 2012

September 4, 2012

Mr. Jeff Bradshaw, Associate Planner, jeffreyb@moval.org
Planning Department
City of Moreno Valley
14177 Frederick Street
Moreno Valley, CA 92553

**Draft Environmental Impact Report (Draft EIR) for the Proposed
ProLogis Eucalyptus Industrial Park Project (SCH. NO. 2008021002)**

The South Coast Air Quality Management District (AQMD) staff appreciates the opportunity to comment on the above-mentioned document. The following comments are meant as guidance for the Lead Agency and should be incorporated into the Final EIR.

In the project description, the lead agency proposes construction of six warehouse distribution facility buildings totaling 2,244,419 square feet with 326 total loading docks. Building sizes will range from 160,106 to 862,035 square feet on a total 122.8 acre site. Operations at the proposed industrial park will include approximately 1,989 trucks operating 24 hours per day and 7-days per week. Construction is planned to begin in the fall of 2012 and be completed as early as the last quarter of 2013, with a possible opening year by 2016.

In the Air Quality Section, the Draft EIR quantified the project's construction and operation air quality impacts and found that those impacts exceeded the AQMD's recommended significance thresholds. As stated in the Draft EIR, air quality in our basin exceeds federal and state standards and presents numerous health risks to those living and working here. The AQMD staff appreciates that the project therefore includes mitigation measures that have the potential to reduce emissions including building energy efficiency measures, carpooling programs, and encouragement of alternative fueled vehicles. However, the project's air quality impacts remain substantially above AQMD thresholds after mitigation. This is due, in part, to the lack of enforceability of some mitigation measures. The AQMD staff recommends that the lead agency strengthen the project's mitigation measures and additionally provide further clarity to portions of the air quality analysis. Details are provided in the attached comments.

1

Pursuant to Public Resources Code Section 21092.5, please provide the AQMD with written responses to all comments contained herein prior to the adoption of the Final Environmental Impact Report. The AQMD staff is available to work with the Lead

2

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RESPONSE TO LETTER B-3

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Introduction Letter (Pages 1-2)

Response to Comment 1. The following responses address the South Coast Air Quality Management District's (District) specific comments on the air quality analysis in the Draft EIR, including the mitigation measures. The City believes the recommended mitigation measures are feasible and enforceable on future tenants of this project. The project air study does not support the commenter's contention that the main reason the project air emissions exceed the AQMD's daily thresholds is because the mitigation measures cannot be enforced. However, the City desires to address the District's recommendations to the extent feasible, so the applicant has agreed to allow the following modifications to Mitigation Measure 4.3.6.6A to incorporate the District's recommendations to eliminate "encouraged" with stronger enforceable language.

4.3.6.6A *Prior to issuance of the first building permit, building and site plan designs shall ensure that the project's energy efficiencies surpass applicable 2008 California Title 24, Part 6 Energy Efficiency Standards by a minimum of ~~20~~ 10 percent until January 1, 2014. For building permits issued after that date, new state energy standards require a 20 percent reduction from 2008 Title 24, Part 6 Energy Efficiency Standards. Verification of increased energy efficiencies shall be documented in Title 24 Compliance Reports provided by the Applicant, and reviewed and approved by the City. ~~Any combination of~~ The following design features ~~including but not limited to the following list~~ shall be used to fulfill this requirement:*

- *Buildings shall exceed California Title 24 Energy Efficiency performance standards for water heating and space heating and cooling, as deemed acceptable by the City.*
- *Increase in insulation such that heat transfer and thermal bridging is minimized.*
- *Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption.*
- *Incorporate dual-paned or other energy efficient windows.*
- *Incorporate energy efficient space heating and cooling equipment.*
- *Interior and exterior energy efficient lighting which exceeds the California Title 24 Energy Efficiency performance standards shall be installed, as deemed acceptable by the City. Automatic devices to turn off lights when they are not needed shall be implemented.*
- *To the extent that they are compatible with landscaping guidelines established by the City, shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and buildings shall be planted at the project site.*
- *Paint and surface color palette for the project shall emphasize light and off-white colors which reflect heat away from the buildings.*
- *All buildings shall be designed to accommodate renewable energy sources, such as photovoltaic solar electricity systems, appropriate to their architectural design.*
- *To reduce energy demand associated with potable water conveyance, the project shall implement the following:*
 - *Landscaping palette emphasizing drought-tolerant plants;*

- *Use of water-efficient irrigation techniques; and,*
- *U.S. EPA Certified WaterSense labeled for equivalent faucets, high-efficiency toilets (HETs), and water-conserving shower heads.*
- *The project shall provide secure, weather-protected, on-site bicycle storage/parking.*
- *The project shall provide on-site showers (one for males and one for females). Lockers for employees shall be provided.*
- *The project will establish a Transportation Management Association (TMA). The TMA will coordinate with other TMAs within the City to encourage and coordinate carpooling among building occupants. The TMA will advertise its services to building occupants, and offer transit and/or other incentives to reduce greenhouse gas (GHG) emissions. A plan will be submitted by the TMA to the City within two months of project completion that outlines the measures implemented by the TMA, as well as contact information.*
- *The project shall provide preferential parking for carpools and vanpools. Locations and configurations of proposed preferential parking for carpools and vanpools are subject to review and approval by the City. Prior to final site plan approval, preferential parking for carpools and vanpools shall be delineated on the project site plan.*
- *The project shall provide at least two electric vehicle charging stations. Locations and configurations of proposed charging stations are subject to review and approval by the City. Prior to issuance of the first building permit, stub outs for charging stations shall be indicated on the project building plans.*
- *Lease/purchase documents shall identify that tenants are encouraged to promote the following:*
 - *Implementation of compressed workweek schedules.*
 - *SmartWay partnership;*
 - *Achievement of at least 20 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of consolidated trips carried by SmartWay carriers until it reaches a minimum of 90 percent of all long-haul trips carried by SmartWay 1.0 or greater carriers.*
 - *Achievement of at least 15 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of long-haul trips carried by SmartWay carriers until it reaches a minimum of 85 percent of all consolidator trips carried by SmartWay 1.0 or greater carriers.*
 - *Use of fleet vehicles conforming to 2010 air quality standards or better.*
 - *Installation of catalytic converters on gasoline-powered equipment.*
 - *Inclusion of electric powered and/or compressed natural gas fueled trucks and/or vehicles in fleets.*
 - *Establishment and use of carpool/vanpool programs, complemented by parking fees for single-occupancy vehicles.*
 - *Provision of preferential parking for EV and CNG vehicles.*
 - *Use of electrical equipment (instead of gasoline-powered equipment) for landscape maintenance.*
 - *Use of electric (instead of diesel or gasoline-powered) yard trucks.*

- *Use of SmartWay 1.25 rated trucks.*
- *Each facility operator shall provide regular sweeping of onsite parking and drive areas using street sweepers that comply with applicable SCAQMD Rules.*
- *Each facility operator shall maintain a log of all trucks entering the facility to ensure that, on average, the daily truck fleet meets applicable air quality emission standards. This log shall be available for inspection by City staff at any time.*
- *Each facility operator shall prohibit all vehicles from idling in excess of five minutes in all onsite areas.*
- *Each facility operator shall ensure that onsite staff in charge of keeping the daily log and monitoring for excess idling will be trained and certified in diesel health effects and technologies, such as by requiring attendance at CARB-approved courses.*
- *Each facility operator which upon occupancy does not already operate 2007 and newer trucks shall in good faith be required to apply for funding to replace or retrofit their trucks such as Carl Moyer, VIP, Prop 1B or similar funds. Should funds be awarded, the tenant shall be required to accept and use them.*

Response to Comment 2. The AQMD will receive a copy of the Final EIR, with the Response to Comments, at least 10 days prior to action on the project and EIR, as required under Section 15088(b) of the State CEQA Guidelines.

Technical Evaluation (Pages 3-8)

Response to Comment 1. The recommendations made by the SCAQMD are beyond the scope of this project-level EIR. Fleet-related requirements such as these are the responsibility of state-level agencies (e.g., California Air Resources Board).”

- (1) Onsite vehicles to zero or near-zero emission technology – Mitigation Measure 4.3.6.6A requires the inclusion of electric powered and/or compressed natural gas fueled trucks and/or vehicles in fleets.
- (2) Alternative fueling infrastructure – These technologies do not yet represent a significant share of the warehousing truck fleet, so it is burdensome to require one particular project to provide this infrastructure when it is not known what user will locate to this site, or to what degree the future user can control their truck fleet (i.e., large corporate user may have total control, smaller user fleets may be independent truckers who cannot afford the modifications to their trucks to accommodate these fuels.
- (3) Phase-in of zero or near-zero technology – Response to Comment B-3, No. 2 below indicates that Mitigation Measure 4.3.6.6A encourages the future user of the site to participate in the SmartWay program. It should be noted that the end-user of the building is not known at this time and there is the possibility that participation in the SmartWay program may not be feasible.
- (4) Loading docks or truck routes more than 500 feet from sensitive receptors – The Draft EIR clearly describes that the closest loading dock would be 664 feet from the existing residential uses southeast of the site (Draft EIR page 4.3-17, 4th paragraph). In addition, Eucalyptus Avenue, the project’s truck route both east and west to the freeway, would be 1,500 feet at its closest point to the residential uses.

Response to Comment 2. This mitigation might be appropriate if the project warehouses were being built and used by one large warehousing company that had its own truck fleet, but it is infeasible to apply this measure to a “speculation” project where the eventual end user is not known at this time. However, the City desires to address the District’s recommendations to the extent feasible, so the applicant has agreed to allow the following modifications to Mitigation Measure 4.3.6.6A to incorporate the District’s recommendations:

4.3.6.6A *Prior to issuance of the first building permit, building and site plan designs shall ensure that the project’s energy efficiencies surpass applicable 2008 California Title 24, Part 6 Energy Efficiency Standards by a minimum of ~~20~~ 10 percent until January 1, 2014. For building permits issued after that date, new state energy standards require a 20 percent reduction from 2008 Title 24, Part 6 Energy Efficiency Standards. Verification of increased energy efficiencies shall be documented in Title 24 Compliance Reports provided by the Applicant, and reviewed and approved by the City. ~~Any combination of~~ The following design features ~~including but not limited to the following list~~ shall be used to fulfill this requirement:*

- *Buildings shall exceed California Title 24 Energy Efficiency performance standards for water heating and space heating and cooling, as deemed acceptable by the City.*
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- *Interior and exterior energy efficient lighting which exceeds the California Title 24 Energy Efficiency performance standards shall be installed, as deemed acceptable by the City. Automatic devices to turn off lights when they are not needed shall be implemented.*
- *To the extent that they are compatible with landscaping guidelines established by the City, shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and buildings shall be planted at the project site.*
- *Paint and surface color palette for the project shall emphasize light and off-white colors which reflect heat away from the buildings.*
- *All buildings shall be designed to accommodate renewable energy sources, such as photovoltaic solar electricity systems, appropriate to their architectural design.*
- *To reduce energy demand associated with potable water conveyance, the project shall implement the following:*
 - *Landscaping palette emphasizing drought-tolerant plants;*
 - *Use of water-efficient irrigation techniques; and,*
 - *U.S. EPA Certified WaterSense labeled for equivalent faucets, high-efficiency toilets (HETs), and water-conserving shower heads.*
- *The project shall provide secure, weather-protected, on-site bicycle storage/parking.*
- *The project shall provide on-site showers (one for males and one for females). Lockers for employees shall be provided.*
- *The project will establish a Transportation Management Association (TMA). The TMA will coordinate with other TMAs within the City to encourage and coordinate*

carpooling among building occupants. The TMA will advertise its services to building occupants, and offer transit and/or other incentives to reduce greenhouse gas (GHG) emissions. A plan will be submitted by the TMA to the City within two months of project completion that outlines the measures implemented by the TMA, as well as contact information.

- *The project shall provide preferential parking for carpools and vanpools. Locations and configurations of proposed preferential parking for carpools and vanpools are subject to review and approval by the City. Prior to final site plan approval, preferential parking for carpools and vanpools shall be delineated on the project site plan.*
- *The project shall provide at least two electric vehicle charging stations. Locations and configurations of proposed charging stations are subject to review and approval by the City. Prior to issuance of the first building permit, stub outs for charging stations shall be indicated on the project building plans.*
- *Lease/purchase documents shall identify that tenants are encouraged to promote the following:*
 - *Implementation of compressed workweek schedules.*
 - *SmartWay partnership;*
 - *Achievement of at least 20 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of consolidated trips carried by SmartWay carriers until it reaches a minimum of 90 percent of all long-haul trips carried by SmartWay 1.0 or greater carriers.*
 - *Achievement of at least 15 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of long-haul trips carried by SmartWay carriers until it reaches a minimum of 85 percent of all consolidator trips carried by SmartWay 1.0 or greater carriers.*
 - *Use of fleet vehicles conforming to 2010 air quality standards or better.*
 - *Installation of catalytic converters on gasoline-powered equipment.*
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 - *Establishment and use of carpool/vanpool programs, complemented by parking fees for single-occupancy vehicles.*
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 - *Use of electrical equipment (instead of gasoline-powered equipment) for landscape maintenance.*
 - *Use of electric (instead of diesel or gasoline-powered) yard trucks.*
 - *Use of SmartWay 1.25 rated trucks.*
 - *Each facility operator shall provide regular sweeping of onsite parking and drive areas using street sweepers that comply with applicable SCAQMD Rules.*
 - *Each facility operator shall maintain a log of all trucks entering the facility to ensure that, on average, the daily truck fleet meets applicable air quality emission standards. This log shall be available for inspection by City staff at any time.*

- Each facility operator shall prohibit all vehicles from idling in excess of five minutes in all onsite areas.
- Each facility operator shall ensure that onsite staff in charge of keeping the daily log and monitoring for excess idling will be trained and certified in diesel health effects and technologies, such as by requiring attendance at CARB-approved courses.
- Each facility operator which upon occupancy does not already operate 2007 and newer trucks shall in good faith be required to apply for funding to replace or retrofit their trucks such as Carl Moyer, VIP, Prop 1B or similar funds. Should funds be awarded, the tenant shall be required to accept and use them.

In addition, the City will consider application of these actions on future truck-intensive projects in the area. The District also recommended additional mitigation measures that are addressed in the following Responses to Comments B-3, Nos. 3 through 14.

Response to Comment 3. Truck log – this item has been added to Mitigation Measure 4.3.6.6.A (see Response to Comment B-3, No. 2 and Final EIR, Section 3.0, *EIR Errata and Additions*).

Response to Comment 4. Idle limits - this item has been added to Mitigation Measure 4.3.6.6A (see Response to Comment B-3, No. 2 and Final EIR, Section 3.0, *EIR Errata and Additions*).

Response to Comment 5. Log monitor training - this item has been added to Measure 4.3.6.6A (see Response to Comment B-3, No. 2 and Final EIR, Section 3.0, *EIR Errata and Additions*).

Response to Comment 6. The traffic levels projected in the EIR are considered to be conservative and protective of the environment and public health. Realistically, it is anticipated that the project traffic generation might also be considerably less than indicated in the Draft EIR, depending on the actual user(s) that locate within this project. The City believes the items outlined in Mitigation Measure 4.3.6.6A, including all the recommended additions described in Responses to Comments B-3, Nos. 2-5 and 11-13 are adequate to reduce project emissions. However, considering the volume of emissions generated and current commuter habits, it is unlikely the implementation of TDMs/TCMs described in the EIR will result in a reduction of operational project emissions to below existing localized operation emissions thresholds. Long-term air quality impacts resulting from the operation of the proposed project would remain significant and unavoidable.

Response to Comment 7. Again, the traffic levels projected in the EIR are considered to be conservative and protective of the environment and public health. The City believes the items outlined in Mitigation Measure 4.3.6.6A, including all the recommended additions described in Responses to Comments B-3, Nos. 2-5 and 11-13 are adequate to reduce project emissions to the extent practical.

Response to Comment 8. This measure would be onerous and difficult if not impossible to implement for a particular warehouse project, especially one such as this where the ultimate end user is not known. The City believes the items outlined in Mitigation Measure 4.3.6.6A, including all the recommended additions described in Responses to Comments B-3, Nos. 2-5 and Nos. 11-13 are adequate to reduce project emissions to the extent practical.

Response to Comment 9. Measure 4.3.6.6A require the project applicant to encourage the use of the SmartWay program for the leasee to reduce truck emissions over the long-term. The City believes the items outlined in Mitigation Measure 4.3.6.6A including all the recommended additions described in Responses to Comments B-3, Nos. 2-5 and 11-13 are adequate to reduce project emissions to the extent practical.

4.3.6.6A *Prior to issuance of the first building permit, building and site plan designs shall ensure that the project's energy efficiencies surpass applicable 2008 California Title 24, Part 6 Energy Efficiency Standards by a minimum of ~~20~~ 10 percent until January 1, 2014. For building permits issued after that date, new state energy standards require a 20 percent reduction from 2008 Title 24, Part 6 Energy Efficiency Standards. Verification of increased energy efficiencies shall be documented in Title 24 Compliance Reports provided by the Applicant, and reviewed and approved by the City. ~~Any combination of~~ The following design features ~~including but not limited to the following list~~ shall be used to fulfill this requirement:*

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- *Interior and exterior energy efficient lighting which exceeds the California Title 24 Energy Efficiency performance standards shall be installed, as deemed acceptable by the City. Automatic devices to turn off lights when they are not needed shall be implemented.*
- *To the extent that they are compatible with landscaping guidelines established by the City, shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and buildings shall be planted at the project site.*
- *Paint and surface color palette for the project shall emphasize light and off-white colors which reflect heat away from the buildings.*
- *All buildings shall be designed to accommodate renewable energy sources, such as photovoltaic solar electricity systems, appropriate to their architectural design.*
- *To reduce energy demand associated with potable water conveyance, the project shall implement the following:*
 - *Landscaping palette emphasizing drought-tolerant plants;*
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 - *U.S. EPA Certified WaterSense labeled for equivalent faucets, high-efficiency toilets (HETs), and water-conserving shower heads.*
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- *The project shall provide preferential parking for carpools and vanpools. Locations and configurations of proposed preferential parking for carpools and vanpools are subject to review and approval by the City. Prior to final site plan approval, preferential parking for carpools and vanpools shall be delineated on the project site plan.*
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 - *Achievement of at least 15 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of long-haul trips carried by SmartWay carriers until it reaches a minimum of 85 percent of all consolidator trips carried by SmartWay 1.0 or greater carriers.*
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 - *Establishment and use of carpool/vanpool programs, complemented by parking fees for single-occupancy vehicles.*
 - *Provision of preferential parking for EV and CNG vehicles.*
 - *Use of electrical equipment (instead of gasoline-powered equipment) for landscape maintenance.*
 - *Use of electric (instead of diesel or gasoline-powered) yard trucks.*
 - *Use of SmartWay 1.25 rated trucks.*
 - *Each facility operator shall provide regular sweeping of onsite parking and drive areas using street sweepers that comply with applicable SCAQMD Rules.*
 - *Each facility operator shall maintain a log of all trucks entering the facility to ensure that, on average, the daily truck fleet meets applicable air quality emission standards. This log shall be available for inspection by City staff at any time.*
 - *Each facility operator shall prohibit all vehicles from idling in excess of five minutes in all onsite areas.*
 - *Each facility operator shall ensure that onsite staff in charge of keeping the daily log and monitoring for excess idling will be trained and certified in diesel health effects and technologies, such as by requiring attendance at CARB-approved courses.*

- Each facility operator which upon occupancy does not already operate 2007 and newer trucks shall in good faith be required to apply for funding to replace or retrofit their trucks such as Carl Moyer, VIP, Prop 1B or similar funds. Should funds be awarded, the tenant shall be required to accept and use them.

Response to Comment 10. The project site plan has already been checked by City staff for this component and there is sufficient stacking distance within the project.

Response to Comment 11. No residential areas are immediately accessible to the project site from the two main freeway access points (i.e., along Eucalyptus Avenue west to Redlands Boulevard and west to Moreno Beach Drive). Overnight parking of trucks in residential areas is prohibited by the City.

Response to Comment 12. The roofs of all buildings within the proposed project will be capable of supporting photovoltaic solar panels. As shown below, ProLogis has a strong history of installing solar panels on its warehouse projects:

Description	Bldg Size (SF)	Megawatts (Mw)
Ontario Airport #2	562,089	2.55
Ontario Airport #3	369,086	1.41
Ontario Airport #4	680,925	2.85
Ontario Airport #5	241,367	0.773
Rialto I-210 DC #2	1,197,051	8.6
Rialto I-210 DC #3	543,400	2.62
Vista Rialto DC #1	436,650	
Kaiser DC #2	577,905	2.25
Kaiser DC #5	757,765	4.5
Kaiser DC #6	544,768	1.94
Kaiser DC #7	872,380	4.688
Transpark DC #1	849,054	3.86
Redlands DC #1	467,853	3.4
Redlands DC #2	259,572	1.75
Redlands DC #3	446,050	3.2
Redlands DC #4	683,269	5.0176
Redlands DC #5	699,350	4.9
Redlands DC #6	600,306	3.09
San Bernardino DC #1	758,139	4.85
Redlands DC #10 (to start Q4 '12)		
	12,860,449	68.67

Response to Comment 13. This item (street sweeping) has been added to Mitigation Measure 4.3.6.6A to require compliance with applicable SCAQMD rules (refer to Response to Comment B-3, No. 2 above).

Response to Comment 14. The recommendations regarding “Trucking Support Services” are all beyond the scope of this project-level EIR. As stated in the comment, these measures are suggested as City requirements that would be applied to any truck-intensive projects in the City.

Response to Comment 15. The combination of the very conservative assumptions required of all health risk assessments with the very small amount of emissions from yard trucks (the project does not plan to use any diesel generators nor allow TRUs during normal operations) compared to the

large emissions from the many heavy-duty haul trucks idling and driving around mean that the HRA as published, which shows health risk levels less than half of the significance thresholds, adequately analyzes the risks to public health from the project operations.

Response to Comment 16. The HRA modeling only allows for one emission rate for the diesel engines to represent the entire 70-year period from opening year (2013) until 2083. The available emissions factors model (EMFAC) only has factors thru 2040. Thus, there is no information available about how the diesel emissions will change from 2040 until 2083. It is pure guesswork to predict how the diesel emissions will change over this period. To assume that the emissions during this 43 year period will not change at all is a very conservative assumption – there is a real possibility that all diesel engines will have been replaced by an alternative power source before 2083 resulting in zero diesel particulate emissions. Selecting the best year between 2083 and 2013 to represent the average is somewhat arbitrary – the median is 2048, outside the range of available factors. EMFAC incorporates expectations of technological improvements that would result in lower emissions over the period from the 1990s thru 2040, however it does not include everything – for instance it does not include the law just passed in August 2012 that sets the average mileage of cars and light trucks to 54.5 miles per gallon by 2025. While this does not include the heavy-duty trucks the HRA is focused on, it is an indication that there will be aggressive regulations in the future reducing these diesel emissions below what is in the EMFAC model. While using the emissions factors for 2040 as an average is not optimal due to the higher existing emissions, using 2013 factors as an average is unreasonably conservative also. In our best engineering judgment, 2025 is the best set of emissions factors to represent this complicated issue.

It should be noted that all of the details for calculating health risks of the proposed project were provided in Appendix B of the Draft EIR, including the EMFAC and dispersion modeling outputs. In addition, “active” CalEEMod and supporting computer files were sent to the AQMD during the EIR review period to allow for replication and verification of the HRA report results.

Response to Comment 17. Refer to Response to Comment B-3, No. 16 above.

Response to Comment 18. Refer to Response to Comment B-3, No. 16 above. The emissions for trucks idling at the load bays and for vehicle operating on the roadways were explicitly modeled. The emissions for the trucks moving the short distances from the loading docks to the driveways were included in the modeling, just without explicit emissions sources (those emissions were included with the roadway sources). Since there are no sensitive receptors between where the trucks are traveling from the loading docks to the driveway and the roadway sources, this simplification of the modeling results in the same health risk levels as a more detailed modeling with the additional emissions sources. There are no diesel generators planned and TRUs will not burn diesel fuel because any refrigerated trucks will plug in and their TRUs run off that electricity. There are also no plans for onsite diesel-powered hostlers or other diesel-powered equipment.

Response to Comment 19. The project is expected to operate 24 hour per day. Modeling the actual number of trucks that are planned to operate over 24 hours as if they operated over 12 hours results in much higher hourly emissions. Thus, the HRA is protective of human health in case there is a change in the project operations to only operate 12 hours per day.

Response to Comment 20. The vast majority (over 90 percent) of the project’s diesel particulate emissions are from the trucks idling on the project site, so adjusting the amount of trucks traveling east and west will have only a very minor effect on the HRA results. The HRA assumed a relatively equal split for east-west trip distribution so the results would not be biased relative to the closest sensitive receptor to the project site (i.e., residential southeast of site) that could otherwise result from an unequal distribution of projected versus actual project trips.

Response to Comment 21. While assuming that 100% of the trucks will be diesel is certainly worst case, it overstates the real-world condition that some trucks use gasoline. The HRA is a careful balance of assumptions, some already very conservative (such as assuming people live in one place for 70 years and stay in that house 24 hours a day for 350 days out the year). The fuel use percentages are from the URBEMIS model. These are percentages there to best represent the real-world operations for projects modeled using the URBEMIS model. Since it is not known what the actual warehouse operator will use, using this published representative fuel use percentages is the best method to model the future use. The carcinogenic health risk at the nearest residences for individuals living there for 70 years was identified in the DEIR as 4.33 in 1 million. Changing the percentage of trucks using diesel from the URBEMIS parameters to 100% would certainly increase the estimate carcinogenic health risk.

Response to Comment 22. The PM₁₀ emissions factor from EMFAC2007 at 50°, 50% humidity, 2025, SCAQMD fleet for HDT traveling at 40mph is 0.095 g/mile/truck. To derive the corresponding project emissions rate in g/sec, the g/mile rate is adjusted by the distance covered between volume sources per second. Thus, 0.095 g/mi is multiplied by 117 meter source spacing. And, since this is to convert from trucks per day to emissions per second, the result is divided by 86,400 sec/day. So, $0.095 * 117 * 0.0006214 \text{ meters/mile} / 86,400 = 8.0E-08 \text{ g/s/truck}$. With 1,246 trucks per day that are 87.5% diesel, this becomes 8.7E-05 g/s.

Response to Comment 23. The idling emissions factors were from EMFAC2007 for HDT at 0.396 g/hr. The following table lists the derivation of the individual emissions rates:

Idling Emissions of Diesel Particulate

	No. of diesel trucks per day	Minutes Idling	Idling Emission Factor	Number of Sources	Emission Rates per Source		
					g/s	lb/hr	lb/yr
Building 1	89	5	0.396	3	9.9E-06	7.9E-05	0.7
Building 2	594	5	0.396	12	1.7E-05	1.3E-04	1.2
Building 3	84	5	0.396	3	9.4E-06	7.5E-05	0.7
Building 4	234	5	0.396	5	1.6E-05	1.3E-04	1.1
Building 5	269	5	0.396	6	1.5E-05	1.2E-04	1.0
Building 6	224	5	0.396	6	1.2E-05	9.5E-05	0.83

For example, for Building 1: $89 * 87.5\% / 24 * 5 \text{ min} / 60 * 0.396 / 3,600 / 3 \text{ sources}$

Response to Comment 24. All of the emissions sources in proximity to the project building that could be affected by the building downwash are point sources, which do work correctly with building downwash. The building height used was an estimate made before the project design had progressed far enough to include the building heights described in the DEIR. The HRA has not been updated to use the planned building heights for two reasons – using a higher building height results in greater building wake affects and higher health risk levels, so is conservative. Secondly, the effects of building wake affects diminish quickly the further the residence of concern is downwind. At the distance of the nearest residence the building wake affect is making a negligible difference

Response to Comment 25. The site is designed so that there will not be any queuing while entering the site, the trucks will proceed immediately from the loading docks immediately to their truck route and vice versa. While it is possible that there will be isolated trucks that stop briefly while in transit, it is expected that the number of occurrences will be so small as to not affect the health risk assessment.

Response to Comment 26. The project trip rate used in the air quality analysis matches what was used in the project traffic study. That study explains the project trip rate selection. The conversion of these factors between EMFAC and CalEEMod is difficult, due to the nomenclature differences. The air quality study used the fleet defaults built into the CalEEMod model to characterize the project operational emissions as the most representative of the expected emissions. As the HRA did not use the same fleet assumptions as the operational air quality analysis, as noted by SCAQMD staff, the HRA used the CalEEMod classifications. ~~these fleet EMFAC adjustments were different.~~

Response to Comment 27. As detailed in Responses 28-33, the mitigation measures have been modified to include all feasible SCAQMD mitigation language suggestions. Since the effectiveness of these mitigation measures is not included in the analysis, the analysis represents a worst-case post-mitigation analysis.

Response to Comment 28. Mitigation Measure 4.3.6.2D has been modified to incorporate this clarification as follows:

4.3.6.2D *All clearing, grading, earthmoving, or excavation activities shall cease when winds (as instantaneous gusts) exceed 25 mph per SCAQMD guidelines in order to limit fugitive dust emissions.*

Response to Comment 29. Mitigation Measure 4.3.6.2D has been modified to include a provisions that grading shall be stopped when instantaneous gusts exceed 25 mph to help further minimize offsite dust impacts. Restricting the number of acres grading on any one day is not reasonable. The CalEEMod calculates a total grading disturbed area many times the size of the project site based on the idea that there are multiple graders, dozers, scrapers, etc. making multiple passes during any one day. This suggested measure to limit simultaneous disturbance of the site to 5 acres per day would not change the results of the air quality modeling and projected air emissions identified in the Draft EIR and in fact may increase emissions due to the grading inefficiencies created by this restriction. By grading a smaller area it prolongs the grading process and releases dust and vehicular emissions (grading construction workers going back and forth to the site over a greater period of time and grading equipment moving around the site) into the air basin over a longer period of time. In addition, the 120-acre project generally slopes at approximately 2% from north to south. Areas on the northern half of the project will have dirt removed (cut) while areas to the south will have dirt added (fill). To achieve this will require that dirt be moved over more than 5 acres per day. To limit the grading operation to any one 5 acre area per day area would result in the same dirt being deposited and picked up many times as it is "hop scotched" to its final location rather than transporting the dirt in one move. A 5-acre daily limitation would result in more, not less, grading equipment emissions. The grading contractor is motivated to move the dirt as efficiently as possible resulting in the lowest amount of equipment run time which also results in the lowest amount of emissions. There are also logistical considerations getting construction equipment and people back and forth to the site.

Response to Comment 30. The agencies mentioned have much more control over truck operations and activities within their respective jurisdictions compared to the City of Moreno Valley. However, the City and the applicant have agreed to add this requirement into Mitigation Measure 4.3.6.2C. The measure has been amended as follows as is included in Final EIR, Section 3.0, *EIR Errata and Additions*:

4.3.6.2C *Prior to the issuance of a grading permit, the project developer shall require by contract specifications that contractors shall utilize California Air Resources Board (CARB) Tier II Certified equipment or better during the rough/mass grading phase for the following pieces of equipment: rubber-tired dozers and scrapers. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the City.*

Project start to December 31, 2014: All off-road diesel-powered construction equipment greater than 50 horsepower shall meet Tier 3 off-road emission standards. In addition, all construction equipment shall be outfitted with Best Available Control Technology (BACT) devices certified by CARB. Any emission control devices used by the contractor shall achieve emission reductions that are no less than what would be achieved by a Level 3 diesel emission control strategy for a similarly sized engine as defined by CARB regulations.

Post January 1, 2015: All off-road diesel-powered construction equipment greater than 50 horsepower shall meet Tier 4 emission standards, where available. In addition, all construction equipment shall be outfitted with Best Available Control Technology (BACT) devices certified by CARB. Any emission control devices used by the contractor shall achieve emission reductions that are no less than what would be achieved by a Level 3 diesel emission control strategy for a similarly sized engine as defined by CARB regulations.

A copy of each unit's certified tier specifications, BACT documentation, and CARB or SCAQMD operating permit shall be provided at the time of mobilization of each applicable unit of equipment.

Response to Comment 31. The City and the applicant have agreed to include this requirement into Mitigation Measure 4.3.6.2C. The measure has been amended as indicated above in Response to Comment B-3, No. 30 and is included in Final EIR, Section 3.0, *EIR Errata and Additions*.

Response to Comment 32. The City and the applicant have agreed to include this requirement into Mitigation Measure 4.3.6.2C. The measure has been amended as indicated above in Response to Comment B-3, No. 30 and is included in Final EIR, Section 3.0, *EIR Errata and Additions*.

Response to Comment 33. Many of the activities listed in the referenced CEQA Handbook have already been incorporated or have been added to the project mitigation, as outlined in previous responses in this section regarding mitigation.

Response to Comment 34. Mitigation Measure 4.3.6.5B has been modified to include businesses with fewer than 250 employees, rather than 100 employees.

LETTER B-4: RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

WARREN D. WILLIAMS
General Manager-Chief Engineer



1995 MARKET STREET
RIVERSIDE, CA 92501
951.955.1200
FAX 951.788.9965
www.rcflood.org

Letter B-4

51183

RIVERSIDE COUNTY FLOOD CONTROL
AND WATER CONSERVATION DISTRICT

RECEIVED

SEP 17 2012

CITY OF MORENO VALLEY
Planning Division

City of Moreno Valley
Community Development Department -
Planning Division
Post Office Box 88005
Moreno Valley, California 92552-0805

Attention: Jeff Bradshaw
Ladies and Gentlemen: Associate Planner

ProLogis Eucalyptus
Re: Industrial Park

The District does not normally recommend conditions for land divisions or other land use cases in incorporated cities. The District also does not plan check city land use cases, or provide State Division of Real Estate letters or other flood hazard reports for such cases. District comments/recommendations for such cases are normally limited to items of specific interest to the District including District Master Drainage Plan facilities, other regional flood control and drainage facilities which could be considered a logical component or extension of a master plan system, and District Area Drainage Plan fees (development mitigation fees). In addition, information of a general nature is provided. 1

The District has not reviewed the proposed project in detail and the following checked comments do not in any way constitute or imply District approval or endorsement of the proposed project with respect to flood hazard, public health and safety or any other such issue: 2

No comment.

This project would not be impacted by District Master Drainage Plan facilities nor are other facilities of regional interest proposed.

This project involves District Master Plan facilities. The District will accept ownership of such facilities on written request of the City. Facilities must be constructed to District standards, and District plan check and inspection will be required for District acceptance. Plan check, inspection and administrative fees will be required. 3

This project proposes channels, storm drains 36 inches or larger in diameter or other facilities that could be considered regional in nature and/or a logical extension of the adopted Moreno Master Drainage Plan. The District would consider accepting ownership of such facilities on written request of the City. Facilities must be constructed to District standards, and District plan check and inspection will be required for District acceptance. Plan check, inspection and administrative fees will be required.

This project is located within the limits of the District's Moreno Area Drainage Plan for which drainage fees have been adopted; applicable fees should be paid by cashier's check or money order only to the Flood Control District or City prior to issuance of grading permits. Fees to be paid should be at the rate in effect at the time of issuance of the actual permit. 4

An encroachment permit shall be obtained for any construction related activities occurring within District right of way or facilities. For further information, contact the District's encroachment permit section at 951.955.1266. 5

The District's previous comments are still valid. 6

GENERAL INFORMATION

This project may require a National Pollutant Discharge Elimination System (NPDES) permit from the State Water Resources Control Board. Clearance for grading, recordation or other final approval should not be given until the City has determined that the project has been granted a permit or is shown to be exempt. 7

If this project involves a Federal Emergency Management Agency (FEMA) mapped flood plain, then the City should require the applicant to provide all studies, calculations, plans and other information required to meet FEMA requirements, and should further require that the applicant obtain a Conditional Letter of Map Revision (CLOMR) prior to grading, recordation or other final approval of the project, and a Letter of Map Revision (LOMR) prior to occupancy. 8

If a natural watercourse or mapped flood plain is impacted by this project, the City should require the applicant to obtain a Section 1602 Agreement from the California Department of Fish and Game and a Clean Water Act Section 404 Permit from the U.S. Army Corps of Engineers, or written correspondence from these agencies indicating the project is exempt from these requirements. A Clean Water Act Section 401 Water Quality Certification may be required from the local California Regional Water Quality Control Board prior to issuance of the Corps 404 permit. 9

Very truly yours,

HENRY OLIVO
Engineering Project Manager

Date: 9/10/2012

c: Riverside County Planning Department
Attn: Kristi Lovelady

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RCFCWCD
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RESPONSE TO LETTER B-4

**RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION
DISTRICT**

Response to Comment 1. The City thanks the District for clarifying its role in the project review process relative to flood control issues.

Response to Comment 2. The City does not infer the District's approval or endorsement of the proposed project.

Response to Comment 3. The City and the developer understand the project improvement review and approval process. The applicant will contact the District to coordinate the design and maintenance of the Quincy Channel as needed.

Response to Comment 4. The City and the applicant understand the project is within the Moreno Area Drainage Plan and the project will pay applicable fees in this regard.

Response to Comment 5. The applicant will obtain an encroachment permit from the District if necessary for work related to the Quincy Channel.

Response to Comment 6. The City and the applicant understand the District's NOP comments on the project are still valid.

Response to Comment 7. The City and the applicant understand that the project may require an NPDES permit from the Regional Water Quality Control Board.

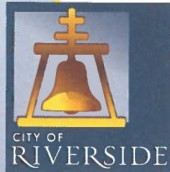
Response to Comment 8. The City and the applicant understand that a CLOMR and/or a LOMR may be required for this project – one or both will be obtained if necessary as part of the subsequent development review process if the project is approved.

Response to Comment 9. The City and the applicant understand that a 1602 Agreement will be needed with Fish and Game, a 401 Certification will be needed from the Regional Water Quality Control Board, and a 404 permit may be required from the U.S. Army Corps of Engineers. The applicant would obtain the necessary permits in this regard subsequent to approval of the proposed entitlements.

C. LETTERS FROM LOCAL AGENCIES

LETTER C-1: CITY OF RIVERSIDE

Letter C-1



Community Development
Department
Planning Division

September 4, 2012

Jeff Bradshaw
City of Moreno Valley
14177 Frederick Street
Moreno Valley CA, 92553

SUBJECT: Notice of Availability (NOA) of a Draft Environmental Impact Report for the Prologis Eucalyptus Industrial Park Project in Moreno Valley

Dear Mr. Bradshaw:

Thank you for the opportunity to review and comment on the Notice of Availability (NOA) of a Draft Environmental Impact Report (DEIR) for the Prologis Eucalyptus Industrial Park Project proposed on approximately 122.8 acres generally located south of and adjacent to State Route (SR)-60, east of the Moreno Valley Auto Mall and adjacent to and west of the Quincy Channel. As described in the DEIR, the project consists of the development of six distribution warehouse facilities totaling 2,224,419 square feet. Associated with this project is a General Plan Amendment to change the land use designation of 71.3 acres of the project site from Residential (R15, R5, and R2) to Business Park (BP) so the entire site would then be designated Business Park (BP).

City of Riverside staff has reviewed the DEIR and offers the following comments:

- The proposed General Plan Amendment will change the land use designation of 71 acres from residential to a business park designation allowing for large warehouse distribution facilities which will result in a substantial increase in truck trips beyond what is currently anticipated in the Moreno Valley General Plan. The County Transportation Uniform Mitigation Fee (TUMF) model is based on the existing Moreno Valley General Plan and as such did not account for this major change of 71 acres to distribution warehousing facilities. As a result, payment of TUMF does not sufficiently mitigate traffic impacts of the proposed project. 1
- The traffic analysis section of the DEIR is limited in scope as it only analyzes localized traffic impacts within Moreno Valley at 17 intersections, most of which are within a mile radius of the project site, yet the project involves a large warehouse development (over 2.2 million square feet) that will generate substantial truck traffic. Taken together, passenger vehicle and truck traffic is equivalent to over 7,500 passenger vehicle trips a day in terms of traffic impact. The DEIR needs to analyze project impacts regionally, 2

3900 Main Street • Riverside, CA 92522 • 951.826.5371 • fax 951.826.5981 • www.riversideca.gov

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RESPONSE TO LETTER C-1

CITY OF RIVERSIDE

Response to Comment 1. The comment has accurately summarized the characteristics of the proposed project. It is correct that the project proposes a change in land use 71 acres of land from residential uses to warehousing uses. As noted on Page 18 of the traffic study, currently 5 percent of the project site is designated as R2 Residential, 2 percent as R5 Residential, 41 percent as R15 Residential, and the remaining 34 percent as Business Park/Light Industrial. Table E of the Traffic Study (DEIR Table 4.11.E on page 4.11-15 of the DEIR) illustrates a comparison between the trip generation of the site as presently zoned, and the trip generation of the proposed project. As can be seen in Table E, compared to the present zoning, the project produces 6,702 fewer trips per day, with 885 fewer trips in the a.m. peak hour and 939 fewer trips in the p.m. peak hour. Please note that these trips are PCE trips, so the effects of trucks have been included in the trip generation. Therefore, the commenter is mistaken in the statement that the project increases the number of trips. On the contrary, the proposed project actually reduces the future number of PCE trips compared to approved land uses on the site. The comment also asserts that payment of the TUMF does not sufficiently mitigate the traffic impacts of the proposed project. The Mitigation Measures identified in Section 4.11.6.4.E of the DEIR outline the specific improvements required to mitigate the direct and cumulative impacts of the project. This section also identifies where the required improvements are programmed into the DIF and TUMF. In cases where the improvements are not programmed, the project would be responsible to implement the improvements, as outlined in Section 4.11.6.4.E. As a result, the impacts of the project will be fully mitigated prior to issuance of the Certificate of Occupancy by the City, either through payment of the DIF, TUMF, or by a fair-share participation in improvements that are not included in these funding programs.

It should be noted that the **Reduced Intensity Alternative (Less Intensive Modified Plan)** evaluated in Section 4 of this document would substantially reduce traffic generation and therefore warehouse traffic impacts (4 warehouse building with approx. 30% less traffic) compared to the 6 warehouse buildings of the Proposed Project. The reader is referred to Section 4 of this document for more information regarding that alternative land plan.

Response to Comment 2. The City selected the intersections for analysis in accordance with the guidelines established by the City's Traffic Impact Analysis Preparation Guide (i.e., 50 or more peak hour trips within a five mile radius) and as accepted and required by the City of Moreno Valley in their Traffic Impact Assessment (TIA) guidelines. It should be noted that this is the same criteria for selection of a study area in the City of Riverside Traffic Impact Analysis Preparation Guide. It should also be noted that the project does not add more than 50 trips at intersections farther than those included in the analysis. In addition, Response to Comment C-1, No. 1 above demonstrates the proposed project actually reduces the number of PCE trips that would be generated on the project site from the previously considered project. Since the World Logistics Center and RPT Centerpointe West projects were initiated after the NOP for this project went out, the trips from these two projects are not required to be and have not been included in this analysis. See also Response to Letter A-2, Comment No. 8. In addition, see Response No. 1 above regarding the proposed **Less Intensive Modified Plan** evaluated in Section 4 of this document.

Response to Comment 3. The comment states that the redistribution of traffic caused by the project was not appropriately analyzed in the DEIR - this statement is incorrect. The 2035 analysis was prepared using forecasts from the RivTAM traffic model, which distributes traffic according to the "path of least resistance", as requested in the comment. The select zone assignment prepared for the project shows that approximately 5 percent of project traffic, equating to fewer than 50 trips, would utilize Alessandro and Van Buren Boulevards in the City of Riverside. Changes in the distribution of traffic within the City of Riverside due to the influence of the project were not evaluated, as these

roadways and intersections do not meet the criteria for inclusion into the project study area. An explicit analysis of “spill-over” traffic, as requested in the comment, is not required by the traffic study guidelines adopted by the Cities of Moreno Valley or Riverside, or the County of Riverside. The comment also asserts that the TUMF program may not adequately mitigate project impacts due to “spill-over” traffic. This comment is also incorrect. The TUMF Nexus Study prepared by Parsons Brinckerhoff in October 2009 relied upon traffic forecasts from the RivTAM traffic model. As noted previously, the RivTAM traffic model assigns traffic based on the “path of least resistance”. Additionally, the General Plan land use planned for the project site, and included in the RivTAM, would generate more trips than the proposed project. As a result, the forecasts prepared for the TUMF Nexus Study would be a more conservative estimate of “spill-over” traffic than would be experienced with the project, and the projects programmed in the TUMF would be adequate to mitigate project impacts.

Response to Comment 4. The RIVTAM traffic model was used to generate forecast traffic volumes for no project and with project condition. The methodology utilized by the RivTAM traffic model to assign trips to the roadway network minimizes travel time and delay for trip origins and destinations within the model network. As such, if a faster route was observed, then a significant diversion of trips should have been seen on these routes. However, significant diversion of traffic was not observed between the no-build and build conditions. Furthermore, the modeling indicated that diversion of trips on to surface streets under without and with project conditions are anticipated to be minimal (a maximum diversion of 7 peak hour PCE trips is forecast at on Alessandro Boulevard). Please note that compared to the present zoning, the project produces 6,702 fewer trips per day, with 885 fewer trips in the a.m. peak hour and 939 fewer trips in the p.m. peak hour, and based on the model runs, the trips on surface streets in the City of Riverside are generally lower under conditions where the proposed zone change is approved.

Response to Comment 5. The commenter is correct that the project involves a General Plan Amendment and Zone Change, and the Draft EIR does identify a number of significant impacts for the proposed project. The purpose of an EIR is to disclose potential impacts of the project to the public and to decision makers. Utilizing the information provided in the DEIR, the decision makers will determine whether the benefits of the project outweigh the environmental impacts of the project.

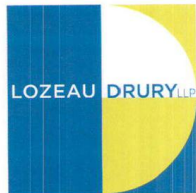
| It should be noted that the ~~Less~~ ~~intensive~~ ~~Modified~~ ~~Plan~~ evaluated in Section 4 of this document would substantially reduce traffic generation and therefore warehouse traffic impacts (4 warehouse building with approx. 30% less traffic) compared to the 6 warehouse buildings of the Proposed Project. The reader is referred to Section 4 of this document for more information regarding that alternative land plan.

| **Response to Comment 6.** The City of Moreno Valley will keep the City of Riverside informed regarding the review process for this project, and the City of Riverside will have an opportunity to review these responses prior to action on the ProLogis project.

D. LETTERS FROM PRIVATE ORGANIZATIONS AND INDIVIDUALS

LETTER D-1: LOZEAU DRURY, LLP

Letter D-1



T 510.836.4200
F 510.836.4205

410 12th Street, Suite 250
Oakland, Ca 94607

www.lozeaudrury.com
michael@lozeaudrury.com

August 29, 2012

Via email

Jeff Bradshaw
Associate Planner
City of Moreno Valley, Planning Division
14177 Frederick Street
Post Office Box 88005
Moreno Valley, CA 92553
Email: jeffreyb@moval.org

Re: Comment on Draft Environmental Impact Report for ProLogis Eucalyptus Industrial Park (State Clearinghouse No. 2008021002)

Dear Mr. Bradshaw:

I am writing on behalf of Laborers International Union of North America, Local Union No. 1184, and its members living in Riverside County ("LIUNA Local Union No. 1184") regarding the Draft Environmental Impact Statement ("DEIR") for the ProLogis Eucalyptus Industrial Park, State Clearinghouse No. 2008021002 ("Project").

On Tuesday, August 28, 2012, we made a request that the City of Moreno Valley ("City") extend the comment period for the DEIR due to substantial information requiring additional time for review and comment. You responded today, August 29, 2012 that you respectfully decline to grant the request for additional time.

Today, we sent you an email requesting Appendix L. Appendix L is referenced in the DEIR. In pertinent part, the DEIR states:

Mitigation Measures. The potential mitigation measures identified by the City's General Plan have been deemed infeasible by the property owner under current economic conditions. In addition, supplementary analysis of the project site and local economic conditions indicates that continued citrus production and/or the raising of row crops would not be economically feasible on the project site (*see Appendix L*).

(DEIR, p. 4.2-8) (emphasis added). The DEIR does not contain an Appendix L.

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LOZEAU
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RESPONSE TO LETTER D-1

LOZEAU DRURY, LLP (8/29/12)

Response to Comment 1. As explained to the commenter on the telephone and via email by Jeff Bradshaw on August 28, 2012, the reference to Appendix L was a typographical error – it should have referred to Appendix E which contains the material on “agricultural resources” requested by the commenter. The material in Appendix E is clearly labeled “Agricultural Resources” in the Table of Contents, so the Draft EIR does not need to be recirculated. This correction will be noted in Section 3 of this document (*EIR Errata and Additions*) as shown below. Appendix E was available along with the entire DEIR and all DEIR appendices for the duration of the 45-day public review period. In addition, the comment has not resulted in any change in the impact judgment contained in the DEIR regarding agricultural resources and that impacts were identified as significant and unavoidable.

Mitigation Measures. *The potential mitigation measures identified by the City’s General Plan have been deemed infeasible by the property owner under current economic conditions. In addition, supplementary analysis of the project site and local economic conditions indicates that continued citrus production and/or the raising of row crops would not be economically feasible on the project site (see Appendix ~~L~~ E).*

LETTER D-2: SIERRA CLUB

Letter D-2



SAN GORGONIO CHAPTER

4079 Mission Inn Avenue
Riverside, CA 92501
(951) 684-6203 Fax (951) 684-6172
Membership/Outings (951) 686-6112

*Regional Groups Serving Riverside and San Bernardino Counties:
Big Bear, Los Serranos, Mojave, Moreno Valley, Mountains, Tehuquit*

Jeff Bradshaw
Associate Planner
P.O. Box 88005
Moreno Valley, CA 92552

September 3, 2012

RE: ProLogis Eucalyptus Industrial Park project's Draft Environmental Impact Report (DEIR).

The Sierra Club appreciates this opportunity to comment on this DEIR. We hope to read your responses in the FEIR which do fully answer our comments, concerns, suggestions and questions. Most of our concerns are about Global Warming, Climate Change, Greenhouse Gas Pollution and Air Pollutant emissions. These concerns can be read below and we expect this project to do everything possible to mitigate these problems in our non-attainment area. The Sierra Club understands that "the applicant has indicated the building will be designed to qualify for certification under the Leadership in Energy and Environmental Design (LEED) program, but there are no plans to submit the project to actual LEED certification." (p 3-12) We do not understand why you do not match the Gold LEED certification recently agreed to by the Alessandro Business Center warehouse in the City of Riverside or even the LEED Silver of nearby Skechers and West Ridge Commerce Center warehouses. In fact your words do not guarantee anything about even reaching the lowest level of LEED certification. The City needs to require you to hire a LEED expert and then require you to become LEED certified—hopefully higher than just certified. You could pay less than \$1,000 this year and lock in current LEED standards for your building. Through the installation of solar panels and other verified LEED ideas you could avoid generating air pollutants with the electricity you consume. This warehouse and all warehouses need to be required to have their roofs built to accommodate the maximum number of solar panels. You are now able to sell excess energy back and earn money as well as do right for our non-attainment area. The DEIR states that "the proposed project would unavoidably contribute to the significant cumulative air quality impacts." (p 1-28) The DEIR also indicates that the "cumulative impacts associated with diesel particulate matter are considered significant and unavoidable". (p 1-29) The Sierra Club does not believe it is totally unavoidable. The fact you are given a cafeteria list of mitigations to chose from shows that there is more that could and should be done to protect the health of area residents. These need to be required of the project and not just implemented "where feasible" or some other weasel words like "will be considered". Why isn't there a requirement to exceed current Title 24 at time of construction by at least 25% instead of just "exceed" Title 24? Agreeing to require all of your

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RESPONSE TO LETTER D-2

SIERRA CLUB

Response to Comment 1. The City believes the following responses address the comments submitted by the Sierra Club relative to this EIR on all the topics indicated. Short-term and long-term project specific and cumulative effects of the proposed project on air quality are evaluated in Section 4.3, *Air Quality* (pages 4.3-1 through 4.3-38) in the Draft EIR. Greenhouse gas emissions and climate change were evaluated in Section 4.13, *Global Climate Change* (4.13-1 through 4.13-22) in the Draft EIR. Where the proposed project's impacts were determined to be significant mitigation was provided to lessen those impacts. It was determined that even with the implementation of feasible mitigation measures the proposed project will have a significant and unavoidable impact on short-term construction air quality, long-term operational air quality impacts, cumulative air quality, and cumulative greenhouse gas emissions.

The concerns raised by the commenter have been responded to in the following Response to Comments 1 through 31. Any comments that were raised by the commenter that resulted in additions or revisions to the language in the Draft EIR are provided in Section 3.0, *Errata and Additions*, of this Final EIR.

Lastly, the commenter inaccurately suggests that the project should be required to obtain a LEED Silver or Gold rating as a form of mitigation of significant impacts associated with air pollution and greenhouse gas emissions. The process of obtaining a LEED rating is not mitigation. The specific green building features that are part of the LEED rating equation can reduce air pollution and greenhouse gas emissions impacts by minimizing and reducing the quantity of emissions associated with operations of a building. To clarify, Section 3.5.3, Green Building Construction, in the Project Description states that "The applicant has indicated the buildings will be designed to qualify for certification under the Leadership in Energy and Environmental Design (LEED) program, but there are no plans to submit the project for actual LEED certification at this time due to cost and time delay factors." (EIR page 3-12). The applicant will formally apply for LEED Certified status, but the ultimate determination of the level of compliance is up to the LEED organization and cannot be guaranteed with any certainty at this point in time, since the final engineering will not occur until after certification of the EIR.

Response to Comment 2. See Response No. 1 above regarding LEED certification. In addition, the applicant has agreed that the project will be constructed to accommodate solar photovoltaic panels in the future. Additional information in this regard is found in the responses to the comments by the South Coast Air Quality Management District (Letter B-3).

The opinions stated by the Sierra Club regarding the significance of project and cumulative air quality impacts are unsubstantiated. The air quality analysis in the EIR includes a detailed analysis showing that the cumulative impacts are unavoidable. The "cafeteria list" of mitigation measures listed in Mitigation Measure 4.3.6.5B is included to minimize the air quality impacts from the area and energy emissions. As described in EIR Section 4.3.6.5, page 4.3-34: *"Although implementation of Mitigation Measures 4.3.6.5A through 4.3.6.5B may reduce vehicle trips associated with the proposed project, it is not possible to quantify the reduction in the amount of emissions that may occur. Considering the volume of emissions generated and current commuter habits, it is unlikely the implementation of TDMs/TCMs will result in a reduction of operational project emissions to below existing SCAQMD thresholds. Application of Leadership in Energy and Environmental Design (LEED) standards and green building design principles could reduce emissions from building operations such as heating and cooling; however, such standards and principles would not reduce emissions of CO, ROG, NO_x, PM₁₀, and PM_{2.5} to below SCAQMD thresholds. No other feasible mitigation measures have been identified to reduce the operational emissions of CO, ROG, NO_x, PM₁₀, and PM_{2.5} to a less than*

significant level.” Further, the commenter mixed the short-term construction impacts with the long-term operational impacts – the majority of the comment above is about long-term operational impacts, however the last sentence is about short-term construction impacts and would not help reduce long-term emissions. The emissions control measures listed in Mitigation Measures 4.3.6.2A through 4.3.6.2M are adequate to reduce the short-term construction measures. However, the City and the applicant have agreed to add the Tier III requirement into Mitigation Measure 4.3.6.2C. The measure has been amended as follows as is included in Final EIR, Section 3.0, *EIR Errata and Additions*:

4.3.6.2C *Prior to the issuance of a grading permit, the project developer shall require by contract specifications that contractors shall utilize California Air Resources Board (CARB) Tier II Certified equipment or better during the rough/mass grading phase for the following pieces of equipment: rubber-tired dozers and scrapers. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the City.*

Project start to December 31, 2014: All off-road diesel-powered construction equipment greater than 50 horsepower shall meet Tier 3 off-road emission standards. In addition, all construction equipment shall be outfitted with Best Available Control Technology (BACT) devices certified by CARB. Any emission control devices used by the contractor shall achieve emission reductions that are no less than what would be achieved by a Level 3 diesel emission control strategy for a similarly sized engine as defined by CARB regulations.

Post January 1, 2015: All off-road diesel-powered construction equipment greater than 50 horsepower shall meet Tier 4 emission standards, where available. In addition, all construction equipment shall be outfitted with Best Available Control Technology (BACT) devices certified by CARB. Any emission control devices used by the contractor shall achieve emission reductions that are no less than what would be achieved by a Level 3 diesel emission control strategy for a similarly sized engine as defined by CARB regulations.

A copy of each unit's certified tier specifications, BACT documentation, and CARB or SCAQMD operating permit shall be provided at the time of mobilization of each applicable unit of equipment.

However, several air quality related mitigation measures have been modified as a result of discussion in the Final EIR (refer to Final EIR, Section 3.0 *EIR Errata and Additions*). The list of mitigations included in the Air Quality section are qualified by “where feasible” because the EIR can only require a project to implement feasible mitigation measures, and at this time it is not possible to determine mitigation measure feasibility. The determination will only be possible once operations have begun and will have to be determined by the project operator in cooperation with the City. Additionally, mandating that the construction process exceed Title 24 by a particular percentage makes the mitigation measure infeasible – there is no way to determine by what percentage the construction operations exceed Title 24.

The modified measures are also in the Mitigation Monitoring and Reporting Plan in Section 4.0 in the Final EIR to ensure they are implemented

Response to Comment 3. As documented in Section 4.2 of the Draft EIR, farming is no longer a viable economic activity in this portion of Riverside County, and the General Plans of the County and City both identify land uses that will a transition from historical agricultural land to appropriate suburban land uses. This proposed project represents a step in that anticipated transition.

This commenter also states that a developer recently donated \$100,000.00 to the Riverside Land Conservancy to help mitigate for the loss of agricultural lands but fails to appropriately cite the

information and identify the basis for determining the amount of agricultural lands lost in relation to this monetary amount. In discussion with Gail Egenes, Executive Director of the Riverside Land Conservancy, the agency does not have any established program to purchase agricultural easements or lands. Also, in consultation with the National Conservation Easement Database, Riverside County does not have any established agricultural easements.¹

Contributions to Riverside County Land Conservancy or the San Jacinto Basin Resource Conservation District by private land owners are laudable but are not required as part of a City or regional mitigation plan for loss of agricultural land. Therefore, the decision whether to make any contributions in this regard would be at the discretion of the developer in consultation with the City. For additional detailed analysis on this issue, see Responses 22 and 23 in the letter from Johnson & Sedlack (D-3). Since there is no feasible mitigation available, the impact has been identified as significant and unavoidable, and the City will have to adopt a Statement of Overriding Considerations as part of its Findings on the EIR prior to action on the project.

The project's greenhouse gas (GHG) emission assessment assumes the citrus groves are not present onsite, which we consider to be a "worst case" estimate of greenhouse gases related to the proposed project. The Draft EIR determined that GHG impacts would be less than significant with implementation of the proposed mitigation, and this information does not alter that conclusion.

The project site likely provides some amount of raptor foraging habitat, as outlined on page 4.4-2 of the Draft EIR. However, there are few large trees suitable for raptor perching and roosting (i.e., the citrus trees do not contribute much in this regard), and the site is proximate to human activity at its southeast and northwest corners, as well as SR-60 along its northern boundary. Therefore, the value of the project site for raptor foraging is marginal at best. The DEIR concluded project impacts on raptor foraging were less than significant with implementation of Mitigation Measure 4.4.6.1A to address impacts on nesting birds (DEIR page 4-29). In addition, any incremental cumulative impact on raptor foraging would be mitigated by the project's payment of the MSHP fee.

Response to Comment 4. Section 4.4 of the Draft EIR fully evaluates and minimizes impacts to the Quincy Channel, the main onsite drainage feature. The offsite mitigation for onsite impacts is mainly for removal of the two degraded erosional drainage channels along the west and southwest portions of the site. As shown on the project site plan (Figure 1.2 in the Draft EIR), the project would protect the Quincy Channel essentially intact (only 0.04 acre permanent impact and 0.03 acre temporary impact) along the eastern boundary of the project site. The impacts are outlined in Table 4.4.D of the EIR and the planned improvements are shown in Figures 1.2, 3.6.B, and 3.6.F, and Appendix K-3 A-1 Master Architectural Plan which shows the channel and bridge notes.

Response to Comment 5. There is no empirical evidence presented that would support the contention that the citrus groves on the project site provide significant biological habitat. The orchard property and the trees are subject to human disturbance on a regular basis, and are immediately adjacent to the SR-60 Freeway. The trees are maintained such that they provide minimal or no potential for roosting or perching by raptors, although some songbirds may utilize them and the fruit to some degree. A detailed biological assessment was prepared for the project to document consistency with the County's MSHCP, of which the City is a signatory. It came to a similar conclusion (i.e., the site has very low value as biological habitat).

Response to Comment 6. Impacts related to agriculture and raptor foraging are addressed in Sections 4.2 and 4.4 of the Draft EIR, and in Responses 3 and 5 above.

¹ <http://nced.conservancyregistry.org/browse/map>, accessed October 4, 2012.

Response to Comment 7. The observation of Swainson's hawk in the general vicinity of the project site does not change the fundamental conclusion that impacts of the project on biological resources are less than significant with the proposed mitigation. Payment of the MSHCP impact fee will also help contribute to preservation of raptor foraging lands as habitat lands are purchased under the plan.

Response to Comment 8. The site would need to continue to be disked for weed abatement and fuel modification per City Fire Department requirements. Since the site is not actively tilled, this clearing would take place mainly once a year. Mitigation Measures 4.4.6.1B and 4.4.6.1C require a pre-construction burrowing owl survey and establish what actions must be taken if the burrowing owl is found on-site during the pre-construction surveys that are in accordance with the Burrowing Owl Consortium 1993 Burrowing Owl Survey Protocol and Mitigation Guidelines¹ and referred to the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) survey instructions² to complete the pre-construction burrowing owl survey.

Response to Comment 9. All of the topics mentioned in the comment were addressed in the Draft EIR and are addressed in specific responses to this letter. Impacts to burrowing owl were addressed in Section 4.4 of the Draft EIR (biological resources), including mitigation for pre-construction surveys. The Draft EIR did look at direct and indirect impacts of the project relative to noise, vibration, odors (fumes?), and light during both construction and operation of the proposed warehouse buildings. Mitigation Measure 4.3.6.5B and 4.3.6.6A require the planting of shade trees in parking areas to reduce heat load on cars and buildings. Alternative fuels for onsite vehicles are addressed in Mitigation Measure 4.3.6.6A.

Response to Comment 10. There is no City-wide general requirement for parking areas of warehouse projects to use porous pavement, which create their own water quality issues with percolation of runoff directly from parking areas into the ground, rather than collecting runoff into detention basins, especially low flows which can have the most concentrated pollutants.

Response to Comment 11. CEQA requires an analysis of cumulative impacts from projects that are "on the books" at the time the baseline for the EIR is established (i.e., recently approved or proposed at the time of issuance of the Notice of Preparation). The cumulative project list does not include the World Logistics Center (WLC) because it was not a proposed project when the Notice of Preparation (NOP) was released for this project EIR (i.e., "baseline" conditions are typically established at the time the NOP is released). Even though that project is now on the City's "horizon", no traffic study or other technical information were available for evaluation relative to the cumulative impacts of this proposed project when the EIR for this project was prepared.

Response to Comment 12. The Draft EIR clearly identifies that... "The nearest existing sensitive land uses are single-family residences located approximately 50 feet southeast of the southern boundary of the project site, approximately 395 feet southeast of the proposed warehouse buildings, and approximately 664 feet southeast of the proposed loading docks." (Draft EIR page 4.3-17, 4th paragraph). The commenter may be confused by the terms used to characterize the spatial relationship of the project to the existing residences. The residences are 50 feet from the project's property line, but the Project Description (e.g., Figure 1.2 clearly shows there are several large detention basins in the southern portion of the site that will act as a buffer and separate truck activities of the project from the residences. As stated in the EIR and demonstrated on the project site plan, the residences would be 395 feet from the closest proposed warehouse building, and 664 feet from the closest proposed loading dock. As shown in the air quality analysis and health risk assessment of the EIR, this distance is sufficient to protect the health of the residents near to the project.

¹ <http://www2.ucsc.edu/scpbrg/burrowingowls.htm>.

² http://www.tlma.co.riverside.ca.us/epd/documents/survey_protocols/burrowing_owl_survey_instructions.pdf.

All recommendations for locating warehouses some safe distance (which varies depending on the author) are all conditioned with the concept “unless a site-specific health risk assessment is performed.” This EIR did include such a health risk assessment, which shows that, even with all the very conservative assumptions required, there will not be a significant health risk to any sensitive receptors (residents, schools, medical facilities, etc.) from project-related air emissions.

In addition, the commenter is referred to Section 4 of this document for an evaluation of a less intensive modified plan, which is a subset of the Reduced Intensity Alternative evaluated in the DEIR (and which was determined to be environmentally superior to the Proposed Project). This less intensive plan proposes to develop 4 warehouse buildings, leaving the southeast portion of the site vacant for future development of residential uses consistent with existing zoning (R-5 and RA-2) adjacent to the existing residential neighborhood to the southeast.

Response to Comment 13. The commenter is correct in pointing out there are other residential uses in the area. However, they are over 250 feet north across the SR-60 Freeway from the project site, and are not downwind of the site based on regional prevailing wind patterns. As stated on page 4.3-17 of the DEIR, “...receptors were placed in a general grid extending in all directions to characterize the risk level surrounding the project site. Meteorological data from the Perris area were utilized to represent the conditions at the project site.” These features of the HRA insure that the health risk levels to all individuals in the region of the project site were adequately considered. The SCAQMD’s methodology for preparing health risk assessments requires an examination of impacts at the closest sensitive receptor to identify the worst case conditions. Therefore, it is neither required nor would it be helpful to show potential health risk levels of all residential zoning within 2,000 feet of the site.

As outlined in Response 12 above, the existing residences would be 664 feet from the closest truck loading dock, which would be the closest main source of truck-related air pollutants including diesel particulate matter. The project HRA used a worst case estimate of 25 meters (minimum 82.5 feet) to calculate potential health risks from new project warehousing, therefore, the actual exposure would likely be lower than that identified in the HRA, which showed that the project would create a maximum health risk of 1 additional cancer case in a million near the southwest corner of the site (or 10 times lower than the significance threshold of 10 in a million). As shown in Figure 4.3.3 of the Draft EIR, expected health risks further from the project site, including residences to the north across the freeway, are much less than 1 in a million.” Therefore, existing housing north of the freeway would likely be exposed to a much higher health risk from ongoing traffic along SR-60 than would be generated by the proposed project.

Worker Health. A detailed health risk assessment (HRA) was prepared for the proposed project and included in Appendix B of the Draft EIR (LSA March 2012). The HRA examined the short-term and long-term potential health effects from project-related emissions of toxic air pollutants (TAP) in the exhaust of diesel-powered delivery trucks on existing surrounding sensitive receptors, including single- and multifamily residences. Onsite workers will be protected by the requirements established by the Occupational Safety and Health Administration (OSHA) and are not considered sensitive receptors in accordance to the California Air Resources Board (CARB). The CARB defines “sensitive” land uses, as homes, medical facilities, daycare centers, schools, and playgrounds but not on-site workers.

According to the HRA prepared for the proposed project, “The operations expected to occur at this facility will not emit any toxic chemicals in any significant quantity other than vehicle exhaust. While there may be other toxic substances in use on site, compliance with State and federal handling regulations will bring emissions to below a level of significance. Due to the lack of data, precise evaluation of vehicle exhaust impacts is not feasible; however, based on the limited amount of TAC from vehicle exhaust associated with the project operations in relation to background levels, the impact is not expected to be significant.” (Section 5.4.2, Operational Health Risk Impacts, page 44).

The responsibility of the health of workers of the proposed project is to OSHA. The following is from the OSHA website (<http://www.osha.gov/as/opa/worker/employer-responsibility.html>):

Employer Responsibilities

Employers have certain responsibilities under the Occupational Safety and Health Act of 1970. The following list is a summary of the most important ones:

- Provide a workplace free from serious recognized hazards and comply with standards, rules and regulations issued under the OSHA Act.
- Examine workplace conditions to make sure they conform to applicable OSHA standards.
- Make sure employees have and use safe tools and equipment and properly maintain this equipment.
- Use color codes, posters, labels or signs to warn employees of potential hazards.
- Establish or update operating procedures and communicate them so that employees follow safety and health requirements.
- Provide medical examinations and training when required by OSHA standards.
- Post, at a prominent location within the workplace, the OSHA poster (or the state-plan equivalent) informing employees of their rights and responsibilities.
- Report to the nearest OSHA office within 8 hours any fatal accident or one that results in the hospitalization of three or more employees.
- Keep records of work-related injuries and illnesses. (Note: Employers with 10 or fewer employees and employers in certain low-hazard industries are exempt from this requirement.)
- Provide employees, former employees and their representatives access to the Log of Work-Related Injuries and Illnesses (OSHA Form 300).
- Provide access to employee medical records and exposure records to employees or their authorized representatives.
- Provide to the OSHA compliance officer the names of authorized employee representatives who may be asked to accompany the compliance officer during an inspection.
- Not discriminate against employees who exercise their rights under the Act.
- Post OSHA citations at or near the work area involved. Each citation must remain posted until the violation has been corrected, or for three working days, whichever is longer. Post abatement verification documents or tags.
- Correct cited violations by the deadline set in the OSHA citation and submit required abatement verification documentation.

With this OSHA protection, the employees of the proposed project will not be subject to unhealthful conditions.

The results of the conservative HRA modeling were shown in Table R (Table 4.3.F in the Draft EIR) for carcinogenic and chronic inhalation health risks at the sensitive receptors. Even with the conservative modeling technique used, assuming that an individual stays outdoors at his or her residence 24 hours per day for 70 years, which is the State-required period of time that all HRAs must assess, the nearest sensitive receptor would be exposed to an unmitigated inhalation cancer risk of no more than 4.3 in 1 million, less than the State's threshold of 10 in a million. The highest worker exposure occurs at the east boundary of the facility just south of Eucalyptus Avenue (see Draft EIR Figure 4.3.1). Based on the conservative nature of the assumptions used in this study, the health risk levels cited in the DEIR in Table 4.3.F on page 3.4-17 are likely higher than are actually expected to occur. This assessment demonstrates that no significant health risk would occur from project-related truck traffic, and no mitigation is necessary. Much of the construction equipment used is not powered by electricity (i.e. grading equipment, bull dozers, etc.) is not available as electric equipment. Therefore, it is not practical to set a percentage requirement for the amount of construction equipment that must be powered by electricity. In addition, a percentage based requirement would not translate well to construction equipment. For example, it would not seem logical to base the calculation on the number of pieces of equipment since the size and emissions of equipment vary significantly.

Again, OSHA has programs that the project operator is required to comply with to protect warehouse workers from the long term health effects of breathing toxic diesel emissions throughout their workday and employment.

In addition, the commenter is referred to Section 4 of this document for an evaluation of a less intensive modified plan, which is a subset of the Reduced Intensity Alternative evaluated in the DEIR (and which was determined to be environmentally superior to the Proposed Project). This less intensive plan proposes to develop 4 warehouse buildings, leaving the southeast portion of the site vacant for future development of residential uses consistent with existing zoning (R-5 and RA-2) adjacent to the existing residential neighborhood to the southeast.

Response to Comment 14. The noise impact analysis for the proposed project evaluated potential noise impacts from construction and project operations, and did not identify any significant noise impacts. Therefore, no noise barrier or other mitigation measures are required. For related discussion of noise impacts, see also Response to Comments 80 through 93 in Letter D-3 from Johnson & Sedlack. In addition, Mitigation Measure 4.3.6.6A was modified and Mitigation Measure 4.3.6.6B was added to address construction equipment and vehicles operating for the project (see Final EIR, Section 3.0, *EIR Errata and Additions*). Modifications are as follows:

4.3.6.6A *Prior to issuance of the first building permit, building and site plan designs shall ensure that the project's energy efficiencies surpass applicable 2008 California Title 24, Part 6 Energy Efficiency Standards by a minimum of 20 10 percent until January 1, 2014. For building permits issued after that date, new state energy standards require a 20 percent reduction from 2008 Title 24, Part 6 Energy Efficiency Standards. Verification of increased energy efficiencies shall be documented in Title 24 Compliance Reports provided by the Applicant, and review and approved by the City. The following design features, including but not limited to the following list, shall be used to fulfill this requirement:*

- *Buildings shall exceed California Title 24 Energy Efficiency performance standards for water heating and space heating and cooling, as deemed acceptable by the City.*
- *Increase in insulation such that heat transfer and thermal bridging is minimized.*

- *Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption.*
- *Incorporate dual-paned or other energy efficient windows.*
- *Incorporate energy efficient space heating and cooling equipment.*
- *Interior and exterior energy efficient lighting which exceeds the California Title 24 Energy Efficiency performance standards shall be installed, as deemed acceptable by the City. Automatic devices to turn off lights when they are not needed shall be implemented.*
- *To the extent that they are compatible with landscaping guidelines established by the City, shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and buildings shall be planted at the project site.*
- *Paint and surface color palette for the project shall emphasize light and off-white colors which reflect heat away from the buildings.*
- *All buildings shall be designed to accommodate renewable energy sources, such as photovoltaic solar electricity systems, appropriate to their architectural design.*
- *To reduce energy demand associated with potable water conveyance, the project shall implement the following:*
 - *Landscaping palette emphasizing drought-tolerant plants;*
 - *Use of water-efficient irrigation techniques; and,*
 - *U.S. EPA Certified WaterSense labeled for equivalent faucets, high-efficiency toilets (HETs), and water-conserving shower heads.*
- *The project shall provide secure, weather-protected, on-site bicycle storage/parking.*
- *The project shall provide on-site showers (one for males and one for females). Lockers for employees shall be provided.*
- *The project will establish a Transportation Management Association (TMA). The TMA will coordinate with other TMAs within the City to encourage and coordinate carpooling among building occupants. The TMA will advertise its services to building occupants, and offer transit and/or other incentives to reduce greenhouse gas (GHG) emissions. A plan will be submitted by the TMA to the City within two months of project completion that outlines the measures implemented by the TMA, as well as contact information.*
- *The project shall provide preferential parking for carpools and vanpools. Locations and configurations of proposed preferential parking for carpools and vanpools are subject to review and approval by the City. Prior to final site plan approval, preferential parking for carpools and vanpools shall be delineated on the project site plan.*
- *The project shall provide at least two electric vehicle charging stations. Locations and configurations of proposed charging stations are subject to review and approval by the City. Prior to issuance of the first building permit, stub outs for charging stations shall be indicated on the project building plans.*
- *Lease/purchase documents shall identify that tenants are encouraged to promote the following:*
 - *Implementation of compressed workweek schedules.*
 - *SmartWay partnership.*

- *Achievement of at least 20 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of consolidated trips carried by SmartWay carriers until it reaches a minimum of 90 percent of all long-haul trips carried by SmartWay 1.0 or greater carriers.*
- *Achievement of at least 15 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of long-haul trips carried by SmartWay carriers until it reaches a minimum of 85 percent of all consolidated trips carried by SmartWay 1.0 or greater carriers.*
- *Use of fleet vehicles conforming to 2010 air quality standards or better.*
- *Installation of catalytic converters on gasoline-powered equipment.*
- *Inclusion of electric powered and/or compressed natural gas fueled trucks and/or vehicles in fleets.*
- *Establishment and use of carpool/vanpool programs, complemented by parking fees for single-occupancy vehicles.*
- *Provision of preferential parking for EV and CNG vehicles.*
- *Use of electrical equipment (instead of gasoline-powered equipment) for landscape maintenance.*
- *Use of electric (instead of diesel or gasoline-powered) yard trucks.*
- *Use of SmartWay 1.25 rated trucks.*
- *Each facility operator shall provide regular sweeping of onsite parking and drive areas.*
- *Each facility operator shall maintain a log of all trucks entering the facility to ensure that, on average, the daily truck fleet meets the quantities and emissions standards. This log shall be available for inspection by City staff at any time.*
- *Each facility operator shall prohibit all vehicles from idling in excess of five minutes in all onsite areas.*
- *Each facility operator shall ensure that onsite staff in charge of keeping the daily log and monitoring for excess idling will be trained and certified in diesel health effects and technologies, such as by requiring attendance at CARB-approved courses.*
- *Each facility operator upon occupancy that do not already operate 2007 and newer trucks shall in good faith apply for funding to replace or retrofit their trucks such as Carl Moyer, VIP, Prop 1B or similar funds. Should funds be awarded, the tenant shall be required to accept and use them.*

Response to Comment 15. Many of the very detailed portions of the various environmental impact analyses are placed in the appendices so that the EIR is easier to read and understand. All details are available for the reviewer. Trip lengths are not considered, as trip lengths do not affect the operation of traffic at various locations. The passenger vehicle and truck trip assignment figures provided in the DEIR show the number of passenger vehicle and truck trips at each intersection, and therefore indicate the routes that project trips are expected to utilize. The trip generation provided in the DEIR section would be for the project at its full capacity. The project trip generation analyzed in the analysis would be a typical weekday trip generation for the project. It is standard traffic engineering practice and the practice required by Cities and the County to analyze the project trips occurring during the weekday peak hours, as this is generally the period when the worst traffic is experienced on the adjacent streets. In addition, the trip generation analysis does not assume only

some initial level of operation. The full operation of the project is analyzed so that the effects of the project on the existing environment are disclosed, as required by CEQA. Trips generated by the project under opening year are likely to be less than those included in the analysis. All of the details for calculating health risks of the proposed project were provided in Appendix B of the Draft EIR, including the EMFAC and dispersion modeling outputs. The details of the project traffic routing are discussed in detail in the traffic analysis and the truck trip length on DEIR page 4.3-32. In addition, "active" CalEEMod and supporting computer files were sent to the AQMD during the EIR review period to allow for replication and verification of the HRA report results. In addition, Mitigation Measure 4.3.6.6A was modified (see above) to address these types of equipment (see Final EIR, Section 3.0, *EIR Errata and Additions*).

Response to Comment 16. All of the details for calculating health risks of the proposed project were provided in Appendix B of the Draft EIR, including the EMFAC and dispersion modeling outputs. In addition, "active" CalEEMod and supporting computer files were sent to the SCAQMD during the EIR review period to allow for replication and verification of the HRA report results.

The Villages of Lakeview project included over 2,800 acres consisting of 11,350 dwellings, a mixed-use town center including some 500,000 square feet of retail, office and commercial uses, public facilities including four schools and a library, and nearly 1,000 acres of open space/conservation areas. The court found that the EIR analysis of traffic impacts was inadequate because it did not study how an additional 85,000 car trips would affect two local freeways. The only fault the court found in the project's relationship to the General Plan was that traffic congestion standards would be exceeded¹. The proposed project reduces the intensity of the trip generation compared to the General Plan, and as shown in the analysis, doesn't change traffic congestion standards.

This EIR evaluates traffic impacts at intersections with more than 50 trips and freeway segments within a 5 mile radius where the project has more than 100 peak hour trips, as required by the traffic study guidelines adopted by the City of Moreno Valley as well as the County of Riverside. Please note that the 50 and 100 trip thresholds were not questioned in the Lakeview judgment. East of Redlands Boulevard, the project adds less than 100 peak hour trips to freeway facilities, therefore, the study area is consistent with the Friends decision. West of Pigeon Pass Road, project traffic is more than 100 trips. However, traffic volumes on the freeway west of Pigeon Pass Road are higher than those to the east of Pigeon Pass Road. Since the number of lanes is the same, and the segments east of Pigeon Pass Road are forecast to operate at unsatisfactory conditions under future conditions without the project, the segments to the west would also operate at unsatisfactory conditions (higher volumes and same capacity). Therefore, to the freeway segments west of Pigeon Pass Road, the project will not create a direct impact but add to unsatisfactory conditions.

It should also be noted that the referenced case is a Superior Court, not an appellate court decision, and thus does not have the power of an appellate decision.

Response to Comment 17. It is not clear what the commenter is asking. This project is not the Moreno Valley Auto Mall but if the commenter is asking if the cumulative impacts of the Moreno Valley Auto Mall in combination with this project (Eucalyptus Industrial Park) were considered, yes they were for both air quality and traffic on the SR-60. The DEIR includes (1) a description of the circulation system from both a local and regional perspective and list the pages; (2) screening criteria were used to determine the appropriate intersections and segments to include in the analysis, based on whether there was a potential or impacts and what the criteria were; and (3) that freeway impacts were studied in the EIR (list the pages) and the findings and pages on which the freeway analysis findings are listed. The EIR evaluates traffic impacts at intersections with more than 50 trips, and

¹ From Courthouse News Service, May 29, 2012.
<http://www.courthousenews.com/2012/05/29/46884.htm> accessed September 17, 2012.

freeway segments within a 5 mile radius where the project has more than 100 peak hour trips. For freeway segments, the traffic analysis states that the project will add to unsatisfactory conditions but not create unsatisfactory conditions by itself. East of Redlands Boulevard, the project adds less than 100 peak hour trips to freeway facilities, therefore, the study area is consistent with the Friends decision. West of Pigeon Pass Road, since project traffic is more than 100 trips. However, traffic volumes on the freeway west of Pigeon Pass Road are higher than those to the east of Pigeon Pass Road. Since the number of lanes is the same, and the segments east of Pigeon Pass Road are forecast to operate at unsatisfactory conditions under future conditions without the project, the segments to the west would also operate at unsatisfactory conditions (higher volumes and same capacity). Therefore, to the freeway segments west of Pigeon Pass Road, the project will not create a direct impact but add to unsatisfactory conditions. Since the project does not create a direct significant impact at freeway segments where the project traffic is a higher percentage of the total freeway traffic, it can be said with certainty that the project will not create a direct impact at locations where the project traffic is a lower percentage of the total freeway traffic. Therefore, as described in the Response to Comment 13, as shown in Figure 4.3.3 of the DEIR, expected health risks further from the project site, including residences to the north along the freeway, are much less than 1 in a million.

A review of existing traffic volumes on the freeway reveals that the existing traffic volumes on segments beyond a 5-mile radius that were not analyzed and where the project has more than 100 peak hour trips are significantly higher than at the segments that were analyzed in the EIR. Since in 2035 all freeway segments analyzed operate at unsatisfactory levels of service in at least one peak hour, it can be said with certainty that segments with traffic volumes higher than those analyzed will also operate at unsatisfactory levels of service. Moreover, as the distance from the project site increases, project traffic on the freeway segments reduce. Since the project does not create a direct significant impact at freeway segments where traffic volumes are low and project contribution higher, it can be said with certainty that the project will not create a direct impact at locations where background traffic volumes are higher and project trips lesser. It is understood that the project will have a cumulative impact at all freeway segments where the background (without project) traffic volumes result in an unsatisfactory level of service. As stated in the DEIR Section 4.11.7, *Cumulative Impacts*, page 4.11-40, the addition of project traffic would be considered a cumulative impact. Review of the RTIP indicates that there are no projects programmed on SR-60 within the study area. Furthermore, neither the project applicant nor the City has jurisdiction over Caltrans facilities; therefore, implementation of improvements to the freeway mainline cannot be guaranteed. Furthermore, Caltrans does not have a mechanism for development projects to contribute to improvements on State Highways.

Response to Comment 18. The commenter states that global warming poses a grave threat to California and the Draft EIR is obligated to discuss the threats posed by greenhouse gas emissions for the public and decision makers. Page 4.13-1 through 4.13-6 in the Draft EIR (Section 4.13, *Global Climate Change*) provides the background information related to climate change requested in this comment.

The Draft EIR: discusses the existing greenhouse gas/climate change setting including the main gases of concern; provides the current emissions inventory at the global, US, and State levels; gives a detailed description of what global warming is and the effects that result, all of which could be considered the “threat of greenhouse gas pollution and global warming.” The EIR attempts to present a non-sensational, balanced description based on the best information available. Section 4.13.2 describes the entire regulatory setting, including all applicable federal, State and City of Moreno Valley regulations and policies. The DEIR’s GHG analysis is consistent with the requirements of CEQA (specifically CEQA Guidelines Section 15064.4, 15125(d), 15126.4(c), 15130(B).

Response to Comment 19. The comment summarizes international and national concerns about global climate change and greenhouse gas emissions which are also discussed in the DEIR in Section 4.13.1.1 on page 4.13-2.

Response to Comment 20. The comment summarizes concerns within the State of California about global climate change and greenhouse gas emissions which are also discussed in the DEIR in Section 4.13.1.1 on page 4.13-2.

Response to Comment 21. Section 4.13.6 of the Draft EIR includes a complete, detailed inventory and analysis of the project's short-term construction and long-term operational greenhouse gas emissions. The EIR states the project's greenhouse gas emissions and discusses the significance of these emissions without attempting to minimize the impact by subtracting whatever existing greenhouse gas emissions there might be from the project site. Section 4.13.7 discusses the cumulative impacts of the project's greenhouse gas emissions.

The greenhouse gas impact study provided emissions from both construction and operation periods. During the construction period, emissions from both equipment exhaust and other area sources were calculated. During the operational period, emissions associated with vehicular (including automobiles and trucks) trips, water and energy usage, waste treatment, and other known sources have been calculated and identified in the study. If the commenter is suggesting that an exhaustive "life-cycle" inventory of the project's greenhouse gas emissions be prepared, the State Office of Planning and Research provided guidance on this issue and clarified that a life-cycle analysis is not required.¹

Response to Comment 22. According to the greenhouse gas impact study, "*Global climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other significant changes in climate (such as precipitation or wind) that last for an extended period of time. The term "global climate change" is often used interchangeably with the term "global warming," but "global climate change" is preferred to "global warming" because it helps convey that there are other changes in addition to rising temperatures.*" The Draft EIR did analyze the project's effects on greenhouse gas emissions which is a component of global climate change or global warming (Section 4.13 Global Climate Change, pages 4.13-1 through 4.13-22).

In addition the California Green Building Code requires mandatory measures to be implemented on all new construction projects that consist of a wide array of green measures concerning project site design, water use reduction, improvement of indoor air quality, and conservation of materials and resources. The "Cal Green Building Code" refers to compliance with Title 24, Part 6 energy efficiency measures. Additionally, it encourages 15 percent energy use reduction over the amount required in Part 6. The Cal Green Building Code prescribes a wide array of measures that would directly and indirectly result in reduction of GHG emissions from the Business as Usual Scenario. The mandatory measures that are applicable to nonresidential projects include site selection, energy efficiency, water efficiency, materials conservation and resource efficiency, and environmental quality measures.

The Climate Change technical report included in the EIR Appendix B does include a discussion of the impacts that climate change could have on the project. The conclusion is that there are not expected to be any significant impacts. If the commenter is suggesting that the DEIR should provide a more detailed analysis of global warming on the proposed project, there is a recent CEQA Case, *Ballona Wetlands Land Trust v. City of Los Angeles and Ballona Ecosystem Education Project v City of Los Angeles*, No.B231965 (Cal. Ct. App 2d Dist., November 9, 2011), where the opponents claimed that the EIR was inadequate because it did not analyze the effects of sea rise due to global warming on the project. The Court held that CEQA did not require the EIR to analyze this risk, concluding that

¹ Transmittal of the Governor's Office of Planning and Research's Proposed SB97 CEQA Guidelines Amendments to the Natural Resources Agency, California Governor's Office of Planning and Research, April 13, 2009, page 2.

“the purpose of an EIR is to identify the environmental effects of the project on the environment and not the significant effects of the environment on the project.” The court reasoned: “[w]e believe that identifying the environmental effects of attracting development and people to an area is consistent with CEQA’s legislative purpose and statutory requirements, but identifying the effects on the project and its users of locating the project in a particular environmental setting is neither consistent with CEQA’s legislative purpose nor required by CEQA statutes.” Although an analysis of the effects of global climate change on the project is not required, one was provided on page 4.13-3 of the DEIR (Section 4.13.1.3, *Effects of Global Warming*).

Response to Comment 23. The opinion of the Sierra Club that “The project’s greenhouse gas impacts are clearly significant” is noted, but contrary to the detailed climate change analysis included in the EIR. The EIR does include a detailed significance discussion and conclusion at the end of Sections 4.13.5, 4.13.6, and 4.13.7.

The SCAQMD and other air quality agencies agree that GHG and climate change should be assessed as a potentially significant “cumulative impact” rather than a “project-specific” impact. SCAQMD is considering the adoption of a numeric plan-level efficiency target of 6.6 MTCO₂E per service population.

The intent of CEQA is to determine the significant effects of a project on the environment and provide feasible and reasonable mitigation to reduce impacts to less than significant. In instances where the impact of the project cannot be reduced to less than significant and it is determined the impact is significant and unavoidable, the Lead Agency, must adopt a Statement of Overriding Considerations that finds (1) under Public Resources Code Section 21081(a)(3), and CEQA Guidelines Section 15091(a)(3), that specific economic, legal, social technological, or other considerations, including provisions of employment opportunities to highly trained workers make infeasible the mitigation measures or project alternatives identified in the Final EIR; and (2) under CEQA Guidelines section 15092(b), that the remaining significant effects are acceptable due to overriding concerns described in the CEQA Guidelines Section 15093. CEQA does have a provision as stated above that an impact can be significant and unavoidable if the City makes findings as to why it is willing to accept the significant impact; therefore, it was not CEQA’s intent to not allow any tolerance for impacts on the environment as long a good faith effort is made to reduce the impacts where reasonable.

In addition, the Draft EIR analyzed the cumulative effects of the project on greenhouse gas emissions (Section 4.13.7 Cumulative Impacts, page 4.13-25). The EIR further determined that, while it is not possible to determine whether the project individually will have a significant impact on global warming or climate change, it will contribute to cumulative GHG emissions in California. Cumulatively, the build out of the proposed project would contribute approximately 79,000 metric tons of CO₂e per year. The mitigation measures discussed in the project-level impact analysis of GHG emissions indicated the measures would substantially reduce the project’s emissions of greenhouse gases, however, without the necessary science and analytical tools, it is not possible to determine with certainty whether the project’s emissions of greenhouse gases will be cumulatively considerable, within the meaning of CEQA Guidelines Sections 15065(a)(3) and 15130. The CARB is currently in the process of designing regulations to monitor, limit, and ultimately reduce California GHG emissions but there are as yet no adopted standards for assessing the significance of cumulative impacts from projects.

Cumulatively, the emissions from electricity production would comprise approximately 2.8 percent of the project’s total CO₂e emissions. Water usage and solid waste disposal emissions comprise approximately 14 percent of the project’s total CO₂e emissions while the emissions from vehicle exhaust would comprise approximately 84 percent of the project’s total CO₂e emissions. The emissions from vehicle exhaust are controlled by the State and Federal governments and are outside the control of the City. The remaining CO₂e emissions are primarily associated with building systems. The proposed project is required to comply with existing State and Federal regulations regarding the energy efficiency of buildings, appliances, and lighting, which would reduce the project’s electricity demand. The new

buildings constructed in accordance with current energy efficiency standards would be more energy efficient than older buildings.

The Draft EIR (Section 4.3) made a determination that the proposed project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases and no mitigation is required. However, it was determined that the proposed project would generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment and mitigation was proposed to reduce these project-specific effects to less than significant (Draft EIR, page 4.3-21 through 4.3-26).

With implementation of the strategies and programs described previously, the project is consistent with the strategies to reduce California's emissions to the levels proposed in Executive Order S-3-05. However, given the uncertainty of data and appropriate methodology to accurately analyze, and the inability to quantify the reduction achieved through implementation of strategies and programs previously identified, the proposed project's GHG emission contribution would result in a cumulative impact regarding global climate change and the cumulative impacts of the proposed project on global climate change are considered to be significant and unavoidable.

In summary, the City believes all known emissions during construction and operations of the proposed project have been identified and calculated. The preparer of the greenhouse gas impact study has followed the guidelines provided by the OPR and California Air Pollution Controls Officers Association (CAPCOA) and has provided an adequate analysis. It is the City's opinion that the study has disclosed the impacts of the proposed project adequately and mitigated the impacts of greenhouse gas emissions where applicable (Draft EIR Section 4.13, *Global Climate Change*, pages 4.13-1 through 4.13-26).

Response to Comment 24. Section 4.13.6 includes mitigation measures 4.13.6.1A, 4.13.6.1B, and 4.13.6.1C which include many feasible mitigation measures to be implemented to minimize greenhouse gas emissions. As stated in Response 23, all known emissions during construction and operations of the proposed project have been identified and calculated. The preparer of the greenhouse gas impact study has followed the guidelines provided by the OPR and CAPCOA and has provided an adequate analysis. It is the City's opinion that it has disclosed the impacts of the proposed project adequately and mitigated the impacts of greenhouse gas emissions where applicable (Draft EIR Section 4.13, *Global Climate Change*, pages 4.13-1 through 4.13-26).

Response to Comment 25. The proposed project would certainly take advantage of public transit (i.e., bus service) when it becomes available to the area, most likely along the realigned Eucalyptus Avenue. The project would be required to install bus turnouts as directed by the Riverside Transit Authority (RTA) (e.g., RTA Route 35) and future workers would no doubt take advantage of bus service in the project area. The closest existing RTA Bus Route in the area is Route 35 with a bus stop at the WalMart Super Center at Moreno Beach Drive west of the project site and within walking distance.¹ The commenter requests that the project create routes to facilitate access to commercial centers, schools and parks for residents, however, this is an industrial project, not a residential development, so there will not be residents who need access to those facilities.

The project provides for the relocation of the Quincy Channel multi-purpose trail and will provide sidewalks along Eucalyptus Avenue, as required by the City. When completed, Eucalyptus Avenue will be wide enough (72-foot curb-to-curb) to allow bicycles to travel safely east and west to the rest of the City. Pedestrians will also be able to travel west along Eucalyptus Avenue to the shopping and services along and off of Moreno Beach Drive.

¹ <http://www.riversidetransit.com/home/images/stories/DOWNLOADS/ROUTES/035.pdf> accessed December 17, 2012.

Response to Comment 26. The comment states the “FEIR should consider mitigation measures that will ensure the planned community will use energy efficiently and conservatively.” The proposed project is a logistics distribution warehouse not a planned community with a residential component. As stated in the Draft EIR, page 3-2: “The proposed project includes the construction and operation of a warehouse facility comprising six buildings consisting of a total of approximately 2,244,638 square feet.” Nonetheless, the project will be required to comply with the state’s new Green Building Code, which has significantly increased energy, water, and resource conservation features required of new buildings over previous building codes” Second, the project Mitigation Measures, as presented in the Draft EIR and as modified in this Final EIR, will substantially reduce energy, water, and other resource consumption by this project. Many of these measures will also help reduce the potential production of excessive air pollution and greenhouse gas emissions related to this project, as outlined in Sections 4.3 Air Quality and 4.13 Global Climate Change of the Draft EIR. For example, Mitigation Measure 4.3.6.5A requires that the project implement transportation demand management strategies such as preferential parking for employee vanpooling/carpooling, bicycle parking facilities (such as bicycle lockers and racks), bus turnouts, and other strategies to reduce vehicle miles traveled. Mitigation Measure 4.3.6.5B requires that the project applicant incorporate twenty-one (21) energy-efficiency and low-air pollution emission methods into the project design and building construction including but not limited to:

- *Low-emissions water heaters;*
- *Central water-heating systems;*
- *Energy-efficient appliances;*
- *Increased insulation;*
- *Automated controls for air conditioners;*
- *Energy-efficient parking lot lighting;*
- *Lighting controls and energy-efficient lighting;*
- *Low-VOC interior and exterior coatings during project repainting;*
- *On-site improvements such as sidewalks or pedestrian walkways to promote pedestrian activity and reduce the amount of vehicle trips;*
- *Installation of skylights and energy-efficient lighting that exceeds California Title 24 standards where feasible, including electronic dimming ballasts and computer-controlled daylight sensors in the buildings;*
- *Shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and building shall be planted at the proposed project site;*
- *Fans to assist natural ventilation, centralized water and space conditioning systems, high efficiency individual heating and cooling units, and automatic setback thermostats. Incorporating drought-tolerant plants into the landscaping palette; and*
- *Use of water-efficient irrigation techniques;*
- *Energy-efficient low-pressure sodium parking lot lights or lighting equivalent as determined by the City;*
- *Buildings shall be oriented north-south where feasible;*
- *Implement an on-site circulation plan in parking lots to reduce vehicle queuing;*
- *Develop a trip reduction plan to achieve 1.5 average vehicle ridership (AVR) for businesses with fewer than 100 employees or multitenant worksites;*
- *Include bicycle parking facilities such as bicycle lockers and racks;*

- *Include showers for bicycling employees use; and*
- *Construct on-site pedestrian facility improvements such as building access that is physically separated from street and parking lot traffic and walk paths.*

Mitigation Measure 4.13.6.1A requires that the project applicant incorporate four (4) energy-efficiency and water-efficiency methods into the project design including but not limited to:

- *Utilize exterior window treatments for efficient energy conservation;*
- *Utilize water-efficient fixtures and appliances, including but not limited to low-flow faucets, dual-flush toilets minimizing water consumption by 20 percent from the Building Standards Code baseline water consumption;*
- *Prepare a Commissioning Plan that includes commissioning by a Commissioning Authority for all building systems (e.g., heating, ventilation, and air-conditioning [HVAC], irrigation systems, lighting, and water heating); and*
- *Restrict watering methods (e.g., prohibit systems that apply water to non-vegetated surfaces) and control runoff;*

Mitigation Measure 4.13.6.1B requires that the project applicant incorporate twelve (12) energy-efficiency methods into the project design and construction including but not limited to:

- *Use locally produced and/or manufactured building materials for at least 10 percent of the construction materials used for the project;*
- *Use “Green Building Materials,” such as those materials that are resource efficient, and recycled and manufactured in an environmentally friendly way, for at least 10 percent of the project;*
- *Limit unnecessary idling of construction equipment;*
- *Maximize the use of electricity from the power grid by replacing diesel- or gasoline-powered equipment;*
- *Design the project building to exceed the California Building Code (CBC) Title 24 energy standard, including, but not limited to, any combination of the following:*
 - *Increase insulation such that heat transfer and thermal bridging is minimized.*
 - *Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption.*
 - *Incorporate ENERGY STAR or better rated windows, space heating and cooling equipment, light fixtures, appliances, or other applicable electrical equipment.*
- *Provide a landscape and development plan for the project that takes advantage of shade, prevailing winds, and landscaping;*
- *Install efficient lighting and lighting control systems. Use daylight as an integral part of the lighting systems in buildings.*
- *Install light-colored “cool” roof and cool pavements.*
- *Install energy-efficient heating and cooling systems, appliances and equipment, and control systems.*
- *Install solar or light-emitting diodes (LEDs) for outdoor lighting.*

Mitigation Measure 4.13.6.1C requires that the project applicant incorporate six (6) greenhouse gas emission and waste reduction methods into project operations including but not limited to:

- *Use less than 3,900 Global Warming Potential (GWP) hydrofluorocarbon (HCF) refrigerants or natural refrigerants (ammonia, propane, carbon dioxide [CO2]) for refrigeration and fire suppression equipment;*
- *Provide vegetative or man-made exterior wall shading devices for east-, south-, and west facing walls with windows;*
- *Devise a comprehensive water conservation strategy appropriate for the project and its location. The strategy may include the following, plus other innovative measures that may be appropriate:*
 - *Install drought-tolerant plants for landscaping.*
 - *Use reclaimed water for landscape irrigation within the project. Install the infrastructure to deliver and use reclaimed water.*
 - *Install water-efficient irrigations systems, such as weather-based and soil-moisture-based irrigation controllers and sensors for landscaping according to the California Department of Water Resources Model Efficient Landscape Ordinance.*
- *Provide employee education about reducing waste and available recycling services.*

Information on the project’s LEED certification is presented in the previous Response to Comments D-2, Nos. 1 and. 2. The other measures suggested in this comment have already been evaluated in this EIR, and most have already been incorporated into the project Mitigation Measures. For example, the project will provide an alternative fuel station, shading of parking areas, energy efficient lighting both inside and outside, etc. The City believes compliance to at least 10 percent less than current energy codes included in the Green Building Code, and the project mitigation measures as proposed in the Draft EIR and as modified in this Final EIR, are sufficient and reduce the energy use of this project to the greatest extent practical and feasible, as required under CEQA.

The comment suggests that thirteen (13) additional measures to reduce greenhouse gas emission be included. The Draft EIR already incorporates or includes eight of the measures and the remaining six measures are not included or are infeasible. An explanation of these measures including where they are already included or incorporated in the Draft EIR or why they are not included or are infeasible is provided in Table A as follows:

Table A: Comparison of Sierra Club Suggested Measures to Project EIR Mitigation Measures

Suggested Mitigation Measure to Reduce Greenhouse Gas Emissions	Response
1. Analyzing and incorporating the U.S. Green Building Council’s LEED (Leadership in Energy and Environmental Design) or comparable standards for energy efficient building during pre-design, design, construction, operations and management.	Included. The project description (see Draft EIR p 3-14) recognizes the trend towards “Green Building” in the state, and the applicant for the proposed project will apply for the Leadership in Energy and Environmental Design (LEED) Core & Shell rating program. LEED is a voluntary, consensus-based standard to support and certify successful green building design, construction, and operations.
2. Designing buildings for passive heating and cooling, and natural light, including building orientation, proper orientation and placement of windows, overhangs, skylights, etc.	Included. A similar mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on pages 4.3-33 and 4.3-34.
3. Designing buildings for maximum energy efficiency including the maximum possible insulation, use of compact florescent or other	Included. Similar mitigation measures are already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on pages 4.3-33 and 4.3-34

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Suggested Mitigation Measure to Reduce Greenhouse Gas Emissions	Response
low-energy lighting, use of energy efficient appliances, etc.	and Mitigation Measure 4.3.6.6A on pages 4.3-35 and 4.3-36 and Section 4.13 Global Climate Change of the Draft EIR under Mitigation Measures 4.13.6.1A, 4.13.6.1B, and 4.13.6.1C on pages 4.13-20 and 4.13-21.
4. Reducing the use of pavement and impermeable surfaces.	Included where appropriate. Impermeable surfaces will be installed where appropriate, but it is not feasible to use impermeable surfaces in the truck parking area since a soft permeable surface will not support the weight of a large truck.
5. Requiring water re-use systems.	Infeasible. Reclaimed water is not available to this area of the City yet, so a “purple” pipe system is not required to be installed as part of this project.
6. Installing light emitting diodes (LEDs) for traffic, street and other outdoor lighting.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.13.6.1B on page 4.13-21.
7. Limiting the hours of operation of outdoor lighting.	Not Included. The future facility operator is not known at this time since the developer is building a spec building. The City cannot burden the future, unknown operator with this limitation provided the operation complies with all applicable City ordinances regarding night lighting. .
8. Maximizing water conservation measures in buildings and landscaping, using drought tolerant plants in lieu of turf, planting shade trees.	Included. Similar mitigation measures are already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-34 and Section 4.13 Global Climate Change of the Draft EIR under Mitigation Measures 4.13.6.1A, 4.13.6.1B, and 4.13.6.1C on pages 4.13-20 and 4.13-21.
9. Ensure that the Project is fully served by full recycling and composting services.	Included. A similar mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.6B on page 4.3-37. Infeasible. The proposed industrial warehouse project will not generate any compost materials, with the exception of trimmings from landscape vegetation and scraps from employee meals. The landscape service provided will be responsible for removal of trimmed vegetation to an off-site receiving facility. Scraps from employee meals will not be generated in enough quantities to warrant an on-site composting facility, so such a system is not required to be installed as part of this project.
10. Ensure that the Project’s wastewater and solid waste will be treated in facilities where greenhouse gas emissions are minimized and captured.	Infeasible. The site is served by public entities for wastewater and solid waste. Neither the City nor the project proponent has control over those facilities.
11. Installing the maximum possible photovoltaic array on the building roofs and/or on the project site to generate all of the electricity required by the Project, and utilizing wind energy to the extent necessary and feasible.	Partially Included. The proposed project does not have a specific end user at this point, but the building design will allow for future installation of solar photovoltaic for the entire building and solar hot water heating for the office area.
12. Installing solar water heating systems to generate all of the Project’s hot water requirements.	Not Included. The proposed project does not have a specific end user at this point, but the building design will allow for future installation of solar photovoltaic and solar hot water heating for the office area.
13. Installing solar or wind powered electric vehicle and plug-in hybrid vehicle charging stations to reduce emissions from vehicle trips.	Included. A similar mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.6B on page 4.3-36.

Response to Comment 27. The commenter is confusing the proposed project, which involves industrial warehouses, with a residential project. All known emissions during construction and operations of the proposed project have been identified and calculated (Draft EIR Section 4.13, Global Climate Change, pages 4.13-1 through 4.13-26). Feasible mitigation measures, including several identified in the list provided by the commenter, have been already included as mitigation for the project and are identified in the Draft EIR. In addition, the mitigation measures shown as “Incorporated” in the Table C have been added to the Final EIR (Section 3.0 Errata and Additions) as suggested by the commenter. The changes to the Draft EIR do not result in the identification of a new or more severe significant impact and has no material effect on the findings of the EIR. Table B below contains each of the greenhouse gas reduction measures suggested for inclusion by the commenter and if it is already included, if will be added mitigation as part of the Final EIR, or if will not be included and why.

The comment suggests that five (5) additional measures to reduce air quality and greenhouse gas emissions during project construction be included. The Draft EIR already incorporates or includes two of the measures and the remaining three measures are not included or are infeasible. An explanation of these measures including where they are already included or incorporated in the Draft EIR or why they are not included or are infeasible is provided in Table B as follows:

Table B: Comparison of Sierra Club Suggested Measures to Project EIR Mitigation Measures

Mitigation Related to Construction	
1. Utilize recycled, low-carbon, and otherwise climate-friendly building materials such as salvaged and recycled-content materials for building, hard surfaces, and non-plant landscaping materials.	Included. A similar mitigation measure is already included in Section 4.13 Global Climate Change of the Draft EIR under Mitigation Measure 4.13.6.1B on page 4.13-20.
2. Minimize, reuse, and recycle construction-related waste.	Not Included. The project is required to comply with Policy 6.7.6 of the Chapter 9 of the City’s General Plan: Require building construction to comply with the energy conservation requirements of Title 24 of the California Administrative Code. The applicant will attempt to divert at least 50% of construction waste, and would apply for LEED credit if they achieve that goal.
3. Minimize grading, earth-moving, and other energy-intensive construction practices.	Infeasible. The entire site must be graded to accommodate the building structures and parking lots.
4. Landscape to preserve natural vegetation and maintain watershed integrity.	Infeasible. The site contains very little natural/native vegetation, only associated with the Quincy Channel, which will be preserved onsite.
5. Utilize alternative fuels in construction equipment and require construction equipment to utilize the best available technology to reduce emissions.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measures 4.3.6.2B and 4.3.6.2J on page 4.3-24.

Response to Comment 28. Many of these proposed measures appear to apply to a residential “planned community” rather than an industrial warehouse project, so it is assumed they were mistakenly excerpted from another document (e.g., shuttle service, car sharing service, encouraging residents to use low or zero emission vehicles, etc.).

Measure 4.3.6.5A requires ridesharing, and the project will provide a vehicle charging station (Measure 4.3.6.6A). In addition, the project will take advantage of transit when transit services are extended through the project along Eucalyptus Avenue by the RTA.

It should be noted that the commenter made very similar comments on the Vogel Industrial Project EIR recently processed by the City, and many of the mitigation measures incorporated into that project were incorporated into this project. However, Table C, below summarizes the measures recommended by the commenter compared to the actual measures provided in the Draft EIR and this Final EIR.

The comment suggests that six (6) additional measures to reduce air quality and greenhouse gas emissions from project vehicles be included. The Draft EIR already incorporates or includes two of the measures and the remaining four measures are not included or are infeasible. An explanation of these measures including where they are already included or incorporated in the Draft EIR or why they are not included or are infeasible is provided in Table C as follows:

Table C: Comparison of Sierra Club Suggested Measures to Project EIR Mitigation Measures

Transportation Mitigation Measures	
1. Encourage and promote ride sharing programs through such methods as a specific percentage of parking spaces for ride sharing vehicles.	Included. Similar mitigation measures are already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5A on pages 4.3-33 and Mitigation Measure 4.3.6.6A on page 4.3-36.
2. Create a car sharing program within the planned community;	Not Included. The suggested mitigation measure applies to a planned community and is therefore inappropriate. As noted in Mitigation Measure 4.3.6.2J (Draft EIR page 4.3-25), documentation shall be provided to the City of Moreno Valley indicating that construction workers have been encouraged to carpool or otherwise reduce VMT to the greatest extent practical, including providing information on available park and ride programs. However, the applicant will provide a bulletin board that will facilitate posting of ridesharing information and requests by project workers.
3. Create a light vehicle network, such as a neighborhood electric vehicle (NEV) system.	Not Included. The suggested mitigation measure applies to a residential neighborhood and is therefore inappropriate. However, Mitigation Measure 4.3.6.2J on page 4.3-24 requires alternative fuel vehicles onsite.
4. Provide necessary facilities and infrastructure to encourage residents to use low or zero-emission vehicles, for example, by developing electric vehicle charging facilities and conveniently located alternative fueling stations.	Included. The mitigation measure the comment suggests refers to “residents”, and this project proposes warehousing not a residential development. However, a similar mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.6A on page 4.3-36.
5. Provide a shuttle service to public transit within and beyond the planned community.	Not required. The RTA serves the general project area and may require bus stops to be installed as service is needed to the project or other nearby areas. Therefore, the site is serviced by the RTA and no further actions are necessary.
6. Incorporate bicycle lanes and routes into the planned community’s street systems.	Not required. Bicycle access to and from the project would use Eucalyptus Avenue, and pedestrians would be able to access the site on the planned multi-purpose trail on the north side of Eucalyptus Avenue. It should be noted the proposed project is warehousing, not a planned community.

Response to Comment 29. The use of carbon offsets is infeasible because:

- The cited precedent is a negotiated settlement for a major oil refinery in Contra Costa County, rather than a warehouse development in Riverside County;
- The cited precedent was for the period prior to 2012;

- California has not established any generally applicable standards for requiring offsets for GHG emissions; and
- Most cities and counties in California have not required offsets for GHG emissions on projects of the scale of the proposed project.

Using such carbon offsets to mitigate for cumulative impacts is fraught with uncertainty. As the comment implies (“... offsets purchased are real...”), but there is considerable controversy regarding whether offsets that are available today will actually mitigate this cumulative effect.

First, it requires an accurate measure of the emissions to be offset and the offsets to be provided. That calculation turns out to be riddled with uncertainty on both ends. As noted above in the example cited by the commenter, this initial offset of \$7 million for the Rodeo refinery was later reduced to \$4.4 million due to revised calculations of GHG emissions. The UN's Intergovernmental Panel on Climate Change found a margin of error of 10% with measuring emissions from making cement or fertilizer; 60% with the oil, gas and coal industries; and 100% with some agricultural processes.

Second, the provision of offsets requires an accurate measure of the carbon saved elsewhere. Most of the earliest offset projects involved planting trees, which naturally ingest carbon, a complex and unpredictable process which forbids accurate measurement.

Finally, the very idea of offsetting relies on the concept that a carbon reduction would not have occurred in the natural order of commercial life. For example, one of the biggest UK companies that sells offsets, Climate Care, distributed 10,000 energy-efficient light bulbs in a South African township; offered the carbon reductions as offsets; and then discovered that an energy company was distributing the same kind of light bulbs free to masses of customers, including their township, so the reduction would have happened anyway.

To accurately calculate the amount of credit for each of the above actions, the offset program must make a number of critical assumptions:

- What is the baseline of emissions for the existing facilities that would be retrofitted to reduce their energy consumption? Would they ultimately be retrofitted in any case, thus limiting the actual resulting reduction in GHG emissions?
- Is the development of the alternative energy source actually dependent on the external funding provided by the offset? Or is the alternative energy developer simply achieving another subsidy?
- How much extra energy (and GHG emissions) is required to construct the alternative energy facility? What period of time should this be amortized over? For example, the development of the California High Speed Rail Project is estimated to reduce energy consumption in the long run. However, the extra energy involved with construction is estimated to have a 40 year payback.

As such, the actual amount of mitigation provided by an offset program can be speculative, based upon the actual performance of the program.

There is a global marketplace for fossil fuel energy based upon a market between buyers and sellers. The sellers, those who own the sources and production of fossil fuel energy, have a powerful economic interest to keep and increase their income stream from the production of fossil fuels.

To the extent that the actions cited above as potential offset measures, in combination with other conservation measures, reduce the demand for fossil fuels in the countries where they are implemented, the owners of these fossil fuel supplies will still want to preserve and enhance their income as much as possible. And there is a large unmet need (unmet as defined by consumer actions) for increased energy consumption in developing countries. For example the average annual energy consumption of a citizen of China or sub-Saharan Africa, at 4.5 metric tons, is far less than that of the average US citizen, at 20 metric tons. To the extent that the US and other countries reduce energy consumption based upon energy efficiency measures, the owners of fossil fuel resources will seek to sell the same energy, perhaps at a lower price, to the less developed countries. If the energy is sold at a lower price, then more energy would need to be sold to generate the same income, and the resulting energy consumption and GHG emissions could actually increase.

In conclusion, the City concludes that compliance to at least 10 percent less than current energy codes included in the Green Building Code, and the project mitigation measures as proposed in the Draft EIR and as modified in this Final EIR, are sufficient and reduce the energy use of this project to the greatest extent practical and feasible, as required under CEQA. There are no established laws or regulatory guidelines requiring contributions toward carbon offsets. In addition, there is uncertainty regarding the efficacy, reliability and legal standing of carbon off-sets at this time. For this reason, such mitigation is considered to be infeasible. The analysis in the Draft EIR concludes that greenhouse gas emission impacts of the project will be less than significant with implementation of the recommended mitigation measures, despite protestations of the commenter and others to the contrary.

Response to Comment 30. The commenter is correct in stating that the EIR must contain a “reasonable” [emphasis added] range of alternatives to the proposed project that avoid or lessen the significant impacts to the proposed project (Pub. Res. Code §21002; CEQA Guidelines §§ 15002(a)(3), 15021(a)(2), 15126.6(d)). According to CEQA Guidelines §15126.6(a) “[A]n EIR need not consider every conceivable alternative to a project. An EIR is not required to consider alternatives which are infeasible. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason. [Citizens of Goleta Valley v. Board of Supervisors (1990) 52 Cal.3d 553 and Laurel Heights Improvement Association v. Regents of the University of California (1988) 47 Cal.3d 376].”

The Draft EIR does include an analysis of a reasonable range of alternatives to the proposed project (Draft EIR, Section 6.0 Alternatives, pages. 6-1 to 6-40) in compliance with CEQA. The Draft EIR discusses the No Project Alternative (Section 6.3.2.1) and an Off-Site Alternative (Section 6.3.2.4) as suggested by the commenter.

In addition, the commenter is referred to Section 4 of this document for an evaluation of a less intensive modified plan, which is a subset of the Reduced Intensity Alternative evaluated in the DEIR (and which was determined to be environmentally superior to the Proposed Project). This less intensive plan proposes to develop 4 warehouse buildings, leaving the southeast portion of the site vacant for future development of residential uses consistent with existing zoning (R-5 and RA-2) adjacent to the existing residential neighborhood to the southeast.

The EIR did look at a higher density mixed commercial residential development. As described on page 6-24 of the Draft EIR, the Mixed Commercial/Office/Residential Alternative (Alternative 4) would result in the development of commercial, office and residential uses on the project site resulting in development of 548 multiple-family residential units, 138 single-family residential units, 441,000 square feet of commercial uses, and 441,000 square feet of office uses.

As described on page 6-31 of the Draft EIR:

Under the Alternative 4, impacts related to short-term construction-related air quality would be similar to the proposed project as the same amount of land would be disturbed and the same mix of equipment would be utilized. Long-term operational-related air quality emissions would be increased in magnitude when compared to the project and would remain significant and unavoidable. Because of the increase in vehicle trips under this alternative, impacts to the operation of local roadways and intersections would be proportionally greater than what was identified for the proposed project. Long-term traffic impacts would remain significant and unavoidable. Traffic-related noise would be increased in magnitude but would be similarly mitigated like the proposed project and would remain less than significant.

Because this alternative would also require a Zone Change and General Plan Amendment, land use impacts would be similar to the proposed project. This alternative would result in the development of office uses that would generate permanent jobs, which may require workers who are not current residents of the City. Combined with the residential component, the office use would increase the total number of people that would be added to the City's population. This alternative would have greater demands on public services and recreation. However, the payment of fees and dedication of parkland would reduce these impacts to a less than significant level. This alternative would increase the amount of water utilized and increase the amount of wastewater and solid waste that would be generated on site. Similar to the proposed project, adherence to wastewater and solid waste requirements would reduce these impacts to a less than significant level. In the event that water is not available for development envisioned under this alternative, impacts to water resources would be significant and avoidable. Under this alternative, some of the proposed project objectives would not be met as warehouse uses would not be built. However, development of this alternative would provide new employment opportunities for residents of Moreno Valley.

The Draft EIR does analyze the various alternatives impacts on greenhouse gas emissions (Table 6.F page 6-10) biological resources, water resources including water quality and water use (Table 6.C on page 6-9) and traffic (Table 6.B page 6-9). In addition, detailed analysis for each of the alternatives is included in Section 6 of the Draft EIR as it relates to the environmental issues listed by the commenter.

An agricultural alternative was not considered because the site has been planned by the City since 1987 for suburban intensity land uses. In addition the current General Plan does not include any agricultural designations. The City allows agricultural uses in all land use designations as an interim use until such time as the land is developed per the vision identified in the General Plan. One of the goals stated in the City's recent General Plan is the "...orderly conversion of agricultural lands." Therefore, an agricultural use as a long-term alternative is not practical and does not require analysis as a separate alternative. However, it should be noted that Alternative 3 does incorporate 27 acres of land that would be used for agriculture to provide a less intense buffer in the southeastern portion of the site. No further analysis is necessary and the comment does not change the conclusion in the Draft EIR.

Response to Comment 31. The commenter is correct in stating that a large segment of the population of Moreno Valley is Hispanic or Latino. However, because a person is Hispanic or Latino does not automatically mean that they only speak Spanish. There is no legal requirement to translate the environmental documents or the notices into other languages. It is not the policy of the City to require project applicants to incur the added expense of having project environmental documents or public notices translated into Spanish. The City is also not required to incur the expense of providing a Spanish translator at public meetings. The commenter is free to provide a Spanish translator at its costs. In addition, neither the State CEQA Statutes nor the State CEQA Guidelines require or even suggest providing such notices.

Contrary to the assertion of the commenter, the City believes the Draft EIR does identify and analyze the potential direct, indirect, and cumulative impacts of the proposed warehouse project. The City believes the EIR, including the Draft EIR, Final EIR, and supporting appendices and materials, comply with the requirements of CEQA, and that the Final EIR has adequately addressed the various comments raised by this and other commenters on the EIR.

The Sierra Club, San Gorgonio Chapter, is already on the mailing list for this project, as previously requested.

LETTER D-3: JOHNSON & SEDLACK

Johnson & Sedlack
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Letter D-3

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September 4, 2012

VIA EMAIL

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RE: Comments on Prologis Eucalyptus Industrial Park Draft Environmental Impact Report (SCH No. 2008021002)

Greetings:

On behalf of the Sierra Club, Moreno Valley Group, and Residents for a Livable Moreno Valley, I hereby submit these comments on the Prologis Eucalyptus Industrial Park Draft Environmental Impact Report (EIR). (SCH No. 2008021002)

General Comments:

The California Environmental Quality Act (CEQA) was adopted as a disclosure and transparency document. The theory is that by providing a document that adequately describes the environmental consequences of a project to decision makers and the public, the decision makers will make a rational decision based upon the true environmental consequences of the project and if they do not, the electorate can hold them accountable for their decisions. The core of this statutory structure is the adequacy of the document as an informational document.

Unfortunately, the Draft EIR for this Project fails as an informational document. The Project Description in the EIR is inadequate, misleading, and internally inconsistent. CEQA requires that an EIR contain an accurate, complete, and consistent description of a proposed project so that decision-makers and the public can properly and fully assess the project's environmental

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RESPONSE TO LETTER D-3

JOHNSON & SEDLACK

Response to Comment 1. The commenter provided some brief information about the purposes of CEQA. No response is necessary.

Response to Comment 2. The commenter's opinions on the quality of the environmental assessment that was done will be forwarded to the decision-makers for their consideration. The City disagrees with the commenter's generalized assertions regarding the adequacy of the Draft EIR. The comment that the conclusions in the EIR are not based in fact is erroneous. The Draft EIR is based on the findings of technical studies that were prepared for the project that were included in their entirety in the appendices to the Draft EIR. Those studies are all listed in Section 2.2.4, *Technical Reports*, of the Draft EIR, and listed separately in the appropriate impact assessment sub-section of Draft EIR Section 4, Impact Analysis (Sections 4.1 through 4.13). The project description and subsequent analysis in the EIR explain that the trail segment north of the realignment of Eucalyptus Avenue will be eliminated because it does not go anywhere, as it was planned when an undercrossing of the SR-60 was envisioned, but which has been eliminated from the General Plan and supporting planning documents and maps. Rather, the proposed trail will follow Eucalyptus Avenue with a leg south of Eucalyptus along the Quincy Channel, which will connect the trail to existing trails to the west and south. This information is not inconsistent in the EIR document.

In addition, the commenter is incorrect, Table 3.C and Figure 3-4 (in Section 3.8, *Cumulative Projects*) in the Project Description do accurately describe and show the locations of cumulative projects being evaluated in the EIR.

The EIR has provided accurate information about the proposed project and cumulative projects and therefore does not fail as an informational document.

Response to Comment 3. The City disagrees with the opinions of the commenter – The City believes the findings of the EIR are supported by substantial evidence and the EIR is an adequate informational document upon which the decision-makers can base their decisions. The responses below document the ways the EIR provides substantial evidence and complies with the requirements of CEQA.

Regarding the evaluation of environmental impacts, the Initial Study prepared for the proposed project was comprehensive and determined that impacts on forest resources, geology and soils, mineral resources, public services, and recreation would be less than significant with the implementation of mitigation requiring further analysis in an EIR. Those specific mitigation measures are identified in the Initial Study, Section 2.0 of the EIR and are also included in the Mitigation Monitoring and Reporting Plan (MMRP) attached to the Final EIR. The City formally initiated the environmental process with circulation of an NOP along with the Initial Study, which it sent to responsible agencies and interested individuals for a 30-day review period from February 4 to March 6, 2008. At the close of the public review period, the City had received 22 letters on the NOP. The NOP disclosed that an EIR would be prepared and the issues that would be addressed included: aesthetics (views and lighting), agricultural resources, air quality, biological resources, cultural and paleontological resources, hazards and hazardous materials, hydrology and water quality, land use and planning, noise, population and housing, traffic and circulation, utilities and service systems, and global climate change (i.e., Sections 4.1 through 4.13 in the Draft EIR). The commenter is in error that the Draft EIR did not address some of these topics. All of these potential impacts were addressed in appropriate sections of the DEIR.

In addition, the technical studies prepared in support of the DEIR analyses that address temporal-related impacts did allow for 24/7 operation. For example, the traffic study was based on peak-hour impacts assuming worst case conditions (i.e., not 24-hour operation), so 24/7 operation would actually lower peak hour traffic impacts. The project traffic data is the basis for the noise assessment, likewise allow for 24/7 operation. Similarly, page 13 of the project noise assessment states...

"These noise levels represent the worst-case scenario, which assumes that no shielding is provided between the traffic and the location where the noise contours are drawn. The specific assumptions used in developing these noise levels and model printouts are provided in Appendix A. Tables F, H, J, and L show that project-related traffic noise level increases would be 2.6 dBA or less along most roadway segments analyzed, except along Eucalyptus Avenue between Auto Mall Drive and Redlands Boulevard. This range of noise level changes is small and is not perceptible by the human ear. The portion of Eucalyptus Avenue with traffic noise increases greater than 3 dBA has no noise-sensitive uses (auto mall, commercial use, and vacant land only) directly adjacent to it."

Response to Comment 4. DEIR pages 4.2-8 and 4.2-9 clearly explain why mitigation for loss of agricultural land is not feasible on a local or regional basis, based on historical and current economic conditions related to agricultural crops in this portion of Riverside County. This conclusion is supported by the project-specific analysis provided in Appendix E of the DEIR.

In addition, the commenter is referred to Section 4 of this document for an evaluation of a less intensive modified plan, which is a subset of the Reduced Intensity Alternative evaluated in the DEIR (and which was determined to be environmentally superior to the Proposed Project). This less intensive plan proposes to develop 4 warehouse buildings, leaving the southeast portion of the site vacant for future development of residential uses consistent with existing zoning (R-5 and RA-2) adjacent to the existing residential neighborhood to the southeast.

Response to Comment 5. The commenter is incorrect – there are a number of measures recommended to offset anticipated traffic and air quality impacts of the project. These are described in their appropriate impact assessment sections (4.3 and 4.13, respectively) and summarized in Table 1.C of the Executive Summary. As outlined in Section 4.4.6, it is infeasible and ineffective to implement operational mitigation on future warehouse users that do not have specific tenants or end-users identified (Draft EIR, page 4.3-37), but Mitigation Measure 4.3.6.6A did address trucking and other activities on the site to the extent practical. In addition, the City has specifically identified the TUMF and DIF programs as the legally established method of mitigating respective regional and local traffic (i.e., road and intersection) impacts. In addition, the project traffic report specifically identifies a number of roadway and intersection improvements that will not be improved through the TUMF or DIF programs for which the proposed project would be responsible, as outlined in Mitigation Measures 4.11.6.4D, 4.11.6.4E, and 4.11.6.4F.

Response to Comment 6. The commenter's opinion that the mitigation measures in the EIR are vague, uncertain, unenforceable, and/or deferred is not based in fact, nor does the commenter provide any examples to support this contention. As detailed in the following responses, appropriate and enforceable mitigation of the project's significant individual and cumulative impacts have been identified in the Draft EIR. The City believes the mitigation measures recommended in the Draft EIR are appropriate based on the identified impacts of the project. However, certain measures or portions of measures suggested by the commenter (such as for air quality) have been incorporated in the Final EIR to clarify their implementation or help further reduce potential impacts. However, these changes or additions do not change the conclusions or overall analysis in the Draft EIR, as outlined in Final EIR Section 3.0, *Errata and Additions*. All mitigation measures that are in the Draft EIR, and mitigation language changed as a result of responses to comments by this commenter as well as the Sierra Club, have been included in the MMRP (Section 4.0 of the Final EIR) to ensure that they are being implemented.

Response to Comment 7. The City believes the alternatives analysis (Section 6.0 of the Draft EIR) is in compliance with *CEQA Guidelines* Section 15126.6(a), because the Draft EIR describes “a range of reasonable alternatives to the project, or to the location of the project which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project.” The EIR need not consider every conceivable alternative; rather it must consider a reasonable range of potentially feasible alternatives to the project, or to the location of the project, which would avoid or substantially lessen significant effects of the project, even if “these alternatives would impede to some degree the attainment of the project objectives, or would be more costly” (*CEQA Guidelines* Section 15126.6(b)). The discussion of project alternatives must “include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project.” The alternatives are to “substantially lessen the significant effects of the project”, not to satisfy the actual mitigation required.

The comment notes that the Draft EIR identifies Alternative 3, the Reduced Intensity Alternative, as the environmentally superior alternative but that Alternative 5, the Off-Site Location Alternative, would result in fewer significant impacts than Alternative 3 and therefore should have been identified as the environmentally superior alternative. It should be noted that Table 6.M contains a typographical error by omitting a “Significant” indication (“S”) under Alternative 5 relative to consistency with the AQMP. The text analysis of this issue in Section 6.3.5.3 (DEIR page 6-32) indicates air quality impacts of the project on another location would still be significant as it would still be inconsistent with the AQMP. This error has been corrected in Section 3, *EIR Errata and Additions*, of this document.

As detailed in the Draft EIR Tables 6.K, page 3-39, Alternative 3 reduces the severity of project-related air quality impacts and is the only alternative that eliminates the significant agricultural impacts. However, reduced, long-term air quality impacts would remain significant after mitigation for this alternative in the same way as the project. Alternative 5 would produce the same level of air pollution as the proposed project. Alternative 3 would reduce the volume of daily traffic trips when compared to the proposed project; however, such impacts would remain significant and unavoidable until roadway improvements are completed. Alternative 5 would generate the same level of traffic trips as the proposed project. Alternative 5 would eliminate impacts associated with land use and planning as this alternative would not require a Zone Change or General Plan Amendment. Alternative 5 would also eliminate the significant population/housing impacts and the significant aesthetic impacts; however, it would likely not reduce the significant agricultural impacts of the project compared to Alternative 3.

The remaining environmental issues would ultimately be similar to the proposed project through adherence to existing standards and mitigation measures. Though the Off-Site Location Alternative is located in a different part of the City, the amount of development under this alternative would remain the same as the proposed project, and it would satisfy all of the identified project objectives. In addition, the potential offsite location is not under the control of the project applicant, so it is problematic if development of the project could actually occur on an alternative site. Based on a review of all the potential impacts, the Draft EIR concluded that the Reduced Intensity Alternative appears to be the environmentally superior alternative for the project site (see Draft EIR page 6-39).

Under the environmentally superior alternative, the proposed project objectives are met but less square footage of warehouse uses would be built. However, Alternative 3 is the only alternative that would reduce the significant impacts to agricultural resources compared to the proposed project and therefore it results in a substantive environmental benefit in comparison to the proposed project. The environmentally superior alternative (reduced density) will result in reduced air pollution and greenhouse gas (GHG) emissions but the significance of these impacts remain significant and unavoidable for air quality, global climate change, and traffic in the same manner as the proposed project. The significant and unavoidable project impacts associated with GHG emissions and traffic

cannot be reduced to less than significant though reduction in the size of the project. The significant and unavoidable project impacts associated with air quality can be eliminated if the project is reduced to approximately 90,000 square feet (based on a linear reduction in the project's 990 pounds per day of operational NO_x emissions to below the 55 pounds per day threshold).

Under Alternative 5, all of the project objectives are met and it reduces two impacts to less than significant that were determined to be significant and unavoidable for the proposed project (consistency with the General Plan and Aesthetics), (see Draft EIR Section 6.5 Comparison of Project Alternatives, Table 6.M, pages 6-39 and 6-40.) The DEIR does correctly conclude that Alternative 5 is also environmentally superior to the proposed project (i.e., fewer significant impacts than the proposed project), however, the commenter incorrectly concludes that, because Alternative 5 meets most project objectives, it must be approved instead of the proposed project. Alternative 3 also reduces significant impacts of the proposed project, and is the only alternative that will reduce impacts to agricultural resources. The commenter claims that this information requires recirculation of the DEIR to identify Alternative 5 as the Environmentally Superior Alternative, but that is not correct - Alternative 3 is the Environmentally Superior Alternative.

~~In addition, the commenter is referred to Section 4 of this document for an evaluation of a Less Intensive Modified Plan, which is a subset of the Reduced Intensity Alternative evaluated in the DEIR (and which was determined to be environmentally superior to the Proposed Project). This less intensive plan proposes to develop only 4 of the 6 warehouse buildings, leaving the southeast portion of the site vacant for future development of residential uses consistent with existing zoning (R-5 and RA-2) adjacent to the existing residential neighborhood to the southeast.~~
In addition, the commenter is referred to Section 4 of this document for an evaluation of a less intensive modified plan, which is a subset of the Reduced Intensity Alternative evaluated in the DEIR (and which was determined to be environmentally superior to the Proposed Project). This less intensive plan proposes to develop 4 warehouse buildings, leaving the southeast portion of the site vacant for future development of residential uses consistent with existing zoning (R-5 and RA-2) adjacent to the existing residential neighborhood to the southeast.

Response to Comment 8. The commenter states that the EIR must be substantially supplemented, amended, and recirculated. The responses provided to the various comments submitted on the Draft EIR, including those of this commenter, indicate the information in the EIR is adequate and the EIR does not need to be recirculated. The rest of this comment summarizes characteristics of the project and related project approvals, so no response is necessary. One of the comments is regarding the status of vacant land around the project site. It does not appear any of the land surrounding the project site is presently being utilized for agriculture, although the area in general has been used for dry farming in the past. The current onsite and offsite land uses are described in detail in Section 4.8, *Land Use and Planning*.

Response to Comment 9. The commenter is correct, the conclusion of the paragraph will be corrected as follows to reflect the determination that impacts to views are significant:

Impact 4.1.6.1 Existing Visual Character or Quality of Site and Its Surroundings:
Implementation of the proposed project would replace the undeveloped character of the project site with an urban setting containing warehouse uses. Therefore, the change in the character of the site would be recognizable and would constitute a permanent alteration of the existing visual character of the project site. Although the visual characteristic of the project site would change, the proposed project would replace the existing vacant parcel with an attractive, well designed development through the use of architectural elements, landscaping, and design of the project site. In addition, the proposed project would be designed and constructed per applicable City Municipal Code and General Plan standards. Despite these requirements, a less than significant impact related to this issue would occur.

This will be corrected in Final EIR, Section 3.0, *EIR Errata and Additions*, but this modification does not change the overall conclusion of the EIR that this impact is significant.

Response to Comment 10. The EIR did conclude that the project would fundamentally change views of the project area, but the line-of-sight analyses of each building (Draft EIR, Figure 3.7A through 3.7F) demonstrate that the proposed buildings, including Building 2, will not completely block views of the Mt. Russell Range or Box Springs Mountain due to their planned heights and setbacks from the freeway (Building 2) and nearby residences (Building 6). The Conservation Element objectives and policies referred to by the commenter encourage the following:

- Objective 7.7** Where practicable, preserve significant visual features significant views and vistas.
- Policy 7.7.4** Gilman Springs Road, Moreno Beach Drive, and State Route 60 shall be designated as local scenic roads.
- Policy 7.7.5** Require development along scenic roadways to be visually attractive and to allow for scenic views of the surrounding mountains and Mystic Lake.

Overall views of the upper slopes of the Mt. Russell Range, views of the Box Springs Mountains, the Badlands will be maintained from the SR-60 and surrounding residential areas, although some views of Mt. Russell and Box Springs Mountain may be partially obscured by the proposed development. Views from Gilman Springs Road and Moreno Beach will not be adversely affected by the project due to the distances involved of project buildings from these roadways. The Project Description and supporting materials demonstrate that the proposed buildings will be attractive and not eliminate important views in the surrounding areas. Therefore, the project does not significantly conflict with this General Plan objective or policies.

Mitigating the project by substantially changing the size, location, and/or heights of the buildings would prevent the project from providing logistics-type warehousing uses on this site. Lowering the heights of the buildings would render them unable to accommodate high cube warehouse users, and making smaller, more spread out buildings would eliminate a major reason for proposing a logistics-type warehousing project on this site (i.e., large buildings with ready freeway access). Interior heights of 30-40 feet are needed for these types of uses, which result in a maximum building height of approximately 50 feet. Note that only two of the buildings (#2 and #3) will be 50 feet in height, the other buildings will have a maximum height of 44 feet. For these reasons, these types of mitigation are not feasible for this type of project. The Project Description (Section 3.0 in the DEIR) indicates that the southern-most building will be almost 400 feet from the closest existing residences to the southeast (i.e., separated by several detention basins), and will be visually screened by landscaping. These project design features will help buffer the residences from the proposed warehouses.

It is at the discretion of the City to approve or disapprove this requested General Plan Amendment. If the City approves the project, it will have to adopt a Statement of Overriding Considerations and demonstrate that the various benefits of the project (e.g., economic, employment) outweigh or override its significant environmental impacts.

In addition, the commenter is referred to Section 4 of this document for an evaluation of a less intensive modified plan, which is a subset of the Reduced Intensity Alternative evaluated in the DEIR (and which was determined to be environmentally superior to the Proposed Project). This less intensive plan proposes to develop 4 warehouse buildings, leaving the southeast portion of the site vacant for future development of residential uses consistent with existing zoning (R-5 and RA-2) adjacent to the existing residential neighborhood to the southeast. This alternative plan would substantially reduce visual impacts for the residences southeast of the project site.

Response to Comment 11. The Project Description does state that...“*Existing single-family residential uses are located approximately 50 feet southeast of the southeastern corner of the project site.*” (Draft EIR page 3-1). However, the commenter is incorrect regarding project distances and conclusions drawn from those errors. That reference is to the property boundary only, and not to buildings or truck-use areas proposed for the project. The reference of 200 feet on page 4.1-1 of the Draft EIR should actually be 50 feet to the property boundary, as outlined below, and will be corrected in Final EIR, Section 3.0, *EIR Errata and Additions*.

The Draft EIR clearly states that...“*The nearest existing sensitive land uses are single-family residences located approximately 50 feet southeast of the southern boundary of the project site, approximately 395 feet southeast of the proposed warehouse buildings, and approximately 664 feet southeast of the loading docks.*” (Draft EIR page 4.3-17, 4th paragraph). The commenter may be confused by the terms used to characterize the spatial relationship of the project to the existing residences. The residences are 50 feet from the project’s property line, but Figure 1.2 and the Project Description (page 3-7) indicated there will be several large detention basins in the southern portion of the site that will act as a buffer and separate truck activities of the project from the residences to the southeast. As stated in the DEIR and demonstrated on the project site plan, the residences would be 395 feet from the closest proposed warehouse building, and 664 feet from the closest proposed loading dock. We hope this clarification resolves the commenter’s concern in this regard.

In addition, the commenter is referred to Section 4 of this document for an evaluation of a less intensive modified plan, which is a subset of the Reduced Intensity Alternative evaluated in the DEIR (and which was determined to be environmentally superior to the Proposed Project). This less intensive plan proposes to develop 4 warehouse buildings, leaving the southeast portion of the site vacant for future development of residential uses consistent with existing zoning (R-5 and RA-2) adjacent to the existing residential neighborhood to the southeast. -Warehouse buildings under the Less intensive mModified pPlan are 1,515 feet from the nearest existing residential neighborhood (southwest), and 1,636 feet from the existing neighborhood at the southeast corner. The Less intensive mModified pPlan also provides a 250-foot buffer between the nearest warehouse truck court and future residential uses.

Response to Comment 12. The commenter is correct, General Plan Objective 2.5 and its polices do not directly relate to community aesthetics, but the analysis in Section 4.1.6 clearly focuses on the other objectives and policies that are more directly related to aesthetics.

Response to Comment 13. The commenter is incorrect, the Draft EIR does address potential lighting impacts (Draft EIR, Section 4.1.5.1, *Light and Glare*), but determines that the impacts will be less than significant with implementation of the project as proposed, and with implementation of the City’s Municipal Code relative to industrial lighting. Night time views are discussed, since that is when nighttime lighting would be visible. The main reason these impacts will be less than significant is that the actual buildings of the project will be almost 400 feet away from the closest residence (to the southeast). The project plans show walls around the southwest corner and along the southern boundary of the project, which will block lights from vehicles in these areas adjacent to Buildings 5 and 6. Security lighting for the building would be on during all nighttime hours (i.e. overnight) but would also be shielded by walls and compliance with the City’s Municipal Code requirements for night lighting of non-residential buildings (see below). With the proposed setback, walls, landscaping, and potential lighting impacts will be less than significant, as indicated in the Draft EIR.

All development in the City, which includes light generated from warehouse buildings and parking lots, is required to adhere to lighting requirements contained in the City’s Municipal Code (Section 9.08.100 Lighting), which states that any outdoor lighting associated with nonresidential uses shall be shielded and directed away from the surrounding residential uses. Such lighting shall not exceed one-half foot-candle at all property lines and shall not blink, flash, oscillate, or be of unusually high intensity or brightness. Lighting in parking areas and drive aisles must be at least 1.0 foot-candle and

cannot exceed a maximum of 8 foot-candles. Adherence to the City's Zoning Code would ensure that any building or parking lighting would not significantly impact adjacent uses. Therefore, impacts associated with this issue are less than significant, and no mitigation is required, so the additional measures recommended by the commenter are not needed.

In addition, the commenter is referred to Section 4 of this document for an evaluation of a less intensive modified plan, which is a subset of the Reduced Intensity Alternative evaluated in the DEIR (and which was determined to be environmentally superior to the Proposed Project). This less intensive plan proposes to develop 4 warehouse buildings, leaving the southeast portion of the site vacant for future development of residential uses consistent with existing zoning (R-5 and RA-2) adjacent to the existing residential neighborhood to the southeast. This alternative plan would substantially reduce lighting impacts for the residences southeast of the project site.

Response to Comment 14. Page 4.1-20 of the Draft EIR clearly states...*"The City's Municipal Code (Section 19.05 and Table 9.05.040-8) establishes the number, location, height, and style of signage permitted within industrial zones. The submittal and approval of signs are required for all development in the City; therefore, it is reasonable to conclude that all on-site signs are internally compatible and consistent with the City's current signage standards. Adherence to City requirements would result in a less than significant visual impact in this regard. The existing General Plan and zoning designations for the site show low density residential."* Therefore, the commenter's statement about the EIR not evaluating impacts of signage is not correct.

Response to Comment 15. Yes, the commenter is correct that Table 3.B indicates a maximum building height of 50 feet for buildings 2 and 3, but the commenter fails to note that the line-of-sight analyses and renderings for these buildings (Building 2 = Figures 3.7B, 3.8B, and 3.8C, Building 3 = Figures 3.7C and 3.8D) clearly show these buildings would have a maximum height of 50 feet. The line-of-sight analyses show that the proposed Building 2 may impact views from the freeway of the lower slopes of Mt. Russell, but would not eliminate views of the upper slopes and open land to the southeast. Similarly, Building 3, and to some degree Building 6, may limit views from the nearby residential areas (to the southeast) toward Box Springs Mountain, but views of Mt. Russell, the Badlands, and open land to the east would remain. It should be noted that the EIR concluded that loss of views and other visual impacts would be significant.

Response to Comment 16. The reader should refer to Response to Comment D-3, No. 11 above regarding distances from the project and nearby residences.

Response to Comment 17. The commenter suggests that evaluation of the project's consistency with land use development requirements was not addressed and therefore the statement "the project appears to be consistent with the various Municipal Code requirements for the proposed land uses outlined in Section 4.1.2 related to landscaping, setbacks parking, storage, etc." is not supported. The quote from the Draft EIR was making the simple factual conclusion that the proposed project will be required to adhere to all applicable development standards contained in the City's Municipal Code, similar to any project in any municipality.

Response to Comment 18. The commenter is correct, the text of the paragraph will be corrected to reflect the determination in the environmental analysis in Section 4.2.5.1 under No Impact/Less than Significant Impacts, but the conclusions shown in the table reflect the correct conclusions (i.e., this agricultural impact is less than significant).

This has been corrected in Final EIR, Section 3.0, *EIR Errata and Additions*, but this minor editorial correction does not change the overall conclusion of the EIR that this impact is significant.

Response to Comment 19. The commenter is correct, and Response to Comment D-3, No. 18 above shows how the text in Table 1.C of the Executive Summary will be modified to account for this

loss. This will be corrected in Final EIR, Section 3.0, *EIR Errata and Additions*, but this modification does not change the overall conclusion of the EIR that this impact is significant.

The loss of 0.4 percent of the PAKO as a result of this project is a minimal amount of change and does not constitute a significant impact, as indicated in the DEIR, Section 4.2.5.1 Conflict with Existing Zoning or a Williamson Act Contract, page 4.2-6.

Response to Comment 20. The commenter is correct, Farmland of Local Importance will be added to the text in Table 1.C, as shown below. In addition, the “(5.3 acres)” reference is a fragment should have been removed from the text because it does not refer to a formal agricultural designation.

Impact 4.2.6.2 Conversion of State Designated Farmland: *The project site is designated as 67 percent Prime Farmland (82.5 acres) and 12 percent (39.8 acres) as Farmland of Local Importance (5.3 acres). While farmland conservation measures have been implemented in other areas of the State, neither the City of Moreno Valley nor Riverside County maintains a program that developers and property owners can participate in to offset agricultural resource impacts; therefore, the conversion of State designated Prime Farmland is a significant impact.*

This will be corrected in Final EIR, Section 3.0, *EIR Errata and Additions*, but this modification does not change the overall conclusion of the EIR that this impact is significant. The significance conclusion for each type of farmland is included in DEIR Section 4.2.6.1 Conversion of State Designated Farmland, pages 4.2-6 through 4.2-10.

Response to Comment 21. The commenter is correct, the correct LESA score for the project site is 85.3, as shown in Table 4.2.A – the other references will be corrected in Final EIR, Section 3.0, *EIR Errata and Additions*, however, these corrections do not change the overall conclusion of the EIR that this impact is significant. It should be noted that all of these scores represent a significant impact.

The Draft EIR already recognizes that the project would contribute to a cumulative impact on agricultural resources and concludes the following:

“The cumulative effect of development in the region will continue to result in the conversion of agricultural lands to non-agricultural uses. Because agricultural land, including Prime Farmland, is a finite resource, the conversion of 122.8 acres of farmland to industrial uses, combined with planned and future development in the City and region, represents a cumulative impact to agricultural operations and resources, and the proposed project’s contribution to this cumulative impact through the conversion of 122.8 acres of farmland is cumulatively considerable.” (Draft EIR page 4.2-11)

Response to Comment 22. The potential mitigation measures identified in this comment are not considered to be feasible by the City of Moreno Valley as determined in the City’s General Plan EIR. As identified in the Draft EIR (Section 4.1.6.1 Conversion of State Designated Farmland, page 4.1-13), “Williamson Act contracts are entered into voluntarily by property owners and the City cannot force owners to participate in this program. The City does have the ability to encourage property owners to participate in Williamson Act programs; however, this is expected to result only in temporary preservation of agricultural land since property owners have the option of non-renewal of these contracts at any time after the ten-year contract period ends. The land would then be available to be developed with urban uses.

Providing protection for ongoing agricultural activities from new developments, such as requiring buffers between agricultural operation and new development or requiring the notification and disclosure of agricultural activities to the purchasers adjacent properties will not permanently protect agricultural land.

The purchase or transfer of development rights, purchase of conservation easements, or donation of funds to assist in the conservation of agricultural land would need to be implemented to ensure the preservation of agricultural land. As stated previously, the City anticipates the conversion of agricultural land within the City and does not set aside land for permanent preservation. The City expects that the majority of the land within the City will be converted to urban uses, although some agriculture will continue as interim uses, as allowed by the City’s Development Code for all zoning categories. Moreno Valley has determined that these measures are economically infeasible based on the higher costs associated with land, water and labor, increased environmental regulation, and competition from neighboring regions where agricultural operations are less costly; thus, resulting in an inability to make farming profitable. Furthermore, these measures are contrary to the City’s vision (as stated in its General Plan) for the project site; therefore, they are not feasible and alternative mitigation has not been identified.” Table B below contains the suggested mitigation measures by the commenter. The responses determine whether the Draft EIR contains the mitigation measure, if the mitigation will be added mitigation as part of the Final EIR, or if it will not be included and why.

Table B: Evaluation of Potential Agricultural Mitigation

Suggested Mitigation Measure	Response
1. The purchase of agricultural conservation easements	<p>Not Feasible. Based on the higher costs associated with land, water and labor, increased environmental regulation, and competition from neighboring regions where agricultural operations are less costly; thus, resulting in an inability to make farming profitable. The site has been planned for developed uses since 1987, the City has recognized that the conversion of agricultural land under its jurisdiction is an eventual and expected outcome of current and future growth and the current General Plan does not include any agricultural designations; therefore mitigation for the loss of agricultural land is not required.</p> <p>An easement does not compensate for the impact by replacing or providing substitute resources or environments (i.e., the easement would not create any new farmland where no farmland presently exists). See Fourth District Court of Appeal, <i>Cherry Valley Pass Acres and Neighbors v. City of Beaumont</i> (2010) 190 Cal.App.4th 316 (<i>Cherry Valley</i>)</p>
2. Transfer of development rights	<p>Not Feasible. Based on the higher costs associated with land, water and labor, increased environmental regulation, and competition from neighboring regions where agricultural operations are less costly; thus, resulting in an inability to make farming profitable.</p>
3. Acquisition of farmland by the city or county	<p>Not Feasible. Based on the higher costs associated with land, water and labor, increased environmental regulation, and competition from neighboring regions where agricultural operations are less costly; thus, resulting in an inability to make farming profitable. No mechanism for the mitigation of impacts to State-designated Farmland and/or existing agricultural operations has been enacted by either the City of Moreno Valley or the County of Riverside. Rather, the City has specifically recognized that the conversion of agricultural land under its jurisdiction is an eventual and expected outcome of current and future growth. The current General Plan does not include any agricultural designations.</p>
4. Mitigation banking	<p>Not Feasible. Neither the City of Moreno Valley nor the County have a mechanism in place for mitigation banking. The site has been planned for developed uses since 1987, the City has recognized that the conversion of agricultural land under its jurisdiction is an eventual and expected outcome of current and future growth and the current General Plan does not include any agricultural designations; therefore mitigation for the loss of is not required. In addition, there is not any agricultural zoned land in the City for the City or County to purchase.</p>

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Suggested Mitigation Measure	Response
5. The establishment of "urban limits," greenbelts, and buffers	Not Feasible. Will not result in permanent protection of agricultural lands. There is no mechanism for the mitigation of impacts to State-designated Farmland and/or existing agricultural operations has been enacted by either the City of Moreno Valley or the County of Riverside. Rather, the City has specifically recognized that the conversion of agricultural land under its jurisdiction is an eventual and expected outcome of current and future growth. The current General Plan does not include any agricultural designations. Section 4.2.6.1 of the DEIR also outlines why local or regional mitigation in this regard is infeasible.
6. The payment of in-lieu fees sufficient to a purchase and maintain farmland conservation easements	Not Feasible. Based on the higher costs associated with land, water and labor, increased environmental regulation, and competition from neighboring regions where agricultural operations are less costly; thus, resulting in an inability to make farming profitable. An easement does not compensate for the impact by replacing or providing substitute resources or environments (i.e., the easement would not create any new farmland where no farmland presently exists). See (Fourth District Court of Appeal, <i>Cherry Valley Pass Acres and Neighbors v. City of Beaumont</i> (2010) 190 Cal.App.4th 316 (<i>Cherry Valley</i>)) In addition, there is not any agricultural zoned land in the City for the City or County to purchase and there is no existing fee program for farmland in the City.
7. Planning tools such as clustering development, use of density bonuses, and limiting "leapfrog" development	Not Feasible. Based on the higher costs associated with land, water and labor, increased environmental regulation, and competition from neighboring regions where agricultural operations are less costly; thus, resulting in an inability to make farming profitable. In addition the project is an industrial project on a site that has been planned for developed uses in the City's General Plan since 1987. This is not a residential project; therefore, clustering of development is not a feasible option on an industrial project. The proposed mitigation is not applicable. The project won't promote "leapfrog" development since the area surrounding the project site is developed.

Comment No. 3 in the letter from the Sierra Club (D-2) stated that..."a developer recently donated \$100,000.00 to the Riverside Land Conservancy to help mitigate for the loss of agricultural lands but fails to appropriately cite the information and identify the basis for determining the amount of agricultural lands lost in relation to this monetary amount." In discussion with Gail Egenes, Executive Director of the Riverside Land Conservancy, the agency does not have any established program to purchase agricultural easements or lands. Also, in consultation with the National Conservation Easement Database, Riverside County does not have any established agricultural easements.¹

Contributions to Riverside County Land Conservancy or the San Jacinto Basin Resource Conservation District by private land owners are laudable but are not required as part of a City or regional mitigation plan for loss of agricultural land. Therefore, the decision whether to make any contributions in this regard would be at the discretion of the developer in consultation with the City.

The Fourth District Court of Appeal, *Cherry Valley Pass Acres and Neighbors v. City of Beaumont* (2010) 190 Cal.App.4th 316 (*Cherry Valley*) addressed a challenge to an EIR for a project that would convert agricultural land to residential uses. Though recognizing the potential for mitigation in the form of agricultural "conservation easements, Williamson Act preserve status, or temporary protection or conservation plans," the EIR noted the long-term trend in agricultural land conversion in the region and concluded that mitigation was not feasible, and the court upheld the City's determination regarding the feasibility of mitigation. The court also examined the City and County General Plans,

¹ <http://nced.conservationregistry.org/browse/map>, accessed October 4, 2012.

which acknowledged that development pressures were constraining the continued viability of agriculture and included the expansion of housing, commercial and industrial land uses. The court then determined that the project was compatible with these planning documents. The court concluded that given the particular circumstances surrounding the project, such mitigation was infeasible and therefore was not required to be adopted. The project site for the project addressed in the ProLogis EIR has been planned for developed uses since 1987, and the City has recognized in the General Plan that the conversion of agricultural land under its jurisdiction is an eventual and expected outcome of current and future growth and the current General Plan does not include any agricultural designations; therefore mitigation for the loss of is not feasible and the EIR concludes that impacts are significant and unavoidable.

The trend of the reduction in agriculture in the Inland Empire is discussed in *Assessing the Economic and Market Trends Affecting Agriculture in the Western Inland Empire* prepared by Justin L. Adams, Ph.D. of Chang & Adams Consulting, September 2011 and *Economic Viability of Agriculture in the East Inland Empire* report prepared by CBRE Consulting, March 18, 2009. Both reports are provided in Appendices B and C to the Final EIR. This reduction in “farming” is due to pressures of the growth in the demand for housing and development and the transportation and warehousing sector; increased restrictions on water deliveries for agricultural uses after several consecutive drought seasons; higher wages in other industries in the region; strong agricultural competition from the southern Central Valley for dairies; increased regulatory pressures from air quality and local jurisdictions regarding particulate matter emissions and land use adjacency issues; and the trend in Riverside and San Bernardino Counties is for agricultural operations to continue to shift to places like Kern County regardless independent of land use policy due to the economic issues.

As stated in the Draft EIR, mitigation measures must be feasible and fully enforceable through permit conditions, agreements, or other legally binding considerations. To be feasible, mitigation must be capable of being accomplished in a successful manner within a reasonable period of time, taking into account the economic, environmental, legal, social, and technological factors. Identification as to the infeasibility of mitigation measures suggested by the commenter has been provided in the Draft EIR. No mechanism for the mitigation of impacts to State-designated Farmland and/or existing agricultural operations has been enacted by either the City of Moreno Valley or the County of Riverside. Rather, the City has specifically recognized that the conversion of agricultural land under its jurisdiction is an eventual and expected outcome of current and future growth. The current General Plan does not include any agricultural designations. The City allows agricultural uses in all land use designations as an interim use until such time as the land is developed per the vision identified in the General Plan. One of the goals stated in the City’s recent General Plan is the “...orderly conversion of agricultural lands.” The proposed project is a continued extension of development in the surrounding area to the east and west (industrial/commercial/business park). The proposed project does not interfere with the ability of other adjacent properties to be used for agricultural production should the property owner wish to do so.

The potential mitigation measures identified by the City in its General Plan EIR and California Department of Conservation (CDC), which are listed in the Draft EIR (Section 4.1.6.1 Conversion of State Designated Farmland, pages 4.2-7 through 4.2-9), are not considered to be feasible by the City of Moreno Valley as determined in the City’s General Plan EIR. Providing protection for ongoing agricultural activities from new developments, such as requiring buffers between agricultural operation and new development or requiring the notification and disclosure of agricultural activities to the purchasers adjacent properties will not permanently protect agricultural land. As identified in the Draft EIR, the City supports agriculture as an interim use within the City and no land is dedicated or designated for agricultural use or agricultural preservation within the City’s jurisdiction. Land in the project area is classified as containing prime agricultural soils, but the City’s General Plan does not designate these lands, including the project site, for preservation through the establishment of urban limits, greenbelts, and buffers that might result in permanent protection of agricultural land as none exists within the City. Areas where agriculture land use designations may exist that are outside of the

City limits cannot be preserved by the City of Moreno Valley as they are outside of the City's jurisdiction. The City's General Plan has acknowledged the analysis and conclusions of the County General Plan that mitigation for the loss of agricultural land is economically and practically infeasible due to ongoing costs to maintain agriculture in this area (see Appendix E in the Draft EIR).

As stated previously, the City anticipates the conversion of agricultural land within the City and does not set aside land for permanent preservation. The City expects that the majority of the land within the City will be converted to urban uses, although some agriculture will continue as interim uses, as allowed by the City's Development Code for all zoning categories. The City of Moreno Valley has determined that these measures are economically infeasible based on the higher costs associated with land, water and labor, increased environmental regulation, and competition from neighboring regions where agricultural operations are less costly; thus, resulting in an inability to make farming profitable. Furthermore, these measures are contrary to the City's vision (as stated in its General Plan) for the project site; therefore, they are not feasible and alternative mitigation has not been identified.

Response to Comment 23. Response to Comment D-3, No. 22 outlines the City's position regarding the infeasibility of mitigation for loss of agricultural land. The City has repeatedly concluded that development projects within the City that remove agricultural land, even if that land carries a "significant" designation for farmland, cannot be mitigated at the local level and all the recommended measures would render the project financially infeasible, therefore the measures are infeasible. The assessment in Appendix E of the Draft EIR provides additional documentation why continued agriculture is not feasible in the Moreno Valley area.

It should also be noted that the research referred to by the commenter was conducted in the state of Vermont, so its information is not directly applicable to the California economy or local conditions affecting the viability of agriculture within a particular region. Nor does it take into account currently poor economic conditions in California

Response to Comment 24. According to Sergio San Martin of Facilities Planning for MVUSD, the Eucalyptus and Redlands sites have been abandoned.¹ The other two sites at Nason and Ironwood and Ironwood and Quincy have not yet been officially abandoned but are no longer being actively considered for the construction of new schools. It is at the School Board's discretion as to whether these two sites are abandoned, however; MVUSD staff has been directed to explore other potential sites. Therefore, it is no longer reasonably foreseeable that these two sites will be developed as future schools.

Response to Comment 25. The commenter referred to the following General Plan Policies allegedly relevant to air pollutant emissions. The following assesses the consistency of the project with those stated policies:

General Plan Goals, Objectives, and Policies	Project Consistency
<p>Ultimate Goal VII: achieve a community which "Emphasizes public health and safety, including, but not limited to, police, fire, emergency and animal services and protection from floods and other hazards...."</p>	<p>The comment erroneously quotes an ultimate goal contained in the General Plan that addresses public safety issues such as police, fire, emergency and animal services and protection from natural hazards such as flooding. This goal is not associated with air quality. However, Sections 4.6 (Hazards) of the DEIR and the Initial Study for the project (Public Services) demonstrate that the proposed project will not result in any significant impacts to public health or safety as</p>

¹ Resolution No. 2007-08-81, Moreno Valley Unified School District Board of Education, approved April 15, 2008.

	outlined in this goal.
Goal 6.1: To achieve acceptable levels of protection from natural and man-made hazards to life, health, and property.	The comment erroneously quotes a goal that addresses the Safety Element of the General Plan. This goal is not associated with air quality; however, various sections of the DEIR demonstrate that the proposed project will not result in any significant impacts to public health or safety from natural or man-made hazards, as outlined in this goal.
Objective 7.5: Encourage efficient use of energy resources.	The comment cites three policies within General Plan Objective 7.5. Consistency and/or applicability of these policies is as follows:
Policy 7.5.1: Encourage building, site design, and landscaping techniques that provide passive heating and cooling to reduce energy demand.	General Plan Policy 7.5.1 will be applied to the project through implementation of Mitigation Measures 4.3.6.5B page 4.3-33 and 4.3-34, 4.3.6.6A page 4.3-35, 4.13.6.1B page 4.13-20, and 4.13.6.1C page 4.13-21.
Policy 7.5.2: Encourage energy efficient modes of transportation and fixed facilities, including transit, bicycle, equestrian, and pedestrian transportation. Emphasize fuel efficiency in the acquisition and use of City-owned vehicles.	General Plan Policy 7.5.2 is related to alternative modes of transportation. The City considers this policy to be beyond the scope of this project-level EIR, because this is a citywide issue for the City to address and not this development project. The project has no control over the fuels used in City-owned vehicles.
Policy 7.5.5 Encourage the use of solar power and other renewable energy systems.	General Plan Policy 7.5.5 will be applied to the project through implementation of Mitigation Measure 4.3.6.6A page 4.3-35.

The analysis demonstrates that the project is consistent with the two applicable General Plan goals, objectives, and policies cited in the comment. The three other goals, objectives, and policies cited in the comment are not applicable to the project and this project-level EIR; however, the project is consistent with Ultimate Goal VII and Goal 6.1 as outlined above. This analysis does not raise significant new issues, nor does it change the conclusions of the EIR regarding significant impacts.

Response to Comment 26. It is not clear what “record” the commenter is referring to. Perhaps the commenter is referring to the various Multiple Air Toxics Exposure Studies (MATES) performed by the SCAQMD over the last two decades? If so, these only document that the air quality is unhealthy in the majority of the South Coast Air Basin, they say nothing about any particular project’s contribution to the level of toxic air contaminants in a region. The HRA included in the EIR examines the potential affect the project could have on the level of toxic air contaminants in the region of the project site and the resulting change in health risk levels and, as shown in the DEIR, Table 4.3.F on page 4.3-17 in the DEIR, shows them to be all less than significant.

Response to Comment 27. The HRA modeled emissions from vehicles idling at all the project buildings and traveling along the roadways thru the project site and into the surrounding area as described on Page 4.3-17 of the DEIR. While the modeling does not include dedicated emissions sources for the short distances from the loading docks along the building and the driveways onto Eucalyptus Avenue, the emissions sources that were included in the modeling for the truck movements include all emissions from vehicles as they travel. Thus, the HRA does not minimize any impact from project operations. The model incorporates building structures into the atmospheric propagation simulation only to determine changes to the propagation pattern due to disturbances in the flow from passing over buildings. The principal effect is that pollutant concentrations are higher from the building wake affect than they would be if the building was ignored. Changing the building height from 65 to 39 feet would only change the pollutant concentrations within 50 feet of so downwind of each building. There would be no change at the distance of any of the residences.

Therefore, the analysis in the DEIR is conservative and protective of human health.

In addition, the commenter is referred to Section 4 of this document for an evaluation of a less intensive modified plan, which is a subset of the Reduced Intensity Alternative evaluated in the DEIR (and which was determined to be environmentally superior to the Proposed Project). This less intensive plan proposes to develop 4 warehouse buildings, leaving the southeast portion of the site vacant for future development of residential uses consistent with existing zoning (R-5 and RA-2) adjacent to the existing residential neighborhood to the southeast.

Response to Comment 28. The standard assumption for all HRAs, per the OEHHA, is that the 70-year lifetime risk assessment assumes that individuals would be away from the location of interest for 15 days out of the year, even though the on-site operations would occur over 365 days per year. The 350 days per year the comment refers to applies to the people living nearby, not to the project operations. This is what is meant by a full lifetime exposure in any HRA.

Response to Comment 29. The Environmental Summary Table 1.C was not updated properly and now is consistent with the results described in Section 4.3 Air Quality (refer to the Final EIR Errata). This update has no effect on any significance conclusions in the DEIR (refer to the Final EIR Errata). Both the Air Quality Analysis and Air Quality section of the EIR describe the health risks to existing and future residents separately and clearly. The peak cancer risk to existing residents to the north is identified in Table R of the Air Quality Analysis and in Table 4.3.F of the Air Quality section of the Draft EIR as 4.33 in 1 million. Section 4.3.5.4 of the EIR shows the peak cancer risk to future residents of a project proposed on the southern project boundary as 4.3 in 1 million. The threshold is 10 in one million so the 4.3 in 1 million does not exceed the threshold of significance.

The Draft EIR clearly identifies that ...*"The nearest existing sensitive land uses are single-family residences located approximately 50 feet southeast of the southern boundary of the project site, approximately 395 feet southeast of the proposed warehouse buildings, and approximately 664 feet southeast of the proposed loading docks."* (Draft EIR page 4.3-17, 4th paragraph). The commenter may be confused by the terms used to characterize the spatial relationship of the project to the existing residences. The residences are 50 feet from the project's property line, but the Project Description (e.g., Figure 1.2) clearly shows there are several large detention basins in the southern portion of the site that will act as a buffer and separate truck activities of the project from the residences. As stated in the EIR and demonstrated on the project site plan, the residences would be 395 feet from the closest proposed warehouse building, and 664 feet from the closest proposed loading dock. We hope this clarification resolves the commenter's concern in this regard.

Additionally, the HRA was conducted using a grid of receptors covering about a mile in all directions from the center of the project site, as described on page 4.3-17 of the DEIR. Therefore, the project effects on health risk levels were determined at all locations throughout the region including the existing residence with the maximum health risk level and the proposed residence with the maximum health risk level, either of which may or may not be the closest to the project site.

In addition, the commenter is referred to Section 4 of this document for an evaluation of a less intensive modified plan, which is a subset of the Reduced Intensity Alternative evaluated in the DEIR (and which was determined to be environmentally superior to the Proposed Project). This less intensive plan proposes to develop 4 warehouse buildings, leaving the southeast portion of the site vacant for future development of residential uses consistent with existing zoning (R-5 and RA-2) adjacent to the existing residential neighborhood to the southeast.

Response to Comment 30. The EIR is tasked with determining the impact of the project on the environment, thus the HRA does this also. The ambient cancer risk is quite high for all of southern California, but this is independent of the project's operations. The HRA in the EIR identifies how the project's operational emissions will affect the health risk levels by the project's contribution to the

ambient health risk. The following limits for maximum individual cancer risk (MICR), cancer burden and non-cancer acute and chronic hazard indices (HI) from project emissions of TACs have been established for the Basin:

- **MICR and Cancer Burden.** MICR is the estimated probability of a potential maximally exposed individual contracting cancer as a result of exposure to TACs over a period of 70 years for residential and 40 years for worker receptor locations. The MICR calculations include multipathway consideration, when applicable. Cancer burden is the estimated increase in the occurrence of cancer cases in a population subject to a MICR of greater than or equal to one in one million (1.0×10^{-6}) resulting from exposure to TACs.

The total increase in MICR that is the sum of the calculated MICR values for all TACs emitted from the project will not result in any of the following:

- (A) An increased MICR greater than 10 in 1 million (1.0×10^{-5}) at any receptor location (assumes the project will be constructed with T-BACT); or
- (B) A cancer burden greater than 0.5.

- **Chronic HI.** This is the ratio of the estimated long-term level of exposure to a TAC for a potential maximally exposed individual to its chronic reference exposure level. The chronic HI calculations include multipathway consideration, when applicable.

The cumulative increase in total chronic HI for any target organ system due to total emissions from the project will not exceed 1.0 at any receptor location.

- **Acute HI.** This is the ratio of the estimated maximum one-hour concentration of a TAC for a potential maximally exposed individual to its acute reference exposure level.

The cumulative increase in total acute HI for any target organ system due to total emissions from the project will not exceed 1.0 at any receptor location.

The DEIR concludes that the project contribution to the existing TAC conditions will be less than significant, as described on page 4.3-17 and shown in Table 4.3.F.

Response to Comment 31. The HRA includes an assessment of the health risks to workers using standard OEHHA assumptions, including an 8 hour workday and a 40 year work career for workers, which likely results in an over-estimate of cancer risk. Thus, the assumptions in the analysis are conservative and err on the side of overestimating impacts.

See also Response No. 13 in the letter D-2 from the Sierra Club.

Response to Comment 32. The HRA modeling only allows for one emission rate for the diesel engines to represent the entire 70-year period from opening year (2013) until 2083. The available emissions factors model (EMFAC) only has factors thru 2040. Thus, there is no information available about how the diesel emissions will change from 2040 until 2083. It is pure guesswork to predict how the diesel emissions will change over this period. To assume that the emissions during this 43-year period will not change at all is a very conservative assumption – there is a real possibility that all diesel engines will have been replaced by an alternative power source before 2083 resulting in zero diesel particulate emissions. Selecting the best year between 2083 and 2013 to represent the average is somewhat arbitrary – the median is 2048, outside the range of available factors. EMFAC incorporates many of the regulations some expectations of technological improvements that result in lower emissions over the period from the 1990s thru 2040, however it does not include everything – for instance it does not include the law just passed in August 2012 that sets the average mileage of cars and light trucks to 54.5 miles per gallon by 2025. While this does not include the heavy-duty trucks the HRA is focused on, it is an indication that there will be aggressive regulations in the future reducing these diesel emissions below what is in the EMFAC model. While using the emissions factors for 2040 as an average is not optimal due to the higher existing emissions, using 2013 factors

as an average is unreasonably conservative also. In our best engineering judgment, 2025 is the best set of emissions factors to represent this complicated issue.

Response to Comment 33. While the project construction may continue for longer than 4 months, the ultra-conservative screening HRA included in the EIR focuses on the emissions from the very large diesel-powered equipment involved in the project construction. As shown in Table E of the Air Quality Analysis, the Site Preparation phase is expected to continue for 18 days and the Grading phase for 44 days, totaling about 3 months. The use of the very large diesel-powered equipment will be intense for these two phases and then drop off dramatically during the remainder of the construction process. Thus, assuming that the use of these very large diesel-powered equipment will occur continuously for 4 months is a conservative representation of the total construction process and appropriate for this screening-type of HRA.

Response to Comment 34. The staffs of the Air Resources Board (ARB) and the Office of Environmental Health Hazard Assessment (OEHHA) have been evaluating diesel exhaust since 1989 under California's air toxics program, for potential identification as a toxic air contaminant (TAC). Diesel exhaust entered the AB 1807 process in October 1989 and has undergone an extensive evaluation. Diesel exhaust was entered into the process because it has potential cancer and non-cancer health effects and widespread exposure in California. The International Agency for Research on Cancer (IARC) had listed diesel exhaust as a "probable" human carcinogen and the U.S. Environmental Protection Agency (U.S. EPA) had begun an evaluation of both the cancer and non-cancer health effects. The ARB and the OEHHA gave priority to the evaluation of diesel exhaust because it met the TAC program criteria related to potential risk of harm to public health, amount of emissions, exposure and use, and persistence in the atmosphere.¹ All HRAs that include diesel PM as a TAC of concern consider all recognized health impacts.

Response to Comment 35. See Response to Comment D-3, No. 34 above.

Response to Comment 36. The HRA included the concept from the OEHHA indicating that both the prenatal and postnatal life stages can be, but are not always, much more susceptible to developing cancer than the adult life stage. The HRA included age sensitivity factors (ASFs) for these age windows that vary by chemical, gender and species, thus the analysis accounted for impacts to the entire population, children and adults. ASFs for prenatal, postnatal, and juvenile exposures are complicated by the limited database of chemicals and studies available for analysis, and the broad distribution of results for different chemicals. The EPA and OEHHA have proposed to apply a default ASF of 10 for the third trimester to age 2 years, and a factor of 3 for ages 2 through 15 years to account for potential increased sensitivity to carcinogens during childhood (adults 16 and older need no adjustment factor), and applied these to all carcinogens, regardless of the theorized mode of action. Thus, for the 70-year cancer assessment in the Draft EIR, the cancer risk adjustment factor (CRAF) used was 1.7 $[(10 \times 2.25/70) + (3 \times 14/70) + 54/70 = 1.7]$.

Response to Comment 37. See Response to Comment D-3, No. 36 above. The Air Quality Analysis described the inclusion of the cancer risk adjustment factor as prescribed by the ARB and OEHHA.

Response to Comment 38. The HRA in the EIR overview in Section 4.3 Air Quality, details in the Air Quality technical report in Appendix B, followed all current guidance from the EPA, ARB, OEHHA and other state agencies to insure that the health of all residents and other sensitive receptors affected by construction and operational emissions from the project are protected. Source: EPA, *Air Toxics Strategy*, July 1999; ARB, *AB 2588 Air Toxics "Hot Spots" Emission Inventory Criteria and Guidelines Regulation*, August 27, 2007; OEHHA, *Air Toxics Hot Spots Program Risk Assessment Guidelines*, August 2003; SCAQMD, *Health Risk Assessment Guidance for Analyzing Cancer Risk from Mobile*

¹ CARB, 1998, *Proposed Identification Of Diesel Exhaust As A Toxic Air Contaminant*.

Source Diesel Idling Emissions for CEQA Air Quality Analysis, August 2003.

Response to Comment 39. As the EIR found that all impacts from project-related diesel PM are less than significant without the use of “buffers and other methods”; none of these are necessary to protect the health of all residents and other sensitive receptors affected by construction and operational emissions from the project.

Response to Comment 40. Comment noted. The exhibit cited is the SCAQMD guidance document *Final-Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds*, which is provided for the Localized Significance Threshold (LST) portion of the air quality analysis. The air quality analysis in the DEIR cited this resource and complied with it.

Response to Comment 41. The EIR discusses consistency in detail. It says “*the proposed project would require a General Plan Amendment that would change the General Plan designations for a portion of the project site from Residential to Business Park/Light Industrial. The project also proposes an amendment to the Circulation Element of the General Plan.*” and “*Implementation of the proposed project would require a zone change from Business Park (BP), Business Park Mixed Use (BPX), Multi-Family Residential (R-15), Suburban Residential (R-5), and Residential Agriculture (RA-2) to Light Industrial for the entire 122.8 acres.*” “*Because the project site is located in a nonattainment air basin for ozone, PM10 and PM2.5, the proposed project’s emission of ozone precursors (CO, ROG, and NOX), PM10 and PM2.5 would contribute to the existing nonattainment status in the Basin. Thus, according to the SCAQMD Consistency Criterion No. 1, the proposed project is not consistent with the AQMP.*”

Response to Comment 42. Table 4.3.I of the Draft EIR has a note stating “includes both fugitive and exhaust sources” and the conceptual grading plan for the project indicates that the earthwork will be largely balanced on site and only 200 cubic yards of soil importation is expected. This small amount of soil import will require minimal truck trips which are included in the general construction vehicle calculations.

Response to Comment 43. While no phasing of construction is required of the project, normal construction operations are conducted in phases – grading cannot begin until site preparation is completed, building construction cannot begin until grading is completed, etc. As shown in Table E of the Air Quality Technical Report in Appendix B, the construction analysis conservatively assumed that the building construction, architectural coating and paving phases could all overlap. The peak daily emissions shown in Table 4.3.I of the DEIR reflect this conservative assumption. Note that the DEIR concluded that construction air quality impacts remained significant and unavoidable with mitigation.”

Response to Comment 44. Section 5.1.4 of the air quality technical study (Draft EIR Appendix B) clearly explains that guidance provided by SCAQMD was followed in which all construction phases were considered in the LST analysis. See the Response to Comment 43 concerning construction phasing. As described in the Air Quality Technical Report in the DEIR Appendix B, Section 5.1.4, the grading phase was determined to be the construction phase of concern for the LST analysis by following the SCAQMD guidance on applying CalEEMod modeling results to LST analyses; *Fact Sheet for Applying CalEEMod to Localized Significance Thresholds*, available at www.aqmd.gov/ceqa/handbook/lst/CalEEModguidance.pdf.

Response to Comment 45. While the DEIR analyzes project operational emissions assuming that the project could operate 24 hours per day, 7 days per week, the construction of the project will not occur 24 hours per day. As pointed out by the commenter, noise regulations alone restrict construction operations to 14 hours per day. Current project plans are to build the project following a typical daily construction schedule, which is what is built into the CalEEMod model and was used in the air quality analysis.”

Response to Comment 46. See Response to Comment D-3, No. 44 above.

Response to Comment 47. SCAQMD Rule 402 regarding nuisances states: “A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.” Construction operations do not typically result in Rule 402 violations, due to the subjective nature of odor and the need for such odor to ‘cause injury, detriment, nuisance, or annoyance to any considerable number of persons’. There is nothing about the proposed project construction that is expected to result in any odor other than those associated with typical construction operations.

Response to Comment 48. LST screening analyses use SCAQMD provided tables for significance determination. The tables provided include data for 1, 2 and 5 acre project sites. The LST emissions thresholds grow larger with larger site areas; using an LST threshold for an area smaller than the actual area (5 acres versus 121 acres) results in lower emissions thresholds than would occur if the entire site was considered. In other words, a 5-acre project is allowed to emit up to 270 lbs/day of NO_x. A 121 acres project would be allowed a much higher daily NO_x emission rate. Thus, using the 5 acre threshold for the proposed project site is conservative.

Response to Comment 49. Based on the results of the air quality study for the project, the mitigation measure as written in the DEIR specifies “...contractors shall place construction equipment staging areas at least 200 feet away from sensitive receptors.” Presumably the commenter is suggesting that this distance should be increased to 1,000 feet. The 200-foot distance was selected after analysis in the project air study determined that construction impacts could be reduced to less than significant levels through imposition of this setback. The commenter has provided no evidence or substantiation why this distance should be increased to 1,000 feet.

Response to Comment 50. The mitigation measure states “...power sources (e.g., power poles)”. Clean fuel is a standard phrase used to describe fuels that release fewer emissions when used in internal combustion engines compared to standard fuels. A “clean-fuel generator” is a generator configured to burn a clean fuel, thus releasing fewer emissions than a generator burning standard fuels.

Response to Comment 51. Mitigation Measure 4.3.6.2C has been updated to specify Tier III equipment for all phases of construction and for all equipment where technologically available.

Response to Comment 52. The text of the mitigation measure states that it is “per SCAQMD guidelines”, showing that this is a requirement for all projects. It is included for completeness and for monitoring purposes.

Response to Comment 53. The commenter first states that Mitigation Measure 4.3.6.2H is not a mitigation measure then allows that the bulk of the measure is a proper mitigation measure. However, the measure has been amended as follows:

4.3.6.2H *The contractor shall minimize pollutant emissions by maintaining equipment engines in good condition and in proper tune according to manufacturer's specifications and ~~during smog season (May through October)~~ by shall not allowing construction equipment to be left idling for more than five minutes (per California law).*

Response to Comment 54. The text of the mitigation measure states that it is “as required by the California Air Resources Board (CARB)”, showing that this is a requirement for all projects. It is included for completeness and monitoring purposes.

Response to Comment 55. Notations to construction documents are how a specified change to the normal construction methods and procedures are documented and to support enforcement. Without notations, no one onsite during construction knows what action or procedure should be enforced. However, in Mitigation Measure 4.3.6.2J has been amended to take out “notations and “where feasible” has been changed to “if available” or “where available” because it is not certain at the time the mitigation is implemented whether the types of fuels and/or construction equipment specified will be available.

4.3.6.2J *Grading plans, construction specifications and bid documents shall also include the following ~~notations~~ requirements:*

- *Off-road construction equipment shall utilize alternative fuels where feasible e.g., biodiesel fuel (a minimum of B20), natural gas (CNG), liquefied natural gas (LNG), propane, except for equipment where use of such fuels would void the equipment warranty;*
- *Gravel pads shall be provided at all access points to prevent tracking of mud onto public roads;*
- *Install and maintain trackout control devices at all access points where paved and unpaved access or travel routes intersect;*
- *The contractor or builder shall designate a person or person(s) to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust off site;*
- *The contractor or builder shall post a publicly visible sign with the telephone number and person to contact regarding dust complaints. The contact person shall take corrective action within 24 hours;*
- *High-pressure injectors shall be provided on diesel construction equipment ~~where feasible~~ if available;*
- *Engine size of construction equipment shall be limited to the minimum practical size;*
- *Substitute gasoline-powered for diesel powered construction equipment where ~~feasible~~ gasoline powered equipment is available;*
- *Use electric construction equipment where ~~feasible~~ it is practical to use such equipment;*
- *Install catalytic converters on gasoline-powered equipment where ~~feasible~~ this type of equipment is available;*
- *Ride-sharing program for the construction crew ~~shall be encouraged and~~ shall be supported by contractor(s) via incentives or other inducement;*
- *Documentation shall be provided to the City of Moreno Valley indicating that construction workers have been encouraged to carpool or otherwise reduce VMT to the greatest extent practical, including providing information on available park and ride programs;*
- *Lunch vendor services shall be ~~provided~~ allowed on site during construction to minimize the need for off-site vehicle trips; and*
- *All forklifts used during construction and in subsequent operation of the project shall be electric or natural gas powered.*

Response to Comment 56. Mitigation Measure 4.3.6.2K has been revised to include a response time.

4.3.6.2K *Throughout project construction, a construction relations officer/community liaison, appointed by the Applicant, shall be retained on site. In coordination and cooperation with the City, the construction relations officer/community liaison shall respond to any concerns related to PM₁₀ (fugitive dust) generation or other construction-related air quality issues within 24 hours.*

Response to Comment 57. Mitigation Measure 4.3.6.2H requires construction equipment to limit idling, Measure 4.3.6.2L only requires signs be posted so that equipment operators are aware of the limit.

Response to Comment 58. The word “should” has been removed and replaced with “shall” in Mitigation Measure 4.3.6.3A.

4.3.6.3A *Prior to the issuance of grading permits, the project applicant shall require by contract specifications that all trucks hauling dirt, sand, soil, or other loose materials are to be covered or ~~should~~ shall maintain at least 2 feet of freeboard in accordance with the requirements of California Vehicle Code (CVC) Section 23114 (freeboard means vertical space between the top of the load and top of the trailer).*

Response to Comment 59. The project has no ability to affect the control of emissions from mobile sources as these are entirely under the control of State and federal authorities. The only means available to the project to affect mobile source emissions is to reduce their use, either by reducing numbers of vehicles or the distance they drive. The project does discuss these options but concludes that due to the magnitude of the calculated emissions, neither of these means that are available would reduce mobile emissions sufficiently to even approach the emissions thresholds. Thus, while mitigation is proposed (Mitigation Measures 4.3.6.5A and 4.3.6.5B) to reduce the numbers of vehicles and the distance they drive no quantification of the emissions reductions was attempted.

Specific air quality mitigation suggestions provided by the commenter are addressed in Response to Comment 60, below.

Response to Comment 60. See also Response to Comment D-3, No. 59 above. In addition, a number of activities requested by the SCAQMD have been incorporated into the mitigation measures for air quality (see Final EIR, Section 3.0, *EIR Errata and Additions*).

Feasible mitigation measures, including several identified in the list provided by the commentor, have been already included as mitigation for the project and are identified in the Draft EIR. The Table below contains each of the mitigation measures suggested for inclusion by the commentor and if it is already included in the Draft EIR, if will be added mitigation as part of the Final EIR, or if will not be included and why. Mitigation Measures 4.3.6.5B and 4.3.6.6A are intended to be suggestions for the developer to choose from to reduce energy consumption by 10% above Title 24 standards (refer to Response to Comment D-3, No. 109, below).

Table A: Comparison of Suggested Mitigation Measures to Project Mitigation

Suggested Mitigation Measure	Response
1. Preferential parking for employee vanpooling/ carpooling	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.6A on page 4.3-36.
2. Bicycle parking facilities	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-33 and Mitigation Measure 4.3.6.6A on page 4.3-36.

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Suggested Mitigation Measure	Response
3. Bus turnouts	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5A on page 4.3-33.
4. Install low-emissions water heaters	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-33.
5. Require construction of buildings to exceed Title 24 by 20+ percent	Not Included. The EIR indicates the project will exceed Title 14 energy standards by 10 percent which is considered adequate for this type of building and based on the most recent changes to the State Green Building Code, including Title 24. This mitigation is discussed in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.6A on page 4.3-36.
6. Install central water heating systems	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-33.
7. Require use of energy-efficient appliances	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-33.
8. Require increased insulation	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-33.
9. Require use of automated controls for air conditioners	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-33.
10. Require use of energy-efficient parking lot lighting.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-33.
11. Require use of lighting controls and energy – efficient lighting.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-33.
12. Require use of low-VOC interior and exterior coatings during any project repainting.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-33 and Mitigation Measure 4.3.6.4A on page 4.3-31.
13. Require on-site improvements such as sidewalks or pedestrian walkways to promote pedestrian activity and reduce the number of vehicle trips.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-33.
14. Require installation of skylights and energy-efficient lighting that exceeds current California Title 24 standards where feasible, including electronic dimming ballasts and computer-controlled daylight sensors in the buildings.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-33.
15. Require installation of fans to assist natural ventilation.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-33.
16. Require planting of shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and building shall be planted at the proposed project site to minimize the heat island effect and thereby reduce the amount of air conditioning required.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.6A on page 4.3-36.
17. Install central water heating systems	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under

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Suggested Mitigation Measure	Response
	Mitigation Measure 4.3.6.5B on page 4.3-33.
18. Require use of energy-efficient appliances	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-33.
19. Install low-emissions water heaters	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-33.
20. Require planting of shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and building shall be planted at the proposed project site to minimize the heat island effect and thereby reduce the amount of air conditioning required.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-33 and Mitigation Measure 4.3.6.6A on page 4.3-35.
21. Require installation of centralized water and space conditioning systems or, alternatively, high efficiency individual heating and cooling units.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-33.
22. Require installation of automatic setback thermostats.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-33.
23. Require the incorporation of the following to reduce energy demand associated with potable water conveyance through the following methods: <ul style="list-style-type: none"> • Require incorporation of drought-tolerant plants into the landscaping palette; and • Require incorporation of water-efficient irrigation techniques. 	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.6A on page 4.3-36.
24. Require installation of energy-efficient low-pressure sodium parking lot lights or equivalent as determined by the City;	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-34.
25. Increase in insulation such that heat transfer and thermal bridging is minimized.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.6A on page 4.3-35
26. Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.6A on page 4.3-35
27. Incorporate dual-paned or other energy-efficient windows.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.6A on page 4.3-35
28. Incorporate energy-efficient space heating and cooling equipment.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.6A on page 4.3-35
29. Interior and exterior energy-efficient lighting which exceeds the California Title 24	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.6A on page 4.3-35.
30. Energy Efficiency performance standards shall be installed.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.6A on page 4.3-35 for water heating and space heating.
31. Install automatic devices to turn off lights	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under

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when they are not needed.	Mitigation Measure 4.3.6.6A on page 4.3-35.
32. Shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and buildings shall be planted at the project site.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-33 and Mitigation Measure 4.3.6.6A on page 4.3-35.
33. Paint and surface color palette for the project shall emphasize light and off-white colors which reflect heat away from the buildings.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.6A on page 4.3-35.
34. All buildings shall be designed to accommodate renewable energy sources, such as photovoltaic solar electricity systems, appropriate to their architectural design, and shall incorporate renewable electricity systems.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.6A on page 4.3-35.
35. The project shall implement a landscaping palette emphasizing drought tolerant plants.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-34 and Mitigation Measure 4.3.6.6A on page 4.3-36.
36. The project shall implement use of water-efficient irrigation techniques.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-34 and Mitigation Measure 4.3.6.6A on page 4.3-36.
37. The project shall implement EPA Certified WaterSense labeled for equivalent faucets and high-efficiency toilets (HETs).	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.6A on page 4.3-36.
38. The project shall establish a Transportation Management Association (TMA). The TMA will coordinate with other TMAs within the City to encourage and coordinate carpooling among building occupants. The TMA will advertise its services to building occupants, and offer transit and/or other incentives to reduce GHG emissions. A plan will be submitted by the TMA to the City within two months of project completion that outlines the measures implemented by the TMA, as well as contact information.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.6A on page 4.3-36.
39. The project shall provide preferential parking for carpools and vanpools. Locations and configurations of proposed preferential parking for carpools and vanpools are subject to review and approval by the City. Prior to final site plan approval, preferential parking for carpools and vanpools shall be delineated on the project site plan.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.6A on page 4.3-36.
40. Lease/purchase documents shall require the implementation of the following mitigation measures by contract specification: <ul style="list-style-type: none"> • SmartWay partnership: Achieve at least 20 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of consolidated trips carried by SmartWay carriers until 	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.6A on page 4.3-36. Note that because the end user is not known at this time, the developer can only commit to language in the lease/purchase documents.

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<p>it reaches a minimum of 90 percent of all long haul trips carried by SmartWay carriers.</p> <ul style="list-style-type: none"> • Achievement of at least 15 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of long haul trips carried by SmartWay carriers until it reaches a minimum of 85 percent of all consolidator trips carried by SmartWay carriers. • Install of catalytic converters on all gasoline-powered equipment. • Include to the greatest extent feasible electric powered and/or compressed natural gas fueled trucks and/or vehicles in fleets. • Establish and encourage use of carpool/vanpool programs through methods such as vouchers. • Require a charge for parking fees for single-occupancy vehicles. • Provide preferential parking for EV and CNG vehicles consisting of at least 15% of parking stalls. • Require use of electrical equipment (instead of gasoline-powered equipment) for landscape maintenance where technologically feasible. • Require use of only electric (instead of diesel or gasoline-powered) yard trucks. • Require that all trucks within the fleet be SmartWay rated. 	

Response to Comment 61. Threshold 3(c) is discussed in Section 4.3.6.2 of the Air Quality section (page 4.3-22).

Response to Comment 62. Threshold 3(c) is discussed in Section 4.3.6.2 of the Air Quality section (page 4.3-22).

Response to Comment 63. The analysis was done in compliance with SCAQMD methodology (SCAQMD California Environmental Quality Act (CEQA) Air Quality Handbook [SCAQMD 1993]). The SCAQMD thresholds have been developed in recognition of air district ambient conditions. EIR Section 4.3.7 discusses the cumulative air quality impacts of project construction and operations in detail. Other than the Moreno Valley Auto Mall and the Wal-Mart center to the west of the project site, the project site region is currently residential, farmland or undeveloped. The majority of the land uses that would go into a cumulative analysis are not sufficiently documented to allow a comprehensive quantitative evaluation of cumulative impacts. The project traffic study includes what data is available for these proposed projects when projecting future cumulative traffic impacts and this data is included

in the air quality analysis of CO Hotspots, thus to the extent possible, the EIR does quantitatively assess cumulative impacts.

Response to Comment 64. The commenter is incorrect; the potential impacts to birds are discussed at length in Section 4.4.6.1 (Biological Resources) of the Draft EIR. Loss of the project site will incrementally impact migratory and passerine birds, but the EIR clearly indicates a lack of resources on the project site to support birds (i.e., no onsite standing water sources, no trees sufficient for perching or nesting, regular disturbance by human activity, and disking for weed abatement). Migratory birds and passerine birds are not considered significant biological resources on this site, so they were not mentioned in the Executive Summary. Development of this site would incrementally reduce foraging opportunities on this site for raptors, passerine, and migratory bird species. However, there are thousands of acres of dry farm agricultural land, Mystic Lake, and the San Jacinto Wildlife Area east of the project site that would provide significant foraging resources for birds compared to the project site.

Regarding Mitigation Measure 4.4.6.1A, the introduction to the “Mitigation Measures” section clearly states the following measures have been identified to reduce the significance of potential impacts to migratory bird species and the burrowing owl. Mitigation Measure 4.4.6.1A clearly addresses nesting (migratory) birds, which measures 4.4.6.1B and 4.4.6.1C clearly address impacts to burrowing owls.

Response to Comment 65. The CDFG’s 2012 “Staff Report on Burrowing Owl Mitigation” supersedes its 1995 Staff Report, not the Burrowing Owl Consortium’s “Burrowing Owl Survey Protocol and Mitigation Guidelines,” which has been commonly followed for burrowing owl surveys and mitigation since released in 1993. The CDFG continues to list the Burrowing Owl Consortium’s 1993 guidelines on its internet page of “Survey and Monitoring Protocols and Guidelines” (http://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html). The CDFG’s 2012 Staff Report indicates that its recommended setback buffers are “general guidelines” and “should be adjusted to address site-specific conditions.” Mitigation measure 4.4.6.1C follows the Burrowing Owl Consortium’s recommendation of a 160-foot buffer during the non-breeding season and a 250-foot buffer during the breeding season. The CDFG’s comments on the Draft EIR regarding burrowing owl (letter from Jeff Brandt, CDFG, to Jeff Bradshaw, City of Moreno Valley, August 28, 2012) do not indicate concern or disagreement with these buffer distances. In addition the site is subject to the provisions of the Western Riverside County MSHCP, in which burrowing owl relocation requires project-specific approval from CDFG. If burrowing owls are found on the site, they will be moved only with CDFG approval. Mitigation measure 4.4.6.1C indicates that if burrowing owls are found on “the project site or immediate vicinity,” the avoidance measures of 4.4.6.1C, including the buffers, will be taken. This will ensure that burrowing owls that may be found adjacent to the project site are not harmed by project-related activities. Impacts to burrowing owl habitat are covered under the MSHCP providing that the project follows MSHCP requirements. For burrowing owl, these requirements include conducting burrowing owl surveys and relocating burrowing owls found within impact areas. Mitigation for impacts to burrowing owl habitat is required only if the project site is within the MSHCP Criteria Area or if the project site and adjacent habitat support three or more pairs of burrowing owls. The project site is not within the MSHCP Criteria Area. A focused burrowing owl survey was conducted and the site was not found to support any burrowing owls. Burrowing owl mitigation is therefore focused on avoiding take of individual burrowing owls that may move onto the site rather than on burrowing owl habitat preservation or restoration.

Response to Comment 66. The commenter is incorrect, Sections 4.4.6.2 and 4.4.6.3 of the Draft EIR clearly identifies the potential impacts of development on the 3 onsite drainage features, including the Quincy Channel. The mitigation measures do not defer mitigation, but rather specify who, when, and how the implementation of the measures will occur, as required by CEQA.

Regarding SAWA, the commenter is being argumentative. SAWA is a separate governmental unit from the City of Moreno Valley, so the City cannot “force” SAWA to use impact fees for specific

purposes. However, it is the express goal of SAWA to use in lieu fee contributions for drainage impacts to acquire/maintain riparian/riverine habitat within the Santa Ana River basin. In fact, they are the most appropriate organization to collect and administer use of these fees, since they were formed specifically to help improve water quality and riparian/riverine habitat along the Santa Ana River and its tributaries. It should also be noted the offsite mitigation language relative to SAWA has been modified to reflect the most current implementation measures of the project DBESP report.

Response to Comment 67. The commenter is incorrect, Section 4.4.6.2 of the Draft EIR clearly identifies the impacts of development on the 3 onsite drainage features, including the Quincy Channel, and also specified the onsite protection of the Quincy Channel and the minimum amount of offsite mitigation required to offset the loss of the other two erosional drainage features.

Mitigation Measure 4.4.6.2B only provides more specific guidance of implementing Mitigation Measure 4.4.6.2A and for subsequent permitting of these actions. These measures do not defer mitigation, but rather specify when and how the implementation of the measures will occur, as required by CEQA.

Response to Comment 68. The commenter is incorrect. The project does not impact federal wetlands, as clearly demonstrated by Table 4.4.D in Section 4.4.6.3 of the Draft EIR. The table shows that the project will have minimal impacts on non-wetland land under the jurisdiction of the Army Corps or Regional Water Quality Control Board (0.054 acre temporary and 0.051 acre permanent), and also relatively small impacts to land under the jurisdiction of the State Department of Fish and Game (0.35 acre temporary, 0.36 acre permanent). Mitigation Measure 4.4.6.3A requires the project to obtain the appropriate federal and/or state permits for these impacts, subject to subsequent permitting approval processes by these agencies. As previously discussed in Responses to Comments D-3, Nos. 66 and 67 above, the proposed mitigation in the EIR will make sure impacts on these drainage features are less than significant. The commenter has provided no data or material supporting his opinion to the contrary. To reflect the most current implementation measures of the project DBESP, Mitigation Measures 4.5.6.2A, 4.5.6.2B, and 4.5.6.3A were modified based on comments by CDFG.

Response to Comment 69. Section 4.4 of the Draft EIR concluded that all potential impacts of the project on biological resources were either less than significant, or could be reduced to less than significant levels by implementing the recommended mitigation measures. The commenter provided no data or support to his opinion as to why the less than significant impacts of the project would contribute to significant cumulative impacts. This conclusion is incorrect, especially in light of the regional protection for biological resources provided by the MSHCP.

Response to Comment 70. The design of the proposed project is consistent with the edge treatment measures identified in the DBESP document (see Draft EIR Appendix E). This conclusion is supported by the analysis of indirect impacts in the MSHCP consistency analysis report (also in Draft EIR Appendix E). Based on these analyses, lighting and noise will not have significant impacts on any biological resources, and the commenter has not provided any empirical data or evidence to support his opinion in this regard.

“The MSHCP was conceived, developed, and is being implemented specifically to address the direct, indirect, cumulative, and growth-related effects on covered species resulting from build out of planned land use and infrastructure, including the proposed project.” (DEIR page 4.4-9). In addition, page 4.4-32 of the DEIR states that...“Project construction will contribute to the incremental loss of mule fat scrub and non-native grassland in the region, including potential habitat for some special status species. Cumulative impacts potentially include habitat fragmentation, increased edge effects, reduced habitat quality, and increased wildlife mortality. The MSHCP provides a comprehensive approach to the regional conservation of these habitats and, as a regional plan, serves to provide mitigation for cumulative impacts to covered species. Project compliance and consistency with the

MSHCP ensures that any cumulative impacts to covered species are effectively mitigated. Special status species that are not covered by the MSHCP also benefit from the surveys, conservation, and other measures of the MSHCP because they occupy many of the same habitats. Therefore, the proposed project will not make a significant contribution to any cumulatively considerable impacts to biological resources.” The EIR does examine these impacts, and determines that compliance with the MSHCP will be sufficient to mitigate any potential impacts in this regard. The EIR clearly demonstrates that, other than the Quincy Channel, there are no important biological resources in the immediate vicinity of the project site, so potential indirect impacts are negligible. In addition, the EIR concluded that the design of the project, implementation of project mitigation, and payment of MSHCP mitigation fees, would be sufficient to reduce potential biological impacts of the project to less than significant levels.

Response to Comment 71. Moreno Hills Complex is not an accepted term according to the Office of State Historic Preservation. “District” is the most appropriate term; however, no such District has been formally established. What is being suggested in the comment is commonly referred to as the “landscape approach” but lacking the designation of a District no landscape considerations can be applied (although the Pechanga increasingly apply the landscape approach in their dealings with cities and developers).

Response to Comment 72. Most municipalities require that archaeologists meet either County of Riverside or Secretary of the Interior qualifications. Letter A-4 (Response to Comment 2) from the Pechangua Band of Luiseno Indians clarifies the procedures to be taken under Mitigation Measures 4.5.6.1A through 4.5.6.1E. This letter also repeated the City’s position that while it encourages developers to work with the tribes, it does not require developers to hire Native American monitors. Since the status of Native American monitors cannot be clarified at this point, their level of authority is undefined. This letter also clarifies the curation procedures that will be carried out as artifacts are recovered and leaves with the tribes the decision regarding whether or not to curate or re-bury on the project. Mitigation Measures 4.5.6.1A has been revised requiring the monitor meet Secretary of Interior standards. Mitigation Measure 4.5.6.1B has been revised to require that work cease in that area if a resource is found.

Again, note that the wording of Mitigation Measures 4.5.6.1A through 4.5.6.1E have been modified as shown in Response 3 in Letter A-4 from the Pechanga Band to address concerns of both Native American groups regarding archaeological mitigation.

Response to Comment 73. The mitigation for paleontological resources is not deferred and is commonly used as standard mitigation when there are potential paleontological resources onsite that may be uncovered during excavation activities. The City of Moreno Valley requires that the paleontologists meet the standards of Riverside County and the Society for Vertebrate Paleontology. The San Bernardino County Museum in Redlands is well equipped to accept and curate paleontological specimens.

Response to Comment 74. Without an accepted, defined District using a landscape approach does not work either since there are no accepted boundaries for determining a cumulative area. Based on ethnographic studies we could use a 800 sq. km area or greater, but a more realistic cumulative boundary might be what is inside the 1-mile diameter of the record search area. The cumulative “universe” or boundary assumed for potential cumulative impacts for cultural resources is the City limits, as this is the largest area under control of the lead agency, and this area is supported as appropriate for a cumulative analysis in the City’s General Plan EIR as well. Regardless, the EIR clearly concludes, the proposed project will not have a significant impact on cultural resources and will not have a cumulative impact on cultural resources whether the cumulative area is the City limits or the entire ethnographic region.

Response to Comment 75. The commenter is incorrect – the project hydrology study clearly shows that post-development flows will be equal or less than pre-development conditions with construction and maintenance of the proposed detention basins. Each building area will have its own basin, and the four basins across the southern boundary of the site will help assure that offsite flows will not exceed existing runoff volumes. The Final Hydrology Study is required by the City development review process to more accurately characterize drainage conditions based on the final building and property development plans. However, the final plans must be consistent and are based on the draft hydrology plan included in Appendix G-1 of the Draft EIR. Therefore, potential flooding impacts will be less than significant, as indicated in Sections 4.7.5.2 and 4.7.5.3 of the Draft EIR.

Response to Comment 76. As demonstrated in Response to Comment D-3, No. 75 above, the commenter is incorrect - the project will not cause significant drainage or flooding impacts. The project hydrological analysis clearly shows that offsite runoff in the post-development condition will not exceed pre-development conditions for downstream land uses. Therefore, the project is not expected to make any contributions to cumulatively considerable flooding impacts in this area.

The analysis in Section 4.7, *Hydrology and Water Quality*, of the DEIR also determined that the project would not result in significant water quality impacts either onsite or for downstream properties, so the project is also not expected to make any contributions to cumulatively considerable water quality impacts in this area.

Response to Comment 77. While it is correct that soil sampling last occurred in 2004, the commenter is incorrect that this requires additional soil testing. The site has lain fallow since that time, and the only farming that has occurred in the non-citrus portions of the site have been dry farming which does not require the application of pesticides or other agricultural chemicals. In fact, the site has not even been dry farmed for several years, and the onsite ruderal vegetation has only been managed for weed abatement purposes. In addition, the citrus trees have not been commercially harvested, nor have they been irrigated or maintained as a commercial activity (i.e., no pesticides or other agricultural chemicals applied). The commenter has provided no evidence why the 2004 soil samples need to be updated. For the purposes of CEQA review, the City considers the information provided in the Draft EIR to be accurate.

Response to Comment 78. The commenter is incorrect; the Draft EIR does address removing the trail segment along the Quincy Channel north of Eucalyptus Avenue. When this trail segment was first proposed, there was an under-crossing of the SR-60 planned that would allow a trail connection to be constructed along the Quincy Channel north of the freeway. Since that time, the City has eliminated that potential under-crossing, which means the segment of the trail along the channel north of Eucalyptus Avenue would not connect to any other trail. Therefore, the ProLogis project is proposing the trail follow the north side of Eucalyptus Avenue when it is realigned through the proposed project. There would then be a continuous trail up the Quincy Channel from the south to Eucalyptus Avenue, then the trail would go east and west along the north side of Eucalyptus Avenue. A similar trail improvement was required of the Westridge project approved just east of the proposed project. The EIR discusses potential conflicts with the “improve air quality and promote energy efficiency” section of the RTP in Section 4.8.7 of the Land Use and Planning chapter, page 4.8-18.

Response to Comment 79. It is true the project will remove some amount of potential affordable housing, and it will add more warehousing in this portion of the City. The project would also contribute to more warehousing City-wide (i.e., the southern portion of the City has an industrial specific plan). However, the comments regarding the significance of the impact are the opinion of the commenter and will have to be decided by the City Council. If the City decides to approve this project, it would have to adopt a Statement of Overriding Considerations to document that the benefits of the project (e.g., employment, revenues) outweigh the significant impacts of the project, as required by CEQA.

Table 3.C clearly identifies 6.65 million square feet of industrial projects in eight locations within the City (Sites 5, 6, 8-13). This list does include the WestRidge and Highland Fairview Corporate Park (“Skechers”) projects, but does not include World Logistics Center project of 41.6 million square feet of industrial space because that project was not proposed when the Notice of Preparation for this ProLogis project was prepared in 2008, which is the baseline time at which cumulative projects are established for an EIR analysis.

Response to Comment 80. The noise impact study was conducted based on applicable City noise standards, including those identified in the City’s Municipal Code and General Plan Noise Element indicated on pages 4.9-5 through 4.9-9 in the DEIR, and provided disclosure of potential noise impact areas. Specific comments on the noise study are addressed in Responses 81-93.

Response to Comment 81. The dominant on-site noise generating activity is the truck maneuvering during the loading/unloading operations at the loading docks. These noise-generating activities include trucks moving in the loading dock, idling, unloading or loading, moving out of the loading dock, and leave the site. The noise impact analysis was based on the site plan and land use assumptions for the proposed LADP development to determine that the closest distance between the loading/unloading area and the future residences to the south. This distance is approximately 280 feet. Other activities associated with the trucks on-site would be traveling at slow speed (15 mph) to get in and out of the site or to move to the designated parking area. This activity generates much lower noise level and last much shorter time when compared to the activities occurring within the loading dock area. Therefore, evaluating the potential truck-related noise within the loading dock area represents the worst case scenario.

It should be noted that noise from on-site operations, including loading/unloading and onsite maneuvering, have been adequately evaluated at the nearest noise-sensitive land uses and no significant noise impacts were identified. Similarly, even though individual truck noise from trucks driving on public streets is not regulated by the local governments (city or county), project-related traffic noise level increases along roadway segments in the project vicinity were shown to be less than 3 dBA and would not be perceptible by the human ear.

In addition, the commenter is referred to Section 4 of this document for an evaluation of a less intensive modified plan, which is a subset of the Reduced Intensity Alternative evaluated in the DEIR (and which was determined to be environmentally superior to the Proposed Project). This less intensive plan proposes to develop 4 warehouse buildings, leaving the southeast portion of the site vacant for future development of residential uses consistent with existing zoning (R-5 and RA-2) adjacent to the existing residential neighborhood to the southeast.

Response to Comment 82. The 3 dBA increase was not identified in the noise impact analysis as a threshold on page 4.9-2 in the DEIR. Rather, it was stated that “audible impacts that refer to increases in noise levels noticeable to humans generally refer to a change of 3 dB or greater, since this level has been found to be barely perceptible in exterior environment. It should be noted that, every doubling of the sound energy from the source would result in a 3 dBA increase in sound level. This would mean that, given everything else remains the same, the traffic volume needs to be doubled to cause an increase of 3 dBA in traffic noise. For noise level changes that are not perceptible by the human ear, they would not cause any audible change and would therefore not result in any significant noise impacts. The City’s noise thresholds were identified in DEIR Section 4.9.2, Existing Policies and Regulations (pages 4.9-5 to 4.9-8), where an exterior noise level of 60 to 65 dBA CNEL/Ldn and an interior noise level of 45 dBA CNEL/Ldn were identified for residential uses, as well as a maximum source land use noise level for residential uses is 60 dBA during daytime hours (7 a.m. to 10 p.m.) and 55 dBA during the nighttime hours (10 p.m. to 7 a.m.). For commercial source land uses, the maximum noise level is 65 dBA during daytime hours and 60 dBA during nighttime hours. (Source: Chapter 11.80.030, Table 11.80.030-2, City of Moreno Valley Municipal Code, City of Moreno Valley).

Response to Comment 83. The City's Municipal Code, Table 11.80.030-2, Maximum Sound Levels for Source Land Uses states that, "...restricts noise levels above 55 dBA at night and 60 dBA during the day in residential areas, when measured at a distance of 200 feet or more from the real property line of the source of the sound if the sound occurs on privately owned property, ..." Therefore, it is clear that the City's Municipal Code specifically indicates that measurement of the source noise levels would be "at a distance of 200 feet or more from the real property line of the source of the sound". For this project, the nearest residences are at a distance of 664 feet or more from the project (sound source) site. Evaluating the noise level at the nearest residential uses meets the City's definition specified in the Municipal Code.

In addition, the commenter is referred to Section 4 of this document for an evaluation of a less intensive modified plan, which is a subset of the Reduced Intensity Alternative evaluated in the DEIR (and which was determined to be environmentally superior to the Proposed Project). This less intensive plan proposes to develop 4 warehouse buildings, leaving the southeast portion of the site vacant for future development of residential uses consistent with existing zoning (R-5 and RA-2) adjacent to the existing residential neighborhood to the southeast. This alternative plan would substantially reduce noise impacts from warehousing for the residences southeast of the project site.

Response to Comment 84. The City's noise thresholds for transportation sources were identified in the DEIR Section 4.9.2, Existing Policies and Regulations (pages 4.9-5 to 4.9-8), where an exterior noise level of 60 to 65 dBA CNEL/Ldn and an interior noise level of 45 dBA CNEL/Ldn were identified for residential uses, For industrial land uses, the City identifies 70 dBA CNEL as the acceptable exterior noise threshold. Most of the roadway segments in the project vicinity would have up to 2.0 dBA increase in traffic noise as a result of the project-related traffic. This range of traffic noise level increases would not be perceptible by the human ear in an outdoor environment. The only exception is along Eucalyptus Avenue between Moreno Beach Drive and Redlands Boulevard, where the project-related traffic noise level increases would be from 2.5 to 13.6 dBA under the Existing With Project Conditions and from 4.5 to 13.3 dBA under the 2012 With Project Conditions. Since this segment of the road goes or will go through industrial land uses and vacant land, the City's noise standard for industrial land uses of 70 dBA CNEL was used. The 70 dBA CNEL noise contour would be confined to within the roadway right-of-way, therefore, there would be no significant traffic noise impact on land uses along the road.

Response to Comment 85. The City has separate noise standards regulating mobile (traffic) and stationary (on-site operational activity) noise sources in its General Plan Noise Element and Municipal Code. Therefore, noise from different sources is analyzed based on the noise regulations applicable to the activity generating it. The City's noise standards regulating traffic noise are those from the General Plan Noise Element in terms of the 24-hour weighted community noise equivalent level (CNEL) to protect residents during the more sensitive evening and nighttime hours from noise exposure. The CNEL noise metric is averaged and weighted over a 24-hour period, so it is not practical or feasible to combine the CNEL with the short-term, intermittent noise events associated with stationary sources such as truck loading/unloading activities or activity in the parking lot. Chapter 9.03.040 of the City's Planning and Zoning Code states that in all residential districts, air conditioners, heating, cooling, and ventilating equipment and all other mechanical lighting or electrical devices shall be operated so that noise levels do not exceed 60 dBA (L_{dn}) at the property line. The City's Municipal Code, Section 9.10.140, specifies that all commercial and industrial uses shall be operated so that noise created by any loudspeaker, bells, gongs, buzzers, or other noise attenuation or attracting devices shall not exceed 55 dBA at any one time beyond the boundaries of the property. Chapter 11.80.030, Table 11.80.030-2, City of Moreno Valley Municipal Code, sets a maximum source land use noise level for residential uses as 60 dBA during daytime hours (7 a.m. to 10 p.m.) and 55 dBA during the nighttime hours (10 p.m. to 7 a.m.). For commercial source land uses, the maximum noise level is 65 dBA during daytime hours and 60 dBA during nighttime hours. The City does not have noise standards regulating stationary sources such as on-site loading/unloading activities, therefore,

the percentile exceedance levels (Ln) recommended in the State's Modal Community Noise Ordinance, which represent the noise levels that were exceeded for N percent of the time during the one-hour analysis period, are used in the analysis (DEIR, page 4.9-21 under Long-term Operational Noise Impacts for Truck Loading/Unloading Operations) Because the adjacent future development had no final plans available at the time the noise impact study was conducted, the future potential noise impact from on-site operations was evaluated separately using the best assumptions available at the time the noise impact analysis was conducted. The closest possible loading/unloading area was used for on-site operations adjacent to the future planned residential uses.

Response to Comment 86. Please refer to Responses to Comments D-3, Nos. 84 and 85 above for traffic noise impact analysis. Also, please refer Response to Comment D-3, No. 85 on the use of separate noise standards from different noise sources. Please refer to the Response to Comment D-3, No. 83 on the noise level analyzed at the nearest residential property line, rather than the project's own property line. The proposed on-site building would function as a noise barrier for receivers on the opposite side of the noise source. As a rule-of-thumb, a noise barrier that blocks the line-of-sight between the noise source and the receiver would provide at least a 5 dBA in noise reduction (Based on Caltrans Technical Noise Supplement (TeNS, Caltrans, November 2009), for every 2 feet increase in barrier height, an additional 1 dBA noise reduction would be achieved). Since the building would be at least 10 feet above ground and is much higher than the barrier height that barely blocks the line-of-sight, it would provide noise attenuation higher than 5 dBA.

Response to Comment 87. The noise impact analysis evaluated existing and future ambient noise level increases by the project-related traffic on roadway segments in the project vicinity, and determined that no significant noise impacts would occur, partly since the majority of the roadway segments would not have noise level increases that are audible in the outdoor environment and partly since there are no sensitive land uses along the roadway segments with relatively large project-related traffic and the projected noise levels would not exceed the exterior noise standards for the land uses along these segments (industrial uses and vacant land). The City's noise thresholds for transportation sources were identified in 4.9.2, Existing Policies and Regulations (Pages 4.9-5 to 4.9-8), where an exterior noise level of 60 to 65 dBA CNEL/Ldn and an interior noise level of 45 dBA CNEL/Ldn were identified for residential uses, For industrial land uses, the City identifies 70 dBA CNEL as the acceptable exterior noise threshold. Most of the roadway segments in the project vicinity would have up to 2.0 dBA increase in traffic noise as a result of the project-related traffic. This range of traffic noise level increases would not be perceptible by the human ear in an outdoor environment. The only exception is along Eucalyptus Avenue between Moreno Beach Drive and Redlands Boulevard, where the project-related traffic noise level increases would be from 2.5 to 13.6 dBA under the Existing With Project Conditions and from 4.5 to 13.3 dBA under the 2012 With Project Conditions. Since this segment of the road goes or will go through industrial land uses and vacant land, and the noise standard for industrial land uses, the 70 dBA CNEL noise contour would be confined to within the roadway right-of-way and would not impact these industrial land uses, there would be no significant noise impact on land uses along the road. Therefore, no significant traffic noise impacts would occur. Similarly, for on-site operational noise sources, even though the ambient noise level would increase as a result of the project operations, no noise-sensitive land uses would be exposed to noise levels that exceed the City's noise standards for such uses.

Response to Comment 88. Please refer to the response for Response to Comment D-3, No. 87 for the existing noise levels in the project vicinity. The City's General Plan Noise Element (or any other Element) does not have noise level restrictions specified for construction activity. The City's Municipal Code, Chapter 11.80.030, prohibits grading activities between the hours of 8:00 p.m. and 7:00 a.m. and prohibits construction activities from 8:00 p.m. to 6:00 a.m. during the week and between 8:00 p.m. and 7:00 a.m. on weekends and holidays. However, it does not specify any upper noise limits for construction activity. Compliance with the construction hours specified in the City's Municipal Code would result in construction noise impacts that are less than significant. While impacts would be considered less than significant as long as construction activities occur within the designated hours

identified in the City's Municipal Code, mitigation measures 4.9.6.1A through 4.9.6.1D have been identified to reduce the noise levels that would expose nearby sensitive receptors to high construction noise.

It should be noted that the noise levels obtained from the 1987 edition of Noise Control for Buildings and Manufacturing Plants (Bolt, Beranek & Newman, 1987) represent a conservative analysis for construction equipment. Because of technology advancement, most current day construction equipment emits lower noise levels compared to the 1987 version.

In addition, the commenter is referred to Section 4 of this document for an evaluation of a less intensive modified plan, which is a subset of the Reduced Intensity Alternative evaluated in the DEIR (and which was determined to be environmentally superior to the Proposed Project). This less intensive plan proposes to develop 4 warehouse buildings, leaving the southeast portion of the site vacant for future development of residential uses consistent with existing zoning (R-5 and RA-2) adjacent to the existing residential neighborhood to the southeast. This alternative plan would substantially reduce noise impacts from warehousing for the residences southeast of the project site.

Response to Comment 89. The City's General Plan Noise Element (or any other Element) does not have noise level restrictions specified for construction activity. Policy 6.5.2 only states that construction activities shall be operated in a manner that limits noise impacts on surrounding uses. The City's Municipal Code, Chapter 11.80.030, prohibits grading activities between the hours of 8:00 p.m. and 7:00 a.m. and prohibits construction activities from 8:00 p.m. to 6:00 a.m. during the week and between 8:00 p.m. and 7:00 a.m. on weekends and holidays. However, it does not specify any upper noise limits for construction activity. Compliance with the construction hours specified in the City's Municipal Code would result in construction noise impacts that are less than significant. While impacts would be considered less than significant as long as construction activities occur within the designated hours identified in the City's Municipal Code, Mitigation Measures 4.9.6.1A through 4.9.6.1D have been identified to reduce the noise levels that would expose nearby sensitive receptors to high construction noise.

Response to Comment 90. Please refer to Response to Comment D-3, No. 89 above on construction activity meeting the City's requirements identified in its Municipal Code and to limit noise closest to the existing residences. Mitigation Measure 4.9.6.1D has been amended as follows:

4.9.6.1D. *During all-project site construction activities at Building 6 (i.e., closest to existing residences), the construction contractor shall limit all construction-related activities ~~that would result in high noise levels~~ to between the hours of 6:00 a.m. and 8:00 p.m. on weekdays and between the hours of 7:00 a.m. to 8:00 p.m. on weekends and holidays, unless written approval is obtained from the City Building Official or City Engineer for specific construction activities that must be conducted outside of the permitted time periods.*

For activities that would be conducted inside the building/structure and would not result in any noise annoyance to off-site land uses, they can occur outside of the hours specified in the Municipal Code.

Response to Comment 91. According to the project noise assessment, none of these measures would be required for noise mitigation purposes.

No significant construction noise impacts would occur if construction of the proposed project would occur within the permitted hours of 6:00 a.m. to 8:00 p.m. of any working day, and within the permitted hours of 7:00 a.m. and 8:00 p.m. on weekends and federal holidays. Compliance with the construction hours specified in the City's Municipal Code would result in construction noise impacts that are less than significant. While impacts would be considered less than significant as long as construction activities occur within the designated hours identified in the City's Municipal Code.

Mitigation Measures 4.9.6.1A – 4.9.6.1D were identified in the Draft EIR to ensure that the City's noise standards are implemented.

As indicated in the noise impact study, no noise barriers would be required during project construction (DEIR, page 4.9-26 under Construction Noise Impact nor are they required during operation of the proposed project (DEIR, page 4.9-24 under Combined Noise Levels from On-site Stationary Sources). The proposed project will comply with all mitigation measures identified and comply with applicable federal, State, and City guidelines.

Response to Comment 92. The noise impact analysis has evaluated the project's cumulative impacts from both mobile and stationary sources. For example, based on all available information and provided future projected traffic noise along roadway segments in the project vicinity under the Project Buildout (2035) and General Plan Buildout conditions. As shown in Tables 4.9.J through 4.9.M on pages 4.9-15 to 4.9-20 of the DEIR, project-related traffic noise level increases under these two scenarios would be 1.3 dBA or less and the proposed land uses would not be significantly impacted by the future traffic noise in the project vicinity. Furthermore, on DEIR pages 4.9-20 through 4.9-24, with a worst-case scenario of all on-site stationary noise sources occurring at the same time with their maximum noise level, the maximum noise level measured at 200 feet from the project's southern boundary would be 55 dBA L_{max} . Although this "combined" noise level is not likely to occur due to the intermittent nature of these noise events, if it occurs, it would still not exceed the City's 55 dBA L_{max} nighttime standard for residential uses. Therefore, no significant cumulative noise impacts were identified, either from mobile or from stationary noise sources.

Response to Comment 93. After review, the LSA Noise Assessment Group determined that none of these references provide additional relevant information to determine the project's noise impacts in a more accurate or appropriate manner. All project-related mobile and stationary noise sources have been evaluated and compared to noise standards applicable to these different noise sources. No additional or overlapping noise analysis is required to confirm the findings in the noise impact analysis.

Response to Comment 94. The City of Moreno Valley uses a more restrictive, higher truck generating rate for high cube warehouses (buildings over 200 KSF). The total trip generation of the project used in the analysis is higher than that if the analysis was purely based on ITE rates.

Response to Comment 95. The commenter is incorrect - the analysis does not use a plan to plan comparison and uses the trips from the proposed project in the analysis. The "Without Project" analyses for all scenarios are based on conditions where the proposed site is vacant. Therefore, the comparison between without and with project conditions is comparing no development on site with the proposed project. An existing plus project analysis has also been included which evaluates the impacts of the project on existing physical conditions.

Response to Comment 96. LOS is a metric used by traffic engineers throughout the state to evaluate traffic conditions. LOS is based on delay and is a function of traffic volumes and capacity at intersections. Section 4.11.1.3 of the DEIR explains the concept of LOS. In addition, the Traffic Study also includes v/c ratios as requested by the commenter.

Response to Comment 97. In terms of traffic, most of the trips are using the SR-60 freeway. The routes from the project to the SR-60 freeway do not pass through existing and future residential areas or schools with the proposed change to the Circulation Element. An examination of school locations in the area did not show any schools with direct access to the freeway. The entire traffic analysis is based on the concept of Passenger Car Equivalents (PCE) which converts trucks to an equivalent number of passenger cars to correctly evaluate impacts of trucks which can be larger and slower than passenger cars. The traffic impacts of trucks sharing the road with passenger vehicles have been adequately analyzed.

Response to Comment 98. The following table provides an analysis of the project’s consistency with, or the inapplicability of, the various transportation-related policies cited on pages 4.11-11 to 4.11-14 of the Draft EIR. Please note that this additional information does not result in identification of new or severe impacts.

City General Plan Policies/Objectives	Project Consistency
Community Development Element	
Policy 2.2.17: Discourage nonresidential uses on local residential streets that generate traffic, noise, or other characteristics that would adversely affect nearby residents.	As identified on page 4.11-37 in the Draft EIR, the project proposes to eliminate the planned Quincy Street connection to the north of proposed Eucalyptus Avenue. Elimination of the Quincy Street connection creates a physical barrier between the proposed project’s industrial uses and the nearby residential uses, and will help to segregate and prevent truck traffic from entering future residential streets.
Circulation Element	
Objective 5.1: Create a safe, efficient, and neighborhood-friendly street system.	The project is an industrial development and as such does not fall under a “neighborhood” as used in the General Plan. The project will construct roadways along its frontage to City standards. See response to Policy 2.2.17.
Policy 5.1.1: Plan access and circulation of each development project to accommodate vehicles (including emergency vehicles and trash trucks), pedestrians, and bicycles.	Access and circulation for the project will accommodate vehicles (including emergency vehicles and trash trucks), pedestrians, and bicycles.
Policy 5.1.2: Plan the circulation system to reduce conflicts between vehicular, pedestrian, and bicycle traffic.	The project will construct roadways and sidewalks to City Standards. The City Standards are developed to create safe conditions.
Policy 5.1.3: Require adequate off-street parking for all developments.	The project provides off street parking based on City standards.
Policy 5.1.4: Driveway placement shall be designed for safety and to enhance circulation wherever possible.	The project will construct driveways to City Standards. The City Standards are developed to create safe conditions.
Policy 5.1.5: Incorporate Americans with Disabilities Act (ADA) and Title 24 requirements in roadway improvements as appropriate.	City Standards include both ADA and Title 24 requirements
Policy 5.1.6: Design new developments to provide opportunity for access and circulation to future adjacent developments.	Adjacent vacant land will be provided access.
Objective 5.2: Implement access management policies.	Roadways will be constructed per City Standards that incorporate various access management policies.
Policy 5.2.1: Locate residential units with access from local streets. Minimize direct residential access from collectors. Prohibit direct single-family driveway access on arterials and higher classification roadways.	See the response above for Objective 5.2. This policy is inapplicable to the proposed industrial project.
Policy 5.2.2: Feed short local streets into collectors.	See the response above for Objective 5.2. This policy is inapplicable to the proposed industrial project.
Policy 5.2.3: Encourage the incorporation of traffic-calming design into local and collector streets to promote safe vehicle speeds.	See the response above for Objective 5.2. This policy is inapplicable to the proposed industrial project.
Objective 5.3: Maintain LOS C on roadway links, wherever possible, and LOS D in the vicinity of SR-60 and high	As identified on page 4.11-5 in the Draft EIR, the traffic study prepared for the project

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City General Plan Policies/Objectives	Project Consistency
employment centers.	utilized a level of service standard of LOS D for all City intersections and roadways analyzed in the traffic study, with the exception of Moreno Beach Drive/Cottonwood Avenue, at which the level of service standard of LOS C was used. For all signalized ramp terminus intersections on SR-60, the level of service standard of between LOS C and LOS D was used. As identified on pages 4.11-31, 4.11-32, 4.11-33, 4.11-35, and 4.11-37 in the Draft EIR, all impacts to City intersections are mitigated to less than significant levels with mitigation.
Policy 5.3.1: Obtain right-of-way and construct roadways in accordance with the designation shown on the General Plan Circulation Element Map and the City street improvement standards.	The project will be required to construct adjacent half street sections in accordance with City street improvement standards. Although the project will not construct Encilia Avenue, the project will preserve right-of-way along the south project boundary to allow Encilia Avenue to be constructed in the future in accordance with the designation shown on the General Plan Circulation Element Map and the City street improvement standards.
Policy 5.3.5: Ensure that new development pays a fair-share cost to provide local and regional transportation improvements and to mitigate cumulative traffic impacts. For this purpose, require new developments to participate in Transportation Uniform Mitigation Fee (TUMF), the Development Impact Fee Program (DIF), and any other applicable transportation fee programs and benefit assessment districts.	As identified on pages 4.11-31, 4.11-32, 4.11-33, and 4.11-35 in the Draft EIR, the project applicant shall implement transportation improvements, either through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program, or through a fair-share contribution to the City of Moreno Valley.
Policy 5.3.6: Where new developments would increase traffic flows beyond the LOS C (or LOS D, where applicable), require appropriate and feasible mitigation measures as a condition of approval. Such measures may include extra right-of-way and improvements to accommodate left-turn and right-turn lanes at intersections, or other improvements.	See response to Objective 5.3. All impacts to City intersections are mitigated to less than significant levels with mitigation.
Policy 5.3.7: Provide consideration to projects that have overriding regional or local benefits that would be desirable even though the LOS standards cannot be met. These projects would be required to analyze traffic impacts and mitigate such impacts to the extent that it is deemed feasible.	See response to Objective 5.3. All impacts to City intersections are mitigated to less than significant levels with mitigation. Impacts to freeway ramps and freeway segments cannot be mitigated and would remain significant and unavoidable until such time that improvements are constructed. Caltrans does not have a mechanism for development projects to contribute to improvements on State Highways and the City has no control over when and how regional freeway improvements will be constructed.
Objective 5.4: Maximize efficiency of the regional circulation system through close coordination with State and regional agencies and implementation of regional transportation policies.	As identified on page 4.11-30 in the Draft EIR, the traffic study includes analysis of regional transportation facilities. These facilities are funded by the Transportation Uniform Mitigation Fee (TUMF), which establishes jurisdictional fair-share contributions for regional transportation facilities (e.g., freeway interchanges, regional

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	<p>arterials, and railroad grade separations) in western Riverside County. The following improvements within the project area are included in the TUMF program:</p> <ul style="list-style-type: none"> • SR-60/Moreno Beach Drive Interchange reconstruction • SR-60/Redlands Boulevard Interchange reconstruction
Policy 5.4.1: Coordinate with Caltrans and the Riverside County Transportation Commission (RCTC) to identify and protect ultimate rights-of-way, including those for freeways, regional arterial projects, transit, bikeways, and interchange expansion.	See response to Objective 5.4.4.
Policy 5.4.2: Coordinate with Caltrans and the RCTC regarding the integration of Intelligent Transportation Systems (ITS) consistent with the principles and recommendations of the Inland Empire Regional ITS Architecture Project.	See response to Objective 5.4.4.
Objective 5.5: Maximize efficiency of the local circulation system by using appropriate policies and standards to design, locate, and size roadways.	Roadways for the project have been sized per the City's General Plan Circulation Element. A General Plan Amendment is being processed to address the location of Encilia Avenue.
Policy 5.5.3: Prohibit points of access from conflicting with other existing or planned access points. Require points of access to roadways to be separated sufficiently to maintain capacity, efficiency, and safety of the traffic flow.	Project driveways are spaced to provide sufficient sight distances to maintain the capacity, efficiency and safety of traffic flow.
Policy 5.5.4: Wherever possible, minimize the frequency of access points along streets by the consolidation of access points between adjacent properties on all circulation element streets, excluding collectors.	The project consolidates driveways wherever possible.
Policy 5.5.5: Design streets and intersections in accordance with the Moreno Valley Municipal Code.	The project will be required to construct adjacent half street sections in accordance with City street improvement standards.
Policy 5.5.8: Whenever possible, require private and public land developments to provide on-site and off-site improvements necessary to mitigate any development-generated circulation impacts. A review of each proposed land development project shall be undertaken to identify project impacts to the circulation system. The City may require developers to provide traffic impact studies prepared by qualified professionals to identify the impacts of a development.	See response to Objective 5.3 and Policy 5.3.6.
Policy 5.5.9: Design curves and grades to permit safe movement of vehicular traffic per applicable Caltrans and Moreno Valley standards.	The project will be required to construct adjacent half street sections in accordance with City street improvement standards, including appropriate curve radii standards.
Policy 5.5.10: Provide adequate sight distances for safe vehicular movement at all intersections and driveways.	The project will be required to construct adjacent half street sections in accordance with City street improvement standards, including appropriate site distance provisions.

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City General Plan Policies/Objectives	Project Consistency
Objective 5.8: Encourage development of an efficient public transportation system for the entire community.	This objective is inapplicable to the proposed industrial project, because this is an objective oriented to an efficient public transportation system within the City, and is larger than a project level initiative. The project will provide bus bays in the area where RTA requests them.
Policy 5.8.1: Support the development of high-speed transit linkages, or express routes, that would benefit the citizens and employers of Moreno Valley.	See the response above for Objective 5.8. This policy is inapplicable to the proposed industrial project.
Policy 5.8.4: Ensure that all new developments make adequate provision for bus stops and turnout areas for both public transit and school bus service.	The project will provide bus bays in the area where RTA requests them.
Objective 5.10: Encourage bicycling as an alternative to single occupant vehicle travel for the purpose of reducing fuel consumption, traffic congestion, and air pollution.	This objective is inapplicable to the proposed industrial project, because this is an objective oriented to promoting bicycling within the City and is larger than a project level initiative. However, the project will provide bike lanes on Eucalyptus Avenue and also provides bike parking to facilitate alternative transportation should employees desire to bike to work.
Policy 5.10.1: Bikeways shall link residential neighborhood areas with parks, employment centers, civic and commercial areas, and schools.	The project provides bike parking to facilitate alternative transportation should employees desire to bike to work.
Objective 5.11: Eliminate obstructions that impede safe movement of vehicles, bicyclists, and pedestrians.	The project will construct roadways based on City standards, which consider all modes of travel and their safety.
Policy 5.11.2: Driveways shall be designed to avoid conflicts with pedestrian and bicycle travel.	The project will construct driveways to City Standards. The City Standards are developed to create safe conditions.
Program 5-1: Periodically review current traffic volumes, traffic collision data, and the pattern of urban development to coordinate, program, and as necessary revise the planning and prioritization of road improvements.	This program is inapplicable to the proposed industrial project, because this is a program for the City to review traffic data for the purposes of revising the transportation plan and for prioritizing roadway improvements within the City.
Program 5-2: Periodically reassess the goals, objectives and policies statements of the Circulation Element and propose amendments, as necessary.	This program is inapplicable to the proposed industrial project, because this is a program for the City to reassess the Circulation Element as necessary.
Program 5-3: Develop a comprehensive strategy to ensure full funding of the circulation system. The strategy will include the DIF, TUMF, and other funding sources that may be available to the City. In addition, the creation of benefit assessment districts, and road and bridge fee districts may be considered where appropriate.	This program is inapplicable to the proposed industrial project, because this is a program for the City to develop a comprehensive strategy to ensure full funding of the circulation system using the DIF, TUMF, other funding sources, benefit assessment districts, and road and bridge fee districts.
Program 5-4: Develop a multi-year transportation infrastructure improvement program that, to the extent feasible, phases the construction of new projects in advance of new development.	This program is inapplicable to the proposed industrial project, because this is a program for the City to develop a multi-year transportation infrastructure improvement program.

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City General Plan Policies/Objectives	Project Consistency
<p>Program 5-5: The above-referenced program will prioritize circulation improvement projects to be funded from DIF, TUMF and other sources. Prioritization to consider the following factors: (a) Traffic safety; (b) Congestion relief; (c) Access to new development; and (d) Equitable benefit.</p>	<p>This program is inapplicable to the proposed industrial project, because this is a program for the City to develop a multi-year transportation infrastructure improvement program with prioritized circulation improvements.</p>
<p>Program 5-6: Conduct studies of specified arterial segments to determine if any additional improvements will be needed to maintain an acceptable LOS at General Plan build-out. Generally, these segments will be studied as new developments are proposed in their vicinity. Measures will be identified that are consistent with the Circulation Element designation of these roadway segments, such as additional turn lanes at intersections, signal optimization by coordination and enhanced phasing, and travel demand management measures. The study of specified arterial segments will be required to identify measures to maintain an acceptable LOS at General Plan build-out for at least one of the reasons discussed below: (a) Segments will need improvement, but their ultimate volumes slightly exceed design capabilities. (b) Segments will need improvements but require inter-jurisdictional coordination. (c) Segments would require significant encroachment on existing adjacent development if built out to their Circulation Element designations.</p>	<p>This program is inapplicable to the proposed industrial project, because this is a program for the City to conduct studies of specified arterial segments to determine if any additional improvements will be needed to maintain an acceptable level of service at General Plan build-out.</p>
<p>Program 5-7: Establish traffic study guidelines to deal with development projects in a consistent manner. The traffic study guidelines shall include criteria for projects that propose changes in the approved General Plan land uses.</p>	<p>This program is inapplicable to the proposed industrial project, because this is a program for the City to establish traffic study guidelines. The City has traffic study guidelines and the analysis was conducted in accordance to these guidelines.</p>
<p>Program 5-13: Implement Transportation Demand Management (TDM) strategies that reduce congestion in the peak travel hours. Examples include carpooling, telecommuting, and flexible work hours.</p>	<p>Similar mitigation measures are already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5A on page 4.3-33, Mitigation Measure 4.3.6.5B on page 4.3-34, and Mitigation Measure 4.3.6.6A on 4.3-36.</p>

Response to Comment D-3, No. 78 above explains why the project is proposing to remove the Quincy Channel trail link north of Eucalyptus Avenue (it does not connect to any trail to the north). The trail is proposed to be realigned through both the ProLogis and the WestRidge (located to the east of ProLogis project) projects to follow the north side of Eucalyptus Avenue, and then connect up to the Quincy Channel trail south of Eucalyptus Avenue. There would then be a continuous trail along the Quincy Channel from the south to Eucalyptus Avenue, then the trail would go east and west along the north side of Eucalyptus Avenue. A similar trail improvement was required of the Westridge project.

Response to Comment 99. It is correct that the Trails Commission has accepted the amendment to the Master Plan of Trails. However, the Trails Commission is not an approval body, and approval from the City Council will be required because the Master Plan of Trails is part of the General Plan.

Response to Comment 100. Beyond a delay of 100 seconds, the HCM analysis methodologies fail to accurately reflect increased delays. For future conditions, background traffic growth will lead to congestion and cumulative impacts. As development occurs, fees will be collected to improve the circulation system to accommodate growth in traffic. The project generates fewer trips than the current land use designation for the site. Therefore, the planned improvements included in the DIF

and TUMF should be sufficient to mitigate cumulative impacts from this project, as other cumulative development occurs. As stated in Section 4.11.6.4, the project will mitigate its impacts to the existing plus project conditions, per CEQA.

Response to Comment 101. The City's DIF includes the General Plan Roadway system. Since the project generates less trips than those anticipated in the General Plan, the ultimate General Plan Roadway system will be sufficient to accommodate project traffic. As new development occurs, fees will be collected to improve the circulation system to accommodate growth in traffic. As stated in Section 4.11.6.4, direct project impacts will be mitigated by the project.

Response to Comment 102. As stated in Section 4.11.6.4, of the DEIR, the project will mitigate its direct impacts to intersections based on the Existing Plus Project analysis. Cumulative impacts will be mitigated by payment of TUMF, DIF and fair-share contributions.

Response to Comment 103. Potential project-related traffic noise impacts are determined based on the worst-case scenario, which is typically the build-out year that has the highest traffic volumes. Traffic noise impacts for the opening year are presented to show interim year project-related increases, which were found to be small and less than significant. Since overall traffic volumes would be higher in 2016 when compared to the overall traffic volumes in 2012, project-related contribution would be even smaller in 2016 compared to 2012. Therefore, the use of 2012 as the opening year would not affect the findings in the noise impact analysis since project-related traffic noise level increases in 2016 would be smaller than those identified in 2012. Noise impacts associated with on-site stationary sources, such as loading/unloading operations, would not be affected by the difference in opening year because they are analyzed with project buildout conditions for the worst case scenario on potential noise impacts on adjacent land uses. Therefore, no significant effect would occur for the difference in opening year in the noise impact analysis.

Response to Comment 104. The latest information from the County is that the Badlands landfill will close in 2024 not 2016, so the references to 2016 will be changed (see below). Therefore, the project will not have a significant impact on solid waste disposal services because the landfill will have adequate capacity to accommodate the proposed project's waste stream.

4.12.1.7 Cumulative Impacts to Solid Waste Services (Draft EIR p.4.12-5)

AB 939 mandates the reduction of solid waste disposal in landfills. While the Badlands Sanitary Landfill has an estimated closure date of ~~2016~~ 2024, as previously identified, the City's waste hauler will also use other County landfills in the area (e.g., Lamb Canyon Landfill and El Sobrante Landfill). The estimated closure date of the Lamb Canyon Landfill is 2023 and the estimated closure date of the El Sobrante Landfill is 2030. With planned expansion activities of landfills in the project vicinity and projected growth rates contained within the City's General Plan EIR, sufficient landfill capacity would exist to accommodate future disposal needs through City build out in 2030. Therefore, build out of the City General Plan would not create demands for solid waste services that would exceed the capabilities of the County's waste management system. Consequently, cumulative impacts associated with solid waste within the City would be considered less than significant.

Response to Comment 105. The commenter is incorrect. A comprehensive Water Supply Assessment was prepared for this project, which was extensively discussed in Section 4.12.2.6.2 of the Draft EIR. That analysis evaluated available water supplies compared to current and future projected conditions under a variety of scenarios (i.e., various drought conditions). That analysis determined there were sufficient supplies of water available to serve the project over a 20-year time frame.

Response to Comment 106. The project will install infrastructure to support solar power, which is all the City is encouraging, thus the consistency statement. The applicant has agreed to obtain LEED

Certified status meaning that the buildings will be much closer to zero net energy (which includes both operational energy consumption and the life cycle of building materials) than were buildings constructed in the past, thus they are consistent with the aim of zero net energy. The Draft EIR discusses the existing greenhouse gas/climate change setting including the main gases of concern; current emissions inventory at the global, US, and State levels; a detailed description of what global warming is and the effects that result, all of which could be considered the “threat of greenhouse gas pollution and global warming.” The EIR attempts to present a non-sensational, balanced description based on the best information available. Section 4.13.2 describes the entire regulatory setting, including all applicable federal, State and City of Moreno Valley regulations and policies.

Response to Comment 107. The process of LEED certification is a demanding one that includes not only aspects of the building construction but also is greatly affected by tenant operations. As the EIR is only covering aspects under the control of the applicant and not the future tenant, achieving the LEED status can only be discussed in general terms. The feasibility of suggested GHG-related mitigation measures have been discussed in other responses, see the Responses to Comments 60, 108, 112 in this letter (D-3, Johnson & Sedlack) and Responses to Comments 1 and 27 in Letter D-2 (Sierra Club).

Response to Comment 108. Mitigation Measure 4.13.6.1A lists select features from Title 24 of the California Code of Regulations to emphasize these important features are included in the project construction. The measure states that the features are required by Title 24 of the California Code of Regulations. Since the measures are required by Code, they are feasible. Mitigation measures which require compliance with environmental regulations have been found by the California courts to be common and reasonable mitigation measures (*Sundstrom v. County of Mendocino* (11988) 202 Cal. App.3d)

Response to Comment 109. A clerical error was made in the Draft EIR regarding energy conservation and project mitigation. Section 4.3, *Air Quality*, contains two mitigation measures that refer to a 20 percent reduction in project energy use beyond or below Title 24. First, the “20 percent reduction” phrase refers to older California Building Code requirements – these older codes were much less stringent than the current California “Green” Building Code, which includes the latest Title 24 requirements. In addition, one measure just refers to “Title 24” while the other refers to “2008 California Title 24, Part 6 Energy Efficiency Standards”. These references are inconsistent, and the measures have been modified to reflect the most current regulatory requirements for energy conservation. The most current California Green Building Code was adopted in 2010, but incorporates the most current Title 24, Part 6 Energy Efficiency Standards which are from 2008, not 2010. Projects that would have been able to achieve a 20 percent reduction in building energy use from previous California Building Codes would most likely not be able to achieve a 20 percent reduction from the current code because it is much more stringent than previous versions.

It should be noted that the state has already approved new energy standards effective January 1, 2014 that would require industrial buildings to achieve 20 percent or more savings above the 2008 Title 24 standard. Until that time, the project is required to achieve a 10 percent reduction from the 2008 Title 24 standards.

Response to Comment 110. The implementation of any water conservation strategy insures that water use efficiency will be improved compared to the situation of no water conservation strategy. The Mitigation Monitoring Plan states that the various activities outlined in this measure will be implemented to the satisfaction of the Planning Division prior to issuance of an occupancy permit, so construction must include some or all of these measures or no permit can be issued.

Response to Comment 111. The EIR acknowledges that the expected project GHG emissions will exceed the interim, proposed SCAQMD Tier 1, 2 and 3 thresholds, none of which have been adopted as thresholds of significance. Also, as described in Section 4.13.2, page 4.13-6, no applicable

agency, including the federal, California, and City of Moreno Valley governments, have adopted a greenhouse gas emissions threshold of significance. It is in this absence of regulatory guidance that this EIR is attempting to assess the significance of project emissions of greenhouse gases. The CEQA Guidelines do include two qualitative thresholds, which the DEIR used as the basis for significance, as discussed in Sections 4.13.5 and 4.13.6. The DEIR concludes that the project would have a less than significant impact for the first CEQA threshold: *Would the proposed project conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?* The DEIR concludes that the project would have a significant impact for the second CEQA threshold: *Would the proposed project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?* and includes Mitigation Measures 4.13.6.1A thru 4.16.6.1C to reduce this impact.

Response to Comment 112. See also Response to Comment D-3, No. 111 above. The EIR complies with OPR guidance related to GHG/Climate change analyses and all other guidance applicable to the region. With implementation of the strategies and programs described in the EIR, it was concluded that the project is consistent with the strategies to reduce California's emissions to the levels proposed in Executive Order S-3-05. Based on the threshold of the project's consistency with these measures, the project has a less than significant impact as it complies with these measures. Because the project's impacts alone would not cause or significantly contribute to global climate change, project-related CO₂e emissions and their contribution to global climate change impacts in the State of California would not make a significant contribution to cumulatively considerable GHG emission impacts.

Response to Comment 113. As discussed in Section 6.3.3 of the Draft EIR, Alternative 3 does reduce several of the significant impacts of the project, and it is feasible because the applicant controls the proposed project site. While Alternative 5 does reduce some significant impacts of the project (including land use since it would not require a GPA or ZC), the applicant does not own or control that or any other potential offsite location for this project. Therefore, Alternative 5 is not feasible compared to Alternative 3. In addition, Alternative 3 is the only one that eliminates significant impacts to agricultural resources, so it was selected as the Environmentally Superior Alternative. For additional discussion, see Response 7 earlier in this section.

Response to Comment 114. As explained in Response to Comment D-3, No. 113 above, Alternative 5 is not feasible compared to Alternative 3 as the applicant does not own or control any offsite properties that would accommodate the proposed project. In addition, almost all of the significant impacts of the project would also be present at an alternative site, based on the proposed land uses and air pollutant emissions. Alternative 3 does reduce some of the significant impacts of the proposed project, and it will be up to the discretion of the City Council whether to approve the proposed project, or adopt one of the project alternatives. If the City Council approves the proposed project, it would have to adopt a Statement of Overriding Considerations that demonstrates the benefits of the project (e.g., employment, revenues) outweigh the significant impacts of the project.

LETTER D-4A: LOZEAU DRURY, LLP, RICHARD DRURY

LETTER D-4A



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August 31, 2012

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**RE: Comment on Draft Environmental Impact Report for ProLogis
Eucalyptus Industrial Park (State Clearinghouse No. 2008021002)**

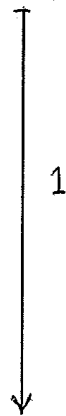
Dear Mr. Bradshaw:

I am writing on behalf of Laborers International Union of North America, Local Union No. 1184 and its members living in Riverside County (collectively "LIUNA Local Union No. 1184" or "LIUNA" or "Commenters") regarding the Draft Environmental Impact Report ("DEIR") prepared for the ProLogis Eucalyptus Industrial Park, State Clearinghouse No. 2008021002 ("Project").

We have reviewed the DEIR with the assistance of:

1. Atmospheric Scientist, Dr. James Clark, Ph.D.
2. Hydrogeologist, Matthew Hagemann, C.Hg., MS.

These experts have prepared written comments that are attached hereto, and which are incorporated in their entirety. The City of Moreno Valley ("City") should respond to the expert comments separately. These experts and our own independent review demonstrate that the DEIR is woefully inadequate and that a new supplemental EIR is required to be prepared and recirculated for public comment. In particular, the EIR suffers from the following significant errors and omissions, among others:



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RESPONSES TO LETTER D-4A

Response to Comment 1: The following responses will address the specific comments made by the commenter regarding these topics.

Response to Comment 2: The project information summarized by the commenter is correct.

Response to Comment 3: The City understands comments made by the LIUNA Local Union No. 1184 regarding standing to make these comments. While it is not the City's responsibility to determine standing, the following responses will address all the comments raised in this letter consistent with CEQA.

Response to Comment 4: The information provided in the letter regarding several EIR and CEQA topics is factually correct, but it may or may not apply to this particular EIR for this specific project. Nonetheless, the following responses address specific comments made by the commenter on the Draft EIR for the ProLogis project.

Response to Comment 5: The information provided in the letter regarding recirculation of an EIR under is factually correct, but it may or may not apply to this particular EIR for this specific project. Nonetheless, the following responses address specific comments made by the commenter on the Draft EIR for the ProLogis project. The City contends that this information does not rise to the level of that requiring circulation, but several mitigation measures have been added to make certain there will be no significant impacts relative to the issues raised by the commenter.

Response to Comment 6: The commenter is correct that the project description of the EIR must describe the "whole of the action" as outlined in CEQA. However, the City believes the EIR does provide that information and does not segment the utility or infrastructure improvements outlined by the commenter. The discussion related to the Westridge project was only relative to the timing and funding of the various improvements for which both projects would either construct or provide a fair share contribution towards their construction, since both were being processed at approximately the same time. Section 3.5.4 of the ProLogis EIR clearly identifies the various utility improvements for which the project will be responsible, and Section 3.5.5 outlines the road and intersection improvements for which the ProLogis project is responsible. The following discussion in Section 3.5.1, Operations and Infrastructure Timing, was included to show the relationship of the two projects in terms of the timing of the various improvements.

3.5.1 Operations and Infrastructure Timing

The EIR evaluated "worst case" conditions of the project operating 24/7. If the proposed project is constructed prior to the West Ridge project, ProLogis will install the infrastructure necessary to serve its project (e.g., roads, water, and sewer) and will be reimbursed by the City from the West Ridge developer at the time that project is constructed. If the West Ridge project is constructed first, ProLogis will contribute an appropriate amount to the City for a reimbursement account to help off-site improvement costs installed by the West Ridge project that serve the ProLogis project. The timing of improvements shall be coordinated by the City in cooperation with ProLogis and the West Ridge developer.

Therefore, the project EIR does not segment these improvements from inclusion in the project description. The impacts of these improvements are also addressed in the appropriate sections of the environmental analysis (e.g., 4.3, *Air Quality*, 4.11, *Transportation and Traffic*, and 4.12, *Utilities*).

Response to Comment 7: The information provided in the letter regarding implementation of all feasible mitigation measures is factually correct, but it may or may not apply to this particular EIR for this specific project. Nonetheless, the following responses address specific comments made by the commenter on specific sections of the Draft EIR and mitigation for impacts on those sections.

Response to Comment 8: The commenter presents information that indicates preservation of habitat is appropriate mitigation for loss of habitat based on the results of the *Mira Mar* case in Oceanside. The commenter then concludes that concept can be applied to loss of prime agricultural land. The comparison may not be directly applicable, but an Appeals Court decision (*Building Industry Association of Central California v. County of Stanislaus*) certified in November 29, 2010 may be more applicable to this situation. That case concluded that it is appropriate to mitigate at a 1:1 ratio for the loss of prime agricultural land through the acquisition of an offsite agricultural easement if such a program is established by a county or regional governmental entity. However, as outlined in the DEIR section, there is no established County or regional program, and active agriculture in western Riverside County is no longer economically viable or feasible.

The commenter also quotes the “farmland mitigation measures” in the General Plan EIR (GPEIR) out of context. The commenter implies that these measures are recommended in the GPEIR, but actually the EIR section, after only describing the potential measures, concludes that they are all infeasible, does not adopt any mitigation measures for loss of farmland, and concludes impacts related to loss of farmland are significant and unavoidable. There are also numerous references in the GP that state the City’s support of interim farmland and agricultural use throughout the City in all land use designations as long as they are economically viable as outlined in Objective 4.1 shown below and included with other materials in Final EIR Appendix E:

Objective 4.1 “Retain agricultural open space as long as agricultural activities can be economically conducted, and are desired by agricultural interests, and provide for an orderly transition of agricultural lands to other urban and rural uses.”

It should also be noted that a statement of overriding considerations was adopted for the GPEIR to address this and other significant impacts of implementing the City GP. Therefore, no mitigation is required for the ProLogis project relative to loss of farmland, as outlined in the DEIR.

Response to Comment 9: The information provided in the letter regarding several EIR and CEQA topics is factually correct, but it may or may not apply to this particular EIR for this specific project. The City believes the EIR did use the proper baseline for hazardous materials. The commenter states that the Phase 1 ESA reports for the site were “out of date”, however, CEQA does not mandate when the data from certain types of studies, such as Phase 1 reports, are considered out of date. The only concept of “out of date” refers to the typical limitation for financial institutions upon which to base their decisions using Phase 1 ESA reports. For that purpose, Phase 1 reports are typically only considered “good” for 90 days. However, if it can be established that the conditions outlined in the Phase 1 have not changed since that report was prepared, a lead agency may rely on that information for the purposes of CEQA documentation. That is the case with the ProLogis EIR, in that the project applicant acquired the project site in 2008 and hired a local grower to manage the citrus trees until December of 2013 when the trees were removed to reduce irrigation and maintenance costs. Until the time the trees were removed, the developer indicates no agricultural chemicals were applied to the property, and the commenter’s own records show that various materials were applied back in 2010.

The commenter also questioned the number of samples taken on the site. The comment references the Department of Toxic Substance Control Interim Guidance for Sampling Agricultural Properties (Third Revision), dated August 7, 2008 as the standard that should have been used for pesticide sampling conducted during the several Phase I Environmental Site Assessment (ESA) reports for

various parcels that comprise the site. The referenced (California) Department of Toxic Substance Control (DTSC) document is:

“specific to agricultural properties where pesticides and/or fertilizers were presumably applied uniformly, for agricultural purposes consistent with normal application practices. It is applicable to agricultural properties that are currently under cultivation with row, fiber or food crops, orchards, or pasture. It is also applicable to fallow and former agricultural properties that are no longer in production and have not been disturbed beyond normal disking and plowing practices. Each field of the same crop is assumed to have been watered, fertilized and treated with agricultural chemicals to the same degree across the field. Because of this homogeneous application, contaminant levels are expected to be similar at any given location within the field. This is the underlying premise of the guidance...”

Properties not requiring agricultural sampling under the referenced guidance include property used exclusively as grazing lands or pasture. The guidance also states that dry-land farming, which is the practice of growing a crop without irrigation, are not treated with pesticides or infrequently treated, since the lack of water does not provide a desirable habitat for most agricultural pests. Properties that clearly qualify as dry-land farming do not need further investigation for pesticides or metals. *“For properties where there is uncertainty regarding dry-land farming, limited sampling may be conducted at a rate of four discrete samples per site, with one sample collected in each quadrant.”* It should be noted that five samples were taken on the ProLogis site, one each in the four quadrants and one near the northern portion of the site near the former UST location.

The DTSCs 2003 Interim Guidance for Sampling Agricultural Properties, which they referenced as to why additional samples for organo-chloro-phosphate (OCPs) were necessary, was taken out of context. The 2008 Interim Guidance for Sampling Agricultural Properties speaks to how an environmental assessor for the DTSC should conduct an evaluation of an agricultural property to be converted into another use. The guidance is envisioned as being most relevant to sites on which schools will be constructed or for residential use. However, it does apply to any project with DTSC oversight. Properties not subject to this guidance include former agricultural property that has been graded for construction or other purposes, land used exclusively for grazing or pasture, most dry-land farming fields, and sites that were agricultural properties prior to 1950. The subject site would be an exempted site as it was dry farmed land.

Based on standard spraying practices for such crops, the number of soil samples taken at the subject site during the Phase I ESA demonstrate that pesticide use was infrequent and limited over the site, and are at levels that are below regulatory requirements for residential property. These are the baseline conditions with respect to pesticide use at the site.

In terms of sample frequency, the sampling pattern should be sufficient to characterize the site. The guidance, done for school and residential properties, apparently interprets this as a range for properties from one acre to fifty acres (with the number of each of the following categories increasing every few acres), of between 4 and 60 borings, 4 and 15 composite organo-chloro-phosphate (OCP) samples. For acreages greater than 50, consultation with the DTSC is required. However, mitigation of frequency is available to sites based on documentation of consistent ownership, operator, and use. It should be noted that none of our samples were composites but all were discrete samples, so they are more representative of what is actually on the properties. The DTSC's document is a guidance document for school sites and residential properties not those that are to be commercial/industrial. The intent is to avoid having children (schools, residential) from coming in contact with soils with high levels of OCPs. Therefore, evidence supports the EIR's contention that there are no significant OCPs present on the site, and only trace amounts were detected in the onsite sampling in 2003.

The state records provided by the commenter indicate that approximately 200 pounds of 2,4-D, 2-Ethylhexyl Ester (DEHE) was applied to the site as a general herbicide (based on data in the

commenter's letter and appendix) in 2010. DEHE is a very common herbicide used in the United States and can be purchased at retailers like Home Depot. Assuming it was applied to the 70 acres of the site without citrus trees (i.e., available for dry farming), this equals less than 3 pounds per acre, or 0.00002 ounce per square foot, in other words a very small amount. In addition, this chemical has a relatively short half-life. Data from the National Library of Medicine, provided by the commenter, indicates that DEHE has a half-life of 1 to 51 days when applied as a spray, and 4-16 days when applied in granular form. In only 6 months there would be less than 0.5 percent of the original product in the soil, so this is not a significant soil contamination issue. It is expected this chemical would have become inert or diluted well past the point of concern or any established governmental action level in the 3 years or more from its most recent application in 2010.

NOTE: There is NO evidence that DDT, DDE, or arsenic were ever applied to the project site, they were not typical pesticides that were sprayed for dry farming and/or citrus production in this area.

The existing conditions at the time the NOP was issued (February 21, 2012), which is when the timeframe of baseline conditions is established, were there was no dry framing or citrus production being conducted on the site, although the trees were being maintained at a minimal level so they would not die and become a fire hazard.

Although both Phase 1 ESA reports were done in 2003, the onsite conditions have not changed appreciably since the Phase 1 reports were done. The commenter also stated the "entire" site had not been surveyed. While this may be technically correct, the commenter failed to note that 98.5 percent or 121 acres of the 122.8-acre site was surveyed, and the 1.8 acres not surveyed were on the far west boundary of the site and planted with citrus, so it is reasonable to conclude the conditions found on the rest of the site apply to this portion as well. It should also be noted that the underground storage tank that would on the site at one time was removed or remediated according to the "Report of Removal of the Abandoned Underground Storage Tank" dated January 28, 2004 in the DEIR Appendix F.

Section 2.3, *Interviews*, in the Phase 1 reports indicate the following:

On November 12, 2003, our environmental assessor interviewed Mr. Pat Kawamoto, owner of APN 477-120-015. Mr. Kawamoto reportedly has owned the land for over 25 years. According to Mr. Kawamoto, no petroleum storage tanks have ever been present on the project site. Mr. Kawamoto indicated that the project site had been regularly leased to Mr. David Bruno of Bruno Ranching for agricultural purposes. Mr. Kawamoto had no knowledge of any pesticides or PCBs stored or used on the site.

In addition, the following information from the EIR (Section 4.6, *Hazards and Hazardous Materials*, bears directly on this discussion:

...because the project site has been historically utilized for agricultural production and because of the close proximity to SR-60, soil samples were taken in various parts of the project site to further evaluate the potential contamination on the site. Soil samples were also collected from the area of a wind-machine remaining in the western portion of the site, the area adjacent to SR-60 in the northern portion of the site, and from selected areas of the citrus groves on the site. These soil samples are identified in Figure 4.6.1. [NOTE: 5 sampling locations spread out around the site]

Two soil samples were collected at the base of the wind-machine. One 200 to 300-gallon petroleum tank is located in the western portion of the site within the column of the wind machine structure. In interviews with Raymond Noriega, manager of the site, he indicated that the wind machine had not been used in the past 10 years that he had been employed there. Soil samples were taken at depths of 1.5 feet and 3 feet below the ground surface to assess the potential of

hydrocarbon compounds occurring in the soil. Laboratory results indicated no detectable concentrations of hydrocarbon compounds in the samples collected.

Two soil samples were collected at areas adjacent to SR-60 at depths of one to four inches below ground surface to assess the potential of lead contamination. Laboratory results indicated total lead concentrations of 0.601 to 4.41 milligrams per kilogram (mg/Kg), which were determined to be insignificant.¹ In addition, on September 3, 2003, five near-surface (upper 6 inches) soil samples were collected from selected areas (upper portion) of possible drainage accumulation and pesticide usage on the site. The detected concentrations of organochlorine pesticides and PCBs were within the allowable Preliminary Remedial Goals (PRGs) for the project. No additional assessment for organochlorine pesticides or PCBs is recommended for the site.² [NOTE: *emphasis added*]

On November 7, 2003, three near-surface (upper six inches) soil samples were collected from selected areas (lower portion) of possible drainage accumulation and pesticide usage on the site. The detected concentrations of organochlorine pesticides and PCBs were within the allowable PRGs for the project. No additional assessment for organochlorine pesticides or PCBs is recommended for the site.³ [NOTE: *emphasis added*]

At the request of the current owner of the site (northern portion), the area of the former abandoned 13,400-gallon UST was excavated during the site reconnaissance on September 20, 2003. No significant hydrocarbon odors or staining were observed. Between January 5 and 8, 2004, the UST was removed from the site. The UST had been abandoned in-place approximately 50 years ago. The abandonment reportedly consisted of removal of free-liquids; removal of the UST top; then backfilling the interior of the UST with on-site soils. Due to the installation of a 12-inch diameter, Eastern Municipal Water District (EMWD) waterline main in the north portion of the UST, the north portion of the UST was not removed. No indication of soil contamination was observed during the UST removal work. Additionally, soil sampling was conducted on January 7, 2004, at depths between 2 feet and 6 feet below the former bottom elevation of the UST, under the direction of a representative from the County of Riverside DEH Hazardous Materials Management Division. Laboratory results of the collected soil samples indicated a concentration of total petroleum hydrocarbons as oil (116 mg/Kg) in the soil sample collected at 2 feet below the bottom elevation of the UST. No other hydrocarbons, BTEX,⁴ or fuel oxygenates were detected; therefore, no additional environmental investigation is recommended for the former UST location.⁵ [NOTE: *emphasis added*]

Therefore, the project site was previously surveyed for pesticides and no significant impacts were found. It has also been documented that the former UST on the site was properly remediated, so it also would not pose a threat to any workers on the site during grading. This previous documentation supports the conclusion that there are no significant health risks on the project site for construction workers related to the proposed project. However, to determine the most current hazmat conditions of the site, the following measure will be added to the DEIR in response to this and other comments:

¹ Phase 1 Preliminary Environmental Site Assessment 84± Acres, Assessor Parcel Numbers (APNs) 477-120-001 and 477-120-006, Near Intersection of Pettit Street and Highway 60, Moreno Valley, California, R M Environmental, October 30, 2003, page 8.

² Phase 1 Preliminary Environmental Site Assessment 84± Acres, Assessor Parcel Numbers (APNs) 477-120-001 and 477-120-006, Near Intersection of Pettit Street and Highway 60, Moreno Valley, California, R M Environmental, October 30, 2003, page 9.

³ Phase 1 Preliminary Environmental Site Assessment 37± Acres, Assessor Parcel Numbers (APNs) 477-120-(007, 008, 014, 015), Near Intersection of Pettit Street and Highway 60, Moreno Valley, California, R M Environmental, November 25, 2003, page 8.

⁴ BTEX is an acronym for benzene, toluene, ethyl benzene, and xylene. This group of volatile organic compounds (VOCs) is found in petroleum hydrocarbons, such as gasoline, and other common environmental contaminants.

⁵ Report of Removal of Abandoned 13,400± gallon Diesel Underground Storage Tank, APN 477-120-001, Near the Intersection of Pettit Street and Highway 60, Moreno Valley, California, R M Environmental, January 28, 2004.

4.6.6.1A Prior to issuance of a grading permit for the project, a qualified contractor shall test onsite soils for contamination by agricultural chemicals. If present in concentrations above established actionable levels or thresholds, these materials shall be removed and transported to an appropriate landfill by a licensed contractor. This measure shall be implemented to the satisfaction of the Building Division including written documentation of the disposal of any agricultural chemical residue in conformance with all applicable regulations.

The text of the EIR will be revised to reflect this additional information. Implementation of this measure will assure that any potential impacts related to pesticide residues on the project site, to either area residents or construction workers on the site, will be reduced to less than significant levels. The addition of this measure will address the commenter's comments in this regard.

Response to Comment 10: Most of this comment was addressed in the early portion of Response 9 above. The commenter's citation that the U.S. EPA requires Phase 1 ESA reports to be prepared within 180 days of property acquisition are related to federal remediation of sites and do not apply directly to the requirements of CEQA to provide accurate information on the project site. As previously stated, CEQA does NOT require a Phase 1 ESA report, but they are typically used to provide the baseline information for EIRs. Although the Phase 1 reports for this project are ten years old, there has been no evidence presented that would indicate baseline conditions are otherwise than presented in the EIR. The site has been dry farmed and supported citrus trees for many years, which were removed in December 2013 to reduce irrigation and maintenance costs and reduce fire hazards. The previous Response 9 addressed the coverage of the Phase 1 reports (121 out of 122.8 acres or 98.5 percent of the site surveyed) much more than an adequate statistical sampling of the site. Response 9 also outlines an additional mitigation measure that addresses these concerns.

Response to Comment 11: As outlined in the previous Response 9 in this letter, the DEIR did evaluate the removal or remediation of the former Underground Storage Tank (UST) which was fully documented in Appendix F of the EIR. There is no empirical evidence that there is any hazmat or health risk from a UST on the site since it has been effectively remediated.

Response to Comment 12: This comment states that the EIR did not show the GHG emissions with mitigation. The reductions with mitigation were not calculated because the GHG-related mitigation measures included in the EIR do not have quantified reduction amounts. The EIR supports the statement of less-than-significance qualitatively by stating: "...project-related GHG emissions and their contribution to global climate change impacts in the State are less than significant and less than cumulatively considerable because: (1) the project's impacts alone would not cause or significantly contribute to global climate change, and (2) the project has no substantial effect on consumption of fuels or other energy resources, especially fossil fuels that contribute to GHG emissions when consumed."

Response to Comment 13: This commenter asks for information about the URBEMIS modeling results. The URBEMIS model was not used in the EIR, except for a few parameters in the health risk assessment. None of the construction or operational emissions modeling were conducted using URBEMIS, only CalEEMod, which is currently the accepted computer emission modeling program recommended by the SCAQMD. Thus, there is no need for highlighting the differences in the models.

In addition, the commenter quotes information from the CalEEMod Technical Paper, but leaves out the following sentence: "This limitation could result in underestimated fugitive dust emissions if high wind and loose soil are substantial characteristics for a given land use/construction scenario." As this project will be constructed following the requirements for dust control specified in SCAQMD Rule 403, including watering the disturbed areas three times per day, there will be no "loose soil".

Response to Comment 14: First, the commenter states the DEIR fails to accurately compare construction emissions to daily construction significance thresholds. The comment correctly states that ROG emissions would be in exceedance of the CEQA thresholds, as is also stated in the EIR. However, the comment incorrectly states that PM_{2.5} emissions would be in exceedance of the CEQA thresholds. The comment correctly identifies the EIR emissions rate of PM_{2.5} as 7.95 lbs/day, and then correctly states that the threshold is 55 lbs/day. It is not clear why the commenter believes that 7.95 lbs/day of PM_{2.5} would be in exceedance of 55 lbs/day.

Further in Section D.2, on page 21: A review of the CalEEMod analysis shows that the highest emission values are not associated with the grading phase. By design and SCAQMD direction, LST analyses only include onsite emissions. The following table from the Air Quality technical report Appendix shows all the onsite emissions for all the construction phases. Note that the onsite emissions (i.e., not fugitive) for the grading phase are the greatest.

Construction Phase	Onsite Pollutant Emissions, lbs/day							
	ROG	NO _x	CO	SO ₂	Fugitive PM ₁₀	Exhaust PM ₁₀	Fugitive PM _{2.5}	Exhaust PM _{2.5}
Site Preparation	10.43	84.72	47.82	0.07	7.05	4.27	3.87	4.27
Grading	12.5	103.9	55.13	0.1	3.38	5.01	1.29	5.01
Building Construction	5.63	37.37	23.73	0.04	0	2.54	0	2.54
Architectural Coating	342.39	2.96	1.94	0	0	0.27	0	0.27
Paving	7.91	33.81	20.89	0.03	0	2.93	0	2.93

Response to Comment 15: As outlined in Responses 9 through 11 above, there is no empirical evidence that onsite soils are contaminated by pesticides or other agricultural chemicals. However, Response 9 outlines an additional mitigation measure that will assure there are no health risks from pesticides or contaminated soil on the site.

Response to Comment 16: It is not clear why the BAAQMD CEQA Guidance is pertinent to this project, as the Bay Area has substantially different climate and pollution conditions than the South Coast area. As a result of these differences, the BAAQMD has different NO_x construction and GHG operational standards than the SCAQMD does. The EIR adequately compares all construction and operational emissions to the appropriate SCAQMD thresholds.

Response to Comment 17: The commenter states the DEIR fails to disclose impacts to offsite receptors. The EIR includes a localized impacts analysis for both construction and operational emissions as well as a full health risk assessment of operational emissions. These analyses completely disclose project-related impacts to offsite receptors.

Response to Comment 18: The information provided in the letter regarding the legal standard for cumulative impacts is factually correct, but it may or may not apply to this particular EIR for this specific project. In fact, the information is not specific to the ProLogis project but is rather a restatement of court case citations and evaluations, so there is no specific response to this comment relative to the EIR.

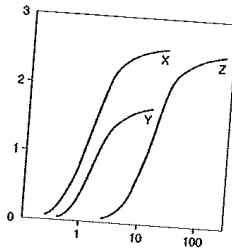
Response to Comment 19: The EIR includes a complete cumulative air quality impacts analysis that satisfies all CEQA requirements and that includes the conclusion that the long-term cumulative air quality impacts would be significant and avoidable. A similar analysis is performed regarding water supplies and water-related impacts, and that analysis concludes the project will not make a significant contribution to any cumulatively considerable impacts outlined in the DEIR.

Response to Comment 20: The commenter will receive a copy of the revised FEIR document prior to action on the project, similar to that afforded public agencies for projects in the City of Moreno Valley (i.e., 10 days before the next Planning Commission hearing).

In addition, the commenter is referred to Section 4 of this document for an evaluation of a less intensive modified plan, which is a subset of the Reduced Intensity Alternative evaluated in the DEIR (and which was determined to be environmentally superior to the Proposed Project). This less intensive plan proposes to develop 4 warehouse buildings, leaving the southeast portion of the site vacant for future development of residential uses consistent with existing zoning (R-5 and RA-2) adjacent to the existing residential neighborhood to the southeast.

LETTER D-4B: LOZEAU DRURY, LLP, MEMORANDUM FROM JAMES CLARK,
PH.D.

LETTER D-4B



August 31, 2012

Lozeau | Drury LLP
410 12th Street, Suite 250
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Attn: Mr. Michael Lozeau

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Subject: Comment Letter on the Draft Environmental Impact
Report for the Prologis Eucalyptus Industrial Park,
SCH No. 2008021002.

Dear Mr. Lozeau:

At the request of Lozeau | Drury LLP (Lozeau Drury), Clark and Associates (Clark) has reviewed materials related to the above referenced project, including the Draft Environmental Impact Report¹ (DEIR) for the Prologis Eucalyptus Industrial Park (hereafter called the Project), SCH No. 2008021002 and its appendices. The proposed project site is located in the eastern portion of the City of Moreno Valley, in Riverside County, California. The 122.8-acre project site is located south of State Route 60 (SR-60) east of the Moreno Valley Auto Mall, and adjacent to and west of the Quincy Channel. According to the DEIR the proposed project would result in the construction and operation of a warehouse facility, consisting of approximately 2,244,638 square feet (sq ft).

Currently the site is used undeveloped for commercial uses and has two citrus groves in the northeastern and northwestern portions of the site, while the central and southern portions are vacant and support mainly weedy vegetation. According to a March, 2012 Memo from LSA

¹ LSA. 2012. Draft Environmental Impact Report, State Clearinghouse No. 2008021002, Prologis Eucalyptus Industrial Park (formerly Prologis Park Moreno Valley Eucalyptus Project), City of Moreno Valley, Riverside County, California. LSA Associates, Inc. 1500 Iowa Ave, Suite 200, Riverside, CA LAS Project No. PLO1101. Prepared July 2012 pg. 1-2

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**RESPONSES TO LETTER D-4B
LOZEAU DRURY, MEMORANDUM FROM JAMES CLARK, PH.D.**

Response to Comment 1: Most of this comment repeats information from the EIR regarding characteristics of the project and requested approvals. The following responses address each of the specific comments made by the commenter on several topics, as outlined below.

Response to Comment 2: The air quality assessment for the project used the CalEEMod program because the SCAQMD requires projects doing CEQA-level analyses to use that particular program. See the Responses to Comments D-4A-13 and D-4A-14 in the previous Letter D-4A from Lozeau Drury.

Response to Comment 3: For a detailed response regarding the use of CalEEMod vs. URBEMIS, see the Responses to Comments D-4A-13 and D-4A-14 in the previous Letter D-4A from Lozeau Drury.

Response to Comment 4: For a detailed response on comparing construction emissions to daily construction thresholds, see the Responses to Comments D-4A-13 and D-4A-14 in the previous Letter D-4A from Lozeau Drury.

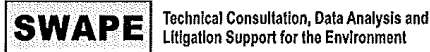
Response to Comment 5: This comment is similar to that addressed in Response D-4A-9 in the letter from Mr. Drury. There is no empirical evidence that onsite soils are contaminated by pesticides or other agricultural chemicals. However, Response D-4A-9 outlines an additional mitigation measure that will assure there are no health risks from pesticides or contaminated soil on the site.

Response to Comment 6: For a detailed response on operational impacts of the project, see the Response to Comment D-4A-16 in the previous Letter D-4A from Lozeau Drury.

Response to Comment 7: Contrary to the commenter's conclusion, there does not appear to be sufficient empirical evidence presented that would lead a reasonable person to conclude the EIR is flawed or lacking in its analysis of these potential impacts. A mitigation was added in response to comments by this commenter and the related comments by Mr. Drury (Letter D-4A), but there is no justification for recirculation based on this information, and there are no new or substantially different significant impacts of the project.

LETTER D-4C: LOZEAU DRURY, LLP, MEMORANDUM FROM MATTHEW HAGEMANN (S.W.A.P.E.)

LETTER D-4C



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August 30, 2012

Brooke O'Hanley
Lozeau | Drury LLP
410 12th Street, Suite 250
Oakland, CA 94607

Subject: Comments on the Prologis Eucalyptus Industrial Park Project, Riverside County, California

Dear Ms. O'Hanley:

We have reviewed the July 2012 Draft Environmental Impact Report (DEIR) for Prologis Eucalyptus Industrial Park Project ("Project"). The Project would construct six buildings encompassing approximately 2.3 million square feet (or 53 acres) of warehouse space. The Project site would be located on a 123-acre lot in the eastern portion of the City of Moreno Valley in Riverside County, California.

We have reviewed the DEIR for issues associated with hazards and hazardous materials, greenhouse gases, air quality, and cumulative impacts. Project construction will result in potentially significant impacts to construction workers and nearby residents that are not adequately disclosed in the DEIR. A revised DEIR needs to be prepared to fully disclose, evaluate, and mitigate these impacts.

Hazards and Hazardous Materials:

Construction workers and nearby residents may be at risk during construction from failure to disclose baseline soil conditions at the Project site.

Residual pesticides in soil may pose health risks to workers and nearby residents

Currently, 57 acres of the Project site are used to grow grapefruit and 36 acres of the Project site are used for hay and alfalfa production (DEIR, p. 4.2-1). The DEIR and supporting documents do not provide any specific details on the types of pesticides that have been used on the Project site in association with

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**RESPONSES TO LETTER D-4C
LOZEAU DRURY, MEMORANDUM FROM MATTHEW HAGEMANN**

Response to Comment 1: It appears that Mr. Hagemann's comments were incorporated more or less directly into the letter from Mr. Drury (Letter D-4A). However, the following responses will address Mr. Hagemann's comments with reference to the responses to Mr. Drury's letter when appropriate.

Response to Comment 2: The commenter believes that residual soil contamination may contribute health risks to area residents and workers on the project site. However, the issues raised by Mr. Hagemann have already been addressed in Response to Comment D-4A-9 through D-4A-11.

Response to Comment 3: The commenter believes the Phase 1 ESA reports are out of date. These comments are addressed in the previous Response to Comment D-4A-9 and D-4A-10.

Response to Comment 4: For a detailed response on greenhouse gas emissions of the project, see the Response to Comment D-4A-12 in the previous Letter D-4A from Lozeau Drury.

Response to Comment 5: For a detailed response on comparing construction emissions to daily construction thresholds, see the Responses to Comments D-4A-13 and D-4A-14 in the previous Letter D-4A from Lozeau Drury. For a detailed response on operational impacts of the project, see the Response to Comment D-4A-16 in the previous Letter D-4A from Lozeau Drury. The DEIR presented evidence and supported its conclusions with empirical evidence that the project would not result in any significant health risks to local residents as a result of project air emissions, both in the short-term and over the long-term.

Response to Comment 6: The commenter makes the same comment as Mr. Drury in Response to Comment D-4A-19. The reader is referred to that response for more information.

RESPONSES TO LETTER D-4D: LOZEAU DRURY APPENDICES

Response to Appendix 1 – GHG Strategies Issued by the State Attorney General’s Office: Section 4.13 of the DEIR examined the potential impacts of the ProLogis project relative to greenhouse gases, and compared the project characteristics and impacts to the .

As outlined in DEIR Section 4.13.5.1, *Greenhouse Gas Plan, Policy, Regulation Consistency*, the CAT and the CARB have developed several reports to achieve the Governor’s GHG targets that rely on voluntary actions of California businesses, local government and community groups, and State incentive and regulatory programs. These include the CAT’s 2006 “Report to Governor Schwarzenegger and the Legislature,” the CARB’s 2007 “Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California,” and the CARB’s “Climate Change Proposed Scoping Plan: a Framework for Change. The reports identify strategies to reduce California’s emissions to the levels proposed in Executive Order S-3-05 and AB 32 (i.e., 29 percent below existing “business as usual” emissions) that are applicable to proposed project. Table 4.3.C presents the applicable Recommended Actions (qualitative measures) identified to date by CARB in its Climate Change Proposed Scoping Plan and whether or not the proposed project is consistent with the applicable Recommended Actions. Table 4.13.C, Proposed Scoping Plan Recommended Actions for Climate Change, in the DEIR examined the project’s consistency with these policies.

In addition, GHG emissions reduction strategies were also set forth in the 2006 CAT Report, and the strategies included in the CAT Report that apply to the project were evaluated in Table 4.13.E of the DEIR, which also summarized the extent to which the project would comply with the strategies to help California reach the emission reduction targets. The strategies listed in DEIR Table 4.13.E were addressed as either part of the project, required mitigation measures, or requirements under local or State ordinances.

The mitigation measures outlined in the Attorney General’s guidance have already been addressed in the two evaluation processes outlined above, since most or all of the AG’s recommendations are an outgrowth of the CAT report. Therefore, the project does not need an additional evaluation specifically against the AG’s criteria.

Response to Appendix 2 – Resumes for James Clark Ph.D. and Matt Hagemann: Resumes were provided for the two primary authors of the supplementary comment memos that were included in the Lozeau Drury Letter D-4A. No comments on their qualifications.

Response to Appendix 3 – CalEEMod Technical Paper (July 2011 SCAQMD et al): This report outlines the methodology, reasoning, and policy development issues related to the California Emission Estimator Model (CalEEMod). The commenter does not indicate why this reference was included, so no specific response is necessary. A discussion on two comments regarding differences between the project emissions using CalEEMod and the older URBEMIS model is provided in Responses D-4A-13 and D-4B-3.

Response to Appendix 4 – Initial Statement of Reasons for Rulemaking – Staff Report (CARB): The commenter does not indicate why this reference was included, so no specific response is necessary. However, the air quality study prepared for the project included a Health Risk Assessment (HRA) that assumed diesel exhaust as a toxic air contaminant and used the procedures established by the SCAQMD to conduct the HRA.

Response to Appendix 5 – Health Assessment Document for Diesel Engine Exhaust (U.S. EPA): The commenter does not indicate why this reference was included, so no specific response is necessary. However, the air quality study prepared for the project included a Health Risk Assessment

(HRA) that assumed diesel exhaust as a toxic air contaminant and used the procedures established by the SCAQMD to conduct the HRA, which are in turn consistent with the U.S. EPA guidance.

Response to Appendix 6 – Interim Guidance for Sampling Agricultural Fields for School Sites (Cal DTSC 8/02): The commenter refers to this document in relation to comments that the soil sampling conducted for the Phase 1 ESA reports on the project site were not consistent with the guidance in this report. A discussion on two comments regarding this topic is provided in Responses D-4A-9 through D-4A11 and D-4C-3.

Response to Appendix 7 – Various DTSC forms and chemical data materials related to pesticide applications or suspected applications on the project site (various dates around 2010): The commenter refers to this document in relation to comments that the onsite soils may be contaminated with pesticides, and the attached materials document that certain pesticides were applied to the site (or at least purchased by site maintenance staff) around 2010. A discussion on two comments regarding this topic is provided in Responses D-4A-9, and it should be noted a mitigation measure (4.6.6.1A) was added to do additional soil testing before grading (see Response D-4A-9).

Response to Appendix 8 – Various reports and data on pesticides and other agricultural chemicals (various): The commenter refers to this document in relation to comments that the onsite soils may be contaminated with pesticides such as DDT, DDE, and arsenic. A discussion on two comments regarding this topic is provided in Responses D-4A-9, and it should be noted a mitigation measure (4.6.6.1A) was added to do additional soil testing before grading (see Response D-4A-9).

Response to Appendix 9 – Use of California Human Health Screening Levels in Evaluation of Contaminated Properties (January 2002): The commenter refers to this document in relation to comments that the onsite soils may be contaminated with various kinds of pesticides applied over the years. A discussion on comments regarding this topic is provided in Responses D-4A-9, and it should be noted a mitigation measure (4.6.6.1A) was added to do additional soil testing before grading (see Response D-4A-9).

Response to Appendix 10 – Strategic Plan for Asthma in California, 2008 – 2012, and other reports related to health and air quality: This report was included apparently to support the commenter's contention that there will be health risks to local residents and construction workers from project air emissions, including diesel emissions. The air quality study prepared for the project was comprehensive and based on guidance from SCAQMD for such studies. It included a Health Risk Assessment (HRA) that assumed diesel exhaust as a toxic air contaminant and used the procedures established by the SCAQMD to conduct the HRA, which are in turn consistent with U.S. EPA guidance. The study determined impacts on local residents would be less than significant, although it would contribute to cumulatively significant air impacts due to the poor quality of air in the South Coast Air Basin.

In addition, the commenter is referred to Section 4 of this document for an evaluation of a less intensive modified plan, which is a subset of the Reduced Intensity Alternative evaluated in the DEIR (and which was determined to be environmentally superior to the Proposed Project). This less intensive plan proposes to develop 4 warehouse buildings, leaving the southeast portion of the site vacant for future development of residential uses consistent with existing zoning (R-5 and RA-2) adjacent to the existing residential neighborhood to the southeast.

3. EIR ERRATA AND ADDITIONS

Any corrections to the Draft Environmental Impact Report (EIR) text and figures generated either from responses to comments or independently by the City, are stated in this section of the Final EIR. The Draft EIR text and figures have not been modified to reflect these EIR modifications.

These EIR errata are provided to clarify, refine, and provide supplemental information for the Eucalyptus Industrial Park Draft EIR. Changes may be corrections or clarifications to the text and figures of the original Draft EIR. Other changes to the EIR clarify the analysis in the EIR based upon the information and concerns raised by commenters during the public review period. None of the information contained in these EIR modifications constitutes significant new information or changes to the analysis or conclusions of the Draft EIR.

The information included in this EIR erratum that resulted from the public comment process does not constitute substantial new information that requires recirculation of the Draft EIR. The California Environmental Quality Act (CEQA) Guidelines, Section 15088.5, states in part:

- (a) A lead agency is required to recirculate an EIR when significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public review under Section 15087 but before certification. As used in this section, the term “information” can include changes in the project or environmental setting as well as additional data or other information. New information added to an EIR is not “significant” unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project’s proponents have declined to implement. “Significant new information” requiring recirculation includes, for example, a disclosure showing that:
 - (1) A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented.
 - (2) A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.
 - (3) A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the significant environmental impacts of the project, but the project’s proponents decline to adopt it.
 - (4) The Draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded.
- (b) Recirculation is not required where the new information added to the EIR merely clarifies or amplifies or makes insignificant modifications in an adequate EIR.

The changes to the Draft EIR included in these EIR modifications do not constitute “significant” new information because:

No new significant environmental impact would result from the project or from a new mitigation measure;

There is no substantial increase in the severity of an environmental impact that would result unless mitigation measures are adopted that reduce the identified significant impacts to a level of insignificance;

No feasible project alternative or mitigation measure considerably different from others previously analyzed has been proposed or identified that would clearly lessen the significant environmental impacts of the project; and

The Draft EIR is not fundamentally or basically inadequate or conclusory in nature such that meaningful public review and comment were precluded.

Therefore, recirculation of the Draft EIR is not required because the new information added to the EIR through these modifications clarifies or amplifies information already provided or makes insignificant modifications to the already adequate Draft EIR.

For simplicity, the EIR modifications contained in the following pages are in the same order as the information appears in the Draft EIR. Changes in text are signified by strikeouts (~~strikeouts~~) where text has been removed and by underlining (underline) where text has been added. The applicable page numbers from the Draft EIR are also provided where necessary for easy reference.

Draft EIR, Section 1.0 Executive Summary, Summary (pages 1-13 through 1-73)

Table 1.C: The Environmental Summary in the Draft EIR has been updated to be consistent with changes that have been made, as a result of the responses to comments. Changes have been made to mitigation measures for air quality, biological resources, cultural resources, and noise. These changes to the Draft EIR do not result in a significant impact and has no material effect on the findings of the Draft EIR. The change to Impact 4.3.6.1 was an editorial one, the action section 4.3.5.1 concluded the impact related to “Conflict with an Existing Agricultural Zone” was less than significant with no mitigation required, but Table 1.C wrongly showed it as “significant with no mitigation available”. This has been corrected.

IMPORTANT NOTE: *The various changes to the mitigation measures will be presented following Table 1.C, but the actual wording changes will not be reflected in Table 1.C to avoid duplication and unnecessary length of the table. However, a note will be included in the table to reference mitigation measures that have changed. The revised mitigation measures will appear in their entirety in Section 4, Mitigation Monitoring and Reporting Program.*

Table 1.C: ProLogis Eucalyptus Industrial Park - Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
4.1 AESTHETICS		
<p>Impact 4.1.6.1: Existing Visual Character or Quality of Site and Its Surroundings: Implementation of the proposed project would replace the undeveloped character of the project site with an urban setting containing warehouse uses. Therefore, the change in the character of the site would be recognizable and would constitute a permanent alteration of the existing visual character of the project site. Although the visual characteristic of the project site would change, the proposed project would replace the existing vacant parcel with an attractive, well designed development through the use of architectural elements, landscaping, and design of the project site. In addition, the proposed project would be designed and constructed per applicable City Municipal Code and General Plan standards. Despite these requirements, a less than significant impact related to this issue would occur.</p>	No feasible mitigation is available	Significant and unavoidable

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4.2 AGRICULTURAL RESOURCES		
<p>Impact 4.2.6.1: Conflict with an Existing Agricultural Zone: The proposed project would not conflict with an existing agricultural zone. An approximately 12-acre portion of the project site is zoned Residential Agriculture (R-A-2) with a PAKO designation, and is located near the southern border. With the development of the project, this portion of the site would be rezoned to Light Industrial to allow for the proposed warehouse distribution uses. While this zone change would not conflict with the existing zone for this area of the project site. This type of change is expected, and planned for within the City, and is consistent with the City's overall vision. Impacts are less than significant.</p>	<p>No feasible mitigation is available <u>No mitigation required.</u></p>	<p>Significant and unavoidable <u>Less than Significant</u></p>
<p>Impact 4.2.6.2: Conversion of State Designated Farmland: The project site is designated as 67 percent Prime Farmland (82.5 acres) and 12 percent (39.8 acres) as <u>Farmland of Local Importance</u> (5.3 acres). While farmland conservation measures have been implemented in other areas of the State, neither the City of Moreno Valley nor Riverside County maintains a program that developers and property owners can participate in to offset agricultural resource impacts; therefore, the conversion of State designated Prime Farmland is a significant impact.</p>	<p>No feasible mitigation is available</p>	<p>Significant and unavoidable</p>
4.3 AIR QUALITY		
<p>Impact 4.3.6.2: Equipment Exhaust Emissions From Construction Activities Impacts: Grading and other construction activities would result in combustion emissions from heavy-duty construction vehicles, haul trucks, utility engines, and vehicles transporting the construction crew. Construction equipment/vehicle emissions during proposed on-site grading periods would exceed the SCAQMD daily thresholds for CO and NO_x. This remains a significant impact requiring mitigation.</p>	<p>4.3.6.2C Prior to the issuance of a grading permit, the project developer shall require by contract specifications that contractors shall utilize California Air Resources Board (CARB) Tier II Certified equipment or better during the rough/mass grading phase for the following pieces of equipment: rubber-tired dozers and scrapers. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the City.</p> <p><u>Project start to December 31, 2014: All off-road diesel-powered construction equipment greater than 50 horsepower shall meet Tier 3 off-road emission standards. In addition, all construction equipment shall be outfitted with Best Available Control Technology (BACT) devices</u></p>	<p>Implementation of identified mitigation measures would reduce construction-related emissions; however, it is not possible to quantify emission reductions for all pollutants, so impact remains significant and unavoidable.</p>

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	<p><u>certified by CARB. Any emission control devices used by the contractor shall achieve emission reductions that are no less than what would be achieved by a Level 3 diesel emission control strategy for a similarly sized engine as defined by CARB regulations.</u></p> <p><u>Post January 1, 2015: All off-road diesel-powered construction equipment greater than 50 horsepower shall meet Tier 4 emission standards, where available. In addition, all construction equipment shall be outfitted with Best Available Control Technology (BACT) devices certified by CARB. Any emission control devices used by the contractor shall achieve emission reductions that are no less than what would be achieved by a Level 3 diesel emission control strategy for a similarly sized engine as defined by CARB regulations.</u></p> <p><u>A copy of each unit's certified tier specifications, BACT documentation, and CARB or SCAQMD operating permit shall be provided at the time of mobilization of each applicable unit of equipment.</u></p> <p>4.3.6.2D All clearing, grading, earthmoving, or excavation activities shall cease when winds (as instantaneous gusts) exceed 25 mph per SCAQMD guidelines in order to limit fugitive dust emissions.</p> <p>4.3.6.2H The contractor shall minimize pollutant emissions by maintaining equipment engines in good condition and in proper tune according to manufacturer's specifications and during smog season (May through October) <u>shall not allowing construction equipment to be left idling for more than five minutes (per California law).</u></p> <p>4.3.6.2J Grading plans, construction</p>	

Table 1.C: ProLogis Eucalyptus Industrial Park - Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<p>specifications and bid documents shall also include the following notations requirements:</p> <ul style="list-style-type: none"> • Off-road construction equipment shall utilize alternative fuels where feasible e.g., biodiesel fuel (a minimum of B20), natural gas (CNG), liquefied natural gas (LNG), propane, except for equipment where use of such fuels would void the equipment warranty; • Gravel pads shall be provided at all access points to prevent tracking of mud onto public roads; • Install and maintain trackout control devices at all access points where paved and unpaved access or travel routes intersect; • The contractor or builder shall designate a person or person(s) to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust off site; • The contractor or builder shall post a publicly visible sign with the telephone number and person to contact regarding dust complaints. The contact person shall take corrective action within 24 hours; • High-pressure injectors shall be provided on diesel construction equipment where feasible if <u>available</u>; • Engine size of construction equipment shall be limited to the minimum practical size; • Substitute gasoline-powered for diesel powered construction equipment where feasible <u>gasoline powered equipment is available</u>; • Use electric construction equipment where feasible <u>it is</u> 	

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	<p><u>practical to use such equipment;</u></p> <ul style="list-style-type: none"> • Install catalytic converters on gasoline-powered equipment where feasible <u>this type of equipment is available;</u> • Ride-sharing program for the construction crew shall be encouraged and shall be supported by contractor(s) via incentives or other inducement; • Documentation shall be provided to the City of Moreno Valley indicating that construction workers have been encouraged to carpool or otherwise reduce VMT to the greatest extent practical, including providing information on available park and ride programs; • Lunch vendor services shall be provided <u>allowed</u> on site during construction to minimize the need for off-site vehicle trips; and • All forklifts used during construction and in subsequent operation of the project shall be electric or natural gas powered. <p>4.3.6.2K Throughout project construction, a construction relations officer/community liaison, appointed by the Applicant, shall be retained on site. In coordination and cooperation with the City, the construction relations officer/community liaison shall respond to any concerns related to PM₁₀ (fugitive dust) generation or other construction-related air quality issues <u>within 24 hours.</u></p>	
<p>Impact 4.3.6.3: <u>Localized Construction Equipment Exhaust Emissions Impacts:</u> Emissions of PM₁₀ and PM_{2.5} exceed the localized threshold that would occur for construction activity. PM₁₀ and PM_{2.5} emissions are a significant impact requiring mitigation.</p>	<p>4.3.6.3A Prior to the issuance of grading permits, the project applicant shall require by contract specifications that all trucks hauling dirt, sand, soil, or other loose materials are to be covered or should <u>shall</u> maintain at least 2 feet</p>	<p>Although Mitigation Measures 4.3.6.3A through 4.3.6.3C would reduce localized emission rates up to 50 percent, the localized</p>

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	<p>of freeboard in accordance with the requirements of California Vehicle Code (CVC) Section 23114 (freeboard means vertical space between the top of the load and top of the trailer).</p> <p>4.3.6.3B Prior to the issuance of grading permits, the project applicant shall provide evidence to the City that construction access roads shall be paved at least 100 feet onto the site from the main road.</p> <p>4.3.6.3C. Prior to the issuance of grading permits, the project applicant shall require by contract specifications that all streets within the construction site shall be swept once per day if visible soil materials are carried to adjacent streets.</p>	<p>construction thresholds are exceeded at the nearest residences for PM₁₀ and PM_{2.5}. Therefore, even with implementation of Mitigation Measures 4.3.6.3A through 4.3.6.3C, impacts associated with localized construction emissions for PM₁₀ and PM_{2.5} would remain significant and unavoidable.</p>
<p>Impact 4.3.6.5 Long-Term Project-Related Emissions Impacts: Project-related emissions for CO, ROG, NO_x, PM₁₀, and PM_{2.5} would exceed the SCAQMD daily emissions thresholds during the operational phase of the project. This is a significant impact requiring mitigation.</p>	<p>4.3.6.5B Prior to issuance of building permits, the project applicant shall provide evidence to the City that energy-efficient and low-emission methods and features of building construction shall be incorporated into the project design. These methods and features may include (but are not limited to) the following:</p> <ul style="list-style-type: none"> • Construction of buildings that exceed statewide energy requirements beyond <u>20</u> 10 percent of that identified in Title 24, Part 6 Energy Efficiency Standards: <ul style="list-style-type: none"> ○ Use of low-emissions water heaters; ○ Use of central water-heating systems; ○ Use of energy-efficient appliances; ○ Use of increase insulation; ○ Use of automated controls for air conditioners; ○ Use of energy-efficient parking lot lighting; and 	<p>Although implementation of Mitigation Measures 4.3.6.5A through 4.3.6.5B may reduce vehicle trips associated with the proposed project, it is not possible to quantify the reduction in the amount of emissions that may occur. In the absence of mitigation to reduce the proposed project's emission of contribution of ROC and NO_x to below SCAQMD thresholds, long-term air quality impacts resulting from the operation of the proposed project would remain significant and unavoidable.</p>

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<ul style="list-style-type: none"> ○ Use of lighting controls and energy-efficient lighting. • Utilize low-VOC interior and exterior coatings during project repainting. • Provide on-site improvements such as sidewalks or pedestrian walkways to promote pedestrian activity and reduce the amount of vehicle trips. • Installation of skylights and energy-efficient lighting that exceeds California Title 24 standards where feasible, including electronic dimming ballasts and computer-controlled daylight sensors in the buildings. • Shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and building shall be planted at the proposed project site. These strategies will minimize the heat island effect and thereby reduce the amount of air conditioning required. • Strategies to be considered include fans to assist natural ventilation, centralized water and space conditioning systems, high efficiency individual heating and cooling units, and automatic setback thermostats. • Reduction of energy demand associated with potable water conveyance through the following methods: <ul style="list-style-type: none"> ○ Incorporating drought-tolerant plants into the landscaping palette; and ○ Use of water-efficient irrigation techniques. • Energy-efficient low-pressure sodium parking lot lights or lighting equivalent as determined by the City, shall be used; 	

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	<ul style="list-style-type: none"> Buildings shall be oriented north-south where feasible; Implement an on-site circulation plan in parking lots to reduce vehicle queuing; Develop a trip reduction plan to achieve 1.5 average vehicle ridership (AVR) for businesses with fewer than 400 <u>250</u> employees or multitenant worksites; Include bicycle parking facilities such as bicycle lockers and racks; Include showers for bicycling employees use; and Construct on-site pedestrian facility improvements such as building access that is physically separated from street and parking lot traffic and walk paths. 	
<p>Impact 4.3.6.6: Localized Project Operational Emissions. All localized operational emissions for the proposed project, with the exception of PM₁₀ and PM_{2.5} emissions, are below the localized significance threshold. Since PM₁₀ and PM_{2.5} emissions exceed the localized significance thresholds, operational activities associated with the proposed project may cause long-term localized air quality impacts and mitigation is required.</p>	<p>4.3.6.6A Prior to issuance of the first building permit, building and site plan designs shall ensure that the project's energy efficiencies surpass applicable 2008 California Title 24, Part 6 Energy Efficiency Standards by a minimum of 20 <u>10</u> percent <u>until</u> January 1, 2014. For building permits issued after that date, new state energy standards require a 20 percent reduction from 2008 Title 24, Part 6 Energy Efficiency Standards. Verification of increased energy efficiencies shall be documented in Title 24 Compliance Reports provided by the Applicant, and reviewed and approved by the City. Any combination of The following design features including but not limited to the following list shall be used to fulfill this requirement:</p> <ul style="list-style-type: none"> Buildings shall exceed California Title 24 Energy Efficiency performance standards for water heating and space heating and 	<p>Although implementation of Mitigation Measures 4.3.6.6A and 4.3.6.6B may reduce vehicle trips associated with the proposed project, it is not possible to quantify the reduction in the amount of emissions that may occur. Considering the volume of emissions generated and current commuter habits, it is unlikely the implementation of TDMs/TCMs will result in a reduction of operational project emissions to below existing localized operation emissions thresholds. In the absence of mitigation to reduce the proposed project's</p>

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	<p>cooling, as deemed acceptable by the City.</p> <ul style="list-style-type: none"> • Increase in insulation such that heat transfer and thermal bridging is minimized. • Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption. • Incorporate dual-paned or other energy efficient windows. • Incorporate energy efficient space heating and cooling equipment. • Interior and exterior energy efficient lighting which exceeds the California Title 24 Energy Efficiency performance standards shall be installed, as deemed acceptable by the City. Automatic devices to turn off lights when they are not needed shall be implemented. • To the extent that they are compatible with landscaping guidelines established by the City, shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and buildings shall be planted at the project site. • Paint and surface color palette for the project shall emphasize light and off-white colors which reflect heat away from the buildings. • All buildings shall be designed to accommodate renewable energy sources, such as photovoltaic solar electricity systems, appropriate to their architectural design. • To reduce energy demand associated with potable water conveyance, the project shall implement the following: 	<p><u>localized emission of contribution of PM10 and PM2.5 to below localized emission thresholds, long-term air quality impacts resulting from the operation of the proposed project would remain significant and unavoidable.</u></p>

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	<ul style="list-style-type: none"> ○ Landscaping palette emphasizing drought-tolerant plants; ○ Use of water-efficient irrigation techniques; and, ○ U.S. EPA Certified WaterSense labeled for equivalent faucets, high-efficiency toilets (HETs), and water-conserving shower heads. • The project shall provide secure, weather-protected, on-site bicycle storage/parking. • The project shall provide on-site showers (one for males and one for females). Lockers for employees shall be provided. • The project will establish a Transportation Management Association (TMA). The TMA will coordinate with other TMAs within the City to encourage and coordinate carpooling among building occupants. The TMA will advertise its services to building occupants, and offer transit and/or other incentives to reduce greenhouse gas (GHG) emissions. A plan will be submitted by the TMA to the City within two months of project completion that outlines the measures implemented by the TMA, as well as contact information. • The project shall provide preferential parking for carpools and vanpools. Locations and configurations of proposed preferential parking for carpools and vanpools are subject to review and approval by the City. Prior to final site plan approval, preferential parking for carpools and vanpools shall be delineated on the project site plan. • The project shall provide at least two electric vehicle charging 	

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<p>stations. Locations and configurations of proposed charging stations are subject to review and approval by the City. Prior to issuance of the first building permit, stub outs for charging stations shall be indicated on the project building plans.</p> <ul style="list-style-type: none"> • Lease/purchase documents shall identify that tenants are encouraged to promote the following: <ul style="list-style-type: none"> ○ Implementation of compressed workweek schedules. ○ SmartWay partnership; ○ Achievement of at least 20 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of consolidated trips carried by SmartWay carriers until it reaches a minimum of 90 percent of all long-haul trips carried by SmartWay 1.0 or greater carriers. ○ Achievement of at least 15 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of long-haul trips carried by SmartWay carriers until it reaches a minimum of 85 percent of all consolidator trips carried by SmartWay 1.0 or greater carriers. ○ Use of fleet vehicles conforming to 2010 air quality standards or better. ○ Installation of catalytic converters on gasoline-powered equipment. ○ Inclusion of electric powered and/or compressed natural gas fueled trucks and/or 	

Table 1.C: ProLogis Eucalyptus Industrial Park - Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<p>vehicles in fleets.</p> <ul style="list-style-type: none"> ○ Establishment and use of carpool/vanpool programs, complemented by parking fees for single-occupancy vehicles. ○ Provision of preferential parking for EV and CNG vehicles. ○ Use of electrical equipment (instead of gasoline-powered equipment) for landscape maintenance. ○ Use of electric (instead of diesel or gasoline-powered) yard trucks. ○ Use of SmartWay 1.25 rated trucks. ○ <u>Each facility operator shall provide regular sweeping of onsite parking and drive areas using street sweepers that comply with applicable SCAQMD Rules.</u> ○ <u>Each facility operator shall maintain a log of all trucks entering the facility to ensure that, on average, the daily truck fleet meets applicable air quality emission standards. This log shall be available for inspection by City staff at any time.</u> ○ <u>Each facility operator shall prohibit all vehicles from idling in excess of five minutes in all onsite areas.</u> ○ <u>Each facility operator shall ensure that onsite staff in charge of keeping the daily log and monitoring for excess idling will be trained and certified in diesel health effects and technologies, such as by requiring attendance at CARB-approved courses.</u> ○ <u>Each facility operator which</u> 	

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<p><u>upon occupancy does not already operate 2007 and newer trucks shall in good faith be required to apply for funding to replace or retrofit their trucks such as Carl Moyer, VIP, Prop 1B or similar funds. Should funds be awarded, the tenant shall be required to accept and use them.</u></p>	

Table 1.C: ProLogis Eucalyptus Industrial Park - Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
4.4 BIOLOGICAL RESOURCES		
<p>Impact 4.4.6.2: Riparian Habitat or Other Sensitive Natural Communities: The three on-site drainages, including the Quincy Channel, contain riparian/riverine area. While the proposed project would incorporate the design standards identified in the City's Municipal Code, the development of the proposed project may result in the elimination of habitat for special-status plant species (mule fat scrub) or reduce population size of sensitive plant species below self-sustaining levels. Therefore, a potentially significant impact would occur and mitigation is required.</p>	<p>4.4.6.2A As outlined in the project's Determination of a Biologically Equivalent or Superior Preservation (DBESP) report, the project applicant shall compensate for the <u>temporary and permanent impact on and loss of jurisdictional waters and streambeds by providing a minimum 2:1 off-site replacement of equivalent riverine/riparian habitat prior to project construction.</u> (0.36 acre impact = 0.72 acre replacement). This off-site replacement shall be accomplished through the contribution of in-lieu fees to the Santa Ana Watershed Association (SAWA) for its efforts in removal of invasive plants and restoration of riparian habitat adjacent to the tributaries of the San Jacinto River or within the Santa Ana River watershed. Documentation of acceptance of the SAWA contribution shall be provided to the City prior to issuance of a grading permit. <u>Offsite restoration, enhancement, and/or land purchase mitigation for the drainage impacts will occur at an offsite location through one or more of the following: an USACE approved mitigation bank, through an in lieu fee mitigation program, and/or land purchase and conservation. DFG and USFWS will need to provide concurrence that this mitigation is equivalent or superior to that proposed for impact through their review and acceptance of the DBESP.</u></p> <p>4.4.6.2B The project applicant shall retain qualified personnel to prepare and implement a Habitat Mitigation and Monitoring Plan (HMMP) to oversee restoration of temporarily affected areas (0.35 acre of riverine/riparian habitat) to their pre-construction contours and vegetation. The HMMP will be approved by USACE and CDFG prior to the City issuing any</p>	<p>Less than Significant with Mitigation</p>

Table 1.C: ProLogis Eucalyptus Industrial Park - Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	occupancy permits. <u>Riparian/riverine resources that are temporarily impacted by project construction shall be returned to their preconstruction contours and hydroseeded, as outlined in the DBESP.</u>	
<p>Impact 4.4.6.3: Jurisdictional Waters/Wetlands: Implementation of the proposed project would result in permanent impacts to 0.051 acre (354 linear feet) of non-wetland waters of the United States and waters of the State and 0.362 acre (440 linear feet) of State streambed associated with the eastern, southern, and western drainages. In addition to permanent impacts, the proposed project would result in temporary impacts to 0.054 acre (332 linear feet) of non-wetland waters of the United States and waters of the State and 0.33 acre (547 linear feet) of State streambed associated with construction activities. This is a significant impact requiring mitigation.</p>	<p>4.4.6.3A The project applicant shall obtain a Section 404 Nationwide or Individual Permit, as appropriate, from the USACE and a Section 1602 Streambed Alteration Agreement from the CDFG. Direct temporary impacts to more than 0.1 acre of jurisdictional area that are regulated by the USACE, CDFG, and RWQCB shall be mitigated at a 2:1 ratio, including enhancement and/or creation of wetlands or the contribution of in-lieu fee to the Santa Ana Watershed Association (SAWA) for its efforts in removal of invasive plants and restoration of off-site riparian habitat, as outlined in Mitigation Measure 3.3.6.2A. <u>The project applicant shall obtain a Section 404 Nationwide or Individual Permit, as appropriate, from the USACE, a Section 401/Porter-Cologne Water Quality Certification from the RWQCB, and a Section 1602 Streambed Alteration Agreement from the CDFG. Offsite restoration, enhancement, and/or land purchase mitigation of jurisdictional drainage impacts will occur at an off-site location through one or more of the following: an USACE approved mitigation bank, through an in-lieu fee mitigation program, and/or land purchase and conservation.</u></p>	Less than Significant with Mitigation
4.5 CULTURAL RESOURCES		
<p>Impact 4.5.6.1: Prehistoric Cultural Resources: The cultural resources survey indicates there are no recorded cultural sites or surface evidence that cultural resources are present on the project site. Correspondence from Native American groups represents appropriate consultation under SB 18. The site's location within the Moreno Hills Complex indicates a potential exists that excavation and construction activities may uncover</p>	<p>4.5.6.1A <u>Prior to the issuance of a grading permit, the Project Applicant shall provide evidence to the City of Moreno Valley that a Cultural Resources Monitoring Agreement has been secured for qualified Tribal representatives, and that a</u></p>	Less than Significant with Mitigation

Table 1.C: ProLogis Eucalyptus Industrial Park - Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
<p>previously undetected prehistoric or historic cultural resources. This is a significant impact requiring mitigation.</p>	<p><u>professional archaeological monitor meeting Secretary of Interior standards has been retained by the Applicant to conduct monitoring of all mass grading and trenching activities and has the authority to temporarily halt and redirect earthmoving activities in the event that suspected archaeological resources are unearthed during Project construction. The Project Archaeologist and Tribal representatives shall attend the pre-grading meeting with the City and contractors to explain and coordinate the requirements of the monitoring program.</u></p> <p><u>4.5.6.1B Prior to the issuance of a grading permit, the Applicant shall provide evidence to the City of Moreno Valley that appropriate Native American representative(s), Project Archaeologist, and the Tribal representative(s) shall be allowed to monitor and have received a minimum of 30 days advance notice of all mass grading and trenching activities. During grading and trenching operations, the Tribal representatives and the project archaeological monitor shall observe all mass grading and trenching activities per the Cultural Resources Monitoring Agreement. If the Tribal representatives suspect that an archaeological resource may have been unearthed, the archaeologist, in consultation with the tribal representative, shall immediately halt and redirect grading operations in a 100-foot radius around the find to allow identification and evaluation of the suspected resource. In consultation with the appropriate Native American Tribe(s), the archaeological monitor shall evaluate the suspected resource and make a determination of significance pursuant to California Public Resources Code Section 21083.2.</u></p>	

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<p><u>4.5.6.1C</u> If a significant archaeological resource(s) is discovered on the property, ground disturbing activities shall be suspended 100 feet around the resource(s). The archaeological monitor and representatives of the appropriate Native American Tribe(s), the Project Applicant, and the City Planning Division shall confer regarding mitigation of the discovered resource(s). A treatment plan and/or preservation plan shall be prepared and by the archaeological monitor and reviewed by representatives of the appropriate Native American Tribe(s), the Project Applicant, and the City Planning Division and implemented by the archaeologist to protect the identified archaeological resource(s) from damage and destruction. The landowner shall relinquish ownership of all archaeological artifacts that are of Native American origin found on the Project site to the culturally affiliated Native American tribe(s) for proper treatment and disposition. A final report containing the significance and treatment findings shall be prepared by the archaeologist and submitted to the City Planning Division, the appropriate Native American tribe(s), and the Eastern Information Center at the University of California, Riverside. All cultural material, excluding sacred, ceremonial, grave goods and human remains, collected during the grading monitoring program and from any previous archaeological studies or excavations on the project site shall be curated, as determined by the treatment plan, according to the current professional repository standards and may include the Pechanga Bands curatorial facility.</p> <p><u>4.5.6.1D</u> Prior to grading permit issuance, the City shall verify that the following note is included on the Grading Plan:</p>	

Table 1.C: ProLogis Eucalyptus Industrial Park - Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<p><u>"If any suspected archaeological resources are discovered during ground-disturbing activities and the archaeological monitor or Tribal representatives are not present, the construction supervisor is obligated to halt work in a 100-foot radius around the find and call the project archaeologist and the Tribal representatives to the site to assess the significance of the find."</u></p> <p><u>4.5.6.1E If human remains are encountered, California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the Riverside County Coroner has made the necessary findings as to origin. Further, pursuant to California Public Resources Code Section 5097.98(b), remains shall be left in place and free from disturbance until a final decision as to the treatment and disposition has been made by the Coroner. If the Riverside County Coroner determines the remains to be Native American, the California Native American Heritage Commission must be contacted within 24 hours. The Native American Heritage Commission must then immediately notify the "most likely descendant(s)" of receiving notification of the discovery. The most likely descendant(s) shall then make recommendations within 48 hours, and engage in consultations concerning the treatment of the remains as provided in Public Resources Code §5097.98.</u></p>	
<p>Impact 4.5.6.2: Paleontological Resources: The project site is located in an area identified as having a "high sensitivity" for paleontological resources. Construction of the proposed project has the potential to result in significant impacts to nonrenewable paleontological resources, requiring mitigation.</p>	<p><u>4.5.6.2D Prior to grading permit issuance, the City shall verify that the following note is included on the Grading Plan:</u></p> <p><u>"If any suspected paleontological resources are discovered during ground-disturbing activities, the</u></p>	<p>Less than Significant with Mitigation</p>

Table 1.C: ProLogis Eucalyptus Industrial Park - Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<p><u>construction supervisor is obligated to halt work in a 100-foot radius around the find and call a qualified paleontologist to the site to assess the significance of the find. A qualified paleontologist shall evaluate the suspected resource. If the paleontologist determines that the find is not unique, construction shall be permitted to proceed. However, if the paleontologist determines that further information is needed to evaluate significance, the City of Moreno Valley shall be notified and a treatment plan shall be prepared and implemented in consultation with the City to protect the identified paleontological resource(s) from damage and destruction."</u></p>	
4.6 HAZARDS AND HAZARDOUS MATERIALS		
<p>4.6.6 Although the EIR did not identify any significant impacts related to hazardous materials, the mitigation measure was added to assure there will be no impacts related to soil contamination.</p>	<p>4.6.6.1A <u>Prior to issuance of a grading permit for the project, a qualified contractor shall test onsite soils for contamination by agricultural chemicals. If present in concentrations above established actionable levels or thresholds, these materials shall be removed and transported to an appropriate landfill by a licensed contractor. This measure shall be implemented to the satisfaction of the Building Division including written documentation of the disposal of any agricultural chemical residue in conformance with all applicable regulations.</u></p>	Less than Significant
4.9 NOISE		
<p>Impact 4.9.6.1: Short-Term Construction Noise Impacts: Construction activities would include grading, excavation, and installation activities generating noise levels up 91 dBA L_{max} at 50 feet from an active construction area. These noise levels would diminish rapidly with distance from the construction site at a rate of approximately 6 dBA per doubling of distance. The worst-case scenario during construction would be a noise level of 91 dBA L_{max} at a distance of 50 feet from the noise source to the nearest existing sensitive receptor. However, compliance with the construction hours specified in the City's</p>	<p>4.9.6.1D. During all project site construction activities at Building 6 (i.e., closest to existing residences), the construction contractor shall limit all construction-related activities that would result in high noise levels to between the hours of 6:00 a.m. and 8:00 p.m. on weekdays and between the hours of 7:00 a.m. to 8:00 p.m. on weekends and</p>	Less than Significant with Mitigation

Table 1.C: ProLogis Eucalyptus Industrial Park - Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
Municipal Code would result in construction noise impacts that are less than significant. While impacts would be considered less than significant as long as construction activities occur within the designated hours identified in the City's Municipal Code, mitigation measures have been identified to reduce the noise levels that would expose nearby sensitive receptors to noise levels in excess of the City's noise standards.	holidays, unless written approval is obtained from the City Building Official or City Engineer <u>for specific construction activities that must be conducted outside of the permitted time periods.</u>	
4.11 TRANSPORTATION		
<p>Impact 4.11.6.1A: Existing (2011) with project Conditions (Intersection) Traffic and Level of Service Impacts: The addition of project traffic to this scenario would result in conditions exceeding the established LOS standard at the following intersections:</p> <p>Redlands Boulevard/SR-60 Westbound Ramps (a.m. and p.m. peak hours); and</p> <p>Redlands Boulevard/Eucalyptus Avenue-Fir Avenue (p.m. peak hour).</p> <p>The project would contribute toward the worsening of the already unsatisfactory LOS at the intersection of Redlands Boulevard/SR-60 Westbound Ramps and would create a significant impact at the intersection of Redlands Boulevard/Eucalyptus Avenue-Fir Avenue. Therefore, mitigation is required at both intersections.</p>	<p>4.11.6.4A Prior to issuance of a building permit <u>Certificate of Occupancy</u>, the project applicant shall construct <u>pay the fair share contribution toward</u> the following traffic improvements through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program:</p> <ul style="list-style-type: none"> • Redlands Boulevard/SR-60 Westbound Ramps. Install a traffic signal. This improvement is currently approved, and permitted by Caltrans. If not otherwise completed prior to project opening, the required traffic signal shall be constructed by the Applicant prior to issuance of the first Certificate of Occupancy. • Redlands Boulevard/Fir Avenue/Eucalyptus Avenue. If not otherwise completed prior to project opening, prior to issuance of the first Certificate of Occupancy, the Applicant shall construct the following improvements: Install a traffic signal and This improvement is listed in the City's DIF program. A add a northbound left-turn lane and a southbound left-turn lane. These improvements are listed in the TUMF. <p>If the improvements are constructed by others prior to the Certificate of Occupancy, the applicant shall pay its fair share towards the improvements through the City's DIF program.</p>	<p>With the implementation of the recommended improvements, the minimum level of service standards would be maintained for the Existing (2011) with project condition and impacts would be reduced to a less than significant level for all identified intersections. However, improvements to freeway facilities are under the authority of Caltrans. Since the City has no control over when and how the improvements will be in place, impacts associated with SR-60 ramp intersections would remain significant and unavoidable until such improvement is constructed.</p>

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
4.12 GLOBAL CLIMATE CHANGE		
<p><u>Greenhouse Gas Emissions and Climate Change:</u> Construction of the project would emit approximately 37.5 tons per day of CO₂ equivalent emissions, while occupancy of the project will emit 61,000 tons of CO₂ equivalent emissions per year. The carbon dioxide, methane, and nitrous oxide emissions that would be associated with the proposed project is approximately 0.0024 percent of California's 2004 total emissions for carbon dioxide, methane, and nitrous oxide (492 Tg CO₂ Eq).</p> <p>The proposed project would be consistent with all feasible and applicable strategies to reduce greenhouse gas emissions in California. Therefore, the impact of the proposed project, based on these specifications, would be less than significant. The SCAQMD currently recommends that potential GHG emissions be addressed through energy efficiency.</p>	<p>4.13.6.1B. Prior to the issuance of building permits, the project applicant shall provide evidence to the City of Moreno Valley that the following measures have been incorporated into the design and construction of the project:</p> <ul style="list-style-type: none"> • Use of locally produced and/or manufactured building materials for at least 10 percent of the construction materials used for the project. • Use of "Green Building Materials," such as those materials that are resource efficient, and recycled and manufactured in an environmentally friendly way, for at least 10 percent of the project. • Limit unnecessary idling of construction equipment. A reduction in equipment idling would reduce fuel consumption, and therefore, GHG emissions. • Maximize the use of electricity from the power grid by replacing diesel- or gasoline-powered equipment. This would reduce GHG emissions because electricity can be produced more efficiently at centralized power plants. • Design the project building to exceed the California Building Code's (CBC) Title 24 energy standard, including, but not limited to, any combination of the following: <ul style="list-style-type: none"> ○ Increase insulation such that heat transfer and thermal bridging is minimized. ○ Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption. 	<p>Less than Significant with Mitigation</p> <p>Since the project is consistent with the strategies to reduce California's emissions to the levels proposed by Executive Order S-3-05, the project's incremental contribution to climate change at the project level is less than significant.</p>

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<ul style="list-style-type: none"> ○ Incorporate ENERGY STAR or better rated windows, space heating and cooling equipment, light fixtures, appliances, or other applicable electrical equipment. • Provide a landscape and development plan for the project that takes advantage of shade, prevailing winds, and landscaping. • Install efficient lighting and lighting control systems. Use daylight as an integral part of the lighting systems in buildings. • Install light-colored “cool” roof and cool pavements. • Install energy-efficient heating and cooling systems, appliances and equipment, and control systems. • Install solar or light-emitting diodes (LEDs) for outdoor lighting <u>for auto parking areas.</u> 	

Draft EIR Section 4.1, AESTHETICS

4.1.1.1 Topographic/Vegetation Features (page 4.1-1)

Until recently, commercial citrus groves occupied the northwestern and northeastern portions of the project site, forming a dark-green canopy over approximately a third of the site area. The 2006 City General Plan EIR notes that the remaining citrus groves are “visually pleasing features” (MVGPF EIR, p. 5.11-2). However, in December 2013, the trees were removed due to ongoing maintenance and irrigation costs, and fire protection concerns (J. Jachetta, personal communication, December 2, 2013).

4.1.6 Significant Impacts

4.1.6.1 Scenic Vistas (page 4.1-9)

Views from SR-60 and Residences North of SR-60. ...As identified in Figure 4.1.3, existing views from this vantage point include SR-60 in the foreground, a concrete lane divider ~~and the tops of citrus groves~~ in the midground, and the Mount Russell Range in the background. As part of conditions of approval for the proposed project, two rows of ~~the existing~~ orange trees would be provided and

maintained on the northern portion of the project site adjacent to SR-60 and along the perimeter of the proposed project site adjacent to the public ROW or residential zoning. With development of the proposed project, buildings, associated parking lots, and ornamental landscaping would be built and placed on the project site. This would change existing views from the single-family residences north of SR-60 along Pettit Street. Foreground views would consist of SR-60, midground views would consist of a concrete divider and the tops of the ~~remaining~~ mature orange trees, and background views would consist of the upper half of the proposed warehouse buildings.

~~It is anticipated that the existing orange trees have an approximate height ranging from 12 feet to 16 feet.~~ Two rows of the former orange trees will be retained on the northern boundary adjacent to SR-60. Additionally, new orange trees would be planted along the northern length of Buildings No. 1 and 2. With the inclusion of the orange trees along this project boundary, the existing residences would see the upper 27 to 31 feet of the proposed buildings.

4.1.6.2 Scenic Resources and Scenic Highways (page 4.1-17)

... As illustrated in Figure 4.1.4, existing eastbound views on SR-60 would be altered with the development of the proposed project. Motorists would still view noise attenuation walls, urban development, landscaping, and ~~orange~~ scattered trees as they look to the south, although these views would be of short duration for motorists traveling at normal freeway speeds.

Level of Significance after Mitigation. Since there is no feasible mitigation is available to reduce impacts related to the substantial change in visual character from development of the proposed project, impacts associated with this issue would remain significant and unavoidable.

NOTE: *This conclusion would be the same regardless with or without the existing citrus trees onsite, so the conclusions and mitigation outlined in the DEIR do not change (i.e., significant).*

Draft EIR Section 4.2, AGRICULTURAL RESOURCES

4.2.1 Existing Setting (page 4.2-1)

NOTE: *The following paragraph was reworded to account for removal of the citrus trees.*

~~In addition to on-site farming of citrus, a~~Active agricultural operations take place on properties located to the north of SR-60, east and south of the proposed project site.

... The project site can be divided into ~~two three~~ categories of land cover: ~~citrus production,~~ hay/alfalfa production and fallow. ~~Currently,~~ Until recently, the majority of the northern portion of the site (approximately 57 acres) ~~was is~~ used for citrus production. ~~The remaining portions of the site are~~ Approximately 36 acres of the site, located in the southern portion of the site, supports hay/alfalfa and approximately 75 acres of fallow land is located in the northern portion of the site. Until December 2013, approximately 50 acres of the site contained citrus trees, but these were removed to eliminate ongoing maintenance and irrigation costs and potential fire safety issues. In any case, they are planned to be removed as part of project development. Currently, there are several abandoned wells and a non-functioning wind machine that were used in the past for on-site agricultural uses.

4.2.6.1 Conversion of State Designated Farmland (page 4.2-8)

Mitigation Measures. The potential mitigation measures identified by the City's General Plan have been deemed infeasible by the property owner under current economic conditions. In addition, supplementary analysis of the project site and local economic conditions indicates that continued citrus production and/or the raising of row crops would not be economically feasible on the project site (see Appendix E).

4.2.6.2 Conversion of an Existing Agricultural Operation to a Non-Agricultural Use (page 4.2-9)

Threshold	Would the proposed project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?
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The proposed project would result in the development of industrial uses on land that ~~was~~ has historically ~~been~~ utilized for citrus production. Implementation of the proposed project would result in the ~~retention~~ or provision of rows of citrus trees along the northern portion of the project site adjacent to SR-60, along the western perimeter of Building No. 6, and along the southern perimeter of Buildings No. 5 and 6. Although these citrus trees would be ~~retained~~ or provided along the perimeter of the project site, the ~~retention~~ or provision of citrus trees on site is for ornamental and landscaping purposes and not for agricultural cultivation. The conversion of the project site's agriculture land to non-agricultural uses is a result of various economic and demographic factors. Increased cost for water and a continuing demand for housing and other development in the City and region are the primary reasons for this agricultural land conversion.

NOTE: *The removal of the citrus trees onsite in December 2013 does not change the conclusions of the DEIR regarding agricultural impacts or mitigation. Loss of agricultural soils and former citrus activity would still be significant.*

Draft EIR Section 4.3, AIR QUALITY

Section 4.3.6.2 Equipment Exhaust from Construction-Related Activities (pages 4.3-23 and 4.3-24)

NOTE: *The following requirement was added to Mitigation Measure 4.3.6.2C in response to concerns expressed by the South Coast Air Quality Management District (Letter B-3). These changes to the Draft EIR do not result in a significant impact and has no material effect on the findings of the Draft EIR.*

4.3.6.2C Prior to the issuance of a grading permit, the project developer shall require by contract specifications that contractors shall utilize California Air Resources Board (CARB) Tier II Certified equipment or better during the rough/mass grading phase for the following pieces of equipment: rubber-tired dozers and scrapers. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the City.

Project start to December 31, 2014: All off-road diesel-powered construction equipment greater than 50 horsepower shall meet Tier 3 off-road emission standards. In addition, all construction equipment shall be outfitted with Best Available Control Technology (BACT) devices certified by CARB. Any emission control devices used by the contractor shall achieve emission reductions that are no less than what would be achieved by a Level 3

diesel emission control strategy for a similarly sized engine as defined by CARB regulations.

Post January 1, 2015: All off-road diesel-powered construction equipment greater than 50 horsepower shall meet Tier 4 emission standards, where available. In addition, all construction equipment shall be outfitted with Best Available Control Technology (BACT) devices certified by CARB. Any emission control devices used by the contractor shall achieve emission reductions that are no less than what would be achieved by a Level 3 diesel emission control strategy for a similarly sized engine as defined by CARB regulations.

A copy of each unit's certified tier specifications, BACT documentation, and CARB or SCAQMD operating permit shall be provided at the time of mobilization of each applicable unit of equipment.

NOTE: *The following requirement was added to Mitigation Measure 4.3.6.2D in response to concerns expressed by the South Coast Air Quality Management District (Letter B-3). These changes to the Draft EIR do not result in a significant impact and has no material effect on the findings of the Draft EIR.*

4.3.6.2D All clearing, grading, earthmoving, or excavation activities shall cease when winds (as instantaneous gusts) exceed 25 mph per SCAQMD guidelines in order to limit fugitive dust emissions.

NOTE: *The following requirement was added to Mitigation Measure 4.3.6.1H in response to concerns expressed by Johnson and Sedlack (Letter D-3). These changes to the Draft EIR do not result in a significant impact and has no material effect on the findings of the Draft EIR.*

4.3.6.2H The contractor shall minimize pollutant emissions by maintaining equipment engines in good condition and in proper tune according to manufacturer's specifications and during smog season (May through October) by not allowing construction equipment to be left idling for more than five minutes (per California law).

NOTE: *The following requirement was added to Mitigation Measure 4.3.6.2J in response to concerns expressed by Johnson and Sedlack (Letter D-3). These changes to the Draft EIR do not result in a significant impact and has no material effect on the findings of the Draft EIR.*

4.3.6.2J Grading plans, construction specifications and bid documents shall also include the following requirements notations:

- Off-road construction equipment shall utilize alternative fuels where feasible e.g., biodiesel fuel (a minimum of B20), natural gas (CNG), liquefied natural gas (LNG), propane, except for equipment where use of such fuels would void the equipment warranty;
- Gravel pads shall be provided at all access points to prevent tracking of mud onto public roads;
- Install and maintain trackout control devices at all access points where paved and unpaved access or travel routes intersect;
- The contractor or builder shall designate a person or person(s) to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust off site;

- The contractor or builder shall post a publicly visible sign with the telephone number and person to contact regarding dust complaints. The contact person shall take corrective action within 24 hours;
- High-pressure injectors shall be provided on diesel construction equipment ~~where feasible~~ if available;
- Engine size of construction equipment shall be limited to the minimum practical size;
- Substitute gasoline-powered for diesel powered construction equipment where ~~feasible~~ gasoline powered equipment is available;
- Use electric construction equipment where ~~feasible~~ it is practical to use such equipment;
- Install catalytic converters on gasoline-powered equipment where ~~feasible~~ this type of equipment is available;
- Ride-sharing program for the construction crew ~~shall be encouraged and~~ shall be supported by contractor(s) via incentives or other inducement;
- Documentation shall be provided to the City of Moreno Valley indicating that construction workers have been encouraged to carpool or otherwise reduce VMT to the greatest extent practical, including providing information on available park and ride programs;
- Lunch vendor services shall be ~~provided~~ allowed on site during construction to minimize the need for off-site vehicle trips; and
- All forklifts used during construction and in subsequent operation of the project shall be electric or natural gas powered.

***NOTE:** The following requirement was added to Mitigation Measure 4.3.6.2K in response to concerns expressed by Johnson and Sedlack (Letter D-3). These changes to the Draft EIR do not result in a significant impact and has no material effect on the findings of the Draft EIR.*

4.3.6.2K Throughout project construction, a construction relations officer/community liaison, appointed by the Applicant, shall be retained on site. In coordination and cooperation with the City, the construction relations officer/community liaison shall respond to any concerns related to PM₁₀ (fugitive dust) generation or other construction-related air quality issues within 24 hours.

Section 4.3.6.3 Localized Construction Equipment Exhaust Emissions Impacts (page 4.3-30)

4.3.6.3A Prior to the issuance of grading permits, the project applicant shall require by contract specifications that all trucks hauling dirt, sand, soil, or other loose materials are to be covered or ~~should~~ shall maintain at least 2 feet of freeboard in accordance with the requirements of California Vehicle Code (CVC) Section 23114 (freeboard means vertical space between the top of the load and top of the trailer).

Section 4.3.6.5 Long-Term Project-Related Emissions Impacts (page 4.3-33)

***NOTE:** A clerical error was made in the Draft EIR in Mitigation Measure 4.3.6.5B. These changes to the Draft EIR do not result in a significant impact and has no material effect on the findings of the Draft EIR.*

Mitigation Measures

- 4.3.6.5B** Prior to issuance of building permits, the project applicant shall provide evidence to the City that energy-efficient and low-emission methods and features of building construction shall be incorporated into the project design. These methods and features may include (but are not limited to) the following:
- Construction of buildings that exceed statewide energy requirements beyond 20_10 percent of that identified in Title 24, Part 6 Energy Efficiency Standards:
 - Use of low-emissions water heaters;
 - Use of central water-heating systems;
 - Use of energy-efficient appliances;
 - Use of increase insulation;
 - Use of automated controls for air conditioners;
 - Use of energy-efficient parking lot lighting; and
 - Use of lighting controls and energy-efficient lighting.
 - Utilize low-VOC interior and exterior coatings during project repainting.
 - Provide on-site improvements such as sidewalks or pedestrian walkways to promote pedestrian activity and reduce the amount of vehicle trips.
 - Installation of skylights and energy-efficient lighting that exceeds California Title 24 standards where feasible, including electronic dimming ballasts and computer-controlled daylight sensors in the buildings.
 - Shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and building shall be planted at the proposed project site. These strategies will minimize the heat island effect and thereby reduce the amount of air conditioning required.
 - Strategies to be considered include fans to assist natural ventilation, centralized water and space conditioning systems, high efficiency individual heating and cooling units, and automatic setback thermostats.
 - Reduction of energy demand associated with potable water conveyance through the following methods:
 - Incorporating drought-tolerant plants into the landscaping palette; and
 - Use of water-efficient irrigation techniques.
 - Energy-efficient low-pressure sodium parking lot lights or lighting equivalent as determined by the City, shall be used;
 - Buildings shall be oriented north-south where feasible;
 - Implement an on-site circulation plan in parking lots to reduce vehicle queuing;
 - Develop a trip reduction plan to achieve 1.5 average vehicle ridership (AVR) for businesses with fewer than ~~400~~ 250 employees or multitenant worksites;
 - Include bicycle parking facilities such as bicycle lockers and racks;
 - Include showers for bicycling employees use; and

- Construct on-site pedestrian facility improvements such as building access that is physically separated from street and parking lot traffic and walk paths.

Section 4.3.6.6 Project-Related Localized Operational Emission Impacts (pages 4.3-35 through 4.3-37)

Mitigation Measure 4.3.6.6A has been modified to address concerns expressed by the South Coast Air Quality Management District (Letter B-3), Sierra Club (Letter D-2), and Johnson & Sedlack (Letter D-3). These changes to the Draft EIR do not result in a significant impact and has no material effect on the findings of the Draft EIR.

4.3.6.6A Prior to issuance of the first building permit, building and site plan designs shall ensure that the project's energy efficiencies surpass applicable 2008 California Title 24, Part 6 Energy Efficiency Standards by a minimum of ~~20~~ 10 percent until January 1, 2014. For building permits issued after that date, new state energy standards require a 20 percent reduction from 2008 Title 24, Part 6 Energy Efficiency Standards. Verification of increased energy efficiencies shall be documented in Title 24 Compliance Reports provided by the Applicant, and reviewed and approved by the City. ~~Any combination of~~ The following design features ~~including but not limited to the following list~~ shall be used to fulfill this requirement:

- Buildings shall exceed California Title 24 Energy Efficiency performance standards for water heating and space heating and cooling, as deemed acceptable by the City.
- Increase in insulation such that heat transfer and thermal bridging is minimized.
- Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption.
- Incorporate dual-paned or other energy efficient windows.
- Incorporate energy efficient space heating and cooling equipment.
- Interior and exterior energy efficient lighting which exceeds the California Title 24 Energy Efficiency performance standards shall be installed, as deemed acceptable by the City. Automatic devices to turn off lights when they are not needed shall be implemented.
- To the extent that they are compatible with landscaping guidelines established by the City, shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and buildings shall be planted at the project site.
- Paint and surface color palette for the project shall emphasize light and off-white colors which reflect heat away from the buildings.
- All buildings shall be designed to accommodate renewable energy sources, such as photovoltaic solar electricity systems, appropriate to their architectural design.
- To reduce energy demand associated with potable water conveyance, the project shall implement the following:
 - Landscaping palette emphasizing drought-tolerant plants;
 - Use of water-efficient irrigation techniques; and,
 - U.S. EPA Certified WaterSense labeled for equivalent faucets, high-efficiency toilets (HETs), and water-conserving shower heads.
- The project shall provide secure, weather-protected, on-site bicycle storage/parking.

- The project shall provide on-site showers (one for males and one for females). Lockers for employees shall be provided.
- The project will establish a Transportation Management Association (TMA). The TMA will coordinate with other TMAs within the City to encourage and coordinate carpooling among building occupants. The TMA will advertise its services to building occupants, and offer transit and/or other incentives to reduce greenhouse gas (GHG) emissions. A plan will be submitted by the TMA to the City within two months of project completion that outlines the measures implemented by the TMA, as well as contact information.
- The project shall provide preferential parking for carpools and vanpools. Locations and configurations of proposed preferential parking for carpools and vanpools are subject to review and approval by the City. Prior to final site plan approval, preferential parking for carpools and vanpools shall be delineated on the project site plan.
- The project shall provide at least two electric vehicle charging stations. Locations and configurations of proposed charging stations are subject to review and approval by the City. Prior to issuance of the first building permit, stub outs for charging stations shall be indicated on the project building plans.
- Lease/purchase documents shall identify that tenants are encouraged to promote the following:
 - Implementation of compressed workweek schedules.
 - SmartWay partnership;
 - Achievement of at least 20 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of consolidated trips carried by SmartWay carriers until it reaches a minimum of 90 percent of all long-haul trips carried by SmartWay 1.0 or greater carriers.
 - Achievement of at least 15 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of long-haul trips carried by SmartWay carriers until it reaches a minimum of 85 percent of all consolidator trips carried by SmartWay 1.0 or greater carriers.
 - Use of fleet vehicles conforming to 2010 air quality standards or better.
 - Installation of catalytic converters on gasoline-powered equipment.
 - Inclusion of electric powered and/or compressed natural gas fueled trucks and/or vehicles in fleets.
 - Establishment and use of carpool/vanpool programs, complemented by parking fees for single-occupancy vehicles.
 - Provision of preferential parking for EV and CNG vehicles.
 - Use of electrical equipment (instead of gasoline-powered equipment) for landscape maintenance.
 - Use of electric (instead of diesel or gasoline-powered) yard trucks.
 - Use of SmartWay 1.25 rated trucks.
 - Each facility operator shall provide regular sweeping of onsite parking and drive areas using street sweepers that comply with applicable SCAQMD Rules.

- Each facility operator shall maintain a log of all trucks entering the facility to ensure that, on average, the daily truck fleet meets applicable air quality emission standards. This log shall be available for inspection by City staff at any time.
- Each facility operator shall prohibit all vehicles from idling in excess of five minutes in all onsite areas.
- Each facility operator shall ensure that onsite staff in charge of keeping the daily log and monitoring for excess idling will be trained and certified in diesel health effects and technologies, such as by requiring attendance at CARB-approved courses.
- Each facility operator which upon occupancy does not already operate 2007 and newer trucks shall in good faith be required to apply for funding to replace or retrofit their trucks such as Carl Moyer, VIP, Prop 1B or similar funds. Should funds be awarded, the tenant shall be required to accept and use them.

Draft EIR, Section 4.4, BIOLOGICAL RESOURCES

4.4.1 Existing Setting

4.4.1.2 Vegetation (page 4.4-4)

... Until December 2013, agriculture-citrus (citrus tree orchards) occurred on the northwestern, northeastern, and east-central portions of the project site and occupied approximately 57.2 acres. The trees were removed recently to avoid additional maintenance and irrigation costs, and to help reduce fire safety issues. Approximately 47.4 acres of ruderal vegetation occurs on the project site and is dominated by weedy vegetation that is typically associated with a past disturbance (agriculture).

Section 4.4.6.2, Riparian Habitat or Other Sensitive Natural Communities (page 4.4-29)

Impact 4.4.6.2: *The proposed project has the potential to permanently affect 0.36 acre of riparian/riverine habitat and to temporarily affect 0.35 acre of riparian/riverine habitat.*

Threshold	Would the proposed project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?
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The project site consists of highly disturbed land from which most natural vegetation has been removed by regular disking for weed abatement and historical citrus cultivation.

NOTE: *The removal of the citrus trees in December 2013 does not affect the conclusions of the DEIR regarding biological impacts or mitigation.*

MITIGATION NOTE: *Based on a pre-application MSHCP project meeting with CDFG, USFWS, RCA, and RWQCB that occurred on October 10, 2012, the following minor changes and clarifications have been made to the indicated mitigation measures, mainly to incorporate temporary impacts into the compensation for permanent impacts but also to make the EIR mitigation measures consistent with the DBESP implementation measures:*

- 4.4.6.2A** ~~As outlined in the project's Determination of a Biologically Equivalent or Superior Preservation (DBESP) report, the project applicant shall compensate for the temporary and permanent impact on and loss of jurisdictional waters and streambeds by providing a minimum 2:1 off-site replacement of equivalent riverine/riparian habitat prior to project construction. (0.36 acre impact = 0.72 acre replacement). This off-site replacement shall be accomplished through the contribution of in-lieu fees to the Santa Ana Watershed Association (SAWA) for its efforts in removal of invasive plants and restoration of riparian habitat adjacent to the tributaries of the San Jacinto River or within the Santa Ana River watershed. Documentation of acceptance of the SAWA contribution shall be provided to the City prior to issuance of a grading permit. Offsite restoration, enhancement, and/or land purchase mitigation for the drainage impacts will occur at an offsite location through one or more of the following: an USACE approved mitigation bank, through an in lieu fee mitigation program, and/or land purchase and conservation. DFG and USFWS will need to provide concurrence that this mitigation is equivalent or superior to that proposed for impact through their review and acceptance of the DBESP.~~
- 4.4.6.2B** ~~The project applicant shall retain qualified personnel to prepare and implement a Habitat Mitigation and Monitoring Plan (HMMP) to oversee restoration of temporarily affected areas (0.35 acre of riverine/riparian habitat) to their pre-construction contours and vegetation. The HMMP will be approved by USACE and CDFG prior to the City issuing any occupancy permits. Riparian/riverine resources that are temporarily impacted by project construction shall be returned to their preconstruction contours and hydroseeded, as outlined in the DBESP.~~

NOTE: *The DBESP replaces the need for a separate Habitat Mitigation and Monitoring Plan.*

Section 4.4.6.3, Jurisdictional Waters/Wetlands (page 4.4-31)

- 4.4.6.3A** ~~The project applicant shall obtain a Section 404 Nationwide or Individual Permit, as appropriate, from the USACE and a Section 1602 Streambed Alteration Agreement from the CDFG. Direct temporary impacts to more than 0.1 acre of jurisdictional area that are regulated by the USACE, CDFG, and RWQCB shall be mitigated at a 2:1 ratio, including enhancement and/or creation of wetlands or the contribution of in-lieu fees to the Santa Ana Watershed Association (SAWA) for its efforts in removal of invasive plants and restoration of off-site riparian habitat, as outlined in Mitigation Measure 3.3.6.2A. The project applicant shall obtain a Section 404 Nationwide or Individual Permit, as appropriate, from the USACE, a Section 401/Porter-Cologne Water Quality Certification from the RWQCB, and a Section 1602 Streambed Alteration Agreement from the CDFG. Offsite restoration, enhancement, and/or land purchase mitigation of jurisdictional drainage impacts will occur at an off-site location through one or more of the following: an USACE approved mitigation bank, through an in-lieu fee mitigation program, and/or land purchase and conservation.~~

Draft EIR, Section 4.5, CULTURAL AND PALEONTOLOGICAL RESOURCES

Section 4.5.6.1 Prehistoric Cultural Resources (page 4.5-6)

All of the mitigation measures were modified to better address concerns expressed by the Pechanga Band and Morongo Tribe (Letters A-4 and A-5, respectively). These changes to the Draft EIR do not result in a significant impact and has no material effect on the findings of the Draft EIR, and are shown below:

- 4.5.6.1A** Prior to the issuance of a grading permit, the Project Applicant shall provide evidence to the City of Moreno Valley that a Cultural Resources Monitoring Agreement has been secured for qualified Tribal representatives, and that a professional archaeological monitor meeting Secretary of Interior standards has been retained by the Applicant to conduct monitoring of all mass grading and trenching activities and has the authority to temporarily halt and redirect earthmoving activities in the event that suspected archaeological resources are unearthed during Project construction. The Project Archaeologist and Tribal representatives shall attend the pre-grading meeting with the City and contractors to explain and coordinate the requirements of the monitoring program.
- 4.5.6.1B** Prior to the issuance of a grading permit, the Applicant shall provide evidence to the City of Moreno Valley that appropriate Native American representative(s), Project Archaeologist, and the Tribal representative(s) shall be allowed to monitor and have received a minimum of 30 days advance notice of all mass grading and trenching activities. During grading and trenching operations, the Tribal representatives and the project archaeological monitor shall observe all mass grading and trenching activities per the Cultural Resources Monitoring Agreement. If the Tribal representatives suspect that an archaeological resource may have been unearthed, the archaeologist, in consultation with the tribal representative, shall immediately halt and redirect grading operations in a 100-foot radius around the find to allow identification and evaluation of the suspected resource. In consultation with the appropriate Native American Tribe(s), the archaeological monitor shall evaluate the suspected resource and make a determination of significance pursuant to California Public Resources Code Section 21083.2.
- 4.5.6.1C** If a significant archaeological resource(s) is discovered on the property, ground disturbing activities shall be suspended 100 feet around the resource(s). The archaeological monitor and representatives of the appropriate Native American Tribe(s), the Project Applicant, and the City Planning Division shall confer regarding mitigation of the discovered resource(s). A treatment plan and/or preservation plan shall be prepared and by the archaeological monitor and reviewed by representatives of the appropriate Native American Tribe(s), the Project Applicant, and the City Planning Division and implemented by the archaeologist to protect the identified archaeological resource(s) from damage and destruction. The landowner shall relinquish ownership of all archaeological artifacts that are of Native American origin found on the Project site to the culturally affiliated Native American tribe(s) for proper treatment and disposition. A final report containing the significance and treatment findings shall be prepared by the archaeologist and submitted to the City Planning Division, the appropriate Native American tribe(s), and the Eastern Information Center at the University of California, Riverside. All cultural material, excluding sacred, ceremonial, grave goods and human remains, collected during the grading monitoring program and from any previous archaeological studies or excavations on the project site shall be curated, as determined by the treatment plan, according to the current professional repository standards and may include the Pechanga Bands curatorial facility.

4.5.6.1D Prior to grading permit issuance, the City shall verify that the following note is included on the Grading Plan:

"If any suspected archaeological resources are discovered during ground-disturbing activities and the archaeological monitor or Tribal representatives are not present, the construction supervisor is obligated to halt work in a 100-foot radius around the find and call the project archaeologist and the Tribal representatives to the site to assess the significance of the find."

Although DEIR Section 4.5.5.2, Human Remains, concludes potential impacts of the project will be less than significant with compliance with state law, Mitigation Measure 4.5.6.1E has been added at the request of the tribe to help assure there will be no significant impacts related to the potential discovery of human remains during grading:

4.5.6.1E If human remains are encountered, California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the Riverside County Coroner has made the necessary findings as to origin. Further, pursuant to California Public Resources Code Section 5097.98(b), remains shall be left in place and free from disturbance until a final decision as to the treatment and disposition has been made by the Coroner. If the Riverside County Coroner determines the remains to be Native American, the California Native American Heritage Commission must be contacted within 24 hours. The Native American Heritage Commission must then immediately notify the "most likely descendant(s)" of receiving notification of the discovery. The most likely descendant(s) shall then make recommendations within 48 hours, and engage in consultations concerning the treatment of the remains as provided in Public Resources Code §5097.98.

Section 4.5.6.2, Paleontological Resources

The following mitigation measure was added to address general concerns expressed by the Pechanga Band and Morongo Tribe (Letters A-4 and A-5, respectively).

4.5.6.2D Prior to grading permit issuance, the City shall verify that the following note is included on the Grading Plan:

"If any suspected paleontological resources are discovered during ground-disturbing activities, the construction supervisor is obligated to halt work in a 100-foot radius around the find and call a qualified paleontologist to the site to assess the significance of the find. A qualified paleontologist shall evaluate the suspected resource. If the paleontologist determines that the find is not unique, construction shall be permitted to proceed. However, if the paleontologist determines that further information is needed to evaluate significance, the City of Moreno Valley shall be notified and a treatment plan shall be prepared and implemented in consultation with the City to protect the identified paleontological resource(s) from damage and destruction."

Draft EIR Section 4.6, HAZARDS AND HAZARDOUS MATERIALS

Section 4.6. Significant Impacts

This section did not identify any significant impacts related to hazardous materials, including past use of pesticides on the project site in the past. However, the following measure is proposed in response to comments in Letter D-4 in this regard:

4.6.6.1A Prior to issuance of a grading permit for the project, a qualified contractor shall test onsite soils for contamination by agricultural chemicals. If present in concentrations above established actionable levels or thresholds, these materials shall be removed and transported to an appropriate landfill by a licensed contractor. This measure shall be implemented to the satisfaction of the Building Division including written documentation of the disposal of any agricultural chemical residue in conformance with all applicable regulations.

Draft EIR Section 4.9, NOISE

Section 4.9.6.1 Short-Term Construction Noise Impacts (pages 4.9-26 and 4.9-27)

Mitigation Measure 4.9.6.1D was amended to be consistent with the City's Municipal Code for noise and to specify hourly limits for work nearest the existing residences. This change to the Draft EIR does not result in a significant impact and has no material effect on the findings of the Draft EIR.

4.9.6.1D. During all project site construction activities at Building 6 (i.e., closest to existing residences), the construction contractor shall limit all construction-related activities that would result in high noise levels to between the hours of 6:00 a.m. and 8:00 p.m. on weekdays and between the hours of 7:00 a.m. to 8:00 p.m. on weekends and holidays, unless written approval is obtained from the City Building Official or City Engineer for specific construction activities that must be conducted outside of the permitted time periods.

Draft EIR Section 4.11 TRANSPORTATION

Section 4.11. (page 4.11-14)

Section 4.11.6.6 Mitigation Measures (page 4.11-31)

The following text has been amended to clarify the intension of the measure. This change to the Draft EIR does not result in a significant impact and has no material effect on the findings of the Draft EIR.

4.11.6.4A Prior to issuance of a building permit Certificate of Occupancy, the project applicant shall construct pay the fair share contribution toward the following traffic improvements through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program:

- **Redlands Boulevard/SR-60 Westbound Ramps.** Install a traffic signal. This improvement is currently approved, and permitted by Caltrans. If not otherwise completed prior to project opening, the required traffic signal shall be constructed by the Applicant prior to issuance of the first Certificate of Occupancy.
- **Redlands Boulevard/Fir Avenue/Eucalyptus Avenue.** If not otherwise completed prior to project opening, prior to issuance of the first Certificate of Occupancy, the Applicant shall construct the following improvements: Install a traffic signal and ~~This improvement is listed in the City's DIF program.~~ Add a northbound left-turn lane and a southbound left-turn lane. ~~These improvements are listed in the TUMF.~~

If the improvements are constructed by others prior to the Certificate of Occupancy, the applicant shall pay its fair share towards the improvements through the City's DIF program.

Draft EIR Section 4.12, UTILITIES AND SERVICE SYSTEMS

Section 4.12.1.7 Cumulative Impacts to Solid Waste Services (page 4.12-5)

The following text has been amended to clarify the Badlands Sanitary Landfill is scheduled to close in 2024 not 2016. This change to the Draft EIR does not result in a significant impact and has no material effect on the findings of the Draft EIR.

AB 939 mandates the reduction of solid waste disposal in landfills. While the Badlands Sanitary Landfill has an estimated closure date of ~~2016~~ 2024, as previously identified, the City's waste hauler will also use other County landfills in the area (e.g., Lamb Canyon Landfill and El Sobrante Landfill). The estimated closure date of the Lamb Canyon Landfill is 2023 and the estimated closure date of the El Sobrante Landfill is 2030. With planned expansion activities of landfills in the project vicinity and projected growth rates contained within the City's General Plan EIR, sufficient landfill capacity would exist to accommodate future disposal needs through City build out in 2030. Therefore, build out of the City General Plan would not create demands for solid waste services that would exceed the capabilities of the County's waste management system. Consequently, cumulative impacts associated with solid waste within the City would be considered less than significant.

Draft EIR 4.13, GLOBAL CLIMATE CHANGE

Section 4.13.6.1 Greenhouse Gas Emissions (page 4.13-20)

The following text has been amended to clarify the intension of the measure. This change to the Draft EIR does not result in a significant impact and has no material effect on the findings of the Draft EIR.

4.13.6.1B. Prior to the issuance of building permits, the project applicant shall provide evidence to the City of Moreno Valley that the following measures have been incorporated into the design and construction of the project:

- Use of locally produced and/or manufactured building materials for at least 10 percent of the construction materials used for the project.
- Use of "Green Building Materials," such as those materials that are resource efficient, and recycled and manufactured in an environmentally friendly way, for at least 10 percent of the project.
- Limit unnecessary idling of construction equipment. A reduction in equipment idling would reduce fuel consumption, and therefore, GHG emissions.
- Maximize the use of electricity from the power grid by replacing diesel- or gasoline-powered equipment. This would reduce GHG emissions because electricity can be produced more efficiently at centralized power plants.
- Design the project building to exceed the California Building Code's (CBC) Title 24 energy standard, including, but not limited to, any combination of the following:
 - Increase insulation such that heat transfer and thermal bridging is minimized.
 - Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption.

- Incorporate ENERGY STAR or better rated windows, space heating and cooling equipment, light fixtures, appliances, or other applicable electrical equipment.
- Provide a landscape and development plan for the project that takes advantage of shade, prevailing winds, and landscaping.
- Install efficient lighting and lighting control systems. Use daylight as an integral part of the lighting systems in buildings.
- Install light-colored “cool” roof and cool pavements.
- Install energy-efficient heating and cooling systems, appliances and equipment, and control systems.
- Install solar or light-emitting diodes (LEDs) for outdoor lighting for auto parking areas.

Draft EIR 6.0, ALTERNATIVES

Section 6.5 Environmentally Superior Alternative (page 6-39)

There was a typographical error in Table 6.M under Alternative 5 for Air Quality that has been rectified below. This change to the Draft EIR does not result in a significant impact and has no material effect on the findings of the Draft EIR.

Table 6.M: Summary of Significant Environmental Impacts of the Project Alternatives

Topic	Proposed Project Impact	Impacts of Alternatives ¹					
		PP	1	2	3	4	5
Aesthetics	Scenic Vistas	S			S		
Aesthetics	Scenic Resources and Scenic Highways	S			S		
Aesthetics	Substantial degradation of the existing visual character or quality of the site and its surroundings	S			S		
Aesthetics	Cumulative Aesthetic Impacts	S			S		
Agriculture	Loss of State Designated Farmland	S		S		S	S
Agriculture	Conversion to a Non-agricultural Use	S		S		S	S
Agriculture	Cumulative Agricultural Resources	S		S		S	S
Land Use	Consistency with Regional or Local Land Use Plans, Policies, or Goals	S			S	S	
Land Use	Cumulative land use changes	S			S		
Air Quality	Construction Air Pollutant Emissions	S		S	S	S	S
Air Quality	Architectural Coating Emissions	S		S	S	S	S
Air Quality	Operational Air Pollutant Emissions	S		S	S	S	S
Air Quality	Consistency with Air Quality Management Plan	S		S	S		S
Air Quality	Cumulative Pollutant Air Emissions	S		S	S	S	S
Transportation	Opening Year (2016) with Project Level of Service	S		S	S	S	S
Transportation	Opening Year (2016) Cumulative with Project Level of Service	S		S	S	S	S
Transportation	Cumulative Traffic Impacts	S		S	S	S	S

Table 6.M: Summary of Significant Environmental Impacts of the Project Alternatives

Topic	Proposed Project Impact	Impacts of Alternatives ¹				
		PP	1	2	3	4

¹ Proposed Project (PP)
Alternative 1: No Project – No Build
Alternative 2: No Project (Tentative Tract Map 32255)
Alternative 3: Reduced Intensity
Alternative 4: Mixed Commercial/Office/Residential
Alternative 5: Off-Site Location
S = Significant

4. REDUCED INTENSITY ALTERNATIVE LESS INTENSIVE MODIFIED PLAN EVALUATION

Based on input received at the City's public hearings and after completion of the Final EIR on April 2, 2014, the applicant is proposing the City adopt the Reduced Alternative evaluated in the DEIR ([pages 6-18 through 6-24 and 6-37 through 6-40](#)). [The Reduced Intensity Alternative evaluated developing 25% less warehousing on the site \(1.7 million square feet\) compared to the Proposed Project \(2.2 million square feet\).](#) The applicant has [now proposed to develop 4 of the 6 warehouse buildings \(1.5 million square feet\), which is consistent with](#) the Reduced Intensity Alternative evaluated in DEIR Section 6.0 (1.7 million square feet). [The DEIR did not contain a specific site plan depicting the Reduced Intensity Alternative, so the applicant has prepared a conceptual site plan referred to in this analysis as the "less intensive modified plan".](#)

[The proposed less intensive modified plan is consistent with the](#) Reduced Intensity Alternative [and proposes that 84.8 acres of the site would be developed for warehousing while the remaining 38 acres](#) would remain undeveloped [at this time. The vacant land would retain](#) its existing General Plan and zoning designations (R2 and R5). This [less intensive modified plan](#) represents a net decrease in square footage of approximately 32 percent compared to the original proposed project, and a 7 percent reduction in square feet compared to the Reduced Intensity Alternative evaluated in the DEIR (see Table 4.A). The [less intensive modified plan](#) removes the two industrial buildings (Buildings 5 and 6 in the original site plan) closest to the residential homes southeast of the project site.

Warehouse buildings under the [less intensive modified plan](#) are 1,515 feet from the nearest existing residential neighborhood (southwest), and 1,636 feet from the existing neighborhood at the southeast corner. The [less intensive modified plan](#) also provides a 250-foot buffer between the nearest warehouse truck court and future residential uses. In addition, the large detention basin that was proposed at the south end of Building 6 in the original plan would be moved to near the southeast corner of Building 4 in the [less intensive modified plan](#). Approval of this modified plan would also establish a minimum 250-foot buffer from truck activity areas and future residential uses on the former location of warehouse buildings 5 and 6 under the original plan. Otherwise, the development characteristics of Buildings 1 through 4 would remain the same as those outlined and analyzed in the Draft EIR. For the purposes of this environmental analysis, the [less intensive modified plan](#) is considered equivalent to the Reduced Intensity Alternative except where noted [that impacts are less than those of the Reduced Intensity Alternative](#). The conceptual land plan for the [less intensive modified plan](#) is shown in Figure 4.2 in this section. Table 4.A presents the land uses and ITE rates of the four scenarios evaluated in the following sections.

It is important to emphasize that the [less intensive modified plan](#) would allow development of future residential uses in the southeast portion of the project site, consistent with the existing R-5 and RA-2 zoning (Parcel 5), adjacent to the existing residential neighborhood to the southeast. The modified plan also has a 250-foot setback from the project warehouses to the future residential uses, [consistent with the City's municipal code requirements](#) (i.e., use of a 250-foot buffer and a non-building easement over a portion of Parcel 5).

Table 4.A: Land Use Characteristics Evaluation Scenarios

Land Use (ITE rate) Characteristics	Land Use Scenario			
	Proposed Project	Existing Zoning	Reduced Intensity Alternative (EIR)	Less Intensive Modified Plan ¹
Warehousing (152)				
Square Footage	2,244,600	0	1,683,000	1,529,500
Gross Acres	122.8	0	90.8	84.8
Vacant Acres	0	0	32.0	(38.0)
Business Park/Business Park Mixed Use (770)				
Square Footage	0	622,000	0	0
Gross Acres	0	48.3	0	0
Multi-Family (230) Residential (R-15)				
Units	0	548	0	0
Gross Acres	0	36.5	0	0
Single Family (210) Residential (R-5 & R-2)				(Future)
Units	0	133	0	126
Gross Acres	0	38.0	0	38.0
TOTAL				
Square Feet	2,244,600	622,000	1,683,000 (-25%)	1,529,000 (-32%)
Units	0	681	0	126
Gross Acres	122.8	122.8	122.8	122.8

Source: ProLogis data and trip generation table from LSA Traffic Group, September 2014 (See FEIR Appendix F)

¹ **NOTE:** Residential units under this plan would be built at some later by a different developer with separate CEQA review. This plan is a sub-set of the Reduced Intensity Alternative from the DEIR, it is **NOT** a new alternative.

Figure 4.1 Original Site Plan

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Figure 4.2 Less Intensive Modified Plan

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It should be noted that the 38 acres of residential uses shown in Table 4.A for the less intensive modified plan are only approximate, and the actual acreage will be based on appropriate development constraints, development impact fees, and conditions of approval imposed on the property during the City's development review process of the revised parcel map and revised tentative tract map.

The following analysis is based on Section 6.3.3 of the DEIR but goes into more detail based on development details of the less intensive modified plan. Table 4.D at the end of this section summarizes the impacts of the less intensive modified plan compared to both the Proposed Project and the Reduced Intensity Alternative evaluated in the DEIR. In addition, this analysis shows what the impacts of developing the site under its existing zoning designations (i.e., with Business Park/Business Park-Mixed Use, Residential 15, Residential 5, and Residential 2 uses).

4.1 Aesthetics

- (a) **Proposed Project** – Project would introduce 6 large warehouse buildings into the area, with existing residential uses adjacent to the southeast. Impacts from loss of views and new night lighting are significant even with mitigation.
- (b) **Existing Zoning** – Development of the site under existing zoning designations would result in the alteration of the existing visual character of the site but with new residential uses adjacent to the existing residences to the southeast, and development intensity increasing from R2 next to the existing residences to more dense R5 and R15 uses to the north along Eucalyptus Avenue. This pattern would be consistent with that outlined in the existing General Plan and zoning. New development would adhere to City design and development standards for each particular land use, but would still be a substantial change from existing vacant conditions.
- (c) **Reduced Intensity Alternative** – Impacts to views and lighting are substantially reduced by eliminating 25% of development in the southeast portion of the site compared to the Proposed Project. However, impacts are still significant, similar to the Proposed Project.
Under the less intensive modified plan, impacts to views and lighting are substantially reduced by eliminating 32% of development proposed in the southeast portion of the site (Buildings 5 and 6) compared to the Proposed Project. However, impacts are still significant compared to the Proposed Project.
- (d) **Summary** - Impacts of the Reduced Intensity Alternative, including the less intensive modified plan, are substantially reduced compared to the Proposed Project, but impacts of all three are significant due to the fundamental change in character for the area from existing conditions.

4.2 Agricultural Resources

- (a) **Proposed Project** – Project would introduce 6 large warehouse buildings onto an area designated as Prime Farmland and Farmland of Local Importance. Impacts from the loss of prime agricultural lands are significant and no mitigation is available.
- (b) **Existing Zoning** – Development of the project site with urban uses would result in the conversion of Prime Farmland. Impacts associated with development of this alternative would be significant and unavoidable.
- (c) **Reduced Intensity Alternative** – Impacts to farmland would be substantially reduced by eliminating 25% of development (i.e., in the southeast portion of the site) compared to the Proposed Project. Impacts are less than significant.
Under the less intensive modified plan, impacts to farmland would be substantially reduced by eliminating 32% of proposed development (i.e., Buildings 5 and 6 in the southeast portion

of the site) compared to that planned under the Proposed Project. Agricultural impacts associated with the development of the less intensive modified plan are less than significant as no development would occur (i.e., the land would remain at least temporarily vacant) in the southeast portion of the site. However, it is likely that the southeast corner of the project site would eventually be developed with residential uses. Subsequent CEQA analysis would need to be conducted at that time regarding all impacts of that proposed residential development on approximately 38 acres (see previous Table 4.A). The loss of this agricultural land would be temporarily delayed under this development scenario.

- (d) **Summary** – Impacts of the Reduced Intensity Alternative, including the less intensive modified plan, are substantially reduced to less than significant levels compared to the Proposed Project.

4.3 Air Quality

- (a) **Proposed Project** – Project would produce operational air pollutant emissions except for SO_x above CEQA threshold limits (see Table 4.B below). Impacts from increased air quality emissions would be significant even with mitigation.
- (b) **Existing Zoning** – A similar mix of equipment would operate during earthmoving and construction activities as the Proposed Project. Peak daily construction emissions would be below SCAQMD thresholds of significance for CO, ROC, and SO_x (See Table 4.B below). Although SCAQMD regulations and project-specific mitigation measures would reduce the amount of construction emissions, impacts associated with construction emissions for NO_x remain significant and unavoidable. Although the total number of trips is increased, the volume of each operational pollutant emitted during operation the Existing General Plan would be less since there would be no diesel trucks involved. Operational emissions would continue to exceed SCAQMD significance thresholds for NO_x, CO, and ROG, but would not exceed operational thresholds for PM₁₀ and PM_{2.5}. The impacts for the Existing General Plan development to air quality would be decreased, but the long-term air quality impacts resulting from this alternative would continue to be significant and unavoidable.
- (c) **Reduced Intensity Alternative** - Impacts due to operational air pollutant emissions would be reduced by eliminating 25% of development in the southeast portion of the site compared to the Proposed Project (see Table 4.B below). However, even with a 25% reduction in air quality emissions impacts are still significant even with mitigation.

Under the less intensive modified plan, impacts due to operational air pollutant emissions would be reduced by eliminating 32% of development proposed in the southeast portion of the site (Buildings 5 and 6) compared to the Proposed Project (see Table 4.B below). However, air quality emissions are still significant even with mitigation.

- (d) **Summary** - Impacts of the Reduced Intensity Alternative, including the less intensive modified plan, are substantially reduced compared to the Proposed Project, however impacts of all three are still significant.

Table 4.B: Comparison of Operational Emissions

Source	Pollutant Emissions (lbs/day)					
	CO	ROC	NO _x	SO _x	PM ₁₀	PM _{2.5}
Proposed Project	1,801	289	2,001	3.1	370	85
Existing Zoning	850	114	230	1.2	130	11
Reduced Intensity Alternative	1,351	217	1,501	2.3	278	64
less intensive modified plan	1,225	197	1,361	2.1	252	58
SCAQMD thresholds	550	55	55	150	150	55

Source: data from DEIR Section 6.0 and extrapolated from LSA Associates, Inc., September 2014

Note: During Public Comment and Hearings many people commented on the health impacts of truck related air pollution. While there are health effects associated with exposure to diesel particulate matter (DPM), the following graphs (Figures 4.3 and 4.4) indicated that compliance with state and federal regulations will substantially reduce diesel-related emissions in the coming years. In addition, the previous Table 4.B compares operational emissions of the proposed project to development under the existing zoning, the Reduced Intensity Alternative in the EIR, and the less intensive modified plan.

Figure 4.3 Heavy Duty Truck Emissions Particulate Matter

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Figure 4.4 Heavy Duty Truck Emissions Nitrous Oxide

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4.4 Biological Resources

- (a) **Proposed Project** – Project has the potential to impact migratory bird species, 15 listed special status species (including burrowing owl), riparian/riverine habitat, and jurisdictional waters/wetlands. However, these impacts can be reduced to levels of less than significant by implementation of the recommended mitigation measures.
- (b) **Existing Zoning** – This alternative would result in grading of the entire project site. No plant species listed by the State and/or Federal government as endangered or threatened were identified on site during the field reconnaissance. Similar to the proposed project, potential impacts of site development would be reduced to less than significant levels by implementing mitigation similar to that recommended for the proposed project.
- (c) **Reduced Intensity Alternative** – Impacts to migratory birds and riparian/riverine habitat would be reduced to less than significant in this alternative compared to the proposed project due to the elimination of 25% of development in the southeast portion of the site. This alternative would still have significant impacts related to jurisdictional water/wetlands and listed species (including burrowing owl), which would be reduced to less than significant levels by mitigation measures similar to the proposed project.

Under the less intensive modified plan, impacts to biological resources would be reduced compared to the Proposed Project due to the elimination of development in the southeast corner. Like the Reduced Intensity Alternative, the less intensive modified plan would have less than significant impacts to migratory birds and riparian/riverine habitat with mitigation. In addition, recommended project mitigation would reduce impacts to jurisdictional water/wetlands and listed species (including burrowing owl) to less than significant levels.

- (d) **Summary** – The Reduced Intensity Alternative, including the less intensive modified plan, have impacts to migratory birds, riparian/riverine habitat, jurisdictional water/wetlands, and listed species (including burrowing owl) that can be mitigated to less than significant levels with implementation of recommended mitigation.

4.5 Cultural Resources

- (a) **Proposed Project** – No cultural resources have previously been detected within the project limits. However, as undetected cultural or paleontological resources could be encountered so mitigation was recommended to reduce potential impacts to less than significant levels.
- (b) **Existing Zoning** – Development would result in ground-disturbing activities affecting the entire project site, and similar archaeological and paleontological impacts would be anticipated when compared to the Proposed Project. Adherence to the archaeological and paleontological mitigation measures identified for the proposed project would reduce impacts to less than significant, and no greater impacts would occur with this alternative.
- (c) **Reduced Intensity Alternative** – Similarly to the proposed project, this alternative would include ground-disturbing activities all but 34 acres in the southeast portion of the project site. Similar archaeological and paleontological impacts would be anticipated when compared to the Proposed Project. Therefore, adherence to the archaeological and paleontological mitigation measures identified for the proposed project would reduce impacts to less than significant levels. Compared with the proposed project, no greater impact would occur with this alternative.

The development area of the less intensive modified plan is smaller than the Proposed Project, so implementation of the recommended mitigation would reduce potential impacts to less than significant levels.

- (d) **Summary** – Impacts of the Reduced Intensity Alternative, including the less intensive modified plan, are similar compared to the Proposed Project, and all three would have the same mitigation which would reduce potential impacts to less than significant levels.

4.6 Forest Resources

- (a) **Proposed Project** – The City of Moreno Valley's General Plan does not identify any forest resources on the project site or surrounding area, and the project site is currently vacant, although it did support citrus trees in the past. Therefore, no significant impact would occur in relation to forest resources.
- (b) **Existing Zoning** – The City of Moreno Valley's General Plan does not identify any forest resources on the project site or surrounding area. Therefore, there are no significant impacts under the any development scenario for the project site.
- (c) **Reduced Intensity Alternative** – Although the Reduced Intensity Alternative project site is smaller than the Proposed Project site, the site is still in the same location. Therefore, like the Proposed Project, no significant impacts related to forest resources would occur.

Under the less intensive modified plan, development would be located on the same site as the Proposed Project. Therefore, no significant impacts to forest resources would occur.
- (d) **Summary** - Impacts of the Reduced Intensity Alternative, including the less intensive modified plan, are the same as the Proposed Project. No reduction in impact would occur.

4.7 Geology and Soils

- (a) **Proposed Project** – The Proposed Project, like all of southern California, would be subject to moderate to severe ground shaking. However, with adherence to UBC, the California Building Code, and City design and engineering standards. Impacts associated with this issue would be considered less than significant.
- (b) **Existing Zoning** – Development of the Existing General Plan would have geologic and soil-related impacts since the project site is located in a seismically active area and is subject to ground shaking resulting from activity on local and regional faults. Development of the proposed project site would be required to adhere to UBC, the California Building Code, and City design and engineering standards. Impacts associated with this issue would be considered less than significant.
- (c) **Reduced Intensity Alternative** – Although the Reduced Intensity Alternative project site is smaller than the proposed project site, the site is still in the same location. Therefore, like the Proposed Project adherence to UBC, the California Building Code, and City design and engineering standards will reduce significant impacts to less than significant levels.

The less intensive modified plan is the same site as the Proposed Project. Therefore, no significant impacts related to ground shaking would occur with adherence to UBC, the California Building Code, and City design and engineering standards.
- (d) **Summary** - Impacts of the Reduced Intensity Alternative, including the less intensive modified plan, are essentially the same as the Proposed Project. No reduction in impact would occur.

4.8 Global Climate Change

- (a) **Proposed Project** – Project would produce greenhouse gas emissions above CEQA threshold limits. Impacts from increased greenhouse gas emissions would be significant and require mitigation. The recommended measures would reduce potential climate change impacts to less than significant levels.
- (b) **Existing Zoning** – GHG emissions would increase as development under existing zoning designations would measurably increase the number of daily trips made to the site. Implementation of the mitigation recommended for the proposed project, or similar measures applicable to residential projects, could help keep these emissions at less than significant

levels, but this impact would need to be evaluated in a subsequent CEQA document when specific development was proposed.

- (c) **Reduced Intensity Alternative** – Impacts due to greenhouse gas emissions would be reduced by eliminating 25% of development in the southeast portion of the site compared to the Proposed Project. However, even with a 25% reduction in air quality emissions impacts are still significant and require mitigation measures similar to those recommended for the proposed project which would reduce impacts to less than significant levels.

Under the less intensive modified plan, impacts due to greenhouse gas emissions would be reduced by eliminating 32% of development planned in the southeast portion of the site (Buildings 5 and 6) compared to the Proposed Project. GHG emissions would require the recommended project mitigation to reduce levels to less than significant levels.

- (d) **Summary** - Impacts of the Reduced Intensity Alternative, including the less intensive modified plan, are substantially reduced compared to the Proposed Project, but implementation of the required project mitigation would reduce GHG emission and climate change impacts to less than significant levels for all the other development scenarios.

4.9 Hazards and Hazardous Materials

- (a) **Proposed Project** – The Proposed Project would result in the on-site handling of hazardous substances, both during project construction and operation. However, adherence to existing regulations related to the handling and transport of potentially hazardous materials during construction and operation would reduce impacts to less than significant levels.
- (b) **Existing Zoning** – Development of the site according to existing zoning designations would result in the on-site handling of hazardous substances, both during project construction and operation. All development in the City is required to adhere to existing local, State, and Federal regulations pertaining to hazardous materials, therefore, impacts associated with hazards and hazardous materials under this alternative would be reduced in magnitude and would remain at less than significant levels.
- (c) **Reduced Intensity Alternative** – Because the Reduced Intensity Alternative would construct fewer warehouse uses, impacts associated with the transport or use of hazardous materials or potential upsets or accidents may be reduced in magnitude due to the reduced quantities of hazardous materials that would be present on the site. Similar to the Proposed Project, the Reduced Intensity Alternative would be required to adhere to applicable local, State, and Federal standards associated with hazards and hazardous materials. Impacts of the Reduced Intensity Alternative would remain at less than significant levels, similar to the Proposed Project.

Under the less intensive modified plan, impacts related to hazardous materials would be further reduced compared to the Reduced Intensity Alternative. In addition, like all projects in the City, the less intensive modified plan would be required to adhere to applicable local, State, and Federal standards associated with hazards and hazardous materials. The Reduced Intensity Alternative would remain less than significant, similar to the Proposed Project.

- (d) **Summary** – Impacts of the Reduced Intensity Alternative, including the less intensive modified plan, are reduced compared to the Proposed Project, however impacts of all three are still less than significant with implementation of the recommended mitigation.

4.10 Hydrology and Water Quality

- (a) **Proposed Project** – The Project would modify existing on-site pattern of drainage and would require the installation of drainage improvements that may include detention/retention basins, connected to existing in-street drainage features, on-site storm drains, and other features. The project proposes three basins south of building 2 north of Eucalyptus Avenue and a basin south of buildings 5 and 6. With adherence to required local, State, and Federal policies pertaining to surface and groundwater resources, NPDES requirements, SWPPP, BMPs, and preparation of a WQMP impacts related to hydrology and water quality would be less than significant.
- (b) **Existing Zoning** – Development of the site under existing zoning designations would require the modification of the existing on-site pattern of drainage and would require the installation of drainage improvements that may include detention/retention basins, connection to existing in-street drainage features, on-site storm drains, and other features. The extent of the impermeable surfaces (parking area) would be similar to the project so it would have similar environmental impacts to the Proposed Project. All local, State, and Federal policies and regulations pertaining to surface water and groundwater resources would remain in effect under the existing zoning. Any development of the site has the potential to affect water quality due to sedimentation and erosion, runoff from paved surfaces, and contamination caused by a mixture of sediment, debris, and other contaminants. However, construction of any onsite land uses would be required to follow applicable NPDES requirements, including the preparation of and adherence to an SWPPP and BMPs. A standard condition with any such development would be the preparation and implementation of a WQMP, which would effectively mitigate post-construction water quality impacts from the developed area. Similar to the Proposed Project, potential impacts related to hydrology and water quality would be less than significant.
- (c) **Reduced Intensity Alternative** – Due to the smaller development area of the Reduced Intensity Alternative, this scenario would have a reduced impact on the project site compared to the Proposed Project. However, development of this alternative would still require the modification of the existing onsite pattern of drainage. Adherence with required local, State, and Federal policies pertaining to surface and groundwater resources, NPDES requirements, SWPPP, BMPs, and preparation of a WQMP would reduce impacts to less than significant levels.

Similar to the Reduced Intensity Alternative, the **less intensive modified plan** would reduce impacts to the project site **by not constructing** buildings 5 and 6 **proposed** in the southeast corner. However, this project would still require the installation of drainage improvements that may include detention/retention basins, connection to existing in-street drainage features, on-site storm drains, and other features. The **less intensive modified plan** proposes three basins south of Building 2 above Eucalyptus Avenue, similar to the proposed project, a small additional basin south of Building 1, and a basin east of Building 4. Similar to the Proposed Project the **less intensive modified plan** would be required to adhere to local, State, and Federal policies pertaining to surface and groundwater resources, NPDES requirements, SWPPP, BMPs, and preparation of a WQMP. Impacts would be less than significant.

- (d) **Summary** – Impacts of the Reduced Intensity Alternative, including the **less intensive modified plan**, are reduced compared to the Proposed Project, however impacts of all three are still less than significant.

4.11 Land Use and Planning

- (a) **Proposed Project** – The project would require a General Plan Amendment that would change the General Plan designations of the project site from Residential to Business Park and an amendment to the Circulation Element of the General Plan. A Zone Change from Business Park (BP), Multi-Family Residential (R-15), Suburban Residential (R-5), and

Residential Agriculture (RA-2) to Light Industrial for the project site would also be required. In addition, the Proposed Project would be inconsistent with regional projections and the City's Housing Element. Due to the lack of feasible mitigation this is a significant and unavoidable impact.

- (b) **Existing Zoning** – Development of this alternative would not require a General Plan Amendment for the residential uses or business park uses as these uses are allowed under the existing land use designations. However, the business park component of this alternative would require a change of zone to allow the construction of buildings greater than 50,000 square feet. This alternative would comply with applicable provisions of local and regional plans (e.g., Water Quality Control Plan and Air Quality Management Plan). Compliance with applicable City policies related to development within the project site would ensure that on-site alternative uses would be compatible with existing development in the project area. However, since the development envisioned under this Existing General Plan has already been tentatively approved by the City, this alternative would not require a General Plan Amendment. Therefore, land use impacts associated with this scenario would be reduced to less than significant levels. This alternative would also be fully consistent with the City's Housing Element regarding future sites for affordable housing (i.e., R-15 parcels).
- (c) **Reduced Intensity Alternative** – The Reduced Intensity Alternative would require the same General Plan Amendment and Zone Changes excluding the 32 acres in the southeastern corner that would be used as a buffer for the existing residences to the southeast (see previous Table 4.A). This would reduce potential land use impacts associated with the GPA and Zone Change. However, the Reduced Intensity Alternative would still be inconsistent with regional projections and the City's Housing Element. Similar to the Proposed Project, due to the lack of feasible mitigation this is a significant and unavoidable impact.

The **less intensive modified plan** would be similar to the proposed project and Reduced Intensity Alternative in that it would require the same GPA and Zone Changes. Similar to the Reduced Intensity Alternative the southeast corner of the site would have a 250 foot buffer from any future residential uses, reducing potential land use impacts associated with the GPA and Zone Change. This alternative would leave 38 acres in the southeastern corner of the property temporarily vacant which would act as a buffer for the existing residences to the southeast (see previous Table 4.A). It is expected that this vacant land would eventually be developed with residential uses consistent with the existing General Plan and zoning. Similar to the Proposed Project and the Reduced Intensity Alternative, the **less intensive modified plan** is inconsistent with regional projections and the City's Housing Element. Therefore, impacts are significant and unavoidable.

- (d) **Summary** – Impacts of the Reduced Intensity Alternative, including the **less intensive modified plan**, are substantially reduced compared to the Proposed Project, however impacts of all three are still significant and unavoidable.

4.12 Mineral Resources

- (a) **Proposed Project** – The project site is not identified as a locally important mineral resource recovery site. Therefore, no impact related to mineral resources would occur.
- (b) **Existing Zoning** – Development of the project site with any build scenario would not result in the loss of or reduce the availability of mineral resources or the resource base from which they would be derived. No impact to mineral resources would occur.
- (c) **Reduced Intensity Alternative** – Although the Reduced Intensity Alternative project site is smaller than the Proposed Project site, the site is still in the same location. Therefore, like the proposed project no significant impacts related to mineral resources would occur.

The **less intensive modified plan** is also located on the same site as the Proposed Project. Therefore, no impact related to mineral resources would occur.

- (d) **Summary** – Impacts of the Reduced Intensity Alternative, including the less intensive modified plan, are reduced compared to the Proposed Project, however all three are located on the same site and therefore have less than significant impacts on mineral resources.

4.13 Noise

- (a) **Proposed Project** – Project would produce construction noise levels that would require mitigation measures to reduce short-term noise impacts to levels of less than significant. However, project-related traffic noise would not be perceptible and therefore is considered a less than significant impact.
- (b) **Existing Zoning** – Development of the site under existing zoning designations would require the implementation of mitigation measures to reduce construction noise impacts to less than significant levels. The short-term noise impacts resulting from project construction and stationary noise impacts associated with the operation of the shopping center would be similar and remain less than significant with mitigation incorporated.

The increase in project-related traffic for this scenario would result in an incremental increase in traffic noise which increases the overall mobile source noise impact. Parking lot noise, mechanical ventilation noise, and noise from the loading docks would still occur under this alternative. In addition, the uses envisioned under the Existing General Plan would increase the number (i.e., more commercial buildings) and extent of noise sources but would still have noise approaching levels below significant levels. Therefore, project-related traffic noise would not be perceptible and therefore is considered a less than significant impact.

- (c) **Reduced Intensity Alternative** – Similar to the Proposed Project, the Reduced Intensity Alternative would have short-term construction noise impacts that would be mitigated to less than significant levels. Because the alternative is smaller than the Proposed Project it would generate less traffic and thereby less traffic-related noise. However, like the Proposed Project, noise impacts of this alternative would be less than significant.

Due to its reduced development footprint, noise impacts on sensitive receptors would be greatly reduced under the less intensive modified plan. If Buildings 5 and 6 are not constructed, the nearest sensitive receptors are 1,515 feet from the nearest warehouse. However, mitigation will still be required to further reduce construction noise impacts. Similar to the Proposed Project, operational noise impacts would be less than significant under this alternative and would still generate traffic onto surrounding streets, with a resulting increase in noise levels.

- (d) **Summary** – Impacts of the Reduced Intensity Alternative, including the less intensive modified plan, are substantially reduced compared to the Proposed Project, however construction noise impacts of all three are still less than significant with mitigation.

4.14 Population and Housing

- (a) **Proposed Project** – The proposed project would generate up to 1,532 job opportunities. The new employment opportunities resulting from development of the proposed warehouse uses would improve the City's current jobs-to-housing ratio by providing jobs to local residents. As the jobs would likely be filled by local residents the Proposed Project will not significantly increase the City's population. In addition, the Proposed Project will not displace housing or people.
- (b) **Existing Zoning** – Development under existing zoning designations would result in the development of business park uses making it difficult to conclude if or how many persons from outside of the area may be required to relocate to Moreno Valley to fill positions in the business park. Therefore, it is not possible to determine if this scenario would result in a

population increase in the City. However, the development of single-family and multi-family residential units would result in a direct increase to the existing population, consistent with the City's Housing Element. Potential impacts of this development scenario related to population and housing would be less than significant.

- (c) **Reduced Intensity Alternative** – The Reduced Intensity Alternative would generate 25% fewer jobs compared to the Proposed Project. The Reduced Intensity Alternative would be located on the same site as the Proposed Project. Therefore, the alternative would not displace housing or people.

The less intensive modified plan would generate 32% fewer jobs compared to the Proposed Project (based on the square footage reduction). The less intensive modified plan would not displace housing or people. In addition, the southeast quarter of the site would maintain its General Plan Land Use Designations and Zoning (R2 and R5), which would allow the development of future residential housing. Based on this, it is expected this alternative would have less than significant impacts on population and housing.

- (d) **Summary** – Potential impacts of the Reduced Intensity Alternative, including the less intensive modified plan, are reduced compared to the Proposed Project; however, impacts of all three are still less than significant.

4.15 Public Services

- (a) **Proposed Project** – The Project would be required to pay development impact fees for schools, police services, and fire services. The payment of development impact fees would offset any impacts to these public services that may result from the development of the Proposed Project.
- (b) **Existing Zoning** – Demands on schools, parks, other public facilities, law enforcement, and fire protection services would be greater in magnitude than what was identified for the Proposed Project, however, payment of City and School DIFs would help offset the increased demands for service, so impacts would be reduced to less than significant levels.
- (c) **Reduced Intensity Alternative** – Compared to the Proposed Project, the Reduced Intensity Alternative would result in a reduction of approximately 25 percent of proposed warehouse uses. However, the magnitude of impacts on public services would be similar to the Proposed Project (i.e., no residential development). The Reduced Intensity Alternative would be required to pay development impacts to reduce potential impacts to less than significant levels.

Compared to the Proposed Project, the less intensive modified plan would generate approximately 32% less need for public services due to having fewer proposed warehouse uses. However, like the Proposed Project and Reduced Intensity Alternative, the less intensive modified plan would have a similar magnitude or overall of impact on public services (i.e., no residential uses). The project would be required to pay development impact fees and impacts would be less than significant.

- (d) **Summary** – Impacts of the Reduced Intensity Alternative, including the less intensive modified plan, are reduced compared to the Proposed Project, however all three would have similar impacts to public services and would be required to pay development impact fees to reduce potential impacts to less than significant levels.

4.16 Recreation

- (a) **Proposed Project** – The Proposed Project does not contain any residential components. Therefore, there would be no significant increase in existing population and no increase in demand for park and recreation facilities. No impact would occur.
- (b) **Existing Zoning** – The increase in population from new housing would increase the demand for park and recreation facilities, therefore future development would be required to dedicate or provide in-lieu fees for approximately 7.24 acres of land for park uses (based on anticipated project population). The dedication of land and/or the payment of parkland fees would reduce potential recreation impacts to less than significant levels.
- (c) **Reduced Intensity Alternative** – The Reduced Intensity Alternative would not result in any increase in the City’s population (i.e., no additional housing). Therefore, this alternative would have no impacts related to parks and recreation facilities, similar to the Proposed Project.

The **less intensive modified plan** would have little or no impact to parks or recreation similar to the Reduced Intensity Alternative and the Proposed Project because none of them propose any residential units which would generate additional population. Therefore, no significant impact to parks and recreation facilities would occur.
- (d) **Summary** – Impacts of the Reduced Intensity Alternative, including the **less intensive modified plan**, are reduced compared to the Proposed Project, however, none of these scenarios propose residential uses, therefore, all three would have no impact on parks and recreation facilities.

4.17 Traffic

- (a) **Proposed Project** – The Proposed Project would cause potentially significant traffic impacts on roadway segments and intersections through deficient LOS levels (4,408 daily trips and 7,527 PCE trips). The estimated trip generation for the Proposed Project, Existing General Plan Alternative, and the **less intensive modified plan** are compared in Table 4.C below. Even with mitigation some traffic impacts would be significant and unavoidable due to certain roadway improvements not being under the jurisdiction of the City and could not be guaranteed to be in place when development would be operational.
- (b) **Existing Zoning** – Development under existing zoning designations would result in an almost three-fold increase in average daily traffic (ADT) and a 55% increase in passenger car equivalents (PCE) trips compared to the Proposed Project (see Table 4.C). This additional traffic would substantially increase traffic impacts on nearby roads and intersections, resulting in much worse levels of service (LOS) even with mitigation. Note that the use of PCE accounts for increased traffic impacts due to the larger size of trucks on roadways.

The addition of traffic volumes associated with this scenario could result in deficient LOS levels at one or more of the intersections in the project vicinity during the lifetime of the development. While significant traffic impacts may occur under this alternative, these impacts could be mitigated by payment of DIF and (County) TUMF fees as appropriate. Despite the implementation of appropriate mitigation measures, certain roadway improvements would not be under the jurisdiction of the City and cannot be guaranteed to be in place when development under existing zoning designations would occur. Therefore, traffic-related impacts would remain significant and unavoidable.
- (c) **Reduced Intensity Alternative** – This alternative would reduce traffic trip generation and traffic impacts on local roadways by approximately 25% by eliminating a quarter of the total warehouse development in the southeast portion of the site compared to the Proposed Project. However, even with this reduction in traffic trip generation, impacts are still significant even with mitigation since some roadways that need improvements are not under the control of the City.

The **less intensive modified plan** would have slightly less traffic trip generation than the Reduced Intensity Alternative because it would have slightly less square footage. The estimated trip generation for the Proposed Project, Existing General Plan Alternative, and the **less intensive modified plan** are compared in the table below (see Table 4.C), which shows the **less intensive modified plan** would generate 30% less total traffic (PCE) compared to the Proposed Project. It is important to note that, while this modified plan does not propose residential development at this time, it would leave approximately 38 acres in the southeastern portion of the project property vacant for now. At some point in the future, it is anticipated this 38 acres would be developed into 126 housing units under the R-5 and R-2 zones as outlined in the previous Table 4.A, based on 5 units per acre for the R-5 property and 2 units per acre for the R-2 land. Even with a substantial reduction in trip generation, traffic impacts of this modified plan are considered to be significant even with mitigation. In addition, like the Proposed Project, including the Reduced Intensity Alternative, certain roadway improvements are not under the jurisdiction of the City and could not be guaranteed to be in place when development would be operational.

- (d) **Summary** – Impacts of the Reduced Intensity Alternative, including the **less intensive modified plan**, are substantially reduced compared to the Proposed Project (i.e., almost 30% less), however impacts of all three are still significant and unavoidable.

It should be noted that when residential uses are **eventually** added to the vacant land of the **less intensive modified plan** (southeast corner of the property), overall traffic impacts of these land uses would be 13.8% less than those anticipated under the Proposed Project, as shown in Table 4.C.

Table 4.C: Comparison of Average Daily Vehicle Trips

Scenario	AM Peak	PM Peak	Daily Trips (ADT) ¹	Trip Total (PCE) ²	% PCE to Project
Proposed Project					
Truck Trips	133	157	1,989	5,107	
Car Trips	176	199	2,420	2,420	--
Total	309	356	4,409	7,527	
Existing Zoning³					
Truck Trips	205	185	1,129	2,845	
Car Trips	758	793	8,848	8,848	+
Total	1,894	1,860	12,188	11,693	55.3%
Reduced Intensity Alternative (from EIR)					
Truck Trips	100	118	1,491	3,830	-25.0%
Car Trips	132	149	1,815	1,815	
Total	232	267	3,306	5,645	
Less Intensive Modified Plan-Industrial Only⁴					
Truck Trips	91	107	1,337	3,428	-29.7%
Car Trips	139	156	1,864	1,864	
Total	230	263	3,201	5,292	
Less Intensive Modified Plan-Industrial + (Future) Residential⁴					
Truck Trips	91	107	1,337	3,428	-13.8%
Car Trips	234	282	3,064	3,064	
Total	325	389	4,401	6,492	

Source: LSA Associates, September 2014 based on land uses and ITE rates shown in Table 4.A (see FEIR Appendix F).

¹ Average Daily Trips (ADT)

² Passenger Car Equivalents (PCE)

³ Assumes 30 percent floor area ratio or site coverage for business park uses (i.e., total building square footage divided by the total gross site area).

⁴ **IMPORTANT NOTE:** ProLogis is proposing development of only industrial uses at this time – the industrial plus residential scenario is provided for information purposes only to show traffic generation under ultimate buildout conditions at some point in the future if the residential uses are developed on the vacant portion of the project property

4.18 Utilities and Service Systems

- (a) **Proposed Project** – The project would connect to existing utility infrastructure, require installation of water supply infrastructure, and would generate solid waste. However, the project would be required to adhere to existing requirements identified by the City and EMWD, obtain verification from the water purveyor that water is available to serve the development, and adhere to provisions of the solid waste provider of the site. These requirements would result in the project having less than significant impacts related to Utilities and Services.
- (b) **Existing Zoning** – Development under the existing zoning designations would connect to existing utility infrastructure subject to the terms and conditions of the City and EMWD. This scenario would generate approximately 226,718 gallons of wastewater per day, which is a fivefold increase over what the proposed project would generate, and would increase the wastewater treatment demand. However, adherence to existing requirements identified by the City and EMWD would result in impacts remaining at a less than significant level.

The development of the business park and various residential uses would require the installation of water supply infrastructure to serve the project site and would consume approximately 277,660 gallons of water per day, which is over three times more than what would be consumed by the Proposed Project. However, development under this scenario would be required to obtain verification from the water purveyor (EMWD) that water is available to serve the development. In the event that the amount of water required for this alternative is available, impacts associated with this issue would be less than significant. However, in the event that water is not available for the Existing General Plan, a significant impact associated with this issue would occur.

This development scenario would generate 5,158 tons of solid waste per year, which is over twice what the Proposed Project would be expected to generate. Therefore, demands on solid waste services and landfill capacity would be increased in magnitude. However, development under this scenario would also be required to adhere to the provisions of the solid waste provider that would service the project site. Even with the increase, solid waste impacts under this alternative would be expected to remain at less than significant levels.

- (c) **Reduced Intensity Alternative** – The Reduced Intensity Alternative reduces total development compared to the Proposed Project by 25%, therefore it is reasonable to conclude that demands on utilities services would also be reduced by 25%. The Reduced Intensity Alternative, like the Proposed Project, would be required to adhere to existing requirements identified by the City and EMWD, obtain verification from the water purveyor that water is available to serve the development, and adhere to provisions of the solid waste provider of the site. Like the Proposed Project, the Reduced Intensity Alternative would have less than significant impacts related to utilities.

The less intensive modified plan reduces proposed development by 32%, compared to the Proposed Project (i.e., Buildings 5 and 6 would not be constructed). Therefore it is reasonable to conclude that demands on utilities services would also be reduced by approximately 32%. The less intensive modified plan, like the Proposed Project and Reduced Intensity Alternative, would be required to adhere to existing requirements identified by the City and EMWD, obtain verification from the water purveyor that water is available to serve the development, and adhere to provisions of the solid waste provider of the site. Like the Proposed Project and the Reduced Intensity Alternative, the less intensive modified plan is expected to have less than significant impacts related to utilities.

- (d) **Summary** – Impacts of the Reduced Intensity Alternative, including the less intensive modified plan, are substantially reduced compared to the Proposed Project, however impacts of all three are less than significant.

4.19 Cumulative Impacts

- (a) **Proposed Project** – The Proposed Project would have significant cumulative impacts related to permanent conversion of farmland, long-term operational air pollutant emissions of CO, ROC, NOx, PM10, and PM2.5, and increased traffic operations on local roadways and at local intersections. There are no feasible mitigation measures to reduce impacts related to the conversion of Prime Farmland, reduce long-term air pollutant operational emissions and mitigate increased traffic; therefore cumulative impacts would remain significant and unavoidable for these topics.
- (b) **Existing Zoning** – Development under the existing zoning designations would contribute toward the permanent conversion of farmland, long-term operational air pollutant emissions, and increased traffic operations on local roadways and at local intersections. In addition, there are no mitigation measures that would reduce long-term air quality operational impacts to below the SCAQMD threshold standard and no mitigation measures that would reduce impacts associated with increased traffic in the area. Therefore, cumulative impacts associated with long-term air quality and long-term traffic would remain significant and unavoidable. This scenario would also require the development of the project site. Since there is no feasible mitigation that would reduce the cumulative impacts associated with the conversion of Prime Farmland, cumulative impacts associated with farmland conversion would remain significant and unavoidable.
- (c) **Reduced Intensity Alternative** – Similar to the Proposed Project, the Reduced Intensity Alternative would have significant cumulative impacts related to permanent conversion of farmland, long-term operational air pollutant emissions, and increased traffic operations on local roadways and at local intersections. Although cumulative impacts would have a 25% reduction, there are no feasible mitigation measures to reduce impacts related to the conversion of Prime Farmland, reduce long-term air pollutant operational emissions and mitigate increased traffic; therefore cumulative impacts would remain significant and unavoidable.

Similar to the Proposed Project and the Reduced Intensity Alternative, the **less intensive modified plan** would have significant cumulative impacts related to permanent conversion of farmland, long-term operational air pollutant emissions, and increased traffic operations on local roadways and at local intersections. Although cumulative impacts would have a 32% reduction **in planned development** compared to the Proposed Project, there are no feasible mitigation measures to reduce impacts related to the conversion of Prime Farmland, reduce long-term air pollutant operational emissions and mitigate increased traffic; therefore cumulative impacts would remain significant and unavoidable.

- (d) **Summary** – Cumulative impacts of the Reduced Intensity Alternative, including the **less intensive modified plan**, are substantially reduced compared to the Proposed Project, however, all three development scenarios contribute to some cumulative impacts.

SUMMARY

The Proposed Project has significant and unavoidable impacts related to aesthetics, agricultural resources, air quality, land use, and transportation.

The Existing Zoning would also have significant and unavoidable impacts related to agricultural resources, air quality, and transportation, but would reduce aesthetic and land use impacts to less than significant levels compared to the Proposed Project, as long as future development was consistent with the City's development standards. It is also possible the Existing Zoning would substantially increase impacts on climate change, public services, recreation, and utilities, but it is expected these impacts could be reduced to less than significant levels with mitigation.

The Reduced Intensity Alternative under the EIR, including the currently proposed **l**ess **+**ntensive **m**odified **p**lan, would still have significant impacts related to aesthetics, air quality, land use, and transportation. Due to the reduced size of the **l**ess **i**ntensive **m**odified **p**lan (32% reduction), these impacts would be substantially reduced in magnitude compared to the Proposed Project. In addition, the **l**ess **i**ntensive **m**odified **p**lan would reduce impacts to agricultural resources to less than significant levels compared to the Proposed Project, at least until the southeastern portion of the site was developed with residential uses which are expected to be consistent with existing General Plan and zoning designations.

The following Table 4.D compares environmental impacts associated with the Proposed Project, Existing General Plan Alternative, and the Less Intense Modified Plan.

Table 4.D: Comparison of Impacts of the Proposed Project, Existing Zoning, and Reduced Intensity Alternative (including the Less Intensive Modified Plan)

Environmental Issue	Proposed Project	Existing Zoning	Reduced Intensity Alternative and Less Intensive Modified Plan
Aesthetics	SIG	←LTS	← SIG
Agricultural Resources	SIG	SIG	←LTS
Air Quality	SIG	→ SIG	← SIG
Biological Resources	LTS/mit	LTS/mit	LTS/mit
Cultural Resources	LTS/mit	LTS/mit	LTS/mit
Forest Resources	NI	NI	NI
Geology and Soils	LTS	LTS	LTS
Global Climate Change	LTS/mit	→LTS/mit	←LTS/mit
Hazards and Hazardous Materials	LTS/mit	LTS/mit	LTS/mit
Hydrology and Water Quality	LTS/mit	LTS/mit	LTS/mit
Land Use and Planning	SIG	←LTS	← SIG
Mineral Resources	NI	NI	NI
Noise	LTS/mit	LTS/mit	←LTS/mit
Population and Housing	LTS	→LTS	←LTS
Public Services	LTS	→LTS	←LTS
Recreation and Parks	LTS	→LTS/mit	=
Transportation and Traffic	SIG	→ SIG	← SIG
Utilities and Service Systems	LTS	→LTS	←LTS

Impact Abbreviations

- NI: No Impact
- LTS: Less than Significant Impact
- LTS/mit: Less than Significant Impact with Mitigation
- SIG: Significant Impact with or without Mitigation

Project Alternatives

- Compared with the proposed project, the level of the impact is increased.
- ← Compared with the proposed project, the level of the impact is reduced.
- + Compared with the proposed project, a new impact has been identified.
- Compared with the proposed project, an impact has been eliminated.
- ←SIG Compared with the proposed project, the level of the impact is reduced, yet still significant.

5. MITIGATION MONITORING AND REPORTING PROGRAM

5.1 INTRODUCTION

This Mitigation Monitoring and Reporting Program has been prepared for use in implementing mitigation for the:

ProLogis Eucalyptus Industrial Park

The program has been prepared in compliance with State law and the Environmental Impact Report (EIR) (State Clearinghouse No. 2008021002) prepared for the project by the City of Moreno Valley.

The California Environmental Quality Act (CEQA) requires adoption of a reporting or monitoring program for those measures placed on a project to mitigate or avoid adverse effects on the environment (Public Resource Code Section 21081.6). The law states that the reporting or monitoring program shall be designed to ensure compliance during project implementation.

The monitoring program contains the following elements:

- 1) The mitigation measures are recorded with the action and procedure necessary to ensure compliance. In some instances, one action may be used to verify implementation of several mitigation measures.
- 2) A procedure for compliance and verification has been outlined for each action necessary. This procedure designates who will take action, what action will be taken and when, and to whom and when compliance will be reported.
- 3) The program has been designed to be flexible. As monitoring progresses, changes to compliance procedures may be necessary based upon recommendations by those responsible for the program. As changes are made, new monitoring compliance procedures and records will be developed and incorporated into the program.

This Mitigation Monitoring and Reporting Program includes mitigation identified in the Final EIR.

5.2 MITIGATION MONITORING AND RESPONSIBILITIES

As the Lead Agency, the City of Moreno Valley is responsible for ensuring full compliance with the mitigation measures adopted for the proposed project. The City will monitor and report on all mitigation activities. Mitigation measures will be implemented at different stages of development throughout the project area. In this regard, the responsibilities for implementation have been assigned to the Applicant, Contractor, or a combination thereof. If during the course of project implementation, any of the mitigation measures identified herein cannot be successfully implemented, the City shall be immediately informed, and the City will then inform any affected responsible agencies. The City, in conjunction with any affected responsible agencies, will then determine if modification to the project is required and/or whether alternative mitigation is appropriate.

5.3 MITIGATION MONITORING AND REPORTING PROGRAM CHECKLIST

Project File Name: Eucalyptus Industrial Park

Applicant:

Prologis

Date:

September 10, 2014

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
4.3 AIR QUALITY						
4.3.6.2A. Prior to the issuance of a grading permit, the project developer shall require by contract specifications that contractors shall place construction equipment staging areas at least 200 feet away from sensitive receptors. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the City.	City of Moreno Valley Engineering and Building and Safety Planning Division	Once prior to Grading and once during grading and construction operations.	Prior to Issuance of Grading Permit	Review of construction documents and on-site inspection		Withhold Grading Permit or Issuance of a Stop Work Order
4.3.6.2B Prior to the issuance of a grading permit, the project developer shall require by contract specifications that contractors shall utilize power sources (e.g., power poles) or clean-fuel (e.g., fuel other than diesel or gasoline) generators where feasible. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the City.	City of Moreno Valley Engineering and Building and Safety Planning Division	Once prior to Grading	Prior to Issuance of Grading Permit	Review of construction documents and on-site inspection		Withhold Grading Permit or Issuance of a Stop Work Order
4.3.6.2C Prior to the issuance of a grading permit, the project developer shall require by contract specifications that contractors shall utilize California Air Resources Board (CARB) Tier III Certified equipment or better during the rough/mass grading phase for the following pieces of equipment: rubber-tired dozers and scrapers. Contract specifications shall be included in the	City of Moreno Valley Engineering and Building and Safety Planning Division	Once prior to Grading	Prior to Issuance of Grading Permit	Review of construction documents and on-site inspection		Withhold Grading Permit

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Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non- Compliance
<p>proposed project construction documents, which shall be reviewed by the City.</p> <p>Project start to December 31, 2014: All off-road diesel-powered construction equipment greater than 50 horsepower shall meet Tier 3 off-road emission standards. In addition, all construction equipment shall be outfitted with Best Available Control Technology (BACT) devices certified by CARB. Any emission control devices used by the contractor shall achieve emission reductions that are no less than what would be achieved by a Level 3 diesel emission control strategy for a similarly sized engine as defined by CARB regulations.</p> <p>Post January 1, 2015: All off-road diesel-powered construction equipment greater than 50 horsepower shall meet Tier 4 emission standards, where available. In addition, all construction equipment shall be outfitted with Best Available Control Technology (BACT) devices certified by CARB. Any emission control devices used by the contractor shall achieve emission reductions that are no less than what would be achieved by a Level 3 diesel emission control strategy for a similarly sized engine as defined by CARB regulations.</p> <p>A copy of each unit's certified tier specifications, BACT documentation, and CARB or SCAQMD operating permit shall be provided at the time of mobilization of each applicable unit of equipment.</p>						

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non- Compliance
4.3.6.2D All clearing, grading, earthmoving, or excavation activities shall cease when winds (as instantaneous gusts) exceed 25 mph per SCAQMD guidelines in order to limit fugitive dust emissions. On-site truck idling shall be prohibited in excess of five minutes.	City of Moreno Valley Engineering and Building and Safety Planning Division	Ongoing throughout construction	During grading	Review of construction documents and on- site inspection		Issuance of a Stop Work Order
4.3.6.2E The contractor shall ensure that all disturbed unpaved roads and disturbed areas within the project are watered at least three times daily during dry weather. Watering, with complete coverage of disturbed areas, shall occur at least three times a day, preferably in the mid-morning, afternoon, and after work is done for the day.	City of Moreno Valley Engineering and Building and Safety Planning Division	Ongoing throughout construction	During Construction	On-site inspection		Issuance of a Stop Work Order
4.3.6.2F The contractor shall ensure that traffic speeds on unpaved roads and project site areas are reduced to 15 miles per hour or less to reduce PM ₁₀ and PM _{2.5} fugitive dust haul road emissions. Speed limit signs (15 mph maximum) shall be posted at entry points to the project site, and along any unpaved roads providing access to or within the project site and/or any unpaved designated on-site travel routes.	City of Moreno Valley Engineering and Building and Safety Planning Division	Ongoing throughout construction	During Construction	On-site inspection		Issuance of a Stop Work Order
4.3.6.2G Groundcover shall be replaced, and/or non-toxic soil stabilizers shall be applied (according to manufacturers' specifications) to any inactive construction areas (previously graded areas inactive for ten days or more).	City of Moreno Valley Engineering and Building and Safety Planning Division	Ongoing throughout construction	During Construction	On-site inspection		Issuance of a Stop Work Order

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Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
4.3.6.2H The contractor shall minimize pollutant emissions by maintaining equipment engines in good condition and in proper tune according to manufacturer's specifications and by not allowing construction equipment to be left idling for more than five minutes (per California law).	City of Moreno Valley Engineering and Building and Safety	Ongoing throughout construction	During Construction	On-site inspection		Issuance of a Stop Work Order
4.3.6.2I The contractor shall ensure use of low-sulfur diesel fuel in construction equipment as required by the California Air Resources Board (CARB) (diesel fuel with sulfur content of 15 ppm by weight or less).	City of Moreno Valley Engineering and Building and Safety	Ongoing throughout construction	During Construction	On-site inspection		Issuance of a Stop Work Order
4.3.6.2J. Grading plans, construction specifications and bid documents shall also include the following requirements: <ul style="list-style-type: none"> Off-road construction equipment shall utilize alternative fuels where feasible e.g., biodiesel fuel (a minimum of B20), natural gas (CNG), liquefied natural gas (LNG), propane, except for equipment where use of such fuels would void the equipment warranty; Gravel pads shall be provided at all access points to prevent tracking of mud onto public roads; Install and maintain trackout control devices at all access points where paved and unpaved access or travel routes intersect; The contractor or builder shall 	City of Moreno Valley Engineering and Building and Safety Planning Division	Review plans, specifications, and bid documents prior to grading; conduct site inspections during construction operations.	Prior to Issuance of Grading Permit	Review of construction documents and on-site inspection		Withhold Grading Permit or Issuance of a Stop Work Order

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non- Compliance
<p>designate a person or person(s) to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust off site;</p> <ul style="list-style-type: none"> • The contractor or builder shall post a publicly visible sign with the telephone number and person to contact regarding dust complaints. The contact person shall take corrective action within 24 hours; • High-pressure injectors shall be provided on diesel construction equipment if available; • Engine size of construction equipment shall be limited to the minimum practical size; • Substitute gasoline-powered for diesel powered construction equipment where gasoline powered equipment is available; • Use electric construction equipment where it is practical to use such equipment; • Install catalytic converters on gasoline-powered equipment where this type of equipment is available; • Ride-sharing program for the construction crew shall be supported by contractor(s) via incentives or other inducement; • Documentation shall be provided to the City of Moreno Valley indicating 						

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Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
<p>that construction workers have been encouraged to carpool or otherwise reduce VMT to the greatest extent practical, including providing information on available park and ride programs;</p> <ul style="list-style-type: none"> Lunch vendor services shall be allowed on site during construction to minimize the need for off-site vehicle trips; and All forklifts used during construction and in subsequent operation of the project shall be electric or natural gas powered. 						
<p>4.3.6.2K. Throughout project construction, a construction relations officer/community liaison, appointed by the Applicant, shall be retained on site. In coordination and cooperation with the City, the construction relations officer/community liaison shall respond to any concerns related to PM₁₀ (fugitive dust) generation or other construction-related air quality issues within 24 hours.</p>	City of Moreno Valley Engineering and Building and Safety	Ongoing throughout construction	During Construction	On-site inspection		Issuance of a Stop Work Order
<p>4.3.6.2L. All project entrances shall be posted with signs which state:</p> <ul style="list-style-type: none"> Truck drivers shall turn off engines when not in use; Diesel delivery trucks servicing the project shall not idle for more than three (3) minutes; and Telephone numbers of the building facilities manager and CARB, to 	City of Moreno Valley Engineering and Building and Safety	Ongoing throughout construction	During Construction	On-site inspection		Issuance of a Stop Work Order

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Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
report violations. These measures shall be enforced by the on-site facilities manager (or equivalent).						
4.3.6.2M. During project grading and construction, the various project contractors shall adhere to the control measures listed in Tables 1.G and 1.H (attached to the MMRP).	City of Moreno Valley Engineering and Building and Safety	Throughout construction	During Construction	On-site inspection		Issuance of a Stop Work Order
4.3.6.3A Prior to the issuance of grading permits, the project applicant shall require by contract specifications that all trucks hauling dirt, sand, soil, or other loose materials are to be covered or shall maintain at least 2 feet of freeboard in accordance with the requirements of California Vehicle Code (CVC) Section 23114 (freeboard means vertical space between the top of the load and the top of the trailer).	City of Moreno Valley Engineering and Building and Safety	Throughout construction	During Construction	On-site inspection		Issuance of a Stop Work Order
4.3.6.3B. Prior to the issuance of grading permits, the project applicant shall provide evidence to the City that construction access roads shall be paved at least 100 feet onto the site from the main road.	City of Moreno Valley Engineering and Building and Safety	Throughout construction	Prior to issuance of Grading Permits	On-site inspection		Issuance of a Stop Work Order
4.3.6.3C. Prior to the issuance of grading permits, the project applicant shall require by contract specifications that all streets within the construction site shall be swept once per day if visible soil materials are carried to adjacent streets.	City of Moreno Valley Engineering and Building and Safety Planning Division	One time Review and Approval of Grading Plans Throughout construction	Prior to issuance of Grading Permits During Construction	Review and Approval of Grading Plans On-site inspection		Withhold Grading Permit Issuance of a Stop Work Order

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
<p>4.3.6.4A. The project applicant shall use “Low-Volatile Organic Compounds” paints, coatings, and solvents with a VOC content lower than required under Rule 1113 (not to exceed 150 grams/liter; 1.25 pounds/gallon). High Pressure Low Volume (HPLV) applications of paints, coatings, and solvents shall be consistent with South Coast Air Quality Management District Rule 1113. Alternatively, the project applicant shall use materials that do not require painting or are pre-painted.</p>	<p>City of Moreno Valley Engineering and Building and Safety Planning Division</p>	<p>Throughout construction</p>	<p>During Construction</p>	<p>On-site inspection</p>		<p>Issuance of a Stop Work Order</p>
<p>4.3.6.5B. Prior to issuance of building permits, the project applicant shall provide evidence to the City that energy-efficient and low-emission methods and features of building construction shall be incorporated into the project design. These methods and features may include (but are not limited to) the following:</p> <ul style="list-style-type: none"> o Construction of buildings that exceed statewide energy requirements beyond Construction of buildings that exceed statewide energy requirements beyond 10 percent of that identified in Title 24, Part 6 Energy Efficiency Standards: o Use of low-emissions water heaters; o Use of central water-heating systems; o Use of energy-efficient appliances; o Use of increased insulation; o Use of automated controls for air 	<p>City of Moreno Valley Engineering and Building and Safety and Planning Division</p>	<p>Prior to building and during construction operations.</p>	<p>Prior to Issuance of Building Permit</p>	<p>Review of construction documents and on-site inspection</p>		<p>Withhold Grading Permit or Issuance of a Stop Work Order</p>

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Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non- Compliance
conditioners; <ul style="list-style-type: none"> ○ Use of energy-efficient parking lot lighting; and ○ Use of lighting controls and energy-efficient lighting. • Utilize low-VOC interior and exterior coatings during project repainting. • Provide on-site improvements such as sidewalks or pedestrian walkways to promote pedestrian activity and reduce the number of vehicle trips. • Installation of skylights and energy-efficient lighting that exceeds California Title 24 standards where feasible, including electronic dimming ballasts and computer-controlled daylight sensors in the buildings. • Shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and building shall be planted at the proposed project site. These strategies will minimize the heat island effect and thereby reduce the amount of air conditioning required. • Strategies to be considered include fans to assist natural ventilation, centralized water and space conditioning systems, high efficiency individual heating and cooling units, and automatic setback thermostats. • Reduction of energy demand associated with potable water conveyance through the following 						

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
methods: <ul style="list-style-type: none"> ○ Incorporating drought-tolerant plants into the landscaping palette; and ○ Use of water-efficient irrigation techniques. • Energy-efficient low-pressure sodium parking lot lights or equivalent as determined by the City shall be used; • Buildings shall be oriented north-south where feasible; • Implement an on-site circulation plan in parking lots to reduce vehicle queuing; • Develop a trip reduction plan to achieve 1.5 average vehicle ridership (AVR) for businesses with fewer than 250 employees or multi-tenant worksites; • Include bicycle parking facilities such as bicycle lockers and racks; • Include showers for bicycling employees use; and • Construct on-site pedestrian facility improvements such as building access that is physically separated from street and parking lot traffic and walk paths. 						
4.3.6.6A Prior to issuance of the first building permit, building and site plan designs shall ensure that the project's energy efficiencies surpass applicable 2008 California Title 24, Part 6 Energy Efficiency Standards by a minimum of 10 percent until January 1, 2014. For building permits issued after that date,	City of Moreno Valley Building and Safety Planning Division	Prior to Construction (once)	Prior to Issuance of Building Permits	Review of building plans and on-site inspection		Withhold Building Permits

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non- Compliance
<p>new state energy standards require a 20 percent reduction from 2008 Title 24, Part 6 Energy Efficiency Standards. Verification of increased energy efficiencies shall be documented in Title 24 Compliance Reports provided by the Applicant, and reviewed and approved by the City. The following design features shall be used to fulfill this requirement:</p> <ul style="list-style-type: none"> • Buildings shall exceed California Title 24 Energy Efficiency performance standards for water heating and space heating and cooling, as deemed acceptable by the City. • Increase in insulation such that heat transfer and thermal bridging is minimized. • Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption. • Incorporate dual-paned or other energy efficient windows. • Incorporate energy efficient space heating and cooling equipment. • Interior and exterior energy efficient lighting which exceeds the California Title 24 Energy Efficiency performance standards shall be installed, as deemed acceptable by the City. Automatic devices to turn off lights when they are not needed shall be implemented. 						

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Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
<ul style="list-style-type: none"> • To the extent that they are compatible with landscaping guidelines established by the City, shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and buildings shall be planted at the project site. • Paint and surface color palette for the project shall emphasize light and off-white colors which reflect heat away from the buildings. • All buildings shall be designed to accommodate renewable energy sources, such as photovoltaic solar electricity systems, appropriate to their architectural design. • To reduce energy demand associated with potable water conveyance, the project shall implement the following: <ul style="list-style-type: none"> ○ Landscaping palette emphasizing drought-tolerant plants; ○ Use of water-efficient irrigation techniques; and, ○ U.S. EPA Certified WaterSense labeled for equivalent faucets, high-efficiency toilets (HETs), and water-conserving shower heads. • The project shall provide secure, weather-protected, on-site bicycle 						

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Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non- Compliance
<p>storage/parking.</p> <ul style="list-style-type: none"> • The project shall provide on-site showers (one for males and one for females). Lockers for employees shall be provided. • The project will establish a Transportation Management Association (TMA). The TMA will coordinate with other TMAs within the City to encourage and coordinate carpooling among building occupants. The TMA will advertise its services to building occupants, and offer transit and/or other incentives to reduce greenhouse gas (GHG) emissions. A plan will be submitted by the TMA to the City within two months of project completion that outlines the measures implemented by the TMA, as well as contact information. • The project shall provide preferential parking for carpools and vanpools. Locations and configurations of proposed preferential parking for carpools and vanpools are subject to review and approval by the City. Prior to final site plan approval, preferential parking for carpools and vanpools shall be delineated on the project site plan. • The project shall provide at least two electric vehicle charging stations. Locations and configurations of proposed charging stations are 						

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
<p>subject to review and approval by the City. Prior to issuance of the first building permit, stub outs for charging stations shall be indicated on the project building plan.</p> <ul style="list-style-type: none"> • Lease/purchase documents shall identify that tenants are encouraged to promote the following: <ul style="list-style-type: none"> ○ Implementation of compressed workweek schedules. ○ SmartWay partnership; ○ Achievement of at least 20 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of consolidated trips carried by SmartWay carriers until it reaches a minimum of 90 percent of all long-haul trips carried by SmartWay 1.0 or greater carriers. ○ Achievement of at least 15 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of long-haul trips carried by SmartWay carriers until it reaches a minimum of 85 percent of all consolidator trips carried by SmartWay 1.0 or greater carriers. ○ Use of fleet vehicles conforming 						

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non- Compliance
<p>to 2010 air quality standards or better.</p> <ul style="list-style-type: none"> ○ Installation of catalytic converters on gasoline-powered equipment. ○ Inclusion of electric powered and/or compressed natural gas fueled trucks and/or vehicles in fleets. ○ Establishment and use of carpool/vanpool programs, complemented by parking fees for single-occupancy vehicles. ○ Provision of preferential parking for EV and CNG vehicles. ○ Use of electrical equipment (instead of gasoline-powered equipment) for landscape maintenance. ○ Use of electric (instead of diesel or gasoline-powered) yard trucks. ○ Use of SmartWay 1.25 rated trucks. ○ Each facility operator shall provide regular sweeping of onsite parking and drive areas. ○ Each facility operator shall maintain a log of all trucks entering the facility to ensure that, on average, the daily truck fleet meets the quantities and emissions standards listed in the 						

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<p>Draft EIR. This log shall be available for inspection by City staff at any time.</p> <ul style="list-style-type: none"> o Each facility operator shall prohibit all vehicles from idling in excess of five minutes in all onsite areas. o Each facility operator shall ensure that onsite staff in charge of keeping the daily log and monitoring for excess idling will be trained and certified in diesel health effects and technologies, such as by requiring attendance at CARB-approved courses. o Each facility operator upon occupancy that do not already operate 2007 and newer trucks shall in good faith apply for funding to replace or retrofit their trucks such as Carl Moyer, VIP, Prop 1B or similar funds. Should funds be awarded, the tenant shall be required to accept and use them. 						
4.4 BIOLOGICAL RESOURCES						
<p>4.4.6.1A. If tree removal or clearing and grubbing activities must take place during the general nesting season (February 1 through August 31), a nesting bird survey shall be conducted within seven (7) days prior to any vegetation disturbance activities. If passerine birds are found to be nesting or there is evidence of nesting behavior inside the impact area, an</p>	City of Moreno Valley Planning Division	Prior to grading and periodic site inspections during grading	Prior to Issuance of Grading Permit	Review of Evidence that a qualified biologist has been hired and the pre-construction survey has been completed.		Withhold Grading Permit

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exclusion buffer, to be determined by the appropriate agency (e.g. the City, County, and/or CDFG), shall be set in place around the nest where no vegetation disturbance will be permitted. For raptor species, such as hawks and owls, this buffer may be as large as 500 feet. A qualified biologist shall closely monitor nests until it is determined that they are no longer active, at which time construction activity in the vicinity of nests may continue.				Review of a report of the survey findings. Periodic site inspections during construction activities during the nesting season to ensure compliance.		
4.4.6.1B. Prior to site grading, a pre-construction survey shall be required for the burrowing owl to confirm the presence/absence of this species from the site. The survey shall be conducted by a qualified biologist within 30 days prior to ground disturbance, and in accordance with MSHCP survey requirements, to avoid direct take of burrowing owls. If burrowing owls are determined to occupy the project site or immediate vicinity, the City of Moreno Valley Planning Department shall be notified and avoidance measures as identified in Mitigation Measure 4.4.6.1C , shall be implemented. Implementation of avoidance measures shall be executed pursuant to the MSHCP, the California Fish and Game Code, and the MBTA, and according the Burrowing Owl Survey Protocol and Mitigation Guidelines (California Burrowing Owl Consortium 1993) and reviewed the City of Moreno Valley, the Riverside Conservation Authority, and/or	City of Moreno Valley Planning Division	Once prior to grading	Prior to Issuance of Grading Permit	Review of Evidence that a qualified biologist has been hired and the pre-construction survey has been completed. Review of a report of the survey findings.		Withhold Grading Permit

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by the CDFG.						
4.4.6.1C. As recommended in the BUOW Survey and Mitigation Guidelines prepared by the California BUOW Consortium, no disturbance to an occupied burrow shall occur within approximately 160 feet of an occupied burrow during the non-breeding season (September 1 through January 31), or within approximately 250 feet of an occupied burrow during the breeding season (February 1 through August 31). For unavoidable impacts, passive relocation of burrowing owls shall be implemented. Passive relocation shall be conducted by a qualified biologist in accordance with procedures set forth by the MSHCP and California Burrowing Owl Consortium. Passive relocation of occupied burrows supporting a breeding pair of burrowing owls shall be conducted outside of the breeding season pursuant to the California Fish and Game Code and the MBTA.	City of Moreno Valley Planning Division	Prior to grading	Prior to Issuance of Grading Permit	Provide evidence to the City that the passive relocation plan has been approved by CDFG and USFWS.		Withhold Grading Permit
4.4.6.2A. As outlined in the project's Determination of a Biologically Equivalent or Superior Preservation (DBESP) report, the project applicant shall compensate for the temporary and permanent impact on and loss of jurisdictional waters and streambeds by providing a minimum 2:1 off-site replacement of equivalent riverine/riparian habitat prior to project construction. Offsite restoration, enhancement, and/or land purchase mitigation for the drainage impacts will occur at an offsite location through one or	City of Moreno Valley Planning Division	As outlined in the approved DBESP	Prior to Issuance of Certificate of Occupancy	Demonstrate completion of DBESP implementation measures		Withhold Grading Permit

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more of the following: an USACE approved mitigation bank, through an in lieu fee mitigation program, and/or land purchase and conservation. DFG and USFWS will need to provide concurrence that this mitigation is equivalent or superior to that proposed for impact through their review and acceptance of the DBESP.						
4.4.6.2B. Riparian/riverine resources that are temporarily impacted by project construction shall be returned to their preconstruction contours and hydroseeded, as outlined in the DBESP.	City of Moreno Valley Planning Division	Once, prior to issuance of Certificate of Occupancy	Prior to Issuance of Certificate of Occupancy	Applicant to demonstrate compliance with DBESP		Withhold Certificate of Occupancy
4.4.6.3A. The project applicant shall obtain a Section 404 Nationwide or Individual Permit, as appropriate, from the USACE, a Section 401/Porter-Cologne Water Quality Certification from the RWQCB, and a Section 1602 Streambed Alteration Agreement from the CDFG. Offsite restoration, enhancement, and/or land purchase mitigation of jurisdictional drainage impacts will occur at an off-site location through one or more of the following: an USACE approved mitigation bank, through an in-lieu fee mitigation program, and/or land purchase and conservation.	City of Moreno Valley Planning Division	Once, prior to issuance of Certificate of Occupancy	Prior to Issuance of Certificate of Occupancy	Project applicant to submit to the City a copy of the USACE Section 404 Permit and the Section 1602 Streambed Alteration Agreement from the CDFG		Withhold Certificate of Occupancy
CULTURAL RESOURCES						
4.5.6.1A Prior to the issuance of a grading permit, the Project Applicant shall provide evidence to the City of Moreno Valley that a Cultural Resources Monitoring Agreement has been secured	City of Moreno Valley Planning Division	Prior to grading	Prior to Issuance of Grading Permit	Provide evidence to the City that a qualified archaeological monitor has been		Withhold Grading Permit

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for qualified Tribal representatives, and that a professional archaeological monitor meeting Secretary of Interior standards has been retained by the Applicant to conduct monitoring of all mass grading and trenching activities and has the authority to temporarily halt and redirect earthmoving activities in the event that suspected archaeological resources are unearthed during Project construction. The Project Archaeologist and Tribal representatives shall attend the pre-grading meeting with the City and contractors to explain and coordinate the requirements of the monitoring program.				retained to oversee all ground altering activities		
4.5.6.1B Prior to the issuance of a grading permit, the Applicant shall provide evidence to the City of Moreno Valley that appropriate Native American representative(s), Project Archaeologist, and the Tribal representative(s) shall be allowed to monitor and have received a minimum of 30 days advance notice of all mass grading and trenching activities. During grading and trenching operations, the Tribal representatives and the project archaeological monitor shall observe all mass grading and trenching activities per the Cultural Resources Monitoring Agreement. If the Tribal representatives suspect that an archaeological resource may have been unearthed, the archaeologist, in consultation with the tribal representative, shall immediately halt and redirect grading operations in a 100-foot radius around the find to allow identification and evaluation of the	City of Moreno Valley Planning Division	Prior to grading and throughout ground disturbing activities.	Prior to Issuance of Grading Permit	Provide evidence to the City that a qualified archaeological monitor has been retained to oversee all ground altering activities and that the Soboba, Morongo, and Pechanga Tribes have been notified as to when ground altering activities will occur on site. The archaeological monitor shall invite one or more Native American monitors to participate in the		Withhold Grading Permit and/or Issuance of a Stop Work Order

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<p>suspected resource. In consultation with the appropriate Native American Tribe(s), the archaeological monitor shall evaluate the suspected resource and make a determination of significance pursuant to California Public Resources Code Section 21083.2.</p>				<p>monitoring program at the expense of the applicant.</p>		
<p>4.5.6.1C If a significant archaeological resource(s) is discovered on the property, ground disturbing activities shall be suspended 100 feet around the resource(s). The archaeological monitor and representatives of the appropriate Native American Tribe(s), the Project Applicant, and the City Planning Division shall confer regarding mitigation of the discovered resource(s). A treatment plan and/or preservation plan shall be prepared and by the archaeological monitor and reviewed by representatives of the appropriate Native American Tribe(s), the Project Applicant, and the City Planning Division and implemented by the archaeologist to protect the identified archaeological resource(s) from damage and destruction. The landowner shall relinquish ownership of all archaeological artifacts that are of Native American origin found on the Project site to the culturally affiliated Native American tribe(s) for proper treatment and disposition. A final report containing the significance and treatment findings shall be prepared by the archaeologist and submitted to the City Planning Division, the appropriate Native American tribe(s), and the Eastern Information Center at the</p>	<p>City of Moreno Valley Planning Division</p>	<p>Throughout ground disturbing activities.</p>	<p>On-site Inspection during construction</p>	<p>If historic resources are found the archaeologist shall provide a recommendation to the City as to how to handle and evaluate the resources.</p> <p>If archaeological resources are found the archaeologist shall notify the applicant, City and local Native American representatives.</p> <p>A written disposition of the mitigation shall be provided to the City by the archaeologist.</p>		<p>Issuance of a Stop Work Order</p>

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University of California, Riverside. All cultural material, excluding sacred, ceremonial, grave goods and human remains, collected during the grading monitoring program and from any previous archaeological studies or excavations on the project site shall be curated, as determined by the treatment plan, according to the current professional repository standards and may include the Pechanga Bands curatorial facility.						
4.5.6.1D Prior to grading permit issuance, the City shall verify that the following note is included on the Grading Plan: "If any suspected archaeological resources are discovered during ground-disturbing activities and the archaeological monitor or Tribal representatives are not present, the construction supervisor is obligated to halt work in a 100-foot radius around the find and call the project archaeologist and the Tribal representatives to the site to assess the significance of the find."	City of Moreno Valley Planning Division	Once prior to issuing permit	Prior to Issuance of Grading Permit.	Verify that plans contain specified language		Withhold Grading Permit.
4.5.6.1E If human remains are encountered, California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the Riverside County Coroner has made the necessary findings as to origin. Further, pursuant to California Public Resources Code Section 5097.98(b), remains shall be left in place and free from disturbance until a final decision as to the treatment and disposition has been made by the Coroner. If the Riverside County Coroner	City of Moreno Valley Planning Division	Ongoing during ground disturbing activities.	On-site Inspection during construction if human remains are discovered.	The contractor and/or archaeologist shall contact the applicant and City if human remains are discovered.		Issuance of a Stop Work Order

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
determines the remains to be Native American, the California Native American Heritage Commission must be contacted within 24 hours. The Native American Heritage Commission must then immediately notify the "most likely descendant(s)" of receiving notification of the discovery. The most likely descendant(s) shall then make recommendations within 48 hours, and engage in consultations concerning the treatment of the remains as provided in Public Resources Code §5097.98.						
<p>4.5.6.2A. Prior to the issuance of grading permits, the project applicant shall submit to and receive approval from the City, a Paleontological Resource Impact Mitigation Program (PRIMP). The PRIMP shall include the provision of a trained paleontological monitor during on-site soil disturbance activities. The monitoring for paleontological resources shall be conducted during the rough-grading phase of the project. In the event that paleontological resources are unearthed or discovered during excavation, Mitigation Measure 4.5.6.2C shall apply. Conversely, if no paleontological resources are unearthed or discovered on site during excavation, no additional action is required.</p>	City of Moreno Valley Planning Division	Prior to grading and on-going during ground disturbing activities.	Prior to Issuance of Grading Permit	<p>Provide evidence to the City that a qualified paleontologist has been retained, and that the paleontologist(s) shall prepare a PRIMP for City approval.</p> <p>A qualified paleontologist(s) shall be retained by the applicant to monitor during rough grading.</p> <p>A report of findings shall be submitted to the City after the finalization of construction.</p>		Withhold Grading Permit/ Issuance of a Stop Work Order

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<p>4.5.6.2B. The paleontological monitor shall be equipped to rapidly remove any large fossil specimens encountered during excavation. During monitoring, samples of soil shall be collected and processed to recover microvertebrate fossils. Processing shall include wet screen washing and microscopic examination of the residual materials to identify small vertebrate remains.</p>	City of Moreno Valley Planning Division	Prior to grading and on-going during ground disturbing activities.	Prior to Issuance of Grading Permit	<p>A qualified paleontologist(s) shall be retained by the applicant to monitor during rough grading.</p> <p>A report of findings shall be submitted to the City after the finalization of construction.</p>		Withhold Grading Permit/ Issuance of a Stop Work Order
<p>4.5.6.2C. If paleontological resources are unearthed or discovered during excavation of the project site, the monitoring for paleontological resources shall be conducted on a full-time basis for the duration of the rough-grading of the project site. The following recovery processes shall apply:</p> <ul style="list-style-type: none"> • Upon encountering a large deposit of bone, salvage of all bone in the area shall be conducted with additional field staff and in accordance with modern paleontological techniques. • All fossils collected during the project shall be prepared to a reasonable point of identification. Excess sediment or matrix shall be removed from the specimens to reduce the bulk and cost of storage. Itemized catalogs of all material collected and identified shall be provided to the museum repository along with the 	City of Moreno Valley Planning Division	Ongoing during ground disturbing activities.	When paleontological resources are unearthed or discovered	<p>A qualified paleontologist(s) shall be retained by the applicant to monitor full time during the duration of ground disturbing activities.</p> <p>A report of findings shall be submitted to the City after the finalization of construction.</p>		Issuance of a Stop Work Order

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non- Compliance
<p>specimens.</p> <ul style="list-style-type: none"> A report documenting the results of the monitoring and salvage activities and the significance of the fossils shall be prepared. All fossils collected during this work, along with the itemized inventory of these specimens, shall be deposited in a museum repository for permanent curation and storage. 						
<p>4.5.6.2D Prior to grading permit issuance, the City shall verify that the following note is included on the Grading Plan:</p> <p>“If any suspected paleontological resources are discovered during ground-disturbing activities, the construction supervisor is obligated to halt work in a 100-foot radius around the find and call a qualified paleontologist to the site to assess the significance of the find. A qualified paleontologist shall evaluate the suspected resource. If the paleontologist determines that the find is not unique, construction shall be permitted to proceed. However, if the paleontologist determines that further information is needed to evaluate significance, the City of Moreno Valley shall be notified and a treatment plan shall be prepared and implemented in consultation with the City to protect the identified paleontological resource(s) from damage and destruction.”</p>	City of Moreno Valley Planning Division	Once before issuing grading permit.	Prior to Issuance of Grading Permit	Verify plans contain specified language.		Withhold Grading Permit

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HAZARDS AND HAZARDOUS MATERIALS						
4.6.6.1A Prior to issuance of a grading permit for the project, a qualified contractor shall test onsite soils for contamination by agricultural chemicals. If present in concentrations above established actionable levels or thresholds, these materials shall be removed and transported to an appropriate landfill by a licensed contractor. This measure shall be implemented to the satisfaction of the Building Division including written documentation of the disposal of any agricultural chemical residue in conformance with all applicable regulations.	City of Moreno Valley Planning Division	Prior to grading	Prior to Issuance of Grading Permit and receipt of supplemental Phase II soil testing	Applicant shall provide written results of subsequent soil testing for pesticides		Withhold Grading Permit
HYDROLOGY AND WATER QUALITY						
4.7.6.1A. Prior to grading plan approval and the issuance of a grading permit by the City, the project applicant shall provide evidence to the City that a Notice of Intent (NOI) has been filed with the Regional Water Quality Control Board for coverage under the State NPDES General Construction Permit for discharge of storm water associated with construction activities.	City of Moreno Valley Planning Division Building and Safety Engineering	Prior to grading	Prior to Issuance of Grading Permit and review of grading plan documents	Applicant shall provide written evidence that an NOI has been filed with the Regional Water Quality Control Board.		Withhold Grading Permit
4.7.6.1B. Prior to grading plan approval and the issuance of a grading permit by the City, the project applicant shall submit to the State Water Quality Control Board a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP shall include a surface water control plan and erosion control plan citing specific measures to	City of Moreno Valley Planning Division Building and Safety Engineering	Prior to grading and onsite inspection during construction	Prior to Issuance of Grading Permit	Review of grading and construction documents and on-site inspection. Applicant shall provide written evidence that a SWPPP has been		Withhold Grading Permit and/or Issuance of Stop Work Order

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<p>control on-site and off-site erosion during the entire grading and construction period. Additionally, the SWPPP shall identify structural and nonstructural BMPs to control sediment and nonvisible discharges from the site. BMPs to be implemented in the SWPPP may include, but shall not be limited to, the following:</p> <ul style="list-style-type: none"> • Sediment discharges from the site may be controlled by the following: gravel bags, silt fences, straw wattles and temporary debris basins (if deemed necessary), and other discharge control devices. The construction and condition of the BMPs will be periodically inspected during construction, and repairs will be made when necessary as required by the SWPPP. • No materials of any kind shall be placed in drainage ways. • Materials that could contribute non-visible pollutants to storm water must be contained, elevated, and placed in temporary storage containment areas. • All loose piles of soil, silt, clay, sand, debris, and other earthen material shall be protected per RWQCB standards to eliminate any discharge from the site. Stockpiles will be surrounded by silt fences. <p>The SWPPP will include inspection forms for routine monitoring of the site during the construction phase to</p>				<p>filed with the Regional Water Quality Control Board.</p>		

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<p>ensure NPDES compliance.</p> <ul style="list-style-type: none"> Additional BMPs and erosion control measures will be documented in the SWPPP and utilized if necessary. The SWPPP will be kept on site for the entire duration of project construction and will also be available to the local RWQCB for inspection at any time. <p>In the event that it is not feasible to implement the above BMPs, the City of Moreno Valley can make a determination that other BMPs will provide equivalent or superior treatment either on or off site.</p>						
<p>4.7.6.1C. Prior to the issuance of grading permits, the project applicant shall provide evidence to the City that the following provisions have been added to construction contracts for the project:</p> <ul style="list-style-type: none"> The Construction Contractor shall be responsible for performing and documenting the application of BMPs identified in the SWPPP. Weekly inspections shall be performed on sediment control measures called for in the SWPPP. Monthly reports shall be maintained by the Contractor and submitted to the City for inspection. In addition, the Contractor will also be required to maintain an inspection log and have the log on site to be reviewed by the City of Moreno Valley and the representatives of the Regional Water Quality Control Board. 	<p>City of Moreno Valley Planning Division Engineering</p>	<p>Once prior to grading</p>	<p>Prior to issuance of Grading Permit</p>	<p>City review and approval of grading plans.</p>		<p>Withhold Grading Permit</p>

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<p>4.7.6.2A. Prior to grading plan approval and the issuance of a grading permit by the City, the project applicant shall receive approval from the City of Moreno Valley for a Final Water Quality Management Plan (F-WQMP). The F-WQMP shall specifically identify pollution prevention, site design, source control, and treatment control BMPs that shall be used on site to control predictable pollutant runoff in order to reduce impacts to water quality to the maximum extent practicable. BMPs to be implemented in the F-WQMP may include (but shall not be limited to) the following:</p> <ul style="list-style-type: none"> • Required landscaped areas shall not use decorative concrete or impervious surfaces. • Landscape plans shall incorporate native and drought-tolerant plants, trees, and shrubs. Landscaping shall be maintained weekly and maintenance contractor will properly dispose of all landscape wastes. • Irrigation systems shall be inspected monthly by the landscape contractor to check for over-watering, leaks, or excessive runoff to paved areas. Timers will be used to prevent over-watering. • Signage will be inspected and maintained twice a year for legibility. • Outdoor Loading/Unloading truck docks shall be kept in a clean and orderly condition with weekly 	<p>City of Moreno Valley Planning Division Engineering</p>	<p>Once prior to grading</p>	<p>Prior to issuance of Grading Permit</p>	<p>City review and approval of Final Water Quality Management Plan</p>		<p>Withhold Grading Permit</p>

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<p>inspections, continuous monitoring, and immediate clean up of spills.</p> <ul style="list-style-type: none"> • Parking area maintenance shall be swept or vacuumed at least quarterly, if there is any trash or debris in between the routine sweeping, it shall be swept or vacuumed immediately. • Trash enclosures will be inspected and maintained weekly or as needed by maintenance contractor. • On-site extended detention/sedimentation basins and sand filters will treat all of the site's runoff via vegetated swales and will be maintained and inspected at least twice a year and prior to October 1. • Additional BMPs will be documented in the WQMP and utilized if necessary. <p>In the event that it is not feasible to implement the above BMPs, the City of Moreno Valley can make a determination that other BMPs will provide equivalent or superior treatment either on or off site.</p>						
<p>4.7.6.3A. Prior to grading plan approval, the project proponent shall receive approval on a project-specific Final Hydrology Study, with supporting engineering calculations, from the City Engineer. The Final Hydrology Study shall incorporate relevant requirements identified by the City, and/or site-specific geotechnical investigations. A Preliminary</p>	<p>City of Moreno Valley Planning Division</p> <p>Engineering</p>	<p>Once prior to tentative tract map approval</p> <p>Once prior to</p>	<p>Prior to tentative tract map approval</p> <p>Prior to issuance of</p>	<p>City review and approval of Preliminary Hydrology Study</p> <p>City review and approval of Final</p>		<p>Withhold hearing to approve the tentative tract map.</p> <p>Withhold Grading</p>

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Hydrology Study will be required prior to approval of the associated project tentative tract map.		grading	Grading Permit	Hydrology Study		Permit
NOISE						
4.9.6.1A. During all project site excavation and grading on site, the project contractor shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards.	City of Moreno Valley Building and Safety Engineering Planning Division	Ongoing during construction	Throughout Construction	Review of construction documents and on-site inspection		Withhold Grading Permit or Stop Work Order
4.9.6.1B. The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest to the project site.	City of Moreno Valley Building and Safety Engineering Planning Division	Ongoing throughout construction /on-site inspection	Throughout Construction	Review of construction documents and on-site inspection		Withhold Grading Permit or Stop Work Order
4.9.6.1C. The construction contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise sources and noise-sensitive receptors nearest to the project site during all project construction.	City of Moreno Valley Building and Safety Engineering Planning Division	Ongoing throughout construction /on-site inspection	Throughout Construction	Review of construction documents and on-site inspection		Withhold Grading Permit or Stop Work Order
4.9.6.1D. During project site construction activities at Building 6 (i.e., closest to existing residences), the construction contractor shall limit all construction-related activities to between the hours of 6:00 a.m. and 8:00 p.m. on weekdays and between the hours of 7:00 a.m. to 8:00 p.m. on weekends and holidays, unless written approval is obtained from the City Building Official or City Engineer.	City of Moreno Valley Building and Safety Engineering Planning Division	Ongoing throughout construction /on-site inspection	Throughout Construction	Review of construction documents and on-site inspection		Withhold Grading Permit or Stop Work Order

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TRANSPORTATION						
<p>4.11.6.4A. Prior to issuance of a Certificate of Occupancy the project applicant shall construct the following traffic improvements:</p> <ul style="list-style-type: none"> • Redlands Boulevard/SR-60 Westbound Ramps. Install a traffic signal. This improvement is currently approved, and permitted by Caltrans. If not otherwise completed prior to project opening, the required traffic signal shall be constructed by the Applicant prior to issuance of the first Certificate of Occupancy. • Redlands Boulevard/Fir Avenue/Eucalyptus Avenue. If not otherwise completed prior to project opening, prior to issuance of the first Certificate of Occupancy, the Applicant shall construct the following improvements: Install a traffic signal and add a northbound left-turn lane and a southbound left-turn lane. <p>If the improvements are constructed by others prior to the Certificate of Occupancy, the applicant shall pay its fair share towards the improvements through the City's DIF program.</p>	<p>City of Moreno Valley Building and Safety Engineering Planning Division</p>	<p>Prior to Certificate of Occupancy on the building.</p>	<p>Prior to the Issuance of a Certificate of Occupancy</p>	<p>Evidence of the construction of the improvements. If construction has already occurred by others evidence of payment of DIF fees.</p>		<p>Withhold Certificate of Occupancy</p>
<p>4.11.6.4B. Prior to issuance of building permits, the project applicant shall pay the fair-share contribution toward the following traffic improvements through fees paid to the City of Moreno Valley</p>	<p>City of Moreno Valley Building and Safety Engineering</p>	<p>Once before construction</p>	<p>Prior to the Issuance of Building Permits</p>	<p>Evidence of Payment of City DIF fees and WRCOG TUMF fees.</p>		<p>Withhold Building Permit</p>

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based on the City's DIF system and the County's TUMF program: <ul style="list-style-type: none"> • Moreno Beach Drive/SR-60 Eastbound Ramps. The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF fee would mitigate the significant impact at this location. • Redlands Boulevard/SR-60 Westbound Ramps. Install a traffic signal. This improvement is listed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the significant impact at this location. • Redlands Boulevard/Fir Avenue/Eucalyptus Avenue. Install a traffic signal. This improvement is listed in the City's DIF program. Add a northbound left-turn lane and a southbound left-turn lane. These improvements are listed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location. 	Planning Division					
4.11.6.4C. Prior to issuance of building permits, the project applicant shall pay the fair-share contribution toward the following traffic improvements through fees paid to the City of Moreno Valley	City of Moreno Valley Building and Safety Engineering	Once before construction	Prior to the Issuance of Building Permits	Evidence of Payment of City DIF fees and WRCOG TUMF fees.		Withhold Building Permit

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non- Compliance
<p>based on the City's DIF system and the County's TUMF program:</p> <ul style="list-style-type: none"> Moreno Beach Drive/SR-60 Eastbound Ramps. The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF fee would mitigate the significant impact at this location. Moreno Beach Drive/Cottonwood Avenue. Add a southbound through lane. This improvement is listed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the significant impact at this location. Moreno Beach Drive/Alessandro Boulevard. Add a southbound through lane. This improvement is listed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the significant impact at this location. Redlands Boulevard/SR-60 Westbound Ramps. Install a traffic signal. This improvement is listed in the City's DIF program. Add a northbound through lane. The Redlands Boulevard/SR-60 Interchange reconstruction would implement the northbound through 	<p>Planning Division</p>					

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<p>lane. The interchange reconstruction project is programmed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location.</p> <ul style="list-style-type: none"> • Redlands Boulevard/SR-60 Eastbound Ramps. The Redlands Boulevard/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF. Therefore, payment of the TUMF fee would mitigate the significant impact at this location. • Redlands Boulevard/Fir Avenue/Eucalyptus Avenue. Install a traffic signal. Add a westbound right-turn lane and provide overlap phasing for the westbound right turns. Add a westbound left-turn lane and an eastbound left-turn lane. These improvements are programmed in the City's DIF program. Add a northbound left-turn lane, a southbound through lane, and a southbound left-turn lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location. • Redlands Boulevard/Eucalyptus Avenue. Add a southbound right-turn lane. This improvement is programmed in the TUMF. Therefore, payment of the TUMF fees would 						

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
<p>mitigate the significant impact at this location.</p> <ul style="list-style-type: none"> Redlands Boulevard/Alessandro Boulevard. Add a southbound left-turn lane. This improvement is programmed in the TUMF. Therefore, payment of the TUMF fees would mitigate the significant impact at this location. 						
<p>4.11.6.4D. Prior to issuance of building permits, the project applicant shall pay the fair-share contribution toward the following traffic improvements through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program. At some locations, the DIF and TUMF fees would not fully mitigate the project's impact. For these locations, additional improvements shall be implemented by the project applicant prior to the issuance of a certificate of occupancy for the project:</p> <ul style="list-style-type: none"> Nason Street/Eucalyptus Avenue. Add a northbound right turn lane. This improvement is programmed in the City's DIF; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, the project shall contribute a fair share (calculated to be 1.76%) toward restriping the westbound approach to provide dual left-turn lanes. Nason Street/Alessandro Boulevard. Add an eastbound 	<p>City of Moreno Valley Building and Safety</p> <p>Engineering</p> <p>Planning Division</p>	<p>Once before construction and onsite inspection for improvements.</p>	<p>Prior to the Issuance of Building Permits</p> <p>Where improvements must be built by the developer – Prior to a Certificate of Occupancy on the first building.</p>	<p>Evidence of Payment to the City of fair share contribution in addition to payment of DIF, TUMF and build improvements where indicated in the mitigation measure.</p>		<p>Withhold Building Permit and/or Withhold Certificate of Occupancy.</p>

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non- Compliance
<p>through lane and a westbound through lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, the project shall contribute a fair share (calculated to be 1.4%) toward modification of the traffic signal to provide overlap phasing for the eastbound right-turn lane.</p> <ul style="list-style-type: none"> • Moreno Beach Drive/SR-60 Westbound Ramps. The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF fee would mitigate the significant impact at this location. • Moreno Beach Drive/SR-60 Eastbound Ramps. The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF fee would mitigate the significant impact at this location. • Moreno Beach Drive/Eucalyptus Avenue. Convert the existing 						

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Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
<p>eastbound through lane to a left-turn lane and the eastbound right-turn lane to a shared through/right-turn lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, the project shall contribute a fair share (calculated to be 8.63%) toward modification of the traffic signal to provide right-turn overlap phasing for the westbound right-turn lane.</p> <ul style="list-style-type: none"> • Moreno Beach Drive/Cottonwood Avenue. Add a southbound through lane, This improvement is programmed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the significant impact at this location. • Moreno Beach Drive/Alessandro Boulevard. Add 2 southbound through lanes, 2 northbound through lanes, an eastbound through lane, and a westbound through lane. These improvements are programmed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the significant impact at this location. • Redlands Boulevard/SR-60 Westbound Ramps. Install a traffic signal. This improvement is programmed in the City's DIF program and will be installed before 						

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Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non- Compliance
<p>building occupancy since it was identified as a direct project impact.</p> <ul style="list-style-type: none"> • Redlands Boulevard/SR-60 Eastbound Ramps. The Redlands Boulevard/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF. Therefore, payment of the TUMF fee would mitigate the significant impact at this location. • Redlands Boulevard/Fir Avenue-Eucalyptus Avenue. Install a traffic signal and add a westbound left-turn lane, eastbound through lane, eastbound left-turn lane, and a westbound right-turn lane with overlap phasing. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, add a southbound through lane, southbound left-turn lane, northbound through lane, and northbound left-turn lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location. • Redlands Boulevard/Eucalyptus Avenue. Install a traffic signal and add a westbound left-turn lane. These improvements are 						

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
<p>programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, add a northbound left-turn lane and a southbound left-turn lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location.</p> <ul style="list-style-type: none"> Redlands Boulevard/Alessandro Boulevard. Install a traffic signal. This improvement is programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, add a southbound left-turn lane, a northbound left-turn lane, a westbound left-turn lane, an eastbound left-turn lane, a westbound right-turn lane, and a southbound through lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location. 						
<p>4.11.6.4E. Prior to issuance of building permits, the project applicant shall pay the fair-share contribution toward the following traffic improvements through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program, or through a fair-share contribution to the City of</p>	<p>City of Moreno Valley Building and Safety Engineering Planning Division</p>	<p>Once before construction</p>	<p>Prior to the Issuance of Building Permits</p>	<p>Evidence of Payment of City DIF fees and WRCOG TUMF fees or fair share contribution</p>		<p>Withhold Building Permit</p>

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non- Compliance
<p>Moreno Valley as noted below:</p> <ul style="list-style-type: none"> Nason Street/Eucalyptus Avenue. Add a northbound right-turn lane and an eastbound right-turn lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. Implementation of the improvements identified for this intersection in Mitigation Measure 4.11.6.4D would also partially mitigate the significant impact at this intersection. In addition, the project shall pay a fair share (calculated to be 1.6%) toward modification of the traffic signal to provide right-turn overlap phasing for the eastbound and northbound right turns. Nason Street/Alessandro Boulevard. Add an eastbound through lane and westbound through lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. Implementation of the improvements identified for this intersection in Mitigation Measure 4.11.6.4D would also partially mitigate the significant impact at this intersection. In addition, the project shall pay a fair share (calculated to be 1.35%) toward the addition of an eastbound left-turn lane and modification of the 						

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Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
<p>traffic signal to provide overlap phasing for the westbound right-turn lane.</p> <ul style="list-style-type: none"> Moreno Beach Drive/SR-60 Westbound Ramps. The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF fee would mitigate the significant impact at this location. Moreno Beach Drive/SR-60 Eastbound Ramps. The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF fee would mitigate the significant impact at this location. Moreno Beach Drive/Eucalyptus Avenue. Restripe eastbound approach to dual left-turn lanes and add a northbound through lane, a westbound through lane, and a southbound right-turn lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. 						

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non- Compliance
<p>Implementation of the improvements identified for this intersection in Mitigation Measure 4.11.6.4D would also partially mitigate the significant impact at this intersection. In addition, the project shall pay a fair share (calculated to be 5.17%) toward modification of the traffic signal to provide right-turn overlap phasing for the southbound right-turn lane.</p> <ul style="list-style-type: none"> • Moreno Beach Drive/Cottonwood Avenue. Add a southbound through lane, a northbound through lane, an eastbound left-turn lane, an eastbound through lane, a westbound through lane, and a westbound left-turn lane. These improvements are programmed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the significant impact at this location. • Moreno Beach Drive/Alessandro Boulevard. Add 2 southbound through lanes, 2 northbound through lanes, an eastbound through lane, and a westbound through lane. These improvements are programmed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the significant impact at this location. • Auto Mall Drive/Eucalyptus Avenue. Install a traffic signal. This improvement is programmed in the 						

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Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
<p>City's DIF program. Therefore, payment of the DIF fee would mitigate the significant impact at this location.</p> <ul style="list-style-type: none"> Redlands Boulevard/SR-60 Westbound Ramps. Install a traffic signal. This improvement is programmed in the City's DIF program and will be installed before building occupancy since it was identified as a direct project impact. Therefore, payment of the DIF fee would mitigate the significant impact at this location. Redlands Boulevard/SR-60 Eastbound Ramps. The Redlands Boulevard/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF. Therefore, payment of the TUMF fee would mitigate the significant impact at this location. Redlands Boulevard/Fir Avenue-Eucalyptus Avenue. Install a traffic signal and add a westbound left-turn lane, eastbound through lane, eastbound left-turn lane, a westbound right-turn lane with overlap phasing, and a southbound right-turn lane with overlap phasing. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the 						

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non- Compliance
<p>significant impact at this intersection. In addition, add a southbound through lane, a southbound left-turn lane, a northbound through lane, a northbound left-turn lane, and a northbound right-turn lane. These improvements are programmed in the TUMF. Therefore, payment of the TUMF fee would also partially mitigate the significant impact at this location. In addition, the project shall pay a fair share (calculated to be 10.44%) of the cost of adding a southbound left-turn lane.</p> <ul style="list-style-type: none"> • Redlands Boulevard/Eucalyptus Avenue. Install a traffic signal and add a westbound left-turn lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, add a northbound left-turn lane, a northbound through lane, a southbound left-turn lane, and southbound through lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location. • Redlands Boulevard/Cottonwood Avenue. Add an eastbound through lane and westbound through lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the 						

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Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
<p>significant impact at this intersection. In addition, add a northbound through lane and a southbound through lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location.</p> <ul style="list-style-type: none"> Redlands Boulevard/Alessandro Boulevard. Install a traffic signal. This improvement is programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, and add a southbound left-turn lane, a northbound left-turn lane, a westbound left-turn lane, an eastbound left-turn lane, a westbound right-turn lane, a southbound through lane, a westbound through lane, and an eastbound through lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location. 						
<p>4.11.6.4F. If the Encilia Avenue and Quincy Street Connection plan is implemented as part of the proposed project, then prior to issuance of building permits, the project applicant shall implement the following improvements, in addition to those identified in Mitigation Measure 4.11.6.4.E, either through fees paid to the City of Moreno Valley based on the City's DIF system and the County's</p>	<p>City of Moreno Valley Building and Safety</p> <p>Engineering</p> <p>Planning Division</p>	<p>Once before construction</p>	<p>Prior to the Issuance of Building Permits</p>	<p>Evidence of Payment of City DIF fees and WRCOG TUMF fees or fair share contribution.</p>		<p>Withhold Building Permit</p>

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non- Compliance
<p>TUMF program:</p> <ul style="list-style-type: none"> • Moreno Beach Drive/Eucalyptus Avenue. Restripe the southbound shared through/right-turn lane to a southbound through lane. This improvement is programmed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the impacts of the project at this intersection. • Redlands Boulevard/Fir Avenue-Eucalyptus Avenue. Pay the fair share (calculated to be 10.84%) to add a southbound right-turn lane. • Redlands Boulevard/Encilia Avenue-Eucalyptus Avenue. Install a traffic signal and add a westbound left-turn lane. These improvements are programmed in the City's DIF program. In addition, add a northbound left-turn lane, northbound through lane, southbound left-turn lane, and a southbound through lane. These improvements are programmed in the TUMF program. Therefore, payment of the DIF and TUMF fees would fully mitigate the impact of the project at this intersection. • Moreno Beach Drive/Encilia Avenue. Install a traffic signal and add a northbound through lane, southbound left-turn lane, and a southbound through lane. This improvement is programmed in the 						

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Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
City's DIF program. Therefore, payment of the DIF fee would mitigate the impacts of the project at this intersection.						
GREENHOUSE GASES AND GLOBAL CLIMATE CHANGE						
<p>4.13.6.1A. Prior to the issuance of building permits, the project applicant shall provide evidence to the City of Moreno Valley that building features have been incorporated in building plans as required by Title 24 of the California Code of Regulations. These features include but are not limited to the following:</p> <ul style="list-style-type: none"> Exterior windows shall utilize window treatments for efficient energy conservation. Per CALGreen Code requirements, water-efficient fixtures and appliances, including but not limited to low-flow faucets, dual-flush toilets minimizing water consumption by 20 percent from the Building Standards Code baseline water consumption shall be used. Per CALGreen Code requirements, a Commissioning Plan shall be prepared and all building systems (e.g., heating, ventilation, and air-conditioning [HVAC], irrigation systems, lighting, and water heating) shall be commissioned by the Commissioning Authority. 	City of Moreno Valley Building and Safety Planning Division	Once prior to construction	Prior to issuance of building permits	Review of construction documents and on-site inspection		Withhold Building Permit

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
<ul style="list-style-type: none"> Per CALGreen Code, restrict watering methods (e.g., prohibit systems that apply water to non-vegetated surfaces) and control runoff. 						
<p>4.13.6.1B. Prior to the issuance of building permits, the project applicant shall provide evidence to the City of Moreno Valley that the following measures have been incorporated into the design and construction of the project:</p> <ul style="list-style-type: none"> Use of locally produced and/or manufactured building materials for at least 10 percent of the construction materials used for the project. Use of “Green Building Materials,” such as those materials that are resource efficient, and recycled and manufactured in an environmentally friendly way, for at least 10 percent of the project. Limit unnecessary idling of construction equipment. A reduction in equipment idling would reduce fuel consumption, and therefore, GHG emissions. Maximize the use of electricity from the power grid by replacing diesel- or gasoline-powered equipment. This would reduce GHG emissions because electricity can be produced 	City of Moreno Valley Building and Safety Planning Division	Once prior to construction Once during on-site inspection	Prior to issuance of building permits	Review of construction documents/building plans and on-site inspection		Withhold Building Permit

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Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
<p>more efficiently at centralized power plants.</p> <ul style="list-style-type: none"> • Design the project building to exceed the California Building Code's (CBC) Title 24 energy standard, including, but not limited to, any combination of the following: <ul style="list-style-type: none"> ○ Increase insulation such that heat transfer and thermal bridging is minimized. ○ Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption. ○ Incorporate ENERGY STAR or better rated windows, space heating and cooling equipment, light fixtures, appliances, or other applicable electrical equipment. • Provide a landscape and development plan for the project that takes advantage of shade, prevailing winds, and landscaping. • Install efficient lighting and lighting control systems. Use daylight as an integral part of the lighting systems in buildings. • Install reflective roof material (SRI >45) and cool pavements. • Install energy-efficient heating and cooling systems, appliances and 						

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
equipment, and control systems. <ul style="list-style-type: none"> Install solar or light-emitting diodes (LEDs) for outdoor lighting for auto parking areas. 						
4.13.6.1C. Prior to the issuance of occupancy permits, the project applicant shall provide evidence to the City of Moreno Valley that the following measures have been be incorporated into the operation of the project: <ul style="list-style-type: none"> The project applicant shall use less than 3,900 Global Warming Potential (GWP) hydrofluorocarbon (HCF) refrigerants or natural refrigerants (ammonia, propane, carbon dioxide [CO₂]) for refrigeration and fire suppression equipment. Provide vegetative or man-made exterior wall shading devices for east-, south-, and west facing windows. Devise a comprehensive water conservation strategy appropriate for the project and its location. The strategy may include the following, plus other innovative measures that may be appropriate: <ul style="list-style-type: none"> Install drought-tolerant plants for landscaping. Use reclaimed water for landscape irrigation within the project. Install the infrastructure to deliver and use reclaimed 	City of Moreno Valley Building and Safety Planning Division	Once Prior to construction Once during on-site inspection	Prior to issuance of occupancy permit	Review of construction documents and on-site inspection		Withhold Occupancy Permit

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Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
water. <ul style="list-style-type: none"> ○ Install water-efficient irrigation systems, such as weather-based and soil-moisture-based irrigation controllers and sensors for landscaping according to the California Department of Water Resources Model Efficient Landscape Ordinance. • Provide employee education about reducing waste and available recycling services. 						

Table 1.G: Air Quality Measure 4.3.6.2M Best Available Control Measures for Fugitive Dust (Apply to All Construction Activities)

Source Category	Control Measures	Guidance
Backfilling	<ul style="list-style-type: none"> • Stabilize backfill material when not actively handling; and • Stabilize backfill material during handling; and • Stabilize soil at completion of activity. 	<ul style="list-style-type: none"> • Mix backfill soil with water prior to moving; and • Dedicate water truck or high capacity hose to backfilling equipment; and • Empty loader bucket slowly so that no dust plumes are generated; and • Minimize drop height from loader bucket.
Clearing and grubbing	<ul style="list-style-type: none"> • Maintain stability of soil through pre-watering of site prior to clearing and grubbing; and • Stabilize soil during clearing and grubbing activities; and • Stabilize soil immediately after clearing and grubbing activities. 	<ul style="list-style-type: none"> • Maintain live perennial vegetation where possible; and • Apply water in sufficient quantity to prevent generation of dust plumes.
Clearing forms	<ul style="list-style-type: none"> • Use water spray to clear forms; or • Use sweeping and water spray to clear forms; or • Use vacuum system to clear forms. 	<ul style="list-style-type: none"> • Use of high pressure air to clear forms may cause exceedance of Rule requirements.
Crushing	<ul style="list-style-type: none"> • Stabilize surface soils prior to operation of support equipment; and • Stabilize material after crushing. 	<ul style="list-style-type: none"> • Follow permit conditions for crushing equipment; and • Pre-water material prior to loading into crusher; and • Monitor crusher emissions opacity; and • Apply water to crushed material to prevent dust plumes.
Cut and fill	<ul style="list-style-type: none"> • Pre-water soils prior to cut and fill activities; and • Stabilize soil during and after cut and fill activities. 	<ul style="list-style-type: none"> • For large sites, pre-water with sprinklers or water trucks and allow time for penetration; and • Use water trucks/pulls to water soils to depth of cut prior to subsequent cuts.
Demolition – mechanical/manual	<ul style="list-style-type: none"> • Stabilize wind erodible surfaces to reduce dust; and • Stabilize surface soil where support equipment and vehicles will operate; and • Stabilize loose soil and demolition debris; and • Comply with AQMD Rule 1403. 	<ul style="list-style-type: none"> • Apply water in sufficient quantities to prevent the generation of visible dust plumes.

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Table 1.G: Air Quality Measure 4.3.6.2M Best Available Control Measures for Fugitive Dust (Apply to All Construction Activities)

Source Category	Control Measures	Guidance
Disturbed soil	<ul style="list-style-type: none"> Stabilize disturbed soil throughout the construction site; and Stabilize disturbed soil between structures. 	<ul style="list-style-type: none"> Limit vehicular traffic and disturbances on soils where possible; and If interior block walls are planned, install as early as possible; and Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes.
Earthmoving activities	<ul style="list-style-type: none"> Pre-apply water to depth of proposed cuts; and Re-apply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 100 ft in any direction; and Stabilize soils once earth-moving activities are complete. 	<ul style="list-style-type: none"> Grade each Project phase separately, timed to coincide with construction phase; and Upwind fencing can prevent material movement on site; and Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes.
Importing/exporting of bulk materials	<ul style="list-style-type: none"> Stabilize material while loading to reduce fugitive dust emissions; and Maintain at least 6 inches of freeboard on haul vehicles; and Stabilize material while transporting to reduce fugitive dust emissions; and Stabilize material while unloading to reduce fugitive dust emissions; and Comply with CVC Section 23114. 	<ul style="list-style-type: none"> Use tarps or other suitable enclosures on haul trucks; and Check belly-dump truck seals regularly and remove any trapped rocks to prevent spillage; and Comply with track-out prevention/mitigation requirements; and Provide water while loading and unloading to reduce visible dust plumes.
Landscaping	<ul style="list-style-type: none"> Stabilize soils, materials, slopes 	<ul style="list-style-type: none"> Apply water to materials to stabilize; and Maintain materials in a crusted condition; and Maintain effective cover over materials; and Stabilize sloping surfaces using soil binders until vegetation or ground cover can effectively stabilize the slopes; and Hydroseed prior to rain season.
Road shoulder maintenance	<ul style="list-style-type: none"> Apply water to unpaved shoulders prior to clearing; and Apply chemical dust suppressants and/or washed gravel to maintain a stabilized surface after completing road shoulder maintenance. 	<ul style="list-style-type: none"> Installation of curbing and/or paving of road shoulders can reduce recurring maintenance costs; and Use of chemical dust suppressants can inhibit vegetation growth and reduce future road shoulder maintenance costs.

Table 1.G: Air Quality Measure 4.3.6.2M Best Available Control Measures for Fugitive Dust (Apply to All Construction Activities)

Source Category	Control Measures	Guidance
Screening	<ul style="list-style-type: none"> • Pre-water material prior to screening; and • Limit fugitive dust emissions to opacity and plume length standards; and • Stabilize material immediately after screening. 	<ul style="list-style-type: none"> • Dedicate water truck or high capacity hose to screening operation; and • Drop material through the screen slowly and minimize drop height; and • Install wind barrier with a porosity of no more than 50 percent upwind of screen to the height of the drop point.
Staging areas	<ul style="list-style-type: none"> • Stabilize staging areas during use; and • Stabilize staging area soils at project completion. 	<ul style="list-style-type: none"> • Limit size of staging area; and • Limit vehicle speeds to 15 miles per hour; and • Limit number and size of staging area entrances/exits.
Stockpiles/bulk material handling	<ul style="list-style-type: none"> • Stabilize stockpiled materials, and stockpiles within 100 yards of off-site occupied buildings must not be greater than 8 ft in height; or must have a road bladed to the top to allow water truck access or must have an operational water irrigation system that is capable of complete stockpile coverage. 	<ul style="list-style-type: none"> • Add or remove material from the downwind portion of the storage pile; and • Maintain storage piles to avoid steep sides or faces.
Traffic areas for construction activities	<ul style="list-style-type: none"> • Stabilize all off-road traffic and parking areas; and • Stabilize all haul routes; and • Direct construction traffic over established haul routes. 	<ul style="list-style-type: none"> • Apply gravel/paving to all haul routes as soon as possible to all future roadway areas; and • Barriers can be used to ensure vehicles are only used on established parking areas/haul routes.
Trenching	<ul style="list-style-type: none"> • Stabilize surface soils where trencher or excavator and support equipment will operate; and • Stabilize soils at the completion of trenching activities. 	<ul style="list-style-type: none"> • Pre-watering of soils prior to trenching is an effective preventive measure. For deep trenching activities, pre-trench to 18 inches, soak soils via the pre-trench and resuming trenching; and • Washing mud and soils from equipment at the conclusion of trenching activities can prevent crusting and drying of soil on equipment.
Truck loading	<ul style="list-style-type: none"> • Pre-water material prior to loading; and • Ensure that freeboard exceeds 6 inches (CVC 23114). 	<ul style="list-style-type: none"> • Empty loader bucket such that no visible dust plumes are created; and • Ensure that the loader bucket is close to the truck to minimize drop height while loading.
Turf overseeding	<ul style="list-style-type: none"> • Apply sufficient water immediately prior to conducting turf vacuuming activities to meet opacity and plume length standards; and • Cover haul vehicles prior to exiting the site. 	<ul style="list-style-type: none"> • Haul waste material immediately off site.
Unpaved roads/parking lots	<ul style="list-style-type: none"> • Stabilize soils to meet the applicable performance standards; and • Limit vehicular travel to established unpaved roads (haul routes) and unpaved parking lots. 	<ul style="list-style-type: none"> • Restricting vehicular access to established unpaved travel paths and parking lots can reduce stabilization requirements.

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Table 1.G: Air Quality Measure 4.3.6.2M Best Available Control Measures for Fugitive Dust (Apply to All Construction Activities)

Source Category	Control Measures	Guidance
Vacant land	<ul style="list-style-type: none"> In instances where vacant lots are 0.10 acre or larger and have a cumulative area of 500 sf or more that are driven over and/or used by motor vehicles and/or off-road vehicles, prevent motor vehicle and/or off-road vehicle trespassing, parking and/or access by installing barriers, curbs, fences, gates, posts, signs, shrubs, trees, or other effective control measures. 	

ac = acre(s) AQMD = Air Quality Management District CVC = California Vehicle Code ft = feet sf = square feet

Table 1.H: Air Quality Measure 4.3.6.2M Contingency Control Measures for Fugitive Dust (During High Winds in Excess of 25 MPH)

Fugitive Dust Source Category	Control Measures
Earthmoving	<ul style="list-style-type: none"> Cease all active operations; or Apply water to soil not more than 15 minutes prior to moving such soil.
Disturbed surface areas	<ul style="list-style-type: none"> On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than 4 consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than $1/20$ of the concentration required to maintain a stabilized surface for a period of 6 months; or Apply chemical stabilizers prior to wind event; or Apply water to all unstabilized disturbed areas 3 times per day. If there is any evidence of wind driven fugitive dust, watering frequency is increased to a minimum of 4 times per day; or Establish a vegetative ground cover within 21 days after active operations have ceased. Ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter; or Utilize any combination of these control actions such that, in total, these actions apply to all disturbed surface areas.
Unpaved roads	<ul style="list-style-type: none"> Apply chemical stabilizers prior to wind event; or Apply water 2 times per hour during active operation; or Stop all vehicular traffic.
Open storage piles	<ul style="list-style-type: none"> Apply water 2 times per hour; or Install temporary coverings.
Paved road track-out	<ul style="list-style-type: none"> Cover all haul vehicles; or Comply with the vehicle freeboard requirements of Section 23114 of the CVC for both public and private roads.
All categories	<ul style="list-style-type: none"> Executive Officer and the USEPA as equivalent to the methods specified in this table may be used.

CVC = California Vehicle Code
 USEPA = United States Environmental Protection Agency

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APPENDIX A

**ATTACHMENTS TO JOHNSON & SEDLACK COMMENT LETTER
DATED SEPTEMBER 4, 2012**

APPENDIX B
SB 18 CONSULTATION DOCUMENTATION

SENATE BILL 18 (SB18) NATIVE AMERICAN CONTACT RECORD

Proposed Eucalyptus Industrial Park Project, City of Moreno Valley, Riverside County, California

Date LSA Requested a Sacred Lands File Search from the Native American Heritage Commission (NAHC): July 13, 2011.
 Date the NAHC Replied: July 20, 2011.
 Results of Sacred Lands File Search: Native American cultural resources were *not* identified in the USGS coordinates specified for the project area; however, the NAHC recommended that 10 tribes/individuals be contacted for information regarding cultural resources that could be impacted.

Groups Contacted	Date LSA Sent Letter to Tribes	Date a Response to the Letter was Received by LSA (if Applicable)	Follow-up Telephone Calls and/or emails
Los Coyotes Band of Mission Indians Spokesperson <i>Cahuilla</i>	07-25-11	No response received.	08-09-11: A follow up email was sent. 08-16-11: A message was left with an administrator. The Tribe will return the call if there are concerns.
Santa Rosa Band of Mission Indians Mayme Estrada, Chairwoman <i>Cahuilla</i>	07-25-11	No response received.	08-09-11: A follow up email was sent to Ms. Estrada, and also to Steven Estrada in Cultural Resources. 08-10-11: An email was received from Gabriella Rubalcava, Tribal Council. The email stated that the Band does not have specific concerns and deferred further consultation to Joe Ontiveros, Soboba Band of Luiseño Indians.
Pala Band of Mission Indians Tribal Historic Preservation Office/Shasta Gaughen <i>Luiseño, Cupeño</i>	07-25-11	No response received.	08-09-11: A follow up email was sent to Ms. Gaughen. She responded to say that the project is outside of their area and they have no concerns. A letter is forthcoming. 08-10-11: A letter stating the above dated August 5, 2011 was received.
Morongongo Band of Mission Indians Robert Martin, Chairperson <i>Cahuilla, Serrano</i>	07-25-11	No response received.	08-09-11: A follow up email was sent to Michael Contreras. He is the spokesperson for cultural resources. 08-17-11: Mr. Contreras responded by telephone to state that they have no concerns at this time. He requested a copy of the final report and a City contact should the Tribe wish to engage in formal consultation.
Ramona Band of Cahuilla Mission Indians Joseph Hamilton, Chairman <i>Cahuilla</i>	07-25-11	No response received.	08-09-11: A follow up email was sent to Mr. Hamilton, and also to John Gomez in Cultural Resources. 08-16-11: A second follow up email was sent to Mr. Hamilton and Mr. Gomez.
Pechanga Band of Mission Indians Mark Macarro, Chairperson <i>Luiseño</i>	07-25-11	No response received.	08-09-11: A follow up email was sent to Terrie Brown, Executive Secretary, and also to Paul Macarro and Anna Hoover in Cultural Resources. Ms. Hoover

Groups Contacted	Date LSA Sent Letter to Tribes	Date a Response to the Letter was Received by LSA (if Applicable)	Date and Results of LSA Follow-up Telephone Calls and/or emails
San Manuel Band of Mission Indians James Ramos, Chairperson <i>Serrano</i>	07-25-11	No response received.	responded to say that they do have comments and will send an official comment letter directly to the City. 08-09-11: A follow up email was sent to Mr. Ramos, and also to Ann Brierty in Cultural Resources. 08-16-11: A voicemail was left for Ms. Brierty.
Serrano Nation of Indians Goldie Walker <i>Serrano</i>	07-25-11	No response received.	08-16-11: Mark Lee Cochran, Ms. Walker's son who is also on the Tribal Council, spoke for the Tribe. They would like to be notified of any discoveries and also request a copy of the final report.
Soboba Band of Mission Indians Scott Cozaet, Chairperson; Attn. Carrie Garcia <i>Luiseno</i>	07-25-11	No response received.	08-09-11: A follow up email was sent to Darren Hill (the email contact provided by the NAHC) and also to Joe Ontiveros in Cultural Resources. The email to Mr. Hill was returned. 08-16-11: A voicemail was left for Carrie Garcia, the Executive Secretary for Chairman Cozaet as shown on the NAHC list. 08-17-11: A letter was received via email from Joe Ontiveros, Cultural Resources Department. The letter stated that the project is within the Tribe's Traditional Use Area and is very sensitive to the people of Soboba. The Tribe requests government to government consultation in accordance with SB18; that Soboba continue to be the lead consulting Tribe for the project; that project construction be monitored by a Soboba monitor; and that the proper procedures be taken and the requests of the Tribe are honored.
Cahuilla Band of Indians Luther Salgado, Sr., Chairperson <i>Cahuilla</i>	07-25-11	No response received.	08-09-11: A follow up email was sent to Mr. Salgado, and also to Environmental Officer Yvonne Markel. Ms. Markel responded to say that the Tribe presently has no knowledge of cultural resources within the project area. However, due to the possibility of encountering cultural resources during construction, they request monitoring by a Native American and can provide trained monitors. They also would like to request copies of any cultural resource documentation.

APPENDIX C
REGIONAL AGRICULTURE REPORTS

APPENDIX D
GENERAL PLAN INFO ON AGRICULTURE

APPENDIX E
LOZEAU DRURY COMMENT LETTER ATTACHMENTS

APPENDIX F

TRIP GENERATION COMPARISON OF ALTERNATIVES

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Revised Final
ENVIRONMENTAL IMPACT REPORT

PROLOGIS EUCALYPTUS INDUSTRIAL PARK
STATE CLEARINGHOUSE NO. 2008021002
(former “ProLogis Moreno Valley Eucalyptus Project”)
CITY OF MORENO VALLEY
RIVERSIDE COUNTY, CALIFORNIA

LSA

Original February 12, 2014
Revised April 2, 2014
Second Revision September 26, 2014

**Revised Final
ENVIRONMENTAL IMPACT REPORT**

**PROLOGIS EUCALYPTUS INDUSTRIAL PARK
STATE CLEARINGHOUSE NO. 2008021002
(former "ProLogis Moreno Valley Eucalyptus Project")
CITY OF MORENO VALLEY
RIVERSIDE COUNTY, CALIFORNIA**

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LSA Project No. PLO1101

LSA

Original February 12, 2014
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Second Revision September 26, 2014

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1. INTRODUCTION

The Final Environmental Impact Report (EIR) for the proposed ProLogis Eucalyptus Industrial Park (formerly known as the “ProLogis Moreno Valley Eucalyptus Project”) project is composed of the Draft EIR State Clearinghouse No. 2008021002 and Appendices; the Response to Comments; and the Findings, Statement of Overriding Considerations, Staff Reports, and Resolutions. Specifically, this document portion of the EIR includes the Comments and Responses volume of the Final EIR, EIR modifications or errata, and the Mitigation Monitoring and Reporting Program (MMRP). The purpose of this document is to respond to all comments received by the City of Moreno Valley (City) regarding the environmental information and analyses contained in the Draft EIR. Additionally, any corrections to the text and figures of the Draft EIR, generated either from responses to comments or independently by the City, are stated in this volume of the Final EIR. The Draft EIR text has not been modified to reflect these clarifications. The reason for the delay of more than a year in processing the Final EIR is that the City enacted an entitlement moratorium on new development along the SR-60 corridor in the eastern portion of the City, including the ProLogis site, while the City completed a land use alternatives study of this corridor. That report was officially received by the City on January 14, 2014, and the City rescinded the entitlement moratorium as of January 23, 2014.

IMPORTANT NOTE: Section 4.0 of this document has been added to evaluate the Reduced Intensity Alternative in more detail. To that end, the applicant has proposed a less intensive modified plan to address concerns expressed about the Proposed Project (i.e., its environmental impacts). The applicant is requesting the City consider adopting a Reduced Intensity Alternative as evaluated in the Draft EIR in the form of this less intensive modified plan that would reduce the size of the project by 32% by removing buildings 5 and 6 which are the two buildings proposed in the southeast corner of the project site (i.e., the buildings that are closest to the existing residences). This modified plan would allow development of future residential uses in the southeast portion of the project site, consistent with the existing R-5 and RA-2 zoning, adjacent to the existing residential neighborhood to the southeast. The modified plan also has a 250-foot setback from the project warehouses to the future residential uses, consistent with the City’s municipal code requirements.

1.1 CONTENT AND FORMAT

Subsequent to this introductory section, Section 2.0 contains copies of each comment letter received on the Draft EIR, along with annotated responses to each comment contained within the letters. Section 3 of this document contains corrections and errata to the Draft EIR. Section 4.0 evaluates a Reduced Intensity Alternative (less intensive modified plan) as described above, while Section 5.0 contains the MMRP.

1.2 PUBLIC REVIEW OF THE DRAFT EIR

As required by the California Environmental Quality Act (CEQA) Guidelines Section 15087, a Notice of Completion (NOC) of the Draft EIR State Clearinghouse No. 2008021002 for the Eucalyptus Industrial Park project was filed with the State Clearinghouse on July 17, 2012, and the Notice of Availability (NOA) of the Draft EIR was filed with the Riverside County Clerk on July 18, 2012.

The Draft EIR was circulated for public review for a period of 48 days, from July 18, 2012 to September 4, 2012. Copies of the Draft EIR were distributed to all Responsible Agencies and to the State Clearinghouse in addition to various public agencies, citizen groups, and interested individuals. Copies of the Draft EIR were also made available for public review at the City Planning Department, at one area library, and on the internet.

A total of fourteen (14) comment letters were received. Ten of the comment letters received were from Federal, State, regional, or local agencies. Four comment letters were received from private organizations or conservation groups – no letters were received from individuals. All 14 letters have been responded to within this document. In particular, comments that address environmental issues are responded to in Section 2.0.

It should be noted that one of the comment letters submitted by a private organization, Lozeau Drury LLP dated August 31, 2012, was inadvertently left out of the original Final EIR document issued on February 12, 2014. This letter has been added to the Final EIR and the document has been revised as of March 31, 2014 including responses to the Lozeau Drury letter.

1.3 POINT OF CONTACT

The Lead Agency for this Project is the City of Moreno Valley. Any questions or comments regarding the preparation of this document, its assumptions, or its conclusions, should be referred to:

Jeff Bradshaw, Associate Planner
City of Moreno Valley, Planning Division
14177 Frederick Street
Moreno Valley, California 92553
Phone: (951) 413-3224
e-mail: jeffreyb@moval.org

1.4 PROJECT SUMMARY

The following information is summarized from the Project Description in the Draft EIR. For additional detail in regard to Project characteristics and Project-related improvements, along with analyses of the Project's potential environmental impacts, please refer to Draft EIR Sections 3.0 and 4.0, respectively.

1.4.1 Project Location/Existing Conditions

The project site is located in the City of Moreno Valley, Riverside County. The approximately 122.8-acre site is generally located south of the Sr-60 Freeway between Redlands Boulevard and Moreno Beach Drive in the eastern portion of the City. The Quincy Channel forms the eastern boundary of the site. During preparation of the Draft EIR, one of the existing onsite conditions was the presence of hundreds of citrus trees in the central and northern portions of the site, which were left over from historical agricultural use of the property. During the entitlement moratorium described before Section 1.1, ProLogis decided to remove the citrus trees due to the high ongoing cost of maintaining and harvesting them, and the potential fire danger if the trees became too dry from not enough watering. This minor change in existing conditions is being documented in this FEIR and does not change any of the conclusions of the DEIR regarding significant impacts or mitigation measures. The trees were removed in the winter of 2013 so it was not during the spring breeding season for bird species in the area. This will be described in more detail in Section 4.4 of this document,

1.4.2 Proposed Project

The proposed development would result in the construction and operation of approximately 2,244,638 square feet of distribution warehouse uses in 6 buildings on an approximately 122.8-acre site. The buildings range in size from 106,106 to 862,035 square feet. The buildings will be constructed with a total of 326 vertical-lift dock-high roll up doors on the long sides of each building to allow access for

the loading and unloading of products from diesel truck/trailers. Each building also includes business office space for the management of each warehouse. A total of 372 truck trailer parking stalls and 1,110 vehicle parking stalls will be provided, with truck and vehicle parking provided at each warehouse sufficient for the anticipated trucks and vehicles for that particular building, in accordance with City standards for light industrial uses. The project provides 15 to 24 percent landscaping for each warehouse building area, with a total average of 18 percent compared to 10 percent minimum required by the City's Municipal Code.

1.4.3 Project Objectives

The purpose of the proposed project is to provide a new facility specializing in warehouse distribution services. Upon development, the proposed project will achieve the following:

- Provide industrial warehouse facilities that meet the substantial and unmet demands of businesses located in the City and County;
- Provide new industrial development that is attractive and minimizes conflicts with the surrounding existing uses;
- Provide a variety of new employment opportunities for the citizens of Moreno Valley and surrounding communities;
- Encourage warehouse distribution services that take advantage of the area's close proximity to various freeways and transportation corridors;
- Encourage new development consistent with the capacity and municipal service capabilities;
- Provide infrastructure improvements to meet phased project needs in an efficient and cost-effective manner;
- Cluster industrial warehouse uses near access points to the state highway system to reduce traffic congestion on surface streets and to reduce air pollutant emissions from vehicle sources;
- Develop land uses that provide the City with a positive revenue/cost ratio and provide needed infrastructure in a timely fashion;
- Address community circulation, both vehicular and pedestrian, utilizing available capacity within the existing circulation system, and provide fair share improvements to various future-year deficient intersection or road segments; and
- Reduce peak hour vehicle trips, energy and water consumption compared to existing General Plan land uses.

1.4.4 Required Permits and Discretionary Actions

The following discretionary actions are anticipated to be taken by the City of Moreno Valley as part of the proposed project:

- General Plan Amendment to amend the Land Use Element resulting in a change of land use designations for the southern portion of the project site (approximately 71.3 acres) from Residential 15, Residential 5, and Residential Agriculture to Business Park.
- General Plan Amendment to amend the Circulation Element including (1) elimination of undeveloped Quincy Street from Eucalyptus Avenue to Encilia Avenue; and (2) realignment of Encilia Avenue from its current alignment such that its westerly terminus is

located at Moreno Beach Drive instead of the current General Plan westerly terminus at Eucalyptus Avenue. The segment between Quincy Channel and Moreno Beach Drive would be classified as a Collector.

- Change of Zone resulting in a change from Business Park (BP), Business Park Mixed-Use (BPX), Residential 15 (R15), Residential 5 (R5), and Residential Agriculture (RA-2) to Light Industrial (LI) on the project site.
- Modification of the Primary Animal Keeping Overlay (PAKO) zone district per the recommended change of zone.
- Modification of the Master Plan of Trails to eliminate trail segment along the west side of the Quincy Channel north of the future Eucalyptus Avenue and add a segment along the north side of Eucalyptus Avenue from the Quincy Channel to the west boundary of the project site.
- Approval of a Master Plot Plan and five related Plot Plans.
- Tentative Parcel Map approval.
- Certification of the Environmental Impact Report.
- Final Parcel Map, public improvement agreement, and related securities approval.
- Issuance of an encroachment permit for any construction work done in any City-controlled ROW. Encroachment permit issuance requires approval of improvement plans, public improvement agreement execution with securities posted, and satisfying those conditions of approval required prior to grading.
- Approval of a Storm Water Pollution Prevention Plan (SWPPP) to accommodate site runoff during construction.
- Approval of a Preliminary Water Quality Management Plan (P-WQMP) and Final Water Quality Management Plan (F-WQMP) to mitigate for post-construction runoff flows (non-discretionary).
- Issuance of a Grading Permit that requires approval of a grading plan, approval of the final drainage study, approval of the F-WQMP, obtaining an Notice of Intent and Water Discharge Identification Number, obtaining a WQMP#, and satisfying those conditions of approval required prior to grading (non-discretionary).
- Issuance of a Building permit. The comprehensive building permit includes building, plumbing, mechanical, and electrical permits (non-discretionary).

The following approvals and permits are required by other agencies:

- Approval from the City and Riverside County Flood Control and Water Conservation District (RCFCWCD) to ensure that construction site drainage velocities are equal to or less than the pre-construction conditions and downstream water quality is not worsened.
- Approval of Quincy Channel improvements from the RCFCWCD.
- A Section 404 Permit from the U.S. Army Corps of Engineers (USACE).
- A Section 401 Water Quality Certification from the Regional Water Quality Control Board (RWQCB).
- A Section 1602 Streambed Alteration Agreement from the California Department of Fish and Game (CDFG).

- Encroachment permits from Caltrans for any construction work done in any State-controlled ROW (i.e., SR-60).

2. RESPONSE TO COMMENTS

A total of thirteen (13) comment letters on the Draft EIR were received with 10 of them from Federal, State, regional, or local agencies and 3 letters from private organizations or individuals. All 13 letters have been responded to within this document. Comments that address environmental concerns have been specifically addressed. Comments that (1) do not address the adequacy or completeness of the Draft EIR; (2) do not raise environmental issues; or (3) do request the incorporation of additional information not relevant to environmental issues, do not require a response, pursuant to Section 15088(a) of the State CEQA Guidelines.

Section 15088 of the State CEQA Guidelines, Evaluation of and Response to Comments, states:

- a) The lead agency shall evaluate comments on environmental issues received from persons who reviewed the draft EIR and shall prepare a written response. The lead agency shall respond to comments received during the noticed comment period and any extensions and may respond to late comments.
- b) The written response shall describe the disposition of significant environmental issues raised (e.g., revisions to the proposed project to mitigate anticipated impacts or objections). In particular, major environmental issues raised when the lead agency's position is at variance with recommendations and objections raised in the comments must be addressed in detail, giving the reasons that specific comments and suggestions were not accepted. There must be good faith, reasoned analysis in response. Conclusory statements unsupported by factual information will not suffice.
- c) The response to comments may take the form of a revision to the draft EIR or may be a separate section in the final EIR. Where the response to comments makes important changes in the information contained in the text of the draft EIR, the lead agency should either:
 1. Revise the text in the body of the EIR; or
 2. Include marginal notes showing that the information is revised in the responses to comments.

Information provided in this volume of the Final EIR clarifies, amplifies, or makes minor modifications to the Draft EIR. No significant changes have been made to the information contained in the Draft EIR as a result of the responses to comments, and no significant new information has been added that would require recirculation of the document.

An Errata section to the EIR (Section 3.0) has been prepared to make minor corrections and clarifications to the Draft EIR as a result of City review and comments received during the public review period. Therefore, this Response to Comments document, along with the Errata is included as part of the Final EIR for consideration by the Planning Commission prior to a vote to certify the Final EIR.

2.1 LIST OF PERSONS, ORGANIZATIONS, AND PUBLIC AGENCIES COMMENTING ON THE DRAFT EIR

The persons, organizations, and public agencies that submitted comments regarding the Draft EIR through September, 2012, are listed below. A total of thirteen (13) comment letters were received. Ten of the comment letters were from Federal, State, regional, or local agencies, while three were from private organizations or individuals. Each comment letter received is indexed with a letter and number below.

Comment Letters Received Regarding the Draft EIR

A FEDERAL AND STATE AGENCIES

- A-1 California Office of Planning and Research, State Clearinghouse (September 4, 2012)**
Scott Morgan, Director State Clearinghouse
- A-2 California Department of Fish and Game (August 28, 2012)**
Jeff Brandt, Senior Environmental Specialist
- A-3 California Native American Heritage Commission (July 20, 2012)**
Dave Singleton, Program Analyst
- A-4 Pechanga Band of Luiseno Indians (September 4, 2012)**
Anna Hoover, Cultural Analyst
- A-5 Morongo Band of Mission Indians (September 10, 2012)**
Franklin Dancy, Director of Planning

B. REGIONAL AND COUNTY AGENCIES

- B-1 Eastern Municipal Water District (September 4, 2012)**
Jayne Joy, Director of Environmental and Regulatory Compliance
- B-2 Eastern Municipal Water District (September 4, 2012)**
Maroun El-Hage, Senior Civil Engineer, New Business Development
- B-3 South Coast Air Quality Management District (September 4, 2012)**
Ian McMillan, Program Supervisor, Intergovernmental Review
- B-4 Riverside County Flood Control and Water Conservation District (September 17, 2012)***
Henry Olivo, Engineering Project Manager

C. LOCAL AGENCIES

- C-1 City of Riverside (September 4, 2012)**
Steve Hayes, City Planner

D. PRIVATE ORGANIZATIONS AND INDIVIDUALS

- D-1 Lozeau Drury LLP (August 29, 2012)**
Richard Drury et al, Attorneys for LIUNA Local Union 1184

D-2 Sierra Club, San Geronio Chapter (September 4, 2012)
George Hague, Conservation Chair
Moreno Valley Chapter

D-3 Johnson & Sedlack (September 4, 2012)
Ray Johnson, AICP, Esq.

D-4 Lozeau Drury LLP (August 31, 2012)
Richard Drury et al, Attorneys for LIUNA Local Union 1184

It should be noted that this letter actually consists of four related documents, one main letter from Mr. Drury, two supporting memoranda from other individuals (Dr. Clark and Mr. Hageman), and a number of appendices as attached materials. Each of these has a separate response.

2.2 FORMAT OF RESPONSES TO COMMENTS

Aside from the courtesy statements, introductions, and closings, individual comments within the body of each letter have been identified and numbered. A copy of each comment letter and the City's responses are included in this section. Brackets delineating the individual comments and an alphanumeric identifier have been added to the right margin of the letter. Responses to each comment identified are included on the page(s) following each comment letter. Responses to comments were sent to the agencies that provided comments.

In the process of responding to the comments, there were minor revisions to the Environmental Impact Report. None of the comments or responses constitutes "significant new information" (*CEQA Guidelines* Section 15073.5) that would require recirculation of the Environmental Impact Report.



EDMUND G. BROWN JR.
GOVERNOR

STATE OF CALIFORNIA
GOVERNOR'S OFFICE of PLANNING AND RESEARCH
STATE CLEARINGHOUSE AND PLANNING UNIT



KEN ALEX
DIRECTOR

September 4, 2012

Jeff Bradshaw
City of Moreno Valley
14177 Frederick Street
PO Box 88005
Moreno Valley, CA 92552

Subject: ProLogis Eucalyptus Industrial Park EIR (formerly Prologis Park Moreno Valley Eucalyptus Project)
SCH#: 2008021002

Dear Jeff Bradshaw:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on August 31, 2012, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

"A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Enclosures
cc: Resources Agency

1400 10th Street P.O. Box 3044 Sacramento, California 95812-3044
(916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

**Document Details Report
State Clearinghouse Data Base**

SCH# 2008021002
Project Title ProLogis Eucalyptus Industrial Park EIR (formerly Prologis Park Moreno Valley Eucalyptus Project)
Lead Agency Moreno Valley, City of

Type EIR Draft EIR
Description The proposed project consists of construction and operation of a warehouse facility with six individual warehouses of varying sizes with a total of 2,244,638 sf on 122.8 acres. The project includes construction of parking and driving areas, detention basins, erosion protection and a bridge over Quincy Channel, offsite road and utility improvements, and landscaping along the perimeter and roadway frontages.

Lead Agency Contact

Name Jeff Bradshaw
Agency City of Moreno Valley
Phone 951 413 3206 **Fax**
email
Address 14177 Frederick Street
 PO Box 88005
City Moreno Valley **State** CA **Zip** 92552

Project Location

County Riverside
City Moreno Valley
Region
Lat / Long 33° 55' 54" N / 117° 9' 24" W
Cross Streets Eucalyptus Avenue/Redlands Boulevard
Parcel No. 488-330-011, -012, -013, -0137, -018, -019, -020, and -021
Township 3S **Range** 3W **Section** 2 **Base** SBB&M

Proximity to:

Highways SR-60
Airports None
Railways None
Waterways Quincy Channel
Schools Valley View HS
Land Use Various

Project Issues Aesthetic/Visual; Agricultural Land; Air Quality; Archaeologic-Historic; Biological Resources; Drainage/Absorption; Flood Plain/Flooding; Forest Land/Fire Hazard; Geologic/Seismic; Minerals; Noise; Population/Housing Balance; Public Services; Recreation/Parks; Schools/Universities; Sewer Capacity; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Wildlife; Growth Inducing; Landuse; Cumulative Effects

Reviewing Agencies Resources Agency; Department of Fish and Game, Region 6; Department of Parks and Recreation; Department of Water Resources; California Highway Patrol; Caltrans, District 8; Native American Heritage Commission; State Lands Commission; Air Resources Board, Major Industrial Projects; Regional Water Quality Control Board, Region 8

Date Received 07/18/2012 **Start of Review** 07/18/2012 **End of Review** 08/31/2012

Note: Blanks in data fields result from insufficient information provided by lead agency.

RESPONSE TO LETTER A-1

California Governor's Office of Planning and Research, State Clearinghouse

Response to Comment A-1. The City recognizes the receipt of comments from State agencies and the State Clearinghouse's acknowledgement that it has complied with review requirements for environmental documents.



State of California -The Natural Resources Agency
DEPARTMENT OF FISH AND GAME
3602 Inland Empire Boulevard, Suite C-220
Ontario, CA 91764
(909) 484-0459
http://www.dfg.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director



August 28, 2012

Mr. Jeff Bradshaw
City of Moreno Valley
14177 Frederick St.
P.O. Box 88005
Moreno Valley, CA 92552

Re: ProLogis Eucalyptus Industrial Park Draft Environmental Impact Report
City of Moreno Valley, County of Riverside, SCH# 2008021002

Dear Mr. Bradshaw:

The Department of Fish and Game (Department) appreciates this opportunity to comment on the ProLogis Eucalyptus Industrial Park Draft Environmental Impact Report (DEIR). The Department is responding as a Trustee Agency for fish and wildlife resources [Fish and Game Code sections 711.7 and 1802 and the California Environmental Quality Act Guidelines (CEQA) section 15386] and as a Responsible Agency regarding any discretionary actions (CEQA Guidelines section 15381), such as a Lake and Streambed Alteration Agreement (California Fish and Game Code Sections 1600 *et seq.*), and/or a California Endangered Species Act (CESA) Incidental Take Permit (Fish and Game Code Sections 2080 and 2080.1).

Project Description and Location

The Proposed Project involves the construction of a six building warehouse facility covering an area of 2,244,635 square feet (sf). The project requires a change of land use of 71.2 acres from residential to business park and an overall zone change of 122.8 acres to light industrial. Also included in the Project is the elimination of Quincy Street from State Route 60 (SR-60) south to Cottonwood Avenue, and the completion of Eucalyptus Avenue east to Fir Avenue. The Project site is located in the eastern portion of the City of Moreno Valley, south of SR-60, east of Moreno Valley Auto Mall, and adjacent to and west of the Quincy Channel. The major cross streets are Moreno Beach Drive to the west and Redlands Boulevard to the east. A Notice of Preparation for the Project was submitted to the State Clearinghouse in 2008.

Western Riverside Multiple Species Habitat Conservation Plan (MSHCP)

The Department is responsible for ensuring appropriate conservation of fish and wildlife resources including rare, threatened, and endangered plant and animal species, pursuant to the CESA, and administers the Natural Community Conservation Plan Program (NCCP Program). On June 22, 2004, the Department issued NCCP approval and Take Authorization for the Western Riverside County MSHCP per Section 2800, *et seq.*, of the California Fish and Game Code. The MSHCP establishes a multiple species conservation program to minimize and mitigate habitat loss and the incidental take of covered species in association with activities covered under the permit.

Conserving California's Wildlife Since 1870

ProLogis Eucalyptus Industrial Park Draft Environmental Impact Report
City of Moreno Valley -- SCH# 2008021002
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In order to be considered a covered activity, Permittees must demonstrate that proposed actions are consistent with the MSHCP and its associated Implementing Agreement.

The proposed Project occurs within the MSHCP area and is subject to the provisions and policies of the MSHCP. The Project is located in the City of Moreno Valley, County of Riverside. The City of Moreno Valley is the lead agency and is signatory to the implementing agreement of the MSHCP. Compliance with approved habitat plans, such as the MSHCP, is discussed in CEQA. Specifically, Section 15125(d) of the CEQA Guidelines requires that the DEIR discuss any inconsistencies between a proposed Project and applicable general plans and regional plans, including habitat conservation plans and natural community conservation plans. An assessment of the impacts to the MSHCP as a result of this Project is necessary to address CEQA requirements. Included in the appendices is the "MSHCP Consistency Analysis and Burrowing Owl Habitat Assessment and Focused Survey for the Eucalyptus Industrial Development."

2

The Project is located in the Roche Canyon/Badlands Area Plan of the MSHCP and does not involve a Criteria Cell. The site is not adjacent to any conservation areas. MSHCP survey requirements for this area include surveys for burrowing owl. Vegetation on the site consists of ruderal, agriculture, non-native grasslands, "disturbed" mule fat, non-native woodland, unvegetated streambed and channel upland vegetation. There is a riparian stream just prior to the eastern Project boundary, and a riparian stream on the west, and southeast. Burrowing owl surveys were conducted over five days in July of 2011 and no birds were found, but suitable habitat was observed on the site.

Analysis of the Potential Project-Related Impacts on Biological Resources

CEQA Section 21068 defines "significant" as: "...a substantial, or potentially substantial, adverse change in the environment." This particular Project has the potential to have significant environmental impacts on Cooper's hawk, red-tailed hawk, coyote, desert cottontail, southern California black walnut, bladder pod, and mule fat. The Project is located in the MSHCP survey area for the burrowing owl.

3

Burrowing Owl

The site was suitable for burrowing owl, even though none were found. The applicant should submit a copy of the burrowing owl pre-construction survey (with SCH #) to the Department and notify the Department if a DBESP will be required.

4

Proposed mitigation

The mitigation proposed for upland species is to pay into the Stephens' kangaroo Habitat Conservation Plan and to pay the development fees to the MSHCP.

5

Department Concerns

The Department is concerned about three issues: 1) stream and riparian vegetation impacts, 2) the potential presence of burrowing owl, and, 3) the cumulative impact of the Project on SR-60 traffic and nearby roadways (particularly Gilman Hot Springs Road and Lamb Canyon Road). The Department recommends that the traffic analysis be revised and

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the Department's concerns addressed in the Final Environmental Impact Report or a subsequent CEQA document.

6

Lake and Streambed Alteration Agreement

The applicant conducted a jurisdictional delineation of State and Federal waters. There is an unnamed, eroded channel that originates in the northwest, trends southeast and exits the Project site heading south. Quincy Channel traverses the eastern boundary of the site on a north to south alignment. The applicant has filed a Determination of Biologically Equivalent or Superior Preservation (DBESP) with the Resource Conservation Agency (RCA) of the MSHCP.

Although the proposed Project is within the MSHCP, a Notification of Lake or Streambed Alteration is still required by the Department, should the site contain jurisdictional waters. Additionally, the Department's criteria for determining the presence of jurisdictional waters are more comprehensive than the MSHCP criteria in Section 6.1.2 (Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools). The Department is responsible for assessing and evaluating impacts to jurisdictional waters; typically accomplished through reviewing jurisdictional (JD) reports, supporting information, and conducting site visits. Following review of a JD, the Department may request changes to the JD. The Department may also recommend that additional project avoidance and/or minimization measures be incorporated, or request additional mitigation for project-related impacts to jurisdictional areas. The Department recommends submitting a notification early on, since modification of the proposed project may be required to avoid or reduce impacts to fish and wildlife resources. To obtain a Streambed Alteration Agreement notification package, please go to <http://www.dfg.ca.gov/habcon/1600/forms.html>.

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The applicant completed a JD of State and Federal Waters and included the document as an Appendix. A jurisdictional delineation was conducted in 2011 and the impact analysis determined that there will be 0.362 acres of permanent impact and 0.33 acres of temporary impact to jurisdictional streams. The applicant is proposing to mitigate for 0.362 acres of permanent impacts at a 2:1 ratio or with payment of In-lieu fees to the Santa Ana Watershed Association for arundo donax removal. The JD will be reviewed by the Department to ensure consistency with the Department's regulatory policies. Any mitigation measures required by the resource protection policies of the MSHCP should be included in the CEQA document.

The Department opposes the elimination of ephemeral, intermittent, and perennial streams, channels, lakes, and their associated habitats. The Department recommends avoiding the stream and riparian habitat to the greatest extent possible. Any unavoidable impacts need to be compensated with the creation and/or restoration of in-kind habitat either on-site or off-site at a minimum 3:1 replacement-to-impact ratio, depending on the impacts and proposed mitigation. Additional mitigation requirements through the Department's Streambed Alteration Agreement process may be required depending on the quality of habitat impacted, proposed mitigation, project design, and other factors.

Analysis of Traffic Impacts

The Traffic section of the DEIR states that the project would contribute to the worsening of the unsatisfactory Level of Service (LOS) at the Redlands Boulevard/SR-60 westbound ramps and a significant impact at the intersection of Redlands Boulevard/Eucalyptus Avenue-Fir Avenue. Additionally, the SR-60 Eastbound (Pigeon Pass Road to Peacock

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Street, AM and PM peak hours), SR-60 Westbound (Poacock Street to Perris Boulevard, AM peak hour), and SR-60 westbound (Perris Boulevard to Anson Street, AM peak hour) are forecast to operate at an unsatisfactory level of service with the proposed Project. The traffic study also notes that there are no projects proposed for the SR-60.

The traffic section of the DEIR is limited to projects within a five mile radius and how the proposed development and other development within the five mile radius would affect local traffic conditions. The Department would like to point out that SR-60 is a major west to east linkage connecting State Route 91 (SR-91) to the Interstate 10 (I-10), as well as extending from the City of Los Angeles to the SR-91, Interstate 215 (I-215) and Interstate 15 (I-15) interchanges. There is already heavy congestion on the westbound SR-60.

The Department is interested in existing and projected future traffic flow along SR-60. Specifically, the Department is interested in an analysis of how the Project and other proposed development (which cumulatively includes 13,483,062 sf of development), will ultimately use SR-60. The analysis should include the cumulative impacts associated with future projected traffic flow along SR-60 from these developments. The Department would like to stress that the 13,483,062 sf figure does not include the World Logistics project which would add 41 million sf of warehouse facilities. This omission alone dictates that the traffic study should be revised and recirculated. The scale of these projects suggests that the Project facilities are not for local use only, but are designed as regional warehousing centers to serve the Counties of Riverside, Orange, Los Angeles, and San Bernardino. Therefore an analysis of local intersection impacts is not adequate to describe the regional impacts of these facilities on the SR-60. The analysis also does not include the Villages of Lakeview Specific Plan that involves 11,350 dwelling units near the intersection of Gilman Hot Springs Road and Ramona Expressway, or proposed residential development near the intersection of Lamb Canyon Road and SR-60.

The Department is concerned that traffic congestion on SR-60 will result in an increase in traffic on area surface streets, particularly Gilman Hot Springs Road and the Ramona Expressway. Both of these roads provide access to the Department's San Jacinto Wildlife Area (SJWA), where major development projects are proposed, but are not included in the current traffic study. The Department is very concerned about the potential cumulative impacts of commercial/industrial/warehouse facilities on nearby conserved lands. Of particular importance to the Department are the potential direct and indirect effects of the Project on the adjacent SJWA, Lake Perris Recreation Area, and Badlands area, and potential increased use of Davis Road, lighting, noise, windblown trash, vehicular emissions, traffic, and surface road runoff.

The Badlands area and the SJWA represent a substantial investment (\$80+ million) by the State in acquiring habitat for native plants, animals, and migratory waterfowl. The SJWA is a important and historic migratory stopover for waterfowl, game birds, and non-game birds in Southern California. The SJWA is also a regional destination point for bird watching. A key component of the SJWA is waterfowl and upland game hunting.

In summary, we believe the DEIR is inadequate in describing project related traffic impacts and identifying appropriate mitigation for purposes of CEQA. We appreciate the opportunity to comment on the referenced DEIR and we recommend that the DEIR be revised to

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ProLogis Eucalyptus Industrial Park Draft Environmental Impact Report
City of Moreno Valley -- SCH# 2008021002
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address the Department's concerns. If you should have any questions pertaining to these comments, please contact Robin Maloney-Rames at (909) 980-3818.

↑
10

Sincerely,



Jeff Brandt
Senior Environmental Scientist

RESPONSE TO LETTER A-2

California Department of Fish and Game

Response to Comment 1. The commenter accurately characterizes the responsibilities of the Department and the characteristics of the proposed project.

Response to Comment 2. The commenter accurately summarizes both the CEQA requirement for an analysis of the proposed project's consistency with the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) and the MSHCP policies and procedures applicable to the proposed project. The commenter also outlines the MSHCP requirement for a burrowing owl survey, and that the surveys conducted for the project showed no burrowing owl sign or observations, but the site was determined to contain suitable habitat.

Response to Comment 3. The commenter provides the definition for significant impact under CEQA but then applies it incorrectly to the project site. The detailed biological surveys prepared for the project site, as well as the Section 4.4 of the EIR on biological resources, concludes that the proposed project would not have significant impacts on the species listed by the commenter due to the lack of existing native vegetation on the site, the fact that the has been regularly disturbed by disking for weed abatement (i.e., fuel modification for fire protection), and a substantial portion of the site supports citrus trees that are not commercially harvested. Development of this site would remove an incremental amount of land that now provides foraging for the two raptor species (i.e., Cooper's hawk and red-tailed hawk) but the site does not contain any large trees that are suitable for raptor roosting or perching (i.e., the citrus trees make these activities difficult for raptors). Impacts to cottontail, bladder pod, and mule fat must be considered only incremental as a result of the loss of 122.8 acres of vacant disturbed land that supports mainly weedy non-native vegetation. The commenter provided no empirical evidence or data to support the contention that impacts to these species should be considered significant under CEQA. Finally, impacts to the drainages that support southern California black walnut were assessed and appropriate onsite and offsite mitigation will be provided, as outlined in Mitigation Measure 4.4.6.3A on 4.4-30 of the Draft EIR. These conclusions are supported by the technical studies prepared by ICF International based on the proposed warehouse development project.

ICF International also reviewed this comment and wished to add the following:

"Cooper's hawk, coyote, and southern California black walnut are fully covered species under the MSHCP and as such any potential impacts to them would be fully mitigated through the project being consistent with the MSHCP. Red-tailed hawk, desert cottontail, bladder pod, and mule fat are all widely distributed species with no threat to their continued existence in western Riverside County. The removal of 121.29 acres of foraging habitat for red-tailed hawk is judged to be less than significant under CEQA. The nesting bird mitigation measure will ensure no direct take of individuals would occur. The removal of 121.29 acres of occupied habitat for desert cottontail is judged to be a less than significant impact under CEQA. This species is widely distributed throughout western Riverside County, including many areas of development. The removal of a few bladder pod and less than an acre of occupied mule fat habitat is also judged to be a less than significant impact given these species' wide distribution w/in the county. Agreed, the project site occurs within the survey area of burrowing owl and a survey following MSHCP protocol was performed and the species was absent."

Response to Comment 4. ICF International has prepared and is processing a Determination of Biologically Equivalent or Superior Preservation (DBESP) report for review and approval by Riverside Conservation Authority (RCA) and California Department of Fish and Game (CDFG), according to the

procedures established by the MSHCP. The applicant will be preserving the Quincy Channel along the east side of the project, and will mitigate for the loss of the two minor drainage features along the western and southern portions of the site, as outlined on page 4.4-30 of the Draft EIR.

As outlined in Mitigation Measures 4.4.6.1A through C in the Draft EIR, a pre-construction survey for burrowing owl will be prepared and processed through CDFG prior to grading the site.

Response to Comment 5. As required by law, the developer will pay the established SKR mitigation and MSHCP development impact fee. ICF International adds that this is for those species covered by both the SKR HCP and the MSHCP. For species with potential for occurrence and/or confirmed present, the proposed impacts were judged less than significant under CEQA and no mitigation was necessary.

Response to Comment 6. It is understandable CDFG is concerned about impacts to stream and riparian vegetation and burrowing owl. However, the commenter does not explain why the CDFG, which is a responsible and trustee agency for biological resources in the state, is concerned with traffic issues or the traffic study. However, we believe Response 8 adequately addresses the CDFG's concerns.

In addition, ICF International adds the following information to this response:

- 1) Stream and riparian vegetation impacts – the project will impact stream and riparian vegetation that is protected under the WRC MSHCP, Clean Water Act Sections 401 and 401, and CDFG 1600 code. The project must, under the WRC MSHCP, provide mitigation for impacts (permanent and temporary) such that the compensation is equivalent or superior in preservation to that proposed for impact. A Determination of Equivalent or Superior Preservation (DBESP) report will be submitted to USFWS and CDFG to ensure the compensatory mitigation is at a minimum adequate per the WRC MSHCP. This is stated in the EIR. Under CEQA it is judged that a minimum mitigation ratio at 2:1 would provide equivalent or superior mitigation for that being impacted. Under the MSHCP, USFWS and CDFG concurrence is necessary and the mitigation ratio may be determined to be higher than 2:1. In addition, it is stated in the CEQA document that impacts to federal and state jurisdictional waters/streambeds would require permits/agreements under CWA 401 and 404 and CDFG 1600 code and that under CEQA, impacts would need to be mitigated at a 2:1 ratio to make impacts less than significant. The mitigation ratio determined during the permit/agreement processing may be determined to be higher or lower and the project proponent would be required to fulfill the higher mitigation ratio. Mitigation Measure 4.4.6.3 will be revised to read “...shall be mitigated at a minimum of a 2:1 ratio.”
- 2) The potential presence of burrowing owl – as indicated in the EIR, a focused survey was performed for this species and the species was found absent. A pre-construction survey for burrowing owl is required and stated in the EIR and is to occur within 30 days prior to ground disturbance activities. This is consistent with the WRC MSHCP. Additionally, the EIR states that if burrowing owl is found that the species would be excluded from the site through appropriate measures that USFWS and CDFG approve. These measures ensure that burrowing owl is not directly impacted by the project, that the project is consistent with the WRC MSHCP and that the project is consistent with USFWS and CDFG protocol.

Response to Comment 7. The commenter summarizes the results of the jurisdictional delineation prepared for the project by ICF International. The project will protect in place the entire Quincy Channel along the eastern boundary of the project site. The City is aware the Department opposes the elimination of minor drainage channels, as outlined in their comment, but there are times when small eroded ephemeral drainage courses must be channelized or incorporated into the overall drainage management of a site to provide effective erosion and flood control. The two smaller

ephemeral drainages along the eastern and southwestern portions of the site will be removed, but their loss will be compensated by offsite mitigation as outlined in Mitigation Measure 4.4.6.3A in the Draft EIR. The Department's subsequent Streambed Alteration Agreement process will allow for the effective transition and ultimate loss of these small drainages with minimum offsite compensation of 2:1 (note: subsequent regulatory permitting may require a different compensation ratio).

ICF International would like to add the following information to this response:

- 1) The project proponent plans on submitting an application to CDFG in the near future to ensure CDFG is involved early on in the permitting process.
- 2) The measures indicated in the CDFG comment are being incorporated into the revised DBESP. Finally, the EIR indicates that impacts to stream and riparian habitat will be mitigated at a ratio of 2:1 to provide sufficient mitigation under CEQA. The project has attempted to reduce impacts to all jurisdictional waters/streambeds. The project will install two storm drains and a bridge. The storm drains are necessary to continue supporting water volumes reaching the natural streams and the bridge is a requirement to maintain appropriate movement into and out of the project site. The ability to support on-site mitigation is limited due to the small amount of Quincy Channel that is owned by the project proponent and which is to be dedicated to the City of Moreno Valley as a condition of project approval. As such, all compensatory mitigation will occur off-site at a minimum ratio of 2:1. It is understood that further coordination with CDFG through the Streambed Alteration Agreement program will be necessary and that under the Streambed Alteration Agreement; the mitigation ratio may be higher or lower than 2:1 (as noted above).
- 3) Based on a pre-application MSHCP project meeting with CDFG, USFWS, RCA, and RWQCB that occurred on October 10, 2012, the following minor changes and clarifications will be added to the indicated mitigation measures, mainly to incorporate temporary impacts into the compensation for permanent impacts:

4.4.6.2A *As outlined in the project's Determination of a Biologically Equivalent or Superior Preservation (DBESP) report, the project applicant shall compensate for the temporary and permanent impact on and loss of jurisdictional waters and streambeds by providing a minimum 2:1 off-site replacement of equivalent riverine/riparian habitat prior to project construction. (0.36 acre impact = 0.72 acre replacement). This off-site replacement shall be accomplished through the contribution of in-lieu fees to the Santa Ana Watershed Association (SAWA) for its efforts in removal of invasive plants and restoration of riparian habitat adjacent to the tributaries of the San Jacinto River or within the Santa Ana River watershed. Documentation of acceptance of the SAWA contribution shall be provided to the City prior to issuance of a grading permit. Offsite restoration, enhancement, and/or land purchase mitigation for the drainage impacts will occur at an offsite location through one or more of the following: an USACE approved mitigation bank, through an in lieu fee mitigation program, and/or land purchase and conservation. DFG and USFWS will need to provide concurrence that this mitigation is equivalent or superior to that proposed for impact through their review and acceptance of the DBESP.*

4.4.6.2B *The project applicant shall retain qualified personnel to prepare and implement a Habitat Mitigation and Monitoring Plan (HMMP) to oversee restoration of temporarily affected areas (0.35 acre of riverine/riparian habitat) to their pre-construction contours and vegetation. The HMMP will be approved by USACE and CDFG prior to the City issuing any occupancy permits. Riparian/riverine resources that are temporarily impacted by project construction shall be returned to their preconstruction contours and hydroseeded, as outlined in the DBESP.*

NOTE: The DBESP replaces the need for a separate Habitat Mitigation and Monitoring Plan.

4.4.6.3A ~~The project applicant shall obtain a Section 404 Nationwide or Individual Permit, as appropriate, from the USACE and a Section 1602 Streambed Alteration Agreement from the CDFG. Direct temporary impacts to more than 0.1 acre of jurisdictional area that are regulated by the USACE, CDFG, and RWQCB shall be mitigated at a 2:1 ratio, including enhancement and/or creation of wetlands or the contribution of in-lieu fee to the Santa Ana Watershed Association (SAWA) for its efforts in removal of invasive plants and restoration of off-site riparian habitat, as outlined in Mitigation Measure 3.3.6.2A.~~ The project applicant shall obtain a Section 404 Nationwide or Individual Permit, as appropriate, from the USACE, a Section 401/Porter-Cologne Water Quality Certification from the RWQCB, and a Section 1602 Streambed Alteration Agreement from the CDFG. Offsite restoration, enhancement, and/or land purchase mitigation of jurisdictional drainage impacts will occur at an off-site location through one or more of the following: an USACE approved mitigation bank, through an in-lieu fee mitigation program, and/or land purchase and conservation.

NOTE: These mitigation measures have been revised to be consistent with the revised DBESP report, and so there will not be any conflicts between the implementation measures of the DBESP and the mitigation measures of the EIR.

Response to Comment 8. This comment states that the Traffic Impact Analysis (TIA) only looks at projects within a 5-mile radius. The 2035 conditions analyzed in the TIA were based on the RivTAM model, which includes General Plan land uses for Cities in Riverside County and SCAG forecasts outside Riverside County. Therefore, the comment that the Draft EIR only evaluates projects within a 5-mile radius is incorrect.

The commenter is interested in how the project and other proposed development will affect traffic flow on the SR-60. The analysis of 2035 conditions is based on reasonable absorption rates for General Plan Buildout of the County and based on SCAG forecasts. The background without project conditions for Year 2035 includes potential projects that are consistent with the approved General Plans.

The commenter notes that the World Logistics Center is not included as a cumulative project. Please note that the baseline used to prepare the cumulative conditions analysis in the EIR is based on the past, present and reasonably foreseeable projects at the time the Notice of Preparation (NOP) for the Draft EIR is issued. The NOP was distributed to state, regional, and local agencies on February 4, 2008. At that time, the World Logistics Center was not a planned project, so this project was not included directly as a cumulative project for opening year conditions. However, the traffic model utilized to prepare the traffic analysis does include the approved Moreno Highlands Specific Plan, which is located on the same site as the currently proposed World Logistics Center project. Furthermore, the Moreno Highland Specific Plan generates more trips than the World Logistics Center. As a result, although the World Logistics Center is not included as a cumulative project, as noted in the comment, the 2035 analysis does evaluate the effects of a larger project than the World Logistics Center.

Similarly, although the analysis does not include the Villages at Lakeview as a cumulative project directly, it is included as a Community Development zone in the RIVTAM model, which was used to forecast future volumes. The Community Development land use designation includes all uses proposed in the now rescinded EIR for the Villages at Lakeview project. The commenter also mentions a residential development near the intersection of Lamb Canyon Road and SR-60. It should be noted that Lamb Canyon Road does not intersect SR-60 and therefore it is unclear exactly where this developed uses is located or the exact size of the developed uses. However, LSA believes that the commenter is referring to a development off of SR-79 in the City of Beaumont. It is unlikely that a

residential development located approximately 16 miles from the proposed project would add cumulatively considerable trips to the project study area. Therefore inclusion of the referenced project in the cumulative project list would not be required.

The commentator is concerned about traffic on surface streets due to increased congestion on the SR-60, especially on Gilman Springs Road and Ramona Expressway. As noted in previous comments, the 2035 conditions analyzed in the TIA were based on the RivTAM model, which includes General Plan land uses for cities in Riverside County and SCAG forecasts outside Riverside County. Traffic models route trips based on available capacity and traffic volumes on roadways using the least cost approach. Using this approach, the RivTAM model also forecasts potential diversion of trips due to congested conditions on freeways. Therefore, the 2035 conditions analyzed in the DRAFT EIR accurately represent the future traffic that could be expected on area surface streets, including Gilman Hot Springs Road and the Ramona Expressway. The commenter also states that these two roadways provide access to the San Jacinto Wildlife Area (SJWA), but are not included in the traffic study. Based on local agency guidelines, intersections where the project would add more than 50 peak hour trips were included in the study area. The project would add fewer than 10 peak hour trips to Gilman Hot Springs Road and Ramona Expressway and as a result, these facilities were not included in the study area. The comment claims that potential cumulative impacts on nearby conserved lands, particularly potential direct and indirect effects of the project on the adjacent SJWA, Lake Perris Recreation Area, and Badlands Area, and potential increased use of Davis Road are not discussed in the DRAFT EIR because the project would add an insignificant number of vehicle trips in these areas. It should be noted that Davis Road is not on the City's Circulation Plan or the County of Riverside's Circulation Element. The road is not open to through traffic, and is currently gated. The gate is controlled/maintained by the California Department of Fish and Game. Even if Davis Road were open to through traffic, the small number of trips that would likely be added by the project or diverted from other facilities is minimal and is therefore not required to be analyzed.

Response to Comment 9. The commenter provides brief information on the SJWA and the resources with which the Department is concerned. This comment provides factual information about the Badlands area and the SJWA and does not require a response. The Badlands and the SJWA will not be significantly adversely impacted by the proposed project, as it is not proximate to either of these areas and only a small amount of project-related traffic is expected to use Gilman Springs Road which is adjacent to both areas.

Response to Comment 10. Based on the information in Responses to Comments A-2, Nos.7-9 above, the analysis of traffic impacts provided in the Draft EIR is based on local agency standards, relevant provisions of CEQA, data obtained the most recent version of RivTAM, and standard traffic engineering principles. The comment does not provide any additional information to reinforce the claim that the Draft EIR is inadequate in describing project related traffic impacts and in identifying mitigation measures.

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390
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ds_nahc@pacbell.net

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CITY OF MORENO VALLEY
Planning Division



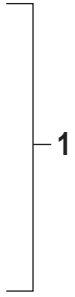
July 20, 2012

Mr. Jeff Bradshaw, Associate Planner
City of Moreno Valley Community Development Department:
Planning Division
14177 Frederick Street; P.O. Box 88005
Moreno Valley, CA 92552

Re: SCH#2008021002; CEQA Notice of Completion: draft Environmental Impact Report (DEIR) for the **PROLOGIS EUCALUPTUS INDUSTRIAL PARK**; located in the City of Moreno Valley; Riverside County, California.

Dear Mr. Bradshaw:

The Native American Heritage Commission (NAHC), the State of California 'Trustee Agency' for the protection and preservation of Native American cultural resources pursuant to California Public Resources Code §21070 and affirmed by the Third Appellate Court in the case of EPIC v. Johnson (1985: 170 Cal App. 3rd 604).

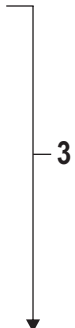


This letter includes state and federal statutes relating to Native American historic properties of religious and cultural significance to American Indian tribes and interested Native American individuals as 'consulting parties' under both state and federal law. State law also addresses the freedom of Native American Religious Expression in Public Resources Code §5097.9

The California Environmental Quality Act (CEQA – CA Public Resources Code 21000-21177, amendments effective 3/18/2010) requires that any project that causes a substantial adverse change in the significance of an historical resource, that includes archaeological resources, is a 'significant effect' requiring the preparation of an Environmental Impact Report (EIR) per the CEQA Guidelines defines a significant impact on the environment as 'a substantial, or potentially substantial, adverse change in any of physical conditions within an area affected by the proposed project, including ... objects of historic or aesthetic significance.' In order to comply with this provision, the lead agency is required to assess whether the project will have an adverse impact on these resources within the 'area of potential effect (APE), and if so, to mitigate that effect. The NAHC recommends that the lead agency request that the NAHC do a Sacred Lands File search as part of the careful planning for the proposed project.



The NAHC "Sacred Sites," as defined by the Native American Heritage Commission and the California Legislature in California Public Resources Code §§5097.94(a) and 5097.96. Items in the NAHC Sacred Lands Inventory are confidential and exempt from the Public Records Act pursuant to California Government Code §6254 (r).



Early consultation with Native American tribes in your area is the best way to avoid unanticipated discoveries of cultural resources or burial sites once a project is underway. Culturally affiliated tribes and individuals may have knowledge of the religious and cultural significance of the historic properties in the project area (e.g. APE). We strongly urge that you

make contact with the list of Native American Contacts on the attached list of Native American contacts, to see if your proposed project might impact Native American cultural resources and to obtain their recommendations concerning the proposed project. Pursuant to CA Public Resources Code § 5097.95, the NAHC requests cooperation from other public agencies in order that the Native American consulting parties be provided pertinent project information. Consultation with Native American communities is also a matter of environmental justice as defined by California Government Code §65040.12(e). Pursuant to CA Public Resources Code §5097.95, the NAHC requests that pertinent project information be provided consulting tribal parties. The NAHC recommends *avoidance* as defined by CEQA Guidelines §15370(a) to pursuing a project that would damage or destroy Native American cultural resources and Section 2183.2 that requires documentation, data recovery of cultural resources.

3

Furthermore, the NAHC if the proposed project is under the jurisdiction of the statutes and regulations of the National Environmental Policy Act (e.g. NEPA; 42 U.S.C. 4321-43351). Consultation with tribes and interested Native American consulting parties, on the NAHC list, should be conducted in compliance with the requirements of federal NEPA and Section 106 and 4(f) of federal NHPA (16 U.S.C. 470 *et seq*), 36 CFR Part 800.3 (f) (2) & .5, the President's Council on Environmental Quality (CSQ, 42 U.S.C 4371 *et seq.* and NAGPRA (25 U.S.C. 3001-3013) as appropriate. The 1992 *Secretary of the Interiors Standards for the Treatment of Historic Properties* were revised so that they could be applied to all historic resource types included in the National Register of Historic Places and including cultural landscapes. Also, federal Executive Orders Nos. 11593 (preservation of cultural environment), 13175 (coordination & consultation) and 13007 (Sacred Sites) are helpful, supportive guides for Section 106 consultation. The aforementioned Secretary of the Interior's *Standards* include recommendations for all 'lead agencies' to consider the historic context of proposed projects and to "research" the cultural landscape that might include the 'area of potential effect.'

4

Confidentiality of "historic properties of religious and cultural significance" should also be considered as protected by California Government Code §6254(r) and may also be protected under Section 304 of he NHPA or at the Secretary of the Interior discretion if not eligible for listing on the National Register of Historic Places. The Secretary may also be advised by the federal Indian Religious Freedom Act (cf. 42 U.S.C., 1996) in issuing a decision on whether or not to disclose items of religious and/or cultural significance identified in or near the APEs and possibility threatened by proposed project activity.

5

Furthermore, Public Resources Code Section 5097.98, California Government Code §27491 and Health & Safety Code Section 7050.5 provide for provisions for inadvertent discovery of human remains mandate the processes to be followed in the event of a discovery of human remains in a project location other than a 'dedicated cemetery'.

6

To be effective, consultation on specific projects must be the result of an ongoing relationship between Native American tribes and lead agencies, project proponents and their contractors, in the opinion of the NAHC. Regarding tribal consultation, a relationship built around regular meetings and informal involvement with local tribes will lead to more qualitative consultation tribal input on specific projects.

7

Finally, when Native American cultural sites and/or Native American burial sites are prevalent within the project site, the NAHC recommends 'avoidance' of the site as referenced by CEQA Guidelines Section 15370(a).

8

If you have any questions about this response to your request, please do not hesitate to contact me at (916) 653-6251.

Sincerely,



Dave Singleton
Program Analyst

Cc: State Clearinghouse

Attachment: Native American Contact List

Native American Contact
 Riverside County
 July 20, 2012

Pechanga Band of Mission Indians
 Paul Macarro, Cultural Resources Manager
 P.O. Box 1477 Luiseno
 Temecula , CA 92593
(951) 770-8100
 pmacarro@pechanga-nsn.
 gov
 (951) 506-9491 Fax

Ramona Band of Cahuilla Mission Indians
 Joseph Hamilton, Chairman
 P.O. Box 391670 Cahuilla
 Anza , CA 92539
 admin@ramonatribe.com
 (951) 763-4105
 (951) 763-4325 Fax

San Manuel Band of Mission Indians
 Carla Rodriguez, Chairwoman
 26569 Community Center Drive Serrano
 Highland , CA 92346
 (909) 864-8933
 (909) 864-3724 - FAX
 (909) 864-3370 Fax

Soboba Band of Mission Indians
 Scott Cozaet, Chairperson; Attn: Carrie Garcia
 P.O. Box 487 Luiseno
 San Jacinto , CA 92581
 carrieg@soboba-nsn.gov
 (951) 654-2765
 (951) 654-4198 - Fax

Santa Rosa Band of Mission Indians
 John Marcus, Chairman
 P.O. Box 391820 Cahuilla
 Anza , CA 92539
 (951) 659-2700
 (951) 659-2228 Fax

Morongo Band of Mission Indians
 Michael Contreras, Cultural Heritage Prog.
 12700 Pumarra Road Cahuilla
 Banning , CA 92220 Serrano
(951) 201-1866 - cell
 mcontreras@morongo-nsn.
 gov
 (951) 922-0105 Fax

San Manuel Band of Mission Indians
 Ann Brierty, Policy/Cultural Resources Departmen
 26569 Community Center. Drive Serrano
 Highland , CA 92346
 (909) 864-8933, Ext 3250
 abrierty@sanmanuel-nsn.
 gov
 (909) 862-5152 Fax

Morongo Band of Mission Indians
 Robert Martin, Chairperson
 12700 Pumarra Road Cahuilla
 Banning , CA 92220 Serrano
 (951) 849-8807
 (951) 755-5200
 (951) 922-8146 Fax

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH#2008021002; CEQA Notice of Completion; draft Environmental Impact Report (DEIR) for the Prologis Eucalyptus Industrial Park Project; located in the City of Moreno Valley; Riverside County, California.

Native American Contact
 Riverside County
 July 20, 2012

Serrano Nation of Indians
 Goldie Walker
 P.O. Box 343
 Patton , CA 92369
 Serrano

SOBOBA BAND OF LUISEÑO INDIANS
 Joseph Ontiveros, Cultural Resource Department
 P.O. BOX 487 Luiseno
 San Jacinto , CA 92581
 jontiveros@soboba-nsn.gov
 (951) 663-5279
 (951) 654-5544, ext 4137

Cahuilla Band of Indians
 Chairperson
 PO Box 391760
 Anza , CA 92539
 tribalcouncil@cahuilla.net
 915-763-5549
 Cahuilla

Pechanga Cultural Resources Department
 Anna Hoover, Cultural Analyst
 P.O. Box 2183
 Temecula , CA 92593
 ahoover@pechanga-nsn.gov
 951-770-8104
 (951) 694-0446 - FAX
 Luiseño

Ernest H. Siva
 Morongo Band of Mission Indians Tribal Elder
 9570 Mias Canyon Road
 Banning , CA 92220
 siva@dishmail.net
 (951) 849-4676
 Serrano
 Cahuilla

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH#2008021002; CEQA Notice of Completion; draft Environmental Impact Report (DEIR) for the Prologis Eucalyptus Industrial Park Project; located in the City of Moreno Valley; Riverside County, California.

RESPONSE TO LETTER A-3

California Native American Heritage Commission

Introduction to Responses. The City has implemented the guidance received from the Native American Heritage Commission (NAHC) regarding the structure of the relationship with concerned Native American tribes and individuals during project development. In particular, the relationship with the tribes and the City regarding this project site have been ongoing since 2008, beginning with a request for a Sacred Lands File Search, and continued by providing copies of reports and other documents to interested tribes. Most recently, the City met with the Pechanga Tribe's Cultural Resources Analyst on October 9, 2012 to further discuss the SB 18 consultation process.

Response to Comment 1. The comment is introductory and states that the NAHC is the State "trustee agency" pursuant to Public Resources Code Section 21070 for the protection and preservation of the State's Native American resources. The comment also states that the letter contains state and federal statutes relating to Native American historic properties of religious and cultural significance. The second paragraph is also introductory in nature and outlines the NAHC's authority and role as a commenting agency. The NAHC's introduction in this comment is noted, and no further response is required.

Response to Comment 2. The comment states that CEQA requires that any project that causes a substantial adverse change in the significance of a historical resource, which includes archaeological resources, is a "significant effect" requiring the preparation of an EIR. A Draft EIR was prepared for the proposed project and circulated for public review on July 18, 2012. Based on the *Phase I Cultural Resources Assessment* prepared for the proposed project (Draft EIR Appendix D), the site contained no cultural or historic resources. Consequently, construction and grading of the proposed project site will not affect significant cultural or paleontological resources, resulting in less than significant impacts.

In the second part of the paragraph, the commenter recommends the NAHC Sacred Lands File (SLF) be searched, and such a search was conducted during the Cultural Resource Assessment and found that no Native American cultural resources were identified within the project area. Similarly, the Draft EIR determined that there were no cultural resources (historic or prehistoric) identified on the project site as a result of records searches or during on site reconnaissance. The comment does not contain any substantive statements or questions about the Draft EIR or the analysis therein. Therefore, no further response is necessary.

Response to Comment 3. The comment states that NAHC Sacred Sites are confidential and exempt from the Public Records Act pursuant to California Government Code Section 6254. The City acknowledges the sensitivity and confidentiality of the information contained in the cultural resources report. No records maps have been made public nor will they be made public in association with the City's consideration of the proposed project.

In the second paragraph, the comment states that pursuant to California Public Resources Code Section 5097.95, the NAHC requests that pertinent project information be provided to Native American consulting parties, and that Native American consultation is a matter of environmental justice. The comment letter states that early consultation with Native American Tribes in the area of the project site is the best way to avoid unanticipated discoveries once a project is underway. The letter includes a list of Native American contacts and recommends obtaining their recommendations concerning the proposed project.

Appendix D of the Draft EIR contains the *Phase I Cultural Resource Assessment* prepared for the proposed project in which Native American consultation was conducted. The NAHC was contacted to

determine whether any sacred sites were listed on the Sacred Lands Files for this area of Moreno Valley containing the project site. In response to the Sacred Land Record Search request, the NAHC identified fourteen Native American contacts that may have knowledge of cultural resources in the project area.

Letters were sent to all the Native American contacts provided by the NAHC in 2008. The letters notified the parties of the proposed project and requested that the tribes respond with information concerning cultural resources that might be affected.

Response to Comment 4. The comment states that consultation with Tribes and interested Native American consulting parties on the NAHC list should be conducted in compliance with the requirements of federal National Environmental Policy Act (NEPA), Sections 106 and 4(f) of the National Historic Preservation Act, and the Native American Grave Protection and Repatriation Act (NAGPRA), as appropriate.

Although the project is not a federal undertaking as defined under Section 106 of the National Historic Preservation Act (NHPA) or 36 Code of Federal Regulations (CFR) Part 800 regulations implementing Section 106, and does not use federal funds, it will require a federal Clean Water Act Section 404 permit. Therefore, the project falls under the regulatory oversight of Section 106. As described in Response to Comment A-3, No. 3 above, the City conducted consultation with thirteen local tribes and interested Native American individuals for the project. Consultation included providing those parties with pertinent project and location information.

The project is not a federal transportation project, so it also does not fall under the jurisdiction of Section 4(f) of the Department of Transportation Act of 1966. There is also no federal involvement in the project that would trigger the requirements of NAGPRA.

Response to Comment 5. The comment states that historic properties of religious and cultural significance are confidential and protected by California Government Code Section 6254. The comment further states that the confidentiality of such resources may also be protected by section 304 of the NHPA. The City acknowledges the sensitivity and confidentiality of any identified resources. The SLF and any associated records maps are not for public distribution. In addition, because the project is not a federal undertaking, it is not regulated under Section 304 of the NHPA.

Response to Comment 6. The comment identifies State laws regarding the accidental discovery of human remains. In compliance with these laws, in the unlikely event human remains are encountered during project grading, the County Coroner and the City Planning Division would be notified immediately, and no further disturbance would occur until the County Coroner makes a determination of origin and disposition. If the remains are determined to be Native American, the County Coroner would notify the NAHC, which will determine and notify the most likely descendant (MLD). Implementation of state law reduces potential impacts related to the discovery of human remains on the proposed project site to a less than significant level, and no additional mitigation is required.

Response to Comment 7. The comment states that effective consultation, in the opinion of the NAHC, is the result of an ongoing relationship between Native American tribes and lead agencies, project proponents and their contractors. The City agrees that effective consultation is desired. The City has reached out to Native American tribes through the consultation process (as detailed in the Draft EIR in Appendix D). The comment does not contain any substantive statements or questions about the Draft EIR or the analysis therein. Therefore, no further response is necessary.

Response to Comment 8. The comment states that the NAHC recommends avoidance when a project would damage or destroy Native American cultural resources. The comment further states that documentation and data recovery of such resources is required pursuant to the CEQA Guidelines. Based on the *Phase I Cultural Resources Assessment* (Draft EIR Appendix D) prepared for the proposed project, the site has a low potential for containing archeological resources due to the lack of such resources previously discovered in the surrounding area and the disturbed nature of the project site. Consequently, construction and grading of the proposed project site will have a low probability of damaging archeological resources. Impacts to archeological resources are considered to be less than significant.



PECHANGA CULTURAL RESOURCES
Temecula Band of Luiseño Mission Indians

Post Office, Box 2183 • Temecula, CA 92593
Telephone (951) 308-9295 • Fax (951) 506-9491

September 4, 2012

Chairperson:
Germaine Arenas

Vice Chairperson:
Mary Bear Magee

Committee Members:
Evic Gerber
Darlene Miranda
Bridgett Barcello Maxwell
Aurelia Marruffo
Richard B. Searce, III

Director:
Gary DuBois

Coordinator:
Paul Macarro

Cultural Analyst:
Anna Hoover

VIA E-MAIL and USPS

Mr. Jeff Bradshaw
Associate Planner
City of Moreno Valley
Community Development Department
14177 Frederick Street
Moreno Valley, CA 92552

Re: Pechanga Tribe Comments on the Draft EIR for the Prologis Park Moreno Valley Eucalyptus Project

Dear Mr. Bradshaw:

This comment letter is written on behalf of the Pechanga Band of Luiseño Indians (hereinafter, "the Tribe"), a federally recognized Indian tribe and sovereign government. The Tribe formally requests, pursuant to Public Resources Code §21092.2, to be notified and involved in the entire CEQA environmental review process for the duration of the above referenced project (the "Project"). The Tribe requests to be directly notified of all public hearings and scheduled approvals concerning this Project. Please also incorporate these comments into the record of approval for this Project.

1

The Tribe submits these comments concerning the Project's potential impacts to cultural resources in conjunction with the environmental review of the Project. The Tribe has reviewed the Cultural Resources Section of the Draft Environmental Impact Report and is very concerned that the City did not address any of the Tribes comments and seems to have ignored the other comments provided by Native American tribes. Both Pechanga and Soboba requested monitoring during grading activities as the City itself in the Initial Study indicated that the possibility of uncovering cultural resources during earthmoving activities was high. Further, the Tribe was not afforded the opportunity to consult with the City per SB18 requirements and as we had requested in our March 4, 2008 comment letter. This violates state law. Additionally, as written, the proposed mitigation measures are inadequate and insufficient to mitigate for unanticipated discoveries of cultural resources. Additional information is provided in our comments below.

2

Pechanga Comment Letter to the City of Moreno Valley
Re: Pechanga Tribe Comments on the Prologis Park Project
September 4, 2012
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THE CITY OF MORENO VALLEY MUST INCLUDE INVOLVEMENT OF AND CONSULTATION WITH THE PECHANGA TRIBE IN ITS ENVIRONMENTAL REVIEW PROCESS

It has been the intent of the Federal Government¹ and the State of California² that Indian tribes be consulted with regard to issues which impact cultural and spiritual resources, as well as other governmental concerns. The responsibility to consult with Indian tribes stems from the unique government-to-government relationship between the United States and Indian tribes. This arises when tribal interests are affected by the actions of governmental agencies and departments. In this case, it is undisputed that the project lies within the Pechanga Tribe's traditional territory. Therefore, in order to comply with CEQA and other applicable Federal and California law, it is imperative that the City of Moreno Valley consult with the Tribe in order to guarantee an adequate knowledge base for an appropriate evaluation of the Project effects, as well as generating adequate mitigation measures.

On this Project, the Tribe was not asked by the City of Moreno Valley for a consultation meeting. Although there was some confusion regarding the original SB18 notification in 2007, an additional SB18 consultation letter was submitted in 2008 and the Tribe responded with a request to consult in our March 4, 2008 letter. Further, LSA Associates sent out an additional consultation letter in 2011 and the Tribe again notified the City that consultation was desired. The Tribe received no further communication from the City until receipt of this DEIR document July 26, 2012. The Tribe believes that would adequate consultation have occurred, the proposed mitigation measures would be adequate and respectful of tribal requests. Further, under SB 18, the City cannot proceed with approving this Project until consultation requests by Tribes have been fulfilled. As such, moving ahead with a Planning Commission hearing at this stage would be in violation of California State law.

PECHANGA CULTURAL AFFILIATION TO PROJECT AREA

The Pechanga Tribe asserts that the Project area is part of Luiseño, and therefore the Tribe's, aboriginal territory as evidenced by the existence of Luiseño place names, *tóota yixélval* (rock art, pictographs, petroglyphs), and an extensive Luiseño artifact record in the vicinity of the Project. This culturally sensitive area is affiliated with the Pechanga Band of Luiseño Indians because of the Tribe's cultural ties to this area as well as extensive history with both this Project and other projects within the area.

The Tribe's knowledge of our ancestral boundaries is based on reliable information passed down to us from our elders; published academic works in the areas of anthropology,

¹ See e.g., Executive Memorandum of April 29, 1994 on Government-to-Government Relations with Native American Tribal Governments, Executive Order of November 6, 2000 on Consultation and Coordination with Indian Tribal Governments, Executive Memorandum of September 23, 2004 on Government-to-Government Relationships with Tribal Governments, and Executive Memorandum of November 5, 2009 on Tribal Consultation.
² See California Public Resource Code §5097.9 et seq.; California Government Code §§65351, 65352.3 and 65352.4

Pechanga Comment Letter to the City of Moreno Valley
Re: Pechanga Tribe Comments on the Prologis Park Project
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history and ethno-history; and through recorded ethnographic and linguistic accounts. Many anthropologists and historians who have presented boundaries of the Luiseño traditional territory include this region in their descriptions (Drucker 1937; Heiser and Whipple 1957; Kroeber 1925; Smith and Freers 1994), and such territory descriptions correspond with what was communicated to the Pechanga people by our elders. While historic accounts, anthropological and linguistic theories are important in determining traditional Luiseño territory; the Tribe asserts that the most critical sources of information used to define our traditional territories are our songs, creation accounts and oral traditions.

Luiseño history originates with the creation of all things at *‘éxva Teméeku*, known today as the City of Temecula, and dispersing out to all corners of creation (what is today known as Luiseño territory). It was at Temecula that the Luiseño god *Wuyóol* lived and taught the people, and here that he became sick, finally expiring at Lake Elsinore after visiting many of the hot springs located within Luiseño and Cahuilla territory. From Elsinore, the people spread out, establishing villages and marking their territories. The first people also became the mountains, plants, animals and heavenly bodies.

The Pechanga Tribe has a specific legal and cultural interest in this Project as the Tribe is culturally affiliated with the geographic area, which comprises the Project property. The Tribe has been named the Most Likely Descendent (Cal. Pub. Res. C. §5097.98) on Projects in the nearby vicinity of the proposed Project and has specific knowledge of cultural resources and sacred places near the Project site. The Tribe submitted information regarding cultural affiliation to the City in previous comment letters for this Project. We would also like the City and the DEIR consultant to know that the Project is not located within Cahuilla territory. The Tribe has previously submitted archaeological, ethnographic, ethnohistoric, oral traditions and song and linguistic information showing that Moreno Valley was indeed Luiseño territory. We would be happy to provide this information again to the City and DEIR preparers so that the cultural affiliation portions of the Cultural section of the DEIR can be updated.

The Tribe welcomes the opportunity to meet with the City of Moreno Valley to further explain and provide documentation concerning our specific cultural affiliation to lands within your jurisdiction, if so desired. In addition, the Tribe is once again requesting face-to-face, government-government consultation under SB 18, as is our legally protected right.

PROJECT IMPACTS TO CULTURAL RESOURCES

The Project is located in a highly sensitive region of Luiseño territory and the Tribe believes that the possibility for recovering subsurface resources during ground-disturbing activities is high. The Tribe has over thirty-five (35) years of experience in working with various types of construction projects throughout its territory. The combination of this knowledge and experience, along with the knowledge of the culturally-sensitive areas and oral tradition, is what

Pechanga Comment Letter to the City of Moreno Valley
Re: Pechanga Tribe Comments on the Prologis Park Project
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Page 4

the Tribe relies on to make fairly accurate predictions regarding the likelihood of subsurface resources in a particular location.

5

The Tribe has reviewed the 2012 Draft Environmental Impact Report for the Prologis Industrial Park Project. In addition to not consulting with the Tribe as required by law, the City has failed to adopt appropriate and protective mitigation measures for any unknown cultural resources, under both the letter and the spirit of CEQA. Based upon the Archaeological Study, there are over 65 cultural sites within a one-mile radius and the Project is located within the Moreno Hills Complex, a well documented habitation site. Habitation sites are of the utmost importance to the Tribe because they are the last physical remains of where the ancestors lived. They contain information and data that are reflective of every aspect of tribal culture. It is well known that native village and habitation complexes enveloped large areas of land, sometimes several square miles. The Tribe agrees that the high number of recorded sites indicates a high prehistoric use area as well as the potential for identification of subsurface cultural resources on this Project. By not providing for archaeological and tribal monitoring during earthmoving, the City is a willing participant in the destruction of irreplaceable cultural sites. The Tribe has continually argued that it is vital to require an archaeological and tribal monitor at the onset of grading and for other activities such as trenching and off-site development because relying on untrained construction crews to identify cultural resources is not only inappropriate, but also untenable since they are not professional cultural resource personnel. Construction crews would not be able to identify cremations, for example or be able to distinguish human from animal bone, or how to identify what is an artifact (manipulated by human hands) or an ecofact (a product of nature).

6

Additionally, while the Tribe understands that the Project has been under citrus groves and agriculture for many years, this does not negate the possibility for cultural resources to be identified below the plow zone, approximately 16 to 24 inches. Both the Soboba and Pechanga tribes have informed the City that the possibility for cultural resources to be identified during earthmoving activities is high and yet the City and DEIR Consultant ignored our comments. The City is well aware of the Highland Fairview project, upon which cultural resources were discovered, despite the use of the land for agricultural purposes and despite the project archaeologist assuring that no resources were on the property. Further, we know of a situation in San Diego County where as many as 14 individual burials were located in what had been a long-time orange tree grove – in fact, one of the burials, a cremation, was discovered entangled with the roots of an orange tree. Thus, agricultural activities rarely touch deeply buried cultural deposits – they typically only affect those artifacts or features that lay within the plow zone. As such, the potential for subsurface resources remains a very real concern for Pechanga.

7

As the City knows from our long history together, the Pechanga Tribe involves itself in these matters because its contributions and knowledge of the natural/cultural resources is not focused on the archaeological or scientific importance of the resources, but rather in the cultural and sociological significance of the sites and places to our People. The Pechanga Tribe contends that despite the lack of identification of surface artifacts during the survey, subsurface sites and

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Pechanga Comment Letter to the City of Moreno Valley
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resources, i.e. inadvertent finds, may be found throughout the development of this entire Project. As such, we request that the City take into account the Pechanga Tribe's cultural view of any such resources.

8

Since the DEIR has now been completed and distributed for public review without tribal consultation - in contravention to SB 18 - it is the Pechanga Tribe's position that this DEIR does not meet standard requirements for cultural resources impact analysis and may not meet state legal requirements for environmental review. Without consultation prior to finalization of the mitigation measures, the City is in danger of putting itself in a position of adopting deferred and arguably inadequate mitigation, which may not be permissible pursuant to CEQA. Furthermore, without consultation prior to finalization of the mitigation measures, Pechanga is unable to meaningfully participate in the CEQA process and we are being denied the rights guaranteed to Tribes by SB 18 - mainly, early and meaningful consultation to address concerns regarding impacts, both direct and indirect, to tangible and intangible cultural resources.

9

The Pechanga Tribe is not opposed to this Project; however, we are opposed to any direct, indirect and cumulative impacts this Project may have to tribal cultural resources. The Tribe's primary concerns stem from the Project's proposed impacts on Native American cultural resources. The Tribe is concerned about both the protection of unique and irreplaceable cultural resources, such as Luiseño village sites, sacred sites and archaeological items which would be displaced by ground disturbing work on the Project, and on the proper and lawful treatment of cultural items, Native American human remains and sacred items likely to be discovered in the course of the work.

10

The Tribe believes that the proposed mitigation measures as written are not sufficient, given the sensitivity of the area which was acknowledged in the archaeological study and the Initial Study, but which was inadequately addressed in the DEIR. Although the DEIR addresses procedures for inadvertent finds, the Tribe is concerned with the lack of specificity of the mitigation measures and the lack of a requirement for both archaeological and tribal monitors for the duration of the Project. While the Tribe understands that the Property has been subjected to previous disturbances, as the Project site lies within such a culturally-sensitive area, the Tribe believes that the possibility exists for the recovery of subsurface resources during earthmoving activities.

11

The Tribe has multiple concerns with the mitigation measures as they are drafted. We believe that it is premature and potentially negatively impacts the Tribe's rights under both SB 18 and the CEQA process to comment on specific mitigation measures until we are able to have our legally protected SB 18 consultation with the City. Had this occurred before the DEIR was released for review, we are certain that more protective measures would have been included that would satisfy both the Tribe and the City's concerns. That has not happened and as such, we are expressly reserving our right to provide comments on the proposed mitigation measures until after the City completes its legally mandated SB 18 consultation with Pechanga.

12

Pechanga Comment Letter to the City of Moreno Valley
Re: Pechanga Tribe Comments on the Prologis Park Project
September 4, 2012
Page 6

The Tribe reserves the right to fully participate in the environmental review process, as well as to provide further comment on the Project's impacts to cultural resources and potential mitigation for such impacts.

13

The Pechanga Tribe looks forward to working together with the City of Moreno Valley in protecting the invaluable Pechanga cultural resources found in the Project area. Please contact me at 951-770-8104 or at ahoover@pechanga-nsn.gov within the next two weeks so we can schedule our legally required SB 18 consultation to discuss the issues at hand. Thank you.

14

Sincerely,

Anna Hoover
Cultural Analyst

Cc Pechanga Office of the General Counsel
John Terrell, Planning Official

RESPONSE TO LETTER A-4

PECHANGA BAND OF LUISEÑO INDIANS

Response to Comment 1. The City acknowledges the Pechanga Band (“Tribe”) is a federally recognized Indian Tribe. The City will continue to notify the Tribe regarding the CEQA process for this project, and the Tribe will be notified of any hearings regarding this project. As requested, the Tribe’s comments and the City’s responses are incorporated into this Final EIR document and administrative record.

Response to Comment 2. According to its records, the City did contact the Tribe for consultation under SB 18 when the applicant first started processing the project in 2007-08, and the City sent a copy of the project cultural resources report at that time. The City received no further correspondence or emails regarding the project, so it believed the SB 18 consultation process for the ProLogis project was completed at that time. On July 25, 2011 a letter inquiring about additional consultation was sent to Mark Macarro and the commenter with Pechanga and no response was received (Paul Macarro is the Director of Cultural Resources). A second letter was sent on August 9, 2011 to which the commenter responded that she would work directly with the City regarding further consultation. Jeff Bradshaw with the City contacted Ms. Hoover (“commenter”) but received no follow-up from the Tribe for additional input or consultation. The revised cultural resources study was mainly an update of the original study to “bring it current” and contained no new additional information. At that time, Mr. Bradshaw considered this second round of SB 18 communication with the tribe completed as well. Separate from the SB 18 process, the Tribe has provided comments to the City during the Notice of Preparation (NOP) period and the Notice of Completion (NOC) sent out for the project under CEQA. The commenter is incorrect that the City has not incorporated concerns and comments from the Tribe into the CEQA document, or has somehow neglected the SB 18 consultation process. The City met with the Anna Hoover, Cultural Analyst for the Tribe regarding SB 18 on October 9, 2012 to address any pending questions regarding the City’s participation in the SB 18 consultation process on this project (see Appendix B in this document).

Response to Comment 3. Although there appears to be some confusion regarding the actual completion of the SB 18 consultation process, the City and the Tribe can still continue to consult effectively on the proposed project, following the guidance from the NAHC which states that “To be effective, consultation on specific projects must be the result of an ongoing relationships between the Native American tribes and lead agencies, project proponents, and their contractors.” The City believes the EIR reflects the intent and desire of the Tribe regarding monitoring of grading activities on the project site, as outlined in the tribe’s comment letter received during the Notice of Preparation (NOP) period and included in Appendix A of the Draft EIR. Mitigation Measures 4.5.6.1A through 4.5.6.1E in the Draft EIR state the following:

- 4.5.6.1A** *If cultural resources are found during grading, the applicant shall immediately retain a qualified archaeological monitor to oversee subsequent ground-altering activities (e.g., removal of debris, de-vegetation, and grading). This monitor shall ensure that any buried or previously unidentified resources are adequately identified, recorded, and evaluated in accordance with applicable standards. The archaeological monitor shall be trained in both prehistoric and historic archaeology and have the authority to temporarily redirect any ground disturbing activities affecting potentially significant cultural resources.*
- 4.5.6.1B** *Prior to the issuance of a grading permit, the local Native American representatives (Soboba, Morongo, and Pechanga) shall be notified in writing of the pending activities. If any evidence of Native American resources is discovered during grading, the archaeological monitor identified in **Mitigation Measure 4.5.6.1A** shall invite one or more Native American monitors to participate in the monitoring program. The Native American*

monitor shall work with the archaeological monitor to aid in the identification of resources and assist in the preliminary evaluation of any Native American resources.

- 4.5.6.1C** *If cultural artifacts and resources are discovered during ground disturbance activities and are historic in nature (not Native American in origin), the archaeological monitor shall make recommendations for the appropriate handling and evaluation of the resources. If cultural artifacts and resources are discovered during ground disturbance activities are determined to be of Native American origin (but not involving burials or grave goods), the archaeological monitor/consultant shall notify the applicant, City, and local Native American representatives and complete consultation for the handling of the resources. All archaeological decisions shall be at the discretion of the professional archaeologist, taking the Native American concerns into account. Work may continue on other parts of the project site while historic or unique archaeological mitigation takes place (14 Cal. Code Regs. 15065.5(f)).*
- 4.5.6.1D** *As a condition of approval, the property owner shall make all cultural resources (e.g., artifacts) discovered on site available for curation at a facility identified by the City (e.g., the UCR Archaeological Research Unit, the Western Center for Archaeology and Paleontology, or the Ya'i Heki' Regional Indian Museum). All artifacts shall be inventoried and prepared for curation per standard professional requirements. If neither repository is available to accept the collections, the cultural resources shall be temporarily curated at a facility identified through consultation with all stakeholders.*
- 4.5.6.1E** *Should resources determined to be of sacred or religious significance to Native Americans be identified within the project area, the resources shall be protected from adverse impacts until consultation between the applicant, City, the Most Likely Descendant (MLD) as determined by the Native American Heritage Commission, and the archaeological consultant, occurs. At that time, the responsibility for the care and disposition of the cultural resources shall be determined and recorded to the satisfaction of all parties involved.*

These measures are consistent with the information provided in the Pechanga NOP comment letter. However, the City desires to work cooperatively with the tribe to the greatest extent possible. Therefore, the wording of all these mitigation measures will be modified as shown below:

- 4.5.6.1A** *Prior to the issuance of a grading permit, the Project Applicant shall provide evidence to the City of Moreno Valley that a Cultural Resources Monitoring Agreement has been secured for qualified Tribal representatives, and that a professional archaeological monitor meeting Secretary of Interior standards has been retained by the Applicant to conduct monitoring of all mass grading and trenching activities and has the authority to temporarily halt and redirect earthmoving activities in the event that suspected archaeological resources are unearthed during Project construction. The Project Archaeologist and Tribal representatives shall attend the pre-grading meeting with the City and contractors to explain and coordinate the requirements of the monitoring program.*
- 4.5.6.1B** *Prior to the issuance of a grading permit, the Applicant shall provide evidence to the City of Moreno Valley that appropriate Native American representative(s), Project Archaeologist, and the Tribal representative(s) shall be allowed to monitor and have received a minimum of 30 days advance notice of all mass grading and trenching activities. During grading and trenching operations, the Tribal representatives and the project archaeological monitor shall observe all mass grading and trenching activities per the Cultural Resources Monitoring Agreement. If the Tribal representatives suspect that an archaeological resource may have been unearthed, the archaeologist, in consultation with the tribal representative, shall immediately halt and redirect grading operations in a*

100-foot radius around the find to allow identification and evaluation of the suspected resource. In consultation with the appropriate Native American Tribe(s), the archaeological monitor shall evaluate the suspected resource and make a determination of significance pursuant to California Public Resources Code Section 21083.2.

4.5.6.1C If a significant archaeological resource(s) is discovered on the property, ground disturbing activities shall be suspended 100 feet around the resource(s). The archaeological monitor and representatives of the appropriate Native American Tribe(s), the Project Applicant, and the City Planning Division shall confer regarding mitigation of the discovered resource(s). A treatment plan and/or preservation plan shall be prepared and by the archaeological monitor and reviewed by representatives of the appropriate Native American Tribe(s), the Project Applicant, and the City Planning Division and implemented by the archaeologist to protect the identified archaeological resource(s) from damage and destruction. The landowner shall relinquish ownership of all archaeological artifacts that are of Native American origin found on the Project site to the culturally affiliated Native American tribe(s) for proper treatment and disposition. A final report containing the significance and treatment findings shall be prepared by the archaeologist and submitted to the City Planning Division, the appropriate Native American tribe(s), and the Eastern Information Center at the University of California, Riverside. All cultural material, excluding sacred, ceremonial, grave goods and human remains, collected during the grading monitoring program and from any previous archaeological studies or excavations on the project site shall be curated, as determined by the treatment plan, according to the current professional repository standards and may include the Pechanga Bands curatorial facility.

4.5.6.1D Prior to grading permit issuance, the City shall verify that the following note is included on the Grading Plan:

"If any suspected archaeological resources are discovered during ground-disturbing activities and the archaeological monitor or Tribal representatives are not present, the construction supervisor is obligated to halt work in a 100-foot radius around the find and call the project archaeologist and the Tribal representatives to the site to assess the significance of the find."

Based on input from the tribe, the City believes these modifications will better protect any potential undiscovered cultural resources if they are present on the site. In addition, Measure 4.5.6.1B clearly allows tribal monitors to be present onsite during grading if they so desire, consistent with the City's current practices for allowing such monitoring.

In addition, although DEIR Section 4.5.5.2, *Human Remains*, concludes potential impacts of the project will be less than significant with compliance with state law, Mitigation Measure 4.5.6.1E has been added at the request of the tribe to help assure there will be no significant impacts related to the potential discovery of human remains during grading:

4.5.6.1E If human remains are encountered, California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the Riverside County Coroner has made the necessary findings as to origin. Further, pursuant to California Public Resources Code Section 5097.98(b), remains shall be left in place and free from disturbance until a final decision as to the treatment and disposition has been made by the Coroner. If the Riverside County Coroner determines the remains to be Native American, the California Native American Heritage Commission must be contacted within 24 hours. The Native American Heritage Commission must then immediately notify the "most likely descendant(s)" of receiving notification of the discovery. The most likely descendant(s) shall then make recommendations within 48

hours, and engage in consultations concerning the treatment of the remains as provided in Public Resources Code §5097.98.

Finally, the commenter is correct that the CEQA process cannot be completed before the SB 18 process is completed. However, the City believes the SB 18 consultation process can still be completed prior to final action on the project as specified by state law.

It should also be noted the tribe requested the following language be added to the mitigation for potential impacts to paleontological resources, so the City has agreed to add the following as Mitigation Measure 4.5.6.2D:

4.5.6.2D Prior to grading permit issuance, the City shall verify that the following note is included on the Grading Plan:

"If any suspected paleontological resources are discovered during ground-disturbing activities, the construction supervisor is obligated to halt work in a 100-foot radius around the find and call a qualified paleontologist to the site to assess the significance of the find. A qualified paleontologist shall evaluate the suspected resource. If the paleontologist determines that the find is not unique, construction shall be permitted to proceed. However, if the paleontologist determines that further information is needed to evaluate significance, the City of Moreno Valley shall be notified and a treatment plan shall be prepared and implemented in consultation with the City to protect the identified paleontological resource(s) from damage and destruction."

Response to Comment 4. The City acknowledges that the tribe has legitimate legal and cultural interests in the project site and surrounding areas, and appreciates the tribal history upon which these interests are based. The City believes it did participate in the SB 18 consultation process in good faith on this project twice, but the City is willing to consider additional input from the tribe regarding this property integral to the CEQA process at this point in time. On October 9 2012, Jeff Bradshaw met with Anna Hoover, Cultural Analyst with the tribe, to receive additional input from the tribe relative to this project. In any case, all of this information will be presented to the City Council for their review prior to any final action on the project, consistent with the requirements of SB 18 and CEQA.

Response to Comment 5. The project cultural resource assessment, and Section 4.5 of the Draft EIR, both acknowledge the existence of Native American resources and sites in the surrounding area. However, the study did not identify any resources actually on the project site, and the site has been previously and regularly disturbed by agricultural and weed abatement activities. In an effort to respond to remaining concerns expressed by the tribe, and based on evidence from mitigation at site on other projects in the region, the City has modified the text of Mitigation Measures 4.5.6.1A through 4.5.6.1E as shown in Response 3 above. The City understands the Tribe's ongoing and currently stated desire to have private development fund Native American monitoring on construction sites. However, the City's repeated position on this issue is not to require private funding of such monitoring, but rather to encourage private landowners to collaborate with Native American tribes regarding monitoring (i.e., private funding is not required but optional). In addition, the revised mitigation measures cited above do require ongoing coordination with the local tribes, including Pechanga.

Response to Comment 6. As outlined in the previous Response to Comment A-4, No.3, the City believes the mitigation measures included in the Draft EIR do reflect the concerns raised by the tribe during the SB 18 and EIR Notice of Preparation processes. In addition, the City believes it has participated in the SB 18 process to an appropriate degree, as described in the previous Responses to Comments A-4, No. 2 and 4 above. Appendix B of this Final EIR includes additional

correspondence and documentation from the City regarding the SB 18 process with the Pechanga tribe on this project.

Response to Comment 7. In response to the tribe's concerns about excavation of the project site, the City has modified the wording of Mitigation Measures 4.5.6.1A through 4.5.6.1E to provide for monitoring of all grading activities. In addition, the modified measures provide a way for local tribes to participate in the monitoring process.

Response to Comment 8. In response to the tribe's concerns, the City has modified the wording of Mitigation Measure 4.5.6.1A to provide for monitoring of all grading activities, and Mitigation Measure 4.5.6.1B provides a way for local tribes like Pechanga to participate in the monitoring process.

Response to Comment 9. As previously explained in Responses 2 and 4 above, the City has participated twice in the SB 18 process on this project, but is certainly willing to accept additional input from the tribe regarding potential impacts and mitigation language within the context of the CEQA process. The mitigation in the EIR, including the text changes to Measures 4.5.6.1A through 4.5.6.1E, do not defer mitigation and are clear as to what will be done and when during the development process if the project is approved. The City believes the tribes have provided input on this project under both SB 18 and CEQA, and the City will strive to implement the project mitigation as outlined.

Response to Comment 10. Section 4.5 of the EIR does evaluate the direct, indirect, and cumulative impacts of the project on cultural resources, and did incorporate information from the City's SB 18 consultation process and the letter from the Pechanga tribe received during the EIR's Notice of Preparation period (see Draft EIR Appendix A). In addition, Appendix B of this Final EIR includes additional correspondence and documentation from the City regarding the SB 18 process with the Pechanga tribe on this project.

Response to Comment 11. The City believes Section 4.5 of the EIR adequately addresses potential impacts of the project on cultural resources, and recommends mitigation measures commensurate with the level of impact expected. In addition, Mitigation Measures 4.5.6.1A through 4.5.6.1E provide additional protection for any undiscovered cultural resources that may exist on the site. The City believes the revised measures are specific, implementable, and do not defer mitigation. It is the City's long-standing policy to encourage but not require private developers to allow and/or fund monitoring of grading by Native American tribal representatives. That continues to be the City's policy on this project as well.

Response to Comment 12. As outlined in the previous responses above, the City believes it has and is participating in the SB 18 and CEQA processes as required by state law, and in a reasonable and fair manner with the Tribe. Please see Response to Comment A-4, No. 11 for additional information in this regard. However, it would not be in the interest of the Tribe to withhold additional comment on the EIR, expecting the City to delay action on the proposed project, based solely on its contention that the City had somehow failed to complete the SB 18 process – the City disagrees with that conclusion. The City encourages the Tribe to provide additional comments if necessary on the EIR and mitigation measures, noting that Measures 4.5.6.1A through 4.5.6.1E have been modified in response to concerns expressed by the Tribe.

Response to Comment 13. The City encourages the Tribe to participate fully in the CEQA process, and see Responses to Comments A-4, Nos. 11 and 12 regarding the related SB 18 process.

Response to Comment 14. The City also looks forward to continuing discussion with the tribe on this project. It should be noted that the City met with the Anna Hoover, Cultural Analyst with the tribe, on October 9 2012 regarding SB 18 which should address any lingering questions about the City's participation in the SB 18 consultation process on this project.

MORONGO
BAND OF
MISSION
INDIANS



A SOVEREIGN NATION

RECEIVED
SEP 12 2012
CITY OF MORENO VALLEY
Planning Division

September 10, 2012

Jeff Bradshaw, Associate Planner
City of Moreno Valley
Community & Economic Development Department
14177 Frederick Street
Moreno Valley, CA 92553

**SUBJECT: Notice of Availability
Prologis Eucalyptus Industrial Park Project)
Draft Environmental Impact Report**

Dear Mr. Bradshaw:

Thank you for contacting the Morongo Band of Mission Indians regarding the above referenced project. The Tribe greatly appreciates the opportunity to review the project and, respectfully, offer the following comments.

The project is outside of the Tribe's current reservation boundaries but within an area that may be considered a traditional use area or one in which the Tribe has cultural ties (e.g. Cahuilla/Serrano territory). Because the project involves a Zone Change, General Plan Amendment, master Plot Plan, Tentative Parcel Map, Plot Plans, and Environmental Impact Report for the Prologis Eucalyptus industrial Park Project the Morongo Band of Mission Indians asks that you impose specific conditions regarding cultural and/or archaeological resources and buried cultural materials on any development plans or entitlement applications as follows:

1

- o If human remains are encountered during grading and other construction excavation, work in the immediate vicinity shall cease and the County Coroner shall be contacted pursuant to State Health and Safety Code §7050.5.

2

- o In the event that Native American cultural resources are discovered during project development/construction, all work in the immediate vicinity of the find shall cease and a qualified archaeologist meeting Secretary of Interior standards shall be hired to assess the find. Work on the overall project may continue during this assessment period.

3

If significant Native American cultural resources are discovered, for which a Treatment Plan must be prepared, the developer or his archaeologist shall contact the Morongo Band of Mission Indians

4

("Tribe")¹. If requested by the Tribe, the developer or the project archaeologist shall, in good faith, consult on the discovery and its disposition (e.g. avoidance, preservation, return of artifacts to tribe, etc.).

↑
-4

If I may be of further assistance with regard to this matter, please do not hesitate to contact me at your convenience.

Very truly yours,

MORONGO BAND OF MISSION INDIANS



Franklin A. Dancy,
Director of Planning

¹ The Morongo Band of Mission Indians realizes that there may be additional tribes claiming cultural affiliation to the area; however, Morongo can only speak for itself. The Tribe has no objection if the archaeologist wishes to consult with other tribes and if the city wishes to revise the condition to recognize other tribes.

RESPONSE TO LETTER A-5

MORONGO BAND OF MISSION INDIANS

Response to Comment 1. The Draft EIR contained measures the City believes are sufficient to protect undiscovered cultural resources, including Native American artifacts. However, the City wishes to cooperate with the tribe to the extent practical, so the language of the mitigation measures related to archaeological and paleontological resources, have been modified to better address the tribe's concerns as outlined in Response to Comment A-4-3 in the previous letter from the Pechanga Tribe.

Response to Comment 2. This action is required under State law, but the City understands the tribe's desire to have the requirement reiterated in the mitigation measure. Therefore, Mitigation Measure 4.5.6.1E has been modified to address this concern as outlined in Response to Comment 3 in Letter A-4 from the Pechanga Band.

Response to Comment 3. All of the cultural mitigation measures were modified as shown to respond to this and similar comments by the Pechanga Band (see Response to Comment 3 in Letter A-4).

Response to Comment 4. The text of Mitigation Measure 4.5.6.1C was changed as shown in Response to Comment 3 in Letter A-4 from the Pechanga Band to better address the tribe's concerns.



September 4, 2012

Board of Directors

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Paul D. Jones II, P.E.

Director of The Metropolitan Water District of So. Calif.
Randy A. Record

Board Secretary and Assistant to the General Manager
Rosemarie V. Howard

Legal Counsel
Lemieux & O'Neill

City Of Moreno Valley
14177 Frederick Street
Moreno Valley, CA 92553

Re. **NOA of DEIR, Prologis Eucalyptus Industrial Park
PA07-0081,82,83,84,142,158,159,160,161,162,&186**

Attn: Jeff Bradshaw, Associate Planner, City Of Moreno Valley

Dear Mr. Bradshaw:

Thank you for the opportunity to review the Notice of Availability (NOA) for the above referenced project. The project is generally described as General Plan Amendment and Zone Change from existing Business Park, to Business Park Mixed-Use, R15, R5, and RA-2 land use designations to Light Industrial for 116.99-net acres. The land use changes are required for development of six distribution warehouse facilities totaling 2,244,419 square feet with building sizes that range from 160,106 square feet to 862,035 square feet. The applicant also proposes Tentative Parcel Map No. 35679 to subdivide the project into six parcels corresponding to the six warehouse facilities. Eastern Municipal Water District (EMWD) offers the following comments:

The subject project requires water, sewer and recycled water services from EMWD. The details of said service connection points will be further detailed in a separate document, known as EMWD's Plan of Service, which is still not yet developed by the project proponent. To that end, EMWD requires dialog with the project proponent, to develop the EMWD Plan of Service, as clarified in the attached letter.

1

Again, EMWD appreciates the opportunity to comment on this project. Please forward the Final Environmental Impact Report to the attention of Helen Stratton at the mailing address shown on page one. If you have questions concerning these comments, please feel free to contact Helen Stratton at 951 928-3777, Ext. 4545, or Maroun El-Hage Ext. 4468.

2

Sincerely,

Jayne Joy
Director of Environmental and Regulatory Compliance

JJ:hs
Cc: Maroun El-Hage
Encls.

Mailing Address: Post Office Box 8300 Perris, CA 92572-8300 Telephone: (951) 928-3777 Fax: (951) 928-6177
Location: 2270 Trumble Road Perris, CA 92570 Internet : www.emwd.org

RESPONSE TO LETTER B-1

EASTERN MUNICIPAL WATER DISTRICT #1

Response to Comment 1. The EIR acknowledges that the project requires water, sewer, and recycled water service from EMWD. The City and the developer are aware that a Plan of Service will be needed if the project receives entitlement approval from the City.

Response to Comment 2. The Final EIR document, including the Response to Comments, will be sent to the EMWD since they commented on the Draft EIR, in accordance with CEQA Guidelines Section 15088(b).



September 4, 2012

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Board Secretary and Assistant to the General Manager
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Legal Counsel
Lemieux & O'Neill

City Of Moreno Valley
14177 Frederick Street
Moreno Valley, CA 92553

Re. NOA of DEIR, Prologis Eucalyptus Industrial Park
PA07-0081,82,83,84,142,158,159,160,161,162,&186

Attn. Jeff Bradshaw, Associate Planner, City Of Moreno Valley

In order to receive water, sewer or recycled water service(s) from Eastern Municipal Water District (EMWD), the following information will be helpful to the project proponent:

EMWD requires beginning dialogue with the project proponent at an early stage in site design and development, via a one-hour complimentary Due Diligence meeting. To set up this meeting, the project proponent should complete a Project Questionnaire (form NBD-058) and submit to EMWD. To download this form or for additional information, please visit our "New Development Process" web page, under the "Businesses" tab, at www.emwd.org. This meeting will offer the following benefits:

1. Describe EMWD's development work-flow process
2. Identify project scope and parameters
3. Preliminary, high level review of the project within the context of existing infrastructure
4. Discuss potential candidacy for recycled water service

1

Following the Due Diligence meeting, to proceed with this project, a Plan Of Service (POS) will need to be developed by the developer's engineer, and reviewed/approved by EMWD prior to submitting improvement plans for Plan Check. The POS process will provide the following:

- 1- Technical evaluation of the project's preliminary design
- 2- Defined facility requirements, i.e. approved POS
- 3- Exception: for feasibility evaluation of a purchase acquisition, only a conceptual facilities assessment may be developed.

2

If you have questions or concerns, please do not hesitate to contact me.

Sincerely,

Maroun El-Hage, M/S., P.E.
Senior Civil Engineer
New Business Development
(951) 928-3777 x4468
El-hagem@emwd.org

Mailing Address: Post Office Box 8300 Perris, CA 92572-8300 Telephone: (951) 928-3777 Fax: (951) 928-6177
Location: 2270 Trumble Road Perris, CA 92570 Internet : www.emwd.org

RESPONSE TO LETTER B-2

EASTERN MUNICIPAL WATER DISTRICT

Response to Comment 1. The developer will prepare a Project Questionnaire (NDB-058) and contact the District to schedule a “due diligence” meeting.

Response to Comment 2. As indicated in the responses to the District’s first letter (B-1), the City and the developer are aware that a Plan of Service will be needed if the project receives entitlement approval from the City.



South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4182
(909) 396-2000 www.aqmd.gov

E-MAILED: September 4, 2012

September 4, 2012

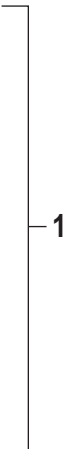
Mr. Jeff Bradshaw, Associate Planner, jeffreyb@moval.org
Planning Department
City of Moreno Valley
14177 Frederick Street
Moreno Valley, CA 92553

Draft Environmental Impact Report (Draft EIR) for the Proposed ProLogis Eucalyptus Industrial Park Project (SCH. NO. 2008021002)

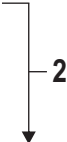
The South Coast Air Quality Management District (AQMD) staff appreciates the opportunity to comment on the above-mentioned document. The following comments are meant as guidance for the Lead Agency and should be incorporated into the Final EIR.

In the project description, the lead agency proposes construction of six warehouse distribution facility buildings totaling 2,244,419 square feet with 326 total loading docks. Building sizes will range from 160,106 to 862,035 square feet on a total 122.8 acre site. Operations at the proposed industrial park will include approximately 1,989 trucks operating 24 hours per day and 7-days per week. Construction is planned to begin in the fall of 2012 and be completed as early as the last quarter of 2013, with a possible opening year by 2016.

In the Air Quality Section, the Draft EIR quantified the project’s construction and operation air quality impacts and found that those impacts exceeded the AQMD’s recommended significance thresholds. As stated in the Draft EIR, air quality in our basin exceeds federal and state standards and presents numerous health risks to those living and working here. The AQMD staff appreciates that the project therefore includes mitigation measures that have the potential to reduce emissions including building energy efficiency measures, carpooling programs, and encouragement of alternative fueled vehicles. However, the project’s air quality impacts remain substantially above AQMD thresholds after mitigation. This is due, in part, to the lack of enforceability of some mitigation measures. The AQMD staff recommends that the lead agency strengthen the project’s mitigation measures and additionally provide further clarity to portions of the air quality analysis. Details are provided in the attached comments.



Pursuant to Public Resources Code Section 21092.5, please provide the AQMD with written responses to all comments contained herein prior to the adoption of the Final Environmental Impact Report. The AQMD staff is available to work with the Lead



Mr. Jeff Bradshaw,
Associate Planner

2

September 4, 2012

Letter B-3

Agency to address these issues and any other air quality questions that may arise. Please contact Gordon Mize, Air Quality Specialist – CEQA Section, at (909) 396-3302, if you have any questions regarding these comments.

↑
2

Sincerely,



Ian MacMillan
Program Supervisor, Inter-Governmental Review
Planning, Rule Development & Area Sources

Attachment
IM:GM

SBC120718-01
Control Number

Operational Mitigation Measures

1. AQMD staff commends the lead agency for encouraging the use of alternatively fueled technologies to reduce the significance CO, VOC, NO_x, PM₁₀, and PM_{2.5} impacts. However, these measures are not enforceable and thus it is unclear how likely they will be implemented because tenants are only “encouraged to promote” them. AQMD staff recognizes that requiring warehouse tenants to place engine technology restrictions on their vendors presents unique challenges. Further, requiring standards for one development and not another can yield competitive inequalities. The AQMD staff therefore encourages the lead agency to work with our agency to develop a common set of measures that are enforceable and that reduce emissions to the maximum extent feasible for the many warehouse projects under consideration in the city.

Some of these measures could include:

- Requiring all on-site vehicles (hostlers, forklifts, etc.) to utilize zero or near-zero emission technology
- Requiring the installation of sufficient alternative fueling infrastructure (e.g., electric charging, CNG/LNG, hydrogen, etc.) for trucks on-site or within close proximity to the site to facilitate the use of these technologies
- Providing a phase-in schedule and goals for the introduction of zero or near-zero technology trucks (e.g., 10% by 2020, 20% by 2025, etc.) that visit warehouses
- Prohibiting the placement of loading docks or major truck routes within 500 feet of sensitive receptors

Should any of these measures be found infeasible, other measures should be considered that will reduce air quality impacts. The measures listed below have been used by other lead agencies including the City of Banning¹, Riverside County², City of San Bernardino³, and the San Pedro Bay Ports⁴, among others.

At project start, all heavy duty trucks entering the property must meet or exceed 2010 engine emission standards specified in California Code of Regulations Title 13, Article 4.5, Chapter 1, Section 2025.

- o If the above clean truck requirement is infeasible, a phase-in schedule should be put forth that will feasibly achieve emission reductions as soon as possible, and faster than existing regulations. Should an alternative schedule be found necessary, the AQMD staff should be consulted prior to approving the schedule.

¹ Banning Business Park <http://banning.ca.us/archives/30/July%2013,%202010%20City%20Council%20Agenda.pdf>

² Mira Loma Commerce Center http://www.rctlma.org/online/content/conditions_of_approval.aspx?PERMITNO=pp17788

³ Palm/Industrial Distribution Center <http://www.ci.san-bernardino.ca.us/civica/filebank/blobdload.asp?BlobID=11793>

⁴ Clean Trucks Program <http://www.cleanairactionplan.org/cleantrucks/>

The facility operator will maintain a log of all trucks entering the facility to ensure that on average, the daily truck fleet meets the quantities and emission standards listed in the Draft EIR. This log should be available for inspection by city staff at any time.

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Prohibit all vehicles from idling in excess of five minutes, both on warehouse property and on streets in the General Plan Amendment area.

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The facility operator will ensure that onsite staff in charge of keeping the daily log and monitoring for excess idling will be trained/certified in diesel health effects and technologies [for example, by requiring attendance at CARB approved courses (such as the free, one-day Course #512)].

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Limit the daily number of trucks allowed at each facility to levels analyzed in the Final EIR. If higher daily truck volumes are anticipated to visit the site, the lead agency should commit to re-evaluating the additional impacts through CEQA prior to allowing this higher activity level.

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Limit project operations to non-refrigerated warehouse types of trucks and appurtenances (e.g., transportation refrigeration units, TRUs) included in the project description and analyzed in the Final EIR. If this equipment and associated higher emissions are anticipated to visit the site, the lead agency should commit to re-evaluating project impacts through CEQA prior to allowing this higher activity level.

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Require at least a portion of the fleet to utilize alternative fueled technologies.

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At a minimum, require tenants upon occupancy that do not already operate 2007 and newer trucks to apply in good faith for funding to replace/retrofit their trucks, such as Carl Moyer, VIP, Prop 1B, or other similar funds. Should funds be awarded, the tenant should also be required to accept and use them.

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Design the warehouse/distribution center such that any check-in point for trucks is well inside the facility property to ensure that there are no trucks queuing outside of the facility.

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Restrict overnight parking in residential areas. Establish overnight parking within the warehouse/distribution center where trucks can rest overnight.

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Due to the large roof area associated with this project, consider installing solar roof panels to reduce emissions from fossil fuel based electrical generating technologies providing electrical power to the project site. At a minimum, buildings should be designed to allow the installation of solar panels at a later date.

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Use street sweepers that comply with SCAQMD Rules 1186 and 1186.1.

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Trucking Support Services

2. The project is projected to accommodate nearly 2,000 trucks on a daily basis. In addition to the project's 2.24 million square feet of warehousing, there are several other warehouse projects in the area, including a recently proposed 40+ million square foot project. The trucks from all of these warehouse operations do not currently have any facilities in this portion of the city to serve their specific needs. Trucking support services can include truck repair, fueling, and overnight parking, hotels, restaurants, banking, etc. If these services are not easily accessible to this

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project or surrounding projects, then truckers may have no choice but to make extra trips into the surrounding neighborhoods to find these services. In other parts of the basin, these extra trips and idling in surrounding neighborhoods has led to increased emissions affecting local residents. The lead agency should address how these trucking services will be provided to truckers serving this project and the other nearby projects. Potential measures to consider include:

- Establish area(s) within the facility for repair needs.
- Post signs outside of the facility providing a phone number where neighbors can call if there is a specific issue.
- Develop, adopt and enforce truck routes both in and out of city, and in and out of facilities.
- Have truck routes clearly marked with trailblazer signs, so trucks will not enter residential areas.
- Identify or develop secure locations outside of residential neighborhoods where truckers that live in the community can park their truck, such as a Park & Ride.
- Provide food options, fueling, truck repair and or convenience store on-site to minimize the need for trucks to traverse through residential neighborhoods.
- Improve traffic flow by signal synchronization.
- Design the warehouse/distribution centers to ensure that truck traffic within the facility is located away from the property line(s) closest to its residential or sensitive receptor neighbors.

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Equipment Not Included in Air Quality Analysis

3. The Draft EIR includes a Health Risk Assessment (HRA) that evaluates the impact from two sources, trucks and employee cars. Although the lead agency has proposed encouraging the promotion of near-zero emission yard trucks, it isn't clear if all applicable on-site equipment are accounted for and included in the health risk assessment. Equipment that is commonly found at warehouses that is not included in the HRA or the air quality analysis includes hostlers (e.g., yard trucks), diesel generators, and transportation refrigeration units (TRU's). The Final EIR should estimate the emissions from these equipment types or specifically prohibit their use onsite.

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Health Risk Assessment Calculations

4. Several parameters used to determine potential health risks for the proposed project require further explanation or recalculation in the Final EIR. In addition to the comments below, details that should be provided in the Final EIR include the EMFAC modeling output and the dispersion modeling output. Should you have any questions regarding these parameters, please call AQMD staff at (909) 396-3244. AQMD staff notes the following items that are unclear in the HRA:

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- o The HRA assumes that 2025 is a representative year from EMFAC2007 for the entire 70 year span of the project. Further justification is needed to

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validate this assumption, especially considering the significantly higher emissions that are expected in the years preceding 2025, and the relatively unchanged emissions in the years following 2025.

- No emissions are calculated for onsite travel such as trucks traveling from Eucalyptus to building dock doors and back. Hostlers, diesel generators, and TRU's are also not included.
- The project description states that operations will occur 24 hours per day, 7 days per week while the HRA states that emissions will only occur 12 hours per day.
- The HRA assumes that half the trucks will travel east, while the other half travel west on Eucalyptus when exiting/entering the project site. The traffic study within the Draft EIR states that only 33% will travel west while the preponderance travel east.
- The HRA assumed that 12.5% of heavy duty trucks, 30% of medium duty trucks, and 80% of light duty trucks will use gasoline instead of diesel fuel. These values should be justified when considering the kinds of trucks that typically serve warehouses. AQMD staff recommends a default assumption of 100% diesel fueled trucks serving warehouses without further justification.
- The derivation of emission rates is unclear. For example, the HRA Emission Rate Worksheet shows a rate of 8.7E-05 g/s for heavy duty diesel trucks. AQMD staff was not able to reproduce this rate. For example, running EMFAC2007 at 70°, 50% humidity, year 2025, with a SCAQMD fleet yields an emission rate of 9.27E-05 g/s.
- It is not clear how the idling emission rate was derived.
- The effects of building downwash was included, however no mention was made that downwash does not work with volume sources in either the AERMOD or ISC dispersion model. In addition, if downwash is used in the final analysis, the building heights should match those found elsewhere in the Draft EIR. The HRA states that heights of 65 feet were used, however this is considerably taller than any building heights described in Appendix K.

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On-Site Truck Idling Emissions

5. In the health risk effects analysis, the lead agency assumes that 1,246 heavy duty diesel trucks will operate daily at the project site. On page 4.3-17 in the Air Quality Section, the lead agency used only five minutes of idling in the emissions estimate for the health risk assessment. Although state regulations only allow five minutes of idling at any one time, trucks may idle for five minute periods several times on-site (e.g., queuing to enter the site, at the loading dock, exiting the site, etc.). AQMD staff therefore recommends an assumption of 15 minutes for on-site idling. If less than 15 minute of idling is used in the HRA, a mitigation measure should be added that requires the project proponent to limit *total* onsite idling time to the time used in the health risk assessment.

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Truck Categorization

6. In the air quality analysis, the lead agency used the truck trip rate of 1.96 trips per 1,000 square feet of land use to estimate operational air quality impacts instead of the default CalEEMod land use model trip rate of 2.59. In addition, the lead agency assumed, as specified in the Transportation chapter of the Draft EIR, the vehicle fleet mix used to estimate truck emissions based on values recommended in the Fontana Truck Study. This study includes data for 2-axle, 3-axle, and 4+ axle trucks. Although EMFAC2007 also includes emission factors based on truck size, the splits are based however on vehicle weight, not axle. For the regional criteria pollutant calculations, the Draft EIR assumes that 2-axle and 3-axle trucks correspond to EMFAC2007 LDT1 and LDT2 vehicle classifications. LDT1 and LDT2 are for pickup trucks and are not typical of the higher emitting 2-axle and 3-axle trucks that would make deliveries at a warehouse. Based on guidance in Appendix E in the CalEEMod User Guide, 2-axle trucks should use the LHD1 classification, and 3-axle trucks should use MHD in the Final EIR. AQMD staff notes that these classifications were used for the Health Risk Assessment.

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Construction Mitigation Measures

7. In the Draft EIR, the lead agency has determined that project regional construction impacts exceed the AQMD recommended significance thresholds. AQMD staff therefore recommends the following changes and additional mitigation measures during the projected 12 month construction period in addition to the measures proposed starting on page 4.3-23 to further reduce ROG and NOx impacts, if applicable and feasible.

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Recommended change:

- 4.3.6.2D All clearing, grading, earthmoving, or excavation activities shall cease when winds (as instantaneous gusts) exceed 25 miles per hour per SCAQMD guidelines in order to limit fugitive dust emissions.

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Recommended addition:

- Limit the amounts of daily soil disturbance to the amounts analyzed in the EIR.
Prohibit truck idling in excess of five minutes, both on- and off-site.

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Further, other lead agencies in the region including LA County Metro, the Port of Los Angeles, and the Port of Long Beach have also enacted the following mitigation measures. AQMD staff recommends the following measures to further reduce air quality impacts from construction equipment exhaust:

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- Project start to December 31, 2014: All off-road diesel-powered construction equipment greater than 50 hp shall meet Tier 3 off-road emissions standards. In

addition, all construction equipment shall be outfitted with BACT devices certified by CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations.

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Post-January 1, 2015: All off-road diesel-powered construction equipment greater than 50 hp shall meet the Tier 4 emission standards, where available. In addition, all construction equipment shall be outfitted with BACT devices certified by CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations.

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A copy of each unit's certified tier specification, BACT documentation, and CARB or AQMD operating permit shall be provided at the time of mobilization of each applicable unit of equipment.

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For additional measures to reduce off-road construction equipment, refer to the mitigation measure tables located at the following website:

www.aqmd.gov/ceqa/handbook/mitigation/MM_intro.html .

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Average Vehicle Ridership

8. Mitigation measure 4.3.6.5B lists as one of the measures the development of trip reduction plans that will achieve 1.5 average vehicle ridership for businesses with fewer than 100 employees. Because AQMD's rule 2202 has been modified⁵ to only apply to businesses with at least 250 employees, the mitigation measure should be modified to include businesses with fewer than 250 employees, rather than 100 employees.

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⁵ <http://www.aqmd.gov/rules/reg/reg22/r2202.pdf>

RESPONSE TO LETTER B-3

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Introduction Letter (Pages 1-2)

Response to Comment 1. The following responses address the South Coast Air Quality Management District's (District) specific comments on the air quality analysis in the Draft EIR, including the mitigation measures. The City believes the recommended mitigation measures are feasible and enforceable on future tenants of this project. The project air study does not support the commenter's contention that the main reason the project air emissions exceed the AQMD's daily thresholds is because the mitigation measures cannot be enforced. However, the City desires to address the District's recommendations to the extent feasible, so the applicant has agreed to allow the following modifications to Mitigation Measure 4.3.6.6A to incorporate the District's recommendations to eliminate "encouraged" with stronger enforceable language.

4.3.6.6A *Prior to issuance of the first building permit, building and site plan designs shall ensure that the project's energy efficiencies surpass applicable 2008 California Title 24, Part 6 Energy Efficiency Standards by a minimum of ~~20~~ 10 percent until January 1, 2014. For building permits issued after that date, new state energy standards require a 20 percent reduction from 2008 Title 24, Part 6 Energy Efficiency Standards. Verification of increased energy efficiencies shall be documented in Title 24 Compliance Reports provided by the Applicant, and reviewed and approved by the City. ~~Any combination of~~ The following design features including but not limited to the following list shall be used to fulfill this requirement:*

- *Buildings shall exceed California Title 24 Energy Efficiency performance standards for water heating and space heating and cooling, as deemed acceptable by the City.*
- *Increase in insulation such that heat transfer and thermal bridging is minimized.*
- *Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption.*
- *Incorporate dual-paned or other energy efficient windows.*
- *Incorporate energy efficient space heating and cooling equipment.*
- *Interior and exterior energy efficient lighting which exceeds the California Title 24 Energy Efficiency performance standards shall be installed, as deemed acceptable by the City. Automatic devices to turn off lights when they are not needed shall be implemented.*
- *To the extent that they are compatible with landscaping guidelines established by the City, shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and buildings shall be planted at the project site.*
- *Paint and surface color palette for the project shall emphasize light and off-white colors which reflect heat away from the buildings.*
- *All buildings shall be designed to accommodate renewable energy sources, such as photovoltaic solar electricity systems, appropriate to their architectural design.*
- *To reduce energy demand associated with potable water conveyance, the project shall implement the following:*
 - *Landscaping palette emphasizing drought-tolerant plants;*

- *Use of water-efficient irrigation techniques; and,*
- *U.S. EPA Certified WaterSense labeled for equivalent faucets, high-efficiency toilets (HETs), and water-conserving shower heads.*
- *The project shall provide secure, weather-protected, on-site bicycle storage/parking.*
- *The project shall provide on-site showers (one for males and one for females). Lockers for employees shall be provided.*
- *The project will establish a Transportation Management Association (TMA). The TMA will coordinate with other TMAs within the City to encourage and coordinate carpooling among building occupants. The TMA will advertise its services to building occupants, and offer transit and/or other incentives to reduce greenhouse gas (GHG) emissions. A plan will be submitted by the TMA to the City within two months of project completion that outlines the measures implemented by the TMA, as well as contact information.*
- *The project shall provide preferential parking for carpools and vanpools. Locations and configurations of proposed preferential parking for carpools and vanpools are subject to review and approval by the City. Prior to final site plan approval, preferential parking for carpools and vanpools shall be delineated on the project site plan.*
- *The project shall provide at least two electric vehicle charging stations. Locations and configurations of proposed charging stations are subject to review and approval by the City. Prior to issuance of the first building permit, stub outs for charging stations shall be indicated on the project building plans.*
- *Lease/purchase documents shall identify that tenants are encouraged to promote the following:*
 - *Implementation of compressed workweek schedules.*
 - *SmartWay partnership;*
 - *Achievement of at least 20 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of consolidated trips carried by SmartWay carriers until it reaches a minimum of 90 percent of all long-haul trips carried by SmartWay 1.0 or greater carriers.*
 - *Achievement of at least 15 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of long-haul trips carried by SmartWay carriers until it reaches a minimum of 85 percent of all consolidator trips carried by SmartWay 1.0 or greater carriers.*
 - *Use of fleet vehicles conforming to 2010 air quality standards or better.*
 - *Installation of catalytic converters on gasoline-powered equipment.*
 - *Inclusion of electric powered and/or compressed natural gas fueled trucks and/or vehicles in fleets.*
 - *Establishment and use of carpool/vanpool programs, complemented by parking fees for single-occupancy vehicles.*
 - *Provision of preferential parking for EV and CNG vehicles.*
 - *Use of electrical equipment (instead of gasoline-powered equipment) for landscape maintenance.*
 - *Use of electric (instead of diesel or gasoline-powered) yard trucks.*

- *Use of SmartWay 1.25 rated trucks.*
- *Each facility operator shall provide regular sweeping of onsite parking and drive areas using street sweepers that comply with applicable SCAQMD Rules.*
- *Each facility operator shall maintain a log of all trucks entering the facility to ensure that, on average, the daily truck fleet meets applicable air quality emission standards. This log shall be available for inspection by City staff at any time.*
- *Each facility operator shall prohibit all vehicles from idling in excess of five minutes in all onsite areas.*
- *Each facility operator shall ensure that onsite staff in charge of keeping the daily log and monitoring for excess idling will be trained and certified in diesel health effects and technologies, such as by requiring attendance at CARB-approved courses.*
- *Each facility operator which upon occupancy does not already operate 2007 and newer trucks shall in good faith be required to apply for funding to replace or retrofit their trucks such as Carl Moyer, VIP, Prop 1B or similar funds. Should funds be awarded, the tenant shall be required to accept and use them.*

Response to Comment 2. The AQMD will receive a copy of the Final EIR, with the Response to Comments, at least 10 days prior to action on the project and EIR, as required under Section 15088(b) of the State CEQA Guidelines.

Technical Evaluation (Pages 3-8)

Response to Comment 1. The recommendations made by the SCAQMD are beyond the scope of this project-level EIR. Fleet-related requirements such as these are the responsibility of state-level agencies (e.g., California Air Resources Board).”

- (1) Onsite vehicles to zero or near-zero emission technology – Mitigation Measure 4.3.6.6A requires the inclusion of electric powered and/or compressed natural gas fueled trucks and/or vehicles in fleets.
- (2) Alternative fueling infrastructure – These technologies do not yet represent a significant share of the warehousing truck fleet, so it is burdensome to require one particular project to provide this infrastructure when it is not known what user will locate to this site, or to what degree the future user can control their truck fleet (i.e., large corporate user may have total control, smaller user fleets may be independent truckers who cannot afford the modifications to their trucks to accommodate these fuels.
- (3) Phase-in of zero or near-zero technology – Response to Comment B-3, No. 2 below indicates that Mitigation Measure 4.3.6.6A encourages the future user of the site to participate in the SmartWay program. It should be noted that the end-user of the building is not known at this time and there is the possibility that participation in the SmartWay program may not be feasible.
- (4) Loading docks or truck routes more than 500 feet from sensitive receptors – The Draft EIR clearly describes that the closest loading dock would be 664 feet from the existing residential uses southeast of the site (Draft EIR page 4.3-17, 4th paragraph). In addition, Eucalyptus Avenue, the project’s truck route both east and west to the freeway, would be 1,500 feet at its closest point to the residential uses.

Response to Comment 2. This mitigation might be appropriate if the project warehouses were being built and used by one large warehousing company that had its own truck fleet, but it is infeasible to apply this measure to a “speculation” project where the eventual end user is not known at this time. However, the City desires to address the District’s recommendations to the extent feasible, so the applicant has agreed to allow the following modifications to Mitigation Measure 4.3.6.6A to incorporate the District’s recommendations:

4.3.6.6A *Prior to issuance of the first building permit, building and site plan designs shall ensure that the project’s energy efficiencies surpass applicable 2008 California Title 24, Part 6 Energy Efficiency Standards by a minimum of ~~20~~ 10 percent until January 1, 2014. For building permits issued after that date, new state energy standards require a 20 percent reduction from 2008 Title 24, Part 6 Energy Efficiency Standards. Verification of increased energy efficiencies shall be documented in Title 24 Compliance Reports provided by the Applicant, and reviewed and approved by the City. ~~Any combination of~~ The following design features ~~including but not limited to the following list~~ shall be used to fulfill this requirement:*

- *Buildings shall exceed California Title 24 Energy Efficiency performance standards for water heating and space heating and cooling, as deemed acceptable by the City.*
- *Increase in insulation such that heat transfer and thermal bridging is minimized.*
- *Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption.*
- *Incorporate dual-paned or other energy efficient windows.*
- *Incorporate energy efficient space heating and cooling equipment.*
- *Interior and exterior energy efficient lighting which exceeds the California Title 24 Energy Efficiency performance standards shall be installed, as deemed acceptable by the City. Automatic devices to turn off lights when they are not needed shall be implemented.*
- *To the extent that they are compatible with landscaping guidelines established by the City, shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and buildings shall be planted at the project site.*
- *Paint and surface color palette for the project shall emphasize light and off-white colors which reflect heat away from the buildings.*
- *All buildings shall be designed to accommodate renewable energy sources, such as photovoltaic solar electricity systems, appropriate to their architectural design.*
- *To reduce energy demand associated with potable water conveyance, the project shall implement the following:*
 - *Landscaping palette emphasizing drought-tolerant plants;*
 - *Use of water-efficient irrigation techniques; and,*
 - *U.S. EPA Certified WaterSense labeled for equivalent faucets, high-efficiency toilets (HETs), and water-conserving shower heads.*
- *The project shall provide secure, weather-protected, on-site bicycle storage/parking.*
- *The project shall provide on-site showers (one for males and one for females). Lockers for employees shall be provided.*
- *The project will establish a Transportation Management Association (TMA). The TMA will coordinate with other TMAs within the City to encourage and coordinate*

carpooling among building occupants. The TMA will advertise its services to building occupants, and offer transit and/or other incentives to reduce greenhouse gas (GHG) emissions. A plan will be submitted by the TMA to the City within two months of project completion that outlines the measures implemented by the TMA, as well as contact information.

- *The project shall provide preferential parking for carpools and vanpools. Locations and configurations of proposed preferential parking for carpools and vanpools are subject to review and approval by the City. Prior to final site plan approval, preferential parking for carpools and vanpools shall be delineated on the project site plan.*
- *The project shall provide at least two electric vehicle charging stations. Locations and configurations of proposed charging stations are subject to review and approval by the City. Prior to issuance of the first building permit, stub outs for charging stations shall be indicated on the project building plans.*
- *Lease/purchase documents shall identify that tenants are encouraged to promote the following:*
 - *Implementation of compressed workweek schedules.*
 - *SmartWay partnership;*
 - *Achievement of at least 20 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of consolidated trips carried by SmartWay carriers until it reaches a minimum of 90 percent of all long-haul trips carried by SmartWay 1.0 or greater carriers.*
 - *Achievement of at least 15 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of long-haul trips carried by SmartWay carriers until it reaches a minimum of 85 percent of all consolidator trips carried by SmartWay 1.0 or greater carriers.*
 - *Use of fleet vehicles conforming to 2010 air quality standards or better.*
 - *Installation of catalytic converters on gasoline-powered equipment.*
 - *Inclusion of electric powered and/or compressed natural gas fueled trucks and/or vehicles in fleets.*
 - *Establishment and use of carpool/vanpool programs, complemented by parking fees for single-occupancy vehicles.*
 - *Provision of preferential parking for EV and CNG vehicles.*
 - *Use of electrical equipment (instead of gasoline-powered equipment) for landscape maintenance.*
 - *Use of electric (instead of diesel or gasoline-powered) yard trucks.*
 - *Use of SmartWay 1.25 rated trucks.*
 - *Each facility operator shall provide regular sweeping of onsite parking and drive areas using street sweepers that comply with applicable SCAQMD Rules.*
 - *Each facility operator shall maintain a log of all trucks entering the facility to ensure that, on average, the daily truck fleet meets applicable air quality emission standards. This log shall be available for inspection by City staff at any time.*

- Each facility operator shall prohibit all vehicles from idling in excess of five minutes in all onsite areas.
- Each facility operator shall ensure that onsite staff in charge of keeping the daily log and monitoring for excess idling will be trained and certified in diesel health effects and technologies, such as by requiring attendance at CARB-approved courses.
- Each facility operator which upon occupancy does not already operate 2007 and newer trucks shall in good faith be required to apply for funding to replace or retrofit their trucks such as Carl Moyer, VIP, Prop 1B or similar funds. Should funds be awarded, the tenant shall be required to accept and use them.

In addition, the City will consider application of these actions on future truck-intensive projects in the area. The District also recommended additional mitigation measures that are addressed in the following Responses to Comments B-3, Nos. 3 through 14.

Response to Comment 3. Truck log – this item has been added to Mitigation Measure 4.3.6.6.A (see Response to Comment B-3, No. 2 and Final EIR, Section 3.0, *EIR Errata and Additions*).

Response to Comment 4. Idle limits - this item has been added to Mitigation Measure 4.3.6.6A (see Response to Comment B-3, No. 2 and Final EIR, Section 3.0, *EIR Errata and Additions*).

Response to Comment 5. Log monitor training - this item has been added to Measure 4.3.6.6A (see Response to Comment B-3, No. 2 and Final EIR, Section 3.0, *EIR Errata and Additions*).

Response to Comment 6. The traffic levels projected in the EIR are considered to be conservative and protective of the environment and public health. Realistically, it is anticipated that the project traffic generation might also be considerably less than indicated in the Draft EIR, depending on the actual user(s) that locate within this project. The City believes the items outlined in Mitigation Measure 4.3.6.6A, including all the recommended additions described in Responses to Comments B-3, Nos. 2-5 and 11-13 are adequate to reduce project emissions. However, considering the volume of emissions generated and current commuter habits, it is unlikely the implementation of TDMs/TCMs described in the EIR will result in a reduction of operational project emissions to below existing localized operation emissions thresholds. Long-term air quality impacts resulting from the operation of the proposed project would remain significant and unavoidable.

Response to Comment 7. Again, the traffic levels projected in the EIR are considered to be conservative and protective of the environment and public health. The City believes the items outlined in Mitigation Measure 4.3.6.6A, including all the recommended additions described in Responses to Comments B-3, Nos. 2-5 and 11-13 are adequate to reduce project emissions to the extent practical.

Response to Comment 8. This measure would be onerous and difficult if not impossible to implement for a particular warehouse project, especially one such as this where the ultimate end user is not known. The City believes the items outlined in Mitigation Measure 4.3.6.6A, including all the recommended additions described in Responses to Comments B-3, Nos. 2-5 and Nos. 11-13 are adequate to reduce project emissions to the extent practical.

Response to Comment 9. Measure 4.3.6.6A require the project applicant to encourage the use of the SmartWay program for the leasee to reduce truck emissions over the long-term. The City believes the items outlined in Mitigation Measure 4.3.6.6A including all the recommended additions described in Responses to Comments B-3, Nos. 2-5 and 11-13 are adequate to reduce project emissions to the extent practical.

4.3.6.6A *Prior to issuance of the first building permit, building and site plan designs shall ensure that the project's energy efficiencies surpass applicable 2008 California Title 24, Part 6 Energy Efficiency Standards by a minimum of ~~20~~ 10 percent until January 1, 2014. For building permits issued after that date, new state energy standards require a 20 percent reduction from 2008 Title 24, Part 6 Energy Efficiency Standards. Verification of increased energy efficiencies shall be documented in Title 24 Compliance Reports provided by the Applicant, and reviewed and approved by the City. ~~Any combination of~~ The following design features ~~including but not limited to the following list~~ shall be used to fulfill this requirement:*

- *Buildings shall exceed California Title 24 Energy Efficiency performance standards for water heating and space heating and cooling, as deemed acceptable by the City.*
- *Increase in insulation such that heat transfer and thermal bridging is minimized.*
- *Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption.*
- *Incorporate dual-paned or other energy efficient windows.*
- *Incorporate energy efficient space heating and cooling equipment.*
- *Interior and exterior energy efficient lighting which exceeds the California Title 24 Energy Efficiency performance standards shall be installed, as deemed acceptable by the City. Automatic devices to turn off lights when they are not needed shall be implemented.*
- *To the extent that they are compatible with landscaping guidelines established by the City, shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and buildings shall be planted at the project site.*
- *Paint and surface color palette for the project shall emphasize light and off-white colors which reflect heat away from the buildings.*
- *All buildings shall be designed to accommodate renewable energy sources, such as photovoltaic solar electricity systems, appropriate to their architectural design.*
- *To reduce energy demand associated with potable water conveyance, the project shall implement the following:*
 - *Landscaping palette emphasizing drought-tolerant plants;*
 - *Use of water-efficient irrigation techniques; and,*
 - *U.S. EPA Certified WaterSense labeled for equivalent faucets, high-efficiency toilets (HETs), and water-conserving shower heads.*
- *The project shall provide secure, weather-protected, on-site bicycle storage/parking.*
- *The project shall provide on-site showers (one for males and one for females). Lockers for employees shall be provided.*
- *The project will establish a Transportation Management Association (TMA). The TMA will coordinate with other TMAs within the City to encourage and coordinate carpooling among building occupants. The TMA will advertise its services to building occupants, and offer transit and/or other incentives to reduce greenhouse gas (GHG) emissions. A plan will be submitted by the TMA to the City within two months of project completion that outlines the measures implemented by the TMA, as well as contact information.*

- *The project shall provide preferential parking for carpools and vanpools. Locations and configurations of proposed preferential parking for carpools and vanpools are subject to review and approval by the City. Prior to final site plan approval, preferential parking for carpools and vanpools shall be delineated on the project site plan.*
- *The project shall provide at least two electric vehicle charging stations. Locations and configurations of proposed charging stations are subject to review and approval by the City. Prior to issuance of the first building permit, stub outs for charging stations shall be indicated on the project building plans.*
- *Lease/purchase documents shall identify that tenants are encouraged to promote the following:*
 - *Implementation of compressed workweek schedules.*
 - *SmartWay partnership;*
 - *Achievement of at least 20 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of consolidated trips carried by SmartWay carriers until it reaches a minimum of 90 percent of all long-haul trips carried by SmartWay 1.0 or greater carriers.*
 - *Achievement of at least 15 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of long-haul trips carried by SmartWay carriers until it reaches a minimum of 85 percent of all consolidator trips carried by SmartWay 1.0 or greater carriers.*
 - *Use of fleet vehicles conforming to 2010 air quality standards or better.*
 - *Installation of catalytic converters on gasoline-powered equipment.*
 - *Inclusion of electric powered and/or compressed natural gas fueled trucks and/or vehicles in fleets.*
 - *Establishment and use of carpool/vanpool programs, complemented by parking fees for single-occupancy vehicles.*
 - *Provision of preferential parking for EV and CNG vehicles.*
 - *Use of electrical equipment (instead of gasoline-powered equipment) for landscape maintenance.*
 - *Use of electric (instead of diesel or gasoline-powered) yard trucks.*
 - *Use of SmartWay 1.25 rated trucks.*
 - *Each facility operator shall provide regular sweeping of onsite parking and drive areas using street sweepers that comply with applicable SCAQMD Rules.*
 - *Each facility operator shall maintain a log of all trucks entering the facility to ensure that, on average, the daily truck fleet meets applicable air quality emission standards. This log shall be available for inspection by City staff at any time.*
 - *Each facility operator shall prohibit all vehicles from idling in excess of five minutes in all onsite areas.*
 - *Each facility operator shall ensure that onsite staff in charge of keeping the daily log and monitoring for excess idling will be trained and certified in diesel health effects and technologies, such as by requiring attendance at CARB-approved courses.*

- Each facility operator which upon occupancy does not already operate 2007 and newer trucks shall in good faith be required to apply for funding to replace or retrofit their trucks such as Carl Moyer, VIP, Prop 1B or similar funds. Should funds be awarded, the tenant shall be required to accept and use them.

Response to Comment 10. The project site plan has already been checked by City staff for this component and there is sufficient stacking distance within the project.

Response to Comment 11. No residential areas are immediately accessible to the project site from the two main freeway access points (i.e., along Eucalyptus Avenue west to Redlands Boulevard and west to Moreno Beach Drive). Overnight parking of trucks in residential areas is prohibited by the City.

Response to Comment 12. The roofs of all buildings within the proposed project will be capable of supporting photovoltaic solar panels. As shown below, ProLogis has a strong history of installing solar panels on its warehouse projects:

Description	Bldg Size (SF)	Megawatts (Mw)
Ontario Airport #2	562,089	2.55
Ontario Airport #3	369,086	1.41
Ontario Airport #4	680,925	2.85
Ontario Airport #5	241,367	0.773
Rialto I-210 DC #2	1,197,051	8.6
Rialto I-210 DC #3	543,400	2.62
Vista Rialto DC #1	436,650	
Kaiser DC #2	577,905	2.25
Kaiser DC #5	757,765	4.5
Kaiser DC #6	544,768	1.94
Kaiser DC #7	872,380	4.688
Transpark DC #1	849,054	3.86
Redlands DC #1	467,853	3.4
Redlands DC #2	259,572	1.75
Redlands DC #3	446,050	3.2
Redlands DC #4	683,269	5.0176
Redlands DC #5	699,350	4.9
Redlands DC #6	600,306	3.09
San Bernardino DC #1	758,139	4.85
Redlands DC #10 (to start Q4 '12)		
	12,860,449	68.67

Response to Comment 13. This item (street sweeping) has been added to Mitigation Measure 4.3.6.6A to require compliance with applicable SCAQMD rules (refer to Response to Comment B-3, No. 2 above).

Response to Comment 14. The recommendations regarding “Trucking Support Services” are all beyond the scope of this project-level EIR. As stated in the comment, these measures are suggested as City requirements that would be applied to any truck-intensive projects in the City.

Response to Comment 15. The combination of the very conservative assumptions required of all health risk assessments with the very small amount of emissions from yard trucks (the project does not plan to use any diesel generators nor allow TRUs during normal operations) compared to the

large emissions from the many heavy-duty haul trucks idling and driving around mean that the HRA as published, which shows health risk levels less than half of the significance thresholds, adequately analyzes the risks to public health from the project operations.

Response to Comment 16. The HRA modeling only allows for one emission rate for the diesel engines to represent the entire 70-year period from opening year (2013) until 2083. The available emissions factors model (EMFAC) only has factors thru 2040. Thus, there is no information available about how the diesel emissions will change from 2040 until 2083. It is pure guesswork to predict how the diesel emissions will change over this period. To assume that the emissions during this 43 year period will not change at all is a very conservative assumption – there is a real possibility that all diesel engines will have been replaced by an alternative power source before 2083 resulting in zero diesel particulate emissions. Selecting the best year between 2083 and 2013 to represent the average is somewhat arbitrary – the median is 2048, outside the range of available factors. EMFAC incorporates expectations of technological improvements that would result in lower emissions over the period from the 1990s thru 2040, however it does not include everything – for instance it does not include the law just passed in August 2012 that sets the average mileage of cars and light trucks to 54.5 miles per gallon by 2025. While this does not include the heavy-duty trucks the HRA is focused on, it is an indication that there will be aggressive regulations in the future reducing these diesel emissions below what is in the EMFAC model. While using the emissions factors for 2040 as an average is not optimal due to the higher existing emissions, using 2013 factors as an average is unreasonably conservative also. In our best engineering judgment, 2025 is the best set of emissions factors to represent this complicated issue.

It should be noted that all of the details for calculating health risks of the proposed project were provided in Appendix B of the Draft EIR, including the EMFAC and dispersion modeling outputs. In addition, “active” CalEEMod and supporting computer files were sent to the AQMD during the EIR review period to allow for replication and verification of the HRA report results.

Response to Comment 17. Refer to Response to Comment B-3, No. 16 above.

Response to Comment 18. Refer to Response to Comment B-3, No. 16 above. The emissions for trucks idling at the load bays and for vehicle operating on the roadways were explicitly modeled. The emissions for the trucks moving the short distances from the loading docks to the driveways were included in the modeling, just without explicit emissions sources (those emissions were included with the roadway sources). Since there are no sensitive receptors between where the trucks are traveling from the loading docks to the driveway and the roadway sources, this simplification of the modeling results in the same health risk levels as a more detailed modeling with the additional emissions sources. There are no diesel generators planned and TRUs will not burn diesel fuel because any refrigerated trucks will plug in and their TRUs run off that electricity. There are also no plans for onsite diesel-powered hostlers or other diesel-powered equipment.

Response to Comment 19. The project is expected to operate 24 hour per day. Modeling the actual number of trucks that are planned to operate over 24 hours as if they operated over 12 hours results in much higher hourly emissions. Thus, the HRA is protective of human health in case there is a change in the project operations to only operate 12 hours per day.

Response to Comment 20. The vast majority (over 90 percent) of the project’s diesel particulate emissions are from the trucks idling on the project site, so adjusting the amount of trucks traveling east and west will have only a very minor effect on the HRA results. The HRA assumed a relatively equal split for east-west trip distribution so the results would not be biased relative to the closest sensitive receptor to the project site (i.e., residential southeast of site) that could otherwise result from an unequal distribution of projected versus actual project trips.

Response to Comment 21. While assuming that 100% of the trucks will be diesel is certainly worst case, it overstates the real-world condition that some trucks use gasoline. The HRA is a careful balance of assumptions, some already very conservative (such as assuming people live in one place for 70 years and stay in that house 24 hours a day for 350 days out the year). The fuel use percentages are from the URBEMIS model. These are percentages there to best represent the real-world operations for projects modeled using the URBEMIS model. Since it is not known what the actual warehouse operator will use, using this published representative fuel use percentages is the best method to model the future use. The carcinogenic health risk at the nearest residences for individuals living there for 70 years was identified in the DEIR as 4.33 in 1 million. Changing the percentage of trucks using diesel from the URBEMIS parameters to 100% would certainly increase the estimate carcinogenic health risk.

Response to Comment 22. The PM₁₀ emissions factor from EMFAC2007 at 50°, 50% humidity, 2025, SCAQMD fleet for HDT traveling at 40mph is 0.095 g/mile/truck. To derive the corresponding project emissions rate in g/sec, the g/mile rate is adjusted by the distance covered between volume sources per second. Thus, 0.095 g/mi is multiplied by 117 meter source spacing. And, since this is to convert from trucks per day to emissions per second, the result is divided by 86,400 sec/day. So, $0.095 * 117 * 0.0006214 \text{ meters/mile} / 86,400 = 8.0E-08 \text{ g/s/truck}$. With 1,246 trucks per day that are 87.5% diesel, this becomes 8.7E-05 g/s.

Response to Comment 23. The idling emissions factors were from EMFAC2007 for HDT at 0.396 g/hr. The following table lists the derivation of the individual emissions rates:

Idling Emissions of Diesel Particulate

	No. of diesel trucks per day	Minutes Idling	Idling Emission Factor	Number of Sources	Emission Rates per Source		
					g/s	lb/hr	lb/yr
Building 1	89	5	0.396	3	9.9E-06	7.9E-05	0.7
Building 2	594	5	0.396	12	1.7E-05	1.3E-04	1.2
Building 3	84	5	0.396	3	9.4E-06	7.5E-05	0.7
Building 4	234	5	0.396	5	1.6E-05	1.3E-04	1.1
Building 5	269	5	0.396	6	1.5E-05	1.2E-04	1.0
Building 6	224	5	0.396	6	1.2E-05	9.5E-05	0.83

For example, for Building 1: $89 * 87.5\% / 24 * 5 \text{ min} / 60 * 0.396 / 3,600 / 3 \text{ sources}$

Response to Comment 24. All of the emissions sources in proximity to the project building that could be affected by the building downwash are point sources, which do work correctly with building downwash. The building height used was an estimate made before the project design had progressed far enough to include the building heights described in the DEIR. The HRA has not been updated to use the planned building heights for two reasons – using a higher building height results in greater building wake affects and higher health risk levels, so is conservative. Secondly, the effects of building wake affects diminish quickly the further the residence of concern is downwind. At the distance of the nearest residence the building wake affect is making a negligible difference

Response to Comment 25. The site is designed so that there will not be any queuing while entering the site, the trucks will proceed immediately from the loading docks immediately to their truck route and vice versa. While it is possible that there will be isolated trucks that stop briefly while in transit, it is expected that the number of occurrences will be so small as to not affect the health risk assessment.

Response to Comment 26. The project trip rate used in the air quality analysis matches what was used in the project traffic study. That study explains the project trip rate selection. The conversion of these factors between EMFAC and CalEEMod is difficult, due to the nomenclature differences. The air quality study used the fleet defaults built into the CalEEMod model to characterize the project operational emissions as the most representative of the expected emissions. As the HRA did not use the same fleet assumptions as the operational air quality analysis, as noted by SCAQMD staff, the HRA used the CalEEMod classifications. ~~these fleet EMFAC adjustments were different.~~

Response to Comment 27. As detailed in Responses 28-33, the mitigation measures have been modified to include all feasible SCAQMD mitigation language suggestions. Since the effectiveness of these mitigation measures is not included in the analysis, the analysis represents a worst-case post-mitigation analysis.

Response to Comment 28. Mitigation Measure 4.3.6.2D has been modified to incorporate this clarification as follows:

4.3.6.2D *All clearing, grading, earthmoving, or excavation activities shall cease when winds (as instantaneous gusts) exceed 25 mph per SCAQMD guidelines in order to limit fugitive dust emissions.*

Response to Comment 29. Mitigation Measure 4.3.6.2D has been modified to include a provisions that grading shall be stopped when instantaneous gusts exceed 25 mph to help further minimize offsite dust impacts. Restricting the number of acres grading on any one day is not reasonable. The CalEEMod calculates a total grading disturbed area many times the size of the project site based on the idea that there are multiple graders, dozers, scrapers, etc. making multiple passes during any one day. This suggested measure to limit simultaneous disturbance of the site to 5 acres per day would not change the results of the air quality modeling and projected air emissions identified in the Draft EIR and in fact may increase emissions due to the grading inefficiencies created by this restriction. By grading a smaller area it prolongs the grading process and releases dust and vehicular emissions (grading construction workers going back and forth to the site over a greater period of time and grading equipment moving around the site) into the air basin over a longer period of time. In addition, the 120-acre project generally slopes at approximately 2% from north to south. Areas on the northern half of the project will have dirt removed (cut) while areas to the south will have dirt added (fill). To achieve this will require that dirt be moved over more than 5 acres per day. To limit the grading operation to any one 5 acre area per day area would result in the same dirt being deposited and picked up many times as it is "hop scotched" to its final location rather than transporting the dirt in one move. A 5-acre daily limitation would result in more, not less, grading equipment emissions. The grading contractor is motivated to move the dirt as efficiently as possible resulting in the lowest amount of equipment run time which also results in the lowest amount of emissions. There are also logistical considerations getting construction equipment and people back and forth to the site.

Response to Comment 30. The agencies mentioned have much more control over truck operations and activities within their respective jurisdictions compared to the City of Moreno Valley. However, the City and the applicant have agreed to add this requirement into Mitigation Measure 4.3.6.2C. The measure has been amended as follows as is included in Final EIR, Section 3.0, *EIR Errata and Additions*:

4.3.6.2C *Prior to the issuance of a grading permit, the project developer shall require by contract specifications that contractors shall utilize California Air Resources Board (CARB) Tier II Certified equipment or better during the rough/mass grading phase for the following pieces of equipment: rubber-tired dozers and scrapers. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the City.*

Project start to December 31, 2014: All off-road diesel-powered construction equipment greater than 50 horsepower shall meet Tier 3 off-road emission standards. In addition, all construction equipment shall be outfitted with Best Available Control Technology (BACT) devices certified by CARB. Any emission control devices used by the contractor shall achieve emission reductions that are no less than what would be achieved by a Level 3 diesel emission control strategy for a similarly sized engine as defined by CARB regulations.

Post January 1, 2015: All off-road diesel-powered construction equipment greater than 50 horsepower shall meet Tier 4 emission standards, where available. In addition, all construction equipment shall be outfitted with Best Available Control Technology (BACT) devices certified by CARB. Any emission control devices used by the contractor shall achieve emission reductions that are no less than what would be achieved by a Level 3 diesel emission control strategy for a similarly sized engine as defined by CARB regulations.

A copy of each unit's certified tier specifications, BACT documentation, and CARB or SCAQMD operating permit shall be provided at the time of mobilization of each applicable unit of equipment.

Response to Comment 31. The City and the applicant have agreed to include this requirement into Mitigation Measure 4.3.6.2C. The measure has been amended as indicated above in Response to Comment B-3, No. 30 and is included in Final EIR, Section 3.0, *EIR Errata and Additions*.

Response to Comment 32. The City and the applicant have agreed to include this requirement into Mitigation Measure 4.3.6.2C. The measure has been amended as indicated above in Response to Comment B-3, No. 30 and is included in Final EIR, Section 3.0, *EIR Errata and Additions*.

Response to Comment 33. Many of the activities listed in the referenced CEQA Handbook have already been incorporated or have been added to the project mitigation, as outlined in previous responses in this section regarding mitigation.

Response to Comment 34. Mitigation Measure 4.3.6.5B has been modified to include businesses with fewer than 250 employees, rather than 100 employees.

WARREN D. WILLIAMS
General Manager-Chief Engineer



Letter B-4
1995 MARKET STREET
RIVERSIDE, CA 92501
951.955.1200
FAX 951.788.9965
www.rcflood.org

51183

RIVERSIDE COUNTY FLOOD CONTROL
AND WATER CONSERVATION DISTRICT

RECEIVED

SEP 17 2012

CITY OF MORENO VALLEY
Planning Division

City of Moreno Valley
Community Development Department -
Planning Division
Post Office Box 88005
Moreno Valley, California 92552-0805

Attention: Jeff Bradshaw

ProLogis Eucalyptus

Ladies and Gentlemen: Associate Planner

Re: Industrial Park

The District does not normally recommend conditions for land divisions or other land use cases in incorporated cities. The District also does not plan check city land use cases, or provide State Division of Real Estate letters or other flood hazard reports for such cases. District comments/recommendations for such cases are normally limited to items of specific interest to the District including District Master Drainage Plan facilities, other regional flood control and drainage facilities which could be considered a logical component or extension of a master plan system, and District Area Drainage Plan fees (development mitigation fees). In addition, information of a general nature is provided.

1

The District has not reviewed the proposed project in detail and the following checked comments do not in any way constitute or imply District approval or endorsement of the proposed project with respect to flood hazard, public health and safety or any other such issue:

2

No comment.

This project would not be impacted by District Master Drainage Plan facilities nor are other facilities of regional interest proposed.

This project ^{may} involves District Master Plan facilities. The District will accept ownership of such facilities on written request of the City. Facilities must be constructed to District standards, and District plan check and inspection will be required for District acceptance. Plan check, inspection and administrative fees will be required.

3

This project proposes channels, storm drains 36 inches or larger in diameter or other facilities that could be considered regional in nature and/or a logical extension of the adopted _____ Master Drainage Plan. The District would consider accepting ownership of such facilities on written request of the City. Facilities must be constructed to District standards, and District plan check and inspection will be required for District acceptance. Plan check, inspection and administrative fees will be required.

This project is located within the limits of the District's Moreno Area Drainage Plan for which drainage fees have been adopted; applicable fees should be paid by cashier's check or money order only to the Flood Control District or City prior to issuance of grading permits. Fees to be paid should be at the rate in effect at the time of issuance of the actual permit.

4

An encroachment permit shall be obtained for any construction related activities occurring within District right of way or facilities. For further information, contact the District's encroachment permit section at 951.955.1266.

5

The District's previous comments are still valid.

6

GENERAL INFORMATION

This project may require a National Pollutant Discharge Elimination System (NPDES) permit from the State Water Resources Control Board. Clearance for grading, recordation or other final approval should not be given until the City has determined that the project has been granted a permit or is shown to be exempt.

7

If this project involves a Federal Emergency Management Agency (FEMA) mapped flood plain, then the City should require the applicant to provide all studies, calculations, plans and other information required to meet FEMA requirements, and should further require that the applicant obtain a Conditional Letter of Map Revision (CLOMR) prior to grading, recordation or other final approval of the project, and a Letter of Map Revision (LOMR) prior to occupancy.

8

If a natural watercourse or mapped flood plain is impacted by this project, the City should require the applicant to obtain a Section 1602 Agreement from the California Department of Fish and Game and a Clean Water Act Section 404 Permit from the U.S. Army Corps of Engineers, or written correspondence from these agencies indicating the project is exempt from these requirements. A Clean Water Act Section 401 Water Quality Certification may be required from the local California Regional Water Quality Control Board prior to issuance of the Corps 404 permit.

9

Very truly yours,

HENRY OLIVO
Engineering Project Manager

Date: 9/10/2012

c: Riverside County Planning Department
Attn: Kristi Lovelady

February 14, 2008

Mr. Jeff Bradshaw, Associate Planner
City of Moreno Valley
Community Development Department
14177 Frederick Street
Moreno Valley, CA 92552-0805

Dear Mr. Bradshaw:

Re: Notice of Preparation of a
Draft Environmental Impact Report for
ProLogis Park Moreno Valley Eucalyptus

This letter is written in response to the Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) for ProLogis Park Moreno Valley Eucalyptus. The proposed project includes a General Plan Amendment (GPA), a Change of Zone (CZ), a Tentative Parcel Map, Municipal Code Amendment, and a Plot Plan. The project site encompasses approximately 122 acres and is bounded in general by State Route 60, Quincy Street, Eucalyptus Avenue and Pettit Street in the city of Moreno Valley, County of Riverside.

The Riverside County Flood Control and Water Conservation District has the following comment:

6

The proposed project is located within the Moreno Master Drainage Plan (MDP). When fully implemented, these MDP facilities will provide flood protection to relieve those areas within the plan of the most serious flooding problems and will provide adequate drainage outlets. The DEIR should address impacts to MDP facilities within the proposed project area. To obtain further information on the MDP and the proposed facilities, please contact Dale Anderson of the District's Planning Section at 951.955.1345.

Thank you for the opportunity to review the NOP and Initial Study. Please forward any subsequent environmental documents regarding the project to my attention at this office. Any questions concerning this letter may be referred to Art Diaz at 951.955.4643 or me at 951.955.1233.

Very truly yours,

TERESA TUNG
Senior Civil Engineer

c: TLMA
Attn: David Mares
Dale Anderson

AD:mcv
P8\117913

RESPONSE TO LETTER B-4

**RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION
DISTRICT**

Response to Comment 1. The City thanks the District for clarifying its role in the project review process relative to flood control issues.

Response to Comment 2. The City does not infer the District's approval or endorsement of the proposed project.

Response to Comment 3. The City and the developer understand the project improvement review and approval process. The applicant will contact the District to coordinate the design and maintenance of the Quincy Channel as needed.

Response to Comment 4. The City and the applicant understand the project is within the Moreno Area Drainage Plan and the project will pay applicable fees in this regard.

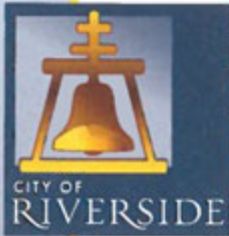
Response to Comment 5. The applicant will obtain an encroachment permit from the District if necessary for work related to the Quincy Channel.

Response to Comment 6. The City and the applicant understand the District's NOP comments on the project are still valid.

Response to Comment 7. The City and the applicant understand that the project may require an NPDES permit from the Regional Water Quality Control Board.

Response to Comment 8. The City and the applicant understand that a CLOMR and/or a LOMR may be required for this project – one or both will be obtained if necessary as part of the subsequent development review process if the project is approved.

Response to Comment 9. The City and the applicant understand that a 1602 Agreement will be needed with Fish and Game, a 401 Certification will be needed from the Regional Water Quality Control Board, and a 404 permit may be required from the U.S. Army Corps of Engineers. The applicant would obtain the necessary permits in this regard subsequent to approval of the proposed entitlements.



Community Development
Department
Planning Division

September 4, 2012

Jeff Bradshaw
City of Moreno Valley
14177 Frederick Street
Moreno Valley CA, 92553

SUBJECT: Notice of Availability (NOA) of a Draft Environmental Impact Report for the Prologis Eucalyptus Industrial Park Project in Moreno Valley

Dear Mr. Bradshaw:

Thank you for the opportunity to review and comment on the Notice of Availability (NOA) of a Draft Environmental Impact Report (DEIR) for the Prologis Eucalyptus Industrial Park Project proposed on approximately 122.8 acres generally located south of and adjacent to State Route (SR)-60, east of the Moreno Valley Auto Mall and adjacent to and west of the Quincy Channel. As described in the DEIR, the project consists of the development of six distribution warehouse facilities totaling 2,224,419 square feet. Associated with this project is a General Plan Amendment to change the land use designation of 71.3 acres of the project site from Residential (R15, R5, and R2) to Business Park (BP) so the entire site would then be designated Business Park (BP).

City of Riverside staff has reviewed the DEIR and offers the following comments:

- The proposed General Plan Amendment will change the land use designation of 71 acres from residential to a business park designation allowing for large warehouse distribution facilities which will result in a substantial increase in truck trips beyond what is currently anticipated in the Moreno Valley General Plan. The County Transportation Uniform Mitigation Fee (TUMF) model is based on the existing Moreno Valley General Plan and as such did not account for this major change of 71 acres to distribution warehousing facilities. As a result, payment of TUMF does not sufficiently mitigate traffic impacts of the proposed project. 1
- The traffic analysis section of the DEIR is limited in scope as it only analyzes localized traffic impacts within Moreno Valley at 17 intersections, most of which are within a mile radius of the project site, yet the project involves a large warehouse development (over 2.2 million square feet) that will generate substantial truck traffic. Taken together, passenger vehicle and truck traffic is equivalent to over 7,500 passenger vehicle trips a day in terms of traffic impact. The DEIR needs to analyze project impacts regionally, 2

considering cumulative impacts of significant truck traffic that will be added with the proposed project along with traffic that will be generated by other projects in Moreno Valley including the proposed RPT Centerpointe West Project (1.28 million square-foot warehouse development) and the a pending EIR for the World Logistics Center – over 40 million square feet of warehouse distribution facilities. These cumulative impacts to the City of Riverside have not been fully analyzed and are potentially significant.

2

- Another regional impact that has not been appropriately evaluated in the DEIR includes the impacts generated by vehicles (those that would normally travel west along the SR-60 Freeway toward I-125/SR-91 interchange). Motorists will find the “path of least resistance” when the freeways are congested and take routes on City of Riverside arterials such as Van Buren and Alessandro Boulevards to get to the SR-91 Freeway. The DEIR shows that project trips will travel south from the project site to Cottonwood Street and Alessandro Boulevard then travel west towards the I-215 Freeway and Riverside. Beyond the I-215 Freeway, a percentage of these project trips will utilize Alessandro or Van Buren Boulevards to access SR-91 Freeway. As a result, the DEIR needs to fully evaluate the spill-over effect on these streets within the City of Riverside to determine how much traffic will be added along these two key corridors, the level of impact to the City of Riverside and identify appropriate mitigation. Specific mitigation or fair share contribution toward mitigation (beyond TUMF) may be needed to address impacts to the City of Riverside.

3

- The DEIR finds that segments of the SR-60 Freeway (both westbound and eastbound) currently operate at an unacceptable level of service (LOS). The project is cumulatively significant and will worsen the existing unacceptable LOS on freeway segments. The DEIR also states that “neither the project applicant nor the City of Moreno Valley have jurisdiction over the Caltrans facilities; therefore, implementation of improvements to the freeway mainline cannot be guaranteed. Additionally, the RTIP has no projects programmed on the SR-60 within the study area and Caltrans does not have a mechanism for development projects to contribute to improvements on State highways. Given this significant unavoidable impact which cannot be mitigated, the impacts will spill over onto other roadways including City of Riverside streets as discussed above, further emphasizing the need to further analyze and mitigate the spill-over impacts to the City of Riverside.

4

- In addition to primary concerns related to unmitigated traffic impacts to the City, as described above, the DEIR finds that the project will result in an excessive number of impact areas (a total of five including transportation/traffic) with significant unavoidable environmental impacts where a statement of overriding considerations is needed. The impact areas found to have significant impacts include Aesthetics, Agricultural Resources, Air Quality, Land Use and Planning, and Transportation/Circulation. These impacts are excessive and as a result the proposed General Plan Amendment to add 71 acres of warehouse distribution facilities is inappropriate and other project alternatives need to be further considered to reduce the number of significant impacts.

5

City of Riverside staff appreciates Moreno Valley's consideration of the comments provided in this letter. Please forward any updated environmental documents to the City of Riverside Planning Division for further review. Should you have any questions regarding this letter, please feel free to contact Doug Darnell, AICP Senior Planner, at (951) 826-5219 or ddarnell@riversideca.gov.

6

Sincerely,


Steve Hayes, AICP
City Planner

c: Ronald Loveridge, Mayor
Riverside City Council Members
Scott Barber, City Manager
Deanna Lorson, Assistant City Manager
Al Zelinka, FAICP, Community Development Director
Kristi Smith, Supervising Deputy City Attorney
Tom Boyd, Public Works Director
Steve Libring, Traffic Engineer
John Terell, Planning Official, City of Moreno Valley
14177 Frederick Street Moreno Valley, CA 92553
LSA Associates, Inc., 1500 Iowa Avenue, Suite 200 Riverside, California 92507

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RESPONSE TO LETTER C-1

CITY OF RIVERSIDE

Response to Comment 1. The comment has accurately summarized the characteristics of the proposed project. It is correct that the project proposes a change in land use 71 acres of land from residential uses to warehousing uses. As noted on Page 18 of the traffic study, currently 5 percent of the project site is designated as R2 Residential, 2 percent as R5 Residential, 41 percent as R15 Residential, and the remaining 34 percent as Business Park/Light Industrial. Table E of the Traffic Study (DEIR Table 4.11.E on page 4.11-15 of the DEIR) illustrates a comparison between the trip generation of the site as presently zoned, and the trip generation of the proposed project. As can be seen in Table E, compared to the present zoning, the project produces 6,702 fewer trips per day, with 885 fewer trips in the a.m. peak hour and 939 fewer trips in the p.m. peak hour. Please note that these trips are PCE trips, so the effects of trucks have been included in the trip generation. Therefore, the commenter is mistaken in the statement that the project increases the number of trips. On the contrary, the proposed project actually reduces the future number of PCE trips compared to approved land uses on the site. The comment also asserts that payment of the TUMF does not sufficiently mitigate the traffic impacts of the proposed project. The Mitigation Measures identified in Section 4.11.6.4.E of the DEIR outline the specific improvements required to mitigate the direct and cumulative impacts of the project. This section also identifies where the required improvements are programmed into the DIF and TUMF. In cases where the improvements are not programmed, the project would be responsible to implement the improvements, as outlined in Section 4.11.6.4.E. As a result, the impacts of the project will be fully mitigated prior to issuance of the Certificate of Occupancy by the City, either through payment of the DIF, TUMF, or by a fair-share participation in improvements that are not included in these funding programs.

It should be noted that the Reduced Intensity Alternative (less intensive modified plan) evaluated in Section 4 of this document would substantially reduce traffic generation and therefore warehouse traffic impacts (4 warehouse building with approx. 30% less traffic) compared to the 6 warehouse buildings of the Proposed Project. The reader is referred to Section 4 of this document for more information regarding that alternative land plan.

Response to Comment 2. The City selected the intersections for analysis in accordance with the guidelines established by the City's Traffic Impact Analysis Preparation Guide (i.e., 50 or more peak hour trips within a five mile radius) and as accepted and required by the City of Moreno Valley in their Traffic Impact Assessment (TIA) guidelines. It should be noted that this is the same criteria for selection of a study area in the City of Riverside Traffic Impact Analysis Preparation Guide. It should also be noted that the project does not add more than 50 trips at intersections farther than those included in the analysis. In addition, Response to Comment C-1, No. 1 above demonstrates the proposed project actually reduces the number of PCE trips that would be generated on the project site from the previously considered project. Since the World Logistics Center and RPT Centerpointe West projects were initiated after the NOP for this project went out, the trips from these two projects are not required to be and have not been included in this analysis. See also Response to Letter A-2, Comment No. 8. In addition, see Response No. 1 above regarding the proposed less intensive modified plan evaluated in Section 4 of this document.

Response to Comment 3. The comment states that the redistribution of traffic caused by the project was not appropriately analyzed in the DEIR - this statement is incorrect. The 2035 analysis was prepared using forecasts from the RivTAM traffic model, which distributes traffic according to the "path of least resistance", as requested in the comment. The select zone assignment prepared for the project shows that approximately 5 percent of project traffic, equating to fewer than 50 trips, would utilize Alessandro and Van Buren Boulevards in the City of Riverside. Changes in the distribution of traffic within the City of Riverside due to the influence of the project were not evaluated, as these

roadways and intersections do not meet the criteria for inclusion into the project study area. An explicit analysis of “spill-over” traffic, as requested in the comment, is not required by the traffic study guidelines adopted by the Cities of Moreno Valley or Riverside, or the County of Riverside. The comment also asserts that the TUMF program may not adequately mitigate project impacts due to “spill-over” traffic. This comment is also incorrect. The TUMF Nexus Study prepared by Parsons Brinckerhoff in October 2009 relied upon traffic forecasts from the RivTAM traffic model. As noted previously, the RivTAM traffic model assigns traffic based on the “path of least resistance”. Additionally, the General Plan land use planned for the project site, and included in the RivTAM, would generate more trips than the proposed project. As a result, the forecasts prepared for the TUMF Nexus Study would be a more conservative estimate of “spill-over” traffic than would be experienced with the project, and the projects programmed in the TUMF would be adequate to mitigate project impacts.

Response to Comment 4. The RIVTAM traffic model was used to generate forecast traffic volumes for no project and with project condition. The methodology utilized by the RivTAM traffic model to assign trips to the roadway network minimizes travel time and delay for trip origins and destinations within the model network. As such, if a faster route was observed, then a significant diversion of trips should have been seen on these routes. However, significant diversion of traffic was not observed between the no-build and build conditions. Furthermore, the modeling indicated that diversion of trips on to surface streets under without and with project conditions are anticipated to be minimal (a maximum diversion of 7 peak hour PCE trips is forecast at on Alessandro Boulevard). Please note that compared to the present zoning, the project produces 6,702 fewer trips per day, with 885 fewer trips in the a.m. peak hour and 939 fewer trips in the p.m. peak hour, and based on the model runs, the trips on surface streets in the City of Riverside are generally lower under conditions where the proposed zone change is approved.

Response to Comment 5. The commenter is correct that the project involves a General Plan Amendment and Zone Change, and the Draft EIR does identify a number of significant impacts for the proposed project. The purpose of an EIR is to disclose potential impacts of the project to the public and to decision makers. Utilizing the information provided in the DEIR, the decision makers will determine whether the benefits of the project outweigh the environmental impacts of the project.

It should be noted that the less intensive modified plan evaluated in Section 4 of this document would substantially reduce traffic generation and therefore warehouse traffic impacts (4 warehouse building with approx. 30% less traffic) compared to the 6 warehouse buildings of the Proposed Project. The reader is referred to Section 4 of this document for more information regarding that alternative land plan.

Response to Comment 6. The City of Moreno Valley will keep the City of Riverside informed regarding the review process for this project, and the City of Riverside will have an opportunity to review these responses prior to action on the ProLogis project.



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August 29, 2012

Via email

Jeff Bradshaw
Associate Planner
City of Moreno Valley, Planning Division
14177 Frederick Street
Post Office Box 88005
Moreno Valley, CA 92553
Email: jeffreyb@moval.org

Re: Comment on Draft Environmental Impact Report for ProLogis Eucalyptus Industrial Park (State Clearinghouse No. 2008021002)

Dear Mr. Bradsahw:

I am writing on behalf of Laborers International Union of North America, Local Union No. 1184, and its members living in Riverside County ("LIUNA Local Union No. 1184") regarding the Draft Environmental Impact Statement ("DEIR") for the ProLogis Eucalyptus Industrial Park, State Clearinghouse No. 2008021002 ("Project").

On Tuesday, August 28, 2012, we made a request that the City of Moreno Valley ("City") extend the comment period for the DEIR due to substantial information requiring additional time for review and comment. You responded today, August 29, 2012 that you respectfully decline to grant the request for additional time.

Today, we sent you an email requesting Appendix L. Appendix L is referenced in the DEIR. In pertinent part, the DEIR states:

Mitigation Measures. The potential mitigation measures identified by the City's General Plan have been deemed infeasible by the property owner under current economic conditions. In addition, supplementary analysis of the project site and local economic conditions indicates that continued citrus production and/or the raising of row crops would not be economically feasible on the project site (*see Appendix L*).

(DEIR, p. 4.2-8) (emphasis added). The DEIR does not contain an Appendix L.

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Jeff Bradshaw
City of Moreno Valley
August 29, 2012
Page 2 of 2

The current comment period closes on Tuesday, September 4, 2012, and the City has failed to provide access to a critical document referenced in the DEIR that is required by law to be made available to the public during the entire DEIR comment period. The City is in violation of CEQA's Section 21092(b)(1) requirement which mandates that "all documents referenced in the draft environmental impact report or negative declaration" be available for review and "readily accessible" during the entire comment period. PRC § 21092(b)(1). Even if the requested document were to be made available to the public today, there is insufficient time for the public to review and comment on this document at this time.

Accordingly, we request that the City extend the comment period for the ProLogis Eucalyptus Project until at least forty-five (45) days from the date that the City makes available all documents referred to in the DEIR.

Given the shortness of time before the current comment deadline, please contact me as soon as possible with your response to this request. Feel free to call me at (510) 836-4200 should you have any questions.

Sincerely,



Richard T. Drury
Christina Caro
Brooke O'Hanley
Lozeau Drury LLP
Attorneys for LIUNA Local Union No. 1184

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RESPONSE TO LETTER D-1

LOZEAU DRURY, LLP (8/29/12)

Response to Comment 1. As explained to the commenter on the telephone and via email by Jeff Bradshaw on August 28, 2012, the reference to Appendix L was a typographical error – it should have referred to Appendix E which contains the material on “agricultural resources” requested by the commenter. The material in Appendix E is clearly labeled “Agricultural Resources” in the Table of Contents, so the Draft EIR does not need to be recirculated. This correction will be noted in Section 3 of this document (*EIR Errata and Additions*) as shown below. Appendix E was available along with the entire DEIR and all DEIR appendices for the duration of the 45-day public review period. In addition, the comment has not resulted in any change in the impact judgment contained in the DEIR regarding agricultural resources and that impacts were identified as significant and unavoidable.

Mitigation Measures. *The potential mitigation measures identified by the City’s General Plan have been deemed infeasible by the property owner under current economic conditions. In addition, supplementary analysis of the project site and local economic conditions indicates that continued citrus production and/or the raising of row crops would not be economically feasible on the project site (see Appendix L E).*



SAN GORGONIO CHAPTER

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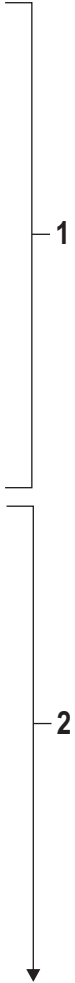
*Regional Groups Serving Riverside and San Bernardino Counties:
Big Bear, Los Serranos, Mojave, Moreno Valley, Mountains, Tahquitz.*

Jeff Bradshaw
Associate Planner
P.O. Box 88005
Moreno Valley, CA 92552

September 3, 2012

RE: ProLogis Eucalyptus Industrial Park project's Draft Environmental Impact Report (DEIR).

The Sierra Club appreciates this opportunity to comment on this DEIR. We hope to read your responses in the FEIR which do fully answer our comments, concerns, suggestions and questions. Most of our concerns are about Global Warming, Climate Change, Greenhouse Gas Pollution and Air Pollutant emissions. These concerns can be read below and we expect this project to do everything possible to mitigate these problems in our non-attainment area. The Sierra Club understands that “the applicant has indicated the building will be designed to qualify for certification under the Leadership in Energy and Environmental Design (LEED) program, but there are no plans to submit the project to actual LEED certification.” (p 3-12) We do not understand why you do not match the Gold LEED certification recently agreed to by the Alessandro Business Center warehouse in the City of Riverside or even the LEED Silver of nearby Skechers and West Ridge Commerce Center warehouses. In fact your words do not guarantee anything about even reaching the lowest level of LEED certification. The City needs to require you to hire a LEED expert and then require you to become LEED certified--hopefully higher than just certified. You could pay less than \$1,000 this year and lock in current LEED standards for your building. Through the installation of solar panels and other verified LEED ideas you could avoid generating air pollutants with the electricity you consume. This warehouse and all warehouses need to be required to have their roofs built to accommodate the maximum number of solar panels. You are now able to sell excess energy back and earn money as well as do right for our non-attainment area. The DEIR states that “the proposed project would unavoidably contribute to the significant cumulative air quality impacts.” (p 1-28) The DEIR also indicates that the “cumulative impacts associated with diesel particulate matter are considered significant and unavoidable”. (p 1-29) The Sierra Club does not believe it is totally unavoidable. The fact you are given a cafeteria list of mitigations to chose from shows that there is more that could and should be done to protect the health of area residents. These need to be required of the project and not just implemented “where feasible” or some other weasel words like “will be considered”. Why isn't there a requirement to exceed current Title 24 at time of construction by at least 25% instead of just “exceed” Title 24? Agreeing to require all of your



off road construction equipment meet or exceed Tier III standards would also significantly help our non-attainment city and county.

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Continuing to pave over Prime Agricultural lands as well as those of Local and State Importance must be mitigated. Having locally grown products also cuts down on the Climate Change problems mentioned in this letter. The FEIR must show the impacts of losing the citrus groves on Climate Chang/Green house Gas/ Air Quality or it will be inadequate. Recently a developer donated \$100,000 to the Riverside Land Conservancy to help mitigate for the loss of Ag Lands. The San Jacinto Basin Resource Conservation District is another entity which would use your monetary donation to mitigate the loss of important Ag lands as well as the loss of lands for raptor foraging. It is therefore incorrect to say that it is "significant and unavoidable". (p 1-15) The impact to Quincy Channel and other watercourses need to be dealt with at the site and not some far distance place. What will you do to reduce direct and indirect edge effects, habitat fragmentation, and reduced habitat quality during construction as well as at build out? You pay little attention to the loss of what could be Moreno Valley's last significant citrus grove with all its biological value and the FEIR needs to rectify that inadequacy. Please consider how your project will seriously mitigate your impacts to Agriculture, nesting and foraging. The San Jacinto Wildlife Area and nearby lands -- which includes this project's--have more than 20 species of raptors. The Sierra Club would differ with the DEIR that the State-listed Swainson's hawk would not likely use the site, because we see them in this valley. The project's land should not be disced or graded for at least six months prior to doing the Burrowing Owl survey otherwise many will believe you are just making it difficult on this special animal as well as making it more likely it will be listed as endangered. The project's impacts on adjacent lands also need to be analyzed, because of the noise. vibration, fumes and lighting created during the construction as well as operation of this project will impact the Burrowing Owl. You should also make sure your parking provides significant drought tolerant shade trees - not palm trees- and ample reserved spaces for several forms of cars using alternative fuels. The parking lot for cars also needs to be made of porous material to help with ground water recharge and to lessen run off.

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The Sierra Club did not see World Logistic Center on your Cumulative Project List (p 3-16). We do not believe all of your analysis have included this massive project. The FEIR will be inadequate unless this and all other projects are part of the analysis in each area of the FEIR. The projects distance from homes and land zoned for homes needs to be easily understood as well as all the paths trucks could take to the warehouse. This project is only across an intersection form existing homes. Most literature on toxic diesel emissions relate how sensitive receptors need to be at least 1,500 feet from warehouses, roads that diesel trucks use and diesel truck parking areas. How will you accomplish this with the existing residents. The FEIR needs to show all adjacent zoning within at least 2,000 feet. The Sierra Club believes that it will show many lands zoned for residential use which this project will make very unhealthy. What mitigations will be made to these residentially zoned lands and to the project to reduce the direct, indirect and cumulative impacts of more than 2,000,000 sq ft of warehousing? How will you protect the warehouse workers from the long term health affects of breathing toxic diesel emissions throughout their workday and employment? What equipment will you make sure is electric instead of diesel or gasoline in order to lessen pollution and better protect the workers--this includes gardening equipment? The FEIR needs to explain how noise barriers used during construction and use of the warehouse could lessen impacts identified. Impacts to our local

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streets as well as our very crowded freeways need to be explained so the average citizen will understand. The FEIR-not just appendices- needs to show the length of trips the diesel trucks will be taking when driving to and from the warehouse as well as their routes. We need to know the maximum number of tucks which will use the warehouses/project each workday and not just after the first year, but when all the warehouses/project are being used to its maximum capacity during peak times of the year. Your traffic analysis will be inadequate unless it addresses the July 2012 judgement of the Friends of the Northern San Jacinto Valley and Sierra Club vs County of Riverside concerning the Villages of Lakeview project which is incorporated by reference. Judge Waters mentions the same five-mile radius used in this project was not adequate for traffic and related impact like air quality under CEQA. (p 7 Statement of Decision) The decision makers have a right to know the cumulative impacts before they vote, that the section of SR 60 passing through Moreno Valley will become a parking lot with significant pollution. How will this project’s traffic impact the health of those living near SR60? The FEIR will be inadequate unless this project analyzes all the impacts caused to the Moreno Valley Auto Mall. Simply paying into a pot of money which may not be used in the impacted part of Moreno Valley does not mitigate your traffic.

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I. THE DEIR MUST ADEQUATELY ADDRESS THE IMPACTS OF GLOBAL WARMING AND CLIMATE CHANGE

As a potential significant impact, the Final EIR (FEIR) must more thoroughly evaluate alternatives and mitigation measures that would reduce the Project’s greenhouse gas emissions. Curbing greenhouse gas emissions to limit the effects of climate change is one of the most urgent challenges of our time. Fortunately, the California Environmental Quality Act (“CEQA”), Cal. Pub. Res. Code §§ 21000 et seq., 14 Cal. Code Regs. § 15000 et seq. (“Guidelines”), set forth a clear and mandatory process to address the Project’s greenhouse gas and global warming impacts. This letter sets forth how this analysis should be completed.

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A. THE DEIR MUST ADEQUATELY SET FORTH THE THREAT OF GREENHOUSE GAS POLLUTION AND GLOBAL WARMING

The FEIR must discuss the grave threats posed by global warming to California and the world. Current scientific consensus on climate change has now determined that the link between greenhouse gas emissions and global warming is highly certain. In California, elected leaders, through Executive Order S-03-05 and the California Global Warming Solutions Act of 2006 (AB 32), have also squarely linked greenhouse gases with global warming. In order to conform to CEQA’s informational mandates and properly inform the public and decision makers of the significance of the Project’s contribution to greenhouse gases, the DEIR must first adequately discuss the threat posed by greenhouse gas emissions and avoid minimizing or discounting the severity of global warming’s impacts. *See* Guidelines § 15151. *See, e.g., Laurel Heights Improvement Ass’n v. Regents of Univ. of Cal.* (“Laurel Heights I”), 47 Cal.3d 376, 392 (1988) (EIR is intended “to demonstrate to an apprehensive citizenry that the agency has, in fact, analyzed and considered the ecological implications of its action.”); Guidelines § 15151 (requiring an FEIR be detailed, complete, and reflect a good faith effort at full disclosure). A discussion of global warming impacts need not be lengthy, but should, at a minimum, convey the magnitude of the threat posed by global warming to humans and the

environment. For the City’s convenience, a scientific background on global warming and the specific threats posed to California is provided below.

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i. Scientific Background on Climate Change

There is no longer credible scientific dispute that the climate is warming. In its most recent assessment, the Intergovernmental Panel on Climate Change (“IPCC”) concluded that “[w]arming of the climate is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting snow and ice, and rising mean sea level.” (IPCC 2007a). Expressed as a global average, surface temperatures have increased by about 0.74°C over the last hundred years, with 11 of the 12 warmest years on record having occurred in the past 12 years (IPCC 2007a). In September 2007, Arctic sea ice plummeted to a record-low level not anticipated by most climate models until 2050, leading scientists to predict that the Arctic could be ice-free in summer by 2030 (National Snow & Ice Data Center 2007).¹ Other observed consequences of the warming climate include sea level rise, increased frequency of droughts, floods, and heat waves and substantial increases in the duration and intensity of hurricanes (IPCC 2007a).

The IPCC now states with “very high confidence” that most of the warming observed over the past 50 years is the result of human generation of greenhouse gases, including carbon dioxide, methane, and nitrous oxide² (IPCC 2007a). The rapid warming observed since the 1970s has occurred in a period when the increase in greenhouse gases has dominated over all other factors (IPCC 2007a). The largest known contribution to global warming is from carbon dioxide (IPCC 2007a). Fossil fuel combustion is responsible for more than 75% of human caused carbon dioxide emissions with the remainder due to land-use change (primarily deforestation) (IPCC 2007a). The global atmospheric concentration of carbon dioxide has increased from a pre-industrial value of about 280 parts per million (ppm) to 379 ppm in 2005, a level that has not been exceeded during the past 650,000 years (during which carbon dioxide concentrations remained between 180 and 300 ppm). (IPCC 2007a; Canadell et al. 2007). In 2006, carbon dioxide concentrations reached a new high of 381.2 ppm (World Metrological Organization 2007). As greenhouse gas concentrations increase, more heat reflected from the earth’s surface is absorbed by these greenhouse gases and radiated back into the atmosphere and to the earth’s surface.³ Consequently, the higher the level of greenhouse gas concentrations, the larger the degree of warming experienced.

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At current growth rates and continued reliance on fossil fuels, atmospheric concentrations of carbon dioxide would likely exceed 1,000 ppm by the end of the century, resulting in an average global temperature increase of more than 5°C (United Nations Foundation & Sigma XI 2007). This is equivalent to the change in temperature since the last ice age – an era in which Europe and North America was under more than one kilometer of ice (United Nations

¹ Based on the startling loss of sea ice in 2007, some scientists have predicted that “the Arctic Ocean could be nearly ice-free at the end of the summer by 2012.” Seth Borenstein, *Ominous Arctic Melt Worries Experts*, Associated Press, Dec. 11, 2007.

² IPCC, 2007: *Summary for Policymakers*, in CLIMATE CHANGE 2007: THE PHYSICAL SCIENCE BASIS, CONTRIBUTION OF WORKING GROUP I TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE at 4 (Susan Solomon et al. eds., Cambridge Univ. Press 2007) at 2-3. “Very high confidence” is defined at “at least a 9 out of 10 chance of being correct.” *Id.* at 3 n.7.

³ Greenhouse gases have a warming effect because, when solar radiation is reflected by the earth, greenhouse gases capture this thermal radiation and reradiate it back to earth, much like the effect of a common garden greenhouse resulting in the “greenhouse effect.”

Foundation & Sigma XI 2007). The growing consensus among climate scientists is that the threshold for dangerous climate change, whereupon a potential “tipping point” is reached and ecological changes become dramatically more rapid and out of control, is estimated at a temperature increase of around 2°C from pre-industrial levels, or an atmospheric concentration of carbon dioxide of approximately 450 ppm (United Nations Foundation & Sigma XI 2007; IPCC 2007c). In 2006, Dr. James E. Hansen, Director of the NASA Goddard Institute for Space Studies, and NASA’s top climate scientist, stated: “In my opinion there is no significant doubt (probability > 99%) that . . . additional global warming of 2° C would push the earth beyond the tipping point and cause dramatic climate impacts including eventual sea level rise of at least several meters, extermination of a substantial fraction of the animal and plant species on the planet, and major regional climate disruptions” (Hansen et al. 2006). More recently however, given the recent unpredicted and extreme rate of loss of arctic ice observed in 2007, Dr. Hansen concluded that “the safe upper limit for atmospheric CO₂ is no more than 350 ppm” (McKibben 2007). Moreover, according to Hansen, just 10 more years of “business-as-usual” global emissions will make it difficult, if not impossible, to keep atmospheric concentrations of greenhouse gases at levels necessary to avoid a temperature increase above 2°C (Hansen et al. 2007).

Keeping the climate within the 2°C threshold requires significant reductions in the world’s greenhouse gas emissions. To reach this objective, it is estimated that developed countries would have to target an emissions peak between 2012 and 2015, with 30 percent cuts by 2020 and 80 percent cuts from 1990 levels by 2050 (United Nations Foundation & Sigma XI 2007). In recognition of need for immediate action, California has committed itself through Executive Order S-3-05 and the California Global Warming Solutions Act to reduce the state’s emissions to 1990 levels by 2020 and by 80% reductions from 1990 levels by 2050. Ca. Health & Safety Code § 38550; Cal. Executive Order S-3-05 (2005).

The costs of taking no action to reduce greenhouse gas emissions far outweigh the costs of stabilizing emissions. The Stern Review of the Economics of Climate Change, a comprehensive report commissioned by the British government, recently concluded that allowing current emissions trajectories to continue unabated would eventually cost the global economy between 5 to 20 percent of GDP each year within a decade, or up to \$7 trillion, and warned that these figures should be considered conservative estimates (Stern 2006). By contrast, measures to mitigate global warming by reducing emissions were estimated to cost about one percent of global GDP each year, and could save the world up to \$2.5 trillion per year (Stern 2006). The Stern Report determined that if no action is taken to control greenhouse gas emissions, each ton of CO₂ emitted causes damage worth at least \$85 (Stern 2006).

ii. Impacts to California from Global Warming

Climate change poses enormous risks to California. Scientific literature on the impact of greenhouse gas emissions on California is well developed.⁴ The California Climate Change Center (“CCCC”) has evaluated the present and future impacts of climate change to California and the project area in research sponsored by the California Energy Commission and the California Environmental Protection Agency (Cayan et al. 2007). The severity of the impacts facing California is directly tied to atmospheric concentrations of greenhouse gases (Cayan et al. 2007; Hayhoe et al. 2004). According to the CCCC aggressive action to cut greenhouse gas

⁴ Additional reports issued by California agencies are available at <http://www.climatechange.ca.gov>, and IPCC

emissions today can limit impacts, such as loss of the Sierra snow pack to 30%, while a business-as-usual approach could result in as much as a 90% loss of the snowpack by the end of the century. As aptly noted in a report commissioned by the California EPA:

Because most global warming emissions remain in the atmosphere for decades or centuries, the choices we make today will greatly influence the climate our children and grandchildren inherit. The quality of life they experience will depend on if and how rapidly California and the rest of the world reduce greenhouse gas emissions (Cayan et al. 2007).

Some of the types of impacts to California and estimated ranges of severity – in large part dependent on the extent to which emissions are reduced – are summarized as follows:

- A 30 to 90 percent reduction of the Sierra snowpack during the next 100 years, including earlier melting and runoff.
- An increase in water temperatures at least commensurate with the increase in air temperatures.
- A 6 to 30 inch rise in sea level, before increased melt rates from the dynamical properties of ice-sheet melting are taken into account.
- An increase in the intensity of storms, the amount of precipitation and the proportion of precipitation as rain versus snow.
- Profound impacts to ecosystem and species, including changes in the timing of life events, shifts in range, and community abundance shifts. Depending on the timing and interaction of these impacts, they can be catastrophic.
- A 200 to 400 percent increase in the number of heat wave days in major urban centers.
- An increase in the number of days meteorologically conducive to ozone (O₃) formation.
- A 55 percent increase in the expected risk of wildfires (Cayan et al. 2007).

By providing details as to the ranges of proposed impacts, and indicating that the higher-range of impact estimates are projected if greenhouse gas emissions continue to increase under a “business as usual” scenario, decision-makers and the public will be better informed of the magnitude of the climate crisis and the urgency with which it must be addressed.

Finally, the DEIR should also include a brief discussion of other laws to address climate change, including California’s mandate to reduce emissions to 1990 levels by 2020 and goal of further reducing emissions to 80% below 1990 levels by 2050. Achievement of state mandated emissions reductions will be severely impeded if agencies across the state continue to approve *new* projects without incorporating measures to reduce the added emissions created by these.

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B. The EIR the Project Must Include an Inventory and Analysis of the Project’s Projected Greenhouse Gas Emissions

The first step in determining a project’s greenhouse gas pollution impact is to complete a full inventory of all emissions sources. In conducting such an inventory, all phases of the proposed project must be considered. *See* 14 Cal. Code Regs. § 15126. A basic requirement of CEQA is that “[a]n EIR should be prepared with a sufficient degree of analysis to provide decision-makers with information which enables them to make a decision which intelligently takes account of environmental consequences.” 14 Cal. Code Regs. § 15151. The greenhouse gas inventory for a project must include a complete analysis of all of a project’s substantial sources of greenhouse gas emissions, from building materials and construction emissions to operational energy use, vehicle trips, water supply and waste disposal.

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A greenhouse gas inventory for the project must include the project's direct and indirect greenhouse gas emissions. *See* 14 Cal. Code Regs. § 15358(a)(1) (Indirect or secondary effects may include effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems, including ecosystems.). Consequently, a complete inventory of a project's emissions should include, at minimum, an estimate of emissions from the following:

- Fugitive emissions of greenhouse gases, such as methane, from the proposed project;
- Emissions during construction from vehicles and machinery;
- Manufacturing and transport of building materials;
- Electricity generation and transmission for the heating, cooling, lighting, and other energy demands of the project;
- Water supply and transportation to the project;
- Vehicle trips and transportation emissions generated by the project;
- Wastewater and solid waste storage or disposal, including transport where applicable; and
- Outsourced activities and contracting.

Methodologies are readily available to inventory the emissions from the proposed project. In its recent white paper, CEQA & Climate Change, Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act (Jan. 2008), the California Air Pollution Control Officers Association (CAPCOA) set forth methodologies for analyzing greenhouse gas pollution (CAPCOA 2008). The California Office of Planning and Research ("OPR") has also released technical guidance on the preferred approach for analyzing greenhouse gas emissions and climate change entitled "Technical Advisory, CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act Review" (California OPR 2008). OPR also provides references to methodologies to quantify greenhouse gas emissions. In addition to the methodologies set forth by CAPCOA and OPR, ICLEI's Clean Air/Climate Protection (CACP) software allows cities to calculate emissions reductions, track and quantify emission outputs, and develop emissions scenarios to inform the planning process.⁵ As noted in the ICLEI Climate Action Handbook, "Expertise in climate science is not necessary" to conduct an emissions inventory and compare this inventory against a forecast year (ICLEI). "A wide range of government staff members, from public works to environment and facilities departments, can conduct an inventory" (ICLEI). ICLEI also provides technical assistance and training to local government using the CACP software. It is incumbent on the City to "disclose all it can" about project impacts and educate itself on methodologies that are available to measure project emissions. *Berkeley Keep Jets Over the Bay Comm. v. Board of Port Comm'rs* ("Berkeley Jets"), 91 Cal. App. 4th 1344, 1370 (2001).

As with any other project under CEQA, the baseline used for analyzing the impacts of a project is the existing on the ground environmental conditions at the time of the NOP. *See Environmental Planning & Information Council v. County of El Dorado (EPIC)*, 131 Cal.App.3d 350, 355 (1982) (effect of general plan amendment must be compared against actual

⁵ ICLEI's Clean Air/Climate Protection software is available at <http://www.cacpsoftware.org/> ICLEI-Local Governments for Sustainability is an international association of more than 650 local governments. Cities, counties, towns and villages around the world are members of ICLEI. ICLEI's mission is to improve the global environment through local action. On the issue of global warming, for example, ICLEI provides resources, tools, peer networking, best practices, and technical assistance to help local governments measure and reduce greenhouse gas emissions in their communities.

environment, not assumptions in existing general plan). Accordingly, the DEIR should compare emissions from existing conditions with those that would result from the development of the project, as well as those that would occur under any proposed alternative scenarios. Because the Project envisions development over a long period, the EIR should also provide data on the trajectory for emissions in the planned community and under each proposed alternative in five-year increments.

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Without a complete inventory, the DEIR cannot adequately inform the public and decision-makers about the Project’s impacts. Similarly, without a complete inventory and analysis of greenhouse gas emissions that will result from the project, there is simply no way that The EIR can then adequately discuss alternatives, avoidance, and mitigation measures to reduce those impacts.

C. THE EIR MUST ADDRESS THE IMPACT GLOBAL WARMING WILL HAVE ON THE PROJECT

California’s temperatures are expected to rise “dramatically” over the course of this century (Cayan 2007). These factors will impact the planned project, as well as exacerbate its own environmental impacts.

The rise in temperatures resulting from global warming will create a more conducive environment for air pollution formation (Cayan 2007). This will intensify the adverse effects the proposed project will already have on air quality in the project area and threaten residents’ health (Cayan 2007).

Significantly for the state, as well as the project area, is global warming’s impact on water supply. The IPCC specifically identified the American West as vulnerable, warning, “Projected warming in the western mountains by the mid-21st century is very likely to cause large decreases in snowpack, earlier snow melt, more winter rain events, increased peak winter flows and flooding, and reduced summer flows” (IPCC 2007b). Recently, researches found that an increase in atmospheric greenhouse gases has contributed to a “coming crisis in water supply for the western United States” (Barnett 2008). Using several climate models and comparing the results, the researches found that “warmer temperatures accompany” decreases in snow pack and precipitation and the timing of runoff, impacting river flow and water levels (Barnett 2008). These researchers concluded with high confidence that up to 60 percent of the “climate related trends of river flow, winter air temperature and snow pack between 1950-1999” are human-induced.

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(Barnett 2008). This, the researchers wrote, is “not good news for those living in the western United States” (Barnett 2008).

The California Center on Climate Change has also recognized the problem global warming presents to the state’s water supply and predicts that if greenhouse gas emissions continue under the business-as-usual scenario, this snowpack could decline up to 70-90 percent, affecting winter recreation, water supply and natural ecosystems (Cayan 2007). Global warming will affect snowpack and precipitation levels, and California will face significant impacts, as its ecosystems depend upon relatively constant precipitation levels and water resources are already under strain (Cayan 2007). The decrease in snowpack in the Sierra Nevada will lead to a decrease in California’s already “over-stretched” water supplies (Cayan 2007). It could also potentially reduce hydropower and lead to the loss of winter recreation (Cayan 2007). All of this means “major changes” in water management and allocation will have to be made (Cayan 2007). Thus, global warming may directly affect the City’s ability to supply clean, affordable water to the residents, or force the City to change how it will utilize water, and it may also impact other

activities outside the project area, such as agriculture.

Scientists indicate that climate change will also exacerbate the problem of flooding by increasing the frequency and magnitude of large storms, which in turn will cause an increase in the size and frequency of flood events (NRDC 2007). The increasing cost of flood damages and potential loss of life will put more pressure on water managers to provide greater flood protection (NRDC 2007). At the same time, changing climate conditions (decreased snowpack, earlier runoff, larger peak events, etc.) will make predicting and maximizing water supply more difficult (NRDC 2007). These changes in hazard risk and water supply availability must be considered during environmental review.

Water quality, in addition to water quantity and timing, will also be impacted. Changes in precipitation, flow, and temperature associated with climate change will likely exacerbate water quality problems (NRDC 2007). Changes in precipitation affect water quantity, flow rates, and flow timing (Gleick 2000). Shifting weather patterns are also jeopardizing water quality and quantity in many countries, where groundwater systems are overdrawn (Epstein 2005). Decreased flows can exacerbate the effect of temperature increases, raise the concentration of pollutants, increase residence time of pollutants, and heighten salinity levels in arid regions (Schindler 1997).

These are only examples of how global warming will impact the proposed project and intensify the environmental impacts the project will already have. It is not an exhaustive list. Thus, when assessing the impact of the Project on air quality, water supply, flood hazards, and biological resources, the EIR must take into account global warming. To ignore the impact of global warming on the Project and the resources impacted by the Project would significantly understate Project impacts.

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D. THE PROJECT'S GREENHOUSE GAS IMPACTS ARE CLEARLY SIGNIFICANT

The greenhouse gas emissions generated by a project of this size and scope will have a clearly significant cumulative impact. An impact is considered significant where its “effects are individually limited but cumulatively considerable.” Guidelines \square 15065(a)(3). Climate change is the classic example of a cumulative effects problem; emissions from numerous sources combine to create the most pressing environmental and societal problem of our time. *Ctr. for Biological Diversity*, 508 F.3d 508, 550 (9th Cir. 2007) (“the impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impacts analysis that NEPA requires agencies to conduct.”); *Kings County Farm Bureau v. City of Hanford*, 221 Cal. App. 3d 692, 720 (1990) (“Perhaps the best example [of a cumulative impact] is air pollution, where thousands of relatively small sources of pollution cause a serious environmental health problem.”). While a particular project’s greenhouse gas emissions represent a fraction of California’s total emissions, courts have flatly rejected the notion that the incremental impact of a project is not cumulatively considerable because it is so small that it would make only a de minimis contribution to the problem as a whole. *Communities for a Better Environment v. California Resources Agency*, 103 Cal.App.4th 98, 117 (2002); see also *Kings County Farm Bureau*, 221 Cal. App. 3d at 720 (“[p]erhaps the best example of [a cumulative impact] is air pollution, where thousands of relatively small sources of pollution cause a serious environmental health problem.”). In addition, there is nothing speculative about the fact that higher levels of greenhouse gas pollution will lead to greater impacts, which is why the State of California has prioritized greenhouse gas pollution reductions under AB 32. Moreover, in the analogous context of the National Environmental Policy Act (NEPA), the Ninth Circuit has already rejected the argument

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that “global warming is too speculative to warrant NEPA analysis.” *Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 508 F.3d at 554.

In addition, lack of established significance thresholds does not excuse an agency from its obligation under CEQA to determine the significance of a Project’s impacts. CEQA routinely calls for an agency to evaluate impacts in the absence of thresholds or to exercise its individual discretion in determining the significance of an impact. *See, e.g., Protect the Historic Amador Waterways*, 116 Cal. App. 4th at 1111 (agency required to assess potential impact not listed in CEQA checklist). The development of significance thresholds is “encouraged” and not a prerequisite for an impact analysis. Guidelines □ 15064.7. Indeed, as noted in the CAPCOA white paper on CEQA and Climate Change, “[t]he absence of a threshold does not in any way relieve agencies of their obligations to address GHG emissions from projects under CEQA” (CAPCOA 2008). In fact, CEQA may require additional analysis even if a project meets an adopted standard, if other evidence indicates the project may nonetheless have a significant impact. *See Berkeley Keep Jets Over the Bay Committee v. Board of Port Commissioners*, 91 Cal.App.4th 1344, 1380-82 (2001).

As the lead agency, CEQA requires the City to determine the significance of the Project’s emissions with or without established significance thresholds. Guidelines □ 15064. CAPCOA provides various means by which a lead agency can determine the significance of project emissions (CAPCOA 2008). Importantly, a universally adopted methodology is *not* necessary to analyze project impacts. *Berkeley Keep Jets*, 91 Cal.App.4th at 1370 (“the fact that a single methodology does not exist...requires the [respondent] to do the necessary work to educate itself about the different methodologies that *are* available.”).

“The determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data.” Guidelines □ 15064(b). Any determination of whether there is a fair argument that the project may have a significant impact must include the consideration of the California Global Warming Solutions Act of 2006 (AB 32), wherein the State of California recognized that “global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California” and required that existing levels of greenhouse gases be reduced to 1990 levels by 2020. Health & Safety Code □□ 38501(a), 38550. Because AB 32 establishes that existing greenhouse gas levels are unacceptable and must be substantially reduced within a fixed timeframe, any additional emissions that contribute to existing levels frustrate California’s ability to meet its ambitious and critical emissions reduction mandate. Ignoring emissions from smaller sources would be neglecting a major portion of the greenhouse gas inventory.

In accordance with the scientific and factual data, the City should adopt a zero significance threshold for the Project’s greenhouse gas emissions. As noted by the Ninth Circuit in *Center for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*:

[W]e cannot afford to ignore even modest contributions to global warming. If global warming is the result of the cumulative contributions of myriad sources, any one modest in itself, is there not a danger of losing the forest by closing our eyes to the felling of the individual trees?

508 F.3d 508, 550 (9th Cir. 2007). Accordingly, the City must unequivocally consider Project emissions to be a potentially significant impact.

E. THE EIR MUST ANALYZE AND ADOPT ALL FEASIBLE MITIGATION MEASURES TO REDUCE THE PROJECT’S GREENHOUSE GAS EMISSIONS

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In addition to thoroughly evaluating project alternatives, because it is clear that the project’s greenhouse gas emissions will cumulatively contribute to global warming, “the EIR must propose and describe mitigation measures that will minimize the significant environmental effects that the EIR has identified.” *Napa Citizens for Honest Gov’t v. Napa County Bd. of Supervisors*, 91 Cal.App.4th 342, 360 (2001). CEQA requires that agencies “mitigate or avoid the significant effects on the environment of projects that it carries out or approves whenever it is feasible to do so.” Pub. Res. Code § 21002.1(b). Mitigation of a project’s significant impacts is one of the “most important” functions of CEQA. *Sierra Club v. Gilroy City Council*, 222 Cal.App.3d 30, 41 (1990). Therefore, it is the “policy of the state that public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures which will avoid or substantially lessen the significant environmental effects of such projects.” Pub. Res. Code § 21002. Importantly, mitigation measures must be “fully enforceable through permit conditions, agreements, or other measures” so “that feasible mitigation measures will actually be implemented as a condition of development.” *Federation of Hillside & Canyon Ass’ns v. City of Los Angeles*, 83 Cal.App.4th 1252, 1261 (2000).

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To the extent that the project moves forward as planned, there are many mitigation measures the City can consider, as described below. This is not an exhaustive list and the EIR should explore these and all other feasible mitigation measures that will reduce the project’s greenhouse gas emissions (CAPCOA 2008; California Office of the Attorney General 2008).

i. Land Use Measures Reducing Traffic Flow

The development plan for the proposed project should incorporate public transit into the project design and should attempt to facilitate the use of public transit. (California Office of the Attorney General 2008). Additionally, the FEIR should analyze ways of including pedestrian and bicycle only streets and plazas within the development and create routes that will allow residents to reach the commercial center, schools and parks by public transportation, bicycling and walking.

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ii. Land Use and Energy

The FEIR should consider mitigation measures that will ensure the planned community will use energy efficiently and conservatively. In doing so, it should analyze incorporating “green building” in the development. Green buildings are those buildings that lower energy consumption, use renewable energy, conserve water, harness natural light and ventilation, use environmentally friendly materials and minimize waste (Commission for Environmental Cooperation 2008).

Buildings create environmental impacts throughout their lifecycle, from the construction phase to their actual use to their eventual destruction (Commission for Environmental Cooperation 2008). In the United States, buildings account for 40 percent of total energy use, 68 percent of total electricity consumption, and 60 percent of total non-industrial waste (Commission for Environmental Cooperation 2008). Buildings also significantly contribute to the release of greenhouse gases. In the U.S. they account for 38 percent of total carbon dioxide emissions (Commission for Environmental Cooperation 2008). More specifically, residential buildings cause up to 1,210 megatons of carbon dioxide, while commercial building create approximately 1,020 megatons (Commission for Environmental Cooperation 2008). This is because buildings require a lot of energy for their day to day operations. Most of the coal-fired

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power plants – one of the biggest sources of greenhouse gas emissions – slated for development in the United States will supply buildings with the energy they need. In fact, 76 percent of the energy these plants produce will go to operating buildings in the U.S. (Commission for Environmental Cooperation 2008).

Using green building techniques, however, can substantially reduce buildings' influence in increasing greenhouse gas emissions. Green buildings help reduce the amount of energy used to light, heat, cool and operate buildings and substitute carbon-based energy sources with alternatives that do not result in greenhouse gas emissions (Commission for Environmental Cooperation 2008). Currently green buildings can reduce energy by 30 percent or more and carbon emissions by 35 percent. (Commission for Environmental Cooperation 2008). The technologies available for green building are already in wide-use and include "passive solar design, high-efficiency lighting and appliances, highly efficient ventilation and cooling systems, solar water heaters, insulation materials and techniques, high-reflectivity building materials and multiple glazing (IPCC 2007c). Additionally, the U.S. Green Building Council (USGBC), a private, nonprofit corporation, has established a nationwide green building rating system, called Leadership in Energy and Environmental Design ("LEED"). The LEED standard supports and certifies successful green building design, construction and operations. It is one of the most widely used and recognized systems, and to obtain LEED certification from the USGBC, project architects must verify in writing that design elements meet established LEED goals.

Specific mitigation for the greenhouse gas emissions generated by the Project's energy consumption include, but are not limited to:

- Analyzing and incorporating the U.S. Green Building Council's LEED (Leadership in Energy and Environmental Design) or comparable standards for energy efficient building during pre-design, design, construction, operations and management.
- Designing buildings for passive heating and cooling, and natural light, including building orientation, proper orientation and placement of windows, overhangs, skylights, etc.;
- Designing buildings for maximum energy efficiency including the maximum possible insulation, use of compact florescent or other low-energy lighting, use of energy efficient appliances, etc.
- Reducing the use of pavement and impermeable surfaces;
- Requiring water re-use systems;
- Installing light emitting diodes (LEDs) for traffic, street and other outdoor lighting
- Limiting the hours of operation of outdoor lighting
- Maximizing water conservation measures in buildings and landscaping, using droughttolerant plants in lieu of turf, planting shade trees;
- Ensure that the Project is fully served by full recycling and composting services;
- Ensure that the Project's wastewater and solid waste will be treated in facilities where greenhouse gas emissions are minimized and captured.
- Installing the maximum possible photovoltaic array on the building roofs and/or on the project site to generate all of the electricity required by the Project, and utilizing wind energy to the extent necessary and feasible;
- Installing solar water heating systems to generate all of the Project's hot water requirements;
- Installing solar or wind powered electric vehicle and plug-in hybrid vehicle charging stations to reduce emissions from vehicle trips.

iii. Mitigation Related to Project Construction

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- Utilize recycled, low-carbon, and otherwise climate-friendly building materials such as salvaged and recycled-content materials for building, hard surfaces, and non-plant landscaping materials;
- Minimize, reuse, and recycle construction-related waste;
- Minimize grading, earth-moving, and other energy-intensive construction practices;
- Landscape to preserve natural vegetation and maintain watershed integrity;
- Utilize alternative fuels in construction equipment and require construction equipment to utilize the best available technology to reduce emissions.

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iv. Transportation Mitigation Measures

- Encourage and promote ride sharing programs through such methods as a specific percentage of parking spaces for ride sharing vehicles;
 - Create a car sharing program within the planned community;
 - Create a light vehicle network, such as a neighborhood electric vehicle (NEV) system;
 - Provide necessary facilities and infrastructure to encourage residents to use low or zero-emission vehicles, for example, by developing electric vehicle charging facilities and conveniently located alternative fueling stations;
- Provide a shuttle service to public transit within and beyond the planned community;•
 Incorporate bicycle lanes and routes into the planned community’s street systems.

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v. Carbon Offsets

After all measures have been implemented to reduce emissions in the first instance, remaining emissions that cannot be eliminated may be mitigated through offsets. Care should be taken to ensure that offsets purchased are real (additional), permanent, and verified, and all aspects of the offsets must be discussed in the FEIR. As demonstrated by the Office of the Attorney General offsets are a feasible CEQA mitigation measures⁶ once all feasible mitigation measures have been adopted to reduce the Project’s carbon footprint and produce energy using renewable sources.

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II. THE EIR MUST CONSIDER A REASONABLE RANGE OF ALTERNATIVES

The EIR must consider a meaningful analysis of reasonable alternatives to the Project in order to lessen or avoid the Project’s significant impacts. CEQA mandates that significant environmental damage be avoided or substantially lessened where feasible. Pub. Res. Code □ 21002; Guidelines □□ 15002(a)(3), 15021(a)(2), 15126(d). A rigorous analysis of reasonable alternatives to the project must be provided to comply with this strict mandate. “Without meaningful analysis of alternatives in the EIR, neither courts nor the public can fulfill their proper roles in the CEQA process.” *Laurel Heights Improvement Ass’n v. Regents of University of California*, 47 Cal.3d 376, 404 (1988). Moreover, “[a] potential alternative should not be excluded from consideration merely because it ‘would impede to some degree the attainment of the project objectives, or would be more costly’ even when that alternative includes Project development on an alternative site. *Save Round Valley Alliance v. County of Inyo*, 157 Cal. App.

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⁶ The California Attorney General’s Office has adopted CEQA settlements calling for the auditing, reduction, and offsetting of greenhouse gas emissions related with a Project demonstrating that offsets are a feasible way to reduce a Project’s negative environmental effects on global warming. See <http://ag.ca.gov/newsalerts/release.php?id=1466&category=global%20warming> See generally <http://ag.ca.gov/globalwarming/ceqa.php>

4th 1437, 1456-57 (2007) (quotations omitted). In analyzing the no-project alternative, the EIR must discuss the need for this project and whether the uses that would potentially utilize the Project can be accommodated in existing areas. As CAPCOA states in its white paper, one way local governments can avoid significant increases in greenhouse gas emissions and help solve the problem of global warming is to “facilitate more efficient and economic use of the lands” already developed within the community (CAPCOA 2008). Reinvesting in existing communities is “appreciably” more efficient than new development and may even result in a net reduction of greenhouse gases (CAPCOA 2008). The EIR should consider an alternative that relies more on higher-density mixed commercial/residential development projects on existing disturbed lands in order to support the reduction of vehicle trips, promote alternatives to individual vehicle travel, and encourage efficient delivery of services and goods (Office of the California Attorney General 2008).

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An analysis of alternatives should also quantify the estimated greenhouse gas emissions, quantified impacts to biological resources, water resources including water quality and water availability, and traffic resulting from each proposed alternative. The no project alternative where the existing General Plan and zoning is implemented is the most appropriate use of these lands. Much more comparisons and analysis needs to be done with these alternatives. Where is the alternative which mentions agricultural uses in total or part? The quality of this land is such that even I could become a successful farmer.

CONCLUSION

Thank you for your attention to these comments. Moreno Valley needs to make sure that this and other environmental documents are also in Spanish. The 2010 census shows that 55% of our residents are Latino with almost 25% foreign born. It is a social justice issue which needs to be corrected. Since your Notice of Preparation (NOP) is more than four years old, the Sierra Club believes you should start again with a new NOP and recirculate the DEIR in English/Spanish. We look forward to working with the City to assure that the FEIR conforms to the requirements of CEQA and to make sure that all significant impacts to the environment are thoroughly analyzed, mitigated or avoided. I hope the FEIR will fully address the concerns found within this letter including the direct, indirect, cumulative and growth inducing impacts of this massive warehouse project as I did not see that within the DEIR. How will this project which is adjacent to lands zoned for housing impact Moreno Valley’s General Plan and land use? The Sierra Club does not believe this General Plan amendment and zone change is in the best interest of our City. The Sierra Club wishes to be placed on the mailing list for all future meetings, notices and documents regarding this project. Please mail these to Sierra Club, San Gorgonio Chapter, Moreno Valley Group, 26711 Ironwood Ave, Moreno Valley, CA. 92555.

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Thank you,

George Hague
Conservation Chair
Moreno Valley Group
San Gorgonio Chapter
Sierra Club
951.924.0816

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RESPONSE TO LETTER D-2

SIERRA CLUB

Response to Comment 1. The City believes the following responses address the comments submitted by the Sierra Club relative to this EIR on all the topics indicated. Short-term and long-term project specific and cumulative effects of the proposed project on air quality are evaluated in Section 4.3, *Air Quality* (pages 4.3-1 through 4.3-38) in the Draft EIR. Greenhouse gas emissions and climate change were evaluated in Section 4.13, *Global Climate Change* (4.13-1 through 4.13-22) in the Draft EIR. Where the proposed project's impacts were determined to be significant mitigation was provided to lessen those impacts. It was determined that even with the implementation of feasible mitigation measures the proposed project will have a significant and unavoidable impact on short-term construction air quality, long-term operational air quality impacts, cumulative air quality, and cumulative greenhouse gas emissions.

The concerns raised by the commenter have been responded to in the following Response to Comments 1 through 31. Any comments that were raised by the commenter that resulted in additions or revisions to the language in the Draft EIR are provided in Section 3.0, *Errata and Additions*, of this Final EIR.

Lastly, the commenter inaccurately suggests that the project should be required to obtain a LEED Silver or Gold rating as a form of mitigation of significant impacts associated with air pollution and greenhouse gas emissions. The process of obtaining a LEED rating is not mitigation. The specific green building features that are part of the LEED rating equation can reduce air pollution and greenhouse gas emissions impacts by minimizing and reducing the quantity of emissions associated with operations of a building. To clarify, Section 3.5.3, Green Building Construction, in the Project Description states that "The applicant has indicated the buildings will be designed to qualify for certification under the Leadership in Energy and Environmental Design (LEED) program, but there are no plans to submit the project for actual LEED certification at this time due to cost and time delay factors." (EIR page 3-12). The applicant will formally apply for LEED Certified status, but the ultimate determination of the level of compliance is up to the LEED organization and cannot be guaranteed with any certainty at this point in time, since the final engineering will not occur until after certification of the EIR.

Response to Comment 2. See Response No. 1 above regarding LEED certification. In addition, the applicant has agreed that the project will be constructed to accommodate solar photovoltaic panels in the future. Additional information in this regard is found in the responses to the comments by the South Coast Air Quality Management District (Letter B-3).

The opinions stated by the Sierra Club regarding the significance of project and cumulative air quality impacts are unsubstantiated. The air quality analysis in the EIR includes a detailed analysis showing that the cumulative impacts are unavoidable. The "cafeteria list" of mitigation measures listed in Mitigation Measure 4.3.6.5B is included to minimize the air quality impacts from the area and energy emissions. As described in EIR Section 4.3.6.5, page 4.3-34: *"Although implementation of Mitigation Measures 4.3.6.5A through 4.3.6.5B may reduce vehicle trips associated with the proposed project, it is not possible to quantify the reduction in the amount of emissions that may occur. Considering the volume of emissions generated and current commuter habits, it is unlikely the implementation of TDMs/TCMs will result in a reduction of operational project emissions to below existing SCAQMD thresholds. Application of Leadership in Energy and Environmental Design (LEED) standards and green building design principles could reduce emissions from building operations such as heating and cooling; however, such standards and principles would not reduce emissions of CO, ROG, NO_x, PM₁₀, and PM_{2.5} to below SCAQMD thresholds. No other feasible mitigation measures have been identified to reduce the operational emissions of CO, ROG, NO_x, PM₁₀, and PM_{2.5} to a less than*

significant level.” Further, the commenter mixed the short-term construction impacts with the long-term operational impacts – the majority of the comment above is about long-term operational impacts, however the last sentence is about short-term construction impacts and would not help reduce long-term emissions. The emissions control measures listed in Mitigation Measures 4.3.6.2A through 4.3.6.2M are adequate to reduce the short-term construction measures. However, the City and the applicant have agreed to add the Tier III requirement into Mitigation Measure 4.3.6.2C. The measure has been amended as follows as is included in Final EIR, Section 3.0, *EIR Errata and Additions*:

4.3.6.2C *Prior to the issuance of a grading permit, the project developer shall require by contract specifications that contractors shall utilize California Air Resources Board (CARB) Tier II Certified equipment or better during the rough/mass grading phase for the following pieces of equipment: rubber-tired dozers and scrapers. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the City.*

Project start to December 31, 2014: All off-road diesel-powered construction equipment greater than 50 horsepower shall meet Tier 3 off-road emission standards. In addition, all construction equipment shall be outfitted with Best Available Control Technology (BACT) devices certified by CARB. Any emission control devices used by the contractor shall achieve emission reductions that are no less than what would be achieved by a Level 3 diesel emission control strategy for a similarly sized engine as defined by CARB regulations.

Post January 1, 2015: All off-road diesel-powered construction equipment greater than 50 horsepower shall meet Tier 4 emission standards, where available. In addition, all construction equipment shall be outfitted with Best Available Control Technology (BACT) devices certified by CARB. Any emission control devices used by the contractor shall achieve emission reductions that are no less than what would be achieved by a Level 3 diesel emission control strategy for a similarly sized engine as defined by CARB regulations.

A copy of each unit's certified tier specifications, BACT documentation, and CARB or SCAQMD operating permit shall be provided at the time of mobilization of each applicable unit of equipment.

However, several air quality related mitigation measures have been modified as a result of discussion in the Final EIR (refer to Final EIR, Section 3.0 *EIR Errata and Additions*). The list of mitigations included in the Air Quality section are qualified by “where feasible” because the EIR can only require a project to implement feasible mitigation measures, and at this time it is not possible to determine mitigation measure feasibility. The determination will only be possible once operations have begun and will have to be determined by the project operator in cooperation with the City. Additionally, mandating that the construction process exceed Title 24 by a particular percentage makes the mitigation measure infeasible – there is no way to determine by what percentage the construction operations exceed Title 24.

The modified measures are also in the Mitigation Monitoring and Reporting Plan in Section 4.0 in the Final EIR to ensure they are implemented

Response to Comment 3. As documented in Section 4.2 of the Draft EIR, farming is no longer a viable economic activity in this portion of Riverside County, and the General Plans of the County and City both identify land uses that will a transition from historical agricultural land to appropriate suburban land uses. This proposed project represents a step in that anticipated transition.

This commenter also states that a developer recently donated \$100,000.00 to the Riverside Land Conservancy to help mitigate for the loss of agricultural lands but fails to appropriately cite the

information and identify the basis for determining the amount of agricultural lands lost in relation to this monetary amount. In discussion with Gail Egenes, Executive Director of the Riverside Land Conservancy, the agency does not have any established program to purchase agricultural easements or lands. Also, in consultation with the National Conservation Easement Database, Riverside County does not have any established agricultural easements.¹

Contributions to Riverside County Land Conservancy or the San Jacinto Basin Resource Conservation District by private land owners are laudable but are not required as part of a City or regional mitigation plan for loss of agricultural land. Therefore, the decision whether to make any contributions in this regard would be at the discretion of the developer in consultation with the City. For additional detailed analysis on this issue, see Responses 22 and 23 in the letter from Johnson & Sedlack (D-3). Since there is no feasible mitigation available, the impact has been identified as significant and unavoidable, and the City will have to adopt a Statement of Overriding Considerations as part of its Findings on the EIR prior to action on the project.

The project's greenhouse gas (GHG) emission assessment assumes the citrus groves are not present onsite, which we consider to be a "worst case" estimate of greenhouse gases related to the proposed project. The Draft EIR determined that GHG impacts would be less than significant with implementation of the proposed mitigation, and this information does not alter that conclusion.

The project site likely provides some amount of raptor foraging habitat, as outlined on page 4.4-2 of the Draft EIR. However, there are few large trees suitable for raptor perching and roosting (i.e., the citrus trees do not contribute much in this regard), and the site is proximate to human activity at its southeast and northwest corners, as well as SR-60 along its northern boundary. Therefore, the value of the project site for raptor foraging is marginal at best. The DEIR concluded project impacts on raptor foraging were less than significant with implementation of Mitigation Measure 4.4.6.1A to address impacts on nesting birds (DEIR page 4-29). In addition, any incremental cumulative impact on raptor foraging would be mitigated by the project's payment of the MSHP fee.

Response to Comment 4. Section 4.4 of the Draft EIR fully evaluates and minimizes impacts to the Quincy Channel, the main onsite drainage feature. The offsite mitigation for onsite impacts is mainly for removal of the two degraded erosional drainage channels along the west and southwest portions of the site. As shown on the project site plan (Figure 1.2 in the Draft EIR), the project would protect the Quincy Channel essentially intact (only 0.04 acre permanent impact and 0.03 acre temporary impact) along the eastern boundary of the project site. The impacts are outlined in Table 4.4.D of the EIR and the planned improvements are shown in Figures 1.2, 3.6.B, and 3.6.F, and Appendix K-3 A-1 Master Architectural Plan which shows the channel and bridge notes.

Response to Comment 5. There is no empirical evidence presented that would support the contention that the citrus groves on the project site provide significant biological habitat. The orchard property and the trees are subject to human disturbance on a regular basis, and are immediately adjacent to the SR-60 Freeway. The trees are maintained such that they provide minimal or no potential for roosting or perching by raptors, although some songbirds may utilize them and the fruit to some degree. A detailed biological assessment was prepared for the project to document consistency with the County's MSHCP, of which the City is a signatory. It came to a similar conclusion (i.e., the site has very low value as biological habitat).

Response to Comment 6. Impacts related to agriculture and raptor foraging are addressed in Sections 4.2 and 4.4 of the Draft EIR, and in Responses 3 and 5 above.

¹ <http://nced.conservancyregistry.org/browse/map>, accessed October 4, 2012.

Response to Comment 7. The observation of Swainson's hawk in the general vicinity of the project site does not change the fundamental conclusion that impacts of the project on biological resources are less than significant with the proposed mitigation. Payment of the MSHCP impact fee will also help contribute to preservation of raptor foraging lands as habitat lands are purchased under the plan.

Response to Comment 8. The site would need to continue to be disked for weed abatement and fuel modification per City Fire Department requirements. Since the site is not actively tilled, this clearing would take place mainly once a year. Mitigation Measures 4.4.6.1B and 4.4.6.1C require a pre-construction burrowing owl survey and establish what actions must be taken if the burrowing owl is found on-site during the pre-construction surveys that are in accordance with the Burrowing Owl Consortium 1993 Burrowing Owl Survey Protocol and Mitigation Guidelines¹ and referred to the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) survey instructions² to complete the pre-construction burrowing owl survey.

Response to Comment 9. All of the topics mentioned in the comment were addressed in the Draft EIR and are addressed in specific responses to this letter. Impacts to burrowing owl were addressed in Section 4.4 of the Draft EIR (biological resources), including mitigation for pre-construction surveys. The Draft EIR did look at direct and indirect impacts of the project relative to noise, vibration, odors (fumes?), and light during both construction and operation of the proposed warehouse buildings. Mitigation Measure 4.3.6.5B and 4.3.6.6A require the planting of shade trees in parking areas to reduce heat load on cars and buildings. Alternative fuels for onsite vehicles are addressed in Mitigation Measure 4.3.6.6A.

Response to Comment 10. There is no City-wide general requirement for parking areas of warehouse projects to use porous pavement, which create their own water quality issues with percolation of runoff directly from parking areas into the ground, rather than collecting runoff into detention basins, especially low flows which can have the most concentrated pollutants.

Response to Comment 11. CEQA requires an analysis of cumulative impacts from projects that are "on the books" at the time the baseline for the EIR is established (i.e., recently approved or proposed at the time of issuance of the Notice of Preparation). The cumulative project list does not include the World Logistics Center (WLC) because it was not a proposed project when the Notice of Preparation (NOP) was released for this project EIR (i.e., "baseline" conditions are typically established at the time the NOP is released). Even though that project is now on the City's "horizon", no traffic study or other technical information were available for evaluation relative to the cumulative impacts of this proposed project when the EIR for this project was prepared.

Response to Comment 12. The Draft EIR clearly identifies that... "The nearest existing sensitive land uses are single-family residences located approximately 50 feet southeast of the southern boundary of the project site, approximately 395 feet southeast of the proposed warehouse buildings, and approximately 664 feet southeast of the proposed loading docks." (Draft EIR page 4.3-17, 4th paragraph). The commenter may be confused by the terms used to characterize the spatial relationship of the project to the existing residences. The residences are 50 feet from the project's property line, but the Project Description (e.g., Figure 1.2 clearly shows there are several large detention basins in the southern portion of the site that will act as a buffer and separate truck activities of the project from the residences. As stated in the EIR and demonstrated on the project site plan, the residences would be 395 feet from the closest proposed warehouse building, and 664 feet from the closest proposed loading dock. As shown in the air quality analysis and health risk assessment of the EIR, this distance is sufficient to protect the health of the residents near to the project.

¹ <http://www2.ucsc.edu/scpbrg/burrowingowls.htm>.

² http://www.tlma.co.riverside.ca.us/epd/documents/survey_protocols/burrowing_owl_survey_instructions.pdf.

All recommendations for locating warehouses some safe distance (which varies depending on the author) are all conditioned with the concept “unless a site-specific health risk assessment is performed.” This EIR did include such a health risk assessment, which shows that, even with all the very conservative assumptions required, there will not be a significant health risk to any sensitive receptors (residents, schools, medical facilities, etc.) from project-related air emissions.

In addition, the commenter is referred to Section 4 of this document for an evaluation of a less intensive modified plan, which is a subset of the Reduced Intensity Alternative evaluated in the DEIR (and which was determined to be environmentally superior to the Proposed Project). This less intensive plan proposes to develop 4 warehouse buildings, leaving the southeast portion of the site vacant for future development of residential uses consistent with existing zoning (R-5 and RA-2) adjacent to the existing residential neighborhood to the southeast.

Response to Comment 13. The commenter is correct in pointing out there are other residential uses in the area. However, they are over 250 feet north across the SR-60 Freeway from the project site, and are not downwind of the site based on regional prevailing wind patterns. As stated on page 4.3-17 of the DEIR, “...receptors were placed in a general grid extending in all directions to characterize the risk level surrounding the project site. Meteorological data from the Perris area were utilized to represent the conditions at the project site.” These features of the HRA insure that the health risk levels to all individuals in the region of the project site were adequately considered. The SCAQMD’s methodology for preparing health risk assessments requires an examination of impacts at the closest sensitive receptor to identify the worst case conditions. Therefore, it is neither required nor would it be helpful to show potential health risk levels of all residential zoning within 2,000 feet of the site.

As outlined in Response 12 above, the existing residences would be 664 feet from the closest truck loading dock, which would be the closest main source of truck-related air pollutants including diesel particulate matter. The project HRA used a worst case estimate of 25 meters (minimum 82.5 feet) to calculate potential health risks from new project warehousing, therefore, the actual exposure would likely be lower than that identified in the HRA, which showed that the project would create a maximum health risk of 1 additional cancer case in a million near the southwest corner of the site (or 10 times lower than the significance threshold of 10 in a million). As shown in Figure 4.3.3 of the Draft EIR, expected health risks further from the project site, including residences to the north across the freeway, are much less than 1 in a million.” Therefore, existing housing north of the freeway would likely be exposed to a much higher health risk from ongoing traffic along SR-60 than would be generated by the proposed project.

Worker Health. A detailed health risk assessment (HRA) was prepared for the proposed project and included in Appendix B of the Draft EIR (LSA March 2012). The HRA examined the short-term and long-term potential health effects from project-related emissions of toxic air pollutants (TAP) in the exhaust of diesel-powered delivery trucks on existing surrounding sensitive receptors, including single- and multifamily residences. Onsite workers will be protected by the requirements established by the Occupational Safety and Health Administration (OSHA) and are not considered sensitive receptors in accordance to the California Air Resources Board (CARB). The CARB defines “sensitive” land uses, as homes, medical facilities, daycare centers, schools, and playgrounds but not on-site workers.

According to the HRA prepared for the proposed project, “*The operations expected to occur at this facility will not emit any toxic chemicals in any significant quantity other than vehicle exhaust. While there may be other toxic substances in use on site, compliance with State and federal handling regulations will bring emissions to below a level of significance. Due to the lack of data, precise evaluation of vehicle exhaust impacts is not feasible; however, based on the limited amount of TAC from vehicle exhaust associated with the project operations in relation to background levels, the impact is not expected to be significant.*” (Section 5.4.2, *Operational Health Risk Impacts*, page 44).

The responsibility of the health of workers of the proposed project is to OSHA. The following is from the OSHA website (<http://www.osha.gov/as/opa/worker/employer-responsibility.html>):

Employer Responsibilities

Employers have certain responsibilities under the Occupational Safety and Health Act of 1970. The following list is a summary of the most important ones:

- Provide a workplace free from serious recognized hazards and comply with standards, rules and regulations issued under the OSHA Act.
- Examine workplace conditions to make sure they conform to applicable OSHA standards.
- Make sure employees have and use safe tools and equipment and properly maintain this equipment.
- Use color codes, posters, labels or signs to warn employees of potential hazards.
- Establish or update operating procedures and communicate them so that employees follow safety and health requirements.
- Provide medical examinations and training when required by OSHA standards.
- Post, at a prominent location within the workplace, the OSHA poster (or the state-plan equivalent) informing employees of their rights and responsibilities.
- Report to the nearest OSHA office within 8 hours any fatal accident or one that results in the hospitalization of three or more employees.
- Keep records of work-related injuries and illnesses. (Note: Employers with 10 or fewer employees and employers in certain low-hazard industries are exempt from this requirement.)
- Provide employees, former employees and their representatives access to the Log of Work-Related Injuries and Illnesses (OSHA Form 300).
- Provide access to employee medical records and exposure records to employees or their authorized representatives.
- Provide to the OSHA compliance officer the names of authorized employee representatives who may be asked to accompany the compliance officer during an inspection.
- Not discriminate against employees who exercise their rights under the Act.
- Post OSHA citations at or near the work area involved. Each citation must remain posted until the violation has been corrected, or for three working days, whichever is longer. Post abatement verification documents or tags.
- Correct cited violations by the deadline set in the OSHA citation and submit required abatement verification documentation.

With this OSHA protection, the employees of the proposed project will not be subject to unhealthful conditions.

The results of the conservative HRA modeling were shown in Table R (Table 4.3.F in the Draft EIR) for carcinogenic and chronic inhalation health risks at the sensitive receptors. Even with the conservative modeling technique used, assuming that an individual stays outdoors at his or her residence 24 hours per day for 70 years, which is the State-required period of time that all HRAs must assess, the nearest sensitive receptor would be exposed to an unmitigated inhalation cancer risk of no more than 4.3 in 1 million, less than the State's threshold of 10 in a million. The highest worker exposure occurs at the east boundary of the facility just south of Eucalyptus Avenue (see Draft EIR Figure 4.3.1). Based on the conservative nature of the assumptions used in this study, the health risk levels cited in the DEIR in Table 4.3.F on page 3.4-17 are likely higher than are actually expected to occur. This assessment demonstrates that no significant health risk would occur from project-related truck traffic, and no mitigation is necessary. Much of the construction equipment used is not powered by electricity (i.e. grading equipment, bull dozers, etc.) is not available as electric equipment. Therefore, it is not practical to set a percentage requirement for the amount of construction equipment that must be powered by electricity. In addition, a percentage based requirement would not translate well to construction equipment. For example, it would not seem logical to base the calculation on the number of pieces of equipment since the size and emissions of equipment vary significantly.

Again, OSHA has programs that the project operator is required to comply with to protect warehouse workers from the long term health effects of breathing toxic diesel emissions throughout their workday and employment.

In addition, the commenter is referred to Section 4 of this document for an evaluation of a less intensive modified plan, which is a subset of the Reduced Intensity Alternative evaluated in the DEIR (and which was determined to be environmentally superior to the Proposed Project). This less intensive plan proposes to develop 4 warehouse buildings, leaving the southeast portion of the site vacant for future development of residential uses consistent with existing zoning (R-5 and RA-2) adjacent to the existing residential neighborhood to the southeast.

Response to Comment 14. The noise impact analysis for the proposed project evaluated potential noise impacts from construction and project operations, and did not identify any significant noise impacts. Therefore, no noise barrier or other mitigation measures are required. For related discussion of noise impacts, see also Response to Comments 80 through 93 in Letter D-3 from Johnson & Sedlack. In addition, Mitigation Measure 4.3.6.6A was modified and Mitigation Measure 4.3.6.6B was added to address construction equipment and vehicles operating for the project (see Final EIR, Section 3.0, *EIR Errata and Additions*). Modifications are as follows:

4.3.6.6A *Prior to issuance of the first building permit, building and site plan designs shall ensure that the project's energy efficiencies surpass applicable 2008 California Title 24, Part 6 Energy Efficiency Standards by a minimum of ~~20~~ 10 percent until January 1, 2014. For building permits issued after that date, new state energy standards require a 20 percent reduction from 2008 Title 24, Part 6 Energy Efficiency Standards. Verification of increased energy efficiencies shall be documented in Title 24 Compliance Reports provided by the Applicant, and review and approved by the City. The following design features, including but not limited to the following list, shall be used to fulfill this requirement:*

- *Buildings shall exceed California Title 24 Energy Efficiency performance standards for water heating and space heating and cooling, as deemed acceptable by the City.*
- *Increase in insulation such that heat transfer and thermal bridging is minimized.*

- *Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption.*
- *Incorporate dual-paned or other energy efficient windows.*
- *Incorporate energy efficient space heating and cooling equipment.*
- *Interior and exterior energy efficient lighting which exceeds the California Title 24 Energy Efficiency performance standards shall be installed, as deemed acceptable by the City. Automatic devices to turn off lights when they are not needed shall be implemented.*
- *To the extent that they are compatible with landscaping guidelines established by the City, shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and buildings shall be planted at the project site.*
- *Paint and surface color palette for the project shall emphasize light and off-white colors which reflect heat away from the buildings.*
- *All buildings shall be designed to accommodate renewable energy sources, such as photovoltaic solar electricity systems, appropriate to their architectural design.*
- *To reduce energy demand associated with potable water conveyance, the project shall implement the following:*
 - *Landscaping palette emphasizing drought-tolerant plants;*
 - *Use of water-efficient irrigation techniques; and,*
 - *U.S. EPA Certified WaterSense labeled for equivalent faucets, high-efficiency toilets (HETs), and water-conserving shower heads.*
- *The project shall provide secure, weather-protected, on-site bicycle storage/parking.*
- *The project shall provide on-site showers (one for males and one for females). Lockers for employees shall be provided.*
- *The project will establish a Transportation Management Association (TMA). The TMA will coordinate with other TMAs within the City to encourage and coordinate carpooling among building occupants. The TMA will advertise its services to building occupants, and offer transit and/or other incentives to reduce greenhouse gas (GHG) emissions. A plan will be submitted by the TMA to the City within two months of project completion that outlines the measures implemented by the TMA, as well as contact information.*
- *The project shall provide preferential parking for carpools and vanpools. Locations and configurations of proposed preferential parking for carpools and vanpools are subject to review and approval by the City. Prior to final site plan approval, preferential parking for carpools and vanpools shall be delineated on the project site plan.*
- *The project shall provide at least two electric vehicle charging stations. Locations and configurations of proposed charging stations are subject to review and approval by the City. Prior to issuance of the first building permit, stub outs for charging stations shall be indicated on the project building plans.*
- *Lease/purchase documents shall identify that tenants are encouraged to promote the following:*
 - *Implementation of compressed workweek schedules.*
 - *SmartWay partnership.*

- *Achievement of at least 20 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of consolidated trips carried by SmartWay carriers until it reaches a minimum of 90 percent of all long-haul trips carried by SmartWay 1.0 or greater carriers.*
- *Achievement of at least 15 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of long-haul trips carried by SmartWay carriers until it reaches a minimum of 85 percent of all consolidated trips carried by SmartWay 1.0 or greater carriers.*
- *Use of fleet vehicles conforming to 2010 air quality standards or better.*
- *Installation of catalytic converters on gasoline-powered equipment.*
- *Inclusion of electric powered and/or compressed natural gas fueled trucks and/or vehicles in fleets.*
- *Establishment and use of carpool/vanpool programs, complemented by parking fees for single-occupancy vehicles.*
- *Provision of preferential parking for EV and CNG vehicles.*
- *Use of electrical equipment (instead of gasoline-powered equipment) for landscape maintenance.*
- *Use of electric (instead of diesel or gasoline-powered) yard trucks.*
- *Use of SmartWay 1.25 rated trucks.*
- *Each facility operator shall provide regular sweeping of onsite parking and drive areas.*
- *Each facility operator shall maintain a log of all trucks entering the facility to ensure that, on average, the daily truck fleet meets the quantities and emissions standards. This log shall be available for inspection by City staff at any time.*
- *Each facility operator shall prohibit all vehicles from idling in excess of five minutes in all onsite areas.*
- *Each facility operator shall ensure that onsite staff in charge of keeping the daily log and monitoring for excess idling will be trained and certified in diesel health effects and technologies, such as by requiring attendance at CARB-approved courses.*
- *Each facility operator upon occupancy that do not already operate 2007 and newer trucks shall in good faith apply for funding to replace or retrofit their trucks such as Carl Moyer, VIP, Prop 1B or similar funds. Should funds be awarded, the tenant shall be required to accept and use them.*

Response to Comment 15. Many of the very detailed portions of the various environmental impact analyses are placed in the appendices so that the EIR is easier to read and understand. All details are available for the reviewer. Trip lengths are not considered, as trip lengths do not affect the operation of traffic at various locations. The passenger vehicle and truck trip assignment figures provided in the DEIR show the number of passenger vehicle and truck trips at each intersection, and therefore indicate the routes that project trips are expected to utilize. The trip generation provided in the DEIR section would be for the project at its full capacity. The project trip generation analyzed in the analysis would be a typical weekday trip generation for the project. It is standard traffic engineering practice and the practice required by Cities and the County to analyze the project trips occurring during the weekday peak hours, as this is generally the period when the worst traffic is experienced on the adjacent streets. In addition, the trip generation analysis does not assume only

some initial level of operation. The full operation of the project is analyzed so that the effects of the project on the existing environment are disclosed, as required by CEQA. Trips generated by the project under opening year are likely to be less than those included in the analysis. All of the details for calculating health risks of the proposed project were provided in Appendix B of the Draft EIR, including the EMFAC and dispersion modeling outputs. The details of the project traffic routing are discussed in detail in the traffic analysis and the truck trip length on DEIR page 4.3-32. In addition, "active" CalEEMod and supporting computer files were sent to the AQMD during the EIR review period to allow for replication and verification of the HRA report results. In addition, Mitigation Measure 4.3.6.6A was modified (see above) to address these types of equipment (see Final EIR, Section 3.0, *EIR Errata and Additions*).

Response to Comment 16. All of the details for calculating health risks of the proposed project were provided in Appendix B of the Draft EIR, including the EMFAC and dispersion modeling outputs. In addition, "active" CalEEMod and supporting computer files were sent to the SCAQMD during the EIR review period to allow for replication and verification of the HRA report results.

The Villages of Lakeview project included over 2,800 acres consisting of 11,350 dwellings, a mixed-use town center including some 500,000 square feet of retail, office and commercial uses, public facilities including four schools and a library, and nearly 1,000 acres of open space/conservation areas. The court found that the EIR analysis of traffic impacts was inadequate because it did not study how an additional 85,000 car trips would affect two local freeways. The only fault the court found in the project's relationship to the General Plan was that traffic congestion standards would be exceeded¹. The proposed project reduces the intensity of the trip generation compared to the General Plan, and as shown in the analysis, doesn't change traffic congestion standards.

This EIR evaluates traffic impacts at intersections with more than 50 trips and freeway segments within a 5 mile radius where the project has more than 100 peak hour trips, as required by the traffic study guidelines adopted by the City of Moreno Valley as well as the County of Riverside. Please note that the 50 and 100 trip thresholds were not questioned in the Lakeview judgment. East of Redlands Boulevard, the project adds less than 100 peak hour trips to freeway facilities, therefore, the study area is consistent with the Friends decision. West of Pigeon Pass Road, project traffic is more than 100 trips. However, traffic volumes on the freeway west of Pigeon Pass Road are higher than those to the east of Pigeon Pass Road. Since the number of lanes is the same, and the segments east of Pigeon Pass Road are forecast to operate at unsatisfactory conditions under future conditions without the project, the segments to the west would also operate at unsatisfactory conditions (higher volumes and same capacity). Therefore, to the freeway segments west of Pigeon Pass Road, the project will not create a direct impact but add to unsatisfactory conditions.

It should also be noted that the referenced case is a Superior Court, not an appellate court decision, and thus does not have the power of an appellate decision.

Response to Comment 17. It is not clear what the commenter is asking. This project is not the Moreno Valley Auto Mall but if the commenter is asking if the cumulative impacts of the Moreno Valley Auto Mall in combination with this project (Eucalyptus Industrial Park) were considered, yes they were for both air quality and traffic on the SR-60. The DEIR includes (1) a description of the circulation system from both a local and regional perspective and list the pages; (2) screening criteria were used to determine the appropriate intersections and segments to include in the analysis, based on whether there was a potential or impacts and what the criteria were; and (3) that freeway impacts were studied in the EIR (list the pages) and the findings and pages on which the freeway analysis findings are listed. The EIR evaluates traffic impacts at intersections with more than 50 trips, and

¹ From Courthouse News Service, May 29, 2012.
<http://www.courthousenews.com/2012/05/29/46884.htm> accessed September 17, 2012.

freeway segments within a 5 mile radius where the project has more than 100 peak hour trips. For freeway segments, the traffic analysis states that the project will add to unsatisfactory conditions but not create unsatisfactory conditions by itself. East of Redlands Boulevard, the project adds less than 100 peak hour trips to freeway facilities, therefore, the study area is consistent with the Friends decision. West of Pigeon Pass Road, since project traffic is more than 100 trips. However, traffic volumes on the freeway west of Pigeon Pass Road are higher than those to the east of Pigeon Pass Road. Since the number of lanes is the same, and the segments east of Pigeon Pass Road are forecast to operate at unsatisfactory conditions under future conditions without the project, the segments to the west would also operate at unsatisfactory conditions (higher volumes and same capacity). Therefore, to the freeway segments west of Pigeon Pass Road, the project will not create a direct impact but add to unsatisfactory conditions. Since the project does not create a direct significant impact at freeway segments where the project traffic is a higher percentage of the total freeway traffic, it can be said with certainty that the project will not create a direct impact at locations where the project traffic is a lower percentage of the total freeway traffic. Therefore, as described in the Response to Comment 13, as shown in Figure 4.3.3 of the DEIR, expected health risks further from the project site, including residences to the north along the freeway, are much less than 1 in a million.

A review of existing traffic volumes on the freeway reveals that the existing traffic volumes on segments beyond a 5-mile radius that were not analyzed and where the project has more than 100 peak hour trips are significantly higher than at the segments that were analyzed in the EIR. Since in 2035 all freeway segments analyzed operate at unsatisfactory levels of service in at least one peak hour, it can be said with certainty that segments with traffic volumes higher than those analyzed will also operate at unsatisfactory levels of service. Moreover, as the distance from the project site increases, project traffic on the freeway segments reduce. Since the project does not create a direct significant impact at freeway segments where traffic volumes are low and project contribution higher, it can be said with certainty that the project will not create a direct impact at locations where background traffic volumes are higher and project trips lesser. It is understood that the project will have a cumulative impact at all freeway segments where the background (without project) traffic volumes result in an unsatisfactory level of service. As stated in the DEIR Section 4.11.7, *Cumulative Impacts*, page 4.11-40, the addition of project traffic would be considered a cumulative impact. Review of the RTIP indicates that there are no projects programmed on SR-60 within the study area. Furthermore, neither the project applicant nor the City has jurisdiction over Caltrans facilities; therefore, implementation of improvements to the freeway mainline cannot be guaranteed. Furthermore, Caltrans does not have a mechanism for development projects to contribute to improvements on State Highways.

Response to Comment 18. The commenter states that global warming poses a grave threat to California and the Draft EIR is obligated to discuss the threats posed by greenhouse gas emissions for the public and decision makers. Page 4.13-1 through 4.13-6 in the Draft EIR (Section 4.13, *Global Climate Change*) provides the background information related to climate change requested in this comment.

The Draft EIR: discusses the existing greenhouse gas/climate change setting including the main gases of concern; provides the current emissions inventory at the global, US, and State levels; gives a detailed description of what global warming is and the effects that result, all of which could be considered the “threat of greenhouse gas pollution and global warming.” The EIR attempts to present a non-sensational, balanced description based on the best information available. Section 4.13.2 describes the entire regulatory setting, including all applicable federal, State and City of Moreno Valley regulations and policies. The DEIR’s GHG analysis is consistent with the requirements of CEQA (specifically CEQA Guidelines Section 15064.4, 15125(d), 15126.4(c), 15130(B).

Response to Comment 19. The comment summarizes international and national concerns about global climate change and greenhouse gas emissions which are also discussed in the DEIR in Section 4.13.1.1 on page 4.13-2.

Response to Comment 20. The comment summarizes concerns within the State of California about global climate change and greenhouse gas emissions which are also discussed in the DEIR in Section 4.13.1.1 on page 4.13-2.

Response to Comment 21. Section 4.13.6 of the Draft EIR includes a complete, detailed inventory and analysis of the project's short-term construction and long-term operational greenhouse gas emissions. The EIR states the project's greenhouse gas emissions and discusses the significance of these emissions without attempting to minimize the impact by subtracting whatever existing greenhouse gas emissions there might be from the project site. Section 4.13.7 discusses the cumulative impacts of the project's greenhouse gas emissions.

The greenhouse gas impact study provided emissions from both construction and operation periods. During the construction period, emissions from both equipment exhaust and other area sources were calculated. During the operational period, emissions associated with vehicular (including automobiles and trucks) trips, water and energy usage, waste treatment, and other known sources have been calculated and identified in the study. If the commenter is suggesting that an exhaustive "life-cycle" inventory of the project's greenhouse gas emissions be prepared, the State Office of Planning and Research provided guidance on this issue and clarified that a life-cycle analysis is not required.¹

Response to Comment 22. According to the greenhouse gas impact study, "*Global climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other significant changes in climate (such as precipitation or wind) that last for an extended period of time. The term "global climate change" is often used interchangeably with the term "global warming," but "global climate change" is preferred to "global warming" because it helps convey that there are other changes in addition to rising temperatures.*" The Draft EIR did analyze the project's effects on greenhouse gas emissions which is a component of global climate change or global warming (Section 4.13 Global Climate Change, pages 4.13-1 through 4.13-22).

In addition the California Green Building Code requires mandatory measures to be implemented on all new construction projects that consist of a wide array of green measures concerning project site design, water use reduction, improvement of indoor air quality, and conservation of materials and resources. The "Cal Green Building Code" refers to compliance with Title 24, Part 6 energy efficiency measures. Additionally, it encourages 15 percent energy use reduction over the amount required in Part 6. The Cal Green Building Code prescribes a wide array of measures that would directly and indirectly result in reduction of GHG emissions from the Business as Usual Scenario. The mandatory measures that are applicable to nonresidential projects include site selection, energy efficiency, water efficiency, materials conservation and resource efficiency, and environmental quality measures.

The Climate Change technical report included in the EIR Appendix B does include a discussion of the impacts that climate change could have on the project. The conclusion is that there are not expected to be any significant impacts. If the commenter is suggesting that the DEIR should provide a more detailed analysis of global warming on the proposed project, there is a recent CEQA Case, *Ballona Wetlands Land Trust v. City of Los Angeles and Ballona Ecosystem Education Project v City of Los Angeles*, No.B231965 (Cal. Ct. App 2d Dist., November 9, 2011), where the opponents claimed that the EIR was inadequate because it did not analyze the effects of sea rise due to global warming on the project. The Court held that CEQA did not require the EIR to analyze this risk, concluding that

¹ Transmittal of the Governor's Office of Planning and Research's Proposed SB97 CEQA Guidelines Amendments to the Natural Resources Agency, California Governor's Office of Planning and Research, April 13, 2009, page 2.

“the purpose of an EIR is to identify the environmental effects of the project on the environment and not the significant effects of the environment on the project.” The court reasoned: “[w]e believe that identifying the environmental effects of attracting development and people to an area is consistent with CEQA’s legislative purpose and statutory requirements, but identifying the effects on the project and its users of locating the project in a particular environmental setting is neither consistent with CEQA’s legislative purpose nor required by CEQA statutes.” Although an analysis of the effects of global climate change on the project is not required, one was provided on page 4.13-3 of the DEIR (Section 4.13.1.3, *Effects of Global Warming*).

Response to Comment 23. The opinion of the Sierra Club that “The project’s greenhouse gas impacts are clearly significant” is noted, but contrary to the detailed climate change analysis included in the EIR. The EIR does include a detailed significance discussion and conclusion at the end of Sections 4.13.5, 4.13.6, and 4.13.7.

The SCAQMD and other air quality agencies agree that GHG and climate change should be assessed as a potentially significant “cumulative impact” rather than a “project-specific” impact. SCAQMD is considering the adoption of a numeric plan-level efficiency target of 6.6 MTCO₂E per service population.

The intent of CEQA is to determine the significant effects of a project on the environment and provide feasible and reasonable mitigation to reduce impacts to less than significant. In instances where the impact of the project cannot be reduced to less than significant and it is determined the impact is significant and unavoidable, the Lead Agency, must adopt a Statement of Overriding Considerations that finds (1) under Public Resources Code Section 21081(a)(3), and CEQA Guidelines Section 15091(a)(3), that specific economic, legal, social technological, or other considerations, including provisions of employment opportunities to highly trained workers make infeasible the mitigation measures or project alternatives identified in the Final EIR; and (2) under CEQA Guidelines section 15092(b), that the remaining significant effects are acceptable due to overriding concerns described in the CEQA Guidelines Section 15093. CEQA does have a provision as stated above that an impact can be significant and unavoidable if the City makes findings as to why it is willing to accept the significant impact; therefore, it was not CEQA’s intent to not allow any tolerance for impacts on the environment as long a good faith effort is made to reduce the impacts where reasonable.

In addition, the Draft EIR analyzed the cumulative effects of the project on greenhouse gas emissions (Section 4.13.7 Cumulative Impacts, page 4.13-25). The EIR further determined that, while it is not possible to determine whether the project individually will have a significant impact on global warming or climate change, it will contribute to cumulative GHG emissions in California. Cumulatively, the build out of the proposed project would contribute approximately 79,000 metric tons of CO₂e per year. The mitigation measures discussed in the project-level impact analysis of GHG emissions indicated the measures would substantially reduce the project’s emissions of greenhouse gases, however, without the necessary science and analytical tools, it is not possible to determine with certainty whether the project’s emissions of greenhouse gases will be cumulatively considerable, within the meaning of CEQA Guidelines Sections 15065(a)(3) and 15130. The CARB is currently in the process of designing regulations to monitor, limit, and ultimately reduce California GHG emissions but there are as yet no adopted standards for assessing the significance of cumulative impacts from projects.

Cumulatively, the emissions from electricity production would comprise approximately 2.8 percent of the project’s total CO₂e emissions. Water usage and solid waste disposal emissions comprise approximately 14 percent of the project’s total CO₂e emissions while the emissions from vehicle exhaust would comprise approximately 84 percent of the project’s total CO₂e emissions. The emissions from vehicle exhaust are controlled by the State and Federal governments and are outside the control of the City. The remaining CO₂e emissions are primarily associated with building systems. The proposed project is required to comply with existing State and Federal regulations regarding the energy efficiency of buildings, appliances, and lighting, which would reduce the project’s electricity demand. The new

buildings constructed in accordance with current energy efficiency standards would be more energy efficient than older buildings.

The Draft EIR (Section 4.3) made a determination that the proposed project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases and no mitigation is required. However, it was determined that the proposed project would generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment and mitigation was proposed to reduce these project-specific effects to less than significant (Draft EIR, page 4.3-21 through 4.3-26).

With implementation of the strategies and programs described previously, the project is consistent with the strategies to reduce California's emissions to the levels proposed in Executive Order S-3-05. However, given the uncertainty of data and appropriate methodology to accurately analyze, and the inability to quantify the reduction achieved through implementation of strategies and programs previously identified, the proposed project's GHG emission contribution would result in a cumulative impact regarding global climate change and the cumulative impacts of the proposed project on global climate change are considered to be significant and unavoidable.

In summary, the City believes all known emissions during construction and operations of the proposed project have been identified and calculated. The preparer of the greenhouse gas impact study has followed the guidelines provided by the OPR and California Air Pollution Controls Officers Association (CAPCOA) and has provided an adequate analysis. It is the City's opinion that the study has disclosed the impacts of the proposed project adequately and mitigated the impacts of greenhouse gas emissions where applicable (Draft EIR Section 4.13, *Global Climate Change*, pages 4.13-1 through 4.13-26).

Response to Comment 24. Section 4.13.6 includes mitigation measures 4.13.6.1A, 4.13.6.1B, and 4.13.6.1C which include many feasible mitigation measures to be implemented to minimize greenhouse gas emissions. As stated in Response 23, all known emissions during construction and operations of the proposed project have been identified and calculated. The preparer of the greenhouse gas impact study has followed the guidelines provided by the OPR and CAPCOA and has provided an adequate analysis. It is the City's opinion that it has disclosed the impacts of the proposed project adequately and mitigated the impacts of greenhouse gas emissions where applicable (Draft EIR Section 4.13, *Global Climate Change*, pages 4.13-1 through 4.13-26).

Response to Comment 25. The proposed project would certainly take advantage of public transit (i.e., bus service) when it becomes available to the area, most likely along the realigned Eucalyptus Avenue. The project would be required to install bus turnouts as directed by the Riverside Transit Authority (RTA) (e.g., RTA Route 35) and future workers would no doubt take advantage of bus service in the project area. The closest existing RTA Bus Route in the area is Route 35 with a bus stop at the WalMart Super Center at Moreno Beach Drive west of the project site and within walking distance.¹ The commenter requests that the project create routes to facilitate access to commercial centers, schools and parks for residents, however, this is an industrial project, not a residential development, so there will not be residents who need access to those facilities.

The project provides for the relocation of the Quincy Channel multi-purpose trail and will provide sidewalks along Eucalyptus Avenue, as required by the City. When completed, Eucalyptus Avenue will be wide enough (72-foot curb-to-curb) to allow bicycles to travel safely east and west to the rest of the City. Pedestrians will also be able to travel west along Eucalyptus Avenue to the shopping and services along and off of Moreno Beach Drive.

¹ <http://www.riversidetransit.com/home/images/stories/DOWNLOADS/ROUTES/035.pdf> accessed December 17, 2012.

Response to Comment 26. The comment states the “FEIR should consider mitigation measures that will ensure the planned community will use energy efficiently and conservatively.” The proposed project is a logistics distribution warehouse not a planned community with a residential component. As stated in the Draft EIR, page 3-2: “The proposed project includes the construction and operation of a warehouse facility comprising six buildings consisting of a total of approximately 2,244,638 square feet.” Nonetheless, the project will be required to comply with the state’s new Green Building Code, which has significantly increased energy, water, and resource conservation features required of new buildings over previous building codes” Second, the project Mitigation Measures, as presented in the Draft EIR and as modified in this Final EIR, will substantially reduce energy, water, and other resource consumption by this project. Many of these measures will also help reduce the potential production of excessive air pollution and greenhouse gas emissions related to this project, as outlined in Sections 4.3 Air Quality and 4.13 Global Climate Change of the Draft EIR. For example, Mitigation Measure 4.3.6.5A requires that the project implement transportation demand management strategies such as preferential parking for employee vanpooling/carpooling, bicycle parking facilities (such as bicycle lockers and racks), bus turnouts, and other strategies to reduce vehicle miles traveled. Mitigation Measure 4.3.6.5B requires that the project applicant incorporate twenty-one (21) energy-efficiency and low-air pollution emission methods into the project design and building construction including but not limited to:

- *Low-emissions water heaters;*
- *Central water-heating systems;*
- *Energy-efficient appliances;*
- *Increased insulation;*
- *Automated controls for air conditioners;*
- *Energy-efficient parking lot lighting;*
- *Lighting controls and energy-efficient lighting;*
- *Low-VOC interior and exterior coatings during project repainting;*
- *On-site improvements such as sidewalks or pedestrian walkways to promote pedestrian activity and reduce the amount of vehicle trips;*
- *Installation of skylights and energy-efficient lighting that exceeds California Title 24 standards where feasible, including electronic dimming ballasts and computer-controlled daylight sensors in the buildings;*
- *Shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and building shall be planted at the proposed project site;*
- *Fans to assist natural ventilation, centralized water and space conditioning systems, high efficiency individual heating and cooling units, and automatic setback thermostats. Incorporating drought-tolerant plants into the landscaping palette; and*
- *Use of water-efficient irrigation techniques;*
- *Energy-efficient low-pressure sodium parking lot lights or lighting equivalent as determined by the City;*
- *Buildings shall be oriented north-south where feasible;*
- *Implement an on-site circulation plan in parking lots to reduce vehicle queuing;*
- *Develop a trip reduction plan to achieve 1.5 average vehicle ridership (AVR) for businesses with fewer than 100 employees or multitenant worksites;*
- *Include bicycle parking facilities such as bicycle lockers and racks;*

- *Include showers for bicycling employees use; and*
- *Construct on-site pedestrian facility improvements such as building access that is physically separated from street and parking lot traffic and walk paths.*

Mitigation Measure 4.13.6.1A requires that the project applicant incorporate four (4) energy-efficiency and water-efficiency methods into the project design including but not limited to:

- *Utilize exterior window treatments for efficient energy conservation;*
- *Utilize water-efficient fixtures and appliances, including but not limited to low-flow faucets, dual-flush toilets minimizing water consumption by 20 percent from the Building Standards Code baseline water consumption;*
- *Prepare a Commissioning Plan that includes commissioning by a Commissioning Authority for all building systems (e.g., heating, ventilation, and air-conditioning [HVAC], irrigation systems, lighting, and water heating); and*
- *Restrict watering methods (e.g., prohibit systems that apply water to non-vegetated surfaces) and control runoff;*

Mitigation Measure 4.13.6.1B requires that the project applicant incorporate twelve (12) energy-efficiency methods into the project design and construction including but not limited to:

- *Use locally produced and/or manufactured building materials for at least 10 percent of the construction materials used for the project;*
- *Use “Green Building Materials,” such as those materials that are resource efficient, and recycled and manufactured in an environmentally friendly way, for at least 10 percent of the project;*
- *Limit unnecessary idling of construction equipment;*
- *Maximize the use of electricity from the power grid by replacing diesel- or gasoline-powered equipment;*
- *Design the project building to exceed the California Building Code (CBC) Title 24 energy standard, including, but not limited to, any combination of the following:*
 - *Increase insulation such that heat transfer and thermal bridging is minimized.*
 - *Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption.*
 - *Incorporate ENERGY STAR or better rated windows, space heating and cooling equipment, light fixtures, appliances, or other applicable electrical equipment.*
- *Provide a landscape and development plan for the project that takes advantage of shade, prevailing winds, and landscaping;*
- *Install efficient lighting and lighting control systems. Use daylight as an integral part of the lighting systems in buildings.*
- *Install light-colored “cool” roof and cool pavements.*
- *Install energy-efficient heating and cooling systems, appliances and equipment, and control systems.*
- *Install solar or light-emitting diodes (LEDs) for outdoor lighting.*

Mitigation Measure 4.13.6.1C requires that the project applicant incorporate six (6) greenhouse gas emission and waste reduction methods into project operations including but not limited to:

- *Use less than 3,900 Global Warming Potential (GWP) hydrofluorocarbon (HCF) refrigerants or natural refrigerants (ammonia, propane, carbon dioxide [CO2]) for refrigeration and fire suppression equipment;*
- *Provide vegetative or man-made exterior wall shading devices for east-, south-, and west facing walls with windows;*
- *Devise a comprehensive water conservation strategy appropriate for the project and its location. The strategy may include the following, plus other innovative measures that may be appropriate:*
 - *Install drought-tolerant plants for landscaping.*
 - *Use reclaimed water for landscape irrigation within the project. Install the infrastructure to deliver and use reclaimed water.*
 - *Install water-efficient irrigations systems, such as weather-based and soil-moisture-based irrigation controllers and sensors for landscaping according to the California Department of Water Resources Model Efficient Landscape Ordinance.*
- *Provide employee education about reducing waste and available recycling services.*

Information on the project’s LEED certification is presented in the previous Response to Comments D-2, Nos. 1 and. 2. The other measures suggested in this comment have already been evaluated in this EIR, and most have already been incorporated into the project Mitigation Measures. For example, the project will provide an alternative fuel station, shading of parking areas, energy efficient lighting both inside and outside, etc. The City believes compliance to at least 10 percent less than current energy codes included in the Green Building Code, and the project mitigation measures as proposed in the Draft EIR and as modified in this Final EIR, are sufficient and reduce the energy use of this project to the greatest extent practical and feasible, as required under CEQA.

The comment suggests that thirteen (13) additional measures to reduce greenhouse gas emission be included. The Draft EIR already incorporates or includes eight of the measures and the remaining six measures are not included or are infeasible. An explanation of these measures including where they are already included or incorporated in the Draft EIR or why they are not included or are infeasible is provided in Table A as follows:

Table A: Comparison of Sierra Club Suggested Measures to Project EIR Mitigation Measures

Suggested Mitigation Measure to Reduce Greenhouse Gas Emissions	Response
1. Analyzing and incorporating the U.S. Green Building Council’s LEED (Leadership in Energy and Environmental Design) or comparable standards for energy efficient building during pre-design, design, construction, operations and management.	Included. The project description (see Draft EIR p 3-14) recognizes the trend towards “Green Building” in the state, and the applicant for the proposed project will apply for the Leadership in Energy and Environmental Design (LEED) Core & Shell rating program. LEED is a voluntary, consensus-based standard to support and certify successful green building design, construction, and operations.
2. Designing buildings for passive heating and cooling, and natural light, including building orientation, proper orientation and placement of windows, overhangs, skylights, etc.	Included. A similar mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on pages 4.3-33 and 4.3-34.
3. Designing buildings for maximum energy efficiency including the maximum possible insulation, use of compact florescent or other	Included. Similar mitigation measures are already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on pages 4.3-33 and 4.3-34

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Suggested Mitigation Measure to Reduce Greenhouse Gas Emissions	Response
low-energy lighting, use of energy efficient appliances, etc.	and Mitigation Measure 4.3.6.6A on pages 4.3-35 and 4.3-36 and Section 4.13 Global Climate Change of the Draft EIR under Mitigation Measures 4.13.6.1A, 4.13.6.1B, and 4.13.6.1C on pages 4.13-20 and 4.13-21.
4. Reducing the use of pavement and impermeable surfaces.	Included where appropriate. Impermeable surfaces will be installed where appropriate, but it is not feasible to use impermeable surfaces in the truck parking area since a soft permeable surface will not support the weight of a large truck.
5. Requiring water re-use systems.	Infeasible. Reclaimed water is not available to this area of the City yet, so a “purple” pipe system is not required to be installed as part of this project.
6. Installing light emitting diodes (LEDs) for traffic, street and other outdoor lighting.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.13.6.1B on page 4.13-21.
7. Limiting the hours of operation of outdoor lighting.	Not Included. The future facility operator is not known at this time since the developer is building a spec building. The City cannot burden the future, unknown operator with this limitation provided the operation complies with all applicable City ordinances regarding night lighting. .
8. Maximizing water conservation measures in buildings and landscaping, using drought tolerant plants in lieu of turf, planting shade trees.	Included. Similar mitigation measures are already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-34 and Section 4.13 Global Climate Change of the Draft EIR under Mitigation Measures 4.13.6.1A, 4.13.6.1B, and 4.13.6.1C on pages 4.13-20 and 4.13-21.
9. Ensure that the Project is fully served by full recycling and composting services.	Included. A similar mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.6B on page 4.3-37. Infeasible. The proposed industrial warehouse project will not generate any compost materials, with the exception of trimmings from landscape vegetation and scraps from employee meals. The landscape service provided will be responsible for removal of trimmed vegetation to an off-site receiving facility. Scraps from employee meals will not be generated in enough quantities to warrant an on-site composting facility, so such a system is not required to be installed as part of this project.
10. Ensure that the Project’s wastewater and solid waste will be treated in facilities where greenhouse gas emissions are minimized and captured.	Infeasible. The site is served by public entities for wastewater and solid waste. Neither the City nor the project proponent has control over those facilities.
11. Installing the maximum possible photovoltaic array on the building roofs and/or on the project site to generate all of the electricity required by the Project, and utilizing wind energy to the extent necessary and feasible.	Partially Included. The proposed project does not have a specific end user at this point, but the building design will allow for future installation of solar photovoltaic for the entire building and solar hot water heating for the office area.
12. Installing solar water heating systems to generate all of the Project’s hot water requirements.	Not Included. The proposed project does not have a specific end user at this point, but the building design will allow for future installation of solar photovoltaic and solar hot water heating for the office area.
13. Installing solar or wind powered electric vehicle and plug-in hybrid vehicle charging stations to reduce emissions from vehicle trips.	Included. A similar mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.6B on page 4.3-36.

Response to Comment 27. The commenter is confusing the proposed project, which involves industrial warehouses, with a residential project. All known emissions during construction and operations of the proposed project have been identified and calculated (Draft EIR Section 4.13, Global Climate Change, pages 4.13-1 through 4.13-26). Feasible mitigation measures, including several identified in the list provided by the commenter, have been already included as mitigation for the project and are identified in the Draft EIR. In addition, the mitigation measures shown as “Incorporated” in the Table C have been added to the Final EIR (Section 3.0 Errata and Additions) as suggested by the commenter. The changes to the Draft EIR do not result in the identification of a new or more severe significant impact and has no material effect on the findings of the EIR. Table B below contains each of the greenhouse gas reduction measures suggested for inclusion by the commenter and if it is already included, if will be added mitigation as part of the Final EIR, or if will not be included and why.

The comment suggests that five (5) additional measures to reduce air quality and greenhouse gas emissions during project construction be included. The Draft EIR already incorporates or includes two of the measures and the remaining three measures are not included or are infeasible. An explanation of these measures including where they are already included or incorporated in the Draft EIR or why they are not included or are infeasible is provided in Table B as follows:

Table B: Comparison of Sierra Club Suggested Measures to Project EIR Mitigation Measures

Mitigation Related to Construction	
1. Utilize recycled, low-carbon, and otherwise climate-friendly building materials such as salvaged and recycled-content materials for building, hard surfaces, and non-plant landscaping materials.	Included. A similar mitigation measure is already included in Section 4.13 Global Climate Change of the Draft EIR under Mitigation Measure 4.13.6.1B on page 4.13-20.
2. Minimize, reuse, and recycle construction-related waste.	Not Included. The project is required to comply with Policy 6.7.6 of the Chapter 9 of the City’s General Plan: Require building construction to comply with the energy conservation requirements of Title 24 of the California Administrative Code. The applicant will attempt to divert at least 50% of construction waste, and would apply for LEED credit if they achieve that goal.
3. Minimize grading, earth-moving, and other energy-intensive construction practices.	Infeasible. The entire site must be graded to accommodate the building structures and parking lots.
4. Landscape to preserve natural vegetation and maintain watershed integrity.	Infeasible. The site contains very little natural/native vegetation, only associated with the Quincy Channel, which will be preserved onsite.
5. Utilize alternative fuels in construction equipment and require construction equipment to utilize the best available technology to reduce emissions.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measures 4.3.6.2B and 4.3.6.2J on page 4.3-24.

Response to Comment 28. Many of these proposed measures appear to apply to a residential “planned community” rather than an industrial warehouse project, so it is assumed they were mistakenly excerpted from another document (e.g., shuttle service, car sharing service, encouraging residents to use low or zero emission vehicles, etc.).

Measure 4.3.6.5A requires ridesharing, and the project will provide a vehicle charging station (Measure 4.3.6.6A). In addition, the project will take advantage of transit when transit services are extended through the project along Eucalyptus Avenue by the RTA.

It should be noted that the commenter made very similar comments on the Vogel Industrial Project EIR recently processed by the City, and many of the mitigation measures incorporated into that project were incorporated into this project. However, Table C, below summarizes the measures recommended by the commenter compared to the actual measures provided in the Draft EIR and this Final EIR.

The comment suggests that six (6) additional measures to reduce air quality and greenhouse gas emissions from project vehicles be included. The Draft EIR already incorporates or includes two of the measures and the remaining four measures are not included or are infeasible. An explanation of these measures including where they are already included or incorporated in the Draft EIR or why they are not included or are infeasible is provided in Table C as follows:

Table C: Comparison of Sierra Club Suggested Measures to Project EIR Mitigation Measures

Transportation Mitigation Measures	
1. Encourage and promote ride sharing programs through such methods as a specific percentage of parking spaces for ride sharing vehicles.	Included. Similar mitigation measures are already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5A on pages 4.3-33 and Mitigation Measure 4.3.6.6A on page 4.3-36.
2. Create a car sharing program within the planned community;	Not Included. The suggested mitigation measure applies to a planned community and is therefore inappropriate. As noted in Mitigation Measure 4.3.6.2J (Draft EIR page 4.3-25), documentation shall be provided to the City of Moreno Valley indicating that construction workers have been encouraged to carpool or otherwise reduce VMT to the greatest extent practical, including providing information on available park and ride programs. However, the applicant will provide a bulletin board that will facilitate posting of ridesharing information and requests by project workers.
3. Create a light vehicle network, such as a neighborhood electric vehicle (NEV) system.	Not Included. The suggested mitigation measure applies to a residential neighborhood and is therefore inappropriate. However, Mitigation Measure 4.3.6.2J on page 4.3-24 requires alternative fuel vehicles onsite.
4. Provide necessary facilities and infrastructure to encourage residents to use low or zero-emission vehicles, for example, by developing electric vehicle charging facilities and conveniently located alternative fueling stations.	Included. The mitigation measure the comment suggests refers to “residents”, and this project proposes warehousing not a residential development. However, a similar mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.6A on page 4.3-36.
5. Provide a shuttle service to public transit within and beyond the planned community.	Not required. The RTA serves the general project area and may require bus stops to be installed as service is needed to the project or other nearby areas. Therefore, the site is serviced by the RTA and no further actions are necessary.
6. Incorporate bicycle lanes and routes into the planned community’s street systems.	Not required. Bicycle access to and from the project would use Eucalyptus Avenue, and pedestrians would be able to access the site on the planned multi-purpose trail on the north side of Eucalyptus Avenue. It should be noted the proposed project is warehousing, not a planned community.

Response to Comment 29. The use of carbon offsets is infeasible because:

- The cited precedent is a negotiated settlement for a major oil refinery in Contra Costa County, rather than a warehouse development in Riverside County;
- The cited precedent was for the period prior to 2012;

- California has not established any generally applicable standards for requiring offsets for GHG emissions; and
- Most cities and counties in California have not required offsets for GHG emissions on projects of the scale of the proposed project.

Using such carbon offsets to mitigate for cumulative impacts is fraught with uncertainty. As the comment implies (“... offsets purchased are real...”), but there is considerable controversy regarding whether offsets that are available today will actually mitigate this cumulative effect.

First, it requires an accurate measure of the emissions to be offset and the offsets to be provided. That calculation turns out to be riddled with uncertainty on both ends. As noted above in the example cited by the commenter, this initial offset of \$7 million for the Rodeo refinery was later reduced to \$4.4 million due to revised calculations of GHG emissions. The UN's Intergovernmental Panel on Climate Change found a margin of error of 10% with measuring emissions from making cement or fertilizer; 60% with the oil, gas and coal industries; and 100% with some agricultural processes.

Second, the provision of offsets requires an accurate measure of the carbon saved elsewhere. Most of the earliest offset projects involved planting trees, which naturally ingest carbon, a complex and unpredictable process which forbids accurate measurement.

Finally, the very idea of offsetting relies on the concept that a carbon reduction would not have occurred in the natural order of commercial life. For example, one of the biggest UK companies that sells offsets, Climate Care, distributed 10,000 energy-efficient light bulbs in a South African township; offered the carbon reductions as offsets; and then discovered that an energy company was distributing the same kind of light bulbs free to masses of customers, including their township, so the reduction would have happened anyway.

To accurately calculate the amount of credit for each of the above actions, the offset program must make a number of critical assumptions:

- What is the baseline of emissions for the existing facilities that would be retrofitted to reduce their energy consumption? Would they ultimately be retrofitted in any case, thus limiting the actual resulting reduction in GHG emissions?
- Is the development of the alternative energy source actually dependent on the external funding provided by the offset? Or is the alternative energy developer simply achieving another subsidy?
- How much extra energy (and GHG emissions) is required to construct the alternative energy facility? What period of time should this be amortized over? For example, the development of the California High Speed Rail Project is estimated to reduce energy consumption in the long run. However, the extra energy involved with construction is estimated to have a 40 year payback.

As such, the actual amount of mitigation provided by an offset program can be speculative, based upon the actual performance of the program.

There is a global marketplace for fossil fuel energy based upon a market between buyers and sellers. The sellers, those who own the sources and production of fossil fuel energy, have a powerful economic interest to keep and increase their income stream from the production of fossil fuels.

To the extent that the actions cited above as potential offset measures, in combination with other conservation measures, reduce the demand for fossil fuels in the countries where they are implemented, the owners of these fossil fuel supplies will still want to preserve and enhance their income as much as possible. And there is a large unmet need (unmet as defined by consumer actions) for increased energy consumption in developing countries. For example the average annual energy consumption of a citizen of China or sub-Saharan Africa, at 4.5 metric tons, is far less than that of the average US citizen, at 20 metric tons. To the extent that the US and other countries reduce energy consumption based upon energy efficiency measures, the owners of fossil fuel resources will seek to sell the same energy, perhaps at a lower price, to the less developed countries. If the energy is sold at a lower price, then more energy would need to be sold to generate the same income, and the resulting energy consumption and GHG emissions could actually increase.

In conclusion, the City concludes that compliance to at least 10 percent less than current energy codes included in the Green Building Code, and the project mitigation measures as proposed in the Draft EIR and as modified in this Final EIR, are sufficient and reduce the energy use of this project to the greatest extent practical and feasible, as required under CEQA. There are no established laws or regulatory guidelines requiring contributions toward carbon offsets. In addition, there is uncertainty regarding the efficacy, reliability and legal standing of carbon off-sets at this time. For this reason, such mitigation is considered to be infeasible. The analysis in the Draft EIR concludes that greenhouse gas emission impacts of the project will be less than significant with implementation of the recommended mitigation measures, despite protestations of the commenter and others to the contrary.

Response to Comment 30. The commenter is correct in stating that the EIR must contain a “reasonable” [emphasis added] range of alternatives to the proposed project that avoid or lessen the significant impacts to the proposed project (Pub. Res. Code §21002; CEQA Guidelines §§ 15002(a)(3), 15021(a)(2), 15126.6(d)). According to CEQA Guidelines §15126.6(a) “[A]n EIR need not consider every conceivable alternative to a project. An EIR is not required to consider alternatives which are infeasible. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason. [Citizens of Goleta Valley v. Board of Supervisors (1990) 52 Cal.3d 553 and Laurel Heights Improvement Association v. Regents of the University of California (1988) 47 Cal.3d 376].”

The Draft EIR does include an analysis of a reasonable range of alternatives to the proposed project (Draft EIR, Section 6.0 Alternatives, pages. 6-1 to 6-40) in compliance with CEQA. The Draft EIR discusses the No Project Alternative (Section 6.3.2.1) and an Off-Site Alternative (Section 6.3.2.4) as suggested by the commenter.

In addition, the commenter is referred to Section 4 of this document for an evaluation of a less intensive modified plan, which is a subset of the Reduced Intensity Alternative evaluated in the DEIR (and which was determined to be environmentally superior to the Proposed Project). This less intensive plan proposes to develop 4 warehouse buildings, leaving the southeast portion of the site vacant for future development of residential uses consistent with existing zoning (R-5 and RA-2) adjacent to the existing residential neighborhood to the southeast.

The EIR did look at a higher density mixed commercial residential development. As described on page 6-24 of the Draft EIR, the Mixed Commercial/Office/Residential Alternative (Alternative 4) would result in the development of commercial, office and residential uses on the project site resulting in development of 548 multiple-family residential units, 138 single-family residential units, 441,000 square feet of commercial uses, and 441,000 square feet of office uses.

As described on page 6-31 of the Draft EIR:

Under the Alternative 4, impacts related to short-term construction-related air quality would be similar to the proposed project as the same amount of land would be disturbed and the same mix of equipment would be utilized. Long-term operational-related air quality emissions would be increased in magnitude when compared to the project and would remain significant and unavoidable. Because of the increase in vehicle trips under this alternative, impacts to the operation of local roadways and intersections would be proportionally greater than what was identified for the proposed project. Long-term traffic impacts would remain significant and unavoidable. Traffic-related noise would be increased in magnitude but would be similarly mitigated like the proposed project and would remain less than significant.

Because this alternative would also require a Zone Change and General Plan Amendment, land use impacts would be similar to the proposed project. This alternative would result in the development of office uses that would generate permanent jobs, which may require workers who are not current residents of the City. Combined with the residential component, the office use would increase the total number of people that would be added to the City's population. This alternative would have greater demands on public services and recreation. However, the payment of fees and dedication of parkland would reduce these impacts to a less than significant level. This alternative would increase the amount of water utilized and increase the amount of wastewater and solid waste that would be generated on site. Similar to the proposed project, adherence to wastewater and solid waste requirements would reduce these impacts to a less than significant level. In the event that water is not available for development envisioned under this alternative, impacts to water resources would be significant and avoidable. Under this alternative, some of the proposed project objectives would not be met as warehouse uses would not be built. However, development of this alternative would provide new employment opportunities for residents of Moreno Valley.

The Draft EIR does analyze the various alternatives impacts on greenhouse gas emissions (Table 6.F page 6-10) biological resources, water resources including water quality and water use (Table 6.C on page 6-9) and traffic (Table 6.B page 6-9). In addition, detailed analysis for each of the alternatives is included in Section 6 of the Draft EIR as it relates to the environmental issues listed by the commenter.

An agricultural alternative was not considered because the site has been planned by the City since 1987 for suburban intensity land uses. In addition the current General Plan does not include any agricultural designations. The City allows agricultural uses in all land use designations as an interim use until such time as the land is developed per the vision identified in the General Plan. One of the goals stated in the City's recent General Plan is the "...orderly conversion of agricultural lands." Therefore, an agricultural use as a long-term alternative is not practical and does not require analysis as a separate alternative. However, it should be noted that Alternative 3 does incorporate 27 acres of land that would be used for agriculture to provide a less intense buffer in the southeastern portion of the site. No further analysis is necessary and the comment does not change the conclusion in the Draft EIR.

Response to Comment 31. The commenter is correct in stating that a large segment of the population of Moreno Valley is Hispanic or Latino. However, because a person is Hispanic or Latino does not automatically mean that they only speak Spanish. There is no legal requirement to translate the environmental documents or the notices into other languages. It is not the policy of the City to require project applicants to incur the added expense of having project environmental documents or public notices translated into Spanish. The City is also not required to incur the expense of providing a Spanish translator at public meetings. The commenter is free to provide a Spanish translator at its costs. In addition, neither the State CEQA Statutes nor the State CEQA Guidelines require or even suggest providing such notices.

Contrary to the assertion of the commenter, the City believes the Draft EIR does identify and analyze the potential direct, indirect, and cumulative impacts of the proposed warehouse project. The City believes the EIR, including the Draft EIR, Final EIR, and supporting appendices and materials, comply with the requirements of CEQA, and that the Final EIR has adequately addressed the various comments raised by this and other commenters on the EIR.

The Sierra Club, San Gorgonio Chapter, is already on the mailing list for this project, as previously requested.

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September 4, 2012

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RE: Comments on Prologis Eucalyptus Industrial Park Draft Environmental Impact Report (SCH No. 2008021002)

Greetings:

On behalf of the Sierra Club, Moreno Valley Group, and Residents for a Livable Moreno Valley, I hereby submit these comments on the Prologis Eucalyptus Industrial Park Draft Environmental Impact Report (EIR). (SCH No. 2008021002)

General Comments:

The California Environmental Quality Act (CEQA) was adopted as a disclosure and transparency document. The theory is that by providing a document that adequately describes the environmental consequences of a project to decision makers and the public, the decision makers will make a rational decision based upon the true environmental consequences of the project and if they do not, the electorate can hold them accountable for their decisions. The core of this statutory structure is the adequacy of the document as an informational document.

Unfortunately, the Draft EIR for this Project fails as an informational document. The Project Description in the EIR is inadequate, misleading, and internally inconsistent. CEQA requires that an EIR contain an accurate, complete, and consistent description of a proposed project so that decision-makers and the public can properly and fully assess the project's environmental

consequences. (California Code of Regulations, Tit. 14 §15124; *County of Inyo v. City of Los Angeles* (1977) 71 Cal.App.3d 185, 192-193.) The Description here fails to divulge important information such as all adjacent land uses. (See, e.g., *Figure 3.2* identifying only a few Surrounding land uses; also, Section 3.0 of Draft EIR) The Description is also inconsistent with statements within the Description itself and elsewhere in the EIR. For example, the Executive Summary states that the amendment to the Master Plan of Trails will either relocate the trail “and/or” eliminate the planned trail segment, whereas the Project Description states that the both elimination and relocation will occur. The Project description also fails to depict all known future projects adjacent or near to the project site. By failing to provide an adequate Project Description, the EIR fails as an informational document.

2

The EIR misleads decision makers and the public as to the extent and severity of the Project’s environmental impacts. The analysis and evaluation of project impacts within the EIR do not evince adequacy, completeness, or a good faith effort at full disclosure. (California Code of Regulations, Tit. 14 § 15003(i).) The conclusions and findings of the EIR are completely unsupported by substantial evidence within that document. The Draft EIR is almost constantly conclusory, and does not provide the analysis or examination required by CEQA to inform the public and decision makers of the analytical pathway taken from facts to conclusions. The EIR also fails to undertake and/or defers studies needed to determine the severity and extent of environmental effects, and whether or not such effects may be mitigated below a level of significance. Furthermore, the EIR is misleading by stating that the EIR evaluated the project as operating 24/7 where, in fact, the specific studies within the EIR evaluate operation in shorter time frames.

3

CEQA also requires that where feasible mitigation exists which can substantially lessen the environmental impacts of a project, **all feasible mitigation** must be adopted. (California Code of Regulations, Tit. 14 § 15091.) In this way CEQA goes beyond its informational role to require that projects substantively lessen their negative effects on the environment. It is critical to proper drafting of an EIR that all feasible mitigation measures be required of a project. This has not been done with this Project. For instance, the EIR fails to require *any* mitigation for the project’s significant impacts to agricultural resources. Additionally, while most of the project’s environmental effects will be a result of its use as a distribution center and corresponding traffic and air quality impacts, no direct mitigation is required to reduce these impacts. With regards to air quality impacts from operational traffic, the EIR improperly concludes without evidence or reasoning that no mitigation is feasible. Regarding traffic effects, the EIR relies entirely on TUMF and DIF programs and concludes that significant effects will be either immediately or promptly reduced by these programs. To the contrary, a significant amount of the streets impacted are not currently planned or funded for improvements, and given the underfunding of these programs and fails to require any direct improvements without finding direct improvements to be infeasible.

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Moreover, all mitigation measures required in the EIR must be fully enforceable, certain to occur, and not deferred. (Public Resources Code § 21081.6; Cal. Code of Regulations, Tit. 14 §§ 15074.1, 15097.) This Project fails to ensure that all feasible mitigation will occur with this Project and instead provides vague, uncertain, and unenforceable approximations of mitigation measures. The Project also defers mitigation extensively with regards to impacts to/from, for instance, biology, culture, hydrology/drainage, among others.

6

The choice of the environmentally superior alternative in the EIR is also not supported by substantial evidence in the record or the evaluation of those alternatives. The EIR concludes that Alternative 3, the Reduced Intensity Alternative, is the environmentally superior alternative where Alternative 5, the Off-Site Location Alternative, would ultimately result in fewer significant impacts. Nonetheless, the EIR does not find either Alternative 3 or Alternative 5 to be infeasible. As both of these alternatives satisfy most project objectives and significantly reduce project impacts, one of these environmentally superior alternatives must be implemented in lieu of the project if the project is approved.

7

For these and the reasons detailed below, the EIR fails to comply with CEQA and must be substantially supplemented, amended, and recirculated.

Project Summary:

The proposed development project would result in the construction and operation of approximately 2,244,638 square feet of distribution warehouse uses on 122.8 acre site. The project site is located adjacent to and south of SR-60, east of Moreno Valley Auto Mall, and adjacent to and west of the Quincy Channel in the eastern portion of Moreno Valley. The project will construct 6 buildings with a maximum height of 50 feet with 326 truck docks. The project will also construct 372 truck parking spaces and 1,110 auto parking spaces; 9 driveways; a bridge over Quincy Channel; a new “Eucalyptus Avenue” through the project site; a new roadway “B Street” between buildings 3 and 4; new storm drain, sewer, and water lines; and other related development.

8

Land uses of the project site presently consist of citrus groves and vacant land. There are also three natural drainage features onsite including two ephemeral channels to the southwest and Quincy Channel along the eastern portion of the property. Existing land uses adjacent to the project site are stated to include presently vacant land to the east and south, SR-60 to the north and residential uses north across that highway, Moreno Valley Auto Mall and Moreno Valley Fire Station No. 58 to the northwest, and single-family residential uses approximately 50 feet southeast of the project site. However, any of the surrounding lands are not mentioned or mapped in the EIR as having a use or, alternatively, being vacant or put to agricultural use. The Project description fails to adequately and accurately depict these adjacent land uses.

The Project will require the following discretionary entitlements, among others, from the City:

General Plan Amendment to change the land use designation of 71.3 acres of the Project site from Residential (R15, R5, and R2) to Business Park.

General Plan Amendment to amend the Circulation Element to (1) eliminate the undeveloped Quincy Street from Eucalyptus Avenue to Encilia Avenue; (2) realign Encilia Avenue such that its western terminus is Moreno Beach Drive rather than its current terminus at Eucalyptus; and (3) classify the segment between Quincy Channel and Moreno Beach Drive as a Collector.

Zone Change of the entire site (122.8) acres from Business Park (BP), Business Park/Mixed Use (BPX), Residential 15 District (R15), Residential 5 District (R5) and Residential Agriculture 2 (RA-2) to Light Industrial (LI). The Zone Change will also redraw the boundary of the Primary Animal Keeping Overlay (PAKO) District which would remove 12.2-acres (part of the RA-2 Zone) from the City's PAKO-designated land.

Amendment to the City's Master Plan of Trails to eliminate the trail segment along the west side of the Quincy Channel north of the Future Eucalyptus from SR-60 to Fir Avenue; and/or relocate the Eucalyptus Avenue trail to the north side of Eucalyptus Avenue.¹

8

The Project will require the following entitlements, among others, from other agencies:

Approval of Quincy Channel Improvements from the Riverside County Flood Control and Water Conservation District

A Section 404 permit from the US Army Corps of Engineers

A Section 401 Water Quality Certification from the Regional Water Quality Control Board

A Section 1602 Streambed Alteration Agreement from the California Department of Fish and Game.

The EIR finds that the Project will result in significant and unavoidable impacts to/from aesthetics, agriculture, air quality, land use/ planning, and traffic/transportation. All other potentially significant impacts are found to be mitigated below a level of significance.

Aesthetics

9

¹ Note: the description of this amendment changes in the EIR, resulting in an inconsistent project description.

Within Table 1.C, Impact 4.1.6.1 states that, “A less than significant impact related to this issue would occur.” This statement is incorrect, unsupported by the narrative, and unsupported by the third column finding that it is a “significant and unavoidable” impact.

9

The project would result in significant and unavoidable individual and cumulative impacts to existing visual character or quality of the site and its surroundings; scenic vistas of the Box Springs Mountains and Russell Range; and scenic resources and scenic highways. The project’s impacts to scenic views and views from SR-60 also conflict with General Plan Policies and Objectives. (*See, e.g.* Objective 7.7, 7.7.4, 7.7.5) Despite these significant aesthetic impacts, no mitigation has been incorporated into the project to reduce or avoid these impacts such as substantially limiting the height of buildings; widely dispersing buildings; and/or creating wide setbacks and buildings screened from the roadway/residences. These mitigation measures are feasible and should be incorporated into the project.

10

At page 4.1-1, the EIR states that the closest residence to the project is 200 feet southeast of the project site. This statement conflicts with the Project Description and other parts of the EIR that place the closest residence at 50 ft.

11

At page 4.1-5, Objective 2.5 and Policy 2.5.1 do not pertain to aesthetics. The EIR lists these policies and then finds that the project is consistent with these policies. However, the EIR wrongly fails to evaluate the project’s inconsistency with most other listed policies. (*See, p.4.1-9, compare, 4.1-21.*)

12

With regards to impact 4.1.5.1- Light and Glare, the EIR does not seem to consider additional light and glare from the *project’s* additional traffic and presumed operation 24/7. Furthermore, the EIR does not consider impacts to nighttime views. Impacts to an from lighting are potentially significant and unmitigated.

With regards to lighting, the following should be required of the project:

- Maximum wattage for light bulbs on the exterior of the project of 250 watts;
- All lighting must be designed with full cutoffs to fully shield light fixtures.
- A further reduction of permitted light trespass or spillover lighting onto adjacent properties to a maximum of 0.25 foot candle maintained lighting measured from within five (5) feet of any property line. The existing City standard is 0.50 foot candle.
- The inclusion of lighting height limits of a maximum of 30 feet, except within 100 feet of a residential use, where lighting shall be reduced to a height of 20 feet and walkway/courtyard lighting to a maximum of 12 feet in height.
- The addition of lighting curfews for outdoor lighting requiring all lighting to be reduced by 50 percent beginning at 10:00 p.m. until dawn.

13

Signage is not evaluated in the EIR even though the EIR implies that the project will have signage. (EIR p. 4.1-20-21) The EIR fails to evaluate all aesthetic impacts by failing to account for light/glare and view impacts from any signs installed for the project.

14

The project description states that the maximum height of the buildings will be 50 feet (Table 3.B); however the aesthetics section does not evaluate the impacts from the two out of six buildings with a maximum height of 50 feet. Instead, the aesthetics evaluation considers the average height of 39 feet and height at the corners of 43 feet. (e.g. p. 4.1-19) The aesthetics evaluation thereby fails to divulge the real aesthetic impacts of the project to views and the visual character and quality of the site and its surroundings.

15

The EIR states that there will be a 395 foot setback between the closest building and residences. However, this does not demonstrate at least a 250-ft buffer or setback between “industrial uses” and “residential uses,” only the buildings themselves.

16

The EIR concludes that, “the project appears to be consistent with the various Municipal Code requirements for the proposed land uses outlined in Section 4.1.2 related to landscaping, setbacks parking, storage, etc.” without in any way evaluating how or why the project is consistent with the requirements.

17

Agricultural Resources

Within Table 1.C (Environmental Summary), Impact 4.2.6.1 states that, “The proposed project would not conflict with an existing agricultural zone” and that “Impacts are less than significant.” However the narrative does not support this finding, the Impact is listed under the title “Significant Impacts” and the level of significance after mitigation states that impacts will be significant and unavoidable. This discrepancy must be corrected to provide the public and decision-makers with an accurate depiction of project impacts.

18

Impacts to the PAKO are not mentioned in the Environmental Summary; rather only the RA-2 zone designation is mentioned. Removing 12 acres from the PAKO designated land in the City must be mentioned in the Summary. Furthermore, the finding that this conflict and conversion of land is less than significant is unsupported where the 12 acres represents .4% of the PAKO-designated land in the City. This impact may also be cumulatively considerable and yet was not considered within the discussion of cumulative impacts.

19

The project would convert 82.5 acres of “Prime Farmland” and 39.8 acres of “Farmland of local importance” to non-agricultural uses. Table 1.C Impact 4.2.6.2 also lists “(5.3 acres)” but fails to identify any designation for these 5.3 acres. The summary table also only states that the conversion of state designated Prime Farmland is significant; any impact to Farmland of Local Importance is disregarded.

20

The project would convert a site currently actively involved in agricultural operation. The project site also has a significant LESA score, further demonstrating its importance and the significant impact of this project to agriculture. However, this score is misstated throughout the EIR as 83 (Table 1.C Impact 4.2.6.3), 85.30 (Table 4.2.A), and 85.07 (p. 4.2-10). The project would also have a cumulatively considerable agricultural impact.

21

No mitigation is required to reduce the individually and cumulatively significant adverse impacts of this project to agriculture. While the EIR identifies many mitigation measures that may be implemented, it fails to require any mitigation. The fact that the General Plan EIR found

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mitigation to be infeasible on a citywide scale does not mean that project level mitigation here is infeasible.

Mitigation measures identified by the Dept. of Conservation to reduce agricultural impacts include:

- The purchase of agricultural conservation easements;
- Transfer of development rights;
- Acquisition of farmland by the city or county;
- mitigation banking;
- the establishment of “urban limits,” greenbelts, and buffers;
- the payment of in-lieu fees sufficient to a purchase and maintain farmland conservation easements;
- and planning tools such as clustering development, use of density bonuses, and limiting “leapfrog” development.

The EIR refers to these as “tools” to mitigate the loss of agricultural land. The EIR does not find that it is infeasible to implement these mitigation measures.

While the measures regarding planning within the purview of the City may have been determined to be infeasible, ***the EIR does not provide evidence to support the finding of infeasibility with regard to project-level mitigation including the purchase or transfer of development rights, conservation easements, or donation of funds to assist in the preservation of agricultural lands.*** These measures must be required as mitigation. In particular, the purchase of a permanent agricultural conservation easements of land of at least 2:1 of equal quality is feasible and must be required to mitigate for impacts from the direct and growth inducing/cumulative loss of agricultural land. This may alternatively be accomplished by the donation of mitigation fees to a local, regional, or statewide organization that provides for acquisition and stewardship of agricultural conservation easements. Such mitigation is not found to be infeasible.

See, Attached Exhibit A, “Zero Sum Game: The Debate Over Off-Site Agricultural Mitigation Measures” by Joshua Safran, Vermont Journal of Environmental Law, Volume 6 2004-2005, explaining the benefits of mitigation and feasibility of such measures.

Air Quality

The EIR assumes that the Moreno Valley Unified School District has abandoned plans to locate several schools in close proximity to the project. However, Resolution No. 2007-08-81 did not abandon these sites but merely gave the superintendent the authority to do so and to enter into an agreement to that effect. There is no evidence in the EIR that any such abandonment of these sites actually occurred. As Resolution 2007-08-81 merely expressed an intention and did not formally abandon these school sites, the failure of the EIR to consider these potential sensitive receptors in the project vicinity with regards to air quality impacts and elsewhere in the EIR is unsupported.

The EIR fails to disclose all Moreno Valley General Plan Policies relevant to air pollutant emissions. Such omitted policies and objectives include:

- Ultimate Goal VII: achieve a community which “Emphasizes public health and safety...”
- Goal 6.1: “To achieve acceptable levels of protection from natural and man-made hazards to life, health, and property.”
- Objective 7.5 “Encourage efficient use of energy resources.”
- Policies 7.5.1; 7.5.2; 7.5.5 regarding energy efficiency.

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Health Risks

The EIR finds, contrary to the evidence in the record, that the project’s Health Risk impacts would be less than significant. Nevertheless, the project will result in significant cumulative health risks, discussed below, and mitigation must be incorporated to reduce such impacts.

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With regards to operational emissions, the Health Risk Assessment² (HRA) modeled emissions as if all trucks and cars moving onsite were located only on Eucalyptus Avenue, not driving to or from the buildings elsewhere onsite. The HRA thereby minimizes impacts where vehicles will be driving onsite closer to receptors and residences. The HRA also assumed that the buildings would have a height of 65 feet where, in fact, the buildings will be of varying height up to 50 feet with an average height of 39 feet and height at the corners of 43 feet. While this assumption may be beneficial to determine any wake effect, it may be detrimental if the EIR assumes that some emissions are blocked by the buildings.

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Further, the HRA assumes operation 350 days per year. This is not the 24/7 evaluation that the EIR claims occurred for all project impacts.

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The Environmental Summary Table 1.C states that the project would increase cancer risks at existing sensitive receptors by no more than 1.1 in 1 million, and at future development by 3 in 1 million. This is contradicted by the Air Quality Analysis and Air Quality section of the EIR, which puts project-related health risks increases of at up to 4.33 cancers in 1 million at residences to the north; it is not apparent that the closest residences to the southeast were evaluated or what the impact to those residences would be. Again, the Environmental Summary and EIR fail to accurately depict project effects. Furthermore, this risk is measured at a distance further than actual existing sensitive receptors (25 meters versus 50 feet) so that the actual health risk may be higher than predicted.

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Furthermore, according to the EIR, **this increase in cancer risk would add to an existing cancer risk of over 250 in 1 million (the rate for parts of Riverside County), well over the threshold of 10 in 1 million.** However, the EIR fails to actually evaluate and quantify present or expected health risks at nearby sensitive receptors with the project. The EIR fails as an informational document by failing to evaluate and quantify actual health risks with and without the project.

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² The HRA refers to the Air Quality Analysis, EIR App. B, p. 43-47.

The health risk assessment also evaluates worker health with a standard work schedule. This should be clarified in the EIR, especially where the EIR states that it evaluates impacts as to operation 24/7.

31

With regards to operational emissions, the EIR and HRA use projected 2025 emissions as a “median point for emission rates.” This again provides an emission estimate and health risk lower than that which would be seen with current emission rates. The EIR fails as an informational document by using the future emissions factors where health risks should be measured based on current emission.

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With regards to construction health risks, the EIR evaluates construction as occurring 22 days per month for 4 months, where construction will actually occur for almost a year and may occur 7 days a week. The claim that this evaluation is “conservative” is unsupported by the record.

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The health risks from this project will be a result of primarily diesel PM. In addition to cancer risks, diesel PM is known to cause immune system effects; reproductive, developmental, and endocrine effects; nervous system effects; and lung health problems, as recognized by the County in the General Plan. Immune system effects include increased allergic inflammatory responses and suppression of infection fighting ability. Diesel PM has also been associated with reproductive effects such as decreased sperm production, changes in fetal development, low birth weight and other impacts. Diesel PM exposure may also cause impairment to the central nervous system. (See, Exhibit C, *The Health Effects of Air Pollution on Children*, Michael T. Kleinman, Ph.D, Fall 2000, <http://aqmd.gov/forstudents/health_effects_on_children.html#WhyChildren>; Exhibit D, *Diesel and Health in America: the Lingering Threat*, Clean Air Task Force, February 2005, <http://www.catf.us/resources/publications/files/Diesel_Health_in_America.pdf>, Exhibit E, “Dirty Air Triggers More Heart Attacks than Cocaine,” Kate Kelland, Reuters 2011, and “Air Pollution Worse than Cocaine for Triggering Heart Attacks, says study,” Press Association 2011.)

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SCAQMD has stated with regards to the health effects from diesel PM:

“Diesel particles consist mainly of elemental carbon and other carbon-containing compounds... Diesel particles are microscopic...Due to their minute size, diesel particles can penetrate deeply into the lung. There is evidence that once in the lung, diesel particles may stay there for a long time.

In addition to particles, diesel exhaust contains several gaseous compounds including carbon monoxide, nitrogen oxides, sulfur dioxide and organic vapors, for example formaldehyde and 1,3-butadiene. Formaldehyde and 1,3-butadiene have been classified as toxic and hazardous air pollutants. Both have been shown to cause tumors in animal studies and there is evidence that exposure to high levels of 1,3-butadiene can cause cancer in humans...

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Diesel emissions may also be a problem for asthmatics. Some studies suggest that children with asthma who live near roadways with high amounts of diesel truck traffic

have more asthma attacks and use more asthma medication.

Some human volunteers, exposed to diesel exhaust in carefully controlled laboratory studies, reported symptoms such as eye and throat irritation, coughing, phlegm production, difficulty breathing, headache, lightheadedness, nausea and perception of unpleasant odors. Another laboratory study, in which volunteers were exposed to relatively high levels of diesel particles for about an hour, showed that such exposures could cause lung inflammation.” (*The Health Effects of Air Pollution on Children, supra.*)

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Furthermore, infants, children, and the elderly are more susceptible to diesel PM and its associated health impacts. Given this project’s potential close proximity to residential uses, this increased susceptibility is extremely relevant. With regards to infants and children, increased susceptibility to TACs and diesel PM exists for a variety of reasons. Children are generally more active than adults, have higher respiration rates, and inhale more pollutants deeper into the lung. Children also have more lung surface area in proportion to their body size and inhale more air pound for pound when compared to adults, taking in 20 to 50 percent more air and associated air pollutants than adults. When compared to adults, children spend more active time outdoors in polluted air environments and exert themselves harder than adults when playing outside. Importantly, this exposure to high pollutant levels in children occurs while their lungs are still developing, and therefore has more severe impacts on this sensitive group. (*The Health Effects of Air Pollution on Children, supra.*)

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This increased susceptibility to air pollutant emissions for children has resulted in the California EPA Office of Environmental Health Hazard Assessment (“OEHHA”) weighting cancer risk by a factor of 10 for exposures to carcinogens from birth to two years old, and by a factor of 3 for exposures from 2 years old to 15 years old. (Exhibit F, *Technical Support Document for Cancer Potency Factors: Methodologies for derivation, listing of available values, and adjustments to allow for early life stage exposures*, California EPA OEHHA Air Toxicology and Epidemiology Branch, April 2009, p. 3. <http://www.oehha.ca.gov/air/hot_spots/pdf/TSDCPFApril_09.pdf>) It is unclear that these increased risks were accounted for in the EIR. Additionally, recent studies conducted by SCAQMD’s Brain and Lung Tumor and Air Pollution Foundation have found a specific connection between exposure to diesel PM and brain cancer in children. (Annual Meeting of the Brain & Lung Tumor and Air Pollution Foundation, April 2, 2010, <<http://www.aqmd.gov/hb/2010/April/100425a.htm>>)

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In addition to an increased risk of cancer, the effects of diesel PM on children include slowed lung function and growth, increased emergency room visits, increased incidences of asthma and bronchitis, crib death, asthma respiratory infections, allergic symptoms, and asthma hospitalizations. (*Diesel and Health in America: the Lingering Threat, supra.*)

The EIR, in evaluating health risks, failed weight potential cancer and non-cancer impacts from the project. Impacts to children and the elderly near the project may be elevated in comparison to the risks stated in the EIR.

See also, Attached Exhibit B, “Appendix G, Emissions Inventory Methodology and Results,”

California Air Resources Control Board. This study is a comprehensive re-evaluation of the heavy duty diesel truck emissions inventory for California and contains EMFAC modeling methodology to estimate vehicle emissions.

37

Exhibit G is also instructive. The “Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning: a Reference for Local Governments within the South Coast Air Quality Management District,” May 6, 2005, details the harms of air pollution on health and public welfare and provides guidance on how harms may be measured and minimized.

38

The attached Exhibit H, “Good Neighbor Guidelines for Siting New and/or Modified Warehouse/Distribution Facilities,” WRCOG Regional Air Quality Task Force, September 12, 2005, provides additional guidance for reducing impacts from diesel PM through the use of buffers and other methods that should be considered in re-evaluating project impacts and mitigation measures/alternatives to the proposed project.

39

Attached Exhibit I provides calculation methods for PM 2.5, “Final-Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds,” October 2006.

40

Air Quality Management Plan Inconsistency

The EIR contemplates that “it is uncertain if [the project] is consistent with the AQMP.” In fact, the project is *inconsistent* with the AQMP as it has not been considered in the General Plan. The statement that it is uncertain if the project is consistent is not supported by the facts in the EIR.

41

Construction

It is not clear whether the EIR considers construction emissions from all sources or merely construction equipment at 4.3.6.2. For instance, it is unclear whether the fugitive dust emissions or the importation of 200 cubic yards of soil during grading and 339,561 cubic yards of fill during excavation were considered in the construction air quality evaluation. If only construction equipment was considered, then the EIR is deficient for failing to consider emissions from all construction sources.

42

Additionally, the EIR does not disclose the actual peak daily emissions should construction phasing overlap. At least two construction phases (architectural coatings and paving) are expected to overlap. Also, no phasing of construction is required of the project. (*See*, App. B p. 23) Phasing as projected must be required and/or the EIR must disclose actual peak daily emissions with the overlap of construction phases.

43

With regards to exceedances of localized significance thresholds, the EIR separately considers emissions from different phases of construction. Again, any overlap must be considered and the phasing must be required so that further overlap of phasing, and associated additional pollutant emissions, do not occur. Furthermore, it does not appear that any phases other than grading and architectural coating were considered; impacts from site preparation, building construction, and paving are conspicuously absent. The EIR is again flawed as an informational document.

44

Diesel construction equipment is evaluated for use at a maximum 8 hours per day but as few as 6 hours per day. There is no requirement that this be the maximum operating time for equipment,

45

and this surely is not the evaluation of project effects at 24/7 operation that the EIR purports to examine. Furthermore, while mitigation for noise impacts allegedly limits construction-related activities that would result in “high noise levels” to occur between set hours, **this still permits construction for up to 14 hours per day; there is no such limit for non-high noise level activities; and written approval may be obtained to permit any construction 24/7.**

45

(MM4.9.6.1D) The limitation of 8 hours per day for use of construction equipment is unreasonable and not supported by facts in the EIR. Construction equipment use 24/7 must be considered.

Similarly, the Air Quality Analysis considers a maximum daily disturbed acreage of 4 acres in order to evaluate construction LST impacts. This assumption is not supported by the potential to construct the project 24/7 until completion. The LST analysis also looks at 25 meters, rather than the 50 feet distance to the nearest sensitive receptors. (Air Quality Analysis p. 26) LST impacts are understated as a result of these discrepancies.

46

Odors are determined to be insignificant as a result of the fact that they would not occur after construction. (Air Quality Analysis p. 27) However, where construction would occur for almost a year, this assumption of only a short-term impact is erroneous. Odors from equipment during construction is a significant and unmitigated impact that is not disclosed in the EIR.

47

LSTs for project operation are also flawed as the evaluation considers a 5 acre site at 25 meters. Neither the Air Quality Analysis nor the EIR cite the source or reasoning for considering only 5 acres of the project site for evaluating LSTs during project operation. Impacts are understated.

48

With regards to mitigation measures for construction air quality impacts:

All construction equipment staging areas should be located at least 1000 feet from sensitive receptors. (Mitigation Measure (“MM”) 4.3.6.2A.)

49

With regards to MM4.3.6.2B, “Power sources” is vague; as is “clean-fuel generators.” If electric power poles or a certain type of generator is meant, those alternatives must be explicitly stated.

50

MM 4.3.6.2C does not go far enough by requiring only Tier II equipment and only during the rough/mass grading phase, and only inclusive of rubber-tired dozers and scrapers. It is feasible to require Tier III or higher equipment for all phases of construction and for all equipment where technologically available.

51

MM 4.3.6.2D is not a mitigation measure but California law. The public and decision-makers are deceived by the incorporation of this and other laws in the Mitigation Measure sections of the EIR so that it looks like much more mitigation is being required of the project that is actually occurring.

52

MM 4.3.6.2H is likewise not a mitigation measure. It is feasible to require, as mitigation, that the construction equipment be maintained in good condition and in proper tune, and that construction equipment always be prohibited from idling for 5 minutes or more. It is feasible to not limit this mitigation to “smog season.”

53

MM 4.3.6.2I is not a mitigation measure but a CARB requirement. 54

MM 4.3.6.2J is uncertain and unenforceable, as it merely requires that documents have “notations”, not that any mitigation occur. The bullet points are further uncertain and unenforceable where they require mitigation only where “feasible”. 55

Regarding MM 4.3.6.2K, no mitigation is certain to occur without the addition of a time limit for responding to air quality issues. It is feasible to require response and resolution within 24 hours. 56

MM 4.3.6.2L merely requires the posting of signs, not that truck drivers turn off engines when not in use or that trucks not idle for more than 3 minutes. 57

At MM 4.3.6.3A, the word “should” must be changed to “shall” to ensure enforceability. As written, the measure is vague and unenforceable. 58

Operational Impacts

Operation of the project will have significant impacts to CO, ROG, NOX, PM10, and PM2.5. However not all feasible mitigation has been required of the project. Moreover, the EIR baselessly concludes that no feasible mitigation exists for impacts from mobile sources and fails to require any mitigation for this project’s enormous mobile source emissions. For instance, mobile source emissions will account for 1,800 lbs/day of the project’s total 1,801.1 lbs/day of CO, well over three times the 550 lbs/day threshold. Likewise, mobile source emissions will account for 2,000 lbs/day of the project’s total 2,001.3 lbs/day of NOX, over thirty-six times the 55 lbs/day threshold. (See, Table 4.3.L at EIR p. 4.3-33) The EIR and Air Quality Analysis nevertheless conclude without reason what emissions from project related truck exhaust is “outside the control of this project” and therefore there is no mitigation available to reduce these air quality impacts. (See, e.g. Air Quality Analysis p. 1) To the contrary, feasible mitigation exists to reduce operational air quality impacts as detailed below and including, for example, requiring Smartway carriers for project operation. 59

With regards to Mitigation for Operational Air Quality impacts, MM4.3.6.5A and 4.3.6.5B are vague, uncertain, and unenforceable. While alternatives and performance standards are allowable, these measures do not demonstrate that any mitigation will be required of the project or that they will in any way require all feasible mitigation. It is feasible to require each of the alternatives listed as mitigation for the project. Accordingly, the following mitigation measures must be incorporated to reduce operational air quality impacts:

- Preferential parking for employee vanpooling/carpooling
 - Bicycle parking facilities
 - Bus turnouts
 - Require construction of buildings to exceed Title 24 requirement by 20 + percent.
 - Install low-emissions water heaters
 - Install central water heating systems
- 60

- Require use of energy-efficient appliances
- Require increased insulation
- Require use of automated controls for air conditioners
- Require use of energy-efficient parking lot lighting.
- Require use of lighting controls and energy –efficient lighting.
- Require use of low-VOC interior and exterior coatings during any project repainting.
- Require on-site improvements such as sidewalks or pedestrian walkways to promote pedestrian activity and reduce the number of vehicle trips.
- Require installation of skylights and energy-efficient lighting that exceeds current California Title 24 standards where feasible, including electronic dimming ballasts and computer-controlled daylight sensors in the buildings.
- Require planting of shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and building shall be planted at the proposed project site to minimize the heat island effect and thereby reduce the amount of air conditioning required.
- Require installation of fans to assist natural ventilation,
- Require installation of centralized water and space conditioning systems or, alternatively, high efficiency individual heating and cooling units
- Require installation of automatic setback thermostats.
- Require the incorporation of the following to reduce energy demand associated with potable water conveyance through the following methods:
 - Require incorporation of drought-tolerant plants into the landscaping palette; and
 - Require incorporation of water-efficient irrigation techniques.
- Require installation of energy-efficient low-pressure sodium parking lot lights or equivalent as determined by the City;
- Require that buildings be oriented north-south;
- Require implementation of an on-site circulation plan in parking lots to reduce vehicle queuing;
- Require applicant to develop a trip reduction plan to achieve 1.5 average vehicle ridership (AVR) for businesses with fewer than 100 employees or multi-tenant worksites;
- Require project to include bicycle parking facilities such as bicycle lockers and racks;
- Require project to include showers for bicycling employees use;
- Require construction of on-site pedestrian facility improvements including building access that is physically separated from street and parking lot traffic and walk paths.

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Likewise, all alternatives listed at MM 4.3.6.6A are feasible and each must be incorporated into the project as below:

- Buildings shall exceed current California Title 24 Energy Efficiency performance standards for water heating and space heating and cooling.
- Increase in insulation such that heat transfer and thermal bridging is minimized.
- Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption.

Incorporate dual-paned or other energy-efficient windows.

Incorporate energy-efficient space heating and cooling equipment.

Interior and exterior energy-efficient lighting which exceeds the California Title 24 Energy Efficiency performance standards shall be installed.

Install automatic devices to turn off lights when they are not needed.

Shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and buildings shall be planted at the project site.

Paint and surface color palette for the project shall emphasize light and off-white colors which reflect heat away from the buildings.

All buildings shall be designed to accommodate renewable energy sources, such as photovoltaic solar electricity systems, appropriate to their architectural design, and shall incorporate renewable electricity systems.

The project shall implement a landscaping palette emphasizing drought tolerant plants.

The project shall implement use of water-efficient irrigation techniques.

The project shall implement EPA Certified WaterSense labeled for equivalent faucets, high-efficiency toilets (HETs), and water-conserving shower heads.

The project shall provide secure, weather protected, on-site bicycle storage/parking.

The project shall provide on-site showers (one for males and one for females).

Lockers for employees shall be provided.

The project shall establish a Transportation Management Association (TMA). The TMA will coordinate with other TMAs within the City to encourage and coordinate carpooling among building occupants. The TMA will advertise its services to building occupants, and offer transit and/or other incentives to reduce GHG emissions. A plan will be submitted by the TMA to the City within two months of project completion that outlines the measures implemented by the TMA, as well as contact information.

The project shall provide preferential parking for carpools and vanpools. Locations and configurations of proposed preferential parking for carpools and vanpools are subject to review and approval by the City. Prior to final site plan approval, preferential parking for carpools and vanpools shall be delineated on the project site plan.

The project shall provide at least two electric vehicle charging stations. Locations and configurations of proposed charging stations are subject to review and approval by the City. Prior to issuance of the first building permit, stub outs for charging stations shall be indicated on the project building plans.

Lease/purchase documents shall require the implementation of the following mitigation measures by contract specification:

- Implement compressed workweek schedules.
- SmartWay partnership: Achieve at least 20 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of consolidated trips carried by SmartWay carriers until it reaches a minimum of 90 percent of all long haul trips carried by SmartWay 1.0 or greater carriers.
- Achievement of at least 15 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of long haul trips carried by SmartWay carriers until it reaches a minimum of 85 percent of all consolidator trips carried by SmartWay 1.0 or greater carriers.
- Require that all fleet vehicles conform to 2010 air quality standards or better.

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- Install of catalytic converters on all gasoline-powered equipment.
- Include to the greatest extent feasible electric powered and/or compressed natural gas fueled trucks and/or vehicles in fleets.
- Establish and encourage use of carpool/vanpool programs through methods such as vouchers.
- Require a charge for parking fees for single-occupancy vehicles.
- Provide preferential parking for EV and CNG vehicles consisting of at least 15% of parking stalls.
- Require use of electrical equipment (instead of gasoline-powered equipment) for landscape maintenance where technologically feasible.
- Require use of only electric (instead of diesel or gasoline-powered) yard trucks.
- Require that all trucks within the fleet be SmartWay rated 1.25.

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Also, the Air Quality Analysis fails to list all thresholds of significance, specifically threshold 3(c): whether the project would result in any cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard. (Air Quality Analysis, App.B, p. 19.)

61

Cumulative Impacts

As discussed above, **the EIR failed to substantively evaluate the potential cumulative health risk impacts to sensitive receptors near the project, instead citing a CARB Map identifying a carcinogenic risk of over 250 in 1 million in the Riverside area. It is entirely possible that the risk is substantially higher in the project vicinity.** Without actual analysis of this matter, the public and decision-makers are denied disclosure of the project's cumulative health risk impacts, and the EIR fails as an informational document.

62

Likewise, the EIR fails to substantively and quantitatively evaluate cumulative impacts from project construction and operation. While the EIR concedes that such impacts will be substantial and unmitigated, the EIR omits any discussion or divulgence of the severity of such effects.

63

Biological Resources

Mitigation Measure 4.4.6.1A will reduce impacts to migratory bird species, however these impacts are only minimally discussed in the EIR. The Environmental Summary likewise fails to mention impacts to migratory birds or passerine birds. Furthermore, the Environmental Summary states that this mitigation measure will reduce impacts to burrowing owls, not migratory birds. It should be clarified that MM4.4.6.1A will reduce potentially significant impacts to migratory nesting birds, not burrowing owls.

64

The distance maintained from burrowing owl dens of 160 feet during the non-breeding season and 250 during the breeding season is not sufficient. A recent "Staff Report on Burrowing Owl Mitigation" by the Department of Fish and Game found that the following distances from nesting sites are required for low, medium, and high disturbance activities. ("Staff Report on Burrowing

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Owl Mitigation,” State of California Natural Resources Agency, Department of Fish and Game March 7, 2012, <<http://www.dfg.ca.gov/wildlife/nongame/docs/BUOWStaffReport.pdf>>, p.9-10)

Time of Year	Low Disturbance	Medium Disturbance	High Disturbance
April 1-Aug 15	200 meters	500 meters	500 meters
August 16-Oct 15	200 meters	200 meters	500 meters
Oct 16- Mar 31	50 meters	100 meters	500 meters

The DFG staff report also provides updated guidance on passive relocation of burrowing owls which must be reviewed and incorporated into any mitigation. (*Id.* at p.10-11) The Staff report also found that if lesser buffers are permitted, a “broad-scale, long-term, scientifically-rigorous monitoring program” must be implemented to ensure that burrowing owls are not detrimentally affected by alternative approaches. (*Id.* at p. 10) Here, lesser buffers are required without implementing any rigorous monitoring to ensure that significant impacts do not occur. There is also no consideration of potential impacts from construction to burrowing owls on neighboring sites where disturbance may occur within 500 meters of burrows. Mitigation may be needed for potential impacts to burrowing owls on neighboring sites.

65

The EIR’s relied upon “Burrowing Owl Survey Protocol and Mitigation Guidelines”, California Burrowing Owl Consortium from 1993 is outdated given the guidance documents presently available for mitigating for impacts to the burrowing owl. The EIR and mitigation measures must be updated to account for these recent studies and guidance for mitigating impacts to the Burrowing Owl.

The following recommended mitigation measures must be implemented to reduce impacts to Burrowing Owls:

1. Where habitat will be temporarily disturbed, restore the disturbed area to pre-project condition including decompacting soil and revegetating. Permanent habitat protection may be warranted if there is the potential that the temporary impacts may render a nesting site (nesting burrow and satellite burrows) unsustainable or unavailable depending on the time frame, resulting in reduced survival or abandonment.
2. Mitigate for permanent impacts to nesting, occupied and satellite burrows and/or burrowing owl habitat such that the habitat acreage, number of burrows and burrowing owls impacted are replaced based on site-specific analysis and accounting for natal area,

home range, foraging area, and other factors influencing burrowing owls and burrowing owl population persistence in the project area.

3. Mitigate for permanent impacts to nesting, occupied and satellite burrows and burrowing owl habitat with (a) permanent conservation of similar vegetation communities (grassland, scrublands, desert, urban, and agriculture) to provide for burrowing owl nesting, foraging, wintering, and dispersal (i.e., during breeding and non-breeding seasons) comparable to or better than that of the impact area, and (b) sufficiently large acreage, and presence of fossorial mammals.

4. Alternatively, where a burrowing owl population appears to be highly adapted to heavily altered habitats such as golf courses, airports, athletic fields, and business complexes, permanently protecting the land, augmenting the site with artificial burrows, and enhancing and maintaining those areas may enhance sustainability of the burrowing owl population onsite. Maintenance includes keeping lands grazed or mowed with weed eaters or push mowers, free from trees and shrubs, and preventing excessive human and human-related disturbance (e.g., walking, jogging, off-road activity, dog-walking) and loose and feral pets (chasing and, presumably, preying upon owls) that make the environment uninhabitable for burrowing owls

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5. Permanently protect mitigation land through a conservation easement deeded to a nonprofit conservation organization or public agency with a conservation mission, for the purpose of conserving burrowing owl habitat and prohibiting activities incompatible with burrowing owl use. If the project is located within the service area of a Department approved burrowing owl conservation bank, the project proponent may purchase available burrowing owl conservation bank credits.

6. Fund the maintenance and management of mitigation land through the establishment of a long-term funding mechanism such as an endowment.

The project will also have significant impacts to riparian/riverine habitat which is not adequately mitigated through the uncertain and deferred mitigation measures at MM 4.4.6.2A and 4.4.6.2B. Mitigation Measure 4.4.6.2A alleges to require the offsite replacement of habitat at a 2:1 ratio; however, the measure only requires contribution of in lieu fees to the SAWA and does not ensure that the fees will be used for the acquisition of equivalent habitat. The required mitigation is uncertain to occur.

66

Mitigation Measure 4.4.6.2B improperly defers mitigation by requiring the preparation and implementation of a Habitat Mitigation and Monitoring Plan to oversee restoration of temporarily effected areas to pre-construction contours and vegetation. Deferred mitigation is only permissible where, for practical reasons, it is not feasible to prescribe specific mitigation measures in the EIR. (*Communities for a Better Environment v. City of Richmond* (2010) 184 Cal.App.4th 70, 94.) The EIR does not demonstrate that it is infeasible to presently prepare this plan. Moreover, this Plan is not subject to any performance standards or alternatives. MM4.4.6.2B thereby improperly defers mitigation, and impacts to riparian/riverine habitat are significant and unmitigated.

67

The proposed project also will permanently impact federally protected wetlands and jurisdictional waters. Again, this impact is inadequately and uncertainly mitigated through the uncertain mitigation measures at MM 4.4.6.3A. Mitigation Measure 4.4.6.3A alleges to require mitigation at a 2:1 ratio. However, the measure only requires contribution of in lieu fees to the SAWA and does not ensure that the fees will be used for the acquisition of equivalent wetlands. This mitigation is uncertain and inadequate.

68

The Cumulative Impact analysis with regards to biological impacts fails to consider impacts deemed to be individually significant, instead focusing on impacts offset by the MSHCP. Specifically, the EIR fails to evaluate the cumulative impacts to burrowing owls and migratory nesting birds; riparian and riverine habitat; and protected wetlands/waters. The EIR fails as an informational document by failing to consider the project's cumulative effects in these areas.

69

The Determination of Biologically Equivalent or Superior Preservation Report (EIR App. C) suggests mitigation measures for edge treatments including lighting and noise, but fails to discuss or evaluate these potential impacts from lighting and noise on biology. (p. 4-6)

70

Cultural Resources

With regards to archaeological resources, the project is located within the Moreno Hills Complex, an area of archaeological sites. Sixty-five archaeological sites and 22 historic buildings have been documented within a one mile radius of the project. The EIR gives short shrift to the potential archaeological impacts of the project given its high likelihood of containing archaeological and native American resources. It is not apparent that the Luiseno or Cahuilla Indians were consulted with regards to potential onsite resources as part of the cultural resource research for the project.

71

Mitigation measures for prehistoric cultural/archaeological resources are insufficient and uncertain to mitigate for impacts. MM 4.5.6.1A provides only for temporarily redirecting ground disturbance, not for halting any disturbance in the event that such a halt is necessary. Further, the archaeological monitor should be one determined to be qualified by the city, not merely one selected by the applicant. At MM 4.5.6.1B and 4.5.6.1C, no authority is given to the Native American monitor beyond aiding and recommending to the archaeologist. These measures must require consensus between the Native American monitor and archaeologist in order to ensure that impacts to Native American archeology is adequately mitigated below a level of significance. At MM 4.5.6.1D, it is unclear what will become of artifacts after any temporary curation, and vague who "stakeholders" refers to.

72

With regards to paleontological impacts, the project site has been identified as having a high potential to contain significant paleontological resources. Mitigation for paleontological impacts is improperly deferred, requiring the preparation of a Paleontological Resource Impact Mitigation Program in the future rather than divulging the details of the mitigation measure in

73

the EIR. The EIR states no reason why this program cannot be presently prepared for review by the public and decisionmakers. The remaining mitigation measures for paleontological impacts allow for only the rapid salvage of fossils/bone, not for the halting of excavation while proper recovery is conducted. It is uncertain who selects the qualified paleontological monitor; such monitor should be independently selected by the City. It is uncertain that there is a museum repository available for permanent curation and storage of any paleontological resources. Overall, the mitigation for paleontological impacts is uncertain and deferred. Impacts to paleontological resources remain potentially significant.

73

The EIR selects a too small area to evaluate cumulative impacts to cultural resources, evaluating on impacts within the City of Moreno Valley. There is no explanation of why the City boundaries were chosen for this cumulative impact analysis. The cumulative impact section fails entirely to evaluate and analyze impacts, instead concluding without reasons that any such impacts will be less than significant. This conclusion is unsupported by evidence in the EIR.

74

Hydrology and Water Quality

The Project would result in storm water flows over double the existing cubic feet per second and at a substantially increased volume. Despite this acknowledgement, the EIR improperly defers preparation of the Final Hydrology Study with supporting engineering calculations without reason. (*Communities for a Better Environment v. City of Richmond* (2010) 184 Cal.App.4th 70, 94.) There is insufficient evidence without this study to conclude that impacts may be reduced below a level of significance.

75

Likewise, the cumulative impact analysis relies on the capability to mitigate project effects below a level of significance, where this ability has not been demonstrated as a result of deferred study. Additionally, the cumulative impact analysis limits consideration of cumulative impacts to the City of Moreno Valley where there is no support for limiting within this area. To the contrary, as the site is located in the Santa Ana River Basin, cumulative impacts to these area watersheds must be considered.

76

Hazards/Hazardous Materials

Appendix F demonstrates that the last soil sampling was conducted in 2003-2004. Any findings with regards to the presence of hazards or hazardous materials onsite is therefore outdated. The site has persisted in agricultural use and may since have been exposed to additional pesticides or other hazardous materials. Additional study concerning whether such materials exist onsite must be undertaken.

77

Land Use/Planning

The project will result in significant impacts to land use/ planning for a myriad of reasons. Nonetheless, the evaluation of impacts to/from land use and planning omit consideration and

78

divulgence of several project effects. For instance, discussion of the RTP fails to mention any potential effect from moving or omitting the trail segment, or from the fact that the only mitigation provided for traffic impacts consists of the payment of in lieu fees. The discussion of the RTP also fails to discuss conflicts with the “improve air quality and promote energy efficiency” section of the RTP. Rather, the EIR references other sections and states that the project is consistent with the RTP. This conclusion is not supported by the EIR or narrative reasoning therein. Hence, while the EIR is right to conclude that the project will result in significant impacts to land use/ planning, the EIR fails to provide adequate information concerning such effects.

78

With regards to cumulative impacts, the EIR acknowledges that the Project may create an over-supply of warehousing space in the city cumulative with only WestRidge. It is not clear whether this assessment also accounts for the other planned or proposed industrial warehousing in the City. Nevertheless, the addition of potentially unneeded warehousing space and loss of up to 584 multi-family residential units which may have contributed to the affordable housing supply is significant and supports project denial. (See also, for instance, “*Moreno Valley: Sketchers’ warehouse has caused net job loss,*” <<http://www.pe.com/business/business-headlines/20120201-moreno-valley-skechers-warehouse-has-caused-net-job-loss.ece>>)

79

Noise

The noise impact section of the EIR is fatally flawed and causes the EIR to fail as an informational document. The EIR fails to measure noise impacts against the actual thresholds of significance and with regards to all project noise sources.

80

The EIR notes that the nearest proposed residential uses are 25 feet to the south of the project site, but states that trucks will operate approximately 280 feet from those proposed residences at loading/unloading areas. There is no evidence in the EIR that this distance of 280 feet is required or evidence that the distance of the **loading areas** is equal to the distance of **truck operation**. To the contrary, the EIR states that the nearest internal driveways are approximately 5 ft. from the southern boundary of the project, and about 30 feet from future residences. The EIR nevertheless utilizes a 280 foot distance from sensitive receptors. This distance is contradicted in the EIR. (See, p. 4.9-23, 4.9-4).

81

The EIR arbitrarily creates a threshold for significance for noise of a 3dbA increase, stating that only this level of increase is considered potentially significant and that a 3 dbA change is used as a threshold of significance. This 3dbA change is **not** a threshold of significance adopted by the City of Moreno Valley. (Guidelines § 15064.7) Furthermore, the statement that only audible changes in existing ambient or background noise levels are considered potentially significant is unsupported except by further conclusory statements in the EIR.

82

The EIR also wrongly measures noise at the nearest sensitive receptors instead of at the property

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line. The property line is the proper locale for measuring the project's noise impact and increases in ambient noise levels.

83

The EIR wrongly concludes that the project will not result in a substantial increase in ambient noise levels in the project vicinity above levels existing without the project with regards to long term traffic noise. The project will, in fact, result in noise increases of **up to 13.6 dBA compared to existing levels (Table 4.9.G) and up to 13.3 dBA in 2012.**³ **These increases are significant.** The conclusion that these increases are less than significant is not based on the threshold of significance, the data of the EIR, or any other facts or evidence. The EIR therefore wrongly concludes that traffic noise impacts will be less than significant.

84

Moreover, the EIR separates out operational noise into three sections where such noise and impacts would all occur during operation: Traffic Noise, Long-Term Operational Noise, and Noise Impacts to Adjacent Future Development. In so doing, the EIR fails to evaluate Operational Noise as a whole from all sources; and fails to evaluate all operational noise based upon the **two unique thresholds of significance.** The EIR fails to consider the potential exposure of persons to, or generation of, noise levels in excess of standards established in the General Plan, Municipal Code, or other standards, from traffic or to future residents. The EIR also fails to evaluate the total noise increases from project operation above existing levels. The EIR fails as an informational document by failing to consider these potentially significant effects.

85

In Section 4.9.5.5, in addition to failing to consider impacts from project traffic in consideration of whether the project exposes people to or generated noise above applicable noise standards, the EIR relies heavily on noise attenuation and shielding from the buildings. This attenuation is not certain, however, especially where noise is considered only at the ground level and, again, only at the nearest off-site residential uses rather than the property line. This section also utilizes 75dBA Lmax and 65 dBA without discussion of the General Plan's acceptable residential exterior noise of 65 and interior noise of 45 dBA CNEL.

86

Section 4.9.5.6 does not evaluate noise level increases in the project vicinity above existing levels as alleged. Instead, almost each subsection looks to noise standards, a separate threshold of significance. The project may increase ambient noise with or without exceeding noise standards. This EIR again fails to act as an accurate or adequate informational document.

87

The EIR finds that short-term construction noise impacts will be potentially significant but mitigated below a level of significance through compliance with permitted hours (MM 4.9.6.1D). This conclusion is not supported by the EIR where the project will result in a substantial temporary increase in ambient noise in the project vicinity, and compliance with project hours

88

³ Note: there is a discrepancy throughout the EIR concerning what year constitutes "Opening Year". For example, the Noise Study has Opening Year at 2012, while the Traffic Study puts Opening Year at 2016 where both concern traffic and daily trips. The EIR is internally inconsistent and provides decision-makers and the public with erroneous information by failing to accurately and consistently evaluate project effects.

will not reduce any increases in ambient noise. Moreover, though the EIR does not state the level of existing noise onsite and in the project vicinity (another flaw of the EIR), the EIR concludes that construction of the project will significantly increase noise to 91 dBA Lmax. There is no evidence that any of the other mitigation measures listed will reduce this noise below a level of significance.

88

Furthermore, the EIR does not at all evaluate construction noise impacts/ temporary impacts with regards to the potential exposure of persons to, or generation of, noise levels in excess of standards established in the General Plan, Municipal Code, or other standards.

89

MM 4.9.6.1D is also uncertain as written approval may be obtained to completely override any such requirement. This does not demonstrate that the City if committed to mitigation.

90

Not all feasible mitigation has been required of the project. The following additional mitigation must be incorporated into project construction:

1. Temporary noise barriers must be installed during project construction.
2. Where technically feasible, utilize only electrical construction equipment
3. During construction, the developer shall require that all contractors turn off all construction equipment and delivery vehicles when not in use and prohibit idling in excess of 3 minutes.
4. Require the use of rubberized asphalt for construction of all roadways and parking areas.
5. Maintain quality pavement conditions that are free of bumps, pot holes, pavement cracks, differential settlement in bridge approaches or individual pavement slabs, etc.
6. Ban heavy trucks near vibration and noise sensitive uses.

91

Lastly, cumulative noise impacts were found to be less than significant based on the above-detailed uncertain mitigation measures and incomplete evaluation of noise impacts. Cumulative noise impacts should be considered significant up to and until such a time that complete and accurate analysis of the project's individual noise impacts as completed and mitigation is demonstrated to be certain, enforceable, and able to reduce impacts below a level of significance.

92

Exhibits J-N provide guidance on calculating noise effects, the potential health risks from noise, and methods for minimizing and mitigating for noise impacts.

93

Transportation/Traffic

Project trip generation estimates are based on the ITE rates for buildings under 200k sq. ft. and Moreno Valley rates for buildings over 200k sq. ft. The EIR does not state why a single trip generation rate calculation method was not used.

94

Additionally, this section of the EIR, in addition to others, attempts to minimize project effects by comparing the proposed project's impacts to those which would potentially be caused by build-out onsite in the manner proposed by the General Plan, rather than assessing the impact of

95

the proposed project on the environment compared to *existing physical conditions onsite*. (Guidelines § 15126.2(a); *See, e.g. EIR Table 4.11.E*) By comparing the proposed project to a potential land use on site instead of the existing use which has minimal, if any, traffic generation, the EIR fails as an informational document.

95

Also, as with the remainder of the EIR, the Transportation/Traffic section fails to evaluate impacts in relation to the actual thresholds of significance. For example, the first threshold: whether the project would cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system; is evaluated only with regards to whether the project would exceed an LOS standard. (*See, p. 4.11-15 - 4.11-16.*) Whether there may be a substantial increase in vehicle trips or volume to capacity ratio on roads is never considered.

96

It is not clear that the design features or incompatible uses evaluation accounted for future residences near the project site. Likewise, the dismissal of potential impacts to schools is flawed for the reasons detailed above. Impacts from a great number of trucks sharing the roadway with passenger vehicles also does not appear to have been considered as a potentially incompatible use where such vehicles would doubtless share access to at least SR-60 in addition to other roadways.

97

Also, there is minimal discussion of conflicts with adopted plans/ policies supporting alternative transportation, such as those listed at pages 4.11-11 through 4.11-13. Moreover, the conclusion that the project will have a less than significant impact with regards to conflicts with adopted plans/ policies supporting alternative transportation is unsupported given the project's proposal to eliminate the planned trail segment on Quincy Ave from SR-60 to Fir Ave.

98

Page 4.11-18 states that the City Trails Commission has accepted the amendment to the Master Plan of Trails to relocate the Eucalyptus Avenue Trail to the north side of Eucalyptus and/or eliminate the planned trail segment on Quincy Ave from SR-60 to Fir Ave. This is inconsistent with the remainder of the EIR which states that such an amendment will need to be approved as part of the project. Moreover, it unclear if only relocation of the trail, only elimination of the plan trail segment, or both portions of the proposed amendment were accepted by the City Trails Commission.

99

The tables delineating The Project's LOS impacts make no attempt at quantifying delay once it exceeds 100 seconds. (Tables 4.11.F, 4.11.G, 4.11.H, 4.11.I, 4.11.J) While acknowledged as LOS F, the Tables fail to divulge how extensive these delays may be.

The Project will result in unacceptable LOS as stated in the EIR as follows:

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Impact	Number of Unsatisfactory Intersections	Number of Unsatisfactory Freeway Segments	Number of Unsatisfactory Freeway Ramps

Existing (2011) with Project	2	3	0
Opening Year (2016) With Project	3	4	0
Opening Year (2016) Cumulative With Project	8	6	0
Future Year (2035) With Project	12	9	9
General Plan Buildout With Project	13	Not Evaluated	Not Evaluated

Despite these impacts, the project does not require any additional mitigation at these intersections or roadways beyond contribution to the DIF and TUMF.

The EIR finds that impacts to intersections and roadway segments within the DIF and TUMF programs will be reduced below a level of significance despite the fact that many of these improvements are not yet funded and will likely not be funded or constructed for some time. Nonetheless, the EIR finds that impacts will be mitigated to less than significant at all significantly impacted roadway segments and intersections other than the SR-60 segments and ramps. The fact that an improvement is part of the DIF or TUMF program does not ensure that it will soon be planned or funded, and surely does not ensure that it will be planned, funded, and built by project opening or other future years evaluated in order to reduce impacts to less than significant. Mitigation is therefore uncertain, and the reasoning that “impacts would remain significant and unavoidable until such improvements are constructed” used elsewhere in the EIR’s reasoning applies.

In fact, the roadways reliant on TUMF funds are not presently scheduled for improvement nor are the improvements funded. (See, e.g., *2011 Annual Report, Transportation Uniform Mitigation Fee Program*, Western Riverside Council of Governments, “Five Year Transportation Improvement Program,” <http://www.wrcog.cog.ca.us/downloads/AnnualReport_for_web.pdf>, p.39, See, also, <<http://www.wrcog.cog.ca.us/downloads/2012CentralZoneTIP020612.pdf>> [detailing funded expenditures in the Central Zone]) Furthermore, TUMF improvements can take up to 9 years to become a reality from a local jurisdiction developing a project to completion of construction. (*2011 Annual Report, Transportation Uniform Mitigation Fee Program, supra*, p.7) Project prioritization, programming, and allocation of funds may also be a barrier to improvements on the roadways impacted by this project. (*2011 Annual Report,*

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Transportation Uniform Mitigation Fee Program, supra, p.10) The EIR’s conclusion that project transportation impacts on local roadways and intersections is less than significant after mitigation is simply not supported by evidence and the realities of these fair share programs.

100

With regards to DIF funding, the EIR does not demonstrate that all impacts to city streets will be reduced below a level of significance or that adequate funding exists or will exist for needed improvements.

101

Mitigation requiring direct funding and completion of improvements at impacted roadways and intersections must be required of the project unless demonstrated to be infeasible. As the project currently stands, not all feasible mitigation has been required of this project to reduce traffic related impacts below a level of significance, and mitigation is uncertain and deferred.

102

Additionally, **the 2016 Opening Year Baseline is inconsistent with the opening year found elsewhere in the EIR.** For example, the Noise section of the EIR relied on an opening year of 2012. This discrepancy must be resolved.

103

Utilities and Service Systems

The EIR states that the Badlands landfill has a closure date of 2024 in some places and **2016** in other places, yet concludes under either assumption that there will be adequate capacity. (*Compare, e.g.*, p. 4.12-1 and p. 4.12-5) This assumption is not based on evidence in the record, particularly if the project has an opening year of 2016 and the landfill has a closing year of 2016, in which case a finding of adequate capacity is entirely contradicted by the EIR. The project will thus have a significant and unmitigated impact to solid waste disposal which is not disclosed in the EIR.

104

With regards to water supply, the EIR spends a great deal of time evaluating water demand compared to general plan build-out, but gives only a short mention of demand compared to *existing site condition*, as required by CEQA. The EIR is misleading with regards to the project’s water supply impacts.

105

GHGs

The EIR concludes that the project would not significantly conflict with applicable plans, policies, or regulations for reducing GHGs. However, many of the “consistency” determinations are unsupported by the project and the record. For instance, the EIR finds that the project is consistent with the City’s encouragement to install solar power, yet the project will not install any solar panels. Similarly, the EIR finds that the project is consistent with the aim to construct zero net energy buildings where this project will not be zero net energy. Other applicable policies are not discussed beyond stated conclusions. This portion of the EIR is highly conclusory and not supported by reasoning or evidence.

106

The EIR states that the project will have a LEED score of 20 out of 69. Table 4.13.D demonstrates that 55 out of 69 points are not infeasible. At least these potentially feasible measures must be implemented to mitigate for this project's enormous air quality and GHG impacts.

107

Compliance with GHG emission reduction strategies is not demonstrated as the mitigation measures for GHG impacts are uncertain and deferred. For instance, MM 4.13.6.1A merely requires compliance with state law required by Title 24.

108

MM 4.13.6.1B does not require all feasible mitigation and is vague. There is no amount stated by which the project must exceed Title 24; it is feasible to require that the project exceed Title 24 standards by at least 30%.

109

MM 4.13.6.1C does not ensure that water use efficiency will be met, as it merely requires that some water conservation strategy be implemented.

110

The project will nevertheless have a significant impact **that the EIR wrongly finds to be individually insignificant after mitigation. The project will emit 79,000 mtpy CO₂e, far above and beyond SCAQMD's 10,000tpy CO₂e threshold.** Despite finding such emissions to be significant, the EIR concludes that GHG emissions will be less than significant individually because the project's impacts alone would not cause or significantly contribute to climate change or have a substantial effect on consumption of fuels. The EIR wrongly evaluates GHG emissions on a global scale, where SCAQMD's quantitative threshold demonstrates the project exceeds that threshold of significance and the EIR does not demonstrate that the project complies with, at least, regional GHG reduction planning. Individual GHG impacts should be deemed significant and unmitigated.

111

Likewise, the EIR concludes on no factual basis that the project will not have a cumulatively significant impact on GHGs, despite finding exceedence of the SCAQMD threshold. The EIR's evaluation on a global scale is again improper.

112

Alternatives

The EIR concludes that Alternative 3, the Reduced Intensity Alternative, is the Environmentally Superior Alternative. Alternative 3 would, according to the EIR, have significant impacts to Aesthetics, Agriculture, Land Use, Air Quality, and Transportation. On the other hand, Alternative 5- the Off-site Location alternative, would only result in significant impacts to Agriculture, Air Quality, and Transportation; impacts to Aesthetics and Land Use would be eliminated or reduced below a level of significance. Hence, while both of these alternatives would reduce subsets of these project effects, the Off-site alternative is environmentally superior to the reduced intensity alternative.

113

Where there is an environmentally superior alternative that significantly decreases the significant impacts of the Project then that alternative must be approved rather than the Project if that alternative is feasible, even if the alternative would impede to some degree the attainment of the

114

project objectives, or would be more costly. [(PRC§ 21002; *Uphold Our Heritage v. Town of Woodside* (2007) 147 Cal.App.4th 587, 597, State CEQA Guidelines § 15126.6(b)] Here, both Alternative 3 and Alternative 5 will meet most project objectives and significantly reduce or eliminate environmental impacts. If the project is approved, one of these alternatives must be adopted in lieu of the project as proposed.

114

Conclusion

Thank you for your consideration of these comments and the attached and/or referenced material.

Sincerely,



Raymond W. Johnson
JOHNSON & SEDLACK

RESPONSE TO LETTER D-3

JOHNSON & SEDLACK

Response to Comment 1. The commenter provided some brief information about the purposes of CEQA. No response is necessary.

Response to Comment 2. The commenter's opinions on the quality of the environmental assessment that was done will be forwarded to the decision-makers for their consideration. The City disagrees with the commenter's generalized assertions regarding the adequacy of the Draft EIR. The comment that the conclusions in the EIR are not based in fact is erroneous. The Draft EIR is based on the findings of technical studies that were prepared for the project that were included in their entirety in the appendices to the Draft EIR. Those studies are all listed in Section 2.2.4, *Technical Reports*, of the Draft EIR, and listed separately in the appropriate impact assessment sub-section of Draft EIR Section 4, Impact Analysis (Sections 4.1 through 4.13). The project description and subsequent analysis in the EIR explain that the trail segment north of the realignment of Eucalyptus Avenue will be eliminated because it does not go anywhere, as it was planned when an undercrossing of the SR-60 was envisioned, but which has been eliminated from the General Plan and supporting planning documents and maps. Rather, the proposed trail will follow Eucalyptus Avenue with a leg south of Eucalyptus along the Quincy Channel, which will connect the trail to existing trails to the west and south. This information is not inconsistent in the EIR document.

In addition, the commenter is incorrect, Table 3.C and Figure 3-4 (in Section 3.8, *Cumulative Projects*) in the Project Description do accurately describe and show the locations of cumulative projects being evaluated in the EIR.

The EIR has provided accurate information about the proposed project and cumulative projects and therefore does not fail as an informational document.

Response to Comment 3. The City disagrees with the opinions of the commenter – The City believes the findings of the EIR are supported by substantial evidence and the EIR is an adequate informational document upon which the decision-makers can base their decisions. The responses below document the ways the EIR provides substantial evidence and complies with the requirements of CEQA.

Regarding the evaluation of environmental impacts, the Initial Study prepared for the proposed project was comprehensive and determined that impacts on forest resources, geology and soils, mineral resources, public services, and recreation would be less than significant with the implementation of mitigation requiring further analysis in an EIR. Those specific mitigation measures are identified in the Initial Study, Section 2.0 of the EIR and are also included in the Mitigation Monitoring and Reporting Plan (MMRP) attached to the Final EIR. The City formally initiated the environmental process with circulation of an NOP along with the Initial Study, which it sent to responsible agencies and interested individuals for a 30-day review period from February 4 to March 6, 2008. At the close of the public review period, the City had received 22 letters on the NOP. The NOP disclosed that an EIR would be prepared and the issues that would be addressed included: aesthetics (views and lighting), agricultural resources, air quality, biological resources, cultural and paleontological resources, hazards and hazardous materials, hydrology and water quality, land use and planning, noise, population and housing, traffic and circulation, utilities and service systems, and global climate change (i.e., Sections 4.1 through 4.13 in the Draft EIR). The commenter is in error that the Draft EIR did not address some of these topics. All of these potential impacts were addressed in appropriate sections of the DEIR.

In addition, the technical studies prepared in support of the DEIR analyses that address temporal-related impacts did allow for 24/7 operation. For example, the traffic study was based on peak-hour impacts assuming worst case conditions (i.e., not 24-hour operation), so 24/7 operation would actually lower peak hour traffic impacts. The project traffic data is the basis for the noise assessment, likewise allow for 24/7 operation. Similarly, page 13 of the project noise assessment states...

"These noise levels represent the worst-case scenario, which assumes that no shielding is provided between the traffic and the location where the noise contours are drawn. The specific assumptions used in developing these noise levels and model printouts are provided in Appendix A. Tables F, H, J, and L show that project-related traffic noise level increases would be 2.6 dBA or less along most roadway segments analyzed, except along Eucalyptus Avenue between Auto Mall Drive and Redlands Boulevard. This range of noise level changes is small and is not perceptible by the human ear. The portion of Eucalyptus Avenue with traffic noise increases greater than 3 dBA has no noise-sensitive uses (auto mall, commercial use, and vacant land only) directly adjacent to it."

Response to Comment 4. DEIR pages 4.2-8 and 4.2-9 clearly explain why mitigation for loss of agricultural land is not feasible on a local or regional basis, based on historical and current economic conditions related to agricultural crops in this portion of Riverside County. This conclusion is supported by the project-specific analysis provided in Appendix E of the DEIR.

In addition, the commenter is referred to Section 4 of this document for an evaluation of a less intensive modified plan, which is a subset of the Reduced Intensity Alternative evaluated in the DEIR (and which was determined to be environmentally superior to the Proposed Project). This less intensive plan proposes to develop 4 warehouse buildings, leaving the southeast portion of the site vacant for future development of residential uses consistent with existing zoning (R-5 and RA-2) adjacent to the existing residential neighborhood to the southeast.

Response to Comment 5. The commenter is incorrect – there are a number of measures recommended to offset anticipated traffic and air quality impacts of the project. These are described in their appropriate impact assessment sections (4.3 and 4.13, respectively) and summarized in Table 1.C of the Executive Summary. As outlined in Section 4.4.6, it is infeasible and ineffective to implement operational mitigation on future warehouse users that do not have specific tenants or end-users identified (Draft EIR, page 4.3-37), but Mitigation Measure 4.3.6.6A did address trucking and other activities on the site to the extent practical. In addition, the City has specifically identified the TUMF and DIF programs as the legally established method of mitigating respective regional and local traffic (i.e., road and intersection) impacts. In addition, the project traffic report specifically identifies a number of roadway and intersection improvements that will not be improved through the TUMF or DIF programs for which the proposed project would be responsible, as outlined in Mitigation Measures 4.11.6.4D, 4.11.6.4E, and 4.11.6.4F.

Response to Comment 6. The commenter's opinion that the mitigation measures in the EIR are vague, uncertain, unenforceable, and/or deferred is not based in fact, nor does the commenter provide any examples to support this contention. As detailed in the following responses, appropriate and enforceable mitigation of the project's significant individual and cumulative impacts have been identified in the Draft EIR. The City believes the mitigation measures recommended in the Draft EIR are appropriate based on the identified impacts of the project. However, certain measures or portions of measures suggested by the commenter (such as for air quality) have been incorporated in the Final EIR to clarify their implementation or help further reduce potential impacts. However, these changes or additions do not change the conclusions or overall analysis in the Draft EIR, as outlined in Final EIR Section 3.0, *Errata and Additions*. All mitigation measures that are in the Draft EIR, and mitigation language changed as a result of responses to comments by this commenter as well as the Sierra Club, have been included in the MMRP (Section 4.0 of the Final EIR) to ensure that they are being implemented.

Response to Comment 7. The City believes the alternatives analysis (Section 6.0 of the Draft EIR) is in compliance with *CEQA Guidelines* Section 15126.6(a), because the Draft EIR describes “a range of reasonable alternatives to the project, or to the location of the project which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project.” The EIR need not consider every conceivable alternative; rather it must consider a reasonable range of potentially feasible alternatives to the project, or to the location of the project, which would avoid or substantially lessen significant effects of the project, even if “these alternatives would impede to some degree the attainment of the project objectives, or would be more costly” (*CEQA Guidelines* Section 15126.6(b)). The discussion of project alternatives must “include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project.” The alternatives are to “substantially lessen the significant effects of the project”, not to satisfy the actual mitigation required.

The comment notes that the Draft EIR identifies Alternative 3, the Reduced Intensity Alternative, as the environmentally superior alternative but that Alternative 5, the Off-Site Location Alternative, would result in fewer significant impacts than Alternative 3 and therefore should have been identified as the environmentally superior alternative. It should be noted that Table 6.M contains a typographical error by omitting a “Significant” indication (“S”) under Alternative 5 relative to consistency with the AQMP. The text analysis of this issue in Section 6.3.5.3 (DEIR page 6-32) indicates air quality impacts of the project on another location would still be significant as it would still be inconsistent with the AQMP. This error has been corrected in Section 3, *EIR Errata and Additions*, of this document.

As detailed in the Draft EIR Tables 6.K, page 3-39, Alternative 3 reduces the severity of project-related air quality impacts and is the only alternative that eliminates the significant agricultural impacts. However, reduced, long-term air quality impacts would remain significant after mitigation for this alternative in the same way as the project. Alternative 5 would produce the same level of air pollution as the proposed project. Alternative 3 would reduce the volume of daily traffic trips when compared to the proposed project; however, such impacts would remain significant and unavoidable until roadway improvements are completed. Alternative 5 would generate the same level of traffic trips as the proposed project. Alternative 5 would eliminate impacts associated with land use and planning as this alternative would not require a Zone Change or General Plan Amendment. Alternative 5 would also eliminate the significant population/housing impacts and the significant aesthetic impacts; however, it would likely not reduce the significant agricultural impacts of the project compared to Alternative 3.

The remaining environmental issues would ultimately be similar to the proposed project through adherence to existing standards and mitigation measures. Though the Off-Site Location Alternative is located in a different part of the City, the amount of development under this alternative would remain the same as the proposed project, and it would satisfy all of the identified project objectives. In addition, the potential offsite location is not under the control of the project applicant, so it is problematic if development of the project could actually occur on an alternative site. Based on a review of all the potential impacts, the Draft EIR concluded that the Reduced Intensity Alternative appears to be the environmentally superior alternative for the project site (see Draft EIR page 6-39).

Under the environmentally superior alternative, the proposed project objectives are met but less square footage of warehouse uses would be built. However, Alternative 3 is the only alternative that would reduce the significant impacts to agricultural resources compared to the proposed project and therefore it results in a substantive environmental benefit in comparison to the proposed project. The environmentally superior alternative (reduced density) will result in reduced air pollution and greenhouse gas (GHG) emissions but the significance of these impacts remain significant and unavoidable for air quality, global climate change, and traffic in the same manner as the proposed project. The significant and unavoidable project impacts associated with GHG emissions and traffic

cannot be reduced to less than significant though reduction in the size of the project. The significant and unavoidable project impacts associated with air quality can be eliminated if the project is reduced to approximately 90,000 square feet (based on a linear reduction in the project's 990 pounds per day of operational NO_x emissions to below the 55 pounds per day threshold).

Under Alternative 5, all of the project objectives are met and it reduces two impacts to less than significant that were determined to be significant and unavoidable for the proposed project (consistency with the General Plan and Aesthetics), (see Draft EIR Section 6.5 Comparison of Project Alternatives, Table 6.M, pages 6-39 and 6-40.) The DEIR does correctly conclude that Alternative 5 is also environmentally superior to the proposed project (i.e., fewer significant impacts than the proposed project), however, the commenter incorrectly concludes that, because Alternative 5 meets most project objectives, it must be approved instead of the proposed project. Alternative 3 also reduces significant impacts of the proposed project, and is the only alternative that will reduce impacts to agricultural resources. The commenter claims that this information requires recirculation of the DEIR to identify Alternative 5 as the Environmentally Superior Alternative, but that is not correct - Alternative 3 is the Environmentally Superior Alternative.

In addition, the commenter is referred to Section 4 of this document for an evaluation of a less intensive modified plan, which is a subset of the Reduced Intensity Alternative evaluated in the DEIR (and which was determined to be environmentally superior to the Proposed Project). This less intensive plan proposes to develop 4 warehouse buildings, leaving the southeast portion of the site vacant for future development of residential uses consistent with existing zoning (R-5 and RA-2) adjacent to the existing residential neighborhood to the southeast.

Response to Comment 8. The commenter states that the EIR must be substantially supplemented, amended, and recirculated. The responses provided to the various comments submitted on the Draft EIR, including those of this commenter, indicate the information in the EIR is adequate and the EIR does not need to be recirculated. The rest of this comment summarizes characteristics of the project and related project approvals, so no response is necessary. One of the comments is regarding the status of vacant land around the project site. It does not appear any of the land surrounding the project site is presently being utilized for agriculture, although the area in general has been used for dry farming in the past. The current onsite and offsite land uses are described in detail in Section 4.8, *Land Use and Planning*.

Response to Comment 9. The commenter is correct, the conclusion of the paragraph will be corrected as follows to reflect the determination that impacts to views are significant:

Impact 4.1.6.1 Existing Visual Character or Quality of Site and Its Surroundings:
Implementation of the proposed project would replace the undeveloped character of the project site with an urban setting containing warehouse uses. Therefore, the change in the character of the site would be recognizable and would constitute a permanent alteration of the existing visual character of the project site. Although the visual characteristic of the project site would change, the proposed project would replace the existing vacant parcel with an attractive, well designed development through the use of architectural elements, landscaping, and design of the project site. In addition, the proposed project would be designed and constructed per applicable City Municipal Code and General Plan standards. Despite these requirements, a less than significant impact related to this issue would occur.

This will be corrected in Final EIR, Section 3.0, *EIR Errata and Additions*, but this modification does not change the overall conclusion of the EIR that this impact is significant.

Response to Comment 10. The EIR did conclude that the project would fundamentally change views of the project area, but the line-of-sight analyses of each building (Draft EIR, Figure 3.7A through 3.7F) demonstrate that the proposed buildings, including Building 2, will not completely block

views of the Mt. Russell Range or Box Springs Mountain due to their planned heights and setbacks from the freeway (Building 2) and nearby residences (Building 6). The Conservation Element objectives and policies referred to by the commenter encourage the following:

- Objective 7.7** Where practicable, preserve significant visual features significant views and vistas.
- Policy 7.7.4** Gilman Springs Road, Moreno Beach Drive, and State Route 60 shall be designated as local scenic roads.
- Policy 7.7.5** Require development along scenic roadways to be visually attractive and to allow for scenic views of the surrounding mountains and Mystic Lake.

Overall views of the upper slopes of the Mt. Russell Range, views of the Box Springs Mountains, the Badlands will be maintained from the SR-60 and surrounding residential areas, although some views of Mt. Russell and Box Springs Mountain may be partially obscured by the proposed development. Views from Gilman Springs Road and Moreno Beach will not be adversely affected by the project due to the distances involved of project buildings from these roadways. The Project Description and supporting materials demonstrate that the proposed buildings will be attractive and not eliminate important views in the surrounding areas. Therefore, the project does not significantly conflict with this General Plan objective or policies.

Mitigating the project by substantially changing the size, location, and/or heights of the buildings would prevent the project from providing logistics-type warehousing uses on this site. Lowering the heights of the buildings would render them unable to accommodate high cube warehouse users, and making smaller, more spread out buildings would eliminate a major reason for proposing a logistics-type warehousing project on this site (i.e., large buildings with ready freeway access). Interior heights of 30-40 feet are needed for these types of uses, which result in a maximum building height of approximately 50 feet. Note that only two of the buildings (#2 and #3) will be 50 feet in height, the other buildings will have a maximum height of 44 feet. For these reasons, these types of mitigation are not feasible for this type of project. The Project Description (Section 3.0 in the DEIR) indicates that the southern-most building will be almost 400 feet from the closest existing residences to the southeast (i.e., separated by several detention basins), and will be visually screened by landscaping. These project design features will help buffer the residences from the proposed warehouses.

It is at the discretion of the City to approve or disapprove this requested General Plan Amendment. If the City approves the project, it will have to adopt a Statement of Overriding Considerations and demonstrate that the various benefits of the project (e.g., economic, employment) outweigh or override its significant environmental impacts.

In addition, the commenter is referred to Section 4 of this document for an evaluation of a less intensive modified plan, which is a subset of the Reduced Intensity Alternative evaluated in the DEIR (and which was determined to be environmentally superior to the Proposed Project). This less intensive plan proposes to develop 4 warehouse buildings, leaving the southeast portion of the site vacant for future development of residential uses consistent with existing zoning (R-5 and RA-2) adjacent to the existing residential neighborhood to the southeast. This alternative plan would substantially reduce visual impacts for the residences southeast of the project site.

Response to Comment 11. The Project Description does state that...*Existing single-family residential uses are located approximately 50 feet southeast of the southeastern corner of the project site.* (Draft EIR page 3-1). However, the commenter is incorrect regarding project distances and conclusions drawn from those errors. That reference is to the property boundary only, and not to buildings or truck-use areas proposed for the project. The reference of 200 feet on page 4.1-1 of the Draft EIR should actually be 50 feet to the property boundary, as outlined below, and will be corrected in Final EIR, Section 3.0, *EIR Errata and Additions*.

The Draft EIR clearly states that...*“The nearest existing sensitive land uses are single-family residences located approximately 50 feet southeast of the southern boundary of the project site, approximately 395 feet southeast of the proposed warehouse buildings, and approximately 664 feet southeast of the loading docks.”* (Draft EIR page 4.3-17, 4th paragraph). The commenter may be confused by the terms used to characterize the spatial relationship of the project to the existing residences. *The residences are 50 feet from the project’s property line, but Figure 1.2 and the Project Description (page 3-7) indicated there will be several large detention basins in the southern portion of the site that will act as a buffer and separate truck activities of the project from the residences to the southeast. As stated in the DEIR and demonstrated on the project site plan, the residences would be 395 feet from the closest proposed warehouse building, and 664 feet from the closest proposed loading dock.* We hope this clarification resolves the commenter’s concern in this regard.

In addition, the commenter is referred to Section 4 of this document for an evaluation of a less intensive modified plan, which is a subset of the Reduced Intensity Alternative evaluated in the DEIR (and which was determined to be environmentally superior to the Proposed Project). This less intensive plan proposes to develop 4 warehouse buildings, leaving the southeast portion of the site vacant for future development of residential uses consistent with existing zoning (R-5 and RA-2) adjacent to the existing residential neighborhood to the southeast. Warehouse buildings under the less intensive modified plan are 1,515 feet from the nearest existing residential neighborhood (southwest), and 1,636 feet from the existing neighborhood at the southeast corner. The less intensive modified plan also provides a 250-foot buffer between the nearest warehouse truck court and future residential uses.

Response to Comment 12. The commenter is correct, General Plan Objective 2.5 and its polices do not directly relate to community aesthetics, but the analysis in Section 4.1.6 clearly focuses on the other objectives and policies that are more directly related to aesthetics.

Response to Comment 13. The commenter is incorrect, the Draft EIR does address potential lighting impacts (Draft EIR, Section 4.1.5.1, *Light and Glare*), but determines that the impacts will be less than significant with implementation of the project as proposed, and with implementation of the City’s Municipal Code relative to industrial lighting. Night time views are discussed, since that is when nighttime lighting would be visible. The main reason these impacts will be less than significant is that the actual buildings of the project will be almost 400 feet away from the closest residence (to the southeast). The project plans show walls around the southwest corner and along the southern boundary of the project, which will block lights from vehicles in these areas adjacent to Buildings 5 and 6. Security lighting for the building would be on during all nighttime hours (i.e. overnight) but would also be shielded by walls and compliance with the City’s Municipal Code requirements for night lighting of non-residential buildings (see below). With the proposed setback, walls, landscaping, and potential lighting impacts will be less than significant, as indicated in the Draft EIR.

All development in the City, which includes light generated from warehouse buildings and parking lots, is required to adhere to lighting requirements contained in the City’s Municipal Code (Section 9.08.100 Lighting), which states that any outdoor lighting associated with nonresidential uses shall be shielded and directed away from the surrounding residential uses. Such lighting shall not exceed one-half foot-candle at all property lines and shall not blink, flash, oscillate, or be of unusually high intensity or brightness. Lighting in parking areas and drive aisles must be at least 1.0 foot-candle and cannot exceed a maximum of 8 foot-candles. Adherence to the City’s Zoning Code would ensure that any building or parking lighting would not significantly impact adjacent uses. Therefore, impacts associated with this issue are less than significant, and no mitigation is required, so the additional measures recommended by the commenter are not needed.

In addition, the commenter is referred to Section 4 of this document for an evaluation of a less intensive modified plan, which is a subset of the Reduced Intensity Alternative evaluated in the DEIR

(and which was determined to be environmentally superior to the Proposed Project). This less intensive plan proposes to develop 4 warehouse buildings, leaving the southeast portion of the site vacant for future development of residential uses consistent with existing zoning (R-5 and RA-2) adjacent to the existing residential neighborhood to the southeast. This alternative plan would substantially reduce lighting impacts for the residences southeast of the project site.

Response to Comment 14. Page 4.1-20 of the Draft EIR clearly states...*"The City's Municipal Code (Section 19.05 and Table 9.05.040-8) establishes the number, location, height, and style of signage permitted within industrial zones. The submittal and approval of signs are required for all development in the City; therefore, it is reasonable to conclude that all on-site signs are internally compatible and consistent with the City's current signage standards. Adherence to City requirements would result in a less than significant visual impact in this regard. The existing General Plan and zoning designations for the site show low density residential."* Therefore, the commenter's statement about the EIR not evaluating impacts of signage is not correct.

Response to Comment 15. Yes, the commenter is correct that Table 3.B indicates a maximum building height of 50 feet for buildings 2 and 3, but the commenter fails to note that the line-of-sight analyses and renderings for these buildings (Building 2 = Figures 3.7B, 3.8B, and 3.8C, Building 3 = Figures 3.7C and 3.8D) clearly show these buildings would have a maximum height of 50 feet. The line-of-sight analyses show that the proposed Building 2 may impact views from the freeway of the lower slopes of Mt. Russell, but would not eliminate views of the upper slopes and open land to the southeast. Similarly, Building 3, and to some degree Building 6, may limit views from the nearby residential areas (to the southeast) toward Box Springs Mountain, but views of Mt. Russell, the Badlands, and open land to the east would remain. It should be noted that the EIR concluded that loss of views and other visual impacts would be significant.

Response to Comment 16. The reader should refer to Response to Comment D-3, No. 11 above regarding distances from the project and nearby residences.

Response to Comment 17. The commenter suggests that evaluation of the project's consistency with land use development requirements was not addressed and therefore the statement "the project appears to be consistent with the various Municipal Code requirements for the proposed land uses outlined in Section 4.1.2 related to landscaping, setbacks parking, storage, etc." is not supported. The quote from the Draft EIR was making the simple factual conclusion that the proposed project will be required to adhere to all applicable development standards contained in the City's Municipal Code, similar to any project in any municipality.

Response to Comment 18. The commenter is correct, the text of the paragraph will be corrected to reflect the determination in the environmental analysis in Section 4.2.5.1 under No Impact/Less than Significant Impacts, but the conclusions shown in the table reflect the correct conclusions (i.e., this agricultural impact is less than significant).

This has been corrected in Final EIR, Section 3.0, *EIR Errata and Additions*, but this minor editorial correction does not change the overall conclusion of the EIR that this impact is significant.

Response to Comment 19. The commenter is correct, and Response to Comment D-3, No. 18 above shows how the text in Table 1.C of the Executive Summary will be modified to account for this loss. This will be corrected in Final EIR, Section 3.0, *EIR Errata and Additions*, but this modification does not change the overall conclusion of the EIR that this impact is significant.

The loss of 0.4 percent of the PAKO as a result of this project is a minimal amount of change and does not constitute a significant impact, as indicated in the DEIR, Section 4.2.5.1 Conflict with Existing Zoning or a Williamson Act Contract, page 4.2-6.

Response to Comment 20. The commenter is correct, Farmland of Local Importance will be added to the text in Table 1.C, as shown below. In addition, the “(5.3 acres)” reference is a fragment should have been removed from the text because it does not refer to a formal agricultural designation.

Impact 4.2.6.2 Conversion of State Designated Farmland: *The project site is designated as 67 percent Prime Farmland (82.5 acres) and 12 percent (39.8 acres) as Farmland of Local Importance (5.3 acres). While farmland conservation measures have been implemented in other areas of the State, neither the City of Moreno Valley nor Riverside County maintains a program that developers and property owners can participate in to offset agricultural resource impacts; therefore, the conversion of State designated Prime Farmland is a significant impact.*

This will be corrected in Final EIR, Section 3.0, *EIR Errata and Additions*, but this modification does not change the overall conclusion of the EIR that this impact is significant. The significance conclusion for each type of farmland is included in DEIR Section 4.2.6.1 Conversion of State Designated Farmland, pages 4.2-6 through 4.2-10.

Response to Comment 21. The commenter is correct, the correct LESA score for the project site is 85.3, as shown in Table 4.2.A – the other references will be corrected in Final EIR, Section 3.0, *EIR Errata and Additions*, however, these corrections do not change the overall conclusion of the EIR that this impact is significant. It should be noted that all of these scores represent a significant impact.

The Draft EIR already recognizes that the project would contribute to a cumulative impact on agricultural resources and concludes the following:

“The cumulative effect of development in the region will continue to result in the conversion of agricultural lands to non-agricultural uses. Because agricultural land, including Prime Farmland, is a finite resource, the conversion of 122.8 acres of farmland to industrial uses, combined with planned and future development in the City and region, represents a cumulative impact to agricultural operations and resources, and the proposed project’s contribution to this cumulative impact through the conversion of 122.8 acres of farmland is cumulatively considerable.” (Draft EIR page 4.2-11)

Response to Comment 22. The potential mitigation measures identified in this comment are not considered to be feasible by the City of Moreno Valley as determined in the City’s General Plan EIR. As identified in the Draft EIR (Section 4.1.6.1 Conversion of State Designated Farmland, page 4.1-13), *“Williamson Act contracts are entered into voluntarily by property owners and the City cannot force owners to participate in this program. The City does have the ability to encourage property owners to participate in Williamson Act programs; however, this is expected to result only in temporary preservation of agricultural land since property owners have the option of non-renewal of these contracts at any time after the ten-year contract period ends. The land would then be available to be developed with urban uses.*

Providing protection for ongoing agricultural activities from new developments, such as requiring buffers between agricultural operation and new development or requiring the notification and disclosure of agricultural activities to the purchasers adjacent properties will not permanently protect agricultural land.

The purchase or transfer of development rights, purchase of conservation easements, or donation of funds to assist in the conservation of agricultural land would need to be implemented to ensure the preservation of agricultural land. As stated previously, the City anticipates the conversion of agricultural land within the City and does not set aside land for permanent preservation. The City expects that the majority of the land within the City will be converted to urban uses, although some agriculture will continue as interim uses, as allowed by the City’s Development Code for all zoning categories. Moreno Valley has determined that these measures are economically infeasible based on

the higher costs associated with land, water and labor, increased environmental regulation, and competition from neighboring regions where agricultural operations are less costly; thus, resulting in an inability to make farming profitable. Furthermore, these measures are contrary to the City's vision (as stated in its General Plan) for the project site; therefore, they are not feasible and alternative mitigation has not been identified." Table B below contains the suggested mitigation measures by the commenter. The responses determine whether the Draft EIR contains the mitigation measure, if the mitigation will be added mitigation as part of the Final EIR, or if it will not be included and why.

Table B: Evaluation of Potential Agricultural Mitigation

Suggested Mitigation Measure	Response
1. The purchase of agricultural conservation easements	<p>Not Feasible. Based on the higher costs associated with land, water and labor, increased environmental regulation, and competition from neighboring regions where agricultural operations are less costly; thus, resulting in an inability to make farming profitable. The site has been planned for developed uses since 1987, the City has recognized that the conversion of agricultural land under its jurisdiction is an eventual and expected outcome of current and future growth and the current General Plan does not include any agricultural designations; therefore mitigation for the loss of agricultural land is not required.</p> <p>An easement does not compensate for the impact by replacing or providing substitute resources or environments (i.e., the easement would not create any new farmland where no farmland presently exists). See Fourth District Court of Appeal, <i>Cherry Valley Pass Acres and Neighbors v. City of Beaumont</i> (2010) 190 Cal.App.4th 316 (<i>Cherry Valley</i>)</p>
2. Transfer of development rights	<p>Not Feasible. Based on the higher costs associated with land, water and labor, increased environmental regulation, and competition from neighboring regions where agricultural operations are less costly; thus, resulting in an inability to make farming profitable.</p>
3. Acquisition of farmland by the city or county	<p>Not Feasible. Based on the higher costs associated with land, water and labor, increased environmental regulation, and competition from neighboring regions where agricultural operations are less costly; thus, resulting in an inability to make farming profitable. No mechanism for the mitigation of impacts to State-designated Farmland and/or existing agricultural operations has been enacted by either the City of Moreno Valley or the County of Riverside. Rather, the City has specifically recognized that the conversion of agricultural land under its jurisdiction is an eventual and expected outcome of current and future growth. The current General Plan does not include any agricultural designations.</p>
4. Mitigation banking	<p>Not Feasible. Neither the City of Moreno Valley nor the County have a mechanism in place for mitigation banking. The site has been planned for developed uses since 1987, the City has recognized that the conversion of agricultural land under its jurisdiction is an eventual and expected outcome of current and future growth and the current General Plan does not include any agricultural designations; therefore mitigation for the loss of is not required. In addition, there is not any agricultural zoned land in the City for the City or County to purchase.</p>

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Suggested Mitigation Measure	Response
5. The establishment of "urban limits," greenbelts, and buffers	Not Feasible. Will not result in permanent protection of agricultural lands. There is no mechanism for the mitigation of impacts to State-designated Farmland and/or existing agricultural operations has been enacted by either the City of Moreno Valley or the County of Riverside. Rather, the City has specifically recognized that the conversion of agricultural land under its jurisdiction is an eventual and expected outcome of current and future growth. The current General Plan does not include any agricultural designations. Section 4.2.6.1 of the DEIR also outlines why local or regional mitigation in this regard is infeasible.
6. The payment of in-lieu fees sufficient to a purchase and maintain farmland conservation easements	Not Feasible. Based on the higher costs associated with land, water and labor, increased environmental regulation, and competition from neighboring regions where agricultural operations are less costly; thus, resulting in an inability to make farming profitable. An easement does not compensate for the impact by replacing or providing substitute resources or environments (i.e., the easement would not create any new farmland where no farmland presently exists). See (Fourth District Court of Appeal, <i>Cherry Valley Pass Acres and Neighbors v. City of Beaumont</i> (2010) 190 Cal.App.4th 316 (<i>Cherry Valley</i>)) In addition, there is not any agricultural zoned land in the City for the City or County to purchase and there is no existing fee program for farmland in the City.
7. Planning tools such as clustering development, use of density bonuses, and limiting "leapfrog" development	Not Feasible. Based on the higher costs associated with land, water and labor, increased environmental regulation, and competition from neighboring regions where agricultural operations are less costly; thus, resulting in an inability to make farming profitable. In addition the project is an industrial project on a site that has been planned for developed uses in the City's General Plan since 1987. This is not a residential project; therefore, clustering of development is not a feasible option on an industrial project. The proposed mitigation is not applicable. The project won't promote "leapfrog" development since the area surrounding the project site is developed.

Comment No. 3 in the letter from the Sierra Club (D-2) stated that..."a developer recently donated \$100,000.00 to the Riverside Land Conservancy to help mitigate for the loss of agricultural lands but fails to appropriately cite the information and identify the basis for determining the amount of agricultural lands lost in relation to this monetary amount." In discussion with Gail Egenes, Executive Director of the Riverside Land Conservancy, the agency does not have any established program to purchase agricultural easements or lands. Also, in consultation with the National Conservation Easement Database, Riverside County does not have any established agricultural easements.¹

Contributions to Riverside County Land Conservancy or the San Jacinto Basin Resource Conservation District by private land owners are laudable but are not required as part of a City or regional mitigation plan for loss of agricultural land. Therefore, the decision whether to make any contributions in this regard would be at the discretion of the developer in consultation with the City.

The Fourth District Court of Appeal, *Cherry Valley Pass Acres and Neighbors v. City of Beaumont* (2010) 190 Cal.App.4th 316 (*Cherry Valley*) addressed a challenge to an EIR for a project that would convert agricultural land to residential uses. Though recognizing the potential for mitigation in the form of agricultural "conservation easements, Williamson Act preserve status, or temporary protection or conservation plans," the EIR noted the long-term trend in agricultural land conversion in the region and concluded that mitigation was not feasible, and the court upheld the City's determination regarding the feasibility of mitigation. The court also examined the City and County General Plans,

¹ <http://nced.conservationregistry.org/browse/map>, accessed October 4, 2012.

which acknowledged that development pressures were constraining the continued viability of agriculture and included the expansion of housing, commercial and industrial land uses. The court then determined that the project was compatible with these planning documents. The court concluded that given the particular circumstances surrounding the project, such mitigation was infeasible and therefore was not required to be adopted. The project site for the project addressed in the ProLogis EIR has been planned for developed uses since 1987, and the City has recognized in the General Plan that the conversion of agricultural land under its jurisdiction is an eventual and expected outcome of current and future growth and the current General Plan does not include any agricultural designations; therefore mitigation for the loss of is not feasible and the EIR concludes that impacts are significant and unavoidable.

The trend of the reduction in agriculture in the Inland Empire is discussed in *Assessing the Economic and Market Trends Affecting Agriculture in the Western Inland Empire* prepared by Justin L. Adams, Ph.D. of Chang & Adams Consulting, September 2011 and *Economic Viability of Agriculture in the East Inland Empire* report prepared by CBRE Consulting, March 18, 2009. Both reports are provided in Appendices B and C to the Final EIR. This reduction in “farming” is due to pressures of the growth in the demand for housing and development and the transportation and warehousing sector; increased restrictions on water deliveries for agricultural uses after several consecutive drought seasons; higher wages in other industries in the region; strong agricultural competition from the southern Central Valley for dairies; increased regulatory pressures from air quality and local jurisdictions regarding particulate matter emissions and land use adjacency issues; and the trend in Riverside and San Bernardino Counties is for agricultural operations to continue to shift to places like Kern County regardless independent of land use policy due to the economic issues.

As stated in the Draft EIR, mitigation measures must be feasible and fully enforceable through permit conditions, agreements, or other legally binding considerations. To be feasible, mitigation must be capable of being accomplished in a successful manner within a reasonable period of time, taking into account the economic, environmental, legal, social, and technological factors. Identification as to the infeasibility of mitigation measures suggested by the commenter has been provided in the Draft EIR. No mechanism for the mitigation of impacts to State-designated Farmland and/or existing agricultural operations has been enacted by either the City of Moreno Valley or the County of Riverside. Rather, the City has specifically recognized that the conversion of agricultural land under its jurisdiction is an eventual and expected outcome of current and future growth. The current General Plan does not include any agricultural designations. The City allows agricultural uses in all land use designations as an interim use until such time as the land is developed per the vision identified in the General Plan. One of the goals stated in the City’s recent General Plan is the “...orderly conversion of agricultural lands.” The proposed project is a continued extension of development in the surrounding area to the east and west (industrial/commercial/business park). The proposed project does not interfere with the ability of other adjacent properties to be used for agricultural production should the property owner wish to do so.

The potential mitigation measures identified by the City in its General Plan EIR and California Department of Conservation (CDC), which are listed in the Draft EIR (Section 4.1.6.1 Conversion of State Designated Farmland, pages 4.2-7 through 4.2-9), are not considered to be feasible by the City of Moreno Valley as determined in the City’s General Plan EIR. Providing protection for ongoing agricultural activities from new developments, such as requiring buffers between agricultural operation and new development or requiring the notification and disclosure of agricultural activities to the purchasers adjacent properties will not permanently protect agricultural land. As identified in the Draft EIR, the City supports agriculture as an interim use within the City and no land is dedicated or designated for agricultural use or agricultural preservation within the City’s jurisdiction. Land in the project area is classified as containing prime agricultural soils, but the City’s General Plan does not designate these lands, including the project site, for preservation through the establishment of urban limits, greenbelts, and buffers that might result in permanent protection of agricultural land as none exists within the City. Areas where agriculture land use designations may exist that are outside of the

City limits cannot be preserved by the City of Moreno Valley as they are outside of the City's jurisdiction. The City's General Plan has acknowledged the analysis and conclusions of the County General Plan that mitigation for the loss of agricultural land is economically and practically infeasible due to ongoing costs to maintain agriculture in this area (see Appendix E in the Draft EIR).

As stated previously, the City anticipates the conversion of agricultural land within the City and does not set aside land for permanent preservation. The City expects that the majority of the land within the City will be converted to urban uses, although some agriculture will continue as interim uses, as allowed by the City's Development Code for all zoning categories. The City of Moreno Valley has determined that these measures are economically infeasible based on the higher costs associated with land, water and labor, increased environmental regulation, and competition from neighboring regions where agricultural operations are less costly; thus, resulting in an inability to make farming profitable. Furthermore, these measures are contrary to the City's vision (as stated in its General Plan) for the project site; therefore, they are not feasible and alternative mitigation has not been identified.

Response to Comment 23. Response to Comment D-3, No. 22 outlines the City's position regarding the infeasibility of mitigation for loss of agricultural land. The City has repeatedly concluded that development projects within the City that remove agricultural land, even if that land carries a "significant" designation for farmland, cannot be mitigated at the local level and all the recommended measures would render the project financially infeasible, therefore the measures are infeasible. The assessment in Appendix E of the Draft EIR provides additional documentation why continued agriculture is not feasible in the Moreno Valley area.

It should also be noted that the research referred to by the commenter was conducted in the state of Vermont, so its information is not directly applicable to the California economy or local conditions affecting the viability of agriculture within a particular region. Nor does it take into account currently poor economic conditions in California

Response to Comment 24. According to Sergio San Martin of Facilities Planning for MVUSD, the Eucalyptus and Redlands sites have been abandoned.¹ The other two sites at Nason and Ironwood and Ironwood and Quincy have not yet been officially abandoned but are no longer being actively considered for the construction of new schools. It is at the School Board's discretion as to whether these two sites are abandoned, however; MVUSD staff has been directed to explore other potential sites. Therefore, it is no longer reasonably foreseeable that these two sites will be developed as future schools.

Response to Comment 25. The commenter referred to the following General Plan Policies allegedly relevant to air pollutant emissions. The following assesses the consistency of the project with those stated policies:

¹ *Resolution No. 2007-08-81*, Moreno Valley Unified School District Board of Education, approved April 15, 2008.

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General Plan Goals, Objectives, and Policies	Project Consistency
<p>Ultimate Goal VII: achieve a community which “Emphasizes public health and safety, including, but not limited to, police, fire, emergency and animal services and protection from floods and other hazards....”</p>	<p>The comment erroneously quotes an ultimate goal contained in the General Plan that addresses public safety issues such as police, fire, emergency and animal services and protection from natural hazards such as flooding. This goal is not associated with air quality. However, Sections 4.6 (Hazards) of the DEIR and the Initial Study for the project (Public Services) demonstrate that the proposed project will not result in any significant impacts to public health or safety as outlined in this goal.</p>
<p>Goal 6.1: To achieve acceptable levels of protection from natural and man-made hazards to life, health, and property.</p>	<p>The comment erroneously quotes a goal that addresses the Safety Element of the General Plan. This goal is not associated with air quality; however, various sections of the DEIR demonstrate that the proposed project will not result in any significant impacts to public health or safety from natural or man-made hazards, as outlined in this goal.</p>
<p>Objective 7.5: Encourage efficient use of energy resources.</p> <p>Policy 7.5.1: Encourage building, site design, and landscaping techniques that provide passive heating and cooling to reduce energy demand.</p> <p>Policy 7.5.2: Encourage energy efficient modes of transportation and fixed facilities, including transit, bicycle, equestrian, and pedestrian transportation. Emphasize fuel efficiency in the acquisition and use of City-owned vehicles.</p> <p>Policy 7.5.5 Encourage the use of solar power and other renewable energy systems.</p>	<p>The comment cites three policies within General Plan Objective 7.5. Consistency and/or applicability of these policies is as follows:</p> <p>General Plan Policy 7.5.1 will be applied to the project through implementation of Mitigation Measures 4.3.6.5B page 4.3-33 and 4.3-34, 4.3.6.6A page 4.3-35, 4.13.6.1B page 4.13-20, and 4.13.6.1C page 4.13-21.</p> <p>General Plan Policy 7.5.2 is related to alternative modes of transportation. The City considers this policy to be beyond the scope of this project-level EIR, because this is a citywide issue for the City to address and not this development project. The project has no control over the fuels used in City-owned vehicles.</p> <p>General Plan Policy 7.5.5 will be applied to the project through implementation of Mitigation Measure 4.3.6.6A page 4.3-35.</p>

The analysis demonstrates that the project is consistent with the two applicable General Plan goals, objectives, and policies cited in the comment. The three other goals, objectives, and policies cited in the comment are not applicable to the project and this project-level EIR; however, the project is consistent with Ultimate Goal VII and Goal 6.1 as outlined above. This analysis does not raise significant new issues, nor does it change the conclusions of the EIR regarding significant impacts.

Response to Comment 26. It is not clear what “record” the commenter is referring to. Perhaps the commenter is referring to the various Multiple Air Toxics Exposure Studies (MATES) performed by the SCAQMD over the last two decades? If so, these only document that the air quality is unhealthy in the majority of the South Coast Air Basin, they say nothing about any particular project’s contribution to the level of toxic air contaminants in a region. The HRA included in the EIR examines the potential affect the project could have on the level of toxic air contaminants in the region of the project site and the resulting change in health risk levels and, as shown in the DEIR, Table 4.3.F on page 4.3-17in the DEIR, shows them to be all less than significant.

Response to Comment 27. The HRA modeled emissions from vehicles idling at all the project buildings and traveling along the roadways thru the project site and into the surrounding area as

described on Page 4.3-17 of the DEIR. While the modeling does not include dedicated emissions sources for the short distances from the loading docks along the building and the driveways onto Eucalyptus Avenue, the emissions sources that were included in the modeling for the truck movements include all emissions from vehicles as they travel. Thus, the HRA does not minimize any impact from project operations. The model incorporates building structures into the atmospheric propagation simulation only to determine changes to the propagation pattern due to disturbances in the flow from passing over buildings. The principal effect is that pollutant concentrations are higher from the building wake affect than they would be if the building was ignored. Changing the building height from 65 to 39 feet would only change the pollutant concentrations within 50 feet of so downwind of each building. There would be no change at the distance of any of the residences. Therefore, the analysis in the DEIR is conservative and protective of human health.

In addition, the commenter is referred to Section 4 of this document for an evaluation of a less intensive modified plan, which is a subset of the Reduced Intensity Alternative evaluated in the DEIR (and which was determined to be environmentally superior to the Proposed Project). This less intensive plan proposes to develop 4 warehouse buildings, leaving the southeast portion of the site vacant for future development of residential uses consistent with existing zoning (R-5 and RA-2) adjacent to the existing residential neighborhood to the southeast.

Response to Comment 28. The standard assumption for all HRAs, per the OEHHA, is that the 70-year lifetime risk assessment assumes that individuals would be away from the location of interest for 15 days out of the year, even though the on-site operations would occur over 365 days per year. The 350 days per year the comment refers to applies to the people living nearby, not to the project operations. This is what is meant by a full lifetime exposure in any HRA.

Response to Comment 29. The Environmental Summary Table 1.C was not updated properly and now is consistent with the results described in Section 4.3 Air Quality (refer to the Final EIR Errata). This update has no effect on any significance conclusions in the DEIR (refer to the Final EIR Errata). Both the Air Quality Analysis and Air Quality section of the EIR describe the health risks to existing and future residents separately and clearly. The peak cancer risk to existing residents to the north is identified in Table R of the Air Quality Analysis and in Table 4.3.F of the Air Quality section of the Draft EIR as 4.33 in 1 million. Section 4.3.5.4 of the EIR shows the peak cancer risk to future residents of a project proposed on the southern project boundary as 4.3 in 1 million. The threshold is 10 in one million so the 4.3 in 1 million does not exceed the threshold of significance.

The Draft EIR clearly identifies that ...*"The nearest existing sensitive land uses are single-family residences located approximately 50 feet southeast of the southern boundary of the project site, approximately 395 feet southeast of the proposed warehouse buildings, and approximately 664 feet southeast of the proposed loading docks."* (Draft EIR page 4.3-17, 4th paragraph). The commenter may be confused by the terms used to characterize the spatial relationship of the project to the existing residences. The residences are 50 feet from the project's property line, but the Project Description (e.g., Figure 1.2) clearly shows there are several large detention basins in the southern portion of the site that will act as a buffer and separate truck activities of the project from the residences. As stated in the EIR and demonstrated on the project site plan, the residences would be 395 feet from the closest proposed warehouse building, and 664 feet from the closest proposed loading dock. We hope this clarification resolves the commenter's concern in this regard.

Additionally, the HRA was conducted using a grid of receptors covering about a mile in all directions from the center of the project site, as described on page 4.3-17 of the DEIR. Therefore, the project effects on health risk levels were determined at all locations throughout the region including the existing residence with the maximum health risk level and the proposed residence with the maximum health risk level, either of which may or may not be the closest to the project site.

In addition, the commenter is referred to Section 4 of this document for an evaluation of a less intensive modified plan, which is a subset of the Reduced Intensity Alternative evaluated in the DEIR (and which was determined to be environmentally superior to the Proposed Project). This less intensive plan proposes to develop 4 warehouse buildings, leaving the southeast portion of the site vacant for future development of residential uses consistent with existing zoning (R-5 and RA-2) adjacent to the existing residential neighborhood to the southeast.

Response to Comment 30. The EIR is tasked with determining the impact of the project on the environment, thus the HRA does this also. The ambient cancer risk is quite high for all of southern California, but this is independent of the project's operations. The HRA in the EIR identifies how the project's operational emissions will affect the health risk levels by the project's contribution to the ambient health risk. The following limits for maximum individual cancer risk (MICR), cancer burden and non-cancer acute and chronic hazard indices (HI) from project emissions of TACs have been established for the Basin:

- **MICR and Cancer Burden.** MICR is the estimated probability of a potential maximally exposed individual contracting cancer as a result of exposure to TACs over a period of 70 years for residential and 40 years for worker receptor locations. The MICR calculations include multipathway consideration, when applicable. Cancer burden is the estimated increase in the occurrence of cancer cases in a population subject to a MICR of greater than or equal to one in one million (1.0×10^{-6}) resulting from exposure to TACs.

The total increase in MICR that is the sum of the calculated MICR values for all TACs emitted from the project will not result in any of the following:

- (A) An increased MICR greater than 10 in 1 million (1.0×10^{-5}) at any receptor location (assumes the project will be constructed with T-BACT); or
- (B) A cancer burden greater than 0.5.

- **Chronic HI.** This is the ratio of the estimated long-term level of exposure to a TAC for a potential maximally exposed individual to its chronic reference exposure level. The chronic HI calculations include multipathway consideration, when applicable.

The cumulative increase in total chronic HI for any target organ system due to total emissions from the project will not exceed 1.0 at any receptor location.

- **Acute HI.** This is the ratio of the estimated maximum one-hour concentration of a TAC for a potential maximally exposed individual to its acute reference exposure level.

The cumulative increase in total acute HI for any target organ system due to total emissions from the project will not exceed 1.0 at any receptor location.

The DEIR concludes that the project contribution to the existing TAC conditions will be less than significant, as described on page 4.3-17 and shown in Table 4.3.F.

Response to Comment 31. The HRA includes an assessment of the health risks to workers using standard OEHHA assumptions, including an 8 hour workday and a 40 year work career for workers, which likely results in an over-estimate of cancer risk. Thus, the assumptions in the analysis are conservative and err on the side of overestimating impacts.

See also Response No. 13 in the letter D-2 from the Sierra Club.

Response to Comment 32. The HRA modeling only allows for one emission rate for the diesel engines to represent the entire 70-year period from opening year (2013) until 2083. The available emissions factors model (EMFAC) only has factors thru 2040. Thus, there is no information available about how the diesel emissions will change from 2040 until 2083. It is pure guesswork to predict how the diesel emissions will change over this period. To assume that the emissions during this 43-year

period will not change at all is a very conservative assumption – there is a real possibility that all diesel engines will have been replaced by an alternative power source before 2083 resulting in zero diesel particulate emissions. Selecting the best year between 2083 and 2013 to represent the average is somewhat arbitrary – the median is 2048, outside the range of available factors. EMFAC incorporates many of the regulations some expectations of technological improvements that result in lower emissions over the period from the 1990s thru 2040, however it does not include everything – for instance it does not include the law just passed in August 2012 that sets the average mileage of cars and light trucks to 54.5 miles per gallon by 2025. While this does not include the heavy-duty trucks the HRA is focused on, it is an indication that there will be aggressive regulations in the future reducing these diesel emissions below what is in the EMFAC model. While using the emissions factors for 2040 as an average is not optimal due to the higher existing emissions, using 2013 factors as an average is unreasonably conservative also. In our best engineering judgment, 2025 is the best set of emissions factors to represent this complicated issue.

Response to Comment 33. While the project construction may continue for longer than 4 months, the ultra-conservative screening HRA included in the EIR focuses on the emissions from the very large diesel-powered equipment involved in the project construction. As shown in Table E of the Air Quality Analysis, the Site Preparation phase is expected to continue for 18 days and the Grading phase for 44 days, totaling about 3 months. The use of the very large diesel-powered equipment will be intense for these two phases and then drop off dramatically during the remainder of the construction process. Thus, assuming that the use of these very large diesel-powered equipment will occur continuously for 4 months is a conservative representation of the total construction process and appropriate for this screening-type of HRA.

Response to Comment 34. The staffs of the Air Resources Board (ARB) and the Office of Environmental Health Hazard Assessment (OEHHA) have been evaluating diesel exhaust since 1989 under California’s air toxics program, for potential identification as a toxic air contaminant (TAC). Diesel exhaust entered the AB 1807 process in October 1989 and has undergone an extensive evaluation. Diesel exhaust was entered into the process because it has potential cancer and non-cancer health effects and widespread exposure in California. The International Agency for Research on Cancer (IARC) had listed diesel exhaust as a “probable” human carcinogen and the U.S. Environmental Protection Agency (U.S. EPA) had begun an evaluation of both the cancer and non-cancer health effects. The ARB and the OEHHA gave priority to the evaluation of diesel exhaust because it met the TAC program criteria related to potential risk of harm to public health, amount of emissions, exposure and use, and persistence in the atmosphere.¹ All HRAs that include diesel PM as a TAC of concern consider all recognized health impacts.

Response to Comment 35. See Response to Comment D-3, No. 34 above.

Response to Comment 36. The HRA included the concept from the OEHHA indicating that both the prenatal and postnatal life stages can be, but are not always, much more susceptible to developing cancer than the adult life stage. The HRA included age sensitivity factors (ASFs) for these age windows that vary by chemical, gender and species, thus the analysis accounted for impacts to the entire population, children and adults. ASFs for prenatal, postnatal, and juvenile exposures are complicated by the limited database of chemicals and studies available for analysis, and the broad distribution of results for different chemicals. The EPA and OEHHA have proposed to apply a default ASF of 10 for the third trimester to age 2 years, and a factor of 3 for ages 2 through 15 years to account for potential increased sensitivity to carcinogens during childhood (adults 16 and older need no adjustment factor), and applied these to all carcinogens, regardless of the theorized mode of action. Thus, for the 70-year cancer assessment in the Draft EIR, the cancer risk adjustment factor (CRAF) used was $1.7 [(10 \times 2.25/70) + (3 \times 14/70) + 54/70 = 1.7]$.

¹ CARB, 1998, *Proposed Identification Of Diesel Exhaust As A Toxic Air Contaminant*.

Response to Comment 37. See Response to Comment D-3, No. 36 above. The Air Quality Analysis described the inclusion of the cancer risk adjustment factor as prescribed by the ARB and OEHHA.

Response to Comment 38. The HRA in the EIR overview in Section 4.3 Air Quality, details in the Air Quality technical report in Appendix B, followed all current guidance from the EPA, ARB, OEHHA and other state agencies to insure that the health of all residents and other sensitive receptors affected by construction and operational emissions from the project are protected. Source: EPA, *Air Toxics Strategy*, July 1999; ARB, *AB 2588 Air Toxics "Hot Spots" Emission Inventory Criteria and Guidelines Regulation*, August 27, 2007; OEHHA, *Air Toxics Hot Spots Program Risk Assessment Guidelines*, August 2003; SCAQMD, *Health Risk Assessment Guidance for Analyzing Cancer Risk from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis*, August 2003.

Response to Comment 39. As the EIR found that all impacts from project-related diesel PM are less than significant without the use of "buffers and other methods"; none of these are necessary to protect the health of all residents and other sensitive receptors affected by construction and operational emissions from the project.

Response to Comment 40. Comment noted. The exhibit cited is the SCAQMD guidance document *Final-Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds*, which is provided for the Localized Significance Threshold (LST) portion of the air quality analysis. The air quality analysis in the DEIR cited this resource and complied with it.

Response to Comment 41. The EIR discusses consistency in detail. It says "*the proposed project would require a General Plan Amendment that would change the General Plan designations for a portion of the project site from Residential to Business Park/Light Industrial. The project also proposes an amendment to the Circulation Element of the General Plan.*" and "*Implementation of the proposed project would require a zone change from Business Park (BP), Business Park Mixed Use (BPX), Multi-Family Residential (R-15), Suburban Residential (R-5), and Residential Agriculture (RA-2) to Light Industrial for the entire 122.8 acres.*" "*Because the project site is located in a nonattainment air basin for ozone, PM10 and PM2.5, the proposed project's emission of ozone precursors (CO, ROG, and NOX), PM10 and PM2.5 would contribute to the existing nonattainment status in the Basin. Thus, according to the SCAQMD Consistency Criterion No. 1, the proposed project is not consistent with the AQMP.*"

Response to Comment 42. Table 4.3.I of the Draft EIR has a note stating "includes both fugitive and exhaust sources" and the conceptual grading plan for the project indicates that the earthwork will be largely balanced on site and only 200 cubic yards of soil importation is expected. This small amount of soil import will require minimal truck trips which are included in the general construction vehicle calculations.

Response to Comment 43. While no phasing of construction is required of the project, normal construction operations are conducted in phases – grading cannot begin until site preparation is completed, building construction cannot begin until grading is completed, etc. As shown in Table E of the Air Quality Technical Report in Appendix B, the construction analysis conservatively assumed that the building construction, architectural coating and paving phases could all overlap. The peak daily emissions shown in Table 4.3.I of the DEIR reflect this conservative assumption. Note that the DEIR concluded that construction air quality impacts remained significant and unavoidable with mitigation."

Response to Comment 44. Section 5.1.4 of the air quality technical study (Draft EIR Appendix B) clearly explains that guidance provided by SCAQMD was followed in which all construction phases were considered in the LST analysis. See the Response to Comment 43 concerning construction phasing. As described in the Air Quality Technical Report in the DEIR Appendix B, Section 5.1.4, the grading phase was determined to be the construction phase of concern for the LST analysis by

following the SCAQMD guidance on applying CalEEMod modeling results to LST analyses; *Fact Sheet for Applying CalEEMod to Localized Significance Thresholds*, available at www.aqmd.gov/ceqa/handbook/lst/CalEEModguidance.pdf.

Response to Comment 45. While the DEIR analyzes project operational emissions assuming that the project could operate 24 hours per day, 7 days per week, the construction of the project will not occur 24 hours per day. As pointed out by the commenter, noise regulations alone restrict construction operations to 14 hours per day. Current project plans are to build the project following a typical daily construction schedule, which is what is built into the CalEEMod model and was used in the air quality analysis.”

Response to Comment 46. See Response to Comment D-3, No. 44 above.

Response to Comment 47. SCAQMD Rule 402 regarding nuisances states: “A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.” Construction operations do not typically result in Rule 402 violations, due to the subjective nature of odor and the need for such odor to ‘cause injury, detriment, nuisance, or annoyance to any considerable number of persons’. There is nothing about the proposed project construction that is expected to result in any odor other than those associated with typical construction operations.

Response to Comment 48. LST screening analyses use SCAQMD provided tables for significance determination. The tables provided include data for 1, 2 and 5 acre project sites. The LST emissions thresholds grow larger with larger site areas; using an LST threshold for an area smaller than the actual area (5 acres verses 121 acres) results in lower emissions thresholds than would occur if the entire site was considered. In other words, a 5-acre project is allowed to emit up to 270 lbs/day of NO_x. A 121 acres project would be allowed a much higher daily NO_x emission rate. Thus, using the 5 acre threshold for the proposed project site is conservative.

Response to Comment 49. Based on the results of the air quality study for the project, the mitigation measure as written in the DEIR specifies “...*contractors shall place construction equipment staging areas at least 200 feet away from sensitive receptors.*” Presumably the commenter is suggesting that this distance should be increased to 1,000 feet. The 200-foot distance was selected after analysis in the project air study determined that construction impacts could be reduced to less than significant levels through imposition of this setback. The commenter has provided no evidence or substantiation why this distance should be increased to 1,000 feet.

Response to Comment 50. The mitigation measure states “...*power sources (e.g., power poles)*”. Clean fuel is a standard phrase used to describe fuels that release fewer emissions when used in internal combustion engines compared to standard fuels. A “clean-fuel generator” is a generator configured to burn a clean fuel, thus releasing fewer emissions than a generator burning standard fuels.

Response to Comment 51. Mitigation Measure 4.3.6.2C has been updated to specify Tier III equipment for all phases of construction and for all equipment where technologically available.

Response to Comment 52. The text of the mitigation measure states that it is “per SCAQMD guidelines”, showing that this is a requirement for all projects. It is included for completeness and for monitoring purposes.

Response to Comment 53. The commenter first states that Mitigation Measure 4.3.6.2H is not a mitigation measure then allows that the bulk of the measure is a proper mitigation measure. However, the measure has been amended as follows:

4.3.6.2H *The contractor shall minimize pollutant emissions by maintaining equipment engines in good condition and in proper tune according to manufacturer's specifications and ~~during smog season (May through October)~~ by shall not allowing construction equipment to be left idling for more than five minutes (per California law).*

Response to Comment 54. The text of the mitigation measure states that it is "as required by the California Air Resources Board (CARB)", showing that this is a requirement for all projects. It is included for completeness and monitoring purposes.

Response to Comment 55. Notations to construction documents are how a specified change to the normal construction methods and procedures are documented and to support enforcement. Without notations, no one onsite during construction knows what action or procedure should be enforced. However, in Mitigation Measure 4.3.6.2J has been amended to take out "notations and "where feasible" has been changed to "if available" or "where available" because it is not certain at the time the mitigation is implemented whether the types of fuels and/or construction equipment specified will be available.

4.3.6.2J *Grading plans, construction specifications and bid documents shall also include the following ~~notations requirements~~:*

- *Off-road construction equipment shall utilize alternative fuels where feasible e.g., biodiesel fuel (a minimum of B20), natural gas (CNG), liquefied natural gas (LNG), propane, except for equipment where use of such fuels would void the equipment warranty;*
- *Gravel pads shall be provided at all access points to prevent tracking of mud onto public roads;*
- *Install and maintain trackout control devices at all access points where paved and unpaved access or travel routes intersect;*
- *The contractor or builder shall designate a person or person(s) to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust off site;*
- *The contractor or builder shall post a publicly visible sign with the telephone number and person to contact regarding dust complaints. The contact person shall take corrective action within 24 hours;*
- *High-pressure injectors shall be provided on diesel construction equipment ~~where feasible if available~~;*
- *Engine size of construction equipment shall be limited to the minimum practical size;*
- *Substitute gasoline-powered for diesel powered construction equipment where ~~feasible gasoline powered equipment is available~~;*
- *Use electric construction equipment where ~~feasible~~ it is practical to use such equipment;*
- *Install catalytic converters on gasoline-powered equipment where ~~feasible~~ this type of equipment is available;*

- *Ride-sharing program for the construction crew ~~shall be encouraged and shall be supported by contractor(s) via incentives or other inducement;~~*
- *Documentation shall be provided to the City of Moreno Valley indicating that construction workers have been encouraged to carpool or otherwise reduce VMT to the greatest extent practical, including providing information on available park and ride programs;*
- *Lunch vendor services shall be ~~provided~~ allowed on site during construction to minimize the need for off-site vehicle trips; and*
- *All forklifts used during construction and in subsequent operation of the project shall be electric or natural gas powered.*

Response to Comment 56. Mitigation Measure 4.3.6.2K has been revised to include a response time.

4.3.6.2K *Throughout project construction, a construction relations officer/community liaison, appointed by the Applicant, shall be retained on site. In coordination and cooperation with the City, the construction relations officer/community liaison shall respond to any concerns related to PM₁₀ (fugitive dust) generation or other construction-related air quality issues within 24 hours.*

Response to Comment 57. Mitigation Measure 4.3.6.2H requires construction equipment to limit idling, Measure 4.3.6.2L only requires signs be posted so that equipment operators are aware of the limit.

Response to Comment 58. The word “should” has been removed and replaced with “shall” in Mitigation Measure 4.3.6.3A.

4.3.6.3A *Prior to the issuance of grading permits, the project applicant shall require by contract specifications that all trucks hauling dirt, sand, soil, or other loose materials are to be covered or ~~should~~ shall maintain at least 2 feet of freeboard in accordance with the requirements of California Vehicle Code (CVC) Section 23114 (freeboard means vertical space between the top of the load and top of the trailer).*

Response to Comment 59. The project has no ability to affect the control of emissions from mobile sources as these are entirely under the control of State and federal authorities. The only means available to the project to affect mobile source emissions is to reduce their use, either by reducing numbers of vehicles or the distance they drive. The project does discuss these options but concludes that due to the magnitude of the calculated emissions, neither of these means that are available would reduce mobile emissions sufficiently to even approach the emissions thresholds. Thus, while mitigation is proposed (Mitigation Measures 4.3.6.5A and 4.3.6.5B) to reduce the numbers of vehicles and the distance they drive no quantification of the emissions reductions was attempted.

Specific air quality mitigation suggestions provided by the commenter are addressed in Response to Comment 60, below.

Response to Comment 60. See also Response to Comment D-3, No. 59 above. In addition, a number of activities requested by the SCAQMD have been incorporated into the mitigation measures for air quality (see Final EIR, Section 3.0, *EIR Errata and Additions*).

Feasible mitigation measures, including several identified in the list provided by the commentor, have been already included as mitigation for the project and are identified in the Draft EIR. The Table

below contains each of the mitigation measures suggested for inclusion by the commentor and if it is already included in the Draft EIR, if will be added mitigation as part of the Final EIR, or if will not be included and why. Mitigation Measures 4.3.6.5B and 4.3.6.6A are intended to be suggestions for the developer to choose from to reduce energy consumption by 10% above Title 24 standards (refer to Response to Comment D-3, No. 109, below).

Table A: Comparison of Suggested Mitigation Measures to Project Mitigation

Suggested Mitigation Measure	Response
1. Preferential parking for employee vanpooling/ carpooling	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.6A on page 4.3-36.
2. Bicycle parking facilities	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-33 and Mitigation Measure 4.3.6.6A on page 4.3-36.
3. Bus turnouts	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5A on page 4.3-33.
4. Install low-emissions water heaters	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-33.
5. Require construction of buildings to exceed Title 24 by 20+ percent	Not Included. The EIR indicates the project will exceed Title 14 energy standards by 10 percent which is considered adequate for this type of building and based on the most recent changes to the State Green Building Code, including Title 24. This mitigation is discussed in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.6A on page 4.3-36.
6. Install central water heating systems	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-33.
7. Require use of energy-efficient appliances	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-33.
8. Require increased insulation	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-33.
9. Require use of automated controls for air conditioners	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-33.
10. Require use of energy-efficient parking lot lighting.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-33.
11. Require use of lighting controls and energy – efficient lighting.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-33.
12. Require use of low-VOC interior and exterior coatings during any project repainting.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-33 and Mitigation Measure 4.3.6.4A on page 4.3-31.
13. Require on-site improvements such as sidewalks or pedestrian walkways to promote pedestrian activity and reduce the number of vehicle trips.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-33.
14. Require installation of skylights and energy-efficient lighting that exceeds current California Title 24 standards where feasible,	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-33.

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Suggested Mitigation Measure	Response
including electronic dimming ballasts and computer-controlled daylight sensors in the buildings.	
15. Require installation of fans to assist natural ventilation.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-33.
16. Require planting of shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and building shall be planted at the proposed project site to minimize the heat island effect and thereby reduce the amount of air conditioning required.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.6A on page 4.3-36.
17. Install central water heating systems	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-33.
18. Require use of energy-efficient appliances	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-33.
19. Install low-emissions water heaters	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-33.
20. Require planting of shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and building shall be planted at the proposed project site to minimize the heat island effect and thereby reduce the amount of air conditioning required.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-33 and Mitigation Measure 4.3.6.6A on page 4.3-35.
21. Require installation of centralized water and space conditioning systems or, alternatively, high efficiency individual heating and cooling units.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-33.
22. Require installation of automatic setback thermostats.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-33.
23. Require the incorporation of the following to reduce energy demand associated with potable water conveyance through the following methods: <ul style="list-style-type: none"> • Require incorporation of drought-tolerant plants into the landscaping palette; and • Require incorporation of water-efficient irrigation techniques. 	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.6A on page 4.3-36.
24. Require installation of energy-efficient low-pressure sodium parking lot lights or equivalent as determined by the City;	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-34.
25. Increase in insulation such that heat transfer and thermal bridging is minimized.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.6A on page 4.3-35
26. Limit air leakage through the structure or within the heating and cooling distribution	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under

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Suggested Mitigation Measure	Response
system to minimize energy consumption.	Mitigation Measure 4.3.6.6A on page 4.3-35
27. Incorporate dual-paned or other energy-efficient windows.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.6A on page 4.3-35
28. Incorporate energy-efficient space heating and cooling equipment.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.6A on page 4.3-35
29. Interior and exterior energy-efficient lighting which exceeds the California Title 24	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.6A on page 4.3-35.
30. Energy Efficiency performance standards shall be installed.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.6A on page 4.3-35 for water heating and space heating.
31. Install automatic devices to turn off lights when they are not needed.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.6A on page 4.3-35.
32. Shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and buildings shall be planted at the project site.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-33 and Mitigation Measure 4.3.6.6A on page 4.3-35.
33. Paint and surface color palette for the project shall emphasize light and off-white colors which reflect heat away from the buildings.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.6A on page 4.3-35.
34. All buildings shall be designed to accommodate renewable energy sources, such as photovoltaic solar electricity systems, appropriate to their architectural design, and shall incorporate renewable electricity systems.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.6A on page 4.3-35.
35. The project shall implement a landscaping palette emphasizing drought tolerant plants.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-34 and Mitigation Measure 4.3.6.6A on page 4.3-36.
36. The project shall implement use of water-efficient irrigation techniques.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5B on page 4.3-34 and Mitigation Measure 4.3.6.6A on page 4.3-36.
37. The project shall implement EPA Certified WaterSense labeled for equivalent faucets and high-efficiency toilets (HETs).	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.6A on page 4.3-36.
38. The project shall establish a Transportation Management Association (TMA). The TMA will coordinate with other TMAs within the City to encourage and coordinate carpooling among building occupants. The TMA will advertise its services to building occupants, and offer transit and/or other incentives to reduce GHG emissions. A plan will be submitted by the TMA to the City within two months of project completion that outlines the measures implemented by the TMA, as well as contact information.	Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.6A on page 4.3-36.

Suggested Mitigation Measure	Response
<p>39. The project shall provide preferential parking for carpools and vanpools. Locations and configurations of proposed preferential parking for carpools and vanpools are subject to review and approval by the City. Prior to final site plan approval, preferential parking for carpools and vanpools shall be delineated on the project site plan.</p>	<p>Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.6A on page 4.3-36.</p>
<p>40. Lease/purchase documents shall require the implementation of the following mitigation measures by contract specification:</p> <ul style="list-style-type: none"> • SmartWay partnership: Achieve at least 20 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of consolidated trips carried by SmartWay carriers until it reaches a minimum of 90 percent of all long haul trips carried by SmartWay carriers. • Achievement of at least 15 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of long haul trips carried by SmartWay carriers until it reaches a minimum of 85 percent of all consolidator trips carried by SmartWay carriers. • Install of catalytic converters on all gasoline-powered equipment. • Include to the greatest extent feasible electric powered and/or compressed natural gas fueled trucks and/or vehicles in fleets. • Establish and encourage use of carpool/vanpool programs through methods such as vouchers. • Require a charge for parking fees for single-occupancy vehicles. • Provide preferential parking for EV and CNG vehicles consisting of at least 15% of parking stalls. • Require use of electrical equipment (instead of gasoline-powered equipment) for landscape maintenance where technologically feasible. • Require use of only electric (instead of diesel or gasoline-powered) yard trucks. • Require that all trucks within the fleet be SmartWay rated. 	<p>Included. This suggested mitigation measure is already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.6A on page 4.3-36. Note that because the end user is not known at this time, the developer can only commit to language in the lease/purchase documents.</p>

Response to Comment 61. Threshold 3(c) is discussed in Section 4.3.6.2 of the Air Quality section (page 4.3-22).

Response to Comment 62. Threshold 3(c) is discussed in Section 4.3.6.2 of the Air Quality section (page 4.3-22).

Response to Comment 63. The analysis was done in compliance with SCAQMD methodology (SCAQMD California Environmental Quality Act (CEQA) Air Quality Handbook [SCAQMD 1993]). The SCAQMD thresholds have been developed in recognition of air district ambient conditions. EIR Section 4.3.7 discusses the cumulative air quality impacts of project construction and operations in detail. Other than the Moreno Valley Auto Mall and the Wal-Mart center to the west of the project site, the project site region is currently residential, farmland or undeveloped. The majority of the land uses that would go into a cumulative analysis are not sufficiently documented to allow a comprehensive quantitative evaluation of cumulative impacts. The project traffic study includes what data is available for these proposed projects when projecting future cumulative traffic impacts and this data is included in the air quality analysis of CO Hotspots, thus to the extent possible, the EIR does quantitatively assess cumulative impacts.

Response to Comment 64. The commenter is incorrect; the potential impacts to birds are discussed at length in Section 4.4.6.1 (Biological Resources) of the Draft EIR. Loss of the project site will incrementally impact migratory and passerine birds, but the EIR clearly indicates a lack of resources on the project site to support birds (i.e., no onsite standing water sources, no trees sufficient for perching or nesting, regular disturbance by human activity, and disking for weed abatement). Migratory birds and passerine birds are not considered significant biological resources on this site, so they were not mentioned in the Executive Summary. Development of this site would incrementally reduce foraging opportunities on this site for raptors, passerine, and migratory bird species. However, there are thousands of acres of dry farm agricultural land, Mystic Lake, and the San Jacinto Wildlife Area east of the project site that would provide significant foraging resources for birds compared to the project site.

Regarding Mitigation Measure 4.4.6.1A, the introduction to the “Mitigation Measures” section clearly states the following measures have been identified to reduce the significance of potential impacts to migratory bird species and the burrowing owl. Mitigation Measure 4.4.6.1A clearly addresses nesting (migratory) birds, which measures 4.4.6.1B and 4.4.6.1C clearly address impacts to burrowing owls.

Response to Comment 65. The CDFG’s 2012 “Staff Report on Burrowing Owl Mitigation” supersedes its 1995 Staff Report, not the Burrowing Owl Consortium’s “Burrowing Owl Survey Protocol and Mitigation Guidelines,” which has been commonly followed for burrowing owl surveys and mitigation since released in 1993. The CDFG continues to list the Burrowing Owl Consortium’s 1993 guidelines on its internet page of “Survey and Monitoring Protocols and Guidelines” (http://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html). The CDFG’s 2012 Staff Report indicates that its recommended setback buffers are “general guidelines” and “should be adjusted to address site-specific conditions.” Mitigation measure 4.4.6.1C follows the Burrowing Owl Consortium’s recommendation of a 160-foot buffer during the non-breeding season and a 250-foot buffer during the breeding season. The CDFG’s comments on the Draft EIR regarding burrowing owl (letter from Jeff Brandt, CDFG, to Jeff Bradshaw, City of Moreno Valley, August 28, 2012) do not indicate concern or disagreement with these buffer distances. In addition the site is subject to the provisions of the Western Riverside County MSHCP, in which burrowing owl relocation requires project-specific approval from CDFG. If burrowing owls are found on the site, they will be moved only with CDFG approval. Mitigation measure 4.4.6.1C indicates that if burrowing owls are found on “the project site or immediate vicinity,” the avoidance measures of 4.4.6.1C, including the buffers, will be taken. This will ensure that burrowing owls that may be found adjacent to the project site are not harmed by project-related activities. Impacts to burrowing owl habitat are covered under the MSHCP

providing that the project follows MSHCP requirements. For burrowing owl, these requirements include conducting burrowing owl surveys and relocating burrowing owls found within impact areas. Mitigation for impacts to burrowing owl habitat is required only if the project site is within the MSHCP Criteria Area or if the project site and adjacent habitat support three or more pairs of burrowing owls. The project site is not within the MSHCP Criteria Area. A focused burrowing owl survey was conducted and the site was not found to support any burrowing owls. Burrowing owl mitigation is therefore focused on avoiding take of individual burrowing owls that may move onto the site rather than on burrowing owl habitat preservation or restoration.

Response to Comment 66. The commenter is incorrect, Sections 4.4.6.2 and 4.4.6.3 of the Draft EIR clearly identifies the potential impacts of development on the 3 onsite drainage features, including the Quincy Channel. The mitigation measures do not defer mitigation, but rather specify who, when, and how the implementation of the measures will occur, as required by CEQA.

Regarding SAWA, the commenter is being argumentative. SAWA is a separate governmental unit from the City of Moreno Valley, so the City cannot “force” SAWA to use impact fees for specific purposes. However, it is the express goal of SAWA to use in lieu fee contributions for drainage impacts to acquire/maintain riparian/riverine habitat within the Santa Ana River basin. In fact, they are the most appropriate organization to collect and administer use of these fees, since they were formed specifically to help improve water quality and riparian/riverine habitat along the Santa Ana River and its tributaries. It should also be noted the offsite mitigation language relative to SAWA has been modified to reflect the most current implementation measures of the project DBESP report.

Response to Comment 67. The commenter is incorrect, Section 4.4.6.2 of the Draft EIR clearly identifies the impacts of development on the 3 onsite drainage features, including the Quincy Channel, and also specified the onsite protection of the Quincy Channel and the minimum amount of offsite mitigation required to offset the loss of the other two erosional drainage features.

Mitigation Measure 4.4.6.2B only provides more specific guidance of implementing Mitigation Measure 4.4.6.2A and for subsequent permitting of these actions. These measures do not defer mitigation, but rather specify when and how the implementation of the measures will occur, as required by CEQA.

Response to Comment 68. The commenter is incorrect. The project does not impact federal wetlands, as clearly demonstrated by Table 4.4.D in Section 4.4.6.3 of the Draft EIR. The table shows that the project will have minimal impacts on non-wetland land under the jurisdiction of the Army Corps or Regional Water Quality Control Board (0.054 acre temporary and 0.051 acre permanent), and also relatively small impacts to land under the jurisdiction of the State Department of Fish and Game (0.35 acre temporary, 0.36 acre permanent). Mitigation Measure 4.4.6.3A requires the project to obtain the appropriate federal and/or state permits for these impacts, subject to subsequent permitting approval processes by these agencies. As previously discussed in Responses to Comments D-3, Nos. 66 and 67 above, the proposed mitigation in the EIR will make sure impacts on these drainage features are less than significant. The commenter has provided no data or material supporting his opinion to the contrary. To reflect the most current implementation measures of the project DBESP, Mitigation Measures 4.5.6.2A, 4.5.6.2B, and 4.5.6.3A were modified based on comments by CDFG.

Response to Comment 69. Section 4.4 of the Draft EIR concluded that all potential impacts of the project on biological resources were either less than significant, or could be reduced to less than significant levels by implementing the recommended mitigation measures. The commenter provided no data or support to his opinion as to why the less than significant impacts of the project would contribute to significant cumulative impacts. This conclusion is incorrect, especially in light of the regional protection for biological resources provided by the MSHCP.

Response to Comment 70. The design of the proposed project is consistent with the edge treatment measures identified in the DBESP document (see Draft EIR Appendix E). This conclusion is supported by the analysis of indirect impacts in the MSHCP consistency analysis report (also in Draft EIR Appendix E). Based on these analyses, lighting and noise will not have significant impacts on any biological resources, and the commenter has not provided any empirical data or evidence to support his opinion in this regard.

“The MSHCP was conceived, developed, and is being implemented specifically to address the direct, indirect, cumulative, and growth-related effects on covered species resulting from build out of planned land use and infrastructure, including the proposed project.” (DEIR page 4.4-9). In addition, page 4.4-32 of the DEIR states that...”Project construction will contribute to the incremental loss of mule fat scrub and non-native grassland in the region, including potential habitat for some special status species. Cumulative impacts potentially include habitat fragmentation, increased edge effects, reduced habitat quality, and increased wildlife mortality. The MSHCP provides a comprehensive approach to the regional conservation of these habitats and, as a regional plan, serves to provide mitigation for cumulative impacts to covered species. Project compliance and consistency with the MSHCP ensures that any cumulative impacts to covered species are effectively mitigated. Special status species that are not covered by the MSHCP also benefit from the surveys, conservation, and other measures of the MSHCP because they occupy many of the same habitats. Therefore, the proposed project will not make a significant contribution to any cumulatively considerable impacts to biological resources.” The EIR does examine these impacts, and determines that compliance with the MSHCP will be sufficient to mitigate any potential impacts in this regard. The EIR clearly demonstrates that, other than the Quincy Channel, there are no important biological resources in the immediate vicinity of the project site, so potential indirect impacts are negligible. In addition, the EIR concluded that the design of the project, implementation of project mitigation, and payment of MSHCP mitigation fees, would be sufficient to reduce potential biological impacts of the project to less than significant levels.

Response to Comment 71. Moreno Hills Complex is not an accepted term according to the Office of State Historic Preservation. “District” is the most appropriate term; however, no such District has been formally established. What is being suggested in the comment is commonly referred to as the “landscape approach” but lacking the designation of a District no landscape considerations can be applied (although the Pechanga increasingly apply the landscape approach in their dealings with cities and developers).

Response to Comment 72. Most municipalities require that archaeologists meet either County of Riverside or Secretary of the Interior qualifications. Letter A-4 (Response to Comment 2) from the Pechangua Band of Luiseno Indians clarifies the procedures to be taken under Mitigation Measures 4.5.6.1A through 4.5.6.1E. This letter also repeated the City’s position that while it encourages developers to work with the tribes, it does not require developers to hire Native American monitors. Since the status of Native American monitors cannot be clarified at this point, their level of authority is undefined. This letter also clarifies the curation procedures that will be carried out as artifacts are recovered and leaves with the tribes the decision regarding whether or not to curate or re-bury on the project. Mitigation Measure 4.5.6.1A has been revised requiring the monitor meet Secretary of Interior standards. Mitigation Measure 4.5.6.1B has been revised to require that work cease in that area if a resource is found.

Again, note that the wording of Mitigation Measures 4.5.6.1A through 4.5.6.1E have been modified as shown in Response 3 in Letter A-4 from the Pechanga Band to address concerns of both Native American groups regarding archaeological mitigation.

Response to Comment 73. The mitigation for paleontological resources is not deferred and is commonly used as standard mitigation when there are potential paleontological resources onsite that may be uncovered during excavation activities. The City of Moreno Valley requires that the

paleontologists meet the standards of Riverside County and the Society for Vertebrate Paleontology. The San Bernardino County Museum in Redlands is well equipped to accept and curate paleontological specimens.

Response to Comment 74. Without an accepted, defined District using a landscape approach does not work either since there are no accepted boundaries for determining a cumulative area. Based on ethnographic studies we could use a 800 sq. km area or greater, but a more realistic cumulative boundary might be what is inside the 1-mile diameter of the record search area. The cumulative “universe” or boundary assumed for potential cumulative impacts for cultural resources is the City limits, as this is the largest area under control of the lead agency, and this area is supported as appropriate for a cumulative analysis in the City’s General Plan EIR as well. Regardless, the EIR clearly concludes, the proposed project will not have a significant impact on cultural resources and will not have a cumulative impact on cultural resources whether the cumulative area is the City limits or the entire ethnographic region.

Response to Comment 75. The commenter is incorrect – the project hydrology study clearly shows that post-development flows will be equal or less than pre-development conditions with construction and maintenance of the proposed detention basins. Each building area will have its own basin, and the four basins across the southern boundary of the site will help assure that offsite flows will not exceed existing runoff volumes. The Final Hydrology Study is required by the City development review process to more accurately characterize drainage conditions based on the final building and property development plans. However, the final plans must be consistent and are based on the draft hydrology plan included in Appendix G-1 of the Draft EIR. Therefore, potential flooding impacts will be less than significant, as indicated in Sections 4.7.5.2 and 4.7.5.3 of the Draft EIR.

Response to Comment 76. As demonstrated in Response to Comment D-3, No. 75 above, the commenter is incorrect - the project will not cause significant drainage or flooding impacts. The project hydrological analysis clearly shows that offsite runoff in the post-development condition will not exceed pre-development conditions for downstream land uses. Therefore, the project is not expected to make any contributions to cumulatively considerable flooding impacts in this area.

The analysis in Section 4.7, *Hydrology and Water Quality*, of the DEIR also determined that the project would not result in significant water quality impacts either onsite or for downstream properties, so the project is also not expected to make any contributions to cumulatively considerable water quality impacts in this area.

Response to Comment 77. While it is correct that soil sampling last occurred in 2004, the commenter is incorrect that this requires additional soil testing. The site has lain fallow since that time, and the only farming that has occurred in the non-citrus portions of the site have been dry farming which does not require the application of pesticides or other agricultural chemicals. In fact, the site has not even been dry farmed for several years, and the onsite ruderal vegetation has only been managed for weed abatement purposes. In addition, the citrus trees have not been commercially harvested, nor have they been irrigated or maintained as a commercial activity (i.e., no pesticides or other agricultural chemicals applied). The commenter has provided no evidence why the 2004 soil samples need to be updated. For the purposes of CEQA review, the City considers the information provided in the Draft EIR to be accurate.

Response to Comment 78. The commenter is incorrect; the Draft EIR does address removing the trail segment along the Quincy Channel north of Eucalyptus Avenue. When this trail segment was first proposed, there was an under-crossing of the SR-60 planned that would allow a trail connection to be constructed along the Quincy Channel north of the freeway. Since that time, the City has eliminated that potential under-crossing, which means the segment of the trail along the channel north of Eucalyptus Avenue would not connect to any other trail. Therefore, the ProLogis project is proposing the trail follow the north side of Eucalyptus Avenue when it is realigned through the proposed project.

There would then be a continuous trail up the Quincy Channel from the south to Eucalyptus Avenue, then the trail would go east and west along the north side of Eucalyptus Avenue. A similar trail improvement was required of the Westridge project approved just east of the proposed project. The EIR discusses potential conflicts with the “improve air quality and promote energy efficiency” section of the RTP in Section 4.8.7 of the Land Use and Planning chapter, page 4.8-18.

Response to Comment 79. It is true the project will remove some amount of potential affordable housing, and it will add more warehousing in this portion of the City. The project would also contribute to more warehousing City-wide (i.e., the southern portion of the City has an industrial specific plan). However, the comments regarding the significance of the impact are the opinion of the commenter and will have to be decided by the City Council. If the City decides to approve this project, it would have to adopt a Statement of Overriding Considerations to document that the benefits of the project (e.g., employment, revenues) outweigh the significant impacts of the project, as required by CEQA.

Table 3.C clearly identifies 6.65 million square feet of industrial projects in eight locations within the City (Sites 5, 6, 8-13). This list does include the WestRidge and Highland Fairview Corporate Park (“Skechers”) projects, but does not include World Logistics Center project of 41.6 million square feet of industrial space because that project was not proposed when the Notice of Preparation for this ProLogis project was prepared in 2008, which is the baseline time at which cumulative projects are established for an EIR analysis.

Response to Comment 80. The noise impact study was conducted based on applicable City noise standards, including those identified in the City’s Municipal Code and General Plan Noise Element indicated on pages 4.9-5 through 4.9-9 in the DEIR, and provided disclosure of potential noise impact areas. Specific comments on the noise study are addressed in Responses 81-93.

Response to Comment 81. The dominant on-site noise generating activity is the truck maneuvering during the loading/unloading operations at the loading docks. These noise-generating activities include trucks moving in the loading dock, idling, unloading or loading, moving out of the loading dock, and leave the site. The noise impact analysis was based on the site plan and land use assumptions for the proposed LADP development to determine that the closest distance between the loading/unloading area and the future residences to the south. This distance is approximately 280 feet. Other activities associated with the trucks on-site would be traveling at slow speed (15 mph) to get in and out of the site or to move to the designated parking area. This activity generates much lower noise level and last much shorter time when compared to the activities occurring within the loading dock area. Therefore, evaluating the potential truck-related noise within the loading dock area represents the worst case scenario.

It should be noted that noise from on-site operations, including loading/unloading and onsite maneuvering, have been adequately evaluated at the nearest noise-sensitive land uses and no significant noise impacts were identified. Similarly, even though individual truck noise from trucks driving on public streets is not regulated by the local governments (city or county), project-related traffic noise level increases along roadway segments in the project vicinity were shown to be less than 3 dBA and would not be perceptible by the human ear.

In addition, the commenter is referred to Section 4 of this document for an evaluation of a less intensive modified plan, which is a subset of the Reduced Intensity Alternative evaluated in the DEIR (and which was determined to be environmentally superior to the Proposed Project). This less intensive plan proposes to develop 4 warehouse buildings, leaving the southeast portion of the site vacant for future development of residential uses consistent with existing zoning (R-5 and RA-2) adjacent to the existing residential neighborhood to the southeast.

Response to Comment 82. The 3 dBA increase was not identified in the noise impact analysis as a threshold on page 4.9-2 in the DEIR. Rather, it was stated that “audible impacts that refer to

increases in noise levels noticeable to humans generally refer to a change of 3 dB or greater, since this level has been found to be barely perceptible in exterior environment. It should be noted that, every doubling of the sound energy from the source would result in a 3 dBA increase in sound level. This would mean that, given everything else remains the same, the traffic volume needs to be doubled to cause an increase of 3 dBA in traffic noise. For noise level changes that are not perceptible by the human ear, they would not cause any audible change and would therefore not result in any significant noise impacts. The City's noise thresholds were identified in DEIR Section 4.9.2, Existing Policies and Regulations (pages 4.9-5 to 4.9-8), where an exterior noise level of 60 to 65 dBA CNEL/Ldn and an interior noise level of 45 dBA CNEL/Ldn were identified for residential uses, as well as a maximum source land use noise level for residential uses is 60 dBA during daytime hours (7 a.m. to 10 p.m.) and 55 dBA during the nighttime hours (10 p.m. to 7 a.m.). For commercial source land uses, the maximum noise level is 65 dBA during daytime hours and 60 dBA during nighttime hours. (Source: Chapter 11.80.030, Table 11.80.030-2, City of Moreno Valley Municipal Code, City of Moreno Valley).

Response to Comment 83. The City's Municipal Code, Table 11.80.030-2, Maximum Sound Levels for Source Land Uses states that, "...restricts noise levels above 55 dBA at night and 60 dBA during the day in residential areas, when measured at a distance of 200 feet or more from the real property line of the source of the sound if the sound occurs on privately owned property, ..." Therefore, it is clear that the City's Municipal Code specifically indicates that measurement of the source noise levels would be "at a distance of 200 feet or more from the real property line of the source of the sound". For this project, the nearest residences are at a distance of 664 feet or more from the project (sound source) site. Evaluating the noise level at the nearest residential uses meets the City's definition specified in the Municipal Code.

In addition, the commenter is referred to Section 4 of this document for an evaluation of a less intensive modified plan, which is a subset of the Reduced Intensity Alternative evaluated in the DEIR (and which was determined to be environmentally superior to the Proposed Project). This less intensive plan proposes to develop 4 warehouse buildings, leaving the southeast portion of the site vacant for future development of residential uses consistent with existing zoning (R-5 and RA-2) adjacent to the existing residential neighborhood to the southeast. This alternative plan would substantially reduce noise impacts from warehousing for the residences southeast of the project site.

Response to Comment 84. The City's noise thresholds for transportation sources were identified in the DEIR Section 4.9.2, Existing Policies and Regulations (pages 4.9-5 to 4.9-8), where an exterior noise level of 60 to 65 dBA CNEL/Ldn and an interior noise level of 45 dBA CNEL/Ldn were identified for residential uses. For industrial land uses, the City identifies 70 dBA CNEL as the acceptable exterior noise threshold. Most of the roadway segments in the project vicinity would have up to 2.0 dBA increase in traffic noise as a result of the project-related traffic. This range of traffic noise level increases would not be perceptible by the human ear in an outdoor environment. The only exception is along Eucalyptus Avenue between Moreno Beach Drive and Redlands Boulevard, where the project-related traffic noise level increases would be from 2.5 to 13.6 dBA under the Existing With Project Conditions and from 4.5 to 13.3 dBA under the 2012 With Project Conditions. Since this segment of the road goes or will go through industrial land uses and vacant land, the City's noise standard for industrial land uses of 70 dBA CNEL was used. The 70 dBA CNEL noise contour would be confined to within the roadway right-of-way, therefore, there would be no significant traffic noise impact on land uses along the road.

Response to Comment 85. The City has separate noise standards regulating mobile (traffic) and stationary (on-site operational activity) noise sources in its General Plan Noise Element and Municipal Code. Therefore, noise from different sources is analyzed based on the noise regulations applicable to the activity generating it. The City's noise standards regulating traffic noise are those from the General Plan Noise Element in terms of the 24-hour weighted community noise equivalent level (CNEL) to protect residents during the more sensitive evening and nighttime hours from noise

exposure. The CNEL noise metric is averaged and weighted over a 24-hour period, so it is not practical or feasible to combine the CNEL with the short-term, intermittent noise events associated with stationary sources such as truck loading/unloading activities or activity in the parking lot. Chapter 9.03.040 of the City's Planning and Zoning Code states that in all residential districts, air conditioners, heating, cooling, and ventilating equipment and all other mechanical lighting or electrical devices shall be operated so that noise levels do not exceed 60 dBA (L_{dn}) at the property line. The City's Municipal Code, Section 9.10.140, specifies that all commercial and industrial uses shall be operated so that noise created by any loudspeaker, bells, gongs, buzzers, or other noise attenuation or attracting devices shall not exceed 55 dBA at any one time beyond the boundaries of the property. Chapter 11.80.030, Table 11.80.030-2, City of Moreno Valley Municipal Code, sets a maximum source land use noise level for residential uses as 60 dBA during daytime hours (7 a.m. to 10 p.m.) and 55 dBA during the nighttime hours (10 p.m. to 7 a.m.). For commercial source land uses, the maximum noise level is 65 dBA during daytime hours and 60 dBA during nighttime hours. The City does not have noise standards regulating stationary sources such as on-site loading/unloading activities, therefore, the percentile exceedance levels (L_n) recommended in the State's Modal Community Noise Ordinance, which represent the noise levels that were exceeded for N percent of the time during the one-hour analysis period, are used in the analysis (DEIR, page 4.9-21 under Long-term Operational Noise Impacts for Truck Loading/Unloading Operations) Because the adjacent future development had no final plans available at the time the noise impact study was conducted, the future potential noise impact from on-site operations was evaluated separately using the best assumptions available at the time the noise impact analysis was conducted. The closest possible loading/unloading area was used for on-site operations adjacent to the future planned residential uses.

Response to Comment 86. Please refer to Responses to Comments D-3, Nos. 84 and 85 above for traffic noise impact analysis. Also, please refer Response to Comment D-3, No. 85 on the use of separate noise standards from different noise sources. Please refer to the Response to Comment D-3, No. 83 on the noise level analyzed at the nearest residential property line, rather than the project's own property line. The proposed on-site building would function as a noise barrier for receivers on the opposite side of the noise source. As a rule-of-thumb, a noise barrier that blocks the line-of-sight between the noise source and the receiver would provide at least a 5 dBA in noise reduction (Based on Caltrans Technical Noise Supplement (TeNS, Caltrans, November 2009), for every 2 feet increase in barrier height, an additional 1 dBA noise reduction would be achieved). Since the building would be at least 10 feet above ground and is much higher than the barrier height that barely blocks the line-of-sight, it would provide noise attenuation higher than 5 dBA.

Response to Comment 87. The noise impact analysis evaluated existing and future ambient noise level increases by the project-related traffic on roadway segments in the project vicinity, and determined that no significant noise impacts would occur, partly since the majority of the roadway segments would not have noise level increases that are audible in the outdoor environment and partly since there are no sensitive land uses along the roadway segments with relatively large project-related traffic and the projected noise levels would not exceed the exterior noise standards for the land uses along these segments (industrial uses and vacant land). The City's noise thresholds for transportation sources were identified in 4.9.2, Existing Policies and Regulations (Pages 4.9-5 to 4.9-8), where an exterior noise level of 60 to 65 dBA CNEL/ L_{dn} and an interior noise level of 45 dBA CNEL/ L_{dn} were identified for residential uses, For industrial land uses, the City identifies 70 dBA CNEL as the acceptable exterior noise threshold. Most of the roadway segments in the project vicinity would have up to 2.0 dBA increase in traffic noise as a result of the project-related traffic. This range of traffic noise level increases would not be perceptible by the human ear in an outdoor environment. The only exception is along Eucalyptus Avenue between Moreno Beach Drive and Redlands Boulevard, where the project-related traffic noise level increases would be from 2.5 to 13.6 dBA under the Existing With Project Conditions and from 4.5 to 13.3 dBA under the 2012 With Project Conditions. Since this segment of the road goes or will go through industrial land uses and vacant land, and the noise standard for industrial land uses, the 70 dBA CNEL noise contour would be confined to within the roadway right-of-way and would not impact these industrial land uses, there

would be no significant noise impact on land uses along the road. Therefore, no significant traffic noise impacts would occur. Similarly, for on-site operational noise sources, even though the ambient noise level would increase as a result of the project operations, no noise-sensitive land uses would be exposed to noise levels that exceed the City's noise standards for such uses.

Response to Comment 88. Please refer to the response for Response to Comment D-3, No. 87 for the existing noise levels in the project vicinity. The City's General Plan Noise Element (or any other Element) does not have noise level restrictions specified for construction activity. The City's Municipal Code, Chapter 11.80.030, prohibits grading activities between the hours of 8:00 p.m. and 7:00 a.m. and prohibits construction activities from 8:00 p.m. to 6:00 a.m. during the week and between 8:00 p.m. and 7:00 a.m. on weekends and holidays. However, it does not specify any upper noise limits for construction activity. Compliance with the construction hours specified in the City's Municipal Code would result in construction noise impacts that are less than significant. While impacts would be considered less than significant as long as construction activities occur within the designated hours identified in the City's Municipal Code, mitigation measures 4.9.6.1A through 4.9.6.1D have been identified to reduce the noise levels that would expose nearby sensitive receptors to high construction noise.

It should be noted that the noise levels obtained from the 1987 edition of Noise Control for Buildings and Manufacturing Plants (Bolt, Beranek & Newman, 1987) represent a conservative analysis for construction equipment. Because of technology advancement, most current day construction equipment emits lower noise levels compared to the 1987 version.

In addition, the commenter is referred to Section 4 of this document for an evaluation of a less intensive modified plan, which is a subset of the Reduced Intensity Alternative evaluated in the DEIR (and which was determined to be environmentally superior to the Proposed Project). This less intensive plan proposes to develop 4 warehouse buildings, leaving the southeast portion of the site vacant for future development of residential uses consistent with existing zoning (R-5 and RA-2) adjacent to the existing residential neighborhood to the southeast. This alternative plan would substantially reduce noise impacts from warehousing for the residences southeast of the project site.

Response to Comment 89. The City's General Plan Noise Element (or any other Element) does not have noise level restrictions specified for construction activity. Policy 6.5.2 only states that construction activities shall be operated in a manner that limits noise impacts on surrounding uses. The City's Municipal Code, Chapter 11.80.030, prohibits grading activities between the hours of 8:00 p.m. and 7:00 a.m. and prohibits construction activities from 8:00 p.m. to 6:00 a.m. during the week and between 8:00 p.m. and 7:00 a.m. on weekends and holidays. However, it does not specify any upper noise limits for construction activity. Compliance with the construction hours specified in the City's Municipal Code would result in construction noise impacts that are less than significant. While impacts would be considered less than significant as long as construction activities occur within the designated hours identified in the City's Municipal Code, Mitigation Measures 4.9.6.1A through 4.9.6.1D have been identified to reduce the noise levels that would expose nearby sensitive receptors to high construction noise.

Response to Comment 90. Please refer to Response to Comment D-3, No. 89 above on construction activity meeting the City's requirements identified in its Municipal Code and to limit noise closest to the existing residences. Mitigation Measure 4.9.6.1D has been amended as follows:

4.9.6.1D. *During all-project site construction activities at Building 6 (i.e., closest to existing residences), the construction contractor shall limit all construction-related activities ~~that would result in high noise levels~~ to between the hours of 6:00 a.m. and 8:00 p.m. on weekdays and between the hours of 7:00 a.m. to 8:00 p.m. on weekends and holidays, unless written approval is obtained from the City Building Official or City Engineer for specific construction activities that must be conducted outside of the permitted time periods.*

For activities that would be conducted inside the building/structure and would not result in any noise annoyance to off-site land uses, they can occur outside of the hours specified in the Municipal Code.

Response to Comment 91. According to the project noise assessment, none of these measures would be required for noise mitigation purposes.

No significant construction noise impacts would occur if construction of the proposed project would occur within the permitted hours of 6:00 a.m. to 8:00 p.m. of any working day, and within the permitted hours of 7:00 a.m. and 8:00 p.m. on weekends and federal holidays. Compliance with the construction hours specified in the City's Municipal Code would result in construction noise impacts that are less than significant. While impacts would be considered less than significant as long as construction activities occur within the designated hours identified in the City's Municipal Code. Mitigation Measures 4.9.6.1A – 4.9.6.1D were identified in the Draft EIR to ensure that the City's noise standards are implemented.

As indicated in the noise impact study, no noise barriers would be required during project construction (DEIR, page 4.9-26 under Construction Noise Impact nor are they required during operation of the proposed project (DEIR, page 4.9-24 under Combined Noise Levels from On-site Stationary Sources). The proposed project will comply with all mitigation measures identified and comply with applicable federal, State, and City guidelines.

Response to Comment 92. The noise impact analysis has evaluated the project's cumulative impacts from both mobile and stationary sources. For example, based on all available information and provided future projected traffic noise along roadway segments in the project vicinity under the Project Buildout (2035) and General Plan Buildout conditions. As shown in Tables 4.9.J through 4.9.M on pages 4.9-15 to 4.9-20 of the DEIR, project-related traffic noise level increases under these two scenarios would be 1.3 dBA or less and the proposed land uses would not be significantly impacted by the future traffic noise in the project vicinity. Furthermore, on DEIR pages 4.9-20 through 4.9-24, with a worst-case scenario of all on-site stationary noise sources occurring at the same time with their maximum noise level, the maximum noise level measured at 200 feet from the project's southern boundary would be 55 dBA L_{max} . Although this "combined" noise level is not likely to occur due to the intermittent nature of these noise events, if it occurs, it would still not exceed the City's 55 dBA L_{max} nighttime standard for residential uses. Therefore, no significant cumulative noise impacts were identified, either from mobile or from stationary noise sources.

Response to Comment 93. After review, the LSA Noise Assessment Group determined that none of these references provide additional relevant information to determine the project's noise impacts in a more accurate or appropriate manner. All project-related mobile and stationary noise sources have been evaluated and compared to noise standards applicable to these different noise sources. No additional or overlapping noise analysis is required to confirm the findings in the noise impact analysis.

Response to Comment 94. The City of Moreno Valley uses a more restrictive, higher truck generating rate for high cube warehouses (buildings over 200 KSF). The total trip generation of the project used in the analysis is higher than that if the analysis was purely based on ITE rates.

Response to Comment 95. The commenter is incorrect - the analysis does not use a plan to plan comparison and uses the trips from the proposed project in the analysis. The "Without Project" analyses for all scenarios are based on conditions where the proposed site is vacant. Therefore, the comparison between without and with project conditions is comparing no development on site with the proposed project. An existing plus project analysis has also been included which evaluates the impacts of the project on existing physical conditions.

Response to Comment 96. LOS is a metric used by traffic engineers throughout the state to evaluate traffic conditions. LOS is based on delay and is a function of traffic volumes and capacity at intersections. Section 4.11.1.3 of the DEIR explains the concept of LOS. In addition, the Traffic Study also includes v/c ratios as requested by the commenter.

Response to Comment 97. In terms of traffic, most of the trips are using the SR-60 freeway. The routes from the project to the SR-60 freeway do not pass through existing and future residential areas or schools with the proposed change to the Circulation Element. An examination of school locations in the area did not show any schools with direct access to the freeway. The entire traffic analysis is based on the concept of Passenger Car Equivalents (PCE) which converts trucks to an equivalent number of passenger cars to correctly evaluate impacts of trucks which can be larger and slower than passenger cars. The traffic impacts of trucks sharing the road with passenger vehicles have been adequately analyzed.

Response to Comment 98. The following table provides an analysis of the project's consistency with, or the inapplicability of, the various transportation-related policies cited on pages 4.11-11 to 4.11-14 of the Draft EIR. Please note that this additional information does not result in identification of new or severe impacts.

City General Plan Policies/Objectives	Project Consistency
Community Development Element	
Policy 2.2.17: Discourage nonresidential uses on local residential streets that generate traffic, noise, or other characteristics that would adversely affect nearby residents.	As identified on page 4.11-37 in the Draft EIR, the project proposes to eliminate the planned Quincy Street connection to the north of proposed Eucalyptus Avenue. Elimination of the Quincy Street connection creates a physical barrier between the proposed project's industrial uses and the nearby residential uses, and will help to segregate and prevent truck traffic from entering future residential streets.
Circulation Element	
Objective 5.1: Create a safe, efficient, and neighborhood-friendly street system.	The project is an industrial development and as such does not fall under a "neighborhood" as used in the General Plan. The project will construct roadways along its frontage to City standards. See response to Policy 2.2.17.
Policy 5.1.1: Plan access and circulation of each development project to accommodate vehicles (including emergency vehicles and trash trucks), pedestrians, and bicycles.	Access and circulation for the project will accommodate vehicles (including emergency vehicles and trash trucks), pedestrians, and bicycles.
Policy 5.1.2: Plan the circulation system to reduce conflicts between vehicular, pedestrian, and bicycle traffic.	The project will construct roadways and sidewalks to City Standards. The City Standards are developed to create safe conditions.
Policy 5.1.3: Require adequate off-street parking for all developments.	The project provides off street parking based on City standards.
Policy 5.1.4: Driveway placement shall be designed for safety and to enhance circulation wherever possible.	The project will construct driveways to City Standards. The City Standards are developed to create safe conditions.
Policy 5.1.5: Incorporate Americans with Disabilities Act (ADA) and Title 24 requirements in roadway improvements as appropriate.	City Standards include both ADA and Title 24 requirements
Policy 5.1.6: Design new developments to provide opportunity for access and circulation to future adjacent developments.	Adjacent vacant land will be provided access.
Objective 5.2: Implement access management policies.	Roadways will be constructed per City Standards that incorporate various access

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City General Plan Policies/Objectives	Project Consistency
	management policies.
Policy 5.2.1: Locate residential units with access from local streets. Minimize direct residential access from collectors. Prohibit direct single-family driveway access on arterials and higher classification roadways.	See the response above for Objective 5.2. This policy is inapplicable to the proposed industrial project.
Policy 5.2.2: Feed short local streets into collectors.	See the response above for Objective 5.2. This policy is inapplicable to the proposed industrial project.
Policy 5.2.3: Encourage the incorporation of traffic-calming design into local and collector streets to promote safe vehicle speeds.	See the response above for Objective 5.2. This policy is inapplicable to the proposed industrial project.
Objective 5.3: Maintain LOS C on roadway links, wherever possible, and LOS D in the vicinity of SR-60 and high employment centers.	As identified on page 4.11-5 in the Draft EIR, the traffic study prepared for the project utilized a level of service standard of LOS D for all City intersections and roadways analyzed in the traffic study, with the exception of Moreno Beach Drive/Cottonwood Avenue, at which the level of service standard of LOS C was used. For all signalized ramp terminus intersections on SR-60, the level of service standard of between LOS C and LOS D was used. As identified on pages 4.11-31, 4.11-32, 4.11-33, 4.11-35, and 4.11-37 in the Draft EIR, all impacts to City intersections are mitigated to less than significant levels with mitigation.
Policy 5.3.1: Obtain right-of-way and construct roadways in accordance with the designation shown on the General Plan Circulation Element Map and the City street improvement standards.	The project will be required to construct adjacent half street sections in accordance with City street improvement standards. Although the project will not construct Encilia Avenue, the project will preserve right-of-way along the south project boundary to allow Encilia Avenue to be constructed in the future in accordance with the designation shown on the General Plan Circulation Element Map and the City street improvement standards.
Policy 5.3.5: Ensure that new development pays a fair-share cost to provide local and regional transportation improvements and to mitigate cumulative traffic impacts. For this purpose, require new developments to participate in Transportation Uniform Mitigation Fee (TUMF), the Development Impact Fee Program (DIF), and any other applicable transportation fee programs and benefit assessment districts.	As identified on pages 4.11-31, 4.11-32, 4.11-33, and 4.11-35 in the Draft EIR, the project applicant shall implement transportation improvements, either through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program, or through a fair-share contribution to the City of Moreno Valley.
Policy 5.3.6: Where new developments would increase traffic flows beyond the LOS C (or LOS D, where applicable), require appropriate and feasible mitigation measures as a condition of approval. Such measures may include extra right-of-way and improvements to accommodate left-turn and right-turn lanes at intersections, or other improvements.	See response to Objective 5.3. All impacts to City intersections are mitigated to less than significant levels with mitigation.
Policy 5.3.7: Provide consideration to projects that have overriding regional or local benefits that would be desirable even though the LOS standards cannot be met. These projects would be required to analyze traffic impacts and mitigate such impacts to the extent that it is deemed feasible.	See response to Objective 5.3. All impacts to City intersections are mitigated to less than significant levels with mitigation. Impacts to freeway ramps and freeway segments cannot be mitigated and would remain significant and unavoidable until such time that

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City General Plan Policies/Objectives	Project Consistency
	improvements are constructed. Caltrans does not have a mechanism for development projects to contribute to improvements on State Highways and the City has no control over when and how regional freeway improvements will be constructed.
Objective 5.4: Maximize efficiency of the regional circulation system through close coordination with State and regional agencies and implementation of regional transportation policies.	As identified on page 4.11-30 in the Draft EIR, the traffic study includes analysis of regional transportation facilities. These facilities are funded by the Transportation Uniform Mitigation Fee (TUMF), which establishes jurisdictional fair-share contributions for regional transportation facilities (e.g., freeway interchanges, regional arterials, and railroad grade separations) in western Riverside County. The following improvements within the project area are included in the TUMF program: <ul style="list-style-type: none"> • SR-60/Moreno Beach Drive Interchange reconstruction • SR-60/Redlands Boulevard Interchange reconstruction
Policy 5.4.1: Coordinate with Caltrans and the Riverside County Transportation Commission (RCTC) to identify and protect ultimate rights-of-way, including those for freeways, regional arterial projects, transit, bikeways, and interchange expansion.	See response to Objective 5.4-4.
Policy 5.4.2: Coordinate with Caltrans and the RCTC regarding the integration of Intelligent Transportation Systems (ITS) consistent with the principles and recommendations of the Inland Empire Regional ITS Architecture Project.	See response to Objective 5.4-4.
Objective 5.5: Maximize efficiency of the local circulation system by using appropriate policies and standards to design, locate, and size roadways.	Roadways for the project have been sized per the City's General Plan Circulation Element. A General Plan Amendment is being processed to address the location of Encilia Avenue.
Policy 5.5.3: Prohibit points of access from conflicting with other existing or planned access points. Require points of access to roadways to be separated sufficiently to maintain capacity, efficiency, and safety of the traffic flow.	Project driveways are spaced to provide sufficient sight distances to maintain the capacity, efficiency and safety of traffic flow.
Policy 5.5.4: Wherever possible, minimize the frequency of access points along streets by the consolidation of access points between adjacent properties on all circulation element streets, excluding collectors.	The project consolidates driveways wherever possible.
Policy 5.5.5: Design streets and intersections in accordance with the Moreno Valley Municipal Code.	The project will be required to construct adjacent half street sections in accordance with City street improvement standards.
Policy 5.5.8: Whenever possible, require private and public land developments to provide on-site and off-site improvements necessary to mitigate any development-generated circulation impacts. A review of each proposed land development project shall be undertaken to identify project impacts to the circulation	See response to Objective 5.3 and Policy 5.3.6.

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City General Plan Policies/Objectives	Project Consistency
system. The City may require developers to provide traffic impact studies prepared by qualified professionals to identify the impacts of a development.	
Policy 5.5.9: Design curves and grades to permit safe movement of vehicular traffic per applicable Caltrans and Moreno Valley standards.	The project will be required to construct adjacent half street sections in accordance with City street improvement standards, including appropriate curve radii standards.
Policy 5.5.10: Provide adequate sight distances for safe vehicular movement at all intersections and driveways.	The project will be required to construct adjacent half street sections in accordance with City street improvement standards, including appropriate site distance provisions.
Objective 5.8: Encourage development of an efficient public transportation system for the entire community.	This objective is inapplicable to the proposed industrial project, because this is an objective oriented to an efficient public transportation system within the City, and is larger than a project level initiative. The project will provide bus bays in the area where RTA requests them.
Policy 5.8.1: Support the development of high-speed transit linkages, or express routes, that would benefit the citizens and employers of Moreno Valley.	See the response above for Objective 5.8. This policy is inapplicable to the proposed industrial project.
Policy 5.8.4: Ensure that all new developments make adequate provision for bus stops and turnout areas for both public transit and school bus service.	The project will provide bus bays in the area where RTA requests them.
Objective 5.10: Encourage bicycling as an alternative to single occupant vehicle travel for the purpose of reducing fuel consumption, traffic congestion, and air pollution.	This objective is inapplicable to the proposed industrial project, because this is an objective oriented to promoting bicycling within the City and is larger than a project level initiative. However, the project will provide bike lanes on Eucalyptus Avenue and also provides bike parking to facilitate alternative transportation should employees desire to bike to work.
Policy 5.10.1: Bikeways shall link residential neighborhood areas with parks, employment centers, civic and commercial areas, and schools.	The project provides bike parking to facilitate alternative transportation should employees desire to bike to work.
Objective 5.11: Eliminate obstructions that impede safe movement of vehicles, bicyclists, and pedestrians.	The project will construct roadways based on City standards, which consider all modes of travel and their safety.
Policy 5.11.2: Driveways shall be designed to avoid conflicts with pedestrian and bicycle travel.	The project will construct driveways to City Standards. The City Standards are developed to create safe conditions.
Program 5-1: Periodically review current traffic volumes, traffic collision data, and the pattern of urban development to coordinate, program, and as necessary revise the planning and prioritization of road improvements.	This program is inapplicable to the proposed industrial project, because this is a program for the City to review traffic data for the purposes of revising the transportation plan and for prioritizing roadway improvements within the City.
Program 5-2: Periodically reassess the goals, objectives and policies statements of the Circulation Element and propose amendments, as necessary.	This program is inapplicable to the proposed industrial project, because this is a program for the City to reassess the Circulation

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City General Plan Policies/Objectives	Project Consistency
	Element as necessary.
Program 5-3: Develop a comprehensive strategy to ensure full funding of the circulation system. The strategy will include the DIF, TUMF, and other funding sources that may be available to the City. In addition, the creation of benefit assessment districts, and road and bridge fee districts may be considered where appropriate.	This program is inapplicable to the proposed industrial project, because this is a program for the City to develop a comprehensive strategy to ensure full funding of the circulation system using the DIF, TUMF, other funding sources, benefit assessment districts, and road and bridge fee districts.
Program 5-4: Develop a multi-year transportation infrastructure improvement program that, to the extent feasible, phases the construction of new projects in advance of new development.	This program is inapplicable to the proposed industrial project, because this is a program for the City to develop a multi-year transportation infrastructure improvement program.
Program 5-5: The above-referenced program will prioritize circulation improvement projects to be funded from DIF, TUMF and other sources. Prioritization to consider the following factors: (a) Traffic safety; (b) Congestion relief; (c) Access to new development; and (d) Equitable benefit.	This program is inapplicable to the proposed industrial project, because this is a program for the City to develop a multi-year transportation infrastructure improvement program with prioritized circulation improvements.
Program 5-6: Conduct studies of specified arterial segments to determine if any additional improvements will be needed to maintain an acceptable LOS at General Plan build-out. Generally, these segments will be studied as new developments are proposed in their vicinity. Measures will be identified that are consistent with the Circulation Element designation of these roadway segments, such as additional turn lanes at intersections, signal optimization by coordination and enhanced phasing, and travel demand management measures. The study of specified arterial segments will be required to identify measures to maintain an acceptable LOS at General Plan build-out for at least one of the reasons discussed below: (a) Segments will need improvement, but their ultimate volumes slightly exceed design capabilities. (b) Segments will need improvements but require inter-jurisdictional coordination. (c) Segments would require significant encroachment on existing adjacent development if built out to their Circulation Element designations.	This program is inapplicable to the proposed industrial project, because this is a program for the City to conduct studies of specified arterial segments to determine if any additional improvements will be needed to maintain an acceptable level of service at General Plan build-out.
Program 5-7: Establish traffic study guidelines to deal with development projects in a consistent manner. The traffic study guidelines shall include criteria for projects that propose changes in the approved General Plan land uses.	This program is inapplicable to the proposed industrial project, because this is a program for the City to establish traffic study guidelines. The City has traffic study guidelines and the analysis was conducted in accordance to these guidelines.
Program 5-13: Implement Transportation Demand Management (TDM) strategies that reduce congestion in the peak travel hours. Examples include carpooling, telecommuting, and flexible work hours.	Similar mitigation measures are already included in Section 4.3 Air Quality of the Draft EIR under Mitigation Measure 4.3.6.5A on page 4.3-33, Mitigation Measure 4.3.6.5B on page 4.3-34, and Mitigation Measure 4.3.6.6A on 4.3-36.

Response to Comment D-3, No. 78 above explains why the project is proposing to remove the Quincy Channel trail link north of Eucalyptus Avenue (it does not connect to any trail to the north). The trail is proposed to be realigned through both the ProLogis and the WestRidge (located to the east of ProLogis project) projects to follow the north side of Eucalyptus Avenue, and then connect up to the Quincy Channel trail south of Eucalyptus Avenue. There would then be a continuous trail along the Quincy Channel from the south to Eucalyptus Avenue, then the trail would go east and west along the north side of Eucalyptus Avenue. A similar trail improvement was required of the Westridge project.

Response to Comment 99. It is correct that the Trails Commission has accepted the amendment to the Master Plan of Trails. However, the Trails Commission is not an approval body, and approval from the City Council will be required because the Master Plan of Trails is part of the General Plan.

Response to Comment 100. Beyond a delay of 100 seconds, the HCM analysis methodologies fail to accurately reflect increased delays. For future conditions, background traffic growth will lead to congestion and cumulative impacts. As development occurs, fees will be collected to improve the circulation system to accommodate growth in traffic. The project generates fewer trips than the current land use designation for the site. Therefore, the planned improvements included in the DIF and TUMF should be sufficient to mitigate cumulative impacts from this project, as other cumulative development occurs. As stated in Section 4.11.6.4, the project will mitigate its impacts to the existing plus project conditions, per CEQA.

Response to Comment 101. The City's DIF includes the General Plan Roadway system. Since the project generates less trips than those anticipated in the General Plan, the ultimate General Plan Roadway system will be sufficient to accommodate project traffic. As new development occurs, fees will be collected to improve the circulation system to accommodate growth in traffic. As stated in Section 4.11.6.4, direct project impacts will be mitigated by the project.

Response to Comment 102. As stated in Section 4.11.6.4, of the DEIR, the project will mitigate its direct impacts to intersections based on the Existing Plus Project analysis. Cumulative impacts will be mitigated by payment of TUMF, DIF and fair-share contributions.

Response to Comment 103. Potential project-related traffic noise impacts are determined based on the worst-case scenario, which is typically the build-out year that has the highest traffic volumes. Traffic noise impacts for the opening year are presented to show interim year project-related increases, which were found to be small and less than significant. Since overall traffic volumes would be higher in 2016 when compared to the overall traffic volumes in 2012, project-related contribution would be even smaller in 2016 compared to 2012. Therefore, the use of 2012 as the opening year would not affect the findings in the noise impact analysis since project-related traffic noise level increases in 2016 would be smaller than those identified in 2012. Noise impacts associated with on-site stationary sources, such as loading/unloading operations, would not be affected by the difference in opening year because they are analyzed with project buildout conditions for the worst case scenario on potential noise impacts on adjacent land uses. Therefore, no significant effect would occur for the difference in opening year in the noise impact analysis.

Response to Comment 104. The latest information from the County is that the Badlands landfill will close in 2024 not 2016, so the references to 2016 will be changed (see below). Therefore, the project will not have a significant impact on solid waste disposal services because the landfill will have adequate capacity to accommodate the proposed project's waste stream.

4.12.1.7 Cumulative Impacts to Solid Waste Services (Draft EIR p.4.12-5)

AB 939 mandates the reduction of solid waste disposal in landfills. While the Badlands Sanitary Landfill has an estimated closure date of ~~2016~~ 2024, as previously identified, the City's waste hauler will also use other County landfills in the area (e.g., Lamb Canyon Landfill and El Sobrante Landfill). The estimated closure date of the Lamb Canyon Landfill is 2023 and the estimated closure date of the El Sobrante Landfill is 2030. With planned expansion activities of landfills in the project vicinity and projected growth rates contained within the City's General Plan EIR, sufficient landfill capacity would exist to accommodate future disposal needs through City build out in 2030. Therefore, build out of the City General Plan would not create demands for solid waste services that would exceed the capabilities of the County's waste management system. Consequently, cumulative impacts associated with solid waste within the City would be considered less than significant.

Response to Comment 105. The commenter is incorrect. A comprehensive Water Supply Assessment was prepared for this project, which was extensively discussed in Section 4.12.2.6.2 of the Draft EIR. That analysis evaluated available water supplies compared to current and future projected conditions under a variety of scenarios (i.e., various drought conditions). That analysis determined there were sufficient supplies of water available to serve the project over a 20-year time frame.

Response to Comment 106. The project will install infrastructure to support solar power, which is all the City is encouraging, thus the consistency statement. The applicant has agreed to obtain LEED Certified status meaning that the buildings will be much closer to zero net energy (which includes both operational energy consumption and the life cycle of building materials) than were buildings constructed in the past, thus they are consistent with the aim of zero net energy. The Draft EIR discusses the existing greenhouse gas/climate change setting including the main gases of concern; current emissions inventory at the global, US, and State levels; a detailed description of what global warming is and the effects that result, all of which could be considered the "threat of greenhouse gas pollution and global warming." The EIR attempts to present a non-sensational, balanced description based on the best information available. Section 4.13.2 describes the entire regulatory setting, including all applicable federal, State and City of Moreno Valley regulations and policies.

Response to Comment 107. The process of LEED certification is a demanding one that includes not only aspects of the building construction but also is greatly affected by tenant operations. As the EIR is only covering aspects under the control of the applicant and not the future tenant, achieving the LEED status can only be discussed in general terms. The feasibility of suggested GHG-related mitigation measures have been discussed in other responses, see the Responses to Comments 60, 108, 112 in this letter (D-3, Johnson & Sedlack) and Responses to Comments 1 and 27 in Letter D-2 (Sierra Club).

Response to Comment 108. Mitigation Measure 4.13.6.1A lists select features from Title 24 of the California Code of Regulations to emphasize these important features are included in the project construction. The measure states that the features are required by Title 24 of the California Code of Regulations. Since the measures are required by Code, they are feasible. Mitigation measures which require compliance with environmental regulations have been found by the California courts to be common and reasonable mitigation measures (*Sundstrom v. County of Mendocino* (11988) 202 Cal. App.3d)

Response to Comment 109. A clerical error was made in the Draft EIR regarding energy conservation and project mitigation. Section 4.3, *Air Quality*, contains two mitigation measures that refer to a 20 percent reduction in project energy use beyond or below Title 24. First, the "20 percent reduction" phrase refers to older California Building Code requirements – these older codes were much less stringent than the current California "Green" Building Code, which includes the latest Title 24 requirements. In addition, one measure just refers to "Title 24" while the other refers to "2008 California Title 24, Part 6 Energy Efficiency Standards". These references are inconsistent, and the

measures have been modified to reflect the most current regulatory requirements for energy conservation. The most current California Green Building Code was adopted in 2010, but incorporates the most current Title 24, Part 6 Energy Efficiency Standards which are from 2008, not 2010. Projects that would have been able to achieve a 20 percent reduction in building energy use from previous California Building Codes would most likely not be able to achieve a 20 percent reduction from the current code because it is much more stringent than previous versions.

It should be noted that the state has already approved new energy standards effective January 1, 2014 that would require industrial buildings to achieve 20 percent or more savings above the 2008 Title 24 standard. Until that time, the project is required to achieve a 10 percent reduction from the 2008 Title 24 standards.

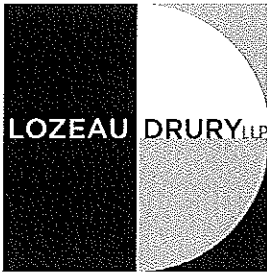
Response to Comment 110. The implementation of any water conservation strategy insures that water use efficiency will be improved compared to the situation of no water conservation strategy. The Mitigation Monitoring Plan states that the various activities outlined in this measure will be implemented to the satisfaction of the Planning Division prior to issuance of an occupancy permit, so construction must include some or all of these measures or no permit can be issued.

Response to Comment 111. The EIR acknowledges that the expected project GHG emissions will exceed the interim, proposed SCAQMD Tier 1, 2 and 3 thresholds, none of which have been adopted as thresholds of significance. Also, as described in Section 4.13.2, page 4.13-6, no applicable agency, including the federal, California, and City of Moreno Valley governments, have adopted a greenhouse gas emissions threshold of significance. It is in this absence of regulatory guidance that this EIR is attempting to assess the significance of project emissions of greenhouse gases. The CEQA Guidelines do include two qualitative thresholds, which the DEIR used as the basis for significance, as discussed in Sections 4.13.5 and 4.13.6. The DEIR concludes that the project would have a less than significant impact for the first CEQA threshold: *Would the proposed project conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?* The DEIR concludes that the project would have a significant impact for the second CEQA threshold: *Would the proposed project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?* and includes Mitigation Measures 4.13.6.1A thru 4.16.6.1C to reduce this impact.

Response to Comment 112. See also Response to Comment D-3, No. 111 above. The EIR complies with OPR guidance related to GHG/Climate change analyses and all other guidance applicable to the region. With implementation of the strategies and programs described in the EIR, it was concluded that the project is consistent with the strategies to reduce California's emissions to the levels proposed in Executive Order S-3-05. Based on the threshold of the project's consistency with these measures, the project has a less than significant impact as it complies with these measures. Because the project's impacts alone would not cause or significantly contribute to global climate change, project-related CO₂e emissions and their contribution to global climate change impacts in the State of California would not make a significant contribution to cumulatively considerable GHG emission impacts.

Response to Comment 113. As discussed in Section 6.3.3 of the Draft EIR, Alternative 3 does reduce several of the significant impacts of the project, and it is feasible because the applicant controls the proposed project site. While Alternative 5 does reduce some significant impacts of the project (including land use since it would not require a GPA or ZC), the applicant does not own or control that or any other potential offsite location for this project. Therefore, Alternative 5 is not feasible compared to Alternative 3. In addition, Alternative 3 is the only one that eliminates significant impacts to agricultural resources, so it was selected as the Environmentally Superior Alternative. For additional discussion, see Response 7 earlier in this section.

Response to Comment 114. As explained in Response to Comment D-3, No. 113 above, Alternative 5 is not feasible compared to Alternative 3 as the applicant does not own or control any offsite properties that would accommodate the proposed project. In addition, almost all of the significant impacts of the project would also be present at an alternative site, based on the proposed land uses and air pollutant emissions. Alternative 3 does reduce some of the significant impacts of the proposed project, and it will be up to the discretion of the City Council whether to approve the proposed project, or adopt one of the project alternatives. If the City Council approves the proposed project, it would have to adopt a Statement of Overriding Considerations that demonstrates the benefits of the project (e.g., employment, revenues) outweigh the significant impacts of the project.



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**RE: Comment on Draft Environmental Impact Report for ProLogis
Eucalyptus Industrial Park (State Clearinghouse No. 2008021002)**

Dear Mr. Bradshaw:

I am writing on behalf of Laborers International Union of North America, Local Union No. 1184 and its members living in Riverside County (collectively "LIUNA Local Union No. 1184" or "LIUNA" or "Commenters") regarding the Draft Environmental Impact Report ("DEIR") prepared for the ProLogis Eucalyptus Industrial Park, State Clearinghouse No. 2008021002 ("Project").

We have reviewed the DEIR with the assistance of:

1. Atmospheric Scientist, Dr. James Clark, Ph.D.
2. Hydrogeologist, Matthew Hagemann, C.Hg., MS.

These experts have prepared written comments that are attached hereto, and which are incorporated in their entirety. The City of Moreno Valley ("City") should respond to the expert comments separately. These experts and our own independent review demonstrate that the DEIR is woefully inadequate and that a new supplemental EIR is required to be prepared and recirculated for public comment. In particular, the EIR suffers from the following significant errors and omissions, among others:



- **SEGMENTATION OF PROJECT:** The DEIR improperly segments the Project by failing to include the infrastructure (e.g., roads, water, and sewer) as part of the Project.
- **LOSS OF FARMLAND:** The DEIR acknowledges that the Project's conversion of Prime Farmland is a significant impact, but the DEIR fails to adequately mitigate for the loss of farmland. The conclusion that mitigation measures are infeasible is unsupported.
- **HAZARDOUS MATERIALS:** The baseline of the physical environmental conditions in the vicinity of the Project is erroneous because the DEIR does not provide any details on the types of pesticides used on the Project site, relies on two outdated Phase I Environmental Site Assessments ("ESAs") that do not cover the entire Project site, and fails to disclose the status of an underground storage tank.
- **GREENHOUSE GAS:** The DEIR fails to provide support for the conclusion that greenhouse gas emissions after mitigation will be less than significant.
- **AIR QUALITY:** The DEIR fails to adequately analyze impacts to air quality because: (1) the DEIR underestimates the potential particulate emissions for the construction phase of the Project, (2) fails to accurately compare construction emissions to daily construction significance thresholds, (3) fails to consider health risks from contaminated dust, (4) fails to properly identify and address the Project's operational air quality impacts, (5) fails to disclose impacts to offsite receptors, and (6) fails to adequately analyze cumulative impacts.

Commenters urge the City to revise the EIR to adequately describe, analyze, and mitigate the Project and its impacts.¹ The revised EIR should be recirculated to allow public review and comment.

I. PROJECT DESCRIPTION

The Project site encompasses 122.8 acres of land located within the City of Moreno Valley, south of and adjacent to SR-60, east of Moreno Valley Auto Mall, and adjacent to and west of the Quincy Channel in Riverside County. (DEIR, p. 3-1). Single-family residential uses are located approximately 50 feet southeast of the southeastern corner of the Project site. (DEIR, p. 3-1). The Assessor's Parcel Numbers ("APNs") for this site are 488-330-011, 488-330-012, 488-330-013, 488-330-017, 488-330-018, 488-330-019, 488-330-022, 488-330-023, 488-330-024, and 488-330-025. (DEIR, p. 3-1).

¹ We reserve the right to supplement these comments at later hearings and proceedings for this Project. See, *Galante Vineyards v. Monterey Water Dist.* (1997) 60 Cal. App. 4th 1109.

The Project would include the construction of a warehouse facility comprising six buildings consisting of a total of approximately 2,244,638 square feet. (DEIR, p. 3-2). The Project site is divided into 2 areas: (1) the northern area (north of future Eucalyptus Avenue) would contain approximately 1,030,377 square feet of warehouse uses divided between two buildings and (2) the southern area (south of the future Eucalyptus Avenue) would consist of approximately 1,214,261 square feet of warehouse uses divided among four separate buildings. (DEIR, p. 3-2). The specific uses/users are not known at this time. (DEIR, p. 3-11).

The Project site currently consists of 57 acres used to grow grapefruit, 36 acres used for hay and alfalfa production, as well as portions that are vacant. (DEIR p. 4.2-1). Approximately 82.5 acres of the Project site is designated as Prime Farmland. (DEIR, p. 4.2-6).

The Project would require significant changes to the General Plan and local zoning ordinances including:

- General Plan Amendment. The proposed project includes an amendment to the Land Use Element to change the General Plan designations for a portion of the project site from Residential 15, Residential 5 and Residential 2 to Business Park. (DEIR, p. 1-2). The project also proposes an amendment to the Circulation Element by making changes to the alignment of Encilia Street and the removal of Quincy Street from within the project boundaries. (DEIR, p. 1-2).
- Change of Zone. The proposed project includes a change to the project site zoning from Business Park (BP), Business Park Mixed-use (BPX), Residential Agriculture 2 (RA2), Residential 5 (R5), and Residential 15 (R15) to Light Industrial (LI). (DEIR, p. 1-2).
- Municipal Code Amendment. The project includes a Municipal Code Amendment to establish a minimum clearance of 250 feet between adjacent residential zoning districts and any truck court or primary truck circulation driveway in lieu of the buffer established by the Business Park zone. (DEIR, p. 1-2).

II. Standing

Members of Local Union No. 1184 live, work, and recreate in the immediate vicinity of the Project site. These members will suffer the impacts of a poorly executed or inadequately mitigated Project, just as would the members of any nearby homeowners association, community group, or environmental group. Hundreds of LIUNA Local Union No. 1184 members live and work in areas that will be affected by traffic, air pollution, and water pollution generated by the Project.

In addition, construction workers will suffer many of the most significant impacts from the Project as currently proposed, such as from air pollution emissions from poorly maintained or controlled construction equipment, possible risks related to hazardous materials on the Project site, and other impacts. Therefore, LIUNA Local Union No. 1184 and its members have a direct interest in ensuring that the Project is adequately analyzed and that its environmental and public health impacts are mitigated to the fullest extent feasible.

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III. LEGAL STANDARDS

A. EIR

CEQA requires that an agency analyze the potential environmental impacts of its proposed actions in an environmental impact report ("EIR") (except in certain limited circumstances). (See, e.g., Pub. Res. Code § 21100). The EIR is the very heart of CEQA. (*Dunn-Edwards v. BAAQMD* (1992) 9 Cal.App.4th 644, 652). "The 'foremost principle' in interpreting CEQA is that the Legislature intended the act to be read so as to afford the fullest possible protection to the environment within the reasonable scope of the statutory language." (*Communities for a Better Environment v. Calif. Resources Agency* (2002) 103 Cal. App. 4th 98, 109).

CEQA has two primary purposes. First, CEQA is designed to inform decision makers and the public about the potential, significant environmental effects of a project. (14 Cal. Code Regs. ("CEQA Guidelines") § 15002(a)(1)). "Its purpose is to inform the public and its responsible officials of the environmental consequences of their decisions before they are made. Thus, the EIR 'protects not only the environment but also informed self-government.'" (*Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal. 3d 553, 564). The EIR has been described as "an environmental 'alarm bell' whose purpose it is to alert the public and its responsible officials to environmental changes before they have reached ecological points of no return." (*Berkeley Keep Jets Over the Bay v. Bd. of Port Comm'rs.* (2001) 91 Cal. App. 4th 1344, 1354 ("*Berkeley Jets*"); *County of Inyo v. Yorty* (1973) 32 Cal.App.3d 795, 810).

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Second, CEQA requires public agencies to avoid or reduce environmental damage when "feasible" by requiring "environmentally superior" alternatives and all feasible mitigation measures. (CEQA Guidelines § 15002(a)(2) and (3); See also, *Berkeley Jets*, 91 Cal. App. 4th 1344, 1354; *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 564). The EIR serves to provide agencies and the public with information about the environmental impacts of a proposed project and to "identify ways that environmental damage can be avoided or significantly reduced." (Guidelines §15002(a)(2)). If the project will have a significant effect on the environment, the agency may approve the project only if it finds that it has "eliminated or substantially lessened all significant effects on the environment where feasible" and that

any unavoidable significant effects on the environment are "acceptable due to overriding concerns." (Pub.Res.Code § 21081; 14 Cal.Code Regs. § 15092(b)(2)(A) & (B)).

While the courts review an EIR using an "abuse of discretion" standard, "the reviewing court is not to 'uncritically rely on every study or analysis presented by a project proponent in support of its position. A 'clearly inadequate or unsupported study is entitled to no judicial deference.'" (*Berkeley Jets*, 91 Cal. App. 4th 1344, 1355 (emphasis added), quoting, *Laurel Heights Improvement Assn. v. Regents of University of California*, 47 Cal. 3d 376, 391 409, fn. 12 (1988)). As the court stated in *Berkeley Jets*, 91 Cal. App. 4th at 1355:

A prejudicial abuse of discretion occurs "if the failure to include relevant information precludes informed decisionmaking and informed public participation, thereby thwarting the statutory goals of the EIR process." (*San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal. App. 4th 713, 722; *Galante Vineyards v. Monterey Peninsula Water Management Dist.* (1997) 60 Cal. App. 4th 1109, 1117; *County of Amador v. El Dorado County Water Agency* (1999) 76 Cal. App. 4th 931, 946).

B. Supplemental EIR

Recirculation of an EIR prior to certification is required "when the new information added to an EIR discloses: (1) a new substantial environmental impact resulting from the project or from a new mitigation measure proposed to be implemented (cf. Guidelines, § 15162, subd. (a)(1), (3)(B)(1)); (2) a substantial increase in the severity of an environmental impact unless mitigation measures are adopted that reduce the impact to a level of insignificance (cf. Guidelines, § 15162, subd. (a)(3)(B)(2)); (3) a feasible project alternative or mitigation measure that clearly would lessen the environmental impacts of the project, but which the project's proponents decline to adopt (cf. Guidelines, § 15162, subd. (a)(3)(B)(3), (4)); or (4) that the draft EIR was so fundamentally and basically inadequate and conclusory in nature that public comment on the draft was in effect meaningless." *Laurel Heights Improvement Assn. v. Regents of University of California* (1993) 6 Cal. 4th 1112, 1130, citing *Mountain Lion Coalition v. Fish & Game Comm'n* (1989) 214 Cal.App.3d 1043.

Significant new information requiring recirculation can include:

- (1) A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented.
- (2) A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.

(3) A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the significant environmental impacts of the project, but the project's proponents decline to adopt it.

(4) The draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded.

(14 Cal. Code Regs. § 15088.5(a)).

The DEIR fails to analyze significant environmental impacts pertaining to the Project and to fully consider available mitigation measures to address those impacts. A revised EIR is required to be prepared and recirculated to address these deficiencies.

IV. THE DEIR IMPROPERLY SEGMENTS THE PROJECT

A. Legal Standard

The courts have repeatedly held that "an accurate, stable and finite project description is the *sine qua non* of an informative and legally sufficient [CEQA document]." *County of Inyo v. City of Los Angeles*, 71 Cal.App.3d 185, 193 (1977). Thus, CEQA mandates "that environmental considerations do not become submerged by chopping a large project into many little ones -- each with a minimal potential impact on the environment -- which cumulatively may have disastrous consequences." *Bozung v. LAFCO*, 13 Cal.3d 263, 283-84 (1975); *City of Santee v. County of San Diego*, 214 Cal.App.3d 1438, 1452 (1989). Before undertaking a project, the lead agency must assess the environmental impacts of all reasonably foreseeable phases of a project and a public agency may not segment a large project into two or more smaller projects in order to mask serious environmental consequences. As the Court of Appeal stated:

The CEQA process is intended to be a careful examination, fully open to the public, of the environmental consequences of a given project, **covering the entire project, from start to finish**...the purpose of CEQA is not to generate paper, but to compel government at all levels to make decisions with environmental consequences in mind.

Natural Resources Defense Council v. City of Los Angeles, 103 Cal.App.4th 268 (2002) (emphasis added).

In *County of Amador v. City of Plymouth*, 149 Cal. App. 4th 1089, 1095 (2007) an Indian tribe intended to build a large gaming development comprised of a hotel, restaurants, and bars, on land located in or adjacent to the city. The Court held that the

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construction of public works, including a city road to the casino hotel, constituted a project within the scope of CEQA. *Id.* at 1100. The Court cited to the CEQA Guideline § 15378(a)(1) which states that the following is included in the term “project”: “public works construction and related activities, clearing or grading of land [and] improvements to existing public structures...” *Id.* at 1100.

B. The DEIR Improperly Segments the Project By Failing to Include the Infrastructure as Part of the Project

The DEIR states:

If the proposed project is constructed prior to the West Ridge project, ProLogis will install the infrastructure necessary to serve its project (e.g., roads, water, and sewer) and will be reimbursed by the City from the West Ridge developer at the time that project is constructed. If the West Ridge project is constructed first, ProLogis will contribute an appropriate amount to the City for a reimbursement account to help off-site improvement costs installed by the West Ridge project that serve the ProLogis project. The timing of improvements shall be coordinated by the City in cooperation with ProLogis and the West Ridge.

(DEIR, p. 3-11). Instead of including the roads, water, and sewer lines required to serve the ProLogis Project as part of the Project, the DEIR treats these infrastructure improvements as a separate project included in the cumulative projects list provided in Table 3.C: Cumulative Projects. (DEIR, p. 3-16). The City is improperly chopping the ProLogis Project into different segments, which is prohibited by CEQA because proper analysis of the whole project is thwarted. Like the casino road in *County of Amador v. City of Plymouth*, the roads, water, and sewer lines that will serve the ProLogis Project must be included as part of the Project and properly analyzed as part of the whole Project.

V. THE DEIR FAILS TO ANALYZE AND MITIGATE ALL POTENTIALLY SIGNIFICANT IMPACTS

An EIR must disclose all potentially significant adverse environmental impacts of a project. (Pub. Res. Code § 21100(b)(1); 14 Cal.Code Regs. § 15126(a); *Berkeley Jets*, 91 Cal. App. 4th 1344, 1354). CEQA requires that an EIR must not only identify the impacts, but must also provide “information about how adverse the impacts will be.” (*Santiago County Water Dist. v. County of Orange* (1981) 118 Cal.App.3d 818, 831). The lead agency may deem a particular impact to be insignificant only if it produces rigorous analysis and concrete substantial evidence justifying the finding. (*Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692).



CEQA requires public agencies to avoid or reduce environmental damage when "feasible" by requiring mitigation measures. (CEQA Guidelines § 15002(a)(2) and (3); See also, *Berkeley Jets*, 91 Cal. App. 4th 1344, 1354; *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 564). The EIR serves to provide agencies and the public with information about the environmental impacts of a proposed project and to "identify ways that environmental damage can be avoided or significantly reduced." (Guidelines §15002(a)(2)). If the project will have a significant effect on the environment, the agency may approve the project only if it finds that it has "eliminated or substantially lessened all significant effects on the environment where feasible" and that any unavoidable significant effects on the environment are "acceptable due to overriding concerns." (Pub.Res.Code § 21081; 14 Cal.Code Regs. § 15092(b)(2)(A) & (B)).

In general, mitigation measures must be designed to minimize, reduce, or avoid an identified environmental impact or to rectify or compensate for that impact. (CEQA Guidelines § 15370). Where several mitigation measures are available to mitigate an impact, each should be discussed and the basis for selecting a particular measure should be identified. (*Id.* at § 15126.4(a)(1)(B)). A lead agency may not make the required CEQA findings unless the administrative record clearly shows that all uncertainties regarding the mitigation of significant environmental impacts have been resolved.

CEQA requires the lead agency to adopt feasible mitigation measures that will substantially lessen or avoid the Project's potentially significant environmental impacts (Pub. Res. Code §§ 21002, 21081(a)), and describe those mitigation measures in the CEQA document. (Pub. Res. Code § 21100(b)(3); CEQA Guidelines § 15126.4). A public agency may not rely on mitigation measures of uncertain efficacy or feasibility. (*Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 727 (finding groundwater purchase agreement inadequate mitigation measure because no record evidence existed that replacement water was available)). "Feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors. (CEQA Guidelines § 15364). To demonstrate economic infeasibility, "evidence must show that the additional costs or lost profitability are sufficiently severe as to render it impractical to proceed with the project." (*Citizens of Goleta Valley v. Board of Supervisors* (1988) 197 Cal.App.3d 1167, 1181). The EIR must provide evidence and analysis to show project cannot be economically implemented. (*Kings County, supra*, 221 Cal.App.3d at 734-737). This requires not just cost data, but also data showing insufficient income and profitability. (*See Burger v. County of Mendocino* (1975) 45 Cal.App.3d 322, 327 (infeasibility claim unfounded absent data on income and expenditures showing project unprofitable); *San Franciscans Upholding the Downtown Plan v. City and County of San Francisco* (2002) 102 Cal.App.4th 656, 694 (upholding infeasibility finding based on analysis of costs, projected revenues, and investment requirements)). Mitigation measures must be fully enforceable through permit conditions, agreements, or other legally binding instruments. (*Id.* at § 15126.4(a)(2)).

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A lead agency may not conclude that an impact is significant and unavoidable without requiring the implementation of all feasible mitigation measures to reduce the impacts of a project to less than significant levels. (CEQA Guidelines §§ 15126.4, 15091).

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A. The DEIR Fails to Adequately Mitigate for the Loss of Farmland

1. Preservation Is an Appropriate Mitigation Measure for the Loss of Agricultural Resources

Preservation can be used as a tool to mitigate impacts of urbanizing land and it is encouraged and supported by legislative pronouncements and case law. For example,

[s]ee the following legislative pronouncements to the effect that conversion of agricultural land is of significant concern, and that the preservation of agricultural land is significant goal of the state. Gov. Code, § 51220 (Williamson Act findings that agricultural preservation is valuable and necessary); Civ. Code, § 815 (legislative declaration that preservation of agricultural lands "is among the most important environmental assets of California"); Pub. Resources Code, § 10200 *et seq.* (California Farmland Conservancy Program Act (formerly the Agricultural Land Stewardship Program of 1995), promoting the establishment of agricultural easements as a means to preserve agricultural land); Pub. Resources Code, §§ 21031.1, 21061.2, 21095 (CEQA provisions requiring the Resources Agency to take steps it to ensure that the environmental effects of agricultural land conversion are quantitatively and consistently considered in the environmental review process); Stats. 1993, ch. 812, § 1, subd. (d) (declaring a legislative intent that CEQA should play an important role in the preservation of agricultural lands).

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In *Mira Mar* [*Mobile Community v. City of Oceanside* (4th Dist. 2004) 119 Cal. App. 4th 477 [14 Cal. Rptr. 3d 176]], the court heard a challenge to the City of Oceanside's approval of a condominium project on 7.5 acres of private property. The project would cause the loss of about .86 acres of coastal sage scrub, which was identified as a significant impact to a sensitive resource. The EIR required the applicant to mitigate for this loss at a ratio of 3 to 1 (or 2.58 acres of mitigation for .86 acres of last habitat). In implementing this mitigation measure, the city required the preservation of .65 acres of undisturbed coastal sage scrub, the restoration and preservation of 2.3 acres of disturbed coastal sage scrub, and the creation of .63 acres of new coastal sage scrub on site. Petitioners argued that this mitigation was inadequate because *preservation* of coastal sage scrub does not mitigate for lost habitat, making the measure "illusory and

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inadequate." 119 Cal. App. 4th 477, 495. The Court of Appeal disagreed, citing CEQA Guidelines section 15370, as well as the opinions of various resource agencies, for the proposition that preservation can be a feasible means of reducing or eliminating the impact of lost habitat.

While the *Mira Mar* case deals specifically with biological and habitat resources, the reasoning of this case seems to have more general applicability to mitigation for lost resources, including agricultural resources.

(Guide to CEQA, Michael H. Remy, et. al., eleventh edition, p. 549-550).

2. The DEIR Fails to Adopt Appropriate Mitigation Measures for the Loss of Farmland

Approximately 82.5 acres of the Project site is designated as Prime Farmland. (DEIR, p. 4.2-6). The DEIR states that "[b]ecause Prime Farmland is a finite resource, its conversion to a non-agricultural use is significant." (DEIR, p. 4.2-6). The DEIR identifies several mitigation measures including mitigation measures discussed in the City General Plan EIR:

- Enrolling productive agricultural land, not presently under contract, under a Williamson Act Contract;
- Providing protection to ongoing agricultural operations from complaints and nuisance complaints from adjacent new development;
- Protecting productive agricultural land subject to conversion through the purchase of or transfer of its development rights;
- Purchasing conservation easements on existing agricultural land to ensure that the land is never converted to urban uses; and
- Donating funds to a regional or statewide program that promotes and implements the use of agricultural land conservation easements.

(DEIR, p. 4.2-7 - 4.2-8). However, the DEIR states that

[t]he potential mitigation measures identified by the City's General Plan have been deemed infeasible by the property owner under current economic conditions. In addition, supplementary analysis of the project

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site and local economic conditions indicates that continued citrus production and/or the raising of row crops would not be economically feasible on the project site (see Appendix L).

(DEIR, p. 4.2-8) (emphasis added).

The conclusion that the mitigation measures are infeasible is completely unsupported. The DEIR states the City General Plan EIR mitigation measure of enrolling productive land under Williamson Act contracts is infeasible because the "contracts are entered into voluntarily by property owners" and these contracts would "result only in temporary contracts at any time after the ten-year contract period ends." (DEIR, p. 4.2-8). Mitigation measures are designed to minimize significant environmental impacts, not necessarily to eliminate them. (Pub. Res. Code § 21100(b)(3); 14 Cal. Code Regs. § 15126.4(a)(1)). The minimum term for a Williamson Act contract is 10 years, however jurisdictions have the option of making them longer. (*Williamson Act Program - Basic Contract Provisions*, State of California Department of Conservation, available at http://www.conservation.ca.gov/dlrp/lca/basic_contract_provisions/Pages/index.aspx#w hat is a williamson act contract). Enrolling land into Williamson Act contracts would minimize the environmental impacts of converting Prime Farmland to warehouses.

In evaluating the feasibility of the mitigation measures: (1) purchasing conservation easements and (2) donating funds to a regional or statewide program, the DEIR states

The purchase or transfer of development rights, purchase of conservation easements, or donation of funds to assist in the conservation of agricultural land would need to be implemented to ensure the preservation of agricultural land. As stated previously, the City anticipates the conversion of agricultural land within the City and does not set aside land for permanent preservation. The City expects that the majority of the land within the City will be converted to urban uses, although some agriculture will continue as interim uses, as allowed by the City's Development Code for all zoning categories.

(DEIR, p. 4.2-8 - 4.2-9). These "reasons" are flawed because the identified mitigation measure was to donate funds to regional or statewide programs that promote and implement the use of agricultural land conservation easements. The "reasons" do not address why donating funds to regional or statewide programs is infeasible.

A supplemental EIR is required to analyze and require implementation of these feasible mitigation measures to reduce the Project's impacts on agricultural land. The fact that the measures are set forth in the City's own General Plan itself makes a prima facie case that the measures are feasible and should be implemented. If the City



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concludes that the measures are infeasible, then it must provide substantial evidence to demonstrate infeasibility. The EIR must provide evidence and analysis to show project cannot be economically implemented. (*Kings County, supra*, 221 Cal.App.3d at 734-737). This requires not just cost data, but also data showing insufficient income and profitability. (*See Burger v. County of Mendocino* (1975) 45 Cal.App.3d 322, 327 (infeasibility claim unfounded absent data on income and expenditures showing project unprofitable); *San Franciscans Upholding the Downtown Plan v. City and County of San Francisco* (2002) 102 Cal.App.4th 656, 694 (upholding infeasibility finding based on analysis of costs, projected revenues, and investment requirements)). The EIR is devoid of any such evidence and is therefore legally inadequate.

B. The DEIR Fails to Adequately Analyze Hazards and Hazardous Materials and Establishes an Erroneous Baseline

1. CEQA Baseline Standard

Every CEQA document must start from a "baseline" assumption. The CEQA "baseline" is the set of environmental conditions against which to compare a project's anticipated impacts. *Communities for a Better Environment v. So Coast Air Qual. Mgmt. Dist.* (2010) 48 Cal. 4th 310, 321. Section 15125(a) of the CEQA Guidelines (14 C.C.R., § 15125(a)) states in pertinent part that a lead agency's environmental review under CEQA:

...must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time [environmental analysis] is commenced, from both a local and regional perspective. This environmental setting will normally constitute the baseline physical conditions by which a Lead Agency determines whether an impact is significant.

(*See, Save Our Peninsula Committee v. County of Monterey* (2001) 87 Cal.App.4th 99, 124-125 ("*Save Our Peninsula*"). As the court of appeal has explained, "the impacts of the project must be measured against the 'real conditions on the ground,'" and not against hypothetical permitted levels. (*Save Our Peninsula*, 87 Cal.App.4th 99, 121-123). As the court has explained, using such a skewed baseline "mislead(s) the public" and "draws a red herring across the path of public input." (*San Joaquin Raptor Rescue Center v. County of Merced* (2007) 149 Cal.App.4th 645, 656; *Woodward Park Homeowners v. City of Fresno* (2007) 150 Cal.App.4th 683, 708-711).

2. Residual Pesticides in the Soil May Pose Health Risks to Workers and Nearby Residents

According to the DEIR, 57 acres of the Project site are used to grow grapefruit and 36 acres of the Project site are used for hay and alfalfa production. (DEIR, p. 4.2-1).

The DEIR and supporting documents fail to provide any specific details on the types of pesticides that have been used on the Project site in association with these agricultural operations and therefore the DEIR fails to adequately describe the environmental setting for the Project. According to Mr. Hagemann,

[o]ur review has shown known and potential pesticide use at the Project site as follows:

- Data available online from the California Department of Pesticide Regulation show that 2,4-D, 2-Ethylhexyl Ester was used on the Project site.^{2,3} Occupational exposure to 2,4-D, 2-Ethylhexyl Ester can occur via inhalation or dermal contact and can result in skin irritation, respiratory failure, hyperventilation, and pulmonary enemas.⁴
- Organochlorine pesticides DDE and DDT were detected in soil samples collected at the Project site⁵, indicating past use. Use of organochlorine pesticides in the area is common: review of the Department of Toxic Substances Control's (DTSC) Envirostor database shows that the surrounding lands have been surveyed for organochlorine pesticides, DDE and DDT.⁶ These pesticides can persist in soil for hundreds of years despite being banned in the 1970s.⁷ Exposure to DDT can result in headaches, nausea, and convulsions.⁸ The U.S. EPA identifies DDT and DDE as probable human carcinogens.⁹
- The EPA states that soils at fruit orchards, such as the grapefruit orchard on the Project site, may contain high levels of arsenic from application as a pesticide.¹⁰ Another chemical used on fruit orchards is lead arsenate, a very persistent pesticide.¹¹ Arsenic is a known human carcinogen and even short-term inhalation of arsenic

² http://cdpr.ca.gov/pub/outgoing/calpip/26814174623515_120824104149.html

³ http://cdpr.ca.gov/pub/outgoing/calpip/26814174623515_120824104217.html

⁴ <http://toxnet.nlm.nih.gov/cgi-bin/sis/search/a?dbs+hsdb:@term+@DOCNO+7309>

⁵ Phase I Environmental Site Assessment, 84 acres. Near Intersection of Pittit Street and Highway 60, Moreno Valley, California, p. 9 and Phase I Environmental Site Assessment, 37 acres. Near Intersection of Pittit Street and Highway 60, Moreno Valley, California, p. 8

⁶ http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=60000825 and

http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=60000931

⁷ <http://www.atsdr.cdc.gov/toxprofiles/tp35.pdf>, p. 3

⁸ <http://www.epa.gov/ttn/atw/hlthef/dde.html>

⁹ <http://www.atsdr.cdc.gov/toxfaqs/ff.asp?id=80&tid=20>

¹⁰ <http://water.epa.gov/drink/info/well/health.cfm>

¹¹ <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1551991/>

dust can cause gastrointestinal effects¹² while lead is known to cause neurotoxicological effects.¹³

Pesticide use at the Project site was not disclosed in the DEIR and the detection of pesticide residuals in soil were not described in the Hazards and Hazardous Materials section.

Failure to disclose the presence of pesticide residuals in Project site soils may pose significant health risks to construction workers. Construction of the Project requires grading and the disturbance of subsurface soils and removal of citrus groves (DEIR, p. 4.7-21). During earthmoving activities, construction workers will be exposed, via inhalation of dust and dermal contact, to Project site soils which may contain harmful levels of pesticide residuals associated with agricultural activities on the site. To protect worker safety, Project site soils must be sampled for pesticides. Sampling results should be compared to health-protective regulatory screening levels such as U.S. EPA Regional Screening Levels¹⁴ and California Human Health Screening Levels.¹⁵

Soil sampling results should also be evaluated for the protection of nearby residents, located 50 feet from the southern boundary and 200 feet from the northern boundary of the Project site (DEIR, p. 4.3-6). Inhalation of pesticides has been linked to asthma in recent research.^{16,17} A report prepared by the California Department of Health identifies pesticides as an asthma trigger.¹⁸ Offsite receptors, including any children living in the neighboring residences, may be exposed to pesticide residuals via dust generated during Project construction.

Construction activities, such as grading and excavation of soils, may generate dust that contains pesticides in concentrations that are harmful to the health of workers and nearby residents and which may act as an asthma trigger. Project site soils should be sampled and results should be compared to human health screening levels. A revised DEIR should be prepared to disclose the results of sampling and include any necessary mitigation to reduce impacts to the health of construction workers and nearby residents.

¹² <http://www.epa.gov/ttn/atw/hlthef/arsenic.html>

¹³ <http://www.epa.gov/lead/pubs/learn-about-lead.html#effects>

¹⁴ <http://www.epa.gov/region9/superfund/prg/>

¹⁵ <http://www.calepa.ca.gov/brownfields/documents/2005/CHHSLsGuide.pdf>

¹⁶ <http://extension.psu.edu/ipm/resources/urbanphilly/partnerships/handouts/asthma-pests.pdf>

¹⁷ <http://www.ncbi.nlm.nih.gov/pubmed/21368619>

¹⁸ <http://www.cdph.ca.gov/programs/caphi/Documents/AsthmaStrategicPlan.5-5-08.pdf>, p. 22

3. The Phase I Environmental Site Assessments Completed for the Project Site are Outdated and Inadequate

According to Mr. Hagemann,

The DEIR relies on the findings from two Phase I Environmental Site Assessments (ESAs) that were completed in October and November 2003, nearly nine years ago. The Phase I ESAs surveyed 121 acres of the 123-acre Project site. The Applicant purchased the Project site more than five years ago.¹⁹ A Phase I ESA, according to the U.S. EPA, must be conducted within one year of the acquisition of the property and on-site visual inspections must be completed within 180 days prior to acquiring ownership of the property.²⁰

Because the Phase I ESAs are dated and omit two acres of the Project site, they cannot be used to evaluate conditions that are potentially hazardous to construction workers and future site personnel. Therefore, the DEIR's analysis of the Project site based on these Phase I ESAs is inadequate.

Review of Google Earth images shows that the Project site has been used for ongoing agricultural operations since the Phase I ESAs were completed in 2003. Limited pesticide sampling was conducted during the Phase I ESAs (a total of 8 soil samples for a 123-acre Project site) but because the samples were collected nine years ago and because they do not reflect continued agricultural use, the results are reflective of current site conditions.

The Phase I ESAs cover 121 acres of the 123-acre Project site. We have created a map to show the areas of the Project site surveyed by the two 2003 Phase I ESAs and the boundaries for the current Project site (Attachment A). As the map shows, not all areas of the current Project site were included in the 2003 Phase I ESAs' site assessments.

The DEIR fails to establish an adequate environmental setting for the Project site because it relies on Phase I ESAs that are outdated and do not cover the entire Project site. A revised DEIR is required, including a new Phase I ESA, to evaluate the Project site's current environmental conditions.

¹⁹ <http://www.pe.com/local-news/riverside-county/moreno-valley/moreno-valley-headlines-index/20120726-moreno-valley-officials-seek-comments-on-prologis-project.ece>

²⁰ <http://www.epa.gov/brownfields/aai/aaicerclafs.pdf>

4. The DEIR Fails to Disclose the Status of an Underground Storage Tank

According to Mr. Hagemann,

A 13,400 gallon underground storage tank (UST), abandoned in the 1950s, was removed from the Project site in 2004 (Appendix F, p. 3/191). The Phase I ESA recommended an additional investigation to be conducted in the area of the former UST (Appendix F, p. 10/191). Accordingly, a permit for removal of the UST was submitted to the Riverside County's Department of Environmental Health in December 2003 and soil samples around the area of the UST were analyzed in 2004. However, the DEIR and supporting documents did not include any documentation that the UST was properly closed by the Riverside County Department of Environmental Health. If the UST removal was not approved, an Underground Storage Tank Closure Application and Permit²¹, per the Riverside County Department of Environmental Health Guidelines,²² must be submitted.

The DEIR fails to establish an adequate baseline because it does not provide the status of a 13,400 gallon UST. A revised DEIR is required to disclose this important information (i.e., whether closure was granted by the Riverside County Department of Environmental Health).

C. The DEIR Fails to Adequately Analyze Greenhouse Gas Emissions

The DEIR states that the Project's operational greenhouse gas (GHG) emissions, before mitigation, are estimated to be 79,000 metric tons of CO₂e/year (MT CO₂e/yr) which exceed the SCAQMD threshold of 10,000 MT CO₂e/yr and are therefore considered significant. (DEIR, p. 4.13-19). The Project's GHG emissions exceed the SCAQMD threshold by nearly eight times. After mitigation, the DEIR states that GHG emissions will be less than significant. (DEIR, p. 4.13-21). This conclusion is completely unsupported. The DEIR fails calculate what the Project's GHG emissions will be after the mitigation measures are implemented. In fact, the DEIR and supporting documents, including a GHG Study (Appendix B), fail to provide any evidence that the proposed mitigation measures will reduce GHG emissions by a factor of eight.

According to Mr. Hagemann,

²¹ http://www.rivcoeh.org/opencms/system/galleries/download/Environmental-Health/HMM/UST_Closure_App.pdf

²² http://www.rivcoeh.org/opencms/system/galleries/download/Environmental-Health/HMM/Closure_by_removal_UST.pdf

A revised DEIR should be prepared to show the efficiency of the Project's proposed mitigation measures in reducing greenhouse gases. If these measures do not account for an eight-fold reduction in the Project's estimated GHG levels, additional mitigation measures (listed below) that are routinely considered in other CEQA projects should be implemented:

- Require preparation of a traffic control plan;
- Demonstrate proper inspection and maintenance of construction equipment;
- Implement a carpool program for construction workers;
- Employ a construction site manager to verify that engines are properly maintained and keep a maintenance log;
- Configure construction parking to minimize traffic interference;
- Consolidate truck deliveries when possible;
- Provide dedicated turn lanes for movement of construction trucks and equipment on and off site;
- Suspend use of all construction equipment operations during second stage smog alerts;
- Establish a staging zone for trucks that are waiting to load or unload material at the work zone in a location where diesel emissions from the trucks will have minimum impact on abutters and the general public;
- Locate construction equipment away from sensitive receptors such as fresh air intakes to buildings, air conditioners and operable windows;
- Require all diesel trucks used by construction contractor(s) at the site, or for on-road hauling of construction material, to be post-1996 models; Diesel portable generators less than 50 hp shall not be allowed at the construction site;
- Use of hybrid and fuel efficient construction equipment and support vehicles (e.g., pick-up trucks);
- Use of grid electricity for smaller equipment such as saws, pumps, and welders;²³
- Reduction in vehicle miles travelled in construction crew commutes through trip carpooling, trip reduction, providing bus service for crews from work sites to carpool parking areas, and in providing incentives to carpool; and
- Use of a Heavy-Duty Off-Road Vehicle Plan to ensure compliances with construction mitigation measures (e.g., hourly meters on equipment, documenting the serial number, horsepower,

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²³ <http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf>, p. 47

manufacture age, fuel, etc. of all onsite equipment and daily logging of the operating hours of the equipment).²⁴

A supplemental EIR should be prepared that calculates the Project's GHG emissions after implementation of all feasible mitigation measures. The supplemental EIR should analyze all mitigation measures set forth in the GHG Guidance Document published by the California Attorney General, Addressing Climate Change at the Project Level (see attached exhibit, also available at http://ag.ca.gov/globalwarming/pdf/GW_mitigation_measures.pdf). If GHG impacts remain significant after implementation of all feasible mitigation measures, then the EIR must acknowledge that the impacts are significant and unavoidable, and the City must adopt a statement of overriding considerations.

D. The DEIR Fails to Adequately Analyze Impacts to Air Quality

1. The DEIR Underestimates the Potential Particulate Emissions for the Construction Phase of the Project

Computer modeling (e.g., the California Air Resource Board's ("CARB's") Urban Emission ("URBEMIS") and the California Emissions Estimator Model ("CalEEMod")) is used to estimate emissions of criteria pollutants during construction and operational phases of projects. The South Coast Air Quality Management District ("SCAQMD") permits the use of the outputs from both the URBEMIS and CalEEMOD in air quality analyses. According to Dr. Clark, there are significant differences between these two models that "must be highlighted in the DEIR." In pertinent part, Dr. Clark states:

The changes in the method used to estimate construction impacts from the proposed project by using the CalEEMod model instead of the URBEMIS model include:

- Failure to account for wind-blown fugitive dust²⁵. According to the July, 2011 CalEEMod Technical Paper, wind-blown fugitive dust is not calculated in CalEEMod. For sites as large as the proposed project site, this can result in significant quantities of particulate matter being released.
- SCAQMD's surveys of construction sites were limited to sites of 35 acres or less. For projects larger than 35 acres the data was extrapolated by increasing the number of construction days but not increasing the number of construction equipment pieces used on a

²⁴ *Ibid.*, p. 431

²⁵ CalEEMod. Technical Paper: Methodology Reasoning and Policy Development of the California Emission Estimator Model. July, 2011. Pg 4.

- given day. The impact is to reduce the construction PM estimates for the site as compared to URBEMIS²⁶.
- The acreage to be based upon Walker's Building Estimator's Reference Book. Grading in URBEMIS is based upon 25% of total project acreage in one day. The impact of this change is to decrease PM emissions from grading in the CalEEMod²⁷.

A revised DEIR should be prepared to highlight the differences between the two models so that the potential impacts are adequately analyzed.

2. The DEIR Fails to Accurately Compare Construction Emissions to Daily Construction Significant Thresholds

According to Dr. Clark, the CalEEMod results were not presented properly. The model shows CEQA significance levels were exceeded as well as South Coast Air Quality Management District Localized Significance Thresholds were exceeded. In pertinent part, Dr. Clark states:

Unlike the operational emissions from most projects, which are typically more or less continuous, emissions from construction sites are highly variable depending on the type of construction that is being performed. For example, grading results in large quantities of fugitive dust and combustion emissions from diesel-powered equipment. Short-term emissions during the various construction phases can be considerable and may result in degradation of local and regional air quality and severe health effects.

To determine whether short-term emissions may result in degradation of local and regional air quality and severe health effects, it is common practice for lead agencies to compare project emissions to quantitative significance thresholds developed by local air districts as a screening tool for CEQA review. Thresholds of significance for construction emissions are typically expressed on a short-term basis, *i.e.* daily or hourly basis to adequately capture impacts due to the high variability of emissions during different construction stages.

Table 1 presents a summary of short-term emissions thresholds developed by SCAQMD and other air districts for assessing impacts on air quality from construction projects.

²⁶ CalEEMod. Technical Paper: Methodology Reasoning and Policy Development of the California Emission Estimator Model. July, 2011. Pg 5.

²⁷ CalEEMod. Technical Paper: Methodology Reasoning and Policy Development of the California Emission Estimator Model. July, 2011. Pg 5.

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**Table 1:
 CEQA significance thresholds for construction emissions from various air districts**

Air district construction thresholds*	NO_x (lbs/day)	ROG (lbs/day)	PM₁₀ (lbs/day)	DPM (lbs/day)	PM_{2.5} (lbs/day)	CO (lbs/day)
SCAQMD	100	75	150		55	550
BAAQMD	54	54	82		54	
EDCAPCD	82	82				
SLOCAPCD				7		
MBUAPCD			82			550
FRAQMD	25	25	80			
SMAQMD	85					
YSAQMD	82	82	150			

SCAQMD = South Coast Air Quality Management District, CEQA Handbook, 1993;
 BAAQMD = Bay Area Air Quality Management District, CEQA Guidelines 2009;
 EDCAPCD = El Dorado County Air Pollution Control District, CEQA Guide, February 2002;
 SLOCAPCD = San Louis Obispo County Air Pollution Control District, CEQA Air Quality Handbook, December 2009.
 MBUAPCD = Monterey Bay Unified Air Pollution Control District, CEQA Air Quality Guidelines, June 2004,
 FRAQMD = Feather River Air Quality Management District,
http://www.fraqmd.org/CEQA_Thresholds.htm;
 SMAQMD Sacramento Metropolitan Air Quality Management District, Guide to Air Quality Assessment, July 2004;
 YSAQMD, Yolo-Solano Air Quality Management District, Air Quality Handbook, Guidelines for Determining Air Quality Thresholds of Significance and Mitigation Measures for Proposed Development Projects that Generate Emissions from Motor Vehicles, revised 2002

A review of the CalEEMod analysis for the project shows that the mitigated construction emissions of ROG and PM_{2.5} exhaust (a surrogate for diesel particulate emissions) are in excess of the CEQA significance thresholds listed above. During Year 2013, ROG and PM_{2.5} exhaust emissions are estimated to be 368.03 lbs/day and 7.95 lbs/day, respectively.

In addition to the Significant Thresholds above, SCAQMD recommends the use of Localized Significance Thresholds (LSTs) to determine potential impacts to receptors near projects. According to the Air Quality Analysis prepared by the proponent, Table I of the Air Quality Analysis shows that the emissions of the pollutants on the peak day of construction are below the SCAQMD LST. In this table the proponent uses the emission estimates from the grading phase of the construction. The proponent inaccurately asserts that the emission levels will be below the LST values.



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**Table 2:
 Construction LST Impacts from Air Quality Analysis**

Emission Sources	Pollutant Emissions, lbs/day			
	NOx	CO	PM ₁₀	PM _{2.5}
On-Site (grading) Emissions	104	55	8.4	6.3
LST Threshold	270	1,577	13	8
Significant Emissions?	No	No	No	No

A review of the CalEEMod analysis shows that the highest emission values are not associated with the grading phase. In Section 2.0 Emission Summary of the CalEEMod analysis presented in the Air Quality Analysis the construction impacts are listed as:

**Table 3:
 Construction LST Impacts from CalEEMod Output**

Emission Sources	Pollutant Emissions, lbs/day			
	NOx	CO	PM ₁₀	PM _{2.5}
Mitigated Construction Emissions	139.84	166.77	29.2	8.28
LST Threshold	270	1,577	13	8
Significant Emissions?	No	No	Yes	Yes

The Proponent's analysis of air quality impacts clearly fails to accurately describe the impacts of the emissions on the receptors closest to the project site. Based on my expert opinion, applicable significance thresholds, and the CalEEMod analysis performed by the proponent, I conclude that the Project will have significant adverse impacts from construction air emissions of fugitive dust, ROG, and diesel emissions. The lead agency must re-evaluate the construction emissions and incorporate a phased approach to estimate the true impacts of construction activities on air quality, and propose all feasible mitigation measures to reduce these significant emissions, in a RDEIR.



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3. The DEIR Fails to Consider Health Risks From Contaminated Dust

According to Dr. Clark:

Residual contaminants in soils at the site may be entrained in dust generated during construction activities. The release of residual contamination is a potentially significant impact, given the past use of the site for agricultural production. According to the California Department of Toxic Substances Control August 2002 Interim Guidance for Sampling Agricultural Fields for School Sites (known sensitive receptors), "the most commonly detected pesticides have been DDT and its derivatives DDD and DDE, toxaphene, dieldrin, and aldrin. Of these pesticides, toxaphene has been the major pesticide driving unacceptable levels of risk requiring remediation by soil removal." Given the volume of soils to be graded at each of the sites it is imperative to understand whether particulate matter generated at the sites will pose a potential health risk to sensitive receptors in the vicinity of each site.

According to DTSC, "the guidance is applicable to agricultural land that is currently under cultivation with row, fiber or food crops, orchards, or pasture. It is also applicable to fallow and former agricultural land that is no longer in production and has not been disturbed beyond normal disking and plowing practices. Each field of the same crop is assumed to have been watered, fertilized, and treated with agricultural chemicals to the same degree across the field. Because of this homogeneous application, contaminant levels are expected to be similar at any given location within the field."

There is no indication of a sampling and analysis plan in the DEIR, or the Project documents provided by the lead agency, a serious deficiency in the documents. Prior to issuing a DEIR for the project, the Proponent should be required to complete a sampling and analysis plan to confirm or rule out the possibility of the presence of residual contaminants at the site. Identifying residual pesticides or other contaminants in soils at the site prior to construction activities will provide an opportunity for the Proponent to remove/mitigate the potential exposure of sensitive receptors within the vicinity of the sites. In the absence of any sampling or analysis, and given the past use of the Project site, I conclude that there is at least a fair argument that the Project may have significant impacts related to residual contaminants at the site.

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4. The DEIR Fails to Properly Identify and Address the Project's Operational Air Quality Impacts

The DEIR states, without any evidentiary support, that the project's emissions of criteria pollutants will not result in a considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard. According to Dr. Clark,

During the operational phase of the project the project will have the potential to generate significant quantities of criteria pollutants (NO_x, SO_x, Ozone precursors, PM). According to Table 3-1 of the most recent BAAQMD CEQA guidance, a construction of a 259,000 square foot light industrial or warehouse operation will typically violate NO_x construction thresholds and GHG operational thresholds. The proposed Project's 2,000,000 square feet plus of warehouse and manufacturing buildings are nearly 8 times the size of the screening threshold, ensuring a violation of local air quality thresholds. I therefore conclude that the Project will have significant NO_x and GHG emissions during Project operations.

The air quality impacts from the traffic associated with a 2,000,000 square foot facility are significant. Typically the impacts are quantified by the number of vehicle trips per day. In the case of the proposed project, the primary concern will be the number of truck trips per day. A truck trip is one round trip (one trip segment to a site and one trip segment away from a site).

According to one source, Bluffstone and Ouderkirk²⁸, a 500,000 square feet facility on 50 acres, will on average have 350 truck trips per day (or 700 trip segments) associated with its development. This figure is proportionate to estimates for an AMB Property Corporation center in Redlands (1,000 truck trips for a 1.3 million square feet structure); Wal-Mart distribution centers in Pueblo, Colorado (700 truck trips per day for an 880,000 square feet facility), Connecticut, and Delaware (both 1,000 truck trips per day for 1.2 million square feet structures); and a grocery distribution center in New York (Boas, 2002; Gasiewski, 2004; Hernandez, 2005; Pueblo Chieftain, 2004; Sholl, 2004).

Estimates from other sources indicate approximately 1 truck per 1,000 square feet of the building, which means that the proposed project would require 1,000 trucks per day (or 1,000 trip segments per day) for the warehouse segment of the Project. The number of truck trips could be

²⁸Bluffstone and Ouderkirk. 2007. Warehouses, trucks, and [PM.sub.2.5]: human health and logistics industry growth in the eastern Inland Empire. Contemporary Economic Policy 25(1):

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higher at a new, more efficient facility where more inventory is moved per day. Without proper modeling of the emissions from these additional vehicles the impacts on the environment and the citizens of Moreno Valley is unknown. It is clear that the size of the Project will have significant NOx and GHG emissions during Project operations.

A proper cumulative impact analysis is vital for an environmental analysis because the full environmental impact of a proposed project cannot be gauged in a vacuum. One of the most important environmental lessons that has been learned is that the environmental damage often occurs incrementally from a variety of small sources with which they interact. The increase in PM in the region, even for short periods of time, will only exacerbate the already serious air quality issues in the region.

5. The DEIR Fails to Disclose Impacts to Offsite Receptors

The Project is located in the South Coast Air Basin and Riverside County,²⁹ both of which are designated non-attainment for PM10 and ozone. (DEIR, p. 4.3-6). According to Mr. Hagemann,

[s]ignificant emissions of PM10 and ozone and contributing factors such as NOx and ROG will lead to a worsening of regional air quality. The Project's estimates of construction emissions need to be properly disclosed and mitigated to ensure that the Project has a less than significant impact on regional air quality.

Estimates and impacts of project's construction and operational emissions
Project construction and operation will result in significant emissions of ROG, NOx, and PM10 even after mitigation (DEIR, pp. 4.3-29, 4.3-34).

Construction emissions

The DEIR estimates that the Project's construction emissions of NOx and ROG will be significant as they exceed the SCAQMD thresholds of 100 lbs/day and 75 lbs/day, respectively (DEIR, p. 4.3-23) and identifies mitigation measures to reduce the Project's emissions (DEIR, pp. 4.3-23 – 4.3-29). Even with mitigation, the Project's emissions of NOx and ROG will still exceed SCAQMD thresholds and therefore are considered significant (DEIR, p. 4.3-29).

Operational emissions

The DEIR estimates that the Project's emissions of ROG, NOx, and PM10 from operational activities will be significant as they exceed the SCAQMD

²⁹ <http://www.epa.gov/oagqs001/greenbk/ancl.html>



thresholds of 55 lbs/day, 55 lbs/day, and 150 lbs/day, respectively (DEIR, p. 4.3-33). The DEIR proposes mitigation measures to reduce the Project's emissions (DEIR, pp. 4.3-33 – 4.3-34) but, even with mitigation, the Project's emissions will still exceed SCAQMD thresholds and therefore are considered significant (DEIR, p. 4.3-34).

Gaseous particles such as NOx can react in the atmosphere to form PM10.^{30,31} Because Riverside County and the South Coast Air Basin are both designated non-attainment for PM10, significant emissions of NOx can lead to a further degradation of regional air quality. NOx emissions can also react to produce ground-level ozone.³² Exposure to NOx emissions and its products (ozone and PM10) can lead to the airway inflammation and can cause or exacerbate conditions such as emphysema and bronchitis.³³

ROG can react to form ozone and contributes to smog formation.^{34,35} Exposure to ozone can result in coughing, throat irritation, and chest pain, burning, and discomfort.³⁶ Smog exposure can lead to sneezing, nausea, coughing, headaches, and chest constriction.³⁷ A study published in the New England Journal of Medicine concluded that the risk of dying from respiratory diseases is three times higher in areas of concentrated ozone.³⁸

Exposure to PM10 can cause bronchitis, increase the number and severity of asthma attacks, damage to lung tissue, and even premature death.³⁹ Research identifies that dust from construction is a major contributor to PM10 and that PM10 exposure is associated with asthma.⁴⁰ Inhalation of PM10 can exacerbate asthma especially in children who are susceptible to higher risks from PM10 exposure.⁴¹

³⁰ <http://www.fhwa.dot.gov/resourcecenter/teams/airquality/brochure/particulatebrochure.pdf>

³¹ <http://www.epa.gov/captrade/documents/power.pdf>

³² *Ibid.*

³³ <http://www.epa.gov/air/nitrogenoxides/health.html>

³⁴ <http://www.arb.ca.gov/research/health/fs/fs2/fs2.htm>

³⁵ <http://www.arb.ca.gov/html/gloss.htm#smog>

³⁶ <http://www.epa.gov/o3healthtraining/population.html>

³⁷ <http://are.berkeley.edu/courses/EEP101/spring03/AllThatSmog/extern.html>

³⁸ <http://www.nytimes.com/qwire/2009/03/12/12greenwire-study-links-smog-exposure-to-premature-death-10098.html>

³⁹ <http://www.epa.gov/airtrends/aqtrnd95/pm10.html> and <http://www.arb.ca.gov/html/brochure/pm10.htm>

⁴⁰ http://scerpifiles.org/cont_mgt/doc_files/EH-01-2.pdf

⁴¹ <http://www.co.imperial.ca.us/airpollution/attainment%20plans/final%20ic%202009%20pm10%20sip%20document.pdf>

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The Project will have significant emissions of ROG, NO_x, and PM₁₀. Because Riverside County and the South Coast Air Basin are designated non-attainment areas for ozone and PM₁₀, Project construction and operation will further degrade regional air quality. Exposure to ROG, NO_x, and PM₁₀ has adverse health effects and can impact offsite receptors, especially children in the nearby residences – a significant and undisclosed public health impact that the DEIR does not consider.

A revised DEIR should be prepared to disclose impacts to offsite receptors from Project construction and operation. Additional mitigation measures must be implemented to ensure that Project emissions of ROG, NO_x, and PM₁₀ are reduced to the maximum extent feasible.

6. The DEIR Fails to Adequately Analyze Cumulative Impacts

1. Legal Standard

An EIR must discuss significant cumulative impacts. CEQA Guidelines section 15130(a). This requirement flows from CEQA section 21083, which requires a finding that a project may have a significant effect on the environment if “the possible effects of a project are individually limited but cumulatively considerable... ‘Cumulatively considerable’ means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.” “Cumulative impacts” are defined as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.” CEQA Guidelines section 15355(a). “[I]ndividual effects may be changes resulting from a single project or a number of separate projects.” (CEQA Guidelines section 15355(a)).

“The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.” (*Communities for a Better Environment v. Cal. Resources Agency* (“*CBE v. CRA*”), (2002) 103 Cal.App.4th 98, 117). A legally adequate cumulative impacts analysis views a particular project over time and in conjunction with other related past, present, and reasonably foreseeable probable future projects whose impacts might compound or interrelate with those of the project at hand. “Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.” (CEQA Guidelines § 15355(b)).

As the court stated in *CBE v. CRA*, 103 Cal. App. 4th at 114:

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Cumulative impact analysis is necessary because the full environmental impact of a proposed project cannot be gauged in a vacuum. One of the most important environmental lessons that has been learned is that environmental damage often occurs incrementally from a variety of small sources. These sources appear insignificant when considered individually, but assume threatening dimensions when considered collectively with other sources with which they interact.

(Citations omitted).

In *Kings County Farm Bureau v. City of Hanford*, 221 Cal.App.3d at 718, the court concluded that an EIR inadequately considered an air pollution (ozone) cumulative impact. The court said: "The EIR concludes the project's contributions to ozone levels in the area would be immeasurable and, therefore, insignificant because the [cogeneration] plant would emit relatively minor amounts of [ozone] precursors compared to the total volume of [ozone] precursors emitted in Kings County. The EIR's analysis uses the magnitude of the current ozone problem in the air basin in order to trivialize the project's impact." The court concluded: "[t]he relevant question to be addressed in the EIR is not the relative amount of precursors emitted by the project when compared with preexisting emissions, but whether any additional amount of precursor emissions should be considered significant in light of the serious nature of the ozone problems in this air basin."⁴² The *Kings County* case was reaffirmed in *CBE v. CRA*, 103 Cal.App.4th at 116, where the court rejected cases with a narrower construction of "cumulative impacts."

Similarly, in *Friends of Eel River v. Sonoma County Water Agency*, (2003) 108 Cal. App. 4th 859, the court held that the EIR for a project that would divert water from the Eel River had to consider the cumulative impacts of the project together with other past, present and reasonably foreseeable future projects that also divert water from the same river system. The court held that the EIR even had to disclose and analyze projects that were merely proposed, but not yet approved. The court stated, CEQA requires "the Agency to consider 'past, present, and probable future projects producing related or cumulative impacts . . .'" (Guidelines, § 15130, subd. (b)(1)(A)). The Agency must interpret this requirement in such a way as to 'afford the fullest possible protection of the environment.'" (*Id.*, at 867, 869). The court held that the failure of the EIR to

⁴² *Los Angeles Unified v. City of Los Angeles*, 58 Cal.App.4th at 1024-1026 found an EIR inadequate for concluding that a project's additional increase in noise level of another 2.8 to 3.3 dBA was insignificant given that the existing noise level of 72 dBA already exceeded the regulatory recommended maximum of 70 dBA. The court concluded that this "ratio theory" trivialized the project's noise impact by focusing on individual inputs rather than their collective significance. The relevant issue was not the relative amount of traffic noise resulting from the project when compared to existing traffic noise, but whether any additional amount of traffic noise should be considered significant given the nature of the existing traffic noise problem.

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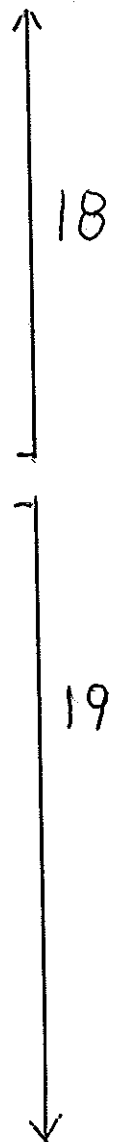
analyze the impacts of the project together with other proposed projects rendered the document invalid. "The absence of this analysis makes the EIR an inadequate informational document." (*Id.*, at 872).

The Court in *Citizens to Preserve the Ojai v. Bd. of Supervisors*, 176 Cal.App.3d 421 (1985), held that an EIR prepared to consider the expansion and modification of an oil refinery was inadequate because it failed to consider the cumulative air quality impacts of other oil refining and extraction activities combined with the project. The court held that the EIR's use of an Air District Air Emissions Inventory did not constitute an adequate cumulative impacts analysis. The court ordered the agency to prepare a new EIR analyzing the combined impacts of the proposed refinery expansion together with the other oil extraction projects.

2. The DEIR Fails to Adequately Analyze Cumulative Construction Impacts

As part of its cumulative impact analysis, the DEIR identifies 13 proposed projects encompassing approximately 7.3 million square feet of space within five miles of the Project site (DEIR, p. 3-16). However, the DEIR does not identify the construction schedule of these projects except to state that "a number of individual projects may be under construction simultaneously with the proposed project." (DEIR, p. 4.3-37). The WestRidge Commerce Center Project (which will be built adjacent to the proposed Project) is scheduled to be constructed in 2012, a schedule similar to the proposed Project. According to Mr. Hagemann,

[s]imultaneous construction of these projects, along with other potential projects, is likely to result in PM10, NOx, and ROG emissions that will have a cumulatively significant impact. The construction timetables of all projects within the vicinity of the Project site should be identified. Any cumulatively significant emissions should be disclosed and impacts to workers and nearby residents should be addressed in a revised DEIR.



VI. CONCLUSION

For the foregoing reasons, LIUNA Local Union No. 1184 urge the City to continue the matter for future consideration pending completion of a supplemental EIR addressing the Project's significant impacts and mitigation measures. Thank you for your attention to these comments. Please include this letter and all attachments hereto in the record of proceedings for this project.

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Sincerely,



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RESPONSES TO LETTER D-4A

Response to Comment 1: The following responses will address the specific comments made by the commenter regarding these topics.

Response to Comment 2: The project information summarized by the commenter is correct.

Response to Comment 3: The City understands comments made by the LIUNA Local Union No. 1184 regarding standing to make these comments. While it is not the City's responsibility to determine standing, the following responses will address all the comments raised in this letter consistent with CEQA.

Response to Comment 4: The information provided in the letter regarding several EIR and CEQA topics is factually correct, but it may or may not apply to this particular EIR for this specific project. Nonetheless, the following responses address specific comments made by the commenter on the Draft EIR for the ProLogis project.

Response to Comment 5: The information provided in the letter regarding recirculation of an EIR under is factually correct, but it may or may not apply to this particular EIR for this specific project. Nonetheless, the following responses address specific comments made by the commenter on the Draft EIR for the ProLogis project. The City contends that this information does not rise to the level of that requiring circulation, but several mitigation measures have been added to make certain there will be no significant impacts relative to the issues raised by the commenter.

Response to Comment 6: The commenter is correct that the project description of the EIR must describe the "whole of the action" as outlined in CEQA. However, the City believes the EIR does provide that information and does not segment the utility or infrastructure improvements outlined by the commenter. The discussion related to the Westridge project was only relative to the timing and funding of the various improvements for which both projects would either construct or provide a fair share contribution towards their construction, since both were being processed at approximately the same time. Section 3.5.4 of the ProLogis EIR clearly identifies the various utility improvements for which the project will be responsible, and Section 3.5.5 outlines the road and intersection improvements for which the ProLogis project is responsible. The following discussion in Section 3.5.1, Operations and Infrastructure Timing, was included to show the relationship of the two projects in terms of the timing of the various improvements.

3.5.1 Operations and Infrastructure Timing

The EIR evaluated "worst case" conditions of the project operating 24/7. If the proposed project is constructed prior to the West Ridge project, ProLogis will install the infrastructure necessary to serve its project (e.g., roads, water, and sewer) and will be reimbursed by the City from the West Ridge developer at the time that project is constructed. If the West Ridge project is constructed first, ProLogis will contribute an appropriate amount to the City for a reimbursement account to help off-site improvement costs installed by the West Ridge project that serve the ProLogis project. The timing of improvements shall be coordinated by the City in cooperation with ProLogis and the West Ridge developer.

Therefore, the project EIR does not segment these improvements from inclusion in the project description. The impacts of these improvements are also addressed in the appropriate sections of the environmental analysis (e.g., 4.3, *Air Quality*, 4.11, *Transportation and Traffic*, and 4.12, *Utilities*).

Response to Comment 7: The information provided in the letter regarding implementation of all feasible mitigation measures is factually correct, but it may or may not apply to this particular EIR for this specific project. Nonetheless, the following responses address specific comments made by the commenter on specific sections of the Draft EIR and mitigation for impacts on those sections.

Response to Comment 8: The commenter presents information that indicates preservation of habitat is appropriate mitigation for loss of habitat based on the results of the *Mira Mar* case in Oceanside. The commenter then concludes that concept can be applied to loss of prime agricultural land. The comparison may not be directly applicable, but an Appeals Court decision (*Building Industry Association of Central California v. County of Stanislaus*) certified in November 29, 2010 may be more applicable to this situation. That case concluded that it is appropriate to mitigate at a 1:1 ratio for the loss of prime agricultural land through the acquisition of an offsite agricultural easement if such a program is established by a county or regional governmental entity. However, as outlined in the DEIR section, there is no established County or regional program, and active agriculture in western Riverside County is no longer economically viable or feasible.

The commenter also quotes the “farmland mitigation measures” in the General Plan EIR (GPEIR) out of context. The commenter implies that these measures are recommended in the GPEIR, but actually the EIR section, after only describing the potential measures, concludes that they are all infeasible, does not adopt any mitigation measures for loss of farmland, and concludes impacts related to loss of farmland are significant and unavoidable. There are also numerous references in the GP that state the City’s support of interim farmland and agricultural use throughout the City in all land use designations as long as they are economically viable as outlined in Objective 4.1 shown below and included with other materials in Final EIR Appendix E:

Objective 4.1 “Retain agricultural open space as long as agricultural activities can be economically conducted, and are desired by agricultural interests, and provide for an orderly transition of agricultural lands to other urban and rural uses.”

It should also be noted that a statement of overriding considerations was adopted for the GPEIR to address this and other significant impacts of implementing the City GP. Therefore, no mitigation is required for the ProLogis project relative to loss of farmland, as outlined in the DEIR.

Response to Comment 9: The information provided in the letter regarding several EIR and CEQA topics is factually correct, but it may or may not apply to this particular EIR for this specific project. The City believes the EIR did use the proper baseline for hazardous materials. The commenter states that the Phase 1 ESA reports for the site were “out of date”, however, CEQA does not mandate when the data from certain types of studies, such as Phase 1 reports, are considered out of date. The only concept of “out of date” refers to the typical limitation for financial institutions upon which to base their decisions using Phase 1 ESA reports. For that purpose, Phase 1 reports are typically only considered “good” for 90 days. However, if it can be established that the conditions outlined in the Phase 1 have not changed since that report was prepared, a lead agency may rely on that information for the purposes of CEQA documentation. That is the case with the ProLogis EIR, in that the project applicant acquired the project site in 2008 and hired a local grower to manage the citrus trees until December of 2013 when the trees were removed to reduce irrigation and maintenance costs. Until the time the trees were removed, the developer indicates no agricultural chemicals were applied to the property, and the commenter’s own records show that various materials were applied back in 2010.

The commenter also questioned the number of samples taken on the site. The comment references the Department of Toxic Substance Control Interim Guidance for Sampling Agricultural Properties (Third Revision), dated August 7, 2008 as the standard that should have been used for pesticide sampling conducted during the several Phase I Environmental Site Assessment (ESA) reports for

various parcels that comprise the site. The referenced (California) Department of Toxic Substance Control (DTSC) document is:

“specific to agricultural properties where pesticides and/or fertilizers were presumably applied uniformly, for agricultural purposes consistent with normal application practices. It is applicable to agricultural properties that are currently under cultivation with row, fiber or food crops, orchards, or pasture. It is also applicable to fallow and former agricultural properties that are no longer in production and have not been disturbed beyond normal disking and plowing practices. Each field of the same crop is assumed to have been watered, fertilized and treated with agricultural chemicals to the same degree across the field. Because of this homogeneous application, contaminant levels are expected to be similar at any given location within the field. This is the underlying premise of the guidance...”

Properties not requiring agricultural sampling under the referenced guidance include property used exclusively as grazing lands or pasture. The guidance also states that dry-land farming, which is the practice of growing a crop without irrigation, are not treated with pesticides or infrequently treated, since the lack of water does not provide a desirable habitat for most agricultural pests. Properties that clearly qualify as dry-land farming do not need further investigation for pesticides or metals. *“For properties where there is uncertainty regarding dry-land farming, limited sampling may be conducted at a rate of four discrete samples per site, with one sample collected in each quadrant.”* It should be noted that five samples were taken on the ProLogis site, one each in the four quadrants and one near the northern portion of the site near the former UST location.

The DTSCs 2003 Interim Guidance for Sampling Agricultural Properties, which they referenced as to why additional samples for organo-chloro-phosphate (OCPs) were necessary, was taken out of context. The 2008 Interim Guidance for Sampling Agricultural Properties speaks to how an environmental assessor for the DTSC should conduct an evaluation of an agricultural property to be converted into another use. The guidance is envisioned as being most relevant to sites on which schools will be constructed or for residential use. However, it does apply to any project with DTSC oversight. Properties not subject to this guidance include former agricultural property that has been graded for construction or other purposes, land used exclusively for grazing or pasture, most dry-land farming fields, and sites that were agricultural properties prior to 1950. The subject site would be an exempted site as it was dry farmed land.

Based on standard spraying practices for such crops, the number of soil samples taken at the subject site during the Phase I ESA demonstrate that pesticide use was infrequent and limited over the site, and are at levels that are below regulatory requirements for residential property. These are the baseline conditions with respect to pesticide use at the site.

In terms of sample frequency, the sampling pattern should be sufficient to characterize the site. The guidance, done for school and residential properties, apparently interprets this as a range for properties from one acre to fifty acres (with the number of each of the following categories increasing every few acres), of between 4 and 60 borings, 4 and 15 composite organo-chloro-phosphate (OCP) samples. For acreages greater than 50, consultation with the DTSC is required. However, mitigation of frequency is available to sites based on documentation of consistent ownership, operator, and use. It should be noted that none of our samples were composites but all were discrete samples, so they are more representative of what is actually on the properties. The DTSC's document is a guidance document for school sites and residential properties not those that are to be commercial/industrial. The intent is to avoid having children (schools, residential) from coming in contact with soils with high levels of OCPs. Therefore, evidence supports the EIR's contention that there are no significant OCPs present on the site, and only trace amounts were detected in the onsite sampling in 2003.

The state records provided by the commenter indicate that approximately 200 pounds of 2,4-D, 2-Ethylhexyl Ester (DEHE) was applied to the site as a general herbicide (based on data in the

commenter's letter and appendix) in 2010. DEHE is a very common herbicide used in the United States and can be purchased at retailers like Home Depot. Assuming it was applied to the 70 acres of the site without citrus trees (i.e., available for dry farming), this equals less than 3 pounds per acre, or 0.00002 ounce per square foot, in other words a very small amount. In addition, this chemical has a relatively short half-life. Data from the National Library of Medicine, provided by the commenter, indicates that DEHE has a half-life of 1 to 51 days when applied as a spray, and 4-16 days when applied in granular form. In only 6 months there would be less than 0.5 percent of the original product in the soil, so this is not a significant soil contamination issue. It is expected this chemical would have become inert or diluted well past the point of concern or any established governmental action level in the 3 years or more from its most recent application in 2010.

NOTE: There is NO evidence that DDT, DDE, or arsenic were ever applied to the project site, they were not typical pesticides that were sprayed for dry farming and/or citrus production in this area.

The existing conditions at the time the NOP was issued (February 21, 2012), which is when the timeframe of baseline conditions is established, were there was no dry framing or citrus production being conducted on the site, although the trees were being maintained at a minimal level so they would not die and become a fire hazard.

Although both Phase 1 ESA reports were done in 2003, the onsite conditions have not changed appreciably since the Phase 1 reports were done. The commenter also stated the "entire" site had not been surveyed. While this may be technically correct, the commenter failed to note that 98.5 percent or 121 acres of the 122.8-acre site was surveyed, and the 1.8 acres not surveyed were on the far west boundary of the site and planted with citrus, so it is reasonable to conclude the conditions found on the rest of the site apply to this portion as well. It should also be noted that the underground storage tank that would on the site at one time was removed or remediated according to the "Report of Removal of the Abandoned Underground Storage Tank" dated January 28, 2004 in the DEIR Appendix F.

Section 2.3, *Interviews*, in the Phase 1 reports indicate the following:

On November 12, 2003, our environmental assessor interviewed Mr. Pat Kawamoto, owner of APN 477-120-015. Mr. Kawamoto reportedly has owned the land for over 25 years. According to Mr. Kawamoto, no petroleum storage tanks have ever been present on the project site. Mr. Kawamoto indicated that the project site had been regularly leased to Mr. David Bruno of Bruno Ranching for agricultural purposes. Mr. Kawamoto had no knowledge of any pesticides or PCBs stored or used on the site.

In addition, the following information from the EIR (Section 4.6, *Hazards and Hazardous Materials*, bears directly on this discussion:

...because the project site has been historically utilized for agricultural production and because of the close proximity to SR-60, soil samples were taken in various parts of the project site to further evaluate the potential contamination on the site. Soil samples were also collected from the area of a wind-machine remaining in the western portion of the site, the area adjacent to SR-60 in the northern portion of the site, and from selected areas of the citrus groves on the site. These soil samples are identified in Figure 4.6.1. [NOTE: 5 sampling locations spread out around the site]

Two soil samples were collected at the base of the wind-machine. One 200 to 300-gallon petroleum tank is located in the western portion of the site within the column of the wind machine structure. In interviews with Raymond Noriega, manager of the site, he indicated that the wind machine had not been used in the past 10 years that he had been employed there. Soil samples were taken at depths of 1.5 feet and 3 feet below the ground surface to assess the potential of

hydrocarbon compounds occurring in the soil. Laboratory results indicated no detectable concentrations of hydrocarbon compounds in the samples collected.

Two soil samples were collected at areas adjacent to SR-60 at depths of one to four inches below ground surface to assess the potential of lead contamination. Laboratory results indicated total lead concentrations of 0.601 to 4.41 milligrams per kilogram (mg/Kg), which were determined to be insignificant.¹ In addition, on September 3, 2003, five near-surface (upper 6 inches) soil samples were collected from selected areas (upper portion) of possible drainage accumulation and pesticide usage on the site. The detected concentrations of organochlorine pesticides and PCBs were within the allowable Preliminary Remedial Goals (PRGs) for the project. No additional assessment for organochlorine pesticides or PCBs is recommended for the site.² [NOTE: *emphasis added*]

On November 7, 2003, three near-surface (upper six inches) soil samples were collected from selected areas (lower portion) of possible drainage accumulation and pesticide usage on the site. The detected concentrations of organochlorine pesticides and PCBs were within the allowable PRGs for the project. No additional assessment for organochlorine pesticides or PCBs is recommended for the site.³ [NOTE: *emphasis added*]

At the request of the current owner of the site (northern portion), the area of the former abandoned 13,400-gallon UST was excavated during the site reconnaissance on September 20, 2003. No significant hydrocarbon odors or staining were observed. Between January 5 and 8, 2004, the UST was removed from the site. The UST had been abandoned in-place approximately 50 years ago. The abandonment reportedly consisted of removal of free-liquids; removal of the UST top; then backfilling the interior of the UST with on-site soils. Due to the installation of a 12-inch diameter, Eastern Municipal Water District (EMWD) waterline main in the north portion of the UST, the north portion of the UST was not removed. No indication of soil contamination was observed during the UST removal work. Additionally, soil sampling was conducted on January 7, 2004, at depths between 2 feet and 6 feet below the former bottom elevation of the UST, under the direction of a representative from the County of Riverside DEH Hazardous Materials Management Division. Laboratory results of the collected soil samples indicated a concentration of total petroleum hydrocarbons as oil (116 mg/Kg) in the soil sample collected at 2 feet below the bottom elevation of the UST. No other hydrocarbons, BTEX,⁴ or fuel oxygenates were detected; therefore, no additional environmental investigation is recommended for the former UST location.⁵ [NOTE: *emphasis added*]

Therefore, the project site was previously surveyed for pesticides and no significant impacts were found. It has also been documented that the former UST on the site was properly remediated, so it also would not pose a threat to any workers on the site during grading. This previous documentation supports the conclusion that there are no significant health risks on the project site for construction workers related to the proposed project. However, to determine the most current hazmat conditions of the site, the following measure will be added to the DEIR in response to this and other comments:

¹ Phase 1 Preliminary Environmental Site Assessment 84± Acres, Assessor Parcel Numbers (APNs) 477-120-001 and 477-120-006, Near Intersection of Pettit Street and Highway 60, Moreno Valley, California, R M Environmental, October 30, 2003, page 8.

² Phase 1 Preliminary Environmental Site Assessment 84± Acres, Assessor Parcel Numbers (APNs) 477-120-001 and 477-120-006, Near Intersection of Pettit Street and Highway 60, Moreno Valley, California, R M Environmental, October 30, 2003, page 9.

³ Phase 1 Preliminary Environmental Site Assessment 37± Acres, Assessor Parcel Numbers (APNs) 477-120-(007, 008, 014, 015), Near Intersection of Pettit Street and Highway 60, Moreno Valley, California, R M Environmental, November 25, 2003, page 8.

⁴ BTEX is an acronym for benzene, toluene, ethyl benzene, and xylene. This group of volatile organic compounds (VOCs) is found in petroleum hydrocarbons, such as gasoline, and other common environmental contaminants.

⁵ Report of Removal of Abandoned 13,400± gallon Diesel Underground Storage Tank, APN 477-120-001, Near the Intersection of Pettit Street and Highway 60, Moreno Valley, California, R M Environmental, January 28, 2004.

4.6.6.1A Prior to issuance of a grading permit for the project, a qualified contractor shall test onsite soils for contamination by agricultural chemicals. If present in concentrations above established actionable levels or thresholds, these materials shall be removed and transported to an appropriate landfill by a licensed contractor. This measure shall be implemented to the satisfaction of the Building Division including written documentation of the disposal of any agricultural chemical residue in conformance with all applicable regulations.

The text of the EIR will be revised to reflect this additional information. Implementation of this measure will assure that any potential impacts related to pesticide residues on the project site, to either area residents or construction workers on the site, will be reduced to less than significant levels. The addition of this measure will address the commenter's comments in this regard.

Response to Comment 10: Most of this comment was addressed in the early portion of Response 9 above. The commenter's citation that the U.S. EPA requires Phase 1 ESA reports to be prepared within 180 days of property acquisition are related to federal remediation of sites and do not apply directly to the requirements of CEQA to provide accurate information on the project site. As previously stated, CEQA does NOT require a Phase 1 ESA report, but they are typically used to provide the baseline information for EIRs. Although the Phase 1 reports for this project are ten years old, there has been no evidence presented that would indicate baseline conditions are otherwise than presented in the EIR. The site has been dry farmed and supported citrus trees for many years, which were removed in December 2013 to reduce irrigation and maintenance costs and reduce fire hazards. The previous Response 9 addressed the coverage of the Phase 1 reports (121 out of 122.8 acres or 98.5 percent of the site surveyed) much more than an adequate statistical sampling of the site. Response 9 also outlines an additional mitigation measure that addresses these concerns.

Response to Comment 11: As outlined in the previous Response 9 in this letter, the DEIR did evaluate the removal or remediation of the former Underground Storage Tank (UST) which was fully documented in Appendix F of the EIR. There is no empirical evidence that there is any hazmat or health risk from a UST on the site since it has been effectively remediated.

Response to Comment 12: This comment states that the EIR did not show the GHG emissions with mitigation. The reductions with mitigation were not calculated because the GHG-related mitigation measures included in the EIR do not have quantified reduction amounts. The EIR supports the statement of less-than-significance qualitatively by stating: "...project-related GHG emissions and their contribution to global climate change impacts in the State are less than significant and less than cumulatively considerable because: (1) the project's impacts alone would not cause or significantly contribute to global climate change, and (2) the project has no substantial effect on consumption of fuels or other energy resources, especially fossil fuels that contribute to GHG emissions when consumed."

Response to Comment 13: This commenter asks for information about the URBEMIS modeling results. The URBEMIS model was not used in the EIR, except for a few parameters in the health risk assessment. None of the construction or operational emissions modeling were conducted using URBEMIS, only CalEEMod, which is currently the accepted computer emission modeling program recommended by the SCAQMD. Thus, there is no need for highlighting the differences in the models.

In addition, the commenter quotes information from the CalEEMod Technical Paper, but leaves out the following sentence: "This limitation could result in underestimated fugitive dust emissions if high wind and loose soil are substantial characteristics for a given land use/construction scenario." As this project will be constructed following the requirements for dust control specified in SCAQMD Rule 403, including watering the disturbed areas three times per day, there will be no "loose soil".

Response to Comment 14: First, the commenter states the DEIR fails to accurately compare construction emissions to daily construction significance thresholds. The comment correctly states that ROG emissions would be in exceedance of the CEQA thresholds, as is also stated in the EIR. However, the comment incorrectly states that PM_{2.5} emissions would be in exceedance of the CEQA thresholds. The comment correctly identifies the EIR emissions rate of PM_{2.5} as 7.95 lbs/day, and then correctly states that the threshold is 55 lbs/day. It is not clear why the commenter believes that 7.95 lbs/day of PM_{2.5} would be in exceedance of 55 lbs/day.

Further in Section D.2, on page 21: A review of the CalEEMod analysis shows that the highest emission values are not associated with the grading phase. By design and SCAQMD direction, LST analyses only include onsite emissions. The following table from the Air Quality technical report Appendix shows all the onsite emissions for all the construction phases. Note that the onsite emissions (i.e., not fugitive) for the grading phase are the greatest.

Construction Phase	Onsite Pollutant Emissions, lbs/day							
	ROG	NO _x	CO	SO ₂	Fugitive PM ₁₀	Exhaust PM ₁₀	Fugitive PM _{2.5}	Exhaust PM _{2.5}
Site Preparation	10.43	84.72	47.82	0.07	7.05	4.27	3.87	4.27
Grading	12.5	103.9	55.13	0.1	3.38	5.01	1.29	5.01
Building Construction	5.63	37.37	23.73	0.04	0	2.54	0	2.54
Architectural Coating	342.39	2.96	1.94	0	0	0.27	0	0.27
Paving	7.91	33.81	20.89	0.03	0	2.93	0	2.93

Response to Comment 15: As outlined in Responses 9 through 11 above, there is no empirical evidence that onsite soils are contaminated by pesticides or other agricultural chemicals. However, Response 9 outlines an additional mitigation measure that will assure there are no health risks from pesticides or contaminated soil on the site.

Response to Comment 16: It is not clear why the BAAQMD CEQA Guidance is pertinent to this project, as the Bay Area has substantially different climate and pollution conditions than the South Coast area. As a result of these differences, the BAAQMD has different NO_x construction and GHG operational standards than the SCAQMD does. The EIR adequately compares all construction and operational emissions to the appropriate SCAQMD thresholds.

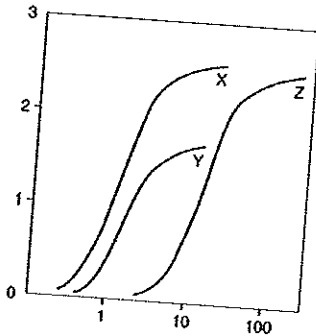
Response to Comment 17: The commenter states the DEIR fails to disclose impacts to offsite receptors. The EIR includes a localized impacts analysis for both construction and operational emissions as well as a full health risk assessment of operational emissions. These analyses completely disclose project-related impacts to offsite receptors.

Response to Comment 18: The information provided in the letter regarding the legal standard for cumulative impacts is factually correct, but it may or may not apply to this particular EIR for this specific project. In fact, the information is not specific to the ProLogis project but is rather a restatement of court case citations and evaluations, so there is no specific response to this comment relative to the EIR.

Response to Comment 19: The EIR includes a complete cumulative air quality impacts analysis that satisfies all CEQA requirements and that includes the conclusion that the long-term cumulative air quality impacts would be significant and avoidable. A similar analysis is performed regarding water supplies and water-related impacts, and that analysis concludes the project will not make a significant contribution to any cumulatively considerable impacts outlined in the DEIR.

Response to Comment 20: The commenter will receive a copy of the revised FEIR document prior to action on the project, similar to that afforded public agencies for projects in the City of Moreno Valley (i.e., 10 days before the next Planning Commission hearing).

In addition, the commenter is referred to Section 4 of this document for an evaluation of a less intensive modified plan, which is a subset of the Reduced Intensity Alternative evaluated in the DEIR (and which was determined to be environmentally superior to the Proposed Project). This less intensive plan proposes to develop 4 warehouse buildings, leaving the southeast portion of the site vacant for future development of residential uses consistent with existing zoning (R-5 and RA-2) adjacent to the existing residential neighborhood to the southeast.



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August 31, 2012

Lozeau | Drury LLP
410 12th Street, Suite 250
Oakland, CA 94607

Attn: Mr. Michael Lozeau

Subject: Comment Letter on the Draft Environmental Impact Report for the Prologis Eucalyptus Industrial Park, SCH No. 2008021002.

Dear Mr. Lozeau:

At the request of Lozeau | Drury LLP (Lozeau Drury), Clark and Associates (Clark) has reviewed materials related to the above referenced project, including the Draft Environmental Impact Report¹ (DEIR) for the Prologis Eucalyptus Industrial Park (hereafter called the Project), SCH No. 2008021002 and its appendices. The proposed project site is located in the eastern portion of the City of Moreno Valley, in Riverside County, California. The 122.8-acre project site is located south of State Route 60 (SR-60) east of the Moreno Valley Auto Mall, and adjacent to and west of the Quincy Channel. According to the DEIR the proposed project would result in the construction and operation of a warehouse facility, consisting of approximately 2,244,638 square feet (sq ft).

Currently the site is used undeveloped for commercial uses and has two citrus groves in the northeastern and northwestern portions of the site, while the central and southern portions are vacant and support mainly weedy vegetation. According to a March, 2012 Memo from LSA

¹ LSA. 2012. Draft Environmental Impact Report, State Clearinghouse No. 2008021002, Prologis Eucalyptus Industrial Park (formerly Prologis Park Moreno Valley Eucalyptus Project), City of Moreno Valley, Riverside County, California. LSA Associates, Inc. 1500 Iowa Ave, Suite 200, Riverside, CA LAS Project No. PLO1101. Prepared July 2012 pg. 1-2

Associates², the project site contains 57-acres of citrus (Grapefruit) trees with the rest of the site vacant. The surrounding area has been dry-farmed in the past, and the eastern end of the City has historically supported a variety of crops, including citrus, melon, potatoes, etc³. There are three small natural drainage features on site, two ephemeral channels in the southwestern portion of the site and the larger Quincy Channel along the eastern edge of the property. According to the DEIR⁴, there is some minor amount of refuse is present in the southwest and southeast corners of the site from unauthorized dumping.

Land adjacent to the project site includes vacant land east and south of the proposed project site, SR- 60 to the north, and the Moreno Valley Auto Mall and the City of Moreno Valley Fire Station No. 58 northwest of the project site. Existing single-family residential uses are located approximately 50 feet southeast of the southeastern corner of the project site⁵.

The proposed project has had and will have significant impacts on the community prior to the approval of the DEIR. The proposed project will require significant changes in the local zoning ordinances (General Plan for the City of Moreno Valley) including:

² LSA. 2012. Project Memorandum: Agricultural Use of ProLogis Industrial Property. Memorandum from Kent Norton, LSA Riverside Office to Jeff Bradshaw, City of Moreno Valley. Dated March 21, 2012.

³ LSA. 2012. Project Memorandum: Agricultural Use of ProLogis Industrial Property. Memorandum from Kent Norton, LSA Riverside Office to Jeff Bradshaw, City of Moreno Valley. Dated March 21, 2012.

⁴ LSA. 2012. Draft Environmental Impact Report, State Clearinghouse No. 2008021002, Prologis Eucalyptus Industrial Park (formerly Prologis Park Moreno Valley Eucalyptus Project), City of Moreno Valley, Riverside County, California. LSA Associates, Inc. 1500 Iowa Ave, Suite 200, Riverside, CA LAS Project No. PLO1101. Prepared July 2012 pg 3-1

⁵ LSA. 2012. Draft Environmental Impact Report, State Clearinghouse No. 2008021002, Prologis Eucalyptus Industrial Park (formerly Prologis Park Moreno Valley Eucalyptus Project), City of Moreno Valley, Riverside County, California. LSA Associates, Inc. 1500 Iowa Ave, Suite 200, Riverside, CA LAS Project No. PLO1101. Prepared July 2012 pg 3-1

- Approval of a General Plan Amendment to change the land use designation of 71.3 acres of the project site from Residential (R15, R5, and R2) to Business Park (BP) so the entire site would then be designated Business Park (BP).
- Approval of a Zone Change of the entire 122.8 acres from its current zoning designations of Business Park (BP), Business Park/Mixed Use (BPX), Residential 15 District (R15), Residential 5 District (R5), and Residential Agriculture 2 (RA-2) to all Light Industrial (LI).
- Zone Change will also be used to redraw the boundary of the Primary Animal Keeping Overlay (PAKO) district.
- Approval of an amendment to the City's Master Plan of Trails to relocate the Eucalyptus Avenue Trail to the north side of future Eucalyptus Avenue and eliminate the planned trail segment on Quincy Avenue from SR-60 to Fir Avenue (future Eucalyptus Avenue), based on discussion with the City Trails Commission.
- Approval of an amendment to the Circulation Element of the General Plan. These changes include the following:
 - Eliminate the undeveloped Quincy Street from Eucalyptus Avenue south to Encilia Avenue;
 - Realign Encilia Avenue from its current alignment such that its westerly terminus is located at Moreno Beach Drive instead of the current General Plan westerly terminus at Eucalyptus Avenue; and
 - The segment between Quincy Channel and Moreno Beach Drive would be classified as a Collector.

In addition, to the changes above, the proposal of the project has forced the Moreno Valley Unified School District (MVUSD) to abandon plans to locate an elementary school (MVUSD Elementary School #24), a middle school (MVUSD Middle School #7), and a high school (MVUSD

High School #5) in the vicinity of Redlands Boulevard and future Eucalyptus Avenue, in close proximity to the proposed. After the Notice of Preparation (NOP) for the proposed project was released, MVUSD decided to abandon plans for these school sites and relocate the future school facilities in a different area of the City⁶. Students who live in the area to be serviced by the proposed schools will now have to travel farther to attend schools.

The DEIR for the Project, determined that the proposed project's construction and operational phases would have impacts on air quality that would be less than significant with mitigation incorporated. These conclusions are premature and based upon a flawed analysis of the potential emissions at the site. The proponents should re-evaluate the impacts of the project and present them in a revised draft environmental impact report (RDEIR).

Clark's review of the materials in no way constitutes a validation of the conclusions or materials contained within the plan. If we do not comment on a specific item this does not constitute acceptance of the item.

This DEIR was issued prematurely without considering the serious flaws in the Proponent's analysis of the project. The flaws include:

1. The proponent's use of the CalEEMod ensures an underestimation of the potential particulate emission for the construction phase of the proposed project.
2. Failure of the proponent to compare construction emissions to daily construction significance thresholds;
3. Failure to consider health risks from contaminated dust; and
4. Failure to properly identify and address the Project's operational air quality impacts.

⁶ LSA. 2012. Draft Environmental Impact Report, State Clearinghouse No. 2008021002, Prologis Eucalyptus Industrial Park (formerly Prologis Park Moreno Valley Eucalyptus Project), City of Moreno Valley, Riverside County, California. LSA Associates, Inc. 1500 Iowa Ave, Suite 200, Riverside, CA LAS Project No. PLO1101. Prepared July 2012 pg 4.3-6.

COMMENTS

1. The Proponent's Use Of The CalEEMod Ensures An Underestimation Of The Potential Particulate Emission For The Construction Phase Of The Proposed Project.

The California Air Resource Board's (CARB's) Urban Emission (URBEMIS) model and the California Emissions Estimator Model (CalEEMod) are computer models designed to estimate emissions of criteria pollutants during construction and operational phases of projects. Currently, South Coast Air Quality Management District (SCAQMD) accepts the outputs from both models in their air quality analyses. Significant differences in the models must be highlighted in the DEIR. The changes in the method used to estimate construction impacts from the proposed project by using the CalEEMod model instead of the URBEMIS model include:

- Failure to account for wind-blown fugitive dust⁷. According to the July, 2011 CalEEMod Technical Paper, wind-blown fugitive dust is not calculated in CalEEMod. For sites as large as the proposed project site, this can result in significant quantities of particulate matter being released.
- SCAQMD's surveys of construction sites were limited to sites of 35 acres or less. For projects larger than 35-acres the data was extrapolated by increasing the number of construction days but not increasing the number of construction equipment pieces used on a given day. The impact is to reduce the construction PM estimates for the site as compared to URBEMIS⁸.

⁷ CalEEMod. Technical Paper: Methodology Reasoning and Policy Development of the California Emission Estimator Model. July, 2011. Pg 4.

⁸ CalEEMod. Technical Paper: Methodology Reasoning and Policy Development of the California Emission Estimator Model. July, 2011. Pg 5.

- Grading in URBEMIS is based upon 25% of total project acreage in one day. Grading in CalEEMod is based upon Walker's Building Estimator's Reference Book. The impact of this change is to decrease PM emissions from grading in the CalEEMod⁹ by tying the emissions to the number of pieces of equipment present at the site.

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The proponent's must include an analysis of these impacts in a revised DEIR (RDEIR) to ensure that an accurate analysis of the potential impacts from the proposed project are presented as required by CEQA.

2. Failure To Accurately Compare Construction Emissions To Daily Construction Significance Thresholds.

Unlike the operational emissions from most projects, which are typically more or less continuous, emissions from construction sites are highly variable depending on the type of construction that is being performed. For example, grading results in large quantities of fugitive dust and combustion emissions from diesel-powered equipment. Short-term emissions during the various construction phases can be considerable and may result in degradation of local and regional air quality and severe health effects.

4

To determine whether short-term emissions may result in degradation of local and regional air quality and severe health effects, it is common practice for lead agencies to compare project emissions to quantitative significance thresholds developed by local air districts as a screening tool for CEQA review. Thresholds of significance for construction emissions are typically expressed on a short-term basis, *i.e.* daily or hourly basis to adequately capture impacts due to the high variability of emissions during different construction stages.

⁹ CalEEMod. Technical Paper: Methodology Reasoning and Policy Development of the California Emission Estimator Model. July, 2011. Pg 5.

Table 1 presents a summary of short-term emissions thresholds developed by SCAQMD and other air districts for assessing impacts on air quality from construction projects.

Table 1:
CEQA significance thresholds for construction emissions from various air districts

Air district construction thresholds*	NO _x (lbs/day)	ROG (lbs/day)	PM ₁₀ (lbs/day)	DPM (lbs/day)	PM _{2.5} (lbs/day)	CO (lbs/day)
SCAQMD	100	75	150		55	550
BAAQMD	54	54	82		54	
EDCAPCD	82	82				
SLOCAPCD				7		
MBUAPCD			82			550
FRAQMD	25	25	80			
SMAQMD	85					
YSAQMD	82	82	150			

SCAQMD = South Coast Air Quality Management District, CEQA Handbook, 1993;
 BAAQMD = Bay Area Air Quality Management District, CEQA Guidelines 2009;
 EDCAPCD = El Dorado County Air Pollution Control District, CEQA Guide, February 2002;
 SLOCAPCD = San Luis Obispo County Air Pollution Control District, CEQA Air Quality Handbook, December 2009.
 MBUAPCD = Monterey Bay Unified Air Pollution Control District, CEQA Air Quality Guidelines, June 2004,
 FRAQMD = Feather River Air Quality Management District,
http://www.fraqmd.org/CEQA_Thresholds.htm;
 SMAQMD Sacramento Metropolitan Air Quality Management District, Guide to Air Quality Assessment, July 2004;
 YSAQMD, Yolo-Solano Air Quality Management District, Air Quality Handbook, Guidelines for Determining Air Quality Thresholds of Significance and Mitigation Measures for Proposed Development Projects that Generate Emissions from Motor Vehicles, revised 2002

According to the DEIR¹⁰, “criteria pollutant emissions during project construction would exceed the SCAQMD emission thresholds for oxides of nitrogen (NO_x) and reactive organic gases (ROG). Compliance with SCAQMD Rules and Regulations during construction will minimize construction-related air quality impacts from fugitive dust emissions and construction equipment emissions. Mitigation is required. The proposed

¹⁰ LSA. 2012. Draft Environmental Impact Report, State Clearinghouse No. 2008021002, Prologis Eucalyptus Industrial Park (formerly Prologis Park Moreno Valley Eucalyptus Project), City of Moreno Valley, Riverside County, California. LSA Associates, Inc. 1500 Iowa Ave, Suite 200, Riverside, CA LAS Project No. PLO1101. Prepared July 2012 pg 1.

project would not exceed any of the localized significance thresholds (LSTs) during construction periods.” This statement is incorrect and misleading.

A review of the CalEEMod analysis for the project shows that the mitigated construction emissions of ROG and particulate matter less than 2.5 microns (PM_{2.5}) exhaust (a surrogate for diesel particulate emissions) are in excess of the CEQA significance thresholds listed above. During Year 2013, ROG and PM_{2.5} exhaust emissions are estimated to be 368.03 lbs/day and 7.95 lbs/day, respectively.

In addition to the Significant Thresholds above, SCAQMD recommends the use of LSTs to determine potential impacts to receptors near projects. According to the Air Quality Analysis prepared by the proponent, Table I of the Air Quality Analysis (Table 2 below) shows that the emissions of the pollutants on the peak day of construction are below the SCAQMD LST. In this table the proponent uses the emission estimates from the grading phase of the construction. The proponent inaccurately asserts that the emission levels will be below the LST values.

4

Table 2:

Construction LST Impacts from Air Quality Analysis

Emission Sources	Pollutant Emissions, lbs/day			
	NOx	CO	PM ₁₀	PM _{2.5}
On-Site (grading) Emissions	104	55	8.4	6.3
LST Threshold	270	1,577	13	8
Significant Emissions?	No	No	No	No

A review of the CalEEMod analysis shows that the highest emission values are not associated with the grading phase. In Section 2.0 Emission Summary of the CalEEMod analysis presented in the Air Quality Analysis the construction impacts are listed as:

**Table 3:
Construction LST Impacts from CalEEMod Output**

Emission Sources	Pollutant Emissions, lbs/day			
	NO _x	CO	PM ₁₀	PM _{2.5}
Mitigated Construction Emissions	139.84	166.77	29.2	8.28
LST Threshold	270	1,577	13	8
Significant Emissions?	No	No	Yes	Yes

The Proponent's analysis of air quality impacts clearly fails to accurately describe the impacts of the emissions on the receptors closest to the project site (homes within 50 feet of the site boundary and the fire station immediately adjacent to the site boundary). Emissions of PM_{2.5} (surrogate for diesel exhaust) and PM₁₀ from the construction site may have lasting impacts on the receptors nearby.

Diesel exhaust contains nearly 40 toxic substances including toxic air contaminants (TACs) and may pose a serious public health risk for residents in the vicinity of the facility. TACs are airborne substances that are capable of causing short-term (acute) and/or long-term (chronic or carcinogenic, i.e., cancer causing) adverse human health effects (i.e., injury or illness). TACs include both organic and inorganic chemical substances. The current California list of TACs¹¹ includes approximately 200 compounds, including particulate emissions from diesel-fueled engines.

DPM and TAC emissions may affect numerous sensitive receptors in the region including onsite construction workers, fire personnel at the station adjacent to the site and the single-family residences located near the site. Evidence exists that clouds of soot emitted by heavy-duty

¹¹ URS. 2012. Impacts to Air Quality from the Construction and Operation of the Brannon Solar, LLC Solar Energy Generation Project. Dated Febraury 7, 2012. Table A-7

construction equipment can travel downwind for miles, then drift into heavily populated areas. For example, health impact studies from the SCAQMD¹² have documented that diesel emissions travel miles from the sources impacting residents.

Diesel exhaust has been linked to a range of serious health problems including an increase in respiratory disease, lung damage, cancer, and premature death^{13,14,15}. Fine diesel particles are deposited deep in the lungs in the smallest airways and can result in increased respiratory symptoms and disease; decreased lung function, particularly in children and individuals with asthma; alterations in lung tissue and respiratory tract defense mechanisms; and premature death.¹⁶ Exposure to diesel exhaust increases the risk of lung cancer. It also causes non-cancer effects including chronic bronchitis, inflammation of lung tissue, thickening of the alveolar walls, immunological allergic reactions, and airway constriction.¹⁷

4

¹² SCAQMD MATES I, II, and III have documented the impacts for DPM in the SCAB.

¹³ California Air Resources Board, Initial Statement of Reasons for Rulemaking, Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant, Staff Report, June 1998.

¹⁴ U.S. EPA, Health Assessment Document for Diesel Engine Exhaust, Report EPA/600/8-90/057F, May 2002.

¹⁵ Environmental Defense Fund, Cleaner Diesel Handbook, Bring Cleaner Fuel and Diesel Retrofits into Your Neighborhood, April 2005; http://www.edf.org/documents/4941_cleanerdieselhandbook.pdf, accessed March 27, 2008.

¹⁶ California Air Resources Board, Initial Statement of Reasons for Rulemaking, Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant, Staff Report, June 1998.

¹⁷ Findings of the Scientific Review Panel on The Report on Diesel Exhaust as adopted at the Panel's April 22, 1998 Meeting.

A recent analysis found that air pollution from diesel construction equipment is already taking a heavy toll on the health and economic well-being of Californians^{18,19}.

PM₁₀ emissions from the construction phase of the proposed project may be extremely troublesome for receptors near the site (i.e., homes near the site boundary and the fire station next to the site) since they will act as carriers for residual pesticides/herbicides from the site (see comment below). The project site currently contains 57-acres of citrus (Grapefruit) trees and the surrounding area has been dry-farmed in the past, and the eastern end of the City of Moreno Valley historically supported a variety of other crops²⁰. Given the proximity of receptors to the site and the estimated emission rates of particulate matter from the site after mitigation, it is clear that construction activities at the project site will adversely impact the previously identified receptors.

Based on my expert opinion, applicable significance thresholds, and the CalEEMod analysis performed by the proponent, I conclude that the Project will have significant adverse impacts from construction air emissions of fugitive dust, ROG, and diesel emissions. The lead agency must re-evaluate the construction emissions and incorporate a phased approach to estimate the true impacts of construction activities on air quality, and propose all feasible mitigation measures to reduce these significant emissions, in a RDEIR.

¹⁸ These estimates are conservative because they do not include emissions from a large number of small construction projects (residential and commercial and projects smaller than 1 acre in size). Further, John Hakel, vice president of the Associated General Contractors, which represents construction equipment fleet owners and general contractors, indicated that the report appeared to underestimate the sheer volume of construction equipment.

¹⁹ Union of Concerned Scientists, Digging up Trouble: Construction Pollution in the Bay Area; http://www.ucsusa.org/assets/documents/clean_vehicles/Bay-Area-Fact-Sheet.pdf, accessed March 27, 2008.

²⁰ LSA. 2012. Project Memorandum: Agricultural Use of ProLogis Industrial Property. Memorandum from Kent Norton, LSA Riverside Office to Jeff Bradshaw, City of Moreno Valley. Dated March 21, 2012.

3. Failure To Consider Health Risks From Contaminated Dust.

Residual contaminants in soils at the site may be entrained in dust generated during construction activities. The release of residual contamination is a potentially significant impact, given the past use of the site for agricultural production. According to the California Department of Toxic Substances Control August 2002 Interim Guidance for Sampling Agricultural Fields for School Sites (known sensitive receptors), “the most commonly detected pesticides have been DDT and its derivatives DDD and DDE, toxaphene, dieldrin, and aldrin. Of these pesticides, toxaphene has been the major pesticide driving unacceptable levels of risk requiring remediation by soil removal.” Given the volume of soils to be graded at each of the sites it is imperative to understand whether particulate matter generated at the sites will pose a potential health risk to sensitive receptors in the vicinity of each site.

According to DTSC, “the guidance is applicable to agricultural land that is currently under cultivation with row, fiber or food crops, orchards, or pasture. It is also applicable to fallow and former agricultural land that is no longer in production and has not been disturbed beyond normal disking and plowing practices. Each field of the same crop is assumed to have been watered, fertilized, and treated with agricultural chemicals to the same degree across the field. Because of this homogeneous application, contaminant levels are expected to be similar at any given location within the field.”

There is no indication of a sampling and analysis plan in the DEIR, or the Project documents provided by the lead agency, which is a serious deficiency. Prior to issuing a DEIR for the project, the Proponent should be required to complete a sampling and analysis plan to confirm or rule out the possibility of the presence of residual contaminants at the site. Identifying residual pesticides or other contaminants in soils at the site

prior to construction activities will provide an opportunity for the Proponent to remove/mitigate the potential exposure of sensitive receptors within the vicinity of the sites. In the absence of any sampling or analysis, and given the past use of the Project site, I conclude that there is at least a fair argument that the Project may have significant impacts related to residual contaminants at the site.

5

4. Failure To Properly Identify and Address the Project's Operational Air Quality Impacts.

The DEIR asserts with no analysis whatsoever that the project's emissions of criteria pollutants will not result in a considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard.

During the operational phase of the project the project will have the potential to generate significant quantities of criteria pollutants (NO_x, SO_x, Ozone precursors, PM). According to Table 3-1 of the most recent BAAQMD CEQA guidance, a construction of a 259,000 square foot light industrial or warehouse operation will typically violate NO_x construction thresholds and GHG operational thresholds. The proposed Project's 2,000,000 square feet plus of warehouse and manufacturing buildings are nearly 8 times the size of the screening threshold, ensuring a violation of local air quality thresholds. I therefore conclude that the Project will have significant NO_x and GHG emissions during Project operations.

6

The air quality impacts from the traffic associated with a 2,000,000 square foot facility are significant. Typically the impacts are quantified by the number of vehicle trips per day. In the case of the proposed project, the primary concern will be the number of truck trips per day. A truck trip is one round trip (one trip segment to a site and one trip segment away from a site).

According to one source, Bluffstone and Ouderkirk²¹, a 500,000 square feet facility on 50 acres, will on average have 350 truck trips per day (or 700 trip segments) associated with its development. This figure is proportionate to estimates for an AMB Property Corporation center in Redlands (1,000 truck trips for a 1.3 million square feet structure); Wal-Mart distribution centers in Pueblo, Colorado (700 truck trips per day for an 880,000 square feet facility), Connecticut, and Delaware (both 1,000 truck trips per day for 1.2 million square feet structures); and a grocery distribution center in New York (Boas, 2002; Gasiewski, 2004; Hernandez, 2005; Pueblo Chieftain, 2004; Sholl, 2004).

Estimates from other sources indicate approximately 1 truck per 1,000 square feet of the building, which means that the proposed project would require 1,000 trucks per day (or 1,000 trip segments per day) for the warehouse segment of the Project. The number of truck trips could be higher at a new, more efficient facility where more inventory is moved per day. Without proper modeling of the emissions from these additional vehicles the impacts on the environment and the citizens of Moreno Valley is unknown. It is clear that the size of the Project will have significant NOx and GHG emissions during Project operations.

A proper operational impact analysis is vital for an environmental analysis because the full environmental impact of a proposed project cannot be gauged in a vacuum. One of the most important environmental lessons that has been learned is that the environmental damage often occurs incrementally from a variety of small sources with which they interact. The increase in PM in the region, even for short periods of time, will only exacerbate the already serious air quality issues in the region.

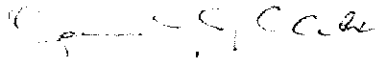
²¹Bluffstone and Ouderkirk. 2007. Warehouses, trucks, and [PM.sub.2.5]: human health and logistics industry growth in the eastern Inland Empire. Contemporary Economic Policy 25(1):

Conclusion

The facts identified and referenced in this comment letter lead me to reasonably conclude that the Project will result in significant adverse impacts that were not identified in the DEIR and that are not adequately mitigated. Many of the DEIR's conclusions that environmental impacts are not significant or less than significant with mitigation are unsupported or contradicted by the evidence. As a result, several analyses presented in the DEIR, including impacts on air quality fail to identify or disclose the magnitude of significant adverse impacts. To protect air quality and public health the Proponent must prepare a RDEIR for the Project.

7

Sincerely,



James Clark, Ph.D.

**RESPONSES TO LETTER D-4B
LOZEAU DRURY, MEMORANDUM FROM JAMES CLARK, PH.D.**

Response to Comment 1: Most of this comment repeats information from the EIR regarding characteristics of the project and requested approvals. The following responses address each of the specific comments made by the commenter on several topics, as outlined below.

Response to Comment 2: The air quality assessment for the project used the CalEEMod program because the SCAQMD requires projects doing CEQA-level analyses to use that particular program. See the Responses to Comments D-4A-13 and D-4A-14 in the previous Letter D-4A from Lozeau Drury.

Response to Comment 3: For a detailed response regarding the use of CalEEMod vs. URBEMIS, see the Responses to Comments D-4A-13 and D-4A-14 in the previous Letter D-4A from Lozeau Drury.

Response to Comment 4: For a detailed response on comparing construction emissions to daily construction thresholds, see the Responses to Comments D-4A-13 and D-4A-14 in the previous Letter D-4A from Lozeau Drury.

Response to Comment 5: This comment is similar to that addressed in Response D-4A-9 in the letter from Mr. Drury. There is no empirical evidence that onsite soils are contaminated by pesticides or other agricultural chemicals. However, Response D-4A-9 outlines an additional mitigation measure that will assure there are no health risks from pesticides or contaminated soil on the site.

Response to Comment 6: For a detailed response on operational impacts of the project, see the Response to Comment D-4A-16 in the previous Letter D-4A from Lozeau Drury.

Response to Comment 7: Contrary to the commenter's conclusion, there does not appear to be sufficient empirical evidence presented that would lead a reasonable person to conclude the EIR is flawed or lacking in its analysis of these potential impacts. A mitigation was added in response to comments by this commenter and the related comments by Mr. Drury (Letter D-4A), but there is no justification for recirculation based on this information, and there are no new or substantially different significant impacts of the project.



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August 30, 2012

Brooke O'Hanley
Lozeau | Drury LLP
410 12th Street, Suite 250
Oakland, CA 94607

Subject: Comments on the Prologis Eucalyptus Industrial Park Project, Riverside County, California

Dear Ms. O'Hanley:

We have reviewed the July 2012 Draft Environmental Impact Report (DEIR) for Prologis Eucalyptus Industrial Park Project ("Project"). The Project would construct six buildings encompassing approximately 2.3 million square feet (or 53 acres) of warehouse space. The Project site would be located on a 123-acre lot in the eastern portion of the City of Moreno Valley in Riverside County, California.

1

We have reviewed the DEIR for issues associated with hazards and hazardous materials, greenhouse gases, air quality, and cumulative impacts. Project construction will result in potentially significant impacts to construction workers and nearby residents that are not adequately disclosed in the DEIR. A revised DEIR needs to be prepared to fully disclose, evaluate, and mitigate these impacts.

Hazards and Hazardous Materials:

Construction workers and nearby residents may be at risk during construction from failure to disclose baseline soil conditions at the Project site.

2

Residual pesticides in soil may pose health risks to workers and nearby residents

Currently, 57 acres of the Project site are used to grow grapefruit and 36 acres of the Project site are used for hay and alfalfa production (DEIR, p. 4.2-1). The DEIR and supporting documents do not provide any specific details on the types of pesticides that have been used on the Project site in association with

these agricultural operations. Our review has shown known and potential pesticide use at the Project site as follows:

- Data available online from the California Department of Pesticide Regulation show that 2,4-D, 2-Ethylhexyl Ester was used on the Project site.^{1,2} Occupational exposure to 2,4-D, 2-Ethylhexyl Ester can occur via inhalation or dermal contact and can result in skin irritation, respiratory failure, hyperventilation, and pulmonary enemas.³
- Organochlorine pesticides DDE and DDT were detected in soil samples collected at the Project site⁴, indicating past use. Use of organochlorine pesticides in the area is common: review of the Department of Toxic Substances Control's (DTSC) Envirostor database shows that the surrounding lands have been surveyed for organochlorine pesticides, DDE and DDT.⁵ These pesticides can persist in soil for hundreds of years despite being banned in the 1970s.⁶ Exposure to DDT can result in headaches, nausea, and convulsions.⁷ The U.S. EPA identifies DDT and DDE as probable human carcinogens.⁸
- The EPA states that soils at fruit orchards, such as the grapefruit orchard on the Project site, may contain high levels of arsenic from application as a pesticide.⁹ Another chemical used on fruit orchards is lead arsenate, a very persistent pesticide.¹⁰ Arsenic is a known human carcinogen and even short-term inhalation of arsenic dust can cause gastrointestinal effects¹¹ while lead is known to cause neurotoxicological effects.¹²

Pesticide use at the Project site was not disclosed in the DEIR and the detection of pesticide residuals in soil were not described in the Hazards and Hazardous Materials section.

Failure to disclose the presence of pesticide residuals in Project site soils may pose significant health risks to construction workers. Construction of the Project requires grading and the disturbance of subsurface soils and removal of citrus groves (DEIR, p. 4.7-21). During earthmoving activities, construction workers will be exposed, via inhalation of dust and dermal contact, to Project site soils which may contain harmful levels of pesticide residuals associated with agricultural activities on the site. To protect worker safety, Project site soils must be sampled for pesticides. Sampling results should be

¹ ftp://cdpr.ca.gov/pub/outgoing/calpip/26814174623515_120824104149.html

² ftp://cdpr.ca.gov/pub/outgoing/calpip/26814174623515_120824104217.html

³ <http://toxnet.nlm.nih.gov/cgi-bin/sis/search/a?dbs+hsdb:@term+@DOCNO+7309>

⁴ Phase I Environmental Site Assessment, 84 acres. Near Intersection of Pittit Street and Highway 60, Moreno Valley, California, p. 9 and Phase I Environmental Site Assessment, 37 acres. Near Intersection of Pittit Street and Highway 60, Moreno Valley, California, p. 8

⁵ http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=60000825 and http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=60000931

⁶ <http://www.atsdr.cdc.gov/toxprofiles/tp35.pdf>, p. 3

⁷ <http://www.epa.gov/ttn/atw/hlthef/dde.html>

⁸ <http://www.atsdr.cdc.gov/toxfaqs/faq.asp?id=80&tid=20>

⁹ <http://water.epa.gov/drink/info/well/health.cfm>

¹⁰ <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1551991/>

¹¹ <http://www.epa.gov/ttn/atw/hlthef/arsenic.html>

¹² <http://www.epa.gov/lead/pubs/learn-about-lead.html#effects>

compared to health-protective regulatory screening levels such as U.S. EPA Regional Screening Levels¹³ and California Human Health Screening Levels.¹⁴

Soil sampling results should also be evaluated for the protection of nearby residents, located 50 feet from the southern boundary and 200 feet from the northern boundary of the Project site (DEIR, p. 4.3-6). Inhalation of pesticides has been linked to asthma in recent research.^{15,16} A report prepared by the California Department of Health identifies pesticides as an asthma trigger.¹⁷ Offsite receptors, including any children living in the neighboring residences, may be exposed to pesticide residuals via dust generated during Project construction.

Construction activities, such as grading and excavation of soils, may generate dust that contains pesticides in concentrations that are harmful to the health of workers and nearby residents and which may act as an asthma trigger. Project site soils should be sampled and results should be compared to human health screening levels. A revised DEIR should be prepared to disclose the results of sampling and include any necessary mitigation to reduce impacts to the health of construction workers and nearby residents.

Phase I ESAs completed for the Project site are outdated and inadequate

The DEIR relies on the findings from two Phase I Environmental Site Assessments (ESAs) that were completed in October and November 2003, nearly nine years ago. The Phase I ESAs surveyed 121 acres of the 123-acre Project site. The Applicant purchased the Project site more than five years ago.¹⁸ A Phase I ESA, according to the U.S. EPA, must be conducted within one year of the acquisition of the property and on-site visual inspections must be completed within 180 days prior to acquiring ownership of the property.¹⁹

Because the Phase I ESAs are dated and omit two acres of the Project site, they cannot be used to evaluate conditions that are potentially hazardous to construction workers and future site personnel. Therefore, the DEIR's analysis of the Project site based on these Phase I ESAs is inadequate.

Review of Google Earth images shows that the Project site has been used for ongoing agricultural operations since the Phase I ESAs were completed in 2003. Limited pesticide sampling was conducted during the Phase I ESAs (a total of 8 soil samples for a 123-acre Project site) but because the samples were collected nine years ago and because they do not reflect continued agricultural use, the results are reflective of current site conditions.

¹³ <http://www.epa.gov/region9/superfund/prg/>

¹⁴ <http://www.calepa.ca.gov/brownfields/documents/2005/CHHSLsGuide.pdf>

¹⁵ <http://extension.psu.edu/ipm/resources/urbanphilly/partnerships/handouts/asthma-pests.pdf>

¹⁶ <http://www.ncbi.nlm.nih.gov/pubmed/21368619>

¹⁷ <http://www.cdph.ca.gov/programs/caphi/Documents/AsthmaStrategicPlan.5-5-08.pdf>, p. 22

¹⁸ <http://www.pe.com/local-news/riverside-county/moreno-valley/moreno-valley-headlines-index/20120726-moreno-valley-officials-look-for-prologis-project.ece>

¹⁹ <http://www.epa.gov/brownfields/aai/aicerclafs.pdf>

The Phase I ESAs cover 121 acres of the 123-acre Project site. We have created a map to show the areas of the Project site surveyed by the two 2003 Phase I ESAs and the boundaries for the current Project site (Attachment A). As the map shows, not all areas of the current Project site were included in the 2003 Phase I ESAs' site assessments.

The Phase I ESAs are outdated and do not cover the entire Project site; therefore, they cannot be used to define baseline conditions for the DEIR's Hazards and Hazardous Materials section. A revised DEIR should be prepared to include a new Phase I ESA that evaluates current Project site conditions.

Status of an underground storage tank is uncertain

A 13,400 gallon underground storage tank (UST), abandoned in the 1950s, was removed from the Project site in 2004 (Appendix F, p. 3/191). The Phase I ESA recommended an additional investigation to be conducted in the area of the former UST (Appendix F, p. 10/191). Accordingly, a permit for removal of the UST was submitted to the Riverside County's Department of Environmental Health in December 2003 and soil samples around the area of the UST were analyzed in 2004. However, the DEIR and supporting documents did not include any documentation that that the UST was properly closed by the Riverside County Department of Environmental Health. If the UST removal was not approved, an Underground Storage Tank Closure Application and Permit²⁰, per the Riverside County Department of Environmental Health Guidelines,²¹ must be submitted. A revised DEIR should be prepared to disclose whether closure was granted by the Riverside County Department of Environmental Health.

Greenhouse Gas Emissions:

The Project's operational greenhouse gas (GHG) emissions, before mitigation, are estimated to be 79,000 metric tons of CO₂e/year (MT CO₂e/yr) which exceed the SCAQMD threshold of 10,000 MT CO₂e/yr and are therefore considered significant (DEIR, p. 4.13-19). After mitigation, the DEIR states that GHG emissions will be less than significant (DEIR, p. 4.13-21). However, the DEIR does not calculate what the Project's GHG emissions will be after the mitigation measures are implemented.

The Project's GHG emissions exceed the SCAQMD threshold by nearly eight times. The DEIR and its supporting documents, including a Greenhouse Gas Study attached as Appendix B, do not provide any evidence that the proposed mitigation measures will reduce GHG emissions by a factor of eight.

A revised DEIR should be prepared to show the efficiency of the Project's proposed mitigation measures in reducing greenhouse gases. If these measures do not account for an eight-fold reduction in the Project's estimated GHG levels, additional mitigation measures (listed below) that are routinely considered in other CEQA projects should be implemented:

- Require preparation of a traffic control plan;

²⁰ http://www.rivcoeh.org/opencms/system/galleries/download/Environmental-Health/HMM/UST_Closure_App.pdf

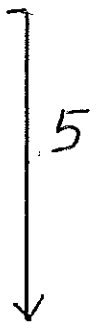
²¹ http://www.rivcoeh.org/opencms/system/galleries/download/Environmental-Health/HMM/Closure_by_removal_UST.pdf

- Demonstrate proper inspection and maintenance of construction equipment;
- Implement a carpool program for construction workers;
- Employ a construction site manager to verify that engines are properly maintained and keep a maintenance log;
- Configure construction parking to minimize traffic interference;
- Consolidate truck deliveries when possible;
- Provide dedicated turn lanes for movement of construction trucks and equipment on and off site;
- Suspend use of all construction equipment operations during second stage smog alerts;
- Establish a staging zone for trucks that are waiting to load or unload material at the work zone in a location where diesel emissions from the trucks will have minimum impact on abutters and the general public;
- Locate construction equipment away from sensitive receptors such as fresh air intakes to buildings, air conditioners and operable windows;
- Require all diesel trucks used by construction contractor(s) at the site, or for on-road hauling of construction material, to be post-1996 models; Diesel portable generators less than 50 hp shall not be allowed at the construction site;
- Use of hybrid and fuel efficient construction equipment and support vehicles (e.g., pick-up trucks);
- Use of grid electricity for smaller equipment such as saws, pumps, and welders;²²
- Reduction in vehicle miles travelled in construction crew commutes through trip carpooling, trip reduction, providing bus service for crews from work sites to carpool parking areas, and in providing incentives to carpool; and
- Use of a Heavy-Duty Off-Road Vehicle Plan to ensure compliances with construction mitigation measures (e.g., hourly meters on equipment, documenting the serial number, horsepower, manufacture age, fuel, etc. of all onsite equipment and daily logging of the operating hours of the equipment).²³



Air Quality:

The Project is located in the South Coast Air Basin and Riverside County²⁴, both of which are designated non-attainment for PM10 and ozone (DEIR, p. 4.3-6). Significant emissions of PM10 and ozone and contributing factors such as NOx and ROG will lead to a worsening of regional air quality. The Project's estimates of construction emissions need to be properly disclosed and mitigated to ensure that the Project has a less than significant impact on regional air quality.



Estimates and impacts of project's construction and operational emissions

²² <http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf>, p. 47

²³ *Ibid.*, p. 431

²⁴ <http://www.epa.gov/oagps001/greenbk/ancl.html>

Project construction and operation will result in significant emissions of ROG, NOx, and PM10 even after mitigation (DEIR, pp. 4.3-29, 4.3-34).

Construction emissions

The DEIR estimates that the Project's construction emissions of NOx and ROG will be significant as they exceed the SCAQMD thresholds of 100 lbs/day and 75 lbs/day, respectively (DEIR, p. 4.3-23) and identifies mitigation measures to reduce the Project's emissions (DEIR, pp. 4.3-23 – 4.3-29). Even with mitigation, the Project's emissions of NOx and ROG will still exceed SCAQMD thresholds and therefore are considered significant (DEIR, p. 4.3-29).

Operational emissions

The DEIR estimates that the Project's emissions of ROG, NOx, and PM10 from operational activities will be significant as they exceed the SCAQMD thresholds of 55 lbs/day, 55 lbs/day, and 150 lbs/day, respectively (DEIR, p. 4.3-33). The DEIR proposes mitigation measures to reduce the Project's emissions (DEIR, pp. 4.3-33 – 4.3-34) but, even with mitigation, the Project's emissions will still exceed SCAQMD thresholds and therefore are considered significant (DEIR, p. 4.3-34).

Gaseous particles such as NOx can react in the atmosphere to form PM10.^{25,26} Because Riverside County and the South Coast Air Basin are both designated non-attainment for PM10, significant emissions of NOx can lead to a further degradation of regional air quality. NOx emissions can also react to produce ground-level ozone.²⁷ Exposure to NOx emissions and its products (ozone and PM10) can lead to the airway inflammation and can cause or exacerbate conditions such as emphysema and bronchitis.²⁸

ROG can react to form ozone and contributes to smog formation.^{29,30} Exposure to ozone can result in coughing, throat irritation, and chest pain, burning, and discomfort.³¹ Smog exposure can lead to sneezing, nausea, coughing, headaches, and chest constriction.³² A study published in the New England Journal of Medicine concluded that the risk of dying from respiratory diseases is three times higher in areas of concentrated ozone.³³

Exposure to PM10 can cause bronchitis, increase the number and severity of asthma attacks, damage to lung tissue, and even premature death.³⁴ Research identifies that dust from construction is a major

²⁵ <http://www.fhwa.dot.gov/resourcecenter/teams/airquality/brochure/particulatebrochure.pdf>

²⁶ <http://www.epa.gov/captrade/documents/power.pdf>

²⁷ *Ibid.*

²⁸ <http://www.epa.gov/air/nitrogenoxides/health.html>

²⁹ <http://www.arb.ca.gov/research/health/fs/fs2/fs2.htm>

³⁰ <http://www.arb.ca.gov/html/gloss.htm#smog>

³¹ <http://www.epa.gov/o3healthtraining/population.html>

³² <http://are.berkeley.edu/courses/EEP101/spring03/AllThatSmog/extern.html>

³³ <http://www.nytimes.com/gwire/2009/03/12/12greenwire-study-links-smog-exposure-to-premature-death-10098.html>

³⁴ <http://www.epa.gov/airtrends/aqtrnd95/pm10.html> and <http://www.arb.ca.gov/html/brochure/pm10.htm>



contributor to PM10 and that PM10 exposure is associated with asthma.³⁵ Inhalation of PM10 can exacerbate asthma especially in children who are susceptible to higher risks from PM10 exposure.³⁶

The Project will have significant emissions of ROG, NOx, and PM10. Because Riverside County and the South Coast Air Basin are designated non-attainment areas for ozone and PM10, Project construction and operation will further degrade regional air quality. Exposure to ROG, NOx, and PM10 has adverse health effects and can impact offsite receptors, especially children in the nearby residences – a significant and undisclosed public health impact that the DEIR does not consider.

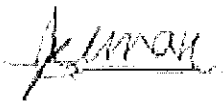
A revised DEIR should be prepared to disclose impacts to offsite receptors from Project construction and operation. Additional mitigation measures must be implemented to ensure that Project emissions of ROG, NOx, and PM10 are reduced to the maximum extent feasible.

Cumulative Impacts:

The DEIR identifies 13 proposed projects encompassing approximately 7.3 million square feet of space within five miles of the Project site (DEIR, p. 3-16). The DEIR does not identify the construction schedule of these projects except to state that “a number of individual projects may be under construction simultaneously with the proposed project” (DEIR, p. 4.3-37). The WestRidge Commerce Center Project (which will be built adjacent to the proposed Project) is scheduled to be constructed in 2012, a schedule similar to the proposed Project. Simultaneous construction of these projects, along with other potential projects, is likely to result in PM10, NOx, and ROG emissions that will have a cumulatively significant impact.

The construction timetables of all projects within the vicinity of the Project site should be identified. Any cumulatively significant emissions should be disclosed and impacts to workers and nearby residents should be addressed in a revised DEIR.

Sincerely,



Uma Bhandaram



Matt Hagemann, P.G., C.Hg.

³⁵ http://scerpfles.org/cont_mgt/doc_files/EH-01-2.pdf

³⁶ <http://www.co.imperial.ca.us/airpollution/attainment%20plans/final%20ic%202009%20pm10%20sip%20document.pdf>



**RESPONSES TO LETTER D-4C
LOZEAU DRURY, MEMORANDUM FROM MATTHEW HAGEMANN**

Response to Comment 1: It appears that Mr. Hagemann's comments were incorporated more or less directly into the letter from Mr. Drury (Letter D-4A). However, the following responses will address Mr. Hagemann's comments with reference to the responses to Mr. Drury's letter when appropriate.

Response to Comment 2: The commenter believes that residual soil contamination may contribute health risks to area residents and workers on the project site. However, the issues raised by Mr. Hagemann have already been addressed in Response to Comment D-4A-9 through D-4A-11.

Response to Comment 3: The commenter believes the Phase 1 ESA reports are out of date. These comments are addressed in the previous Response to Comment D-4A-9 and D-4A-10.

Response to Comment 4: For a detailed response on greenhouse gas emissions of the project, see the Response to Comment D-4A-12 in the previous Letter D-4A from Lozeau Drury.

Response to Comment 5: For a detailed response on comparing construction emissions to daily construction thresholds, see the Responses to Comments D-4A-13 and D-4A-14 in the previous Letter D-4A from Lozeau Drury. For a detailed response on operational impacts of the project, see the Response to Comment D-4A-16 in the previous Letter D-4A from Lozeau Drury. The DEIR presented evidence and supported its conclusions with empirical evidence that the project would not result in any significant health risks to local residents as a result of project air emissions, both in the short-term and over the long-term.

Response to Comment 6: The commenter makes the same comment as Mr. Drury in Response to Comment D-4A-19. The reader is referred to that response for more information.

RESPONSES TO LETTER D-4D: LOZEAU DRURY APPENDICES

Response to Appendix 1 – GHG Strategies Issued by the State Attorney General’s Office: Section 4.13 of the DEIR examined the potential impacts of the ProLogis project relative to greenhouse gases, and compared the project characteristics and impacts to the .

As outlined in DEIR Section 4.13.5.1, *Greenhouse Gas Plan, Policy, Regulation Consistency*, the CAT and the CARB have developed several reports to achieve the Governor’s GHG targets that rely on voluntary actions of California businesses, local government and community groups, and State incentive and regulatory programs. These include the CAT’s 2006 “Report to Governor Schwarzenegger and the Legislature,” the CARB’s 2007 “Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California,” and the CARB’s “Climate Change Proposed Scoping Plan: a Framework for Change. The reports identify strategies to reduce California’s emissions to the levels proposed in Executive Order S-3-05 and AB 32 (i.e., 29 percent below existing “business as usual” emissions) that are applicable to proposed project. Table 4.3.C presents the applicable Recommended Actions (qualitative measures) identified to date by CARB in its Climate Change Proposed Scoping Plan and whether or not the proposed project is consistent with the applicable Recommended Actions. Table 4.13.C, Proposed Scoping Plan Recommended Actions for Climate Change, in the DEIR examined the project’s consistency with these policies.

In addition, GHG emissions reduction strategies were also set forth in the 2006 CAT Report, and the strategies included in the CAT Report that apply to the project were evaluated in Table 4.13.E of the DEIR, which also summarized the extent to which the project would comply with the strategies to help California reach the emission reduction targets. The strategies listed in DEIR Table 4.13.E were addressed as either part of the project, required mitigation measures, or requirements under local or State ordinances.

The mitigation measures outlined in the Attorney General’s guidance have already been addressed in the two evaluation processes outlined above, since most or all of the AG’s recommendations are an outgrowth of the CAT report. Therefore, the project does not need an additional evaluation specifically against the AG’s criteria.

Response to Appendix 2 – Resumes for James Clark Ph.D. and Matt Hagemann: Resumes were provided for the two primary authors of the supplementary comment memos that were included in the Lozeau Drury Letter D-4A. No comments on their qualifications.

Response to Appendix 3 – CalEEMod Technical Paper (July 2011 SCAQMD et al): This report outlines the methodology, reasoning, and policy development issues related to the California Emission Estimator Model (CalEEMod). The commenter does not indicate why this reference was included, so no specific response is necessary. A discussion on two comments regarding differences between the project emissions using CalEEMod and the older URBEMIS model is provided in Responses D-4A-13 and D-4B-3.

Response to Appendix 4 – Initial Statement of Reasons for Rulemaking – Staff Report (CARB): The commenter does not indicate why this reference was included, so no specific response is necessary. However, the air quality study prepared for the project included a Health Risk Assessment (HRA) that assumed diesel exhaust as a toxic air contaminant and used the procedures established by the SCAQMD to conduct the HRA.

Response to Appendix 5 – Health Assessment Document for Diesel Engine Exhaust (U.S. EPA): The commenter does not indicate why this reference was included, so no specific response is necessary. However, the air quality study prepared for the project included a Health Risk Assessment

(HRA) that assumed diesel exhaust as a toxic air contaminant and used the procedures established by the SCAQMD to conduct the HRA, which are in turn consistent with the U.S. EPA guidance.

Response to Appendix 6 – Interim Guidance for Sampling Agricultural Fields for School Sites (Cal DTSC 8/02): The commenter refers to this document in relation to comments that the soil sampling conducted for the Phase 1 ESA reports on the project site were not consistent with the guidance in this report. A discussion on two comments regarding this topic is provided in Responses D-4A-9 through D-4A11 and D-4C-3.

Response to Appendix 7 – Various DTSC forms and chemical data materials related to pesticide applications or suspected applications on the project site (various dates around 2010): The commenter refers to this document in relation to comments that the onsite soils may be contaminated with pesticides, and the attached materials document that certain pesticides were applied to the site (or at least purchased by site maintenance staff) around 2010. A discussion on two comments regarding this topic is provided in Responses D-4A-9, and it should be noted a mitigation measure (4.6.6.1A) was added to do additional soil testing before grading (see Response D-4A-9).

Response to Appendix 8 – Various reports and data on pesticides and other agricultural chemicals (various): The commenter refers to this document in relation to comments that the onsite soils may be contaminated with pesticides such as DDT, DDE, and arsenic. A discussion on two comments regarding this topic is provided in Responses D-4A-9, and it should be noted a mitigation measure (4.6.6.1A) was added to do additional soil testing before grading (see Response D-4A-9).

Response to Appendix 9 – Use of California Human Health Screening Levels in Evaluation of Contaminated Properties (January 2002): The commenter refers to this document in relation to comments that the onsite soils may be contaminated with various kinds of pesticides applied over the years. A discussion on comments regarding this topic is provided in Responses D-4A-9, and it should be noted a mitigation measure (4.6.6.1A) was added to do additional soil testing before grading (see Response D-4A-9).

Response to Appendix 10 – Strategic Plan for Asthma in California, 2008 – 2012, and other reports related to health and air quality: This report was included apparently to support the commenter's contention that there will be health risks to local residents and construction workers from project air emissions, including diesel emissions. The air quality study prepared for the project was comprehensive and based on guidance from SCAQMD for such studies. It included a Health Risk Assessment (HRA) that assumed diesel exhaust as a toxic air contaminant and used the procedures established by the SCAQMD to conduct the HRA, which are in turn consistent with U.S. EPA guidance. The study determined impacts on local residents would be less than significant, although it would contribute to cumulatively significant air impacts due to the poor quality of air in the South Coast Air Basin.

In addition, the commenter is referred to Section 4 of this document for an evaluation of a less intensive modified plan, which is a subset of the Reduced Intensity Alternative evaluated in the DEIR (and which was determined to be environmentally superior to the Proposed Project). This less intensive plan proposes to develop 4 warehouse buildings, leaving the southeast portion of the site vacant for future development of residential uses consistent with existing zoning (R-5 and RA-2) adjacent to the existing residential neighborhood to the southeast.

3. EIR ERRATA AND ADDITIONS

Any corrections to the Draft Environmental Impact Report (EIR) text and figures generated either from responses to comments or independently by the City, are stated in this section of the Final EIR. The Draft EIR text and figures have not been modified to reflect these EIR modifications.

These EIR errata are provided to clarify, refine, and provide supplemental information for the Eucalyptus Industrial Park Draft EIR. Changes may be corrections or clarifications to the text and figures of the original Draft EIR. Other changes to the EIR clarify the analysis in the EIR based upon the information and concerns raised by commenters during the public review period. None of the information contained in these EIR modifications constitutes significant new information or changes to the analysis or conclusions of the Draft EIR.

The information included in this EIR erratum that resulted from the public comment process does not constitute substantial new information that requires recirculation of the Draft EIR. The California Environmental Quality Act (CEQA) Guidelines, Section 15088.5, states in part:

- (a) A lead agency is required to recirculate an EIR when significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public review under Section 15087 but before certification. As used in this section, the term “information” can include changes in the project or environmental setting as well as additional data or other information. New information added to an EIR is not “significant” unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project’s proponents have declined to implement. “Significant new information” requiring recirculation includes, for example, a disclosure showing that:
 - (1) A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented.
 - (2) A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.
 - (3) A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the significant environmental impacts of the project, but the project’s proponents decline to adopt it.
 - (4) The Draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded.
- (b) Recirculation is not required where the new information added to the EIR merely clarifies or amplifies or makes insignificant modifications in an adequate EIR.

The changes to the Draft EIR included in these EIR modifications do not constitute “significant” new information because:

No new significant environmental impact would result from the project or from a new mitigation measure;

There is no substantial increase in the severity of an environmental impact that would result unless mitigation measures are adopted that reduce the identified significant impacts to a level of insignificance;

No feasible project alternative or mitigation measure considerably different from others previously analyzed has been proposed or identified that would clearly lessen the significant environmental impacts of the project; and

The Draft EIR is not fundamentally or basically inadequate or conclusory in nature such that meaningful public review and comment were precluded.

Therefore, recirculation of the Draft EIR is not required because the new information added to the EIR through these modifications clarifies or amplifies information already provided or makes insignificant modifications to the already adequate Draft EIR.

For simplicity, the EIR modifications contained in the following pages are in the same order as the information appears in the Draft EIR. Changes in text are signified by strikeouts (~~strikeouts~~) where text has been removed and by underlining (underline) where text has been added. The applicable page numbers from the Draft EIR are also provided where necessary for easy reference.

Draft EIR, Section 1.0 Executive Summary, Summary (pages 1-13 through 1-73)

Table 1.C: The Environmental Summary in the Draft EIR has been updated to be consistent with changes that have been made, as a result of the responses to comments. Changes have been made to mitigation measures for air quality, biological resources, cultural resources, and noise. These changes to the Draft EIR do not result in a significant impact and has no material effect on the findings of the Draft EIR. The change to Impact 4.3.6.1 was an editorial one, the action section 4.3.5.1 concluded the impact related to “Conflict with an Existing Agricultural Zone” was less than significant with no mitigation required, but Table 1.C wrongly showed it as “significant with no mitigation available”. This has been corrected.

IMPORTANT NOTE: *The various changes to the mitigation measures will be presented following Table 1.C, but the actual wording changes will not be reflected in Table 1.C to avoid duplication and unnecessary length of the table. However, a note will be included in the table to reference mitigation measures that have changed. The revised mitigation measures will appear in their entirety in Section 4, Mitigation Monitoring and Reporting Program.*

Table 1.C: ProLogis Eucalyptus Industrial Park - Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
4.1 AESTHETICS		
<p>Impact 4.1.6.1: <u>Existing Visual Character or Quality of Site and Its Surroundings:</u> Implementation of the proposed project would replace the undeveloped character of the project site with an urban setting containing warehouse uses. Therefore, the change in the character of the site would be recognizable and would constitute a permanent alteration of the existing visual character of the project site. Although the visual characteristic of the project site would change, the proposed project would replace the existing vacant parcel with an attractive, well designed development through the use of architectural elements, landscaping, and design of the project site. In addition, the proposed project would be designed and constructed per applicable City Municipal Code and General Plan standards. <u>Despite these requirements, a less than</u> significant impact related to this issue would occur.</p>	No feasible mitigation is available	Significant and unavoidable

Table 1.C: ProLogis Eucalyptus Industrial Park - Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
4.2 AGRICULTURAL RESOURCES		
<p>Impact 4.2.6.1: Conflict with an Existing Agricultural Zone: The proposed project would not conflict with an existing agricultural zone. An approximately 12-acre portion of the project site is zoned Residential Agriculture (R-A-2) with a PAKO designation, and is located near the southern border. With the development of the project, this portion of the site would be rezoned to Light Industrial to allow for the proposed warehouse distribution uses. While this zone change would not conflict with the existing zone for this area of the project site. This type of change is expected, and planned for within the City, and is consistent with the City's overall vision. Impacts are less than significant.</p>	<p>No feasible mitigation is available</p> <p>No mitigation required.</p>	<p>Significant and unavoidable</p> <p>Less than Significant</p>
<p>Impact 4.2.6.2: Conversion of State Designated Farmland: The project site is designated as 67 percent Prime Farmland (82.5 acres) and 12 percent (39.8 acres) as Farmland of Local Importance (5.3 acres). While farmland conservation measures have been implemented in other areas of the State, neither the City of Moreno Valley nor Riverside County maintains a program that developers and property owners can participate in to offset agricultural resource impacts; therefore, the conversion of State designated Prime Farmland is a significant impact.</p>	<p>No feasible mitigation is available</p>	<p>Significant and unavoidable</p>
4.3 AIR QUALITY		
<p>Impact 4.3.6.2: Equipment Exhaust Emissions From Construction Activities Impacts: Grading and other construction activities would result in combustion emissions from heavy-duty construction vehicles, haul trucks, utility engines, and vehicles transporting the construction crew. Construction equipment/vehicle emissions during proposed on-site grading periods would exceed the SCAQMD daily thresholds for CO and NO_x. This remains a significant impact requiring mitigation.</p>	<p>4.3.6.2C Prior to the issuance of a grading permit, the project developer shall require by contract specifications that contractors shall utilize California Air Resources Board (CARB) Tier II Certified equipment or better during the rough/mass grading phase for the following pieces of equipment: rubber-tired dozers and scrapers. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the City.</p> <p><u>Project start to December 31, 2014:</u> <u>All off-road diesel-powered construction equipment greater than 50 horsepower shall meet Tier 3 off-road emission standards. In addition, all construction equipment shall be outfitted with Best Available Control Technology (BACT) devices certified by CARB. Any emission control devices used by the contractor shall achieve emission</u></p>	<p>Implementation of identified mitigation measures would reduce construction-related emissions; however, it is not possible to quantify emission reductions for all pollutants, so impact remains significant and unavoidable.</p>

Table 1.C: ProLogis Eucalyptus Industrial Park - Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<p><u>reductions that are no less than what would be achieved by a Level 3 diesel emission control strategy for a similarly sized engine as defined by CARB regulations.</u></p> <p><u>Post January 1, 2015: All off-road diesel-powered construction equipment greater than 50 horsepower shall meet Tier 4 emission standards, where available. In addition, all construction equipment shall be outfitted with Best Available Control Technology (BACT) devices certified by CARB. Any emission control devices used by the contractor shall achieve emission reductions that are no less than what would be achieved by a Level 3 diesel emission control strategy for a similarly sized engine as defined by CARB regulations.</u></p> <p><u>A copy of each unit's certified tier specifications, BACT documentation, and CARB or SCAQMD operating permit shall be provided at the time of mobilization of each applicable unit of equipment.</u></p> <p>4.3.6.2D All clearing, grading, earthmoving, or excavation activities shall cease when winds (as instantaneous gusts) exceed 25 mph per SCAQMD guidelines in order to limit fugitive dust emissions.</p> <p>4.3.6.2H The contractor shall minimize pollutant emissions by maintaining equipment engines in good condition and in proper tune according to manufacturer's specifications and during smog season (May through October) by shall not allowing construction equipment to be left idling for more than five minutes (per California law).</p> <p>4.3.6.2J Grading plans, construction specifications and bid documents shall also include the following</p>	

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<p>notations <u>requirements</u>:</p> <ul style="list-style-type: none"> • Off-road construction equipment shall utilize alternative fuels where feasible e.g., biodiesel fuel (a minimum of B20), natural gas (CNG), liquefied natural gas (LNG), propane, except for equipment where use of such fuels would void the equipment warranty; • Gravel pads shall be provided at all access points to prevent tracking of mud onto public roads; • Install and maintain trackout control devices at all access points where paved and unpaved access or travel routes intersect; • The contractor or builder shall designate a person or person(s) to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust off site; • The contractor or builder shall post a publicly visible sign with the telephone number and person to contact regarding dust complaints. The contact person shall take corrective action within 24 hours; • High-pressure injectors shall be provided on diesel construction equipment where feasible if <u>available</u>; • Engine size of construction equipment shall be limited to the minimum practical size; • Substitute gasoline-powered for diesel powered construction equipment where feasible <u>gasoline powered equipment is available</u>; • Use electric construction equipment where feasible <u>it is practical to use such equipment</u>; 	

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<ul style="list-style-type: none"> • Install catalytic converters on gasoline-powered equipment where feasible<u>this type of equipment is available</u>; • Ride-sharing program for the construction crew shall be encouraged and shall be supported by contractor(s) via incentives or other inducement; • Documentation shall be provided to the City of Moreno Valley indicating that construction workers have been encouraged to carpool or otherwise reduce VMT to the greatest extent practical, including providing information on available park and ride programs; • Lunch vendor services shall be provided <u>allowed</u> on site during construction to minimize the need for off-site vehicle trips; and • All forklifts used during construction and in subsequent operation of the project shall be electric or natural gas powered. <p>4.3.6.2K Throughout project construction, a construction relations officer/community liaison, appointed by the Applicant, shall be retained on site. In coordination and cooperation with the City, the construction relations officer/community liaison shall respond to any concerns related to PM₁₀ (fugitive dust) generation or other construction-related air quality issues <u>within 24 hours</u>.</p>	
<p>Impact 4.3.6.3: Localized Construction Equipment Exhaust Emissions Impacts: Emissions of PM₁₀ and PM_{2.5} exceed the localized threshold that would occur for construction activity. PM₁₀ and PM_{2.5} emissions are a significant impact requiring mitigation.</p>	<p>4.3.6.3A Prior to the issuance of grading permits, the project applicant shall require by contract specifications that all trucks hauling dirt, sand, soil, or other loose materials are to be covered or should <u>shall</u> maintain at least 2 feet of freeboard in accordance with the</p>	<p>Although Mitigation Measures 4.3.6.3A through 4.3.6.3C would reduce localized emission rates up to 50 percent, the localized construction</p>

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<p>requirements of California Vehicle Code (CVC) Section 23114 (freeboard means vertical space between the top of the load and top of the trailer).</p> <p>4.3.6.3B Prior to the issuance of grading permits, the project applicant shall provide evidence to the City that construction access roads shall be paved at least 100 feet onto the site from the main road.</p> <p>4.3.6.3C. Prior to the issuance of grading permits, the project applicant shall require by contract specifications that all streets within the construction site shall be swept once per day if visible soil materials are carried to adjacent streets.</p>	<p>thresholds are exceeded at the nearest residences for PM₁₀ and PM_{2.5}. Therefore, even with implementation of Mitigation Measures 4.3.6.3A through 4.3.6.3C, impacts associated with localized construction emissions for PM₁₀ and PM_{2.5} would remain significant and unavoidable.</p>
<p>Impact 4.3.6.5 Long-Term Project-Related Emissions Impacts: Project-related emissions for CO, ROG, NO_x, PM₁₀, and PM_{2.5} would exceed the SCAQMD daily emissions thresholds during the operational phase of the project. This is a significant impact requiring mitigation.</p>	<p>4.3.6.5B Prior to issuance of building permits, the project applicant shall provide evidence to the City that energy-efficient and low-emission methods and features of building construction shall be incorporated into the project design. These methods and features may include (but are not limited to) the following:</p> <ul style="list-style-type: none"> • Construction of buildings that exceed statewide energy requirements beyond <u>20, 10</u> percent of that identified in Title 24, Part 6 Energy Efficiency Standards: <ul style="list-style-type: none"> ○ Use of low-emissions water heaters; ○ Use of central water-heating systems; ○ Use of energy-efficient appliances; ○ Use of increase insulation; ○ Use of automated controls for air conditioners; ○ Use of energy-efficient parking lot lighting; and ○ Use of lighting controls 	<p>Although implementation of Mitigation Measures 4.3.6.5A through 4.3.6.5B may reduce vehicle trips associated with the proposed project, it is not possible to quantify the reduction in the amount of emissions that may occur. In the absence of mitigation to reduce the proposed project's emission of contribution of ROC and NO_x to below SCAQMD thresholds, long-term air quality impacts resulting from the operation of the proposed project would remain significant and unavoidable.</p>

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Table 1.C: ProLogis Eucalyptus Industrial Park - Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<p style="text-align: center;">and energy-efficient lighting.</p> <ul style="list-style-type: none"> • Utilize low-VOC interior and exterior coatings during project repainting. • Provide on-site improvements such as sidewalks or pedestrian walkways to promote pedestrian activity and reduce the amount of vehicle trips. • Installation of skylights and energy-efficient lighting that exceeds California Title 24 standards where feasible, including electronic dimming ballasts and computer-controlled daylight sensors in the buildings. • Shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and building shall be planted at the proposed project site. These strategies will minimize the heat island effect and thereby reduce the amount of air conditioning required. • Strategies to be considered include fans to assist natural ventilation, centralized water and space conditioning systems, high efficiency individual heating and cooling units, and automatic setback thermostats. • Reduction of energy demand associated with potable water conveyance through the following methods: <ul style="list-style-type: none"> ○ Incorporating drought-tolerant plants into the landscaping palette; and ○ Use of water-efficient irrigation techniques. • Energy-efficient low-pressure sodium parking lot lights or lighting equivalent as determined by the City, shall be used; • Buildings shall be oriented 	

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<p>north-south where feasible;</p> <ul style="list-style-type: none"> • Implement an on-site circulation plan in parking lots to reduce vehicle queuing; • Develop a trip reduction plan to achieve 1.5 average vehicle ridership (AVR) for businesses with fewer than 400 <u>250</u> employees or multitenant worksites; • Include bicycle parking facilities such as bicycle lockers and racks; • Include showers for bicycling employees use; and • Construct on-site pedestrian facility improvements such as building access that is physically separated from street and parking lot traffic and walk paths. 	
<p><u>Impact 4.3.6.6: Localized Project Operational Emissions.</u> All localized operational emissions for the proposed project, with the exception of PM₁₀ and PM_{2.5} emissions, are below the localized significance threshold. Since PM₁₀ and PM_{2.5} emissions exceed the localized significance thresholds, operational activities associated with the proposed project may cause long-term localized air quality impacts and mitigation is required.</p>	<p><u>4.3.6.6A</u> Prior to issuance of the first building permit, building and site plan designs shall ensure that the project's energy efficiencies surpass applicable 2008 California Title 24, Part 6 Energy Efficiency Standards by a minimum of 20 10 percent <u>until January 1, 2014. For building permits issued after that date, new state energy standards require a 20 percent reduction from 2008 Title 24, Part 6 Energy Efficiency Standards.</u> Verification of increased energy efficiencies shall be documented in Title 24 Compliance Reports provided by the Applicant, and reviewed and approved by the City. Any combination of The following design features including but not limited to the following list <u>shall be used to fulfill this requirement:</u></p> <ul style="list-style-type: none"> • Buildings shall exceed California Title 24 Energy Efficiency performance standards for water heating and space heating and cooling, as deemed acceptable 	<p><u>Although implementation of Mitigation Measures 4.3.6.6A and 4.3.6.6B may reduce vehicle trips associated with the proposed project, it is not possible to quantify the reduction in the amount of emissions that may occur. Considering the volume of emissions generated and current commuter habits, it is unlikely the implementation of TDMs/TCMs will result in a reduction of operational project emissions to below existing localized operation emissions thresholds. In the absence of mitigation to reduce the proposed project's localized emission of</u></p>

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<p>by the City.</p> <ul style="list-style-type: none"> • Increase in insulation such that heat transfer and thermal bridging is minimized. • Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption. • Incorporate dual-paned or other energy efficient windows. • Incorporate energy efficient space heating and cooling equipment. • Interior and exterior energy efficient lighting which exceeds the California Title 24 Energy Efficiency performance standards shall be installed, as deemed acceptable by the City. Automatic devices to turn off lights when they are not needed shall be implemented. • To the extent that they are compatible with landscaping guidelines established by the City, shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and buildings shall be planted at the project site. • Paint and surface color palette for the project shall emphasize light and off-white colors which reflect heat away from the buildings. • All buildings shall be designed to accommodate renewable energy sources, such as photovoltaic solar electricity systems, appropriate to their architectural design. • To reduce energy demand associated with potable water conveyance, the project shall implement the following: <ul style="list-style-type: none"> ○ Landscaping palette 	<p><u>contribution of PM10 and PM2.5 to below localized emission thresholds, long-term air quality impacts resulting from the operation of the proposed project would remain significant and unavoidable.</u></p>

Table 1.C: ProLogis Eucalyptus Industrial Park - Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<p>emphasizing drought-tolerant plants;</p> <ul style="list-style-type: none"> ○ Use of water-efficient irrigation techniques; and, ○ U.S. EPA Certified WaterSense labeled for equivalent faucets, high-efficiency toilets (HETs), and water-conserving shower heads. <ul style="list-style-type: none"> • The project shall provide secure, weather-protected, on-site bicycle storage/parking. • The project shall provide on-site showers (one for males and one for females). Lockers for employees shall be provided. • The project will establish a Transportation Management Association (TMA). The TMA will coordinate with other TMAs within the City to encourage and coordinate carpooling among building occupants. The TMA will advertise its services to building occupants, and offer transit and/or other incentives to reduce greenhouse gas (GHG) emissions. A plan will be submitted by the TMA to the City within two months of project completion that outlines the measures implemented by the TMA, as well as contact information. • The project shall provide preferential parking for carpools and vanpools. Locations and configurations of proposed preferential parking for carpools and vanpools are subject to review and approval by the City. Prior to final site plan approval, preferential parking for carpools and vanpools shall be delineated on the project site plan. • The project shall provide at least two electric vehicle charging stations. Locations and 	

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<p>configurations of proposed charging stations are subject to review and approval by the City. Prior to issuance of the first building permit, stub outs for charging stations shall be indicated on the project building plans.</p> <ul style="list-style-type: none"> • Lease/purchase documents shall identify that tenants are encouraged to promote the following: <ul style="list-style-type: none"> ○ Implementation of compressed workweek schedules. ○ SmartWay partnership; ○ Achievement of at least 20 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of consolidated trips carried by SmartWay carriers until it reaches a minimum of 90 percent of all long-haul trips carried by SmartWay 1.0 or greater carriers. ○ Achievement of at least 15 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of long-haul trips carried by SmartWay carriers until it reaches a minimum of 85 percent of all consolidator trips carried by SmartWay 1.0 or greater carriers. ○ Use of fleet vehicles conforming to 2010 air quality standards or better. ○ Installation of catalytic converters on gasoline-powered equipment. ○ Inclusion of electric powered and/or compressed natural gas fueled trucks and/or vehicles in fleets. 	

Table 1.C: ProLogis Eucalyptus Industrial Park - Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<ul style="list-style-type: none"> ○ Establishment and use of carpool/vanpool programs, complemented by parking fees for single-occupancy vehicles. ○ Provision of preferential parking for EV and CNG vehicles. ○ Use of electrical equipment (instead of gasoline-powered equipment) for landscape maintenance. ○ Use of electric (instead of diesel or gasoline-powered) yard trucks. ○ Use of SmartWay 1.25 rated trucks. ○ <u>Each facility operator shall provide regular sweeping of onsite parking and drive areas using street sweepers that comply with applicable SCAQMD Rules.</u> ○ <u>Each facility operator shall maintain a log of all trucks entering the facility to ensure that, on average, the daily truck fleet meets applicable air quality emission standards. This log shall be available for inspection by City staff at any time.</u> ○ <u>Each facility operator shall prohibit all vehicles from idling in excess of five minutes in all onsite areas.</u> ○ <u>Each facility operator shall ensure that onsite staff in charge of keeping the daily log and monitoring for excess idling will be trained and certified in diesel health effects and technologies, such as by requiring attendance at CARB-approved courses.</u> ○ <u>Each facility operator which upon occupancy does not</u> 	

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<u>already operate 2007 and newer trucks shall in good faith be required to apply for funding to replace or retrofit their trucks such as Carl Moyer, VIP, Prop 1B or similar funds. Should funds be awarded, the tenant shall be required to accept and use them.</u>	

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
4.4 BIOLOGICAL RESOURCES		
<p>Impact 4.4.6.2: Riparian Habitat or Other Sensitive Natural Communities: The three on-site drainages, including the Quincy Channel, contain riparian/riverine area. While the proposed project would incorporate the design standards identified in the City's Municipal Code, the development of the proposed project may result in the elimination of habitat for special-status plant species (mule fat scrub) or reduce population size of sensitive plant species below self-sustaining levels. Therefore, a potentially significant impact would occur and mitigation is required.</p>	<p>4.4.6.2A As outlined in the project's Determination of a Biologically Equivalent or Superior Preservation (DBESP) report, the project applicant shall compensate for the <u>temporary and permanent impact on and loss of jurisdictional waters and streambeds by providing a minimum 2:1 off-site replacement of equivalent riverine/riparian habitat prior to project construction.</u> (0.36 acre impact = 0.72 acre replacement). This off-site replacement shall be accomplished through the contribution of in-lieu fees to the Santa Ana Watershed Association (SAWA) for its efforts in removal of invasive plants and restoration of riparian habitat adjacent to the tributaries of the San Jacinto River or within the Santa Ana River watershed. Documentation of acceptance of the SAWA contribution shall be provided to the City prior to issuance of a grading permit. <u>Offsite restoration, enhancement, and/or land purchase mitigation for the drainage impacts will occur at an offsite location through one or more of the following: an USACE approved mitigation bank, through an in lieu fee mitigation program, and/or land purchase and conservation. DFG and USFWS will need to provide concurrence that this mitigation is equivalent or superior to that proposed for impact through their review and acceptance of the DBESP.</u></p> <p>4.4.6.2B The project applicant shall retain qualified personnel to prepare and implement a Habitat Mitigation and Monitoring Plan (HMMP) to oversee restoration of temporarily affected areas (0.35 acre of riverine/riparian habitat) to their pre-construction contours and vegetation. The HMMP will be approved by USACE and CDFG prior to the City issuing any</p>	<p>Less than Significant with Mitigation</p>

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	occupancy permits. <u>Riparian/riverine resources that are temporarily impacted by project construction shall be returned to their preconstruction contours and hydroseeded, as outlined in the DBESP.</u>	
<p>Impact 4.4.6.3: Jurisdictional Waters/Wetlands: Implementation of the proposed project would result in permanent impacts to 0.051 acre (354 linear feet) of non-wetland waters of the United States and waters of the State and 0.362 acre (440 linear feet) of State streambed associated with the eastern, southern, and western drainages. In addition to permanent impacts, the proposed project would result in temporary impacts to 0.054 acre (332 linear feet) of non-wetland waters of the United States and waters of the State and 0.33 acre (547 linear feet) of State streambed associated with construction activities. This is a significant impact requiring mitigation.</p>	<p>4.4.6.3A The project applicant shall obtain a Section 404 Nationwide or Individual Permit, as appropriate, from the USACE and a Section 1602 Streambed Alteration Agreement from the CDFG. Direct temporary impacts to more than 0.1 acre of jurisdictional area that are regulated by the USACE, CDFG, and RWQCB shall be mitigated at a 2:1 ratio, including enhancement and/or creation of wetlands or the contribution of in-lieu fee to the Santa Ana Watershed Association (SAWA) for its efforts in removal of invasive plants and restoration of off-site riparian habitat, as outlined in Mitigation Measure 3.3.6.2A. <u>The project applicant shall obtain a Section 404 Nationwide or Individual Permit, as appropriate, from the USACE, a Section 401/Porter-Cologne Water Quality Certification from the RWQCB, and a Section 1602 Streambed Alteration Agreement from the CDFG. Offsite restoration, enhancement, and/or land purchase mitigation of jurisdictional drainage impacts will occur at an off-site location through one or more of the following: an USACE approved mitigation bank, through an in-lieu fee mitigation program, and/or land purchase and conservation.</u></p>	Less than Significant with Mitigation
4.5 CULTURAL RESOURCES		
<p>Impact 4.5.6.1: Prehistoric Cultural Resources: The cultural resources survey indicates there are no recorded cultural sites or surface evidence that cultural resources are present on the project site. Correspondence from Native American groups represents appropriate consultation under SB 18. The site's location within the Moreno Hills Complex indicates a potential exists that excavation and construction activities may uncover</p>	<p>4.5.6.1A <u>Prior to the issuance of a grading permit, the Project Applicant shall provide evidence to the City of Moreno Valley that a Cultural Resources Monitoring Agreement has been secured for qualified Tribal representatives, and that a</u></p>	Less than Significant with Mitigation

Table 1.C: ProLogis Eucalyptus Industrial Park - Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
<p>previously undetected prehistoric or historic cultural resources. This is a significant impact requiring mitigation.</p>	<p><u>professional archaeological monitor meeting Secretary of Interior standards has been retained by the Applicant to conduct monitoring of all mass grading and trenching activities and has the authority to temporarily halt and redirect earthmoving activities in the event that suspected archaeological resources are unearthed during Project construction. The Project Archaeologist and Tribal representatives shall attend the pre-grading meeting with the City and contractors to explain and coordinate the requirements of the monitoring program.</u></p> <p><u>4.5.6.1B Prior to the issuance of a grading permit, the Applicant shall provide evidence to the City of Moreno Valley that appropriate Native American representative(s), Project Archaeologist, and the Tribal representative(s) shall be allowed to monitor and have received a minimum of 30 days advance notice of all mass grading and trenching activities. During grading and trenching operations, the Tribal representatives and the project archaeological monitor shall observe all mass grading and trenching activities per the Cultural Resources Monitoring Agreement. If the Tribal representatives suspect that an archaeological resource may have been unearthed, the archaeologist, in consultation with the tribal representative, shall immediately halt and redirect grading operations in a 100-foot radius around the find to allow identification and evaluation of the suspected resource. In consultation with the appropriate Native American Tribe(s), the archaeological monitor shall evaluate the suspected resource and make a determination of significance pursuant to California Public Resources Code Section 21083.2.</u></p>	

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<p><u>4.5.6.1C</u> If a significant archaeological resource(s) is discovered on the property, ground disturbing activities shall be suspended 100 feet around the resource(s). The archaeological monitor and representatives of the appropriate Native American Tribe(s), the Project Applicant, and the City Planning Division shall confer regarding mitigation of the discovered resource(s). A treatment plan and/or preservation plan shall be prepared and by the archaeological monitor and reviewed by representatives of the appropriate Native American Tribe(s), the Project Applicant, and the City Planning Division and implemented by the archaeologist to protect the identified archaeological resource(s) from damage and destruction. The landowner shall relinquish ownership of all archaeological artifacts that are of Native American origin found on the Project site to the culturally affiliated Native American tribe(s) for proper treatment and disposition. A final report containing the significance and treatment findings shall be prepared by the archaeologist and submitted to the City Planning Division, the appropriate Native American tribe(s), and the Eastern Information Center at the University of California, Riverside. All cultural material, excluding sacred, ceremonial, grave goods and human remains, collected during the grading monitoring program and from any previous archaeological studies or excavations on the project site shall be curated, as determined by the treatment plan, according to the current professional repository standards and may include the Pechanga Bands curatorial facility.</p> <p><u>4.5.6.1D</u> Prior to grading permit issuance, the City shall verify that the following note is included on the Grading Plan:</p>	

Table 1.C: ProLogis Eucalyptus Industrial Park - Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<p><u>"If any suspected archaeological resources are discovered during ground-disturbing activities and the archaeological monitor or Tribal representatives are not present, the construction supervisor is obligated to halt work in a 100-foot radius around the find and call the project archaeologist and the Tribal representatives to the site to assess the significance of the find."</u></p> <p><u>4.5.6.1E If human remains are encountered, California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the Riverside County Coroner has made the necessary findings as to origin. Further, pursuant to California Public Resources Code Section 5097.98(b), remains shall be left in place and free from disturbance until a final decision as to the treatment and disposition has been made by the Coroner. If the Riverside County Coroner determines the remains to be Native American, the California Native American Heritage Commission must be contacted within 24 hours. The Native American Heritage Commission must then immediately notify the "most likely descendant(s)" of receiving notification of the discovery. The most likely descendant(s) shall then make recommendations within 48 hours, and engage in consultations concerning the treatment of the remains as provided in Public Resources Code §5097.98.</u></p>	
<p>Impact 4.5.6.2: Paleontological Resources: The project site is located in an area identified as having a "high sensitivity" for paleontological resources. Construction of the proposed project has the potential to result in significant impacts to nonrenewable paleontological resources, requiring mitigation.</p>	<p><u>4.5.6.2D Prior to grading permit issuance, the City shall verify that the following note is included on the Grading Plan:</u></p> <p><u>"If any suspected paleontological resources are discovered during ground-disturbing activities, the</u></p>	<p>Less than Significant with Mitigation</p>

Table 1.C: ProLogis Eucalyptus Industrial Park - Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<p><u>construction supervisor is obligated to halt work in a 100-foot radius around the find and call a qualified paleontologist to the site to assess the significance of the find. A qualified paleontologist shall evaluate the suspected resource. If the paleontologist determines that the find is not unique, construction shall be permitted to proceed. However, if the paleontologist determines that further information is needed to evaluate significance, the City of Moreno Valley shall be notified and a treatment plan shall be prepared and implemented in consultation with the City to protect the identified paleontological resource(s) from damage and destruction."</u></p>	
4.6 HAZARDS AND HAZARDOUS MATERIALS		
<p>4.6.6 Although the EIR did not identify any significant impacts related to hazardous materials, the mitigation measure was added to assure there will be no impacts related to soil contamination.</p>	<p>4.6.6.1A <u>Prior to issuance of a grading permit for the project, a qualified contractor shall test onsite soils for contamination by agricultural chemicals. If present in concentrations above established actionable levels or thresholds, these materials shall be removed and transported to an appropriate landfill by a licensed contractor. This measure shall be implemented to the satisfaction of the Building Division including written documentation of the disposal of any agricultural chemical residue in conformance with all applicable regulations.</u></p>	Less than Significant
4.9 NOISE		
<p>Impact 4.9.6.1: Short-Term Construction Noise Impacts: Construction activities would include grading, excavation, and installation activities generating noise levels up 91 dBA L_{max} at 50 feet from an active construction area. These noise levels would diminish rapidly with distance from the construction site at a rate of approximately 6 dBA per doubling of distance. The worst-case scenario during construction would be a noise level of 91 dBA L_{max} at a distance of 50 feet from the noise source to the nearest existing sensitive receptor. However, compliance with the construction hours specified in the City's</p>	<p>4.9.6.1D. During all project site construction activities at Building 6 (i.e., closest to existing residences), the construction contractor shall limit all construction-related activities that would result in high noise levels to between the hours of 6:00 a.m. and 8:00 p.m. on weekdays and between the hours of 7:00 a.m. to 8:00 p.m. on weekends and</p>	Less than Significant with Mitigation

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
Municipal Code would result in construction noise impacts that are less than significant. While impacts would be considered less than significant as long as construction activities occur within the designated hours identified in the City's Municipal Code, mitigation measures have been identified to reduce the noise levels that would expose nearby sensitive receptors to noise levels in excess of the City's noise standards.	holidays, unless written approval is obtained from the City Building Official or City Engineer <u>for specific construction activities that must be conducted outside of the permitted time periods.</u>	
4.11 TRANSPORTATION		
<p>Impact 4.11.6.1A: <u>Existing (2011) with project Conditions (Intersection) Traffic and Level of Service Impacts:</u> The addition of project traffic to this scenario would result in conditions exceeding the established LOS standard at the following intersections:</p> <p>Redlands Boulevard/SR-60 Westbound Ramps (a.m. and p.m. peak hours); and</p> <p>Redlands Boulevard/Eucalyptus Avenue-Fir Avenue (p.m. peak hour).</p> <p>The project would contribute toward the worsening of the already unsatisfactory LOS at the intersection of Redlands Boulevard/SR-60 Westbound Ramps and would create a significant impact at the intersection of Redlands Boulevard/Eucalyptus Avenue-Fir Avenue. Therefore, mitigation is required at both intersections.</p>	<p>4.11.6.4A Prior to issuance of a building permit <u>Certificate of Occupancy</u>, the project applicant shall construct <u>pay the fair share contribution toward</u> the following traffic improvements through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program:</p> <ul style="list-style-type: none"> • Redlands Boulevard/SR-60 Westbound Ramps. Install a traffic signal. This improvement is currently approved, and permitted by Caltrans. If not otherwise completed prior to project opening, the required traffic signal shall be constructed by the Applicant prior to issuance of the first Certificate of Occupancy. • Redlands Boulevard/Fir Avenue/Eucalyptus Avenue. If not otherwise completed prior to project opening, prior to issuance of the first Certificate of Occupancy, the Applicant shall construct the following improvements: Install a traffic signal and This improvement is listed in the City's DIF program. A add a northbound left-turn lane and a southbound left-turn lane. These improvements are listed in the TUMF. <p>If the improvements are constructed by others prior to the Certificate of Occupancy, the applicant shall pay its fair share towards the improvements through the City's DIF program.</p>	<p>With the implementation of the recommended improvements, the minimum level of service standards would be maintained for the Existing (2011) with project condition and impacts would be reduced to a less than significant level for all identified intersections. However, improvements to freeway facilities are under the authority of Caltrans. Since the City has no control over when and how the improvements will be in place, impacts associated with SR-60 ramp intersections would remain significant and unavoidable until such improvement is constructed.</p>

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
4.12 GLOBAL CLIMATE CHANGE		
<p><u>Greenhouse Gas Emissions and Climate Change:</u> Construction of the project would emit approximately 37.5 tons per day of CO₂ equivalent emissions, while occupancy of the project will emit 61,000 tons of CO₂ equivalent emissions per year. The carbon dioxide, methane, and nitrous oxide emissions that would be associated with the proposed project is approximately 0.0024 percent of California's 2004 total emissions for carbon dioxide, methane, and nitrous oxide (492 Tg CO₂ Eq).</p> <p>The proposed project would be consistent with all feasible and applicable strategies to reduce greenhouse gas emissions in California. Therefore, the impact of the proposed project, based on these specifications, would be less than significant. The SCAQMD currently recommends that potential GHG emissions be addressed through energy efficiency.</p>	<p>4.13.6.1B. Prior to the issuance of building permits, the project applicant shall provide evidence to the City of Moreno Valley that the following measures have been incorporated into the design and construction of the project:</p> <ul style="list-style-type: none"> • Use of locally produced and/or manufactured building materials for at least 10 percent of the construction materials used for the project. • Use of "Green Building Materials," such as those materials that are resource efficient, and recycled and manufactured in an environmentally friendly way, for at least 10 percent of the project. • Limit unnecessary idling of construction equipment. A reduction in equipment idling would reduce fuel consumption, and therefore, GHG emissions. • Maximize the use of electricity from the power grid by replacing diesel- or gasoline-powered equipment. This would reduce GHG emissions because electricity can be produced more efficiently at centralized power plants. • Design the project building to exceed the California Building Code's (CBC) Title 24 energy standard, including, but not limited to, any combination of the following: <ul style="list-style-type: none"> ○ Increase insulation such that heat transfer and thermal bridging is minimized. ○ Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption. 	<p>Less than Significant with Mitigation</p> <p>Since the project is consistent with the strategies to reduce California's emissions to the levels proposed by Executive Order S-3-05, the project's incremental contribution to climate change at the project level is less than significant.</p>

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<ul style="list-style-type: none"> ○ Incorporate ENERGY STAR or better rated windows, space heating and cooling equipment, light fixtures, appliances, or other applicable electrical equipment. • Provide a landscape and development plan for the project that takes advantage of shade, prevailing winds, and landscaping. • Install efficient lighting and lighting control systems. Use daylight as an integral part of the lighting systems in buildings. • Install light-colored “cool” roof) and cool pavements. • Install energy-efficient heating and cooling systems, appliances and equipment, and control systems. • Install solar or light-emitting diodes (LEDs) for outdoor lighting <u>for auto parking areas.</u> 	

Draft EIR Section 4.1, AESTHETICS

4.1.1.1 Topographic/Vegetation Features (page 4.1-1)

Until recently, commercial citrus groves occupied the northwestern and northeastern portions of the project site, forming a dark-green canopy over approximately a third of the site area. The 2006 City General Plan EIR notes that the remaining citrus groves are “visually pleasing features” (MVGP FEIR, p. 5.11-2). However, in December 2013, the trees were removed due to ongoing maintenance and irrigation costs, and fire protection concerns (J. Jachetta, personal communication, December 2, 2013).

4.1.6 Significant Impacts

4.1.6.1 Scenic Vistas (page 4.1-9)

Views from SR-60 and Residences North of SR-60. ...As identified in Figure 4.1.3, existing views from this vantage point include SR-60 in the foreground, a concrete lane divider ~~and the tops of citrus groves~~ in the midground, and the Mount Russell Range in the background. As part of conditions of approval for the proposed project, two rows of ~~the existing~~ orange trees would be provided and

maintained on the northern portion of the project site adjacent to SR-60 and along the perimeter of the proposed project site adjacent to the public ROW or residential zoning. With development of the proposed project, buildings, associated parking lots, and ornamental landscaping would be built and placed on the project site. This would change existing views from the single-family residences north of SR-60 along Pettit Street. Foreground views would consist of SR-60, midground views would consist of a concrete divider and the tops of the ~~remaining~~ mature orange trees, and background views would consist of the upper half of the proposed warehouse buildings.

~~It is anticipated that the existing orange trees have an approximate height ranging from 12 feet to 16 feet.~~ Two rows of the former orange trees will be retained on the northern boundary adjacent to SR-60. Additionally, new orange trees would be planted along the northern length of Buildings No. 1 and 2. With the inclusion of the orange trees along this project boundary, the existing residences would see the upper 27 to 31 feet of the proposed buildings.

4.1.6.2 Scenic Resources and Scenic Highways (page 4.1-17)

... As illustrated in Figure 4.1.4, existing eastbound views on SR-60 would be altered with the development of the proposed project. Motorists would still view noise attenuation walls, urban development, landscaping, and ~~orange~~ scattered trees as they look to the south, although these views would be of short duration for motorists traveling at normal freeway speeds.

Level of Significance after Mitigation. Since there is no feasible mitigation is available to reduce impacts related to the substantial change in visual character from development of the proposed project, impacts associated with this issue would remain significant and unavoidable.

***NOTE:** This conclusion would be the same regardless with or without the existing citrus trees onsite, so the conclusions and mitigation outlined in the DEIR do not change (i.e., significant).*

Draft EIR Section 4.2, AGRICULTURAL RESOURCES

4.2.1 Existing Setting (page 4.2-1)

***NOTE:** The following paragraph was reworded to account for removal of the citrus trees.*

~~In addition to on-site farming of citrus, a~~Active agricultural operations take place on properties located to the north of SR-60, east and south of the proposed project site.

... The project site can be divided into ~~two three~~ categories of land cover: ~~citrus production,~~ hay/alfalfa production and fallow. ~~Currently, Until recently,~~ the majority of the northern portion of the site (approximately 57 acres) ~~was is~~ used for citrus production. ~~The remaining portions of the site are~~ Approximately 36 acres of the site, located in the southern portion of the site, supports hay/alfalfa and approximately 75 acres of fallow land is located in the northern portion of the site. Until December 2013, approximately 50 acres of the site contained citrus trees, but these were removed to eliminate ongoing maintenance and irrigation costs and potential fire safety issues. In any case, they are planned to be removed as part of project development. Currently, there are several abandoned wells and a non-functioning wind machine that were used in the past for on-site agricultural uses.

4.2.6.1 Conversion of State Designated Farmland (page 4.2-8)

Mitigation Measures. The potential mitigation measures identified by the City's General Plan have been deemed infeasible by the property owner under current economic conditions. In addition, supplementary analysis of the project site and local economic conditions indicates that continued citrus production and/or the raising of row crops would not be economically feasible on the project site (see Appendix ~~L~~ E).

4.2.6.2 Conversion of an Existing Agricultural Operation to a Non-Agricultural Use (page 4.2-9)

Threshold	Would the proposed project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?
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The proposed project would result in the development of industrial uses on land that ~~was~~ has historically ~~been~~ utilized for citrus production. Implementation of the proposed project would result in the ~~retention~~ or provision of rows of citrus trees along the northern portion of the project site adjacent to SR-60, along the western perimeter of Building No. 6, and along the southern perimeter of Buildings No. 5 and 6. Although these citrus trees would be ~~retained~~ or provided along the perimeter of the project site, the ~~retention~~ or provision of citrus trees on site is for ornamental and landscaping purposes and not for agricultural cultivation. The conversion of the project site's agriculture land to non-agricultural uses is a result of various economic and demographic factors. Increased cost for water and a continuing demand for housing and other development in the City and region are the primary reasons for this agricultural land conversion.

NOTE: *The removal of the citrus trees onsite in December 2013 does not change the conclusions of the DEIR regarding agricultural impacts or mitigation. Loss of agricultural soils and former citrus activity would still be significant.*

Draft EIR Section 4.3, AIR QUALITY

Section 4.3.6.2 Equipment Exhaust from Construction-Related Activities (pages 4.3-23 and 4.3-24)

NOTE: *The following requirement was added to Mitigation Measure 4.3.6.2C in response to concerns expressed by the South Coast Air Quality Management District (Letter B-3). These changes to the Draft EIR do not result in a significant impact and has no material effect on the findings of the Draft EIR.*

4.3.6.2C Prior to the issuance of a grading permit, the project developer shall require by contract specifications that contractors shall utilize California Air Resources Board (CARB) Tier II Certified equipment or better during the rough/mass grading phase for the following pieces of equipment: rubber-tired dozers and scrapers. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the City.

Project start to December 31, 2014: All off-road diesel-powered construction equipment greater than 50 horsepower shall meet Tier 3 off-road emission standards. In addition, all construction equipment shall be outfitted with Best Available Control Technology (BACT) devices certified by CARB. Any emission control devices used by the contractor shall achieve emission reductions that are no less than what would be achieved by a Level 3

diesel emission control strategy for a similarly sized engine as defined by CARB regulations.

Post January 1, 2015: All off-road diesel-powered construction equipment greater than 50 horsepower shall meet Tier 4 emission standards, where available. In addition, all construction equipment shall be outfitted with Best Available Control Technology (BACT) devices certified by CARB. Any emission control devices used by the contractor shall achieve emission reductions that are no less than what would be achieved by a Level 3 diesel emission control strategy for a similarly sized engine as defined by CARB regulations.

A copy of each unit's certified tier specifications, BACT documentation, and CARB or SCAQMD operating permit shall be provided at the time of mobilization of each applicable unit of equipment.

NOTE: *The following requirement was added to Mitigation Measure 4.3.6.2D in response to concerns expressed by the South Coast Air Quality Management District (Letter B-3). These changes to the Draft EIR do not result in a significant impact and has no material effect on the findings of the Draft EIR.*

4.3.6.2D All clearing, grading, earthmoving, or excavation activities shall cease when winds (as instantaneous gusts) exceed 25 mph per SCAQMD guidelines in order to limit fugitive dust emissions.

NOTE: *The following requirement was added to Mitigation Measure 4.3.6.1H in response to concerns expressed by Johnson and Sedlack (Letter D-3). These changes to the Draft EIR do not result in a significant impact and has no material effect on the findings of the Draft EIR.*

4.3.6.2H The contractor shall minimize pollutant emissions by maintaining equipment engines in good condition and in proper tune according to manufacturer's specifications and ~~during smog season (May through October)~~ by not allowing construction equipment to be left idling for more than five minutes (per California law).

NOTE: *The following requirement was added to Mitigation Measure 4.3.6.2J in response to concerns expressed by Johnson and Sedlack (Letter D-3). These changes to the Draft EIR do not result in a significant impact and has no material effect on the findings of the Draft EIR.*

4.3.6.2J Grading plans, construction specifications and bid documents shall also include the following ~~requirements notations~~:

- Off-road construction equipment shall utilize alternative fuels where feasible e.g., biodiesel fuel (a minimum of B20), natural gas (CNG), liquefied natural gas (LNG), propane, except for equipment where use of such fuels would void the equipment warranty;
- Gravel pads shall be provided at all access points to prevent tracking of mud onto public roads;
- Install and maintain trackout control devices at all access points where paved and unpaved access or travel routes intersect;
- The contractor or builder shall designate a person or person(s) to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust off site;

- The contractor or builder shall post a publicly visible sign with the telephone number and person to contact regarding dust complaints. The contact person shall take corrective action within 24 hours;
- High-pressure injectors shall be provided on diesel construction equipment ~~where feasible~~ if available;
- Engine size of construction equipment shall be limited to the minimum practical size;
- Substitute gasoline-powered for diesel powered construction equipment where ~~feasible~~ gasoline powered equipment is available;
- Use electric construction equipment where ~~feasible~~ it is practical to use such equipment;
- Install catalytic converters on gasoline-powered equipment where ~~feasible~~ this type of equipment is available;
- Ride-sharing program for the construction crew ~~shall be encouraged and~~ shall be supported by contractor(s) via incentives or other inducement;
- Documentation shall be provided to the City of Moreno Valley indicating that construction workers have been encouraged to carpool or otherwise reduce VMT to the greatest extent practical, including providing information on available park and ride programs;
- Lunch vendor services shall be ~~provided~~ allowed on site during construction to minimize the need for off-site vehicle trips; and
- All forklifts used during construction and in subsequent operation of the project shall be electric or natural gas powered.

NOTE: The following requirement was added to Mitigation Measure 4.3.6.2K in response to concerns expressed by Johnson and Sedlack (Letter D-3). These changes to the Draft EIR do not result in a significant impact and has no material effect on the findings of the Draft EIR.

4.3.6.2K Throughout project construction, a construction relations officer/community liaison, appointed by the Applicant, shall be retained on site. In coordination and cooperation with the City, the construction relations officer/community liaison shall respond to any concerns related to PM₁₀ (fugitive dust) generation or other construction-related air quality issues within 24 hours.

Section 4.3.6.3 Localized Construction Equipment Exhaust Emissions Impacts (page 4.3-30)

4.3.6.3A Prior to the issuance of grading permits, the project applicant shall require by contract specifications that all trucks hauling dirt, sand, soil, or other loose materials are to be covered or ~~should~~ shall maintain at least 2 feet of freeboard in accordance with the requirements of California Vehicle Code (CVC) Section 23114 (freeboard means vertical space between the top of the load and top of the trailer).

Section 4.3.6.5 Long-Term Project-Related Emissions Impacts (page 4.3-33)

NOTE: A clerical error was made in the Draft EIR in Mitigation Measure 4.3.6.5B. These changes to the Draft EIR do not result in a significant impact and has no material effect on the findings of the Draft EIR.

Mitigation Measures

- 4.3.6.5B** Prior to issuance of building permits, the project applicant shall provide evidence to the City that energy-efficient and low-emission methods and features of building construction shall be incorporated into the project design. These methods and features may include (but are not limited to) the following:
- Construction of buildings that exceed statewide energy requirements beyond 20_10 percent of that identified in Title 24, Part 6 Energy Efficiency Standards:
 - Use of low-emissions water heaters;
 - Use of central water-heating systems;
 - Use of energy-efficient appliances;
 - Use of increase insulation;
 - Use of automated controls for air conditioners;
 - Use of energy-efficient parking lot lighting; and
 - Use of lighting controls and energy-efficient lighting.
 - Utilize low-VOC interior and exterior coatings during project repainting.
 - Provide on-site improvements such as sidewalks or pedestrian walkways to promote pedestrian activity and reduce the amount of vehicle trips.
 - Installation of skylights and energy-efficient lighting that exceeds California Title 24 standards where feasible, including electronic dimming ballasts and computer-controlled daylight sensors in the buildings.
 - Shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and building shall be planted at the proposed project site. These strategies will minimize the heat island effect and thereby reduce the amount of air conditioning required.
 - Strategies to be considered include fans to assist natural ventilation, centralized water and space conditioning systems, high efficiency individual heating and cooling units, and automatic setback thermostats.
 - Reduction of energy demand associated with potable water conveyance through the following methods:
 - Incorporating drought-tolerant plants into the landscaping palette; and
 - Use of water-efficient irrigation techniques.
 - Energy-efficient low-pressure sodium parking lot lights or lighting equivalent as determined by the City, shall be used;
 - Buildings shall be oriented north-south where feasible;
 - Implement an on-site circulation plan in parking lots to reduce vehicle queuing;
 - Develop a trip reduction plan to achieve 1.5 average vehicle ridership (AVR) for businesses with fewer than ~~400~~ 250 employees or multitenant worksites;
 - Include bicycle parking facilities such as bicycle lockers and racks;
 - Include showers for bicycling employees use; and

- Construct on-site pedestrian facility improvements such as building access that is physically separated from street and parking lot traffic and walk paths.

Section 4.3.6.6 Project-Related Localized Operational Emission Impacts (pages 4.3-35 through 4.3-37)

Mitigation Measure 4.3.6.6A has been modified to address concerns expressed by the South Coast Air Quality Management District (Letter B-3), Sierra Club (Letter D-2), and Johnson & Sedlack (Letter D-3). These changes to the Draft EIR do not result in a significant impact and has no material effect on the findings of the Draft EIR.

4.3.6.6A Prior to issuance of the first building permit, building and site plan designs shall ensure that the project's energy efficiencies surpass applicable 2008 California Title 24, Part 6 Energy Efficiency Standards by a minimum of ~~20~~ 10 percent until January 1, 2014. For building permits issued after that date, new state energy standards require a 20 percent reduction from 2008 Title 24, Part 6 Energy Efficiency Standards. Verification of increased energy efficiencies shall be documented in Title 24 Compliance Reports provided by the Applicant, and reviewed and approved by the City. ~~Any combination of~~ The following design features ~~including but not limited to the following list~~ shall be used to fulfill this requirement:

- Buildings shall exceed California Title 24 Energy Efficiency performance standards for water heating and space heating and cooling, as deemed acceptable by the City.
- Increase in insulation such that heat transfer and thermal bridging is minimized.
- Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption.
- Incorporate dual-paned or other energy efficient windows.
- Incorporate energy efficient space heating and cooling equipment.
- Interior and exterior energy efficient lighting which exceeds the California Title 24 Energy Efficiency performance standards shall be installed, as deemed acceptable by the City. Automatic devices to turn off lights when they are not needed shall be implemented.
- To the extent that they are compatible with landscaping guidelines established by the City, shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and buildings shall be planted at the project site.
- Paint and surface color palette for the project shall emphasize light and off-white colors which reflect heat away from the buildings.
- All buildings shall be designed to accommodate renewable energy sources, such as photovoltaic solar electricity systems, appropriate to their architectural design.
- To reduce energy demand associated with potable water conveyance, the project shall implement the following:
 - Landscaping palette emphasizing drought-tolerant plants;
 - Use of water-efficient irrigation techniques; and,
 - U.S. EPA Certified WaterSense labeled for equivalent faucets, high-efficiency toilets (HETs), and water-conserving shower heads.
- The project shall provide secure, weather-protected, on-site bicycle storage/parking.

- The project shall provide on-site showers (one for males and one for females). Lockers for employees shall be provided.
- The project will establish a Transportation Management Association (TMA). The TMA will coordinate with other TMAs within the City to encourage and coordinate carpooling among building occupants. The TMA will advertise its services to building occupants, and offer transit and/or other incentives to reduce greenhouse gas (GHG) emissions. A plan will be submitted by the TMA to the City within two months of project completion that outlines the measures implemented by the TMA, as well as contact information.
- The project shall provide preferential parking for carpools and vanpools. Locations and configurations of proposed preferential parking for carpools and vanpools are subject to review and approval by the City. Prior to final site plan approval, preferential parking for carpools and vanpools shall be delineated on the project site plan.
- The project shall provide at least two electric vehicle charging stations. Locations and configurations of proposed charging stations are subject to review and approval by the City. Prior to issuance of the first building permit, stub outs for charging stations shall be indicated on the project building plans.
- Lease/purchase documents shall identify that tenants are encouraged to promote the following:
 - Implementation of compressed workweek schedules.
 - SmartWay partnership;
 - Achievement of at least 20 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of consolidated trips carried by SmartWay carriers until it reaches a minimum of 90 percent of all long-haul trips carried by SmartWay 1.0 or greater carriers.
 - Achievement of at least 15 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of long-haul trips carried by SmartWay carriers until it reaches a minimum of 85 percent of all consolidator trips carried by SmartWay 1.0 or greater carriers.
 - Use of fleet vehicles conforming to 2010 air quality standards or better.
 - Installation of catalytic converters on gasoline-powered equipment.
 - Inclusion of electric powered and/or compressed natural gas fueled trucks and/or vehicles in fleets.
 - Establishment and use of carpool/vanpool programs, complemented by parking fees for single-occupancy vehicles.
 - Provision of preferential parking for EV and CNG vehicles.
 - Use of electrical equipment (instead of gasoline-powered equipment) for landscape maintenance.
 - Use of electric (instead of diesel or gasoline-powered) yard trucks.
 - Use of SmartWay 1.25 rated trucks.
 - Each facility operator shall provide regular sweeping of onsite parking and drive areas using street sweepers that comply with applicable SCAQMD Rules.

- Each facility operator shall maintain a log of all trucks entering the facility to ensure that, on average, the daily truck fleet meets applicable air quality emission standards. This log shall be available for inspection by City staff at any time.
- Each facility operator shall prohibit all vehicles from idling in excess of five minutes in all onsite areas.
- Each facility operator shall ensure that onsite staff in charge of keeping the daily log and monitoring for excess idling will be trained and certified in diesel health effects and technologies, such as by requiring attendance at CARB-approved courses.
- Each facility operator which upon occupancy does not already operate 2007 and newer trucks shall in good faith be required to apply for funding to replace or retrofit their trucks such as Carl Moyer, VIP, Prop 1B or similar funds. Should funds be awarded, the tenant shall be required to accept and use them.

Draft EIR, Section 4.4, BIOLOGICAL RESOURCES

4.4.1 Existing Setting

4.4.1.2 Vegetation (page 4.4-4)

... Until December 2013, agriculture-citrus (citrus tree orchards) occurred on the northwestern, northeastern, and east-central portions of the project site and occupied approximately 57.2 acres. The trees were removed recently to avoid additional maintenance and irrigation costs, and to help reduce fire safety issues. Approximately 47.4 acres of ruderal vegetation occurs on the project site and is dominated by weedy vegetation that is typically associated with a past disturbance (agriculture).

Section 4.4.6.2, Riparian Habitat or Other Sensitive Natural Communities (page 4.4-29)

Impact 4.4.6.2: *The proposed project has the potential to permanently affect 0.36 acre of riparian/riverine habitat and to temporarily affect 0.35 acre of riparian/riverine habitat.*

Threshold	Would the proposed project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?
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The project site consists of highly disturbed land from which most natural vegetation has been removed by regular disking for weed abatement and historical citrus cultivation.

NOTE: *The removal of the citrus trees in December 2013 does not affect the conclusions of the DEIR regarding biological impacts or mitigation.*

MITIGATION NOTE: *Based on a pre-application MSHCP project meeting with CDFG, USFWS, RCA, and RWQCB that occurred on October 10, 2012, the following minor changes and clarifications have been made to the indicated mitigation measures, mainly to incorporate temporary impacts into the compensation for permanent impacts but also to make the EIR mitigation measures consistent with the DBESP implementation measures:*

4.4.6.2A As outlined in the project's Determination of a Biologically Equivalent or Superior Preservation (DBESP) report, the project applicant shall compensate for the temporary and permanent impact on and loss of jurisdictional waters and streambeds by providing a minimum 2:1 off-site replacement of equivalent riverine/riparian habitat prior to project construction. (0.36 acre impact = 0.72 acre replacement). This off-site replacement shall be accomplished through the contribution of in-lieu fees to the Santa Ana Watershed Association (SAWA) for its efforts in removal of invasive plants and restoration of riparian habitat adjacent to the tributaries of the San Jacinto River or within the Santa Ana River watershed. Documentation of acceptance of the SAWA contribution shall be provided to the City prior to issuance of a grading permit. Offsite restoration, enhancement, and/or land purchase mitigation for the drainage impacts will occur at an offsite location through one or more of the following: an USACE approved mitigation bank, through an in lieu fee mitigation program, and/or land purchase and conservation. DFG and USFWS will need to provide concurrence that this mitigation is equivalent or superior to that proposed for impact through their review and acceptance of the DBESP.

4.4.6.2B ~~The project applicant shall retain qualified personnel to prepare and implement a Habitat Mitigation and Monitoring Plan (HMMP) to oversee restoration of temporarily affected areas (0.35 acre of riverine/riparian habitat) to their pre-construction contours and vegetation. The HMMP will be approved by USACE and CDFG prior to the City issuing any occupancy permits. Riparian/riverine resources that are temporarily impacted by project construction shall be returned to their preconstruction contours and hydroseeded, as outlined in the DBESP.~~

NOTE: *The DBESP replaces the need for a separate Habitat Mitigation and Monitoring Plan.*

Section 4.4.6.3, Jurisdictional Waters/Wetlands (page 4.4-31)

4.4.6.3A ~~The project applicant shall obtain a Section 404 Nationwide or Individual Permit, as appropriate, from the USACE and a Section 1602 Streambed Alteration Agreement from the CDFG. Direct temporary impacts to more than 0.1 acre of jurisdictional area that are regulated by the USACE, CDFG, and RWQCB shall be mitigated at a 2:1 ratio, including enhancement and/or creation of wetlands or the contribution of in-lieu fee to the Santa Ana Watershed Association (SAWA) for its efforts in removal of invasive plants and restoration of off-site riparian habitat, as outlined in Mitigation Measure 3.3.6.2A. The project applicant shall obtain a Section 404 Nationwide or Individual Permit, as appropriate, from the USACE, a Section 401/Porter-Cologne Water Quality Certification from the RWQCB, and a Section 1602 Streambed Alteration Agreement from the CDFG. Offsite restoration, enhancement, and/or land purchase mitigation of jurisdictional drainage impacts will occur at an off-site location through one or more of the following: an USACE approved mitigation bank, through an in-lieu fee mitigation program, and/or land purchase and conservation.~~

Draft EIR, Section 4.5, CULTURAL AND PALEONTOLOGICAL RESOURCES

Section 4.5.6.1 Prehistoric Cultural Resources (page 4.5-6)

All of the mitigation measures were modified to better address concerns expressed by the Pechanga Band and Morongo Tribe (Letters A-4 and A-5, respectively). These changes to the Draft EIR do not result in a significant impact and has no material effect on the findings of the Draft EIR, and are shown below:

- 4.5.6.1A** Prior to the issuance of a grading permit, the Project Applicant shall provide evidence to the City of Moreno Valley that a Cultural Resources Monitoring Agreement has been secured for qualified Tribal representatives, and that a professional archaeological monitor meeting Secretary of Interior standards has been retained by the Applicant to conduct monitoring of all mass grading and trenching activities and has the authority to temporarily halt and redirect earthmoving activities in the event that suspected archaeological resources are unearthed during Project construction. The Project Archaeologist and Tribal representatives shall attend the pre-grading meeting with the City and contractors to explain and coordinate the requirements of the monitoring program.
- 4.5.6.1B** Prior to the issuance of a grading permit, the Applicant shall provide evidence to the City of Moreno Valley that appropriate Native American representative(s), Project Archaeologist, and the Tribal representative(s) shall be allowed to monitor and have received a minimum of 30 days advance notice of all mass grading and trenching activities. During grading and trenching operations, the Tribal representatives and the project archaeological monitor shall observe all mass grading and trenching activities per the Cultural Resources Monitoring Agreement. If the Tribal representatives suspect that an archaeological resource may have been unearthed, the archaeologist, in consultation with the tribal representative, shall immediately halt and redirect grading operations in a 100-foot radius around the find to allow identification and evaluation of the suspected resource. In consultation with the appropriate Native American Tribe(s), the archaeological monitor shall evaluate the suspected resource and make a determination of significance pursuant to California Public Resources Code Section 21083.2.
- 4.5.6.1C** If a significant archaeological resource(s) is discovered on the property, ground disturbing activities shall be suspended 100 feet around the resource(s). The archaeological monitor and representatives of the appropriate Native American Tribe(s), the Project Applicant, and the City Planning Division shall confer regarding mitigation of the discovered resource(s). A treatment plan and/or preservation plan shall be prepared and by the archaeological monitor and reviewed by representatives of the appropriate Native American Tribe(s), the Project Applicant, and the City Planning Division and implemented by the archaeologist to protect the identified archaeological resource(s) from damage and destruction. The landowner shall relinquish ownership of all archaeological artifacts that are of Native American origin found on the Project site to the culturally affiliated Native American tribe(s) for proper treatment and disposition. A final report containing the significance and treatment findings shall be prepared by the archaeologist and submitted to the City Planning Division, the appropriate Native American tribe(s), and the Eastern Information Center at the University of California, Riverside. All cultural material, excluding sacred, ceremonial, grave goods and human remains, collected during the grading monitoring program and from any previous archaeological studies or excavations on the project site shall be curated, as determined by the treatment plan, according to the current professional repository standards and may include the Pechanga Bands curatorial facility.

4.5.6.1D Prior to grading permit issuance, the City shall verify that the following note is included on the Grading Plan:

"If any suspected archaeological resources are discovered during ground-disturbing activities and the archaeological monitor or Tribal representatives are not present, the construction supervisor is obligated to halt work in a 100-foot radius around the find and call the project archaeologist and the Tribal representatives to the site to assess the significance of the find."

Although DEIR Section 4.5.5.2, Human Remains, concludes potential impacts of the project will be less than significant with compliance with state law, Mitigation Measure 4.5.6.1E has been added at the request of the tribe to help assure there will be no significant impacts related to the potential discovery of human remains during grading:

4.5.6.1E If human remains are encountered, California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the Riverside County Coroner has made the necessary findings as to origin. Further, pursuant to California Public Resources Code Section 5097.98(b), remains shall be left in place and free from disturbance until a final decision as to the treatment and disposition has been made by the Coroner. If the Riverside County Coroner determines the remains to be Native American, the California Native American Heritage Commission must be contacted within 24 hours. The Native American Heritage Commission must then immediately notify the "most likely descendant(s)" of receiving notification of the discovery. The most likely descendant(s) shall then make recommendations within 48 hours, and engage in consultations concerning the treatment of the remains as provided in Public Resources Code §5097.98.

Section 4.5.6.2, Paleontological Resources

The following mitigation measure was added to address general concerns expressed by the Pechanga Band and Morongo Tribe (Letters A-4 and A-5, respectively).

4.5.6.2D Prior to grading permit issuance, the City shall verify that the following note is included on the Grading Plan:

"If any suspected paleontological resources are discovered during ground-disturbing activities, the construction supervisor is obligated to halt work in a 100-foot radius around the find and call a qualified paleontologist to the site to assess the significance of the find. A qualified paleontologist shall evaluate the suspected resource. If the paleontologist determines that the find is not unique, construction shall be permitted to proceed. However, if the paleontologist determines that further information is needed to evaluate significance, the City of Moreno Valley shall be notified and a treatment plan shall be prepared and implemented in consultation with the City to protect the identified paleontological resource(s) from damage and destruction."

Draft EIR Section 4.6, HAZARDS AND HAZARDOUS MATERIALS

Section 4.6. Significant Impacts

This section did not identify any significant impacts related to hazardous materials, including past use of pesticides on the project site in the past. However, the following measure is proposed in response to comments in Letter D-4 in this regard:

4.6.6.1A Prior to issuance of a grading permit for the project, a qualified contractor shall test onsite soils for contamination by agricultural chemicals. If present in concentrations above established actionable levels or thresholds, these materials shall be removed and transported to an appropriate landfill by a licensed contractor. This measure shall be implemented to the satisfaction of the Building Division including written documentation of the disposal of any agricultural chemical residue in conformance with all applicable regulations.

Draft EIR Section 4.9, NOISE

Section 4.9.6.1 Short-Term Construction Noise Impacts (pages 4.9-26 and 4.9-27)

Mitigation Measure 4.9.6.1D was amended to be consistent with the City's Municipal Code for noise and to specify hourly limits for work nearest the existing residences. This change to the Draft EIR does not result in a significant impact and has no material effect on the findings of the Draft EIR.

4.9.6.1D. During all project site construction activities at Building 6 (i.e., closest to existing residences), the construction contractor shall limit all construction-related activities that would result in high noise levels to between the hours of 6:00 a.m. and 8:00 p.m. on weekdays and between the hours of 7:00 a.m. to 8:00 p.m. on weekends and holidays, unless written approval is obtained from the City Building Official or City Engineer for specific construction activities that must be conducted outside of the permitted time periods.

Draft EIR Section 4.11 TRANSPORTATION

Section 4.11. (page 4.11-14)

Section 4.11.6.6 Mitigation Measures (page 4.11-31)

The following text has been amended to clarify the intension of the measure. This change to the Draft EIR does not result in a significant impact and has no material effect on the findings of the Draft EIR.

4.11.6.4A Prior to issuance of a building permit Certificate of Occupancy, the project applicant shall construct pay the fair share contribution toward the following traffic improvements through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program:

- **Redlands Boulevard/SR-60 Westbound Ramps.** Install a traffic signal. This improvement is currently approved, and permitted by Caltrans. If not otherwise completed prior to project opening, the required traffic signal shall be constructed by the Applicant prior to issuance of the first Certificate of Occupancy.
- **Redlands Boulevard/Fir Avenue/Eucalyptus Avenue.** If not otherwise completed prior to project opening, prior to issuance of the first Certificate of Occupancy, the Applicant shall construct the following improvements: Install a traffic signal and ~~This improvement is listed in the City's DIF program.~~ Add a northbound left-turn lane and a southbound left-turn lane. ~~These improvements are listed in the TUMF.~~

If the improvements are constructed by others prior to the Certificate of Occupancy, the applicant shall pay its fair share towards the improvements through the City's DIF program.

Draft EIR Section 4.12, UTILITIES AND SERVICE SYSTEMS

Section 4.12.1.7 Cumulative Impacts to Solid Waste Services (page 4.12-5)

The following text has been amended to clarify the Badlands Sanitary Landfill is scheduled to close in 2024 not 2016. This change to the Draft EIR does not result in a significant impact and has no material effect on the findings of the Draft EIR.

AB 939 mandates the reduction of solid waste disposal in landfills. While the Badlands Sanitary Landfill has an estimated closure date of ~~2016~~ 2024, as previously identified, the City's waste hauler will also use other County landfills in the area (e.g., Lamb Canyon Landfill and El Sobrante Landfill). The estimated closure date of the Lamb Canyon Landfill is 2023 and the estimated closure date of the El Sobrante Landfill is 2030. With planned expansion activities of landfills in the project vicinity and projected growth rates contained within the City's General Plan EIR, sufficient landfill capacity would exist to accommodate future disposal needs through City build out in 2030. Therefore, build out of the City General Plan would not create demands for solid waste services that would exceed the capabilities of the County's waste management system. Consequently, cumulative impacts associated with solid waste within the City would be considered less than significant.

Draft EIR 4.13, GLOBAL CLIMATE CHANGE

Section 4.13.6.1 Greenhouse Gas Emissions (page 4.13-20)

The following text has been amended to clarify the intension of the measure. This change to the Draft EIR does not result in a significant impact and has no material effect on the findings of the Draft EIR.

- 4.13.6.1B.** Prior to the issuance of building permits, the project applicant shall provide evidence to the City of Moreno Valley that the following measures have been incorporated into the design and construction of the project:
- Use of locally produced and/or manufactured building materials for at least 10 percent of the construction materials used for the project.
 - Use of "Green Building Materials," such as those materials that are resource efficient, and recycled and manufactured in an environmentally friendly way, for at least 10 percent of the project.
 - Limit unnecessary idling of construction equipment. A reduction in equipment idling would reduce fuel consumption, and therefore, GHG emissions.
 - Maximize the use of electricity from the power grid by replacing diesel- or gasoline-powered equipment. This would reduce GHG emissions because electricity can be produced more efficiently at centralized power plants.
 - Design the project building to exceed the California Building Code's (CBC) Title 24 energy standard, including, but not limited to, any combination of the following:
 - Increase insulation such that heat transfer and thermal bridging is minimized.
 - Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption.

- Incorporate ENERGY STAR or better rated windows, space heating and cooling equipment, light fixtures, appliances, or other applicable electrical equipment.
- Provide a landscape and development plan for the project that takes advantage of shade, prevailing winds, and landscaping.
- Install efficient lighting and lighting control systems. Use daylight as an integral part of the lighting systems in buildings.
- Install light-colored “cool” roof and cool pavements.
- Install energy-efficient heating and cooling systems, appliances and equipment, and control systems.
- Install solar or light-emitting diodes (LEDs) for outdoor lighting for auto parking areas.

Draft EIR 6.0, ALTERNATIVES

Section 6.5 Environmentally Superior Alternative (page 6-39)

There was a typographical error in Table 6.M under Alternative 5 for Air Quality that has been rectified below. This change to the Draft EIR does not result in a significant impact and has no material effect on the findings of the Draft EIR.

Table 6.M: Summary of Significant Environmental Impacts of the Project Alternatives

Topic	Proposed Project Impact	Impacts of Alternatives ¹					
		PP	1	2	3	4	5
Aesthetics	Scenic Vistas	S			S		
Aesthetics	Scenic Resources and Scenic Highways	S			S		
Aesthetics	Substantial degradation of the existing visual character or quality of the site and its surroundings	S			S		
Aesthetics	Cumulative Aesthetic Impacts	S			S		
Agriculture	Loss of State Designated Farmland	S		S		S	S
Agriculture	Conversion to a Non-agricultural Use	S		S		S	S
Agriculture	Cumulative Agricultural Resources	S		S		S	S
Land Use	Consistency with Regional or Local Land Use Plans, Policies, or Goals	S			S	S	
Land Use	Cumulative land use changes	S			S		
Air Quality	Construction Air Pollutant Emissions	S		S	S	S	S
Air Quality	Architectural Coating Emissions	S		S	S	S	S
Air Quality	Operational Air Pollutant Emissions	S		S	S	S	S
Air Quality	Consistency with Air Quality Management Plan	S		S	S		S
Air Quality	Cumulative Pollutant Air Emissions	S		S	S	S	S
Transportation	Opening Year (2016) with Project Level of Service	S		S	S	S	S
Transportation	Opening Year (2016) Cumulative with Project Level of Service	S		S	S	S	S
Transportation	Cumulative Traffic Impacts	S		S	S	S	S

¹ Proposed Project (PP)
Alternative 1: No Project – No Build
Alternative 2: No Project (Tentative Tract Map 32255)
Alternative 3: Reduced Intensity
Alternative 4: Mixed Commercial/Office/Residential
Alternative 5: Off-Site Location
S = Significant

4. REDUCED INTENSITY ALTERNATIVE EVALUATION

Based on input received at the City's public hearings and after completion of the Final EIR on April 2, 2014, the applicant is proposing the City adopt the Reduced Intensity Alternative evaluated in the DEIR (pages 6-18 through 6-24 and 6-37 through 6-40). The Reduced Intensity Alternative evaluated developing 25% less warehousing on the site (1.7 million square feet) compared to the Proposed Project (2.2 million square feet). The applicant has now proposed to develop only 4 of the 6 warehouse buildings (1.5 million square feet) which is consistent with the Reduced Intensity Alternative evaluated in DEIR Section 6.0 (1.7 million square feet). The DEIR did not contain a specific site plan depicting the Reduced Intensity Alternative, so the applicant has prepared a conceptual site plan referred to in this analysis as the "less intensive modified plan".

The proposed less intensive modified plan is consistent with the Reduced Intensity Alternative and proposes that 84.8 acres of the site would be developed for warehousing while the remaining 38 acres would remain undeveloped at this time. The vacant land would retain its existing General Plan and zoning designations (R2 and R5). This less intensive modified plan represents a net decrease in square footage of approximately 32 percent compared to the original Proposed Project, and a 7 percent reduction in square feet compared to the Reduced Intensity Alternative evaluated in the DEIR (see Table 4.A). The less intensive modified plan removes the two industrial buildings (Buildings 5 and 6 in the original site plan) closest to the residential homes southeast of the project site.

Warehouse buildings under the less intensive modified plan are 1,515 feet from the nearest existing residential neighborhood (southwest), and 1,636 feet from the existing neighborhood at the southeast corner. The less intensive modified plan also provides a 250-foot buffer between the nearest warehouse truck court and future residential uses. In addition, the large detention basin that was proposed at the south end of Building 6 in the original plan would be moved to near the southeast corner of Building 4 in the less intensive modified plan. Approval of this modified plan would also establish a minimum 250-foot buffer from truck activity areas and future residential uses on the former location of warehouse buildings 5 and 6 under the original plan. Otherwise, the development characteristics of Buildings 1 through 4 would remain the same as those outlined and analyzed in the Draft EIR. For the purposes of this environmental analysis, the less intensive modified plan is considered equivalent to the Reduced Intensity Alternative except where noted that impacts are less than those of the Reduced Intensity Alternative. The conceptual land plan for the less intensive modified plan is shown in Figure 4.2 in this section. Table 4.A presents the land uses and ITE rates of the four scenarios evaluated in the following sections.

It is important to emphasize that the less intensive modified plan would allow development of future residential uses in the southeast portion of the project site, consistent with the existing R-5 and RA-2 zoning (Parcel 5), adjacent to the existing residential neighborhood to the southeast. The modified plan also has a 250-foot setback from the project warehouses to the future residential uses, consistent with the City's municipal code requirements (i.e., use of a 250-foot buffer and a non-building easement over a portion of Parcel 5).

Table 4.A: Land Use Characteristics Evaluation Scenarios

Land Use (ITE rate) Characteristics	Land Use Scenario			
	Proposed Project	Existing Zoning	Reduced Intensity Alternative (EIR)	Less Intensive Modified Plan ¹
Warehousing (152)				
Square Footage	2,244,600	0	1,683,000	1,529,500
Gross Acres	122.8	0	90.8	84.8
Vacant Acres	0	0	32.0	(38.0)
Business Park/Business Park Mixed Use (770)				
Square Footage	0	622,000	0	0
Gross Acres	0	48.3	0	0
Multi-Family (230) Residential (R-15)				
Units	0	548	0	0
Gross Acres	0	36.5	0	0
Single Family (210) Residential (R-5 & R-2)				(Future)
Units	0	133	0	126
Gross Acres	0	38.0	0	38.0
TOTAL				
Square Feet	2,244,600	622,000	1,683,000 (-25%)	1,529,000 (-32%)
Units	0	681	0	126
Gross Acres	122.8	122.8	122.8	122.8

Source: ProLogis data and trip generation table from LSA Traffic Group, September 2014 (See FEIR Appendix F)

¹ **NOTE:** Residential units under this plan would be built at some later by a different developer with separate CEQA review. This plan is a sub-set of the Reduced Intensity Alternative from the DEIR, it is **NOT** a new alternative.

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FIGURE 4.1

*Eucalyptus Industrial Park
Environmental Impact Report*

Original Project Site Plan

-2341-

Item No. E.3
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250 500
FEET
source: Prologis
:\P\O1101\Reports\EIR\fig4-1_OrigProjSitePlan.mxd (9/3/2014)

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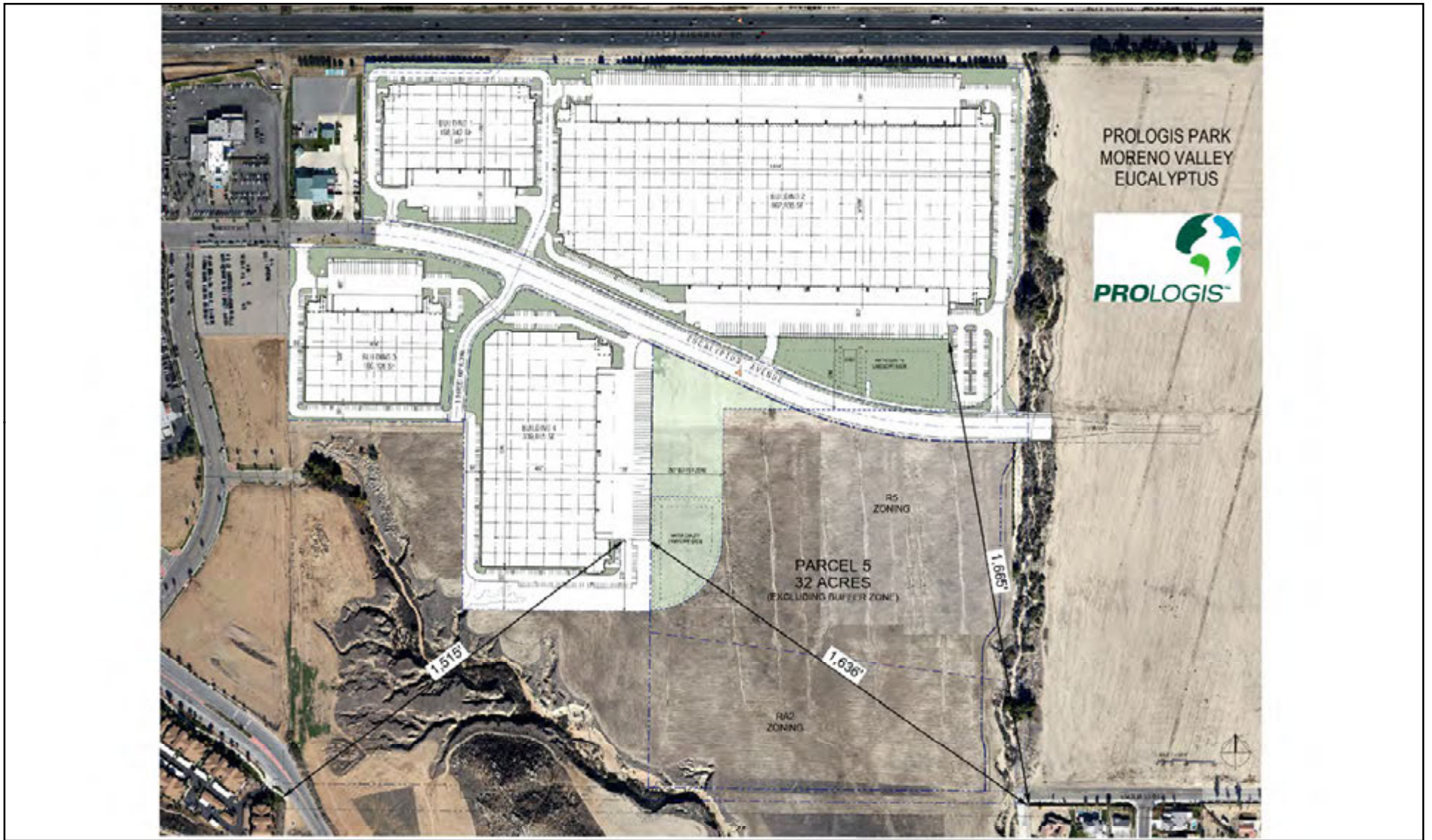


FIGURE 4.2

*Eucalyptus Industrial Park
Environmental Impact Report*

Less Intensive Modified Site Plan

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It should be noted that the 38 acres of residential uses shown in Table 4.A for the less intensive modified plan are only approximate, and the actual acreage will be based on appropriate development constraints, development impact fees, and conditions of approval imposed on the property during the City's development review process of the revised parcel map and revised tentative tract map.

The following analysis is based on Section 6.3.3 of the DEIR but goes into more detail based on development details of the less intensive modified plan. Table 4.D at the end of this section summarizes the impacts of the less intensive modified plan compared to both the Proposed Project and the Reduced Intensity Alternative evaluated in the DEIR. In addition, this analysis shows what the impacts of developing the site under its existing zoning designations (i.e., with Business Park/Business Park-Mixed Use, Residential 15, Residential 5, and Residential 2 uses).

4.1 Aesthetics

- (a) **Proposed Project** – Project would introduce 6 large warehouse buildings into the area, with existing residential uses adjacent to the southeast. Impacts from loss of views and new night lighting are significant even with mitigation.
- (b) **Existing Zoning** – Development of the site under existing zoning designations would result in the alteration of the existing visual character of the site but with new residential uses adjacent to the existing residences to the southeast, and development intensity increasing from R2 next to the existing residences to more dense R5 and R15 uses to the north along Eucalyptus Avenue. This pattern would be consistent with that outlined in the existing General Plan and zoning. New development would adhere to City design and development standards for each particular land use, but would still be a substantial change from existing vacant conditions.
- (c) **Reduced Intensity Alternative** – Impacts to views and lighting are substantially reduced by eliminating 25% of development in the southeast portion of the site compared to the Proposed Project. However, impacts are still significant, similar to the Proposed Project.

Under the less intensive modified plan impacts to views and lighting are substantially reduced by eliminating 32% of development proposed in the southeast portion of the site (Buildings 5 and 6) compared to the Proposed Project. However, impacts are still significant compared to the Proposed Project.

- (d) **Summary** - Impacts of the Reduced Intensity Alternative, including the less intensive modified plan, are substantially reduced compared to the Proposed Project, but impacts of all three are significant due to the fundamental change in character for the area from existing conditions.

4.2 Agricultural Resources

- (a) **Proposed Project** – Project would introduce 6 large warehouse buildings onto an area designated as Prime Farmland and Farmland of Local Importance. Impacts from the loss of prime agricultural lands are significant and no mitigation is available.
- (b) **Existing Zoning** – Development of the project site with urban uses would result in the conversion of Prime Farmland. Impacts associated with development of this alternative would be significant and unavoidable.
- (c) **Reduced Intensity Alternative** – Impacts to farmland would be substantially reduced by eliminating 25% of development (i.e., in the southeast portion of the site) compared to the Proposed Project. Impacts are less than significant.

Under the less intensive modified plan, impacts to farmland would be substantially reduced by eliminating 32% of proposed development (i.e., Buildings 5 and 6 in the southeast portion

of the site) compared to that planned under the Proposed Project. Agricultural impacts associated with the development of the less intensive modified plan are less than significant as no development would occur (i.e., the land would remain at least temporarily vacant) in the southeast portion of the site. However, it is likely that the southeast corner of the project site would eventually be developed with residential uses. Subsequent CEQA analysis would need to be conducted at that time regarding all impacts of that proposed residential development on approximately 38 acres (see previous Table 4.A). The loss of this agricultural land would be temporarily delayed under this development scenario.

- (d) **Summary** – Impacts of the Reduced Intensity Alternative, including the less intensive modified plan, are substantially reduced to less than significant levels compared to the Proposed Project.

4.3 Air Quality

- (a) **Proposed Project** – Project would produce operational air pollutant emissions except for SO_x above CEQA threshold limits (see Table 4.B below). Impacts from increased air quality emissions would be significant even with mitigation.
- (b) **Existing Zoning** – A similar mix of equipment would operate during earthmoving and construction activities as the Proposed Project. Peak daily construction emissions would be below SCAQMD thresholds of significance for CO, ROC, and SO_x (See Table 4.B below). Although SCAQMD regulations and project-specific mitigation measures would reduce the amount of construction emissions, impacts associated with construction emissions for NO_x remain significant and unavoidable. Although the total number of trips is increased, the volume of each operational pollutant emitted during operation the Existing General Plan would be less since there would be no diesel trucks involved. Operational emissions would continue to exceed SCAQMD significance thresholds for NO_x, CO, and ROG, but would not exceed operational thresholds for PM₁₀ and PM_{2.5}. The impacts for the Existing General Plan development to air quality would be decreased, but the long-term air quality impacts resulting from this alternative would continue to be significant and unavoidable.
- (c) **Reduced Intensity Alternative** - Impacts due to operational air pollutant emissions would be reduced by eliminating 25% of development in the southeast portion of the site compared to the Proposed Project (see Table 4.B below). However, even with a 25% reduction in air quality emissions impacts are still significant even with mitigation.

Under the less intensive modified plan, impacts due to operational air pollutant emissions would be reduced by eliminating 32% of development proposed in the southeast portion of the site (Buildings 5 and 6) compared to the Proposed Project (see Table 4.B below). However, air quality emissions are still significant even with mitigation.

- (d) **Summary** - Impacts of the Reduced Intensity Alternative, including the less intensive modified plan, are substantially reduced compared to the Proposed Project, however impacts of all three are still significant.

Table 4.B: Comparison of Operational Emissions

Source	Pollutant Emissions (lbs/day)					
	CO	ROC	NO _x	SO _x	PM ₁₀	PM _{2.5}
Proposed Project	1,801	289	2,001	3.1	370	85
Existing Zoning	850	114	230	1.2	130	11
Reduced Intensity Alternative	1,351	217	1,501	2.3	278	64
less intensive modified plan	1,225	197	1,361	2.1	252	58
SCAQMD thresholds	550	55	55	150	150	55

Source: data from DEIR Section 6.0 and extrapolated from LSA Associates, Inc., September 2014

Note: During Public Comment and Hearings many people commented on the health impacts of truck related air pollution. While there are health effects associated with exposure to diesel particulate matter (DPM), the following graphs (Figures 4.3 and 4.4) indicated that compliance with state and federal regulations will substantially reduce diesel-related emissions in the coming years. In addition, the previous Table 4.B compares operational emissions of the proposed project to development under the existing zoning, the Reduced Intensity Alternative in the EIR, and the less intensive modified plan.

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Heavy-Duty Truck Emissions Particulate Matter

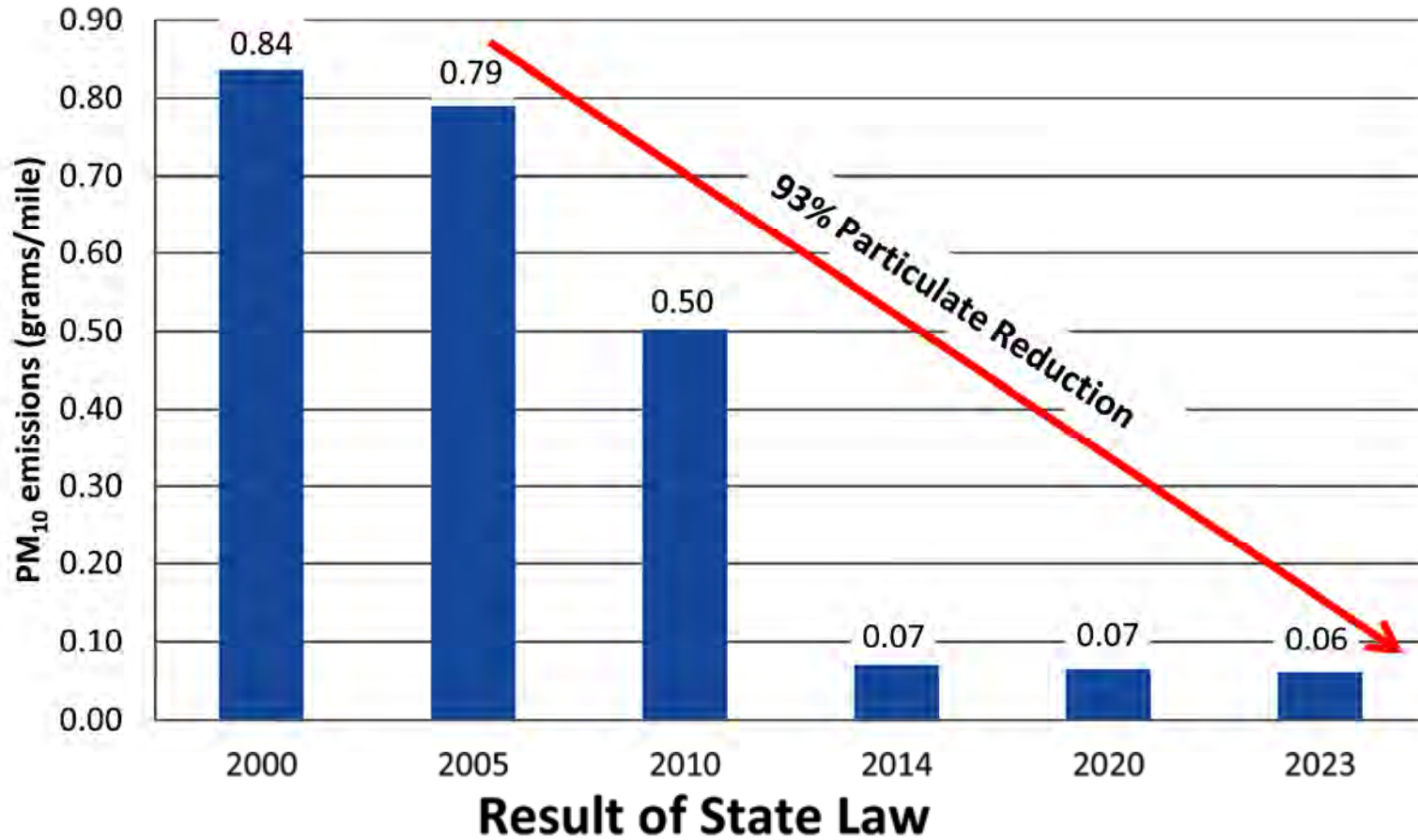
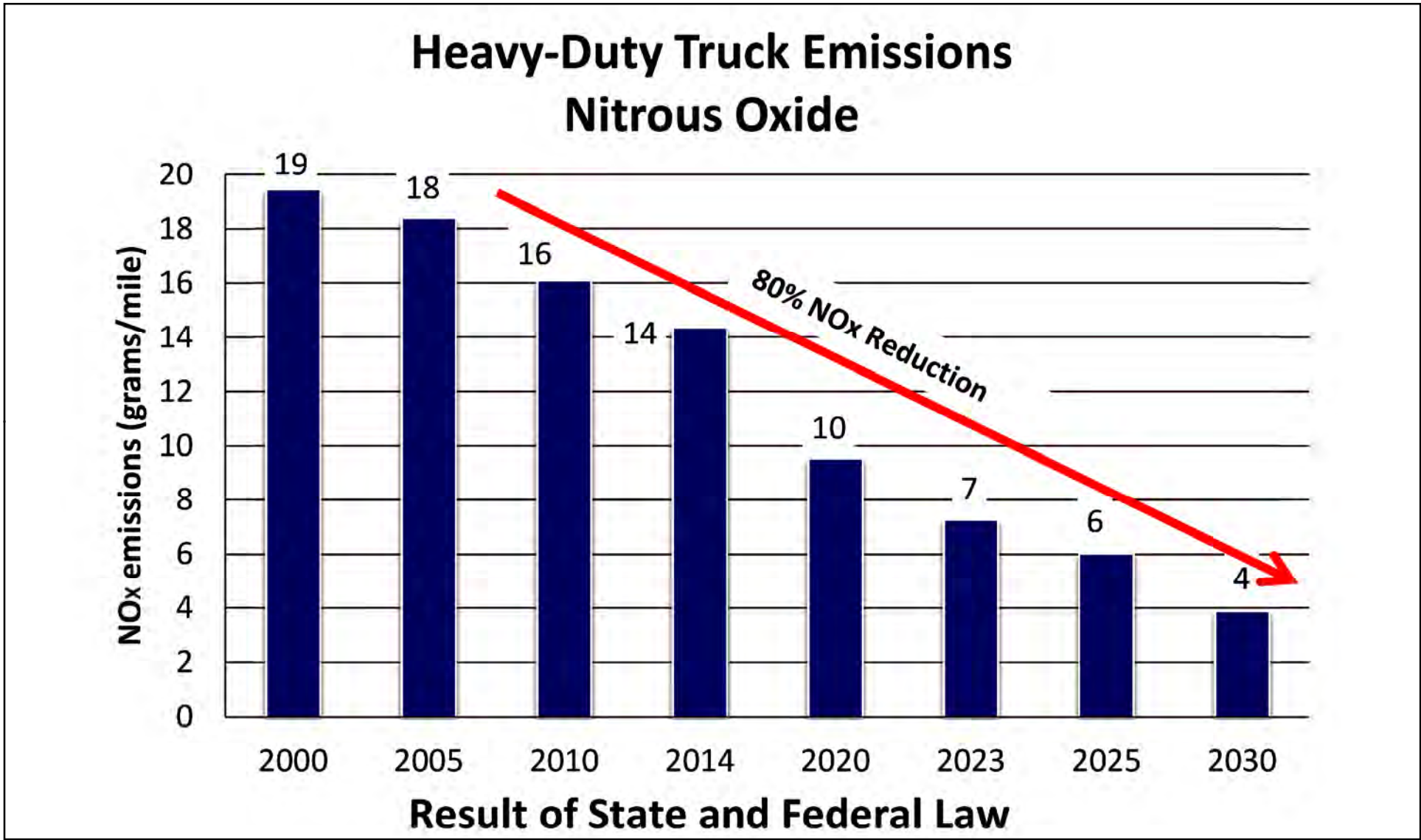


FIGURE 4.3

*Eucalyptus Industrial Park
Environmental Impact Report*

Source: ARB EMFAC2011 model data.

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LSA

FIGURE 4.4

*Eucalyptus Industrial Park
Environmental Impact Report*

source: ARB EMFAC2011 model data.

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4.4 Biological Resources

- (a) **Proposed Project** – Project has the potential to impact migratory bird species, 15 listed special status species (including burrowing owl), riparian/riverine habitat, and jurisdictional waters/wetlands. However, these impacts can be reduced to levels of less than significant by implementation of the recommended mitigation measures.
- (b) **Existing Zoning** – This alternative would result in grading of the entire project site. No plant species listed by the State and/or Federal government as endangered or threatened were identified on site during the field reconnaissance. Similar to the proposed project, potential impacts of site development would be reduced to less than significant levels by implementing mitigation similar to that recommended for the proposed project.
- (c) **Reduced Intensity Alternative** – Impacts to migratory birds and riparian/riverine habitat would be reduced to less than significant in this alternative compared to the proposed project due to the elimination of 25% of development in the southeast portion of the site. This alternative would still have significant impacts related to jurisdictional water/wetlands and listed species (including burrowing owl), which would be reduced to less than significant levels by mitigation measures similar to the proposed project.

Under the less intensive modified plan, impacts to biological resources would be reduced compared to the Proposed Project due to the elimination of development in the southeast corner. Like the Reduced Intensity Alternative, the less intensive modified plan would have less than significant impacts to migratory birds and riparian/riverine habitat with mitigation. In addition, recommended project mitigation would reduce impacts to jurisdictional water/wetlands and listed species (including burrowing owl) to less than significant levels.

- (d) **Summary** – The Reduced Intensity Alternative, including the less intensive modified plan, have impacts to migratory birds, riparian/riverine habitat, jurisdictional water/wetlands, and listed species (including burrowing owl) that can be mitigated to less than significant levels with implementation of recommended mitigation.

4.5 Cultural Resources

- (a) **Proposed Project** – No cultural resources have previously been detected within the project limits. However, as undetected cultural or paleontological resources could be encountered so mitigation was recommended to reduce potential impacts to less than significant levels.
- (b) **Existing Zoning** – Development would result in ground-disturbing activities affecting the entire project site, and similar archaeological and paleontological impacts would be anticipated when compared to the Proposed Project. Adherence to the archaeological and paleontological mitigation measures identified for the proposed project would reduce impacts to less than significant, and no greater impacts would occur with this alternative.
- (c) **Reduced Intensity Alternative** – Similarly to the proposed project, this alternative would include ground-disturbing activities all but 34 acres in the southeast portion of the project site. Similar archaeological and paleontological impacts would be anticipated when compared to the Proposed Project. Therefore, adherence to the archaeological and paleontological mitigation measures identified for the proposed project would reduce impacts to less than significant levels. Compared with the proposed project, no greater impact would occur with this alternative.

The development area of the less intensive modified plan is smaller than the Proposed Project, so implementation of the recommended mitigation would reduce potential impacts to less than significant levels.

- (d) **Summary** – Impacts of the Reduced Intensity Alternative, including the less intensive modified plan, are similar compared to the Proposed Project, and all three would have the same mitigation which would reduce potential impacts to less than significant levels.

4.6 Forest Resources

- (a) **Proposed Project** – The City of Moreno Valley's General Plan does not identify any forest resources on the project site or surrounding area, and the project site is currently vacant, although it did support citrus trees in the past. Therefore, no significant impact would occur in relation to forest resources.
- (b) **Existing Zoning** – The City of Moreno Valley's General Plan does not identify any forest resources on the project site or surrounding area. Therefore, there are no significant impacts under the any development scenario for the project site.
- (c) **Reduced Intensity Alternative** – Although the Reduced Intensity Alternative project site is smaller than the Proposed Project site, the site is still in the same location. Therefore, like the Proposed Project, no significant impacts related to forest resources would occur.

Under the less intensive modified plan, development would be located on the same site as the Proposed Project. Therefore, no significant impacts to forest resources would occur.
- (d) **Summary** - Impacts of the Reduced Intensity Alternative, including the less intensive modified plan, are the same as the Proposed Project. No reduction in impact would occur.

4.7 Geology and Soils

- (a) **Proposed Project** – The Proposed Project, like all of southern California, would be subject to moderate to severe ground shaking. However, with adherence to UBC, the California Building Code, and City design and engineering standards. Impacts associated with this issue would be considered less than significant.
- (b) **Existing Zoning** – Development of the Existing General Plan would have geologic and soil-related impacts since the project site is located in a seismically active area and is subject to ground shaking resulting from activity on local and regional faults. Development of the proposed project site would be required to adhere to UBC, the California Building Code, and City design and engineering standards. Impacts associated with this issue would be considered less than significant.
- (c) **Reduced Intensity Alternative** – Although the Reduced Intensity Alternative project site is smaller than the proposed project site, the site is still in the same location. Therefore, like the Proposed Project adherence to UBC, the California Building Code, and City design and engineering standards will reduce significant impacts to less than significant levels.

The less intensive modified plan is the same site as the Proposed Project. Therefore, no significant impacts related to ground shaking would occur with adherence to UBC, the California Building Code, and City design and engineering standards.
- (d) **Summary** - Impacts of the Reduced Intensity Alternative, including the less intensive modified plan, are essentially the same as the Proposed Project. No reduction in impact would occur.

4.8 Global Climate Change

- (a) **Proposed Project** – Project would produce greenhouse gas emissions above CEQA threshold limits. Impacts from increased greenhouse gas emissions would be significant and require mitigation. The recommended measures would reduce potential climate change impacts to less than significant levels.
- (b) **Existing Zoning** – GHG emissions would increase as development under existing zoning designations would measurably increase the number of daily trips made to the site. Implementation of the mitigation recommended for the proposed project, or similar measures applicable to residential projects, could help keep these emissions at less than significant

levels, but this impact would need to be evaluated in a subsequent CEQA document when specific development was proposed.

- (c) **Reduced Intensity Alternative** – Impacts due to greenhouse gas emissions would be reduced by eliminating 25% of development in the southeast portion of the site compared to the Proposed Project. However, even with a 25% reduction in air quality emissions impacts are still significant and require mitigation measures similar to those recommended for the proposed project which would reduce impacts to less than significant levels.

Under the less intensive modified plan, impacts due to greenhouse gas emissions would be reduced by eliminating 32% of development planned in the southeast portion of the site (Buildings 5 and 6) compared to the Proposed Project. GHG emissions would require the recommended project mitigation to reduce levels to less than significant levels.

- (d) **Summary** - Impacts of the Reduced Intensity Alternative, including the less intensive modified plan, are substantially reduced compared to the Proposed Project, but implementation of the required project mitigation would reduce GHG emission and climate change impacts to less than significant levels for all the other development scenarios.

4.9 Hazards and Hazardous Materials

- (a) **Proposed Project** – The Proposed Project would result in the on-site handling of hazardous substances, both during project construction and operation. However, adherence to existing regulations related to the handling and transport of potentially hazardous materials during construction and operation would reduce impacts to less than significant levels.
- (b) **Existing Zoning** – Development of the site according to existing zoning designations would result in the on-site handling of hazardous substances, both during project construction and operation. All development in the City is required to adhere to existing local, State, and Federal regulations pertaining to hazardous materials, therefore, impacts associated with hazards and hazardous materials under this alternative would be reduced in magnitude and would remain at less than significant levels.
- (c) **Reduced Intensity Alternative** – Because the Reduced Intensity Alternative would construct fewer warehouse uses, impacts associated with the transport or use of hazardous materials or potential upsets or accidents may be reduced in magnitude due to the reduced quantities of hazardous materials that would be present on the site. Similar to the Proposed Project, the Reduced Intensity Alternative would be required to adhere to applicable local, State, and Federal standards associated with hazards and hazardous materials. Impacts of the Reduced Intensity Alternative would remain at less than significant levels, similar to the Proposed Project.

Under the less intensive modified plan, impacts related to hazardous materials would be further reduced compared to the Reduced Intensity Alternative. In addition, like all projects in the City, the less intensive modified plan would be required to adhere to applicable local, State, and Federal standards associated with hazards and hazardous materials. The Reduced Intensity Alternative would remain less than significant, similar to the Proposed Project.

- (d) **Summary** – Impacts of the Reduced Intensity Alternative, including the less intensive modified plan, are reduced compared to the Proposed Project, however impacts of all three are still less than significant with implementation of the recommended mitigation.

4.10 Hydrology and Water Quality

- (a) **Proposed Project** – The Project would modify existing on-site pattern of drainage and would require the installation of drainage improvements that may include detention/retention basins, connected to existing in-street drainage features, on-site storm drains, and other features.

- The project proposes three basins south of building 2 north of Eucalyptus Avenue and a basin south of buildings 5 and 6. With adherence to required local, State, and Federal policies pertaining to surface and groundwater resources, NPDES requirements, SWPPP, BMPs, and preparation of a WQMP impacts related to hydrology and water quality would be less than significant.
- (b) **Existing Zoning** – Development of the site under existing zoning designations would require the modification of the existing on-site pattern of drainage and would require the installation of drainage improvements that may include detention/retention basins, connection to existing in-street drainage features, on-site storm drains, and other features. The extent of the impermeable surfaces (parking area) would be similar to the project so it would have similar environmental impacts to the Proposed Project. All local, State, and Federal policies and regulations pertaining to surface water and groundwater resources would remain in effect under the existing zoning. Any development of the site has the potential to affect water quality due to sedimentation and erosion, runoff from paved surfaces, and contamination caused by a mixture of sediment, debris, and other contaminants. However, construction of any onsite land uses would be required to follow applicable NPDES requirements, including the preparation of and adherence to an SWPPP and BMPs. A standard condition with any such development would be the preparation and implementation of a WQMP, which would effectively mitigate post-construction water quality impacts from the developed area. Similar to the Proposed Project, potential impacts related to hydrology and water quality would be less than significant.
- (c) **Reduced Intensity Alternative** – Due to the smaller development area of the Reduced Intensity Alternative, this scenario would have a reduced impact on the project site compared to the Proposed Project. However, development of this alternative would still require the modification of the existing onsite pattern of drainage. Adherence with required local, State, and Federal policies pertaining to surface and groundwater resources, NPDES requirements, SWPPP, BMPs, and preparation of a WQMP would reduce impacts to less than significant levels.
- Similar to the Reduced Intensity Alternative, the less intensive modified plan would reduce impacts to the project site by not constructing buildings 5 and 6 proposed in the southeast corner. However, this project would still require the installation of drainage improvements that may include detention/retention basins, connection to existing in-street drainage features, on-site storm drains, and other features. The less intensive modified plan proposes three basins south of Building 2 above Eucalyptus Avenue, similar to the proposed project, a small additional basin south of Building 1, and a basin east of Building 4. Similar to the Proposed Project the less intensive modified plan would be required to adhere to local, State, and Federal policies pertaining to surface and groundwater resources, NPDES requirements, SWPPP, BMPs, and preparation of a WQMP. Impacts would be less than significant.
- (d) **Summary** – Impacts of the Reduced Intensity Alternative, including the less intensive modified plan, are reduced compared to the Proposed Project, however impacts of all three are still less than significant.

4.11 Land Use and Planning

- (a) **Proposed Project** – The project would require a General Plan Amendment that would change the General Plan designations of the project site from Residential to Business Park and an amendment to the Circulation Element of the General Plan. A Zone Change from Business Park (BP), Multi-Family Residential (R-15), Suburban Residential (R-5), and Residential Agriculture (RA-2) to Light Industrial for the project site would also be required. In addition, the Proposed Project would be inconsistent with regional projections and the City's

Housing Element. Due to the lack of feasible mitigation this is a significant and unavoidable impact.

- (b) **Existing Zoning** – Development of this alternative would not require a General Plan Amendment for the residential uses or business park uses as these uses are allowed under the existing land use designations. However, the business park component of this alternative would require a change of zone to allow the construction of buildings greater than 50,000 square feet. This alternative would comply with applicable provisions of local and regional plans (e.g., Water Quality Control Plan and Air Quality Management Plan). Compliance with applicable City policies related to development within the project site would ensure that on-site alternative uses would be compatible with existing development in the project area. However, since the development envisioned under this Existing General Plan has already been tentatively approved by the City, this alternative would not require a General Plan Amendment. Therefore, land use impacts associated with this scenario would be reduced to less than significant levels. This alternative would also be fully consistent with the City's Housing Element regarding future sites for affordable housing (i.e., R-15 parcels).
- (c) **Reduced Intensity Alternative** – The Reduced Intensity Alternative would require the same General Plan Amendment and Zone Changes excluding the 32 acres in the southeastern corner that would be used as a buffer for the existing residences to the southeast (see previous Table 4.A). This would reduce potential land use impacts associated with the GPA and Zone Change. However, the Reduced Intensity Alternative would still be inconsistent with regional projections and the City's Housing Element. Similar to the Proposed Project, due to the lack of feasible mitigation this is a significant and unavoidable impact.

The less intensive modified plan would be similar to the proposed project and Reduced Intensity Alternative in that it would require the same GPA and Zone Changes. Similar to the Reduced Intensity Alternative the southeast corner of the site would have a 250 foot buffer from any future residential uses, reducing potential land use impacts associated with the GPA and Zone Change. This alternative would leave 38 acres in the southeastern corner of the property temporarily vacant which would act as a buffer for the existing residences to the southeast (see previous Table 4.A). It is expected that this vacant land would eventually be developed with residential uses consistent with the existing General Plan and zoning. Similar to the Proposed Project and the Reduced Intensity Alternative, the less intensive modified plan is inconsistent with regional projections and the City's Housing Element. Therefore, impacts are significant and unavoidable.

- (d) **Summary** – Impacts of the Reduced Intensity Alternative, including the less intensive modified plan, are substantially reduced compared to the Proposed Project, however impacts of all three are still significant and unavoidable.

4.12 Mineral Resources

- (a) **Proposed Project** – The project site is not identified as a locally important mineral resource recovery site. Therefore, no impact related to mineral resources would occur.
- (b) **Existing Zoning** – Development of the project site with any build scenario would not result in the loss of or reduce the availability of mineral resources or the resource base from which they would be derived. No impact to mineral resources would occur.
- (c) **Reduced Intensity Alternative** – Although the Reduced Intensity Alternative project site is smaller than the Proposed Project site, the site is still in the same location. Therefore, like the proposed project no significant impacts related to mineral resources would occur.

The less intensive modified plan is also located on the same site as the Proposed Project. Therefore, no impact related to mineral resources would occur.

- (d) **Summary** – Impacts of the Reduced Intensity Alternative, including the less intensive modified plan, are reduced compared to the Proposed Project, however all three are located on the same site and therefore have less than significant impacts on mineral resources.

4.13 Noise

- (a) **Proposed Project** – Project would produce construction noise levels that would require mitigation measures to reduce short-term noise impacts to levels of less than significant. However, project-related traffic noise would not be perceptible and therefore is considered a less than significant impact.
- (b) **Existing Zoning** – Development of the site under existing zoning designations would require the implementation of mitigation measures to reduce construction noise impacts to less than significant levels. The short-term noise impacts resulting from project construction and stationary noise impacts associated with the operation of the shopping center would be similar and remain less than significant with mitigation incorporated.

The increase in project-related traffic for this scenario would result in an incremental increase in traffic noise which increases the overall mobile source noise impact. Parking lot noise, mechanical ventilation noise, and noise from the loading docks would still occur under this alternative. In addition, the uses envisioned under the Existing General Plan would increase the number (i.e., more commercial buildings) and extent of noise sources but would still have noise approaching levels below significant levels. Therefore, project-related traffic noise would not be perceptible and therefore is considered a less than significant impact.

- (c) **Reduced Intensity Alternative** – Similar to the Proposed Project, the Reduced Intensity Alternative would have short-term construction noise impacts that would be mitigated to less than significant levels. Because the alternative is smaller than the Proposed Project it would generate less traffic and thereby less traffic-related noise. However, like the Proposed Project, noise impacts of this alternative would be less than significant.

Due to its reduced development footprint, noise impacts on sensitive receptors would be greatly reduced under the less intensive modified plan. If Buildings 5 and 6 are not constructed, the nearest sensitive receptors are 1,515 feet from the nearest warehouse. However, mitigation will still be required to further reduce construction noise impacts. Similar to the Proposed Project, operational noise impacts would be less than significant under this alternative and would still generate traffic onto surrounding streets, with a resulting increase in noise levels.

- (d) **Summary** – Impacts of the Reduced Intensity Alternative, including the less intensive modified plan, are substantially reduced compared to the Proposed Project, however construction noise impacts of all three are still less than significant with mitigation.

4.14 Population and Housing

- (a) **Proposed Project** – The proposed project would generate up to 1,532 job opportunities. The new employment opportunities resulting from development of the proposed warehouse uses would improve the City's current jobs-to-housing ratio by providing jobs to local residents. As the jobs would likely be filled by local residents the Proposed Project will not significantly increase the City's population. In addition, the Proposed Project will not displace housing or people.
- (b) **Existing Zoning** – Development under existing zoning designations would result in the development of business park uses making it difficult to conclude if or how many persons from outside of the area may be required to relocate to Moreno Valley to fill positions in the business park. Therefore, it is not possible to determine if this scenario would result in a

population increase in the City. However, the development of single-family and multi-family residential units would result in a direct increase to the existing population, consistent with the City's Housing Element. Potential impacts of this development scenario related to population and housing would be less than significant.

- (c) **Reduced Intensity Alternative** – The Reduced Intensity Alternative would generate 25% fewer jobs compared to the Proposed Project. The Reduced Intensity Alternative would be located on the same site as the Proposed Project. Therefore, the alternative would not displace housing or people.

The less intensive modified plan would generate 32% fewer jobs compared to the Proposed Project (based on the square footage reduction). The less intensive modified plan would not displace housing or people. In addition, the southeast quarter of the site would maintain its General Plan Land Use Designations and Zoning (R2 and R5), which would allow the development of future residential housing. Based on this, it is expected this alternative would have less than significant impacts on population and housing.

- (d) **Summary** – Potential impacts of the Reduced Intensity Alternative, including the less intensive modified plan, are reduced compared to the Proposed Project; however, impacts of all three are still less than significant.

4.15 Public Services

- (a) **Proposed Project** – The Project would be required to pay development impact fees for schools, police services, and fire services. The payment of development impact fees would offset any impacts to these public services that may result from the development of the Proposed Project.
- (b) **Existing Zoning** – Demands on schools, parks, other public facilities, law enforcement, and fire protection services would be greater in magnitude than what was identified for the Proposed Project, however, payment of City and School DIFs would help offset the increased demands for service, so impacts would be reduced to less than significant levels.
- (c) **Reduced Intensity Alternative** – Compared to the Proposed Project, the Reduced Intensity Alternative would result in a reduction of approximately 25 percent of proposed warehouse uses. However, the magnitude of impacts on public services would be similar to the Proposed Project (i.e., no residential development). The Reduced Intensity Alternative would be required to pay development impacts to reduce potential impacts to less than significant levels.

Compared to the Proposed Project, the less intensive modified plan would generate approximately 32% less need for public services due to having fewer proposed warehouse uses. However, like the Proposed Project and Reduced Intensity Alternative, the less intensive modified plan would have a similar magnitude or overall of impact on public services (i.e., no residential uses). The project would be required to pay development impact fees and impacts would be less than significant.

- (d) **Summary** – Impacts of the Reduced Intensity Alternative, including the less intensive modified plan, are reduced compared to the Proposed Project, however all three would have similar impacts to public services and would be required to pay development impact fees to reduce potential impacts to less than significant levels.

4.16 Recreation

- (a) **Proposed Project** – The Proposed Project does not contain any residential components. Therefore, there would be no significant increase in existing population and no increase in demand for park and recreation facilities. No impact would occur.

(b) **Existing Zoning** – The increase in population from new housing would increase the demand for park and recreation facilities, therefore future development would be required to dedicate or provide in-lieu fees for approximately 7.24 acres of land for park uses (based on anticipated project population). The dedication of land and/or the payment of parkland fees would reduce potential recreation impacts to less than significant levels.

(c) **Reduced Intensity Alternative** – The Reduced Intensity Alternative would not result in any increase in the City’s population (i.e., no additional housing). Therefore, this alternative would have no impacts related to parks and recreation facilities, similar to the Proposed Project.

The less intensive modified plan would have little or no impact to parks or recreation similar to the Reduced Intensity Alternative and the Proposed Project because none of them propose any residential units which would generate additional population. Therefore, no significant impact to parks and recreation facilities would occur.

(d) **Summary** – Impacts of the Reduced Intensity Alternative, including the less intensive modified plan, are reduced compared to the Proposed Project, however, none of these scenarios propose residential uses, therefore, all three would have no impact on parks and recreation facilities.

4.17 Traffic

(a) **Proposed Project** – The Proposed Project would cause potentially significant traffic impacts on roadway segments and intersections through deficient LOS levels (4,408 daily trips and 7,527 PCE trips). The estimated trip generation for the Proposed Project, Existing General Plan Alternative, and the less intensive modified plan are compared in Table 4.C below. Even with mitigation some traffic impacts would be significant and unavoidable due to certain roadway improvements not being under the jurisdiction of the City and could not be guaranteed to be in place when development would be operational.

(b) **Existing Zoning** – Development under existing zoning designations would result in an almost three-fold increase in average daily traffic (ADT) and a 55% increase in passenger car equivalents (PCE) trips compared to the Proposed Project (see Table 4.C). This additional traffic would substantially increase traffic impacts on nearby roads and intersections, resulting in much worse levels of service (LOS) even with mitigation. Note that the use of PCE accounts for increased traffic impacts due to the larger size of trucks on roadways.

The addition of traffic volumes associated with this scenario could result in deficient LOS levels at one or more of the intersections in the project vicinity during the lifetime of the development. While significant traffic impacts may occur under this alternative, these impacts could be mitigated by payment of DIF and (County) TUMF fees as appropriate. Despite the implementation of appropriate mitigation measures, certain roadway improvements would not be under the jurisdiction of the City and cannot be guaranteed to be in place when development under existing zoning designations would occur. Therefore, traffic-related impacts would remain significant and unavoidable.

(c) **Reduced Intensity Alternative** – This alternative would reduce traffic trip generation and traffic impacts on local roadways by approximately 25% by eliminating a quarter of the total warehouse development in the southeast portion of the site compared to the Proposed Project. However, even with this reduction in traffic trip generation, impacts are still significant even with mitigation since some roadways that need improvements are not under the control of the City.

The less intensive modified plan would have slightly less traffic trip generation than the Reduced Intensity Alternative because it would have slightly less square footage. The estimated trip generation for the Proposed Project, Existing General Plan Alternative, and the less intensive modified plan are compared in the table below (see Table 4.C), which shows the less intensive modified plan would generate 30% less total traffic (PCE) compared to the

Proposed Project. It is important to note that, while this modified plan does not propose residential development at this time, it would leave approximately 38 acres in the southeastern portion of the project property vacant for now. At some point in the future, it is anticipated this 38 acres would be developed into 126 housing units under the R-5 and R-2 zones as outlined in the previous Table 4.A, based on 5 units per acre for the R-5 property and 2 units per acre for the R-2 land. Even with a substantial reduction in trip generation, traffic impacts of this modified plan are considered to be significant even with mitigation. In addition, like the Proposed Project, including the Reduced Intensity Alternative, certain roadway improvements are not under the jurisdiction of the City and could not be guaranteed to be in place when development would be operational.

- (d) **Summary** – Impacts of the Reduced Intensity Alternative, including the less intensive modified plan, are substantially reduced compared to the Proposed Project (i.e., almost 30% less), however impacts of all three are still significant and unavoidable.

It should be noted that when residential uses are eventually added to the vacant land of the less intensive modified plan (southeast corner of the property), overall traffic impacts of these land uses would be 13.8% less than those anticipated under the Proposed Project, as shown in Table 4.C.

Table 4.C: Comparison of Average Daily Vehicle Trips

Scenario	AM Peak	PM Peak	Daily Trips (ADT) ¹	Trip Total (PCE) ²	% PCE to Project
Proposed Project					
Truck Trips	133	157	1,989	5,107	
Car Trips	176	199	2,420	2,420	--
Total	309	356	4,409	7,527	
Existing Zoning³					
Truck Trips	205	185	1,129	2,845	
Car Trips	758	793	8,848	8,848	+
Total	1,894	1,860	12,188	11,693	55.3%
Reduced Intensity Alternative (from EIR)					
Truck Trips	100	118	1,491	3,830	-25.0%
Car Trips	132	149	1,815	1,815	
Total	232	267	3,306	5,645	
Less Intensive Modified Plan-Industrial Only⁴					
Truck Trips	91	107	1,337	3,428	-29.7%
Car Trips	139	156	1,864	1,864	
Total	230	263	3,201	5,292	
Less Intensive Modified Plan-Industrial + (Future) Residential⁴					
Truck Trips	91	107	1,337	3,428	-13.8%
Car Trips	234	282	3,064	3,064	
Total	325	389	4,401	6,492	

Source: LSA Associates, September 2014 based on land uses and ITE rates shown in Table 4.A (see FEIR Appendix F).

¹ Average Daily Trips (ADT)

² Passenger Car Equivalents (PCE)

³ Assumes 30 percent floor area ratio or site coverage for business park uses (i.e., total building square footage divided by the total gross site area).

⁴ **IMPORTANT NOTE:** ProLogis is proposing development of only industrial uses at this time – the industrial plus residential scenario is provided for information purposes only to show traffic generation under ultimate buildout conditions at some point in the future if the residential uses are developed on the vacant portion of the project property

4.18 Utilities and Service Systems

- (a) **Proposed Project** – The project would connect to existing utility infrastructure, require installation of water supply infrastructure, and would generate solid waste. However, the project would be required to adhere to existing requirements identified by the City and EMWD, obtain verification from the water purveyor that water is available to serve the development, and adhere to provisions of the solid waste provider of the site. These requirements would result in the project having less than significant impacts related to Utilities and Services.
- (b) **Existing Zoning** – Development under the existing zoning designations would connect to existing utility infrastructure subject to the terms and conditions of the City and EMWD. This scenario would generate approximately 226,718 gallons of wastewater per day, which is a fivefold increase over what the proposed project would generate, and would increase the wastewater treatment demand. However, adherence to existing requirements identified by the City and EMWD would result in impacts remaining at a less than significant level.

The development of the business park and various residential uses would require the installation of water supply infrastructure to serve the project site and would consume approximately 277,660 gallons of water per day, which is over three times more than what would be consumed by the Proposed Project. However, development under this scenario would be required to obtain verification from the water purveyor (EMWD) that water is available to serve the development. In the event that the amount of water required for this alternative is available, impacts associated with this issue would be less than significant. However, in the event that water is not available for the Existing General Plan, a significant impact associated with this issue would occur.

This development scenario would generate 5,158 tons of solid waste per year, which is over twice what the Proposed Project would be expected to generate. Therefore, demands on solid waste services and landfill capacity would be increased in magnitude. However, development under this scenario would also be required to adhere to the provisions of the solid waste provider that would service the project site. Even with the increase, solid waste impacts under this alternative would be expected to remain at less than significant levels.

- (c) **Reduced Intensity Alternative** – The Reduced Intensity Alternative reduces total development compared to the Proposed Project by 25%, therefore it is reasonable to conclude that demands on utilities services would also be reduced by 25%. The Reduced Intensity Alternative, like the Proposed Project, would be required to adhere to existing requirements identified by the City and EMWD, obtain verification from the water purveyor that water is available to serve the development, and adhere to provisions of the solid waste provider of the site. Like the Proposed Project, the Reduced Intensity Alternative would have less than significant impacts related to utilities.

The less intensive modified plan reduces proposed development by 32%, compared to the Proposed Project (i.e., Buildings 5 and 6 would not be constructed). Therefore it is reasonable to conclude that demands on utilities services would also be reduced by approximately 32%. The less intensive modified plan, like the Proposed Project and Reduced Intensity Alternative, would be required to adhere to existing requirements identified by the City and EMWD, obtain verification from the water purveyor that water is available to serve the development, and adhere to provisions of the solid waste provider of the site. Like the Proposed Project and the Reduced Intensity Alternative, the less intensive modified plan is expected to have less than significant impacts related to utilities.

- (d) **Summary** – Impacts of the Reduced Intensity Alternative, including the less intensive modified plan, are substantially reduced compared to the Proposed Project, however impacts of all three are less than significant.

4.19 Cumulative Impacts

- (a) **Proposed Project** – The Proposed Project would have significant cumulative impacts related to permanent conversion of farmland, long-term operational air pollutant emissions of CO, ROC, NOx, PM10, and PM2.5, and increased traffic operations on local roadways and at local intersections. There are no feasible mitigation measures to reduce impacts related to the conversion of Prime Farmland, reduce long-term air pollutant operational emissions and mitigate increased traffic; therefore cumulative impacts would remain significant and unavoidable for these topics.
- (b) **Existing Zoning** – Development under the existing zoning designations would contribute toward the permanent conversion of farmland, long-term operational air pollutant emissions, and increased traffic operations on local roadways and at local intersections. In addition, there are no mitigation measures that would reduce long-term air quality operational impacts to below the SCAQMD threshold standard and no mitigation measures that would reduce impacts associated with increased traffic in the area. Therefore, cumulative impacts associated with long-term air quality and long-term traffic would remain significant and unavoidable. This scenario would also require the development of the project site. Since there is no feasible mitigation that would reduce the cumulative impacts associated with the conversion of Prime Farmland, cumulative impacts associated with farmland conversion would remain significant and unavoidable.
- (c) **Reduced Intensity Alternative** – Similar to the Proposed Project, the Reduced Intensity Alternative would have significant cumulative impacts related to permanent conversion of farmland, long-term operational air pollutant emissions, and increased traffic operations on local roadways and at local intersections. Although cumulative impacts would have a 25% reduction, there are no feasible mitigation measures to reduce impacts related to the conversion of Prime Farmland, reduce long-term air pollutant operational emissions and mitigate increased traffic; therefore cumulative impacts would remain significant and unavoidable.

Similar to the Proposed Project and the Reduced Intensity Alternative, the less intensive modified plan would have significant cumulative impacts related to permanent conversion of farmland, long-term operational air pollutant emissions, and increased traffic operations on local roadways and at local intersections. Although cumulative impacts would have a 32% reduction in planned development compared to the Proposed Project, there are no feasible mitigation measures to reduce impacts related to the conversion of Prime Farmland, reduce long-term air pollutant operational emissions and mitigate increased traffic; therefore cumulative impacts would remain significant and unavoidable.

- (d) **Summary** – Cumulative impacts of the Reduced Intensity Alternative, including the less intensive modified plan, are substantially reduced compared to the Proposed Project, however, all three development scenarios contribute to some cumulative impacts.

SUMMARY

The Proposed Project has significant and unavoidable impacts related to aesthetics, agricultural resources, air quality, land use, and transportation.

The Existing Zoning would also have significant and unavoidable impacts related to agricultural resources, air quality, and transportation, but would reduce aesthetic and land use impacts to less than significant levels compared to the Proposed Project, as long as future development was consistent with the City's development standards. It is also possible the Existing Zoning would substantially increase impacts on climate change, public services, recreation, and utilities, but it is expected these impacts could be reduced to less than significant levels with mitigation.

The Reduced Intensity Alternative under the EIR, including the currently proposed less intensive modified plan, would still have significant impacts related to aesthetics, air quality, land use, and transportation. Due to the reduced size of the less intensive modified plan (32% reduction), these impacts would be substantially reduced in magnitude compared to the Proposed Project. In addition, the less intensive modified plan would reduce impacts to agricultural resources to less than significant levels compared to the Proposed Project, at least until the southeastern portion of the site was developed with residential uses which are expected to be consistent with existing General Plan and zoning designations.

The following Table 4.D compares environmental impacts associated with the Proposed Project, Existing General Plan Alternative, and the Less Intense Modified Plan.

Table 4.D: Comparison of Impacts of the Proposed Project, Existing Zoning, and Reduced Intensity Alternative (including the Less Intensive Modified Plan)

Environmental Issue	Proposed Project	Existing Zoning	Reduced Intensity Alternative and Less Intensive Modified Plan
Aesthetics	SIG	←LTS	← SIG
Agricultural Resources	SIG	SIG	←LTS
Air Quality	SIG	→ SIG	← SIG
Biological Resources	LTS/mit	LTS/mit	LTS/mit
Cultural Resources	LTS/mit	LTS/mit	LTS/mit
Forest Resources	NI	NI	NI
Geology and Soils	LTS	LTS	LTS
Global Climate Change	LTS/mit	→LTS/mit	←LTS/mit
Hazards and Hazardous Materials	LTS/mit	LTS/mit	LTS/mit
Hydrology and Water Quality	LTS/mit	LTS/mit	LTS/mit
Land Use and Planning	SIG	←LTS	← SIG
Mineral Resources	NI	NI	NI
Noise	LTS/mit	LTS/mit	←LTS/mit
Population and Housing	LTS	→LTS	←LTS
Public Services	LTS	→LTS	←LTS
Recreation and Parks	LTS	→LTS/mit	=
Transportation and Traffic	SIG	→ SIG	← SIG
Utilities and Service Systems	LTS	→LTS	←LTS

Impact Abbreviations

- NI: No Impact
- LTS: Less than Significant Impact
- LTS/mit: Less than Significant Impact with Mitigation
- SIG: Significant Impact with or without Mitigation

Project Alternatives

- Compared with the proposed project, the level of the impact is increased.
- ← Compared with the proposed project, the level of the impact is reduced.
- + Compared with the proposed project, a new impact has been identified.
- Compared with the proposed project, an impact has been eliminated.
- ←SIG Compared with the proposed project, the level of the impact is reduced, yet still significant.

5. MITIGATION MONITORING AND REPORTING PROGRAM

5.1 INTRODUCTION

This Mitigation Monitoring and Reporting Program has been prepared for use in implementing mitigation for the:

ProLogis Eucalyptus Industrial Park

The program has been prepared in compliance with State law and the Environmental Impact Report (EIR) (State Clearinghouse No. 2008021002) prepared for the project by the City of Moreno Valley.

The California Environmental Quality Act (CEQA) requires adoption of a reporting or monitoring program for those measures placed on a project to mitigate or avoid adverse effects on the environment (Public Resource Code Section 21081.6). The law states that the reporting or monitoring program shall be designed to ensure compliance during project implementation.

The monitoring program contains the following elements:

- 1) The mitigation measures are recorded with the action and procedure necessary to ensure compliance. In some instances, one action may be used to verify implementation of several mitigation measures.
- 2) A procedure for compliance and verification has been outlined for each action necessary. This procedure designates who will take action, what action will be taken and when, and to whom and when compliance will be reported.
- 3) The program has been designed to be flexible. As monitoring progresses, changes to compliance procedures may be necessary based upon recommendations by those responsible for the program. As changes are made, new monitoring compliance procedures and records will be developed and incorporated into the program.

This Mitigation Monitoring and Reporting Program includes mitigation identified in the Final EIR.

5.2 MITIGATION MONITORING AND RESPONSIBILITIES

As the Lead Agency, the City of Moreno Valley is responsible for ensuring full compliance with the mitigation measures adopted for the proposed project. The City will monitor and report on all mitigation activities. Mitigation measures will be implemented at different stages of development throughout the project area. In this regard, the responsibilities for implementation have been assigned to the Applicant, Contractor, or a combination thereof. If during the course of project implementation, any of the mitigation measures identified herein cannot be successfully implemented, the City shall be immediately informed, and the City will then inform any affected responsible agencies. The City, in conjunction with any affected responsible agencies, will then determine if modification to the project is required and/or whether alternative mitigation is appropriate.

5.3 MITIGATION MONITORING AND REPORTING PROGRAM CHECKLIST

Project File Name: Eucalyptus Industrial Park

Applicant:

Prologis

Date:

September 26, 2014

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
4.3 AIR QUALITY						
4.3.6.2A. Prior to the issuance of a grading permit, the project developer shall require by contract specifications that contractors shall place construction equipment staging areas at least 200 feet away from sensitive receptors. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the City.	City of Moreno Valley Engineering and Building and Safety Planning Division	Once prior to Grading and once during grading and construction operations.	Prior to Issuance of Grading Permit	Review of construction documents and on-site inspection		Withhold Grading Permit or Issuance of a Stop Work Order
4.3.6.2B Prior to the issuance of a grading permit, the project developer shall require by contract specifications that contractors shall utilize power sources (e.g., power poles) or clean-fuel (e.g., fuel other than diesel or gasoline) generators where feasible. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the City.	City of Moreno Valley Engineering and Building and Safety Planning Division	Once prior to Grading	Prior to Issuance of Grading Permit	Review of construction documents and on-site inspection		Withhold Grading Permit or Issuance of a Stop Work Order
4.3.6.2C Prior to the issuance of a grading permit, the project developer shall require by contract specifications that contractors shall utilize California Air Resources Board (CARB) Tier III Certified equipment or better during the rough/mass grading phase for the following pieces of equipment: rubber-tired dozers and scrapers. Contract specifications shall be included in the	City of Moreno Valley Engineering and Building and Safety Planning Division	Once prior to Grading	Prior to Issuance of Grading Permit	Review of construction documents and on-site inspection		Withhold Grading Permit

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Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non- Compliance
<p>proposed project construction documents, which shall be reviewed by the City.</p> <p>Project start to December 31, 2014: All off-road diesel-powered construction equipment greater than 50 horsepower shall meet Tier 3 off-road emission standards. In addition, all construction equipment shall be outfitted with Best Available Control Technology (BACT) devices certified by CARB. Any emission control devices used by the contractor shall achieve emission reductions that are no less than what would be achieved by a Level 3 diesel emission control strategy for a similarly sized engine as defined by CARB regulations.</p> <p>Post January 1, 2015: All off-road diesel-powered construction equipment greater than 50 horsepower shall meet Tier 4 emission standards, where available. In addition, all construction equipment shall be outfitted with Best Available Control Technology (BACT) devices certified by CARB. Any emission control devices used by the contractor shall achieve emission reductions that are no less than what would be achieved by a Level 3 diesel emission control strategy for a similarly sized engine as defined by CARB regulations.</p> <p>A copy of each unit's certified tier specifications, BACT documentation, and CARB or SCAQMD operating permit shall be provided at the time of mobilization of each applicable unit of equipment.</p>						

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non- Compliance
4.3.6.2D All clearing, grading, earthmoving, or excavation activities shall cease when winds (as instantaneous gusts) exceed 25 mph per SCAQMD guidelines in order to limit fugitive dust emissions. On-site truck idling shall be prohibited in excess of five minutes.	City of Moreno Valley Engineering and Building and Safety Planning Division	Ongoing throughout construction	During grading	Review of construction documents and on- site inspection		Issuance of a Stop Work Order
4.3.6.2E The contractor shall ensure that all disturbed unpaved roads and disturbed areas within the project are watered at least three times daily during dry weather. Watering, with complete coverage of disturbed areas, shall occur at least three times a day, preferably in the mid-morning, afternoon, and after work is done for the day.	City of Moreno Valley Engineering and Building and Safety Planning Division	Ongoing throughout construction	During Construction	On-site inspection		Issuance of a Stop Work Order
4.3.6.2F The contractor shall ensure that traffic speeds on unpaved roads and project site areas are reduced to 15 miles per hour or less to reduce PM ₁₀ and PM _{2.5} fugitive dust haul road emissions. Speed limit signs (15 mph maximum) shall be posted at entry points to the project site, and along any unpaved roads providing access to or within the project site and/or any unpaved designated on-site travel routes.	City of Moreno Valley Engineering and Building and Safety Planning Division	Ongoing throughout construction	During Construction	On-site inspection		Issuance of a Stop Work Order
4.3.6.2G Groundcover shall be replaced, and/or non-toxic soil stabilizers shall be applied (according to manufacturers' specifications) to any inactive construction areas (previously graded areas inactive for ten days or more).	City of Moreno Valley Engineering and Building and Safety Planning Division	Ongoing throughout construction	During Construction	On-site inspection		Issuance of a Stop Work Order

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Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
4.3.6.2H The contractor shall minimize pollutant emissions by maintaining equipment engines in good condition and in proper tune according to manufacturer's specifications and by not allowing construction equipment to be left idling for more than five minutes (per California law).	City of Moreno Valley Engineering and Building and Safety	Ongoing throughout construction	During Construction	On-site inspection		Issuance of a Stop Work Order
4.3.6.2I The contractor shall ensure use of low-sulfur diesel fuel in construction equipment as required by the California Air Resources Board (CARB) (diesel fuel with sulfur content of 15 ppm by weight or less).	City of Moreno Valley Engineering and Building and Safety	Ongoing throughout construction	During Construction	On-site inspection		Issuance of a Stop Work Order
4.3.6.2J. Grading plans, construction specifications and bid documents shall also include the following requirements: <ul style="list-style-type: none"> Off-road construction equipment shall utilize alternative fuels where feasible e.g., biodiesel fuel (a minimum of B20), natural gas (CNG), liquefied natural gas (LNG), propane, except for equipment where use of such fuels would void the equipment warranty; Gravel pads shall be provided at all access points to prevent tracking of mud onto public roads; Install and maintain trackout control devices at all access points where paved and unpaved access or travel routes intersect; The contractor or builder shall 	City of Moreno Valley Engineering and Building and Safety Planning Division	Review plans, specifications, and bid documents prior to grading; conduct site inspections during construction operations.	Prior to Issuance of Grading Permit	Review of construction documents and on-site inspection		Withhold Grading Permit or Issuance of a Stop Work Order

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Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non- Compliance
<p>designate a person or person(s) to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust off site;</p> <ul style="list-style-type: none"> • The contractor or builder shall post a publicly visible sign with the telephone number and person to contact regarding dust complaints. The contact person shall take corrective action within 24 hours; • High-pressure injectors shall be provided on diesel construction equipment if available; • Engine size of construction equipment shall be limited to the minimum practical size; • Substitute gasoline-powered for diesel powered construction equipment where gasoline powered equipment is available; • Use electric construction equipment where it is practical to use such equipment; • Install catalytic converters on gasoline-powered equipment where this type of equipment is available; • Ride-sharing program for the construction crew shall be supported by contractor(s) via incentives or other inducement; • Documentation shall be provided to the City of Moreno Valley indicating 						

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
<p>that construction workers have been encouraged to carpool or otherwise reduce VMT to the greatest extent practical, including providing information on available park and ride programs;</p> <ul style="list-style-type: none"> Lunch vendor services shall be allowed on site during construction to minimize the need for off-site vehicle trips; and All forklifts used during construction and in subsequent operation of the project shall be electric or natural gas powered. 						
<p>4.3.6.2K. Throughout project construction, a construction relations officer/community liaison, appointed by the Applicant, shall be retained on site. In coordination and cooperation with the City, the construction relations officer/community liaison shall respond to any concerns related to PM₁₀ (fugitive dust) generation or other construction-related air quality issues within 24 hours.</p>	City of Moreno Valley Engineering and Building and Safety	Ongoing throughout construction	During Construction	On-site inspection		Issuance of a Stop Work Order
<p>4.3.6.2L. All project entrances shall be posted with signs which state:</p> <ul style="list-style-type: none"> Truck drivers shall turn off engines when not in use; Diesel delivery trucks servicing the project shall not idle for more than three (3) minutes; and Telephone numbers of the building facilities manager and CARB, to 	City of Moreno Valley Engineering and Building and Safety	Ongoing throughout construction	During Construction	On-site inspection		Issuance of a Stop Work Order

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Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non- Compliance
report violations. These measures shall be enforced by the on-site facilities manager (or equivalent).						
4.3.6.2M. During project grading and construction, the various project contractors shall adhere to the control measures listed in Tables 1.G and 1.H (attached to the MMRP).	City of Moreno Valley Engineering and Building and Safety	Throughout construction	During Construction	On-site inspection		Issuance of a Stop Work Order
4.3.6.3A Prior to the issuance of grading permits, the project applicant shall require by contract specifications that all trucks hauling dirt, sand, soil, or other loose materials are to be covered or shall maintain at least 2 feet of freeboard in accordance with the requirements of California Vehicle Code (CVC) Section 23114 (freeboard means vertical space between the top of the load and the top of the trailer).	City of Moreno Valley Engineering and Building and Safety	Throughout construction	During Construction	On-site inspection		Issuance of a Stop Work Order
4.3.6.3B. Prior to the issuance of grading permits, the project applicant shall provide evidence to the City that construction access roads shall be paved at least 100 feet onto the site from the main road.	City of Moreno Valley Engineering and Building and Safety	Throughout construction	Prior to issuance of Grading Permits	On-site inspection		Issuance of a Stop Work Order
4.3.6.3C. Prior to the issuance of grading permits, the project applicant shall require by contract specifications that all streets within the construction site shall be swept once per day if visible soil materials are carried to adjacent streets.	City of Moreno Valley Engineering and Building and Safety Planning Division	One time Review and Approval of Grading Plans Throughout construction	Prior to issuance of Grading Permits During Construction	Review and Approval of Grading Plans On-site inspection		Withhold Grading Permit Issuance of a Stop Work Order

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
<p>4.3.6.4A. The project applicant shall use “Low-Volatile Organic Compounds” paints, coatings, and solvents with a VOC content lower than required under Rule 1113 (not to exceed 150 grams/liter; 1.25 pounds/gallon). High Pressure Low Volume (HPLV) applications of paints, coatings, and solvents shall be consistent with South Coast Air Quality Management District Rule 1113. Alternatively, the project applicant shall use materials that do not require painting or are pre-painted.</p>	<p>City of Moreno Valley Engineering and Building and Safety Planning Division</p>	<p>Throughout construction</p>	<p>During Construction</p>	<p>On-site inspection</p>		<p>Issuance of a Stop Work Order</p>
<p>4.3.6.5B. Prior to issuance of building permits, the project applicant shall provide evidence to the City that energy-efficient and low-emission methods and features of building construction shall be incorporated into the project design. These methods and features may include (but are not limited to) the following:</p> <ul style="list-style-type: none"> o Construction of buildings that exceed statewide energy requirements beyond Construction of buildings that exceed statewide energy requirements beyond 10 percent of that identified in Title 24, Part 6 Energy Efficiency Standards: o Use of low-emissions water heaters; o Use of central water-heating systems; o Use of energy-efficient appliances; o Use of increased insulation; o Use of automated controls for air 	<p>City of Moreno Valley Engineering and Building and Safety and Planning Division</p>	<p>Prior to building and during construction operations.</p>	<p>Prior to Issuance of Building Permit</p>	<p>Review of construction documents and on-site inspection</p>		<p>Withhold Grading Permit or Issuance of a Stop Work Order</p>

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conditioners; <ul style="list-style-type: none"> ○ Use of energy-efficient parking lot lighting; and ○ Use of lighting controls and energy-efficient lighting. • Utilize low-VOC interior and exterior coatings during project repainting. • Provide on-site improvements such as sidewalks or pedestrian walkways to promote pedestrian activity and reduce the number of vehicle trips. • Installation of skylights and energy-efficient lighting that exceeds California Title 24 standards where feasible, including electronic dimming ballasts and computer-controlled daylight sensors in the buildings. • Shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and building shall be planted at the proposed project site. These strategies will minimize the heat island effect and thereby reduce the amount of air conditioning required. • Strategies to be considered include fans to assist natural ventilation, centralized water and space conditioning systems, high efficiency individual heating and cooling units, and automatic setback thermostats. • Reduction of energy demand associated with potable water conveyance through the following 						

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methods: <ul style="list-style-type: none"> ○ Incorporating drought-tolerant plants into the landscaping palette; and ○ Use of water-efficient irrigation techniques. • Energy-efficient low-pressure sodium parking lot lights or equivalent as determined by the City shall be used; • Buildings shall be oriented north-south where feasible; • Implement an on-site circulation plan in parking lots to reduce vehicle queuing; • Develop a trip reduction plan to achieve 1.5 average vehicle ridership (AVR) for businesses with fewer than 250 employees or multi-tenant worksites; • Include bicycle parking facilities such as bicycle lockers and racks; • Include showers for bicycling employees use; and • Construct on-site pedestrian facility improvements such as building access that is physically separated from street and parking lot traffic and walk paths. 						
4.3.6.6A Prior to issuance of the first building permit, building and site plan designs shall ensure that the project's energy efficiencies surpass applicable 2008 California Title 24, Part 6 Energy Efficiency Standards by a minimum of 10 percent until January 1, 2014. For building permits issued after that date,	City of Moreno Valley Building and Safety Planning Division	Prior to Construction (once)	Prior to Issuance of Building Permits	Review of building plans and on-site inspection		Withhold Building Permits

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<p>new state energy standards require a 20 percent reduction from 2008 Title 24, Part 6 Energy Efficiency Standards. Verification of increased energy efficiencies shall be documented in Title 24 Compliance Reports provided by the Applicant, and reviewed and approved by the City. The following design features shall be used to fulfill this requirement:</p> <ul style="list-style-type: none"> • Buildings shall exceed California Title 24 Energy Efficiency performance standards for water heating and space heating and cooling, as deemed acceptable by the City. • Increase in insulation such that heat transfer and thermal bridging is minimized. • Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption. • Incorporate dual-paned or other energy efficient windows. • Incorporate energy efficient space heating and cooling equipment. • Interior and exterior energy efficient lighting which exceeds the California Title 24 Energy Efficiency performance standards shall be installed, as deemed acceptable by the City. Automatic devices to turn off lights when they are not needed shall be implemented. 						

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<ul style="list-style-type: none"> • To the extent that they are compatible with landscaping guidelines established by the City, shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and buildings shall be planted at the project site. • Paint and surface color palette for the project shall emphasize light and off-white colors which reflect heat away from the buildings. • All buildings shall be designed to accommodate renewable energy sources, such as photovoltaic solar electricity systems, appropriate to their architectural design. • To reduce energy demand associated with potable water conveyance, the project shall implement the following: <ul style="list-style-type: none"> ○ Landscaping palette emphasizing drought-tolerant plants; ○ Use of water-efficient irrigation techniques; and, ○ U.S. EPA Certified WaterSense labeled for equivalent faucets, high-efficiency toilets (HETs), and water-conserving shower heads. • The project shall provide secure, weather-protected, on-site bicycle 						

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<p>storage/parking.</p> <ul style="list-style-type: none"> • The project shall provide on-site showers (one for males and one for females). Lockers for employees shall be provided. • The project will establish a Transportation Management Association (TMA). The TMA will coordinate with other TMAs within the City to encourage and coordinate carpooling among building occupants. The TMA will advertise its services to building occupants, and offer transit and/or other incentives to reduce greenhouse gas (GHG) emissions. A plan will be submitted by the TMA to the City within two months of project completion that outlines the measures implemented by the TMA, as well as contact information. • The project shall provide preferential parking for carpools and vanpools. Locations and configurations of proposed preferential parking for carpools and vanpools are subject to review and approval by the City. Prior to final site plan approval, preferential parking for carpools and vanpools shall be delineated on the project site plan. • The project shall provide at least two electric vehicle charging stations. Locations and configurations of proposed charging stations are 						

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<p>subject to review and approval by the City. Prior to issuance of the first building permit, stub outs for charging stations shall be indicated on the project building plan.</p> <ul style="list-style-type: none"> • Lease/purchase documents shall identify that tenants are encouraged to promote the following: <ul style="list-style-type: none"> ○ Implementation of compressed workweek schedules. ○ SmartWay partnership; ○ Achievement of at least 20 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of consolidated trips carried by SmartWay carriers until it reaches a minimum of 90 percent of all long-haul trips carried by SmartWay 1.0 or greater carriers. ○ Achievement of at least 15 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of long-haul trips carried by SmartWay carriers until it reaches a minimum of 85 percent of all consolidator trips carried by SmartWay 1.0 or greater carriers. ○ Use of fleet vehicles conforming 						

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to 2010 air quality standards or better. <ul style="list-style-type: none"> ○ Installation of catalytic converters on gasoline-powered equipment. ○ Inclusion of electric powered and/or compressed natural gas fueled trucks and/or vehicles in fleets. ○ Establishment and use of carpool/vanpool programs, complemented by parking fees for single-occupancy vehicles. ○ Provision of preferential parking for EV and CNG vehicles. ○ Use of electrical equipment (instead of gasoline-powered equipment) for landscape maintenance. ○ Use of electric (instead of diesel or gasoline-powered) yard trucks. ○ Use of SmartWay 1.25 rated trucks. ○ Each facility operator shall provide regular sweeping of onsite parking and drive areas. ○ Each facility operator shall maintain a log of all trucks entering the facility to ensure that, on average, the daily truck fleet meets the quantities and emissions standards listed in the 						

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<p>Draft EIR. This log shall be available for inspection by City staff at any time.</p> <ul style="list-style-type: none"> Each facility operator shall prohibit all vehicles from idling in excess of five minutes in all onsite areas. Each facility operator shall ensure that onsite staff in charge of keeping the daily log and monitoring for excess idling will be trained and certified in diesel health effects and technologies, such as by requiring attendance at CARB-approved courses. Each facility operator upon occupancy that do not already operate 2007 and newer trucks shall in good faith apply for funding to replace or retrofit their trucks such as Carl Moyer, VIP, Prop 1B or similar funds. Should funds be awarded, the tenant shall be required to accept and use them. 						
4.4 BIOLOGICAL RESOURCES						
<p>4.4.6.1A. If tree removal or clearing and grubbing activities must take place during the general nesting season (February 1 through August 31), a nesting bird survey shall be conducted within seven (7) days prior to any vegetation disturbance activities. If passerine birds are found to be nesting or there is evidence of nesting behavior inside the impact area, an</p>	City of Moreno Valley Planning Division	Prior to grading and periodic site inspections during grading	Prior to Issuance of Grading Permit	Review of Evidence that a qualified biologist has been hired and the pre-construction survey has been completed.		Withhold Grading Permit

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exclusion buffer, to be determined by the appropriate agency (e.g. the City, County, and/or CDFG), shall be set in place around the nest where no vegetation disturbance will be permitted. For raptor species, such as hawks and owls, this buffer may be as large as 500 feet. A qualified biologist shall closely monitor nests until it is determined that they are no longer active, at which time construction activity in the vicinity of nests may continue.				Review of a report of the survey findings. Periodic site inspections during construction activities during the nesting season to ensure compliance.		
4.4.6.1B. Prior to site grading, a pre-construction survey shall be required for the burrowing owl to confirm the presence/absence of this species from the site. The survey shall be conducted by a qualified biologist within 30 days prior to ground disturbance, and in accordance with MSHCP survey requirements, to avoid direct take of burrowing owls. If burrowing owls are determined to occupy the project site or immediate vicinity, the City of Moreno Valley Planning Department shall be notified and avoidance measures as identified in Mitigation Measure 4.4.6.1C , shall be implemented. Implementation of avoidance measures shall be executed pursuant to the MSHCP, the California Fish and Game Code, and the MBTA, and according the Burrowing Owl Survey Protocol and Mitigation Guidelines (California Burrowing Owl Consortium 1993) and reviewed the City of Moreno Valley, the Riverside Conservation Authority, and/or	City of Moreno Valley Planning Division	Once prior to grading	Prior to Issuance of Grading Permit	Review of Evidence that a qualified biologist has been hired and the pre-construction survey has been completed. Review of a report of the survey findings.		Withhold Grading Permit

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by the CDFG.						
4.4.6.1C. As recommended in the BUOW Survey and Mitigation Guidelines prepared by the California BUOW Consortium, no disturbance to an occupied burrow shall occur within approximately 160 feet of an occupied burrow during the non-breeding season (September 1 through January 31), or within approximately 250 feet of an occupied burrow during the breeding season (February 1 through August 31). For unavoidable impacts, passive relocation of burrowing owls shall be implemented. Passive relocation shall be conducted by a qualified biologist in accordance with procedures set forth by the MSHCP and California Burrowing Owl Consortium. Passive relocation of occupied burrows supporting a breeding pair of burrowing owls shall be conducted outside of the breeding season pursuant to the California Fish and Game Code and the MBTA.	City of Moreno Valley Planning Division	Prior to grading	Prior to Issuance of Grading Permit	Provide evidence to the City that the passive relocation plan has been approved by CDFG and USFWS.		Withhold Grading Permit
4.4.6.2A. As outlined in the project's Determination of a Biologically Equivalent or Superior Preservation (DBESP) report, the project applicant shall compensate for the temporary and permanent impact on and loss of jurisdictional waters and streambeds by providing a minimum 2:1 off-site replacement of equivalent riverine/riparian habitat prior to project construction. Offsite restoration, enhancement, and/or land purchase mitigation for the drainage impacts will occur at an offsite location through one or	City of Moreno Valley Planning Division	As outlined in the approved DBESP	Prior to Issuance of Certificate of Occupancy	Demonstrate completion of DBESP implementation measures		Withhold Grading Permit

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more of the following: an USACE approved mitigation bank, through an in lieu fee mitigation program, and/or land purchase and conservation. DFG and USFWS will need to provide concurrence that this mitigation is equivalent or superior to that proposed for impact through their review and acceptance of the DBESP.						
4.4.6.2B. Riparian/riverine resources that are temporarily impacted by project construction shall be returned to their preconstruction contours and hydroseeded, as outlined in the DBESP.	City of Moreno Valley Planning Division	Once, prior to issuance of Certificate of Occupancy	Prior to Issuance of Certificate of Occupancy	Applicant to demonstrate compliance with DBESP		Withhold Certificate of Occupancy
4.4.6.3A. The project applicant shall obtain a Section 404 Nationwide or Individual Permit, as appropriate, from the USACE, a Section 401/Porter-Cologne Water Quality Certification from the RWQCB, and a Section 1602 Streambed Alteration Agreement from the CDFG. Offsite restoration, enhancement, and/or land purchase mitigation of jurisdictional drainage impacts will occur at an off-site location through one or more of the following: an USACE approved mitigation bank, through an in-lieu fee mitigation program, and/or land purchase and conservation.	City of Moreno Valley Planning Division	Once, prior to issuance of Certificate of Occupancy	Prior to Issuance of Certificate of Occupancy	Project applicant to submit to the City a copy of the USACE Section 404 Permit and the Section 1602 Streambed Alteration Agreement from the CDFG		Withhold Certificate of Occupancy
CULTURAL RESOURCES						
4.5.6.1A Prior to the issuance of a grading permit, the Project Applicant shall provide evidence to the City of Moreno Valley that a Cultural Resources Monitoring Agreement has been secured	City of Moreno Valley Planning Division	Prior to grading	Prior to Issuance of Grading Permit	Provide evidence to the City that a qualified archaeological monitor has been		Withhold Grading Permit

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for qualified Tribal representatives, and that a professional archaeological monitor meeting Secretary of Interior standards has been retained by the Applicant to conduct monitoring of all mass grading and trenching activities and has the authority to temporarily halt and redirect earthmoving activities in the event that suspected archaeological resources are unearthed during Project construction. The Project Archaeologist and Tribal representatives shall attend the pre-grading meeting with the City and contractors to explain and coordinate the requirements of the monitoring program.				retained to oversee all ground altering activities		
4.5.6.1B Prior to the issuance of a grading permit, the Applicant shall provide evidence to the City of Moreno Valley that appropriate Native American representative(s), Project Archaeologist, and the Tribal representative(s) shall be allowed to monitor and have received a minimum of 30 days advance notice of all mass grading and trenching activities. During grading and trenching operations, the Tribal representatives and the project archaeological monitor shall observe all mass grading and trenching activities per the Cultural Resources Monitoring Agreement. If the Tribal representatives suspect that an archaeological resource may have been unearthed, the archaeologist, in consultation with the tribal representative, shall immediately halt and redirect grading operations in a 100-foot radius around the find to allow identification and evaluation of the	City of Moreno Valley Planning Division	Prior to grading and throughout ground disturbing activities.	Prior to Issuance of Grading Permit	Provide evidence to the City that a qualified archaeological monitor has been retained to oversee all ground altering activities and that the Soboba, Morongo, and Pechanga Tribes have been notified as to when ground altering activities will occur on site. The archaeological monitor shall invite one or more Native American monitors to participate in the		Withhold Grading Permit and/or Issuance of a Stop Work Order

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suspected resource. In consultation with the appropriate Native American Tribe(s), the archaeological monitor shall evaluate the suspected resource and make a determination of significance pursuant to California Public Resources Code Section 21083.2.				monitoring program at the expense of the applicant.		
<p>4.5.6.1C If a significant archaeological resource(s) is discovered on the property, ground disturbing activities shall be suspended 100 feet around the resource(s). The archaeological monitor and representatives of the appropriate Native American Tribe(s), the Project Applicant, and the City Planning Division shall confer regarding mitigation of the discovered resource(s). A treatment plan and/or preservation plan shall be prepared and by the archaeological monitor and reviewed by representatives of the appropriate Native American Tribe(s), the Project Applicant, and the City Planning Division and implemented by the archaeologist to protect the identified archaeological resource(s) from damage and destruction. The landowner shall relinquish ownership of all archaeological artifacts that are of Native American origin found on the Project site to the culturally affiliated Native American tribe(s) for proper treatment and disposition. A final report containing the significance and treatment findings shall be prepared by the archaeologist and submitted to the City Planning Division, the appropriate Native American tribe(s), and the Eastern Information Center at the</p>	City of Moreno Valley Planning Division	Throughout ground disturbing activities.	On-site Inspection during construction	<p>If historic resources are found the archaeologist shall provide a recommendation to the City as to how to handle and evaluate the resources.</p> <p>If archaeological resources are found the archaeologist shall notify the applicant, City and local Native American representatives.</p> <p>A written disposition of the mitigation shall be provided to the City by the archaeologist.</p>		Issuance of a Stop Work Order

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University of California, Riverside. All cultural material, excluding sacred, ceremonial, grave goods and human remains, collected during the grading monitoring program and from any previous archaeological studies or excavations on the project site shall be curated, as determined by the treatment plan, according to the current professional repository standards and may include the Pechanga Bands curatorial facility.						
4.5.6.1D Prior to grading permit issuance, the City shall verify that the following note is included on the Grading Plan: "If any suspected archaeological resources are discovered during ground-disturbing activities and the archaeological monitor or Tribal representatives are not present, the construction supervisor is obligated to halt work in a 100-foot radius around the find and call the project archaeologist and the Tribal representatives to the site to assess the significance of the find."	City of Moreno Valley Planning Division	Once prior to issuing permit	Prior to Issuance of Grading Permit.	Verify that plans contain specified language		Withhold Grading Permit.
4.5.6.1E If human remains are encountered, California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the Riverside County Coroner has made the necessary findings as to origin. Further, pursuant to California Public Resources Code Section 5097.98(b), remains shall be left in place and free from disturbance until a final decision as to the treatment and disposition has been made by the Coroner. If the Riverside County Coroner	City of Moreno Valley Planning Division	Ongoing during ground disturbing activities.	On-site Inspection during construction if human remains are discovered.	The contractor and/or archaeologist shall contact the applicant and City if human remains are discovered.		Issuance of a Stop Work Order

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<p>determines the remains to be Native American, the California Native American Heritage Commission must be contacted within 24 hours. The Native American Heritage Commission must then immediately notify the “most likely descendant(s)” of receiving notification of the discovery. The most likely descendant(s) shall then make recommendations within 48 hours, and engage in consultations concerning the treatment of the remains as provided in Public Resources Code §5097.98.</p>						
<p>4.5.6.2A. Prior to the issuance of grading permits, the project applicant shall submit to and receive approval from the City, a Paleontological Resource Impact Mitigation Program (PRIMP). The PRIMP shall include the provision of a trained paleontological monitor during on-site soil disturbance activities. The monitoring for paleontological resources shall be conducted during the rough-grading phase of the project. In the event that paleontological resources are unearthed or discovered during excavation, Mitigation Measure 4.5.6.2C shall apply. Conversely, if no paleontological resources are unearthed or discovered on site during excavation, no additional action is required.</p>	<p>City of Moreno Valley Planning Division</p>	<p>Prior to grading and on-going during ground disturbing activities.</p>	<p>Prior to Issuance of Grading Permit</p>	<p>Provide evidence to the City that a qualified paleontologist has been retained, and that the paleontologist(s) shall prepare a PRIMP for City approval.</p> <p>A qualified paleontologist(s) shall be retained by the applicant to monitor during rough grading.</p> <p>A report of findings shall be submitted to the City after the finalization of construction.</p>		<p>Withhold Grading Permit/ Issuance of a Stop Work Order</p>

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<p>4.5.6.2B. The paleontological monitor shall be equipped to rapidly remove any large fossil specimens encountered during excavation. During monitoring, samples of soil shall be collected and processed to recover microvertebrate fossils. Processing shall include wet screen washing and microscopic examination of the residual materials to identify small vertebrate remains.</p>	City of Moreno Valley Planning Division	Prior to grading and on-going during ground disturbing activities.	Prior to Issuance of Grading Permit	<p>A qualified paleontologist(s) shall be retained by the applicant to monitor during rough grading.</p> <p>A report of findings shall be submitted to the City after the finalization of construction.</p>		Withhold Grading Permit/ Issuance of a Stop Work Order
<p>4.5.6.2C. If paleontological resources are unearthed or discovered during excavation of the project site, the monitoring for paleontological resources shall be conducted on a full-time basis for the duration of the rough-grading of the project site. The following recovery processes shall apply:</p> <ul style="list-style-type: none"> • Upon encountering a large deposit of bone, salvage of all bone in the area shall be conducted with additional field staff and in accordance with modern paleontological techniques. • All fossils collected during the project shall be prepared to a reasonable point of identification. Excess sediment or matrix shall be removed from the specimens to reduce the bulk and cost of storage. Itemized catalogs of all material collected and identified shall be provided to the museum repository along with the 	City of Moreno Valley Planning Division	Ongoing during ground disturbing activities.	When paleontological resources are unearthed or discovered	<p>A qualified paleontologist(s) shall be retained by the applicant to monitor full time during the duration of ground disturbing activities.</p> <p>A report of findings shall be submitted to the City after the finalization of construction.</p>		Issuance of a Stop Work Order

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specimens. <ul style="list-style-type: none"> A report documenting the results of the monitoring and salvage activities and the significance of the fossils shall be prepared. All fossils collected during this work, along with the itemized inventory of these specimens, shall be deposited in a museum repository for permanent curation and storage. 						
4.5.6.2D Prior to grading permit issuance, the City shall verify that the following note is included on the Grading Plan: "If any suspected paleontological resources are discovered during ground-disturbing activities, the construction supervisor is obligated to halt work in a 100-foot radius around the find and call a qualified paleontologist to the site to assess the significance of the find. A qualified paleontologist shall evaluate the suspected resource. If the paleontologist determines that the find is not unique, construction shall be permitted to proceed. However, if the paleontologist determines that further information is needed to evaluate significance, the City of Moreno Valley shall be notified and a treatment plan shall be prepared and implemented in consultation with the City to protect the identified paleontological resource(s) from damage and destruction."	City of Moreno Valley Planning Division	Once before issuing grading permit.	Prior to Issuance of Grading Permit	Verify plans contain specified language.		Withhold Grading Permit

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HAZARDS AND HAZARDOUS MATERIALS						
4.6.6.1A Prior to issuance of a grading permit for the project, a qualified contractor shall test onsite soils for contamination by agricultural chemicals. If present in concentrations above established actionable levels or thresholds, these materials shall be removed and transported to an appropriate landfill by a licensed contractor. This measure shall be implemented to the satisfaction of the Building Division including written documentation of the disposal of any agricultural chemical residue in conformance with all applicable regulations.	City of Moreno Valley Planning Division	Prior to grading	Prior to Issuance of Grading Permit and receipt of supplemental Phase II soil testing	Applicant shall provide written results of subsequent soil testing for pesticides		Withhold Grading Permit
HYDROLOGY AND WATER QUALITY						
4.7.6.1A. Prior to grading plan approval and the issuance of a grading permit by the City, the project applicant shall provide evidence to the City that a Notice of Intent (NOI) has been filed with the Regional Water Quality Control Board for coverage under the State NPDES General Construction Permit for discharge of storm water associated with construction activities.	City of Moreno Valley Planning Division Building and Safety Engineering	Prior to grading	Prior to Issuance of Grading Permit and review of grading plan documents	Applicant shall provide written evidence that an NOI has been filed with the Regional Water Quality Control Board.		Withhold Grading Permit
4.7.6.1B. Prior to grading plan approval and the issuance of a grading permit by the City, the project applicant shall submit to the State Water Quality Control Board a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP shall include a surface water control plan and erosion control plan citing specific measures to	City of Moreno Valley Planning Division Building and Safety Engineering	Prior to grading and onsite inspection during construction	Prior to Issuance of Grading Permit	Review of grading and construction documents and on-site inspection. Applicant shall provide written evidence that a SWPPP has been		Withhold Grading Permit and/or Issuance of Stop Work Order

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<p>control on-site and off-site erosion during the entire grading and construction period. Additionally, the SWPPP shall identify structural and nonstructural BMPs to control sediment and nonvisible discharges from the site. BMPs to be implemented in the SWPPP may include, but shall not be limited to, the following:</p> <ul style="list-style-type: none"> • Sediment discharges from the site may be controlled by the following: gravel bags, silt fences, straw wattles and temporary debris basins (if deemed necessary), and other discharge control devices. The construction and condition of the BMPs will be periodically inspected during construction, and repairs will be made when necessary as required by the SWPPP. • No materials of any kind shall be placed in drainage ways. • Materials that could contribute non-visible pollutants to storm water must be contained, elevated, and placed in temporary storage containment areas. • All loose piles of soil, silt, clay, sand, debris, and other earthen material shall be protected per RWQCB standards to eliminate any discharge from the site. Stockpiles will be surrounded by silt fences. <p>The SWPPP will include inspection forms for routine monitoring of the site during the construction phase to</p>				<p>filed with the Regional Water Quality Control Board.</p>		

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<p>ensure NPDES compliance.</p> <ul style="list-style-type: none"> Additional BMPs and erosion control measures will be documented in the SWPPP and utilized if necessary. The SWPPP will be kept on site for the entire duration of project construction and will also be available to the local RWQCB for inspection at any time. <p>In the event that it is not feasible to implement the above BMPs, the City of Moreno Valley can make a determination that other BMPs will provide equivalent or superior treatment either on or off site.</p>						
<p>4.7.6.1C. Prior to the issuance of grading permits, the project applicant shall provide evidence to the City that the following provisions have been added to construction contracts for the project:</p> <ul style="list-style-type: none"> The Construction Contractor shall be responsible for performing and documenting the application of BMPs identified in the SWPPP. Weekly inspections shall be performed on sediment control measures called for in the SWPPP. Monthly reports shall be maintained by the Contractor and submitted to the City for inspection. In addition, the Contractor will also be required to maintain an inspection log and have the log on site to be reviewed by the City of Moreno Valley and the representatives of the Regional Water Quality Control Board. 	<p>City of Moreno Valley Planning Division Engineering</p>	<p>Once prior to grading</p>	<p>Prior to issuance of Grading Permit</p>	<p>City review and approval of grading plans.</p>		<p>Withhold Grading Permit</p>

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<p>4.7.6.2A. Prior to grading plan approval and the issuance of a grading permit by the City, the project applicant shall receive approval from the City of Moreno Valley for a Final Water Quality Management Plan (F-WQMP). The F-WQMP shall specifically identify pollution prevention, site design, source control, and treatment control BMPs that shall be used on site to control predictable pollutant runoff in order to reduce impacts to water quality to the maximum extent practicable. BMPs to be implemented in the F-WQMP may include (but shall not be limited to) the following:</p> <ul style="list-style-type: none"> • Required landscaped areas shall not use decorative concrete or impervious surfaces. • Landscape plans shall incorporate native and drought-tolerant plants, trees, and shrubs. Landscaping shall be maintained weekly and maintenance contractor will properly dispose of all landscape wastes. • Irrigation systems shall be inspected monthly by the landscape contractor to check for over-watering, leaks, or excessive runoff to paved areas. Timers will be used to prevent over-watering. • Signage will be inspected and maintained twice a year for legibility. • Outdoor Loading/Unloading truck docks shall be kept in a clean and orderly condition with weekly 	<p>City of Moreno Valley Planning Division</p> <p>Engineering</p>	<p>Once prior to grading</p>	<p>Prior to issuance of Grading Permit</p>	<p>City review and approval of Final Water Quality Management Plan</p>		<p>Withhold Grading Permit</p>

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<p>inspections, continuous monitoring, and immediate clean up of spills.</p> <ul style="list-style-type: none"> • Parking area maintenance shall be swept or vacuumed at least quarterly, if there is any trash or debris in between the routine sweeping, it shall be swept or vacuumed immediately. • Trash enclosures will be inspected and maintained weekly or as needed by maintenance contractor. • On-site extended detention/sedimentation basins and sand filters will treat all of the site's runoff via vegetated swales and will be maintained and inspected at least twice a year and prior to October 1. • Additional BMPs will be documented in the WQMP and utilized if necessary. <p>In the event that it is not feasible to implement the above BMPs, the City of Moreno Valley can make a determination that other BMPs will provide equivalent or superior treatment either on or off site.</p>						
<p>4.7.6.3A. Prior to grading plan approval, the project proponent shall receive approval on a project-specific Final Hydrology Study, with supporting engineering calculations, from the City Engineer. The Final Hydrology Study shall incorporate relevant requirements identified by the City, and/or site-specific geotechnical investigations. A Preliminary</p>	<p>City of Moreno Valley Planning Division</p> <p>Engineering</p>	<p>Once prior to tentative tract map approval</p> <p>Once prior to</p>	<p>Prior to tentative tract map approval</p> <p>Prior to issuance of</p>	<p>City review and approval of Preliminary Hydrology Study</p> <p>City review and approval of Final</p>		<p>Withhold hearing to approve the tentative tract map.</p> <p>Withhold Grading</p>

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non- Compliance
Hydrology Study will be required prior to approval of the associated project tentative tract map.		grading	Grading Permit	Hydrology Study		Permit
NOISE						
4.9.6.1A. During all project site excavation and grading on site, the project contractor shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards.	City of Moreno Valley Building and Safety Engineering Planning Division	Ongoing during construction	Throughout Construction	Review of construction documents and on-site inspection		Withhold Grading Permit or Stop Work Order
4.9.6.1B. The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest to the project site.	City of Moreno Valley Building and Safety Engineering Planning Division	Ongoing throughout construction /on-site inspection	Throughout Construction	Review of construction documents and on-site inspection		Withhold Grading Permit or Stop Work Order
4.9.6.1C. The construction contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise sources and noise-sensitive receptors nearest to the project site during all project construction.	City of Moreno Valley Building and Safety Engineering Planning Division	Ongoing throughout construction /on-site inspection	Throughout Construction	Review of construction documents and on-site inspection		Withhold Grading Permit or Stop Work Order
4.9.6.1D. During project site construction activities at Building 6 (i.e., closest to existing residences), the construction contractor shall limit all construction-related activities to between the hours of 6:00 a.m. and 8:00 p.m. on weekdays and between the hours of 7:00 a.m. to 8:00 p.m. on weekends and holidays, unless written approval is obtained from the City Building Official or City Engineer.	City of Moreno Valley Building and Safety Engineering Planning Division	Ongoing throughout construction /on-site inspection	Throughout Construction	Review of construction documents and on-site inspection		Withhold Grading Permit or Stop Work Order

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Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
TRANSPORTATION						
<p>4.11.6.4A. Prior to issuance of a Certificate of Occupancy the project applicant shall construct the following traffic improvements:</p> <ul style="list-style-type: none"> • Redlands Boulevard/SR-60 Westbound Ramps. Install a traffic signal. This improvement is currently approved, and permitted by Caltrans. If not otherwise completed prior to project opening, the required traffic signal shall be constructed by the Applicant prior to issuance of the first Certificate of Occupancy. • Redlands Boulevard/Fir Avenue/Eucalyptus Avenue. If not otherwise completed prior to project opening, prior to issuance of the first Certificate of Occupancy, the Applicant shall construct the following improvements: Install a traffic signal and add a northbound left-turn lane and a southbound left-turn lane. <p>If the improvements are constructed by others prior to the Certificate of Occupancy, the applicant shall pay its fair share towards the improvements through the City's DIF program.</p>	<p>City of Moreno Valley Building and Safety Engineering Planning Division</p>	<p>Prior to Certificate of Occupancy on the building.</p>	<p>Prior to the Issuance of a Certificate of Occupancy</p>	<p>Evidence of the construction of the improvements. If construction has already occurred by others evidence of payment of DIF fees.</p>		<p>Withhold Certificate of Occupancy</p>
<p>4.11.6.4B. Prior to issuance of building permits, the project applicant shall pay the fair-share contribution toward the following traffic improvements through fees paid to the City of Moreno Valley</p>	<p>City of Moreno Valley Building and Safety Engineering</p>	<p>Once before construction</p>	<p>Prior to the Issuance of Building Permits</p>	<p>Evidence of Payment of City DIF fees and WRCOG TUMF fees.</p>		<p>Withhold Building Permit</p>

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Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non- Compliance
based on the City's DIF system and the County's TUMF program: <ul style="list-style-type: none"> • Moreno Beach Drive/SR-60 Eastbound Ramps. The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF fee would mitigate the significant impact at this location. • Redlands Boulevard/SR-60 Westbound Ramps. Install a traffic signal. This improvement is listed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the significant impact at this location. • Redlands Boulevard/Fir Avenue/Eucalyptus Avenue. Install a traffic signal. This improvement is listed in the City's DIF program. Add a northbound left-turn lane and a southbound left-turn lane. These improvements are listed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location. 	Planning Division					
4.11.6.4C. Prior to issuance of building permits, the project applicant shall pay the fair-share contribution toward the following traffic improvements through fees paid to the City of Moreno Valley	City of Moreno Valley Building and Safety Engineering	Once before construction	Prior to the Issuance of Building Permits	Evidence of Payment of City DIF fees and WRCOG TUMF fees.		Withhold Building Permit

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
<p>based on the City's DIF system and the County's TUMF program:</p> <ul style="list-style-type: none"> Moreno Beach Drive/SR-60 Eastbound Ramps. The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF fee would mitigate the significant impact at this location. Moreno Beach Drive/Cottonwood Avenue. Add a southbound through lane. This improvement is listed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the significant impact at this location. Moreno Beach Drive/Alessandro Boulevard. Add a southbound through lane. This improvement is listed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the significant impact at this location. Redlands Boulevard/SR-60 Westbound Ramps. Install a traffic signal. This improvement is listed in the City's DIF program. Add a northbound through lane. The Redlands Boulevard/SR-60 Interchange reconstruction would implement the northbound through 	Planning Division					

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non- Compliance
<p>lane. The interchange reconstruction project is programmed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location.</p> <ul style="list-style-type: none"> • Redlands Boulevard/SR-60 Eastbound Ramps. The Redlands Boulevard/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF. Therefore, payment of the TUMF fee would mitigate the significant impact at this location. • Redlands Boulevard/Fir Avenue/Eucalyptus Avenue. Install a traffic signal. Add a westbound right-turn lane and provide overlap phasing for the westbound right turns. Add a westbound left-turn lane and an eastbound left-turn lane. These improvements are programmed in the City's DIF program. Add a northbound left-turn lane, a southbound through lane, and a southbound left-turn lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location. • Redlands Boulevard/Eucalyptus Avenue. Add a southbound right-turn lane. This improvement is programmed in the TUMF. Therefore, payment of the TUMF fees would 						

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Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
<p>mitigate the significant impact at this location.</p> <ul style="list-style-type: none"> Redlands Boulevard/Alessandro Boulevard. Add a southbound left-turn lane. This improvement is programmed in the TUMF. Therefore, payment of the TUMF fees would mitigate the significant impact at this location. 						
<p>4.11.6.4D. Prior to issuance of building permits, the project applicant shall pay the fair-share contribution toward the following traffic improvements through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program. At some locations, the DIF and TUMF fees would not fully mitigate the project's impact. For these locations, additional improvements shall be implemented by the project applicant prior to the issuance of a certificate of occupancy for the project:</p> <ul style="list-style-type: none"> Nason Street/Eucalyptus Avenue. Add a northbound right turn lane. This improvement is programmed in the City's DIF; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, the project shall contribute a fair share (calculated to be 1.76%) toward restriping the westbound approach to provide dual left-turn lanes. Nason Street/Alessandro Boulevard. Add an eastbound 	<p>City of Moreno Valley Building and Safety Engineering Planning Division</p>	<p>Once before construction and onsite inspection for improvements.</p>	<p>Prior to the Issuance of Building Permits</p> <p>Where improvements must be built by the developer – Prior to a Certificate of Occupancy on the first building.</p>	<p>Evidence of Payment to the City of fair share contribution in addition to payment of DIF, TUMF and build improvements where indicated in the mitigation measure.</p>		<p>Withhold Building Permit and/or Withhold Certificate of Occupancy.</p>

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non- Compliance
<p>through lane and a westbound through lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, the project shall contribute a fair share (calculated to be 1.4%) toward modification of the traffic signal to provide overlap phasing for the eastbound right-turn lane.</p> <ul style="list-style-type: none"> • Moreno Beach Drive/SR-60 Westbound Ramps. The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF fee would mitigate the significant impact at this location. • Moreno Beach Drive/SR-60 Eastbound Ramps. The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF fee would mitigate the significant impact at this location. • Moreno Beach Drive/Eucalyptus Avenue. Convert the existing 						

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Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
<p>eastbound through lane to a left-turn lane and the eastbound right-turn lane to a shared through/right-turn lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, the project shall contribute a fair share (calculated to be 8.63%) toward modification of the traffic signal to provide right-turn overlap phasing for the westbound right-turn lane.</p> <ul style="list-style-type: none"> • Moreno Beach Drive/Cottonwood Avenue. Add a southbound through lane, This improvement is programmed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the significant impact at this location. • Moreno Beach Drive/Alessandro Boulevard. Add 2 southbound through lanes, 2 northbound through lanes, an eastbound through lane, and a westbound through lane. These improvements are programmed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the significant impact at this location. • Redlands Boulevard/SR-60 Westbound Ramps. Install a traffic signal. This improvement is programmed in the City's DIF program and will be installed before 						

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Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non- Compliance
<p>building occupancy since it was identified as a direct project impact.</p> <ul style="list-style-type: none"> • Redlands Boulevard/SR-60 Eastbound Ramps. The Redlands Boulevard/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF. Therefore, payment of the TUMF fee would mitigate the significant impact at this location. • Redlands Boulevard/Fir Avenue-Eucalyptus Avenue. Install a traffic signal and add a westbound left-turn lane, eastbound through lane, eastbound left-turn lane, and a westbound right-turn lane with overlap phasing. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, add a southbound through lane, southbound left-turn lane, northbound through lane, and northbound left-turn lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location. • Redlands Boulevard/Eucalyptus Avenue. Install a traffic signal and add a westbound left-turn lane. These improvements are 						

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
<p>programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, add a northbound left-turn lane and a southbound left-turn lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location.</p> <ul style="list-style-type: none"> Redlands Boulevard/Alessandro Boulevard. Install a traffic signal. This improvement is programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, add a southbound left-turn lane, a northbound left-turn lane, a westbound left-turn lane, an eastbound left-turn lane, a westbound right-turn lane, and a southbound through lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location. 						
<p>4.11.6.4E. Prior to issuance of building permits, the project applicant shall pay the fair-share contribution toward the following traffic improvements through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program, or through a fair-share contribution to the City of</p>	<p>City of Moreno Valley Building and Safety</p> <p>Engineering</p> <p>Planning Division</p>	<p>Once before construction</p>	<p>Prior to the Issuance of Building Permits</p>	<p>Evidence of Payment of City DIF fees and WRCOG TUMF fees or fair share contribution</p>		<p>Withhold Building Permit</p>

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non- Compliance
<p>Moreno Valley as noted below:</p> <ul style="list-style-type: none"> Nason Street/Eucalyptus Avenue. Add a northbound right-turn lane and an eastbound right-turn lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. Implementation of the improvements identified for this intersection in Mitigation Measure 4.11.6.4D would also partially mitigate the significant impact at this intersection. In addition, the project shall pay a fair share (calculated to be 1.6%) toward modification of the traffic signal to provide right-turn overlap phasing for the eastbound and northbound right turns. Nason Street/Alessandro Boulevard. Add an eastbound through lane and westbound through lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. Implementation of the improvements identified for this intersection in Mitigation Measure 4.11.6.4D would also partially mitigate the significant impact at this intersection. In addition, the project shall pay a fair share (calculated to be 1.35%) toward the addition of an eastbound left-turn lane and modification of the 						

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Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
<p>traffic signal to provide overlap phasing for the westbound right-turn lane.</p> <ul style="list-style-type: none"> Moreno Beach Drive/SR-60 Westbound Ramps. The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF fee would mitigate the significant impact at this location. Moreno Beach Drive/SR-60 Eastbound Ramps. The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF fee would mitigate the significant impact at this location. Moreno Beach Drive/Eucalyptus Avenue. Restripe eastbound approach to dual left-turn lanes and add a northbound through lane, a westbound through lane, and a southbound right-turn lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. 						

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non- Compliance
<p>Implementation of the improvements identified for this intersection in Mitigation Measure 4.11.6.4D would also partially mitigate the significant impact at this intersection. In addition, the project shall pay a fair share (calculated to be 5.17%) toward modification of the traffic signal to provide right-turn overlap phasing for the southbound right-turn lane.</p> <ul style="list-style-type: none"> • Moreno Beach Drive/Cottonwood Avenue. Add a southbound through lane, a northbound through lane, an eastbound left-turn lane, an eastbound through lane, a westbound through lane, and a westbound left-turn lane. These improvements are programmed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the significant impact at this location. • Moreno Beach Drive/Alessandro Boulevard. Add 2 southbound through lanes, 2 northbound through lanes, an eastbound through lane, and a westbound through lane. These improvements are programmed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the significant impact at this location. • Auto Mall Drive/Eucalyptus Avenue. Install a traffic signal. This improvement is programmed in the 						

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Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
<p>City's DIF program. Therefore, payment of the DIF fee would mitigate the significant impact at this location.</p> <ul style="list-style-type: none"> Redlands Boulevard/SR-60 Westbound Ramps. Install a traffic signal. This improvement is programmed in the City's DIF program and will be installed before building occupancy since it was identified as a direct project impact. Therefore, payment of the DIF fee would mitigate the significant impact at this location. Redlands Boulevard/SR-60 Eastbound Ramps. The Redlands Boulevard/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF. Therefore, payment of the TUMF fee would mitigate the significant impact at this location. Redlands Boulevard/Fir Avenue-Eucalyptus Avenue. Install a traffic signal and add a westbound left-turn lane, eastbound through lane, eastbound left-turn lane, a westbound right-turn lane with overlap phasing, and a southbound right-turn lane with overlap phasing. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the 						

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non- Compliance
<p>significant impact at this intersection. In addition, add a southbound through lane, a southbound left-turn lane, a northbound through lane, a northbound left-turn lane, and a northbound right-turn lane. These improvements are programmed in the TUMF. Therefore, payment of the TUMF fee would also partially mitigate the significant impact at this location. In addition, the project shall pay a fair share (calculated to be 10.44%) of the cost of adding a southbound left-turn lane.</p> <ul style="list-style-type: none"> • Redlands Boulevard/Eucalyptus Avenue. Install a traffic signal and add a westbound left-turn lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, add a northbound left-turn lane, a northbound through lane, a southbound left-turn lane, and southbound through lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location. • Redlands Boulevard/Cottonwood Avenue. Add an eastbound through lane and westbound through lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the 						

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Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
<p>significant impact at this intersection. In addition, add a northbound through lane and a southbound through lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location.</p> <ul style="list-style-type: none"> Redlands Boulevard/Alessandro Boulevard. Install a traffic signal. This improvement is programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, and add a southbound left-turn lane, a northbound left-turn lane, a westbound left-turn lane, an eastbound left-turn lane, a westbound right-turn lane, a southbound through lane, a westbound through lane, and an eastbound through lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location. 						
<p>4.11.6.4F. If the Encilia Avenue and Quincy Street Connection plan is implemented as part of the proposed project, then prior to issuance of building permits, the project applicant shall implement the following improvements, in addition to those identified in Mitigation Measure 4.11.6.4.E, either through fees paid to the City of Moreno Valley based on the City's DIF system and the County's</p>	<p>City of Moreno Valley Building and Safety</p> <p>Engineering</p> <p>Planning Division</p>	<p>Once before construction</p>	<p>Prior to the Issuance of Building Permits</p>	<p>Evidence of Payment of City DIF fees and WRCOG TUMF fees or fair share contribution.</p>		<p>Withhold Building Permit</p>

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non- Compliance
<p>TUMF program:</p> <ul style="list-style-type: none"> • Moreno Beach Drive/Eucalyptus Avenue. Restripe the southbound shared through/right-turn lane to a southbound through lane. This improvement is programmed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the impacts of the project at this intersection. • Redlands Boulevard/Fir Avenue-Eucalyptus Avenue. Pay the fair share (calculated to be 10.84%) to add a southbound right-turn lane. • Redlands Boulevard/Encilia Avenue-Eucalyptus Avenue. Install a traffic signal and add a westbound left-turn lane. These improvements are programmed in the City's DIF program. In addition, add a northbound left-turn lane, northbound through lane, southbound left-turn lane, and a southbound through lane. These improvements are programmed in the TUMF program. Therefore, payment of the DIF and TUMF fees would fully mitigate the impact of the project at this intersection. • Moreno Beach Drive/Encilia Avenue. Install a traffic signal and add a northbound through lane, southbound left-turn lane, and a southbound through lane. This improvement is programmed in the 						

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City's DIF program. Therefore, payment of the DIF fee would mitigate the impacts of the project at this intersection.						
GREENHOUSE GASES AND GLOBAL CLIMATE CHANGE						
<p>4.13.6.1A. Prior to the issuance of building permits, the project applicant shall provide evidence to the City of Moreno Valley that building features have been incorporated in building plans as required by Title 24 of the California Code of Regulations. These features include but are not limited to the following:</p> <ul style="list-style-type: none"> Exterior windows shall utilize window treatments for efficient energy conservation. Per CALGreen Code requirements, water-efficient fixtures and appliances, including but not limited to low-flow faucets, dual-flush toilets minimizing water consumption by 20 percent from the Building Standards Code baseline water consumption shall be used. Per CALGreen Code requirements, a Commissioning Plan shall be prepared and all building systems (e.g., heating, ventilation, and air-conditioning [HVAC], irrigation systems, lighting, and water heating) shall be commissioned by the Commissioning Authority. 	City of Moreno Valley Building and Safety Planning Division	Once prior to construction	Prior to issuance of building permits	Review of construction documents and on-site inspection		Withhold Building Permit

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
<ul style="list-style-type: none"> Per CALGreen Code, restrict watering methods (e.g., prohibit systems that apply water to non-vegetated surfaces) and control runoff. 						
<p>4.13.6.1B. Prior to the issuance of building permits, the project applicant shall provide evidence to the City of Moreno Valley that the following measures have been incorporated into the design and construction of the project:</p> <ul style="list-style-type: none"> Use of locally produced and/or manufactured building materials for at least 10 percent of the construction materials used for the project. Use of “Green Building Materials,” such as those materials that are resource efficient, and recycled and manufactured in an environmentally friendly way, for at least 10 percent of the project. Limit unnecessary idling of construction equipment. A reduction in equipment idling would reduce fuel consumption, and therefore, GHG emissions. Maximize the use of electricity from the power grid by replacing diesel- or gasoline-powered equipment. This would reduce GHG emissions because electricity can be produced 	City of Moreno Valley Building and Safety Planning Division	Once prior to construction Once during on-site inspection	Prior to issuance of building permits	Review of construction documents/building plans and on-site inspection		Withhold Building Permit

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Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
<p>more efficiently at centralized power plants.</p> <ul style="list-style-type: none"> • Design the project building to exceed the California Building Code's (CBC) Title 24 energy standard, including, but not limited to, any combination of the following: <ul style="list-style-type: none"> ○ Increase insulation such that heat transfer and thermal bridging is minimized. ○ Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption. ○ Incorporate ENERGY STAR or better rated windows, space heating and cooling equipment, light fixtures, appliances, or other applicable electrical equipment. • Provide a landscape and development plan for the project that takes advantage of shade, prevailing winds, and landscaping. • Install efficient lighting and lighting control systems. Use daylight as an integral part of the lighting systems in buildings. • Install reflective roof material (SRI >45) and cool pavements. • Install energy-efficient heating and cooling systems, appliances and 						

Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
equipment, and control systems. <ul style="list-style-type: none"> Install solar or light-emitting diodes (LEDs) for outdoor lighting for auto parking areas. 						
4.13.6.1C. Prior to the issuance of occupancy permits, the project applicant shall provide evidence to the City of Moreno Valley that the following measures have been be incorporated into the operation of the project: <ul style="list-style-type: none"> The project applicant shall use less than 3,900 Global Warming Potential (GWP) hydrofluorocarbon (HCF) refrigerants or natural refrigerants (ammonia, propane, carbon dioxide [CO₂]) for refrigeration and fire suppression equipment. Provide vegetative or man-made exterior wall shading devices for east-, south-, and west facing windows. Devise a comprehensive water conservation strategy appropriate for the project and its location. The strategy may include the following, plus other innovative measures that may be appropriate: <ul style="list-style-type: none"> Install drought-tolerant plants for landscaping. Use reclaimed water for landscape irrigation within the project. Install the infrastructure to deliver and use reclaimed 	City of Moreno Valley Building and Safety Planning Division	Once Prior to construction Once during on-site inspection	Prior to issuance of occupancy permit	Review of construction documents and on-site inspection		Withhold Occupancy Permit

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Mitigation Measure No. / Implementing Action	Responsible for Monitoring	Monitoring Frequency	Timing of Verification	Method of Verification	Verified Date/ Initials	Sanctions for Non-Compliance
water. <ul style="list-style-type: none"> ○ Install water-efficient irrigation systems, such as weather-based and soil-moisture-based irrigation controllers and sensors for landscaping according to the California Department of Water Resources Model Efficient Landscape Ordinance. • Provide employee education about reducing waste and available recycling services. 						

Table 1.G: Air Quality Measure 4.3.6.2M Best Available Control Measures for Fugitive Dust (Apply to All Construction Activities)

Source Category	Control Measures	Guidance
Backfilling	<ul style="list-style-type: none"> • Stabilize backfill material when not actively handling; and • Stabilize backfill material during handling; and • Stabilize soil at completion of activity. 	<ul style="list-style-type: none"> • Mix backfill soil with water prior to moving; and • Dedicate water truck or high capacity hose to backfilling equipment; and • Empty loader bucket slowly so that no dust plumes are generated; and • Minimize drop height from loader bucket.
Clearing and grubbing	<ul style="list-style-type: none"> • Maintain stability of soil through pre-watering of site prior to clearing and grubbing; and • Stabilize soil during clearing and grubbing activities; and • Stabilize soil immediately after clearing and grubbing activities. 	<ul style="list-style-type: none"> • Maintain live perennial vegetation where possible; and • Apply water in sufficient quantity to prevent generation of dust plumes.
Clearing forms	<ul style="list-style-type: none"> • Use water spray to clear forms; or • Use sweeping and water spray to clear forms; or • Use vacuum system to clear forms. 	<ul style="list-style-type: none"> • Use of high pressure air to clear forms may cause exceedance of Rule requirements.
Crushing	<ul style="list-style-type: none"> • Stabilize surface soils prior to operation of support equipment; and • Stabilize material after crushing. 	<ul style="list-style-type: none"> • Follow permit conditions for crushing equipment; and • Pre-water material prior to loading into crusher; and • Monitor crusher emissions opacity; and • Apply water to crushed material to prevent dust plumes.
Cut and fill	<ul style="list-style-type: none"> • Pre-water soils prior to cut and fill activities; and • Stabilize soil during and after cut and fill activities. 	<ul style="list-style-type: none"> • For large sites, pre-water with sprinklers or water trucks and allow time for penetration; and • Use water trucks/pulls to water soils to depth of cut prior to subsequent cuts.
Demolition – mechanical/manual	<ul style="list-style-type: none"> • Stabilize wind erodible surfaces to reduce dust; and • Stabilize surface soil where support equipment and vehicles will operate; and • Stabilize loose soil and demolition debris; and • Comply with AQMD Rule 1403. 	<ul style="list-style-type: none"> • Apply water in sufficient quantities to prevent the generation of visible dust plumes.

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Table 1.G: Air Quality Measure 4.3.6.2M Best Available Control Measures for Fugitive Dust (Apply to All Construction Activities)

Source Category	Control Measures	Guidance
Disturbed soil	<ul style="list-style-type: none"> Stabilize disturbed soil throughout the construction site; and Stabilize disturbed soil between structures. 	<ul style="list-style-type: none"> Limit vehicular traffic and disturbances on soils where possible; and If interior block walls are planned, install as early as possible; and Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes.
Earthmoving activities	<ul style="list-style-type: none"> Pre-apply water to depth of proposed cuts; and Re-apply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 100 ft in any direction; and Stabilize soils once earth-moving activities are complete. 	<ul style="list-style-type: none"> Grade each Project phase separately, timed to coincide with construction phase; and Upwind fencing can prevent material movement on site; and Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes.
Importing/exporting of bulk materials	<ul style="list-style-type: none"> Stabilize material while loading to reduce fugitive dust emissions; and Maintain at least 6 inches of freeboard on haul vehicles; and Stabilize material while transporting to reduce fugitive dust emissions; and Stabilize material while unloading to reduce fugitive dust emissions; and Comply with CVC Section 23114. 	<ul style="list-style-type: none"> Use tarps or other suitable enclosures on haul trucks; and Check belly-dump truck seals regularly and remove any trapped rocks to prevent spillage; and Comply with track-out prevention/mitigation requirements; and Provide water while loading and unloading to reduce visible dust plumes.
Landscaping	<ul style="list-style-type: none"> Stabilize soils, materials, slopes 	<ul style="list-style-type: none"> Apply water to materials to stabilize; and Maintain materials in a crusted condition; and Maintain effective cover over materials; and Stabilize sloping surfaces using soil binders until vegetation or ground cover can effectively stabilize the slopes; and Hydroseed prior to rain season.
Road shoulder maintenance	<ul style="list-style-type: none"> Apply water to unpaved shoulders prior to clearing; and Apply chemical dust suppressants and/or washed gravel to maintain a stabilized surface after completing road shoulder maintenance. 	<ul style="list-style-type: none"> Installation of curbing and/or paving of road shoulders can reduce recurring maintenance costs; and Use of chemical dust suppressants can inhibit vegetation growth and reduce future road shoulder maintenance costs.

Table 1.G: Air Quality Measure 4.3.6.2M Best Available Control Measures for Fugitive Dust (Apply to All Construction Activities)

Source Category	Control Measures	Guidance
Screening	<ul style="list-style-type: none"> • Pre-water material prior to screening; and • Limit fugitive dust emissions to opacity and plume length standards; and • Stabilize material immediately after screening. 	<ul style="list-style-type: none"> • Dedicate water truck or high capacity hose to screening operation; and • Drop material through the screen slowly and minimize drop height; and • Install wind barrier with a porosity of no more than 50 percent upwind of screen to the height of the drop point.
Staging areas	<ul style="list-style-type: none"> • Stabilize staging areas during use; and • Stabilize staging area soils at project completion. 	<ul style="list-style-type: none"> • Limit size of staging area; and • Limit vehicle speeds to 15 miles per hour; and • Limit number and size of staging area entrances/exits.
Stockpiles/bulk material handling	<ul style="list-style-type: none"> • Stabilize stockpiled materials, and stockpiles within 100 yards of off-site occupied buildings must not be greater than 8 ft in height; or must have a road bladed to the top to allow water truck access or must have an operational water irrigation system that is capable of complete stockpile coverage. 	<ul style="list-style-type: none"> • Add or remove material from the downwind portion of the storage pile; and • Maintain storage piles to avoid steep sides or faces.
Traffic areas for construction activities	<ul style="list-style-type: none"> • Stabilize all off-road traffic and parking areas; and • Stabilize all haul routes; and • Direct construction traffic over established haul routes. 	<ul style="list-style-type: none"> • Apply gravel/paving to all haul routes as soon as possible to all future roadway areas; and • Barriers can be used to ensure vehicles are only used on established parking areas/haul routes.
Trenching	<ul style="list-style-type: none"> • Stabilize surface soils where trencher or excavator and support equipment will operate; and • Stabilize soils at the completion of trenching activities. 	<ul style="list-style-type: none"> • Pre-watering of soils prior to trenching is an effective preventive measure. For deep trenching activities, pre-trench to 18 inches, soak soils via the pre-trench and resuming trenching; and • Washing mud and soils from equipment at the conclusion of trenching activities can prevent crusting and drying of soil on equipment.
Truck loading	<ul style="list-style-type: none"> • Pre-water material prior to loading; and • Ensure that freeboard exceeds 6 inches (CVC 23114). 	<ul style="list-style-type: none"> • Empty loader bucket such that no visible dust plumes are created; and • Ensure that the loader bucket is close to the truck to minimize drop height while loading.
Turf overseeding	<ul style="list-style-type: none"> • Apply sufficient water immediately prior to conducting turf vacuuming activities to meet opacity and plume length standards; and • Cover haul vehicles prior to exiting the site. 	<ul style="list-style-type: none"> • Haul waste material immediately off site.
Unpaved roads/parking lots	<ul style="list-style-type: none"> • Stabilize soils to meet the applicable performance standards; and • Limit vehicular travel to established unpaved roads (haul routes) and unpaved parking lots. 	<ul style="list-style-type: none"> • Restricting vehicular access to established unpaved travel paths and parking lots can reduce stabilization requirements.

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Table 1.G: Air Quality Measure 4.3.6.2M Best Available Control Measures for Fugitive Dust (Apply to All Construction Activities)

Source Category	Control Measures	Guidance
Vacant land	<ul style="list-style-type: none"> In instances where vacant lots are 0.10 acre or larger and have a cumulative area of 500 sf or more that are driven over and/or used by motor vehicles and/or off-road vehicles, prevent motor vehicle and/or off-road vehicle trespassing, parking and/or access by installing barriers, curbs, fences, gates, posts, signs, shrubs, trees, or other effective control measures. 	

ac = acre(s) AQMD = Air Quality Management District CVC = California Vehicle Code ft = feet sf = square feet

Table 1.H: Air Quality Measure 4.3.6.2M Contingency Control Measures for Fugitive Dust (During High Winds in Excess of 25 MPH)

Fugitive Dust Source Category	Control Measures
Earthmoving	<ul style="list-style-type: none"> Cease all active operations; or Apply water to soil not more than 15 minutes prior to moving such soil.
Disturbed surface areas	<ul style="list-style-type: none"> On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than 4 consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than $1/20$ of the concentration required to maintain a stabilized surface for a period of 6 months; or Apply chemical stabilizers prior to wind event; or Apply water to all unstabilized disturbed areas 3 times per day. If there is any evidence of wind driven fugitive dust, watering frequency is increased to a minimum of 4 times per day; or Establish a vegetative ground cover within 21 days after active operations have ceased. Ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter; or Utilize any combination of these control actions such that, in total, these actions apply to all disturbed surface areas.
Unpaved roads	<ul style="list-style-type: none"> Apply chemical stabilizers prior to wind event; or Apply water 2 times per hour during active operation; or Stop all vehicular traffic.
Open storage piles	<ul style="list-style-type: none"> Apply water 2 times per hour; or Install temporary coverings.
Paved road track-out	<ul style="list-style-type: none"> Cover all haul vehicles; or Comply with the vehicle freeboard requirements of Section 23114 of the CVC for both public and private roads.
All categories	<ul style="list-style-type: none"> Executive Officer and the USEPA as equivalent to the methods specified in this table may be used.

CVC = California Vehicle Code
 USEPA = United States Environmental Protection Agency

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APPENDIX A

**ATTACHMENTS TO JOHNSON & SEDLACK COMMENT LETTER
DATED SEPTEMBER 4, 2012**

APPENDIX B
SB 18 CONSULTATION DOCUMENTATION

APPENDIX C
REGIONAL AGRICULTURE REPORTS

APPENDIX D
GENERAL PLAN INFO ON AGRICULTURE

APPENDIX E
LOZEAU DRURY COMMENT LETTER ATTACHMENTS

APPENDIX F
TRIP GENERATION COMPARISON OF ALTERNATIVES

SUPERIOR COURT OF CALIFORNIA, COUNTY OF RIVERSIDE

TITLE:
FRIENDS OF THE NORTHERN SAN JACINTO VALLEY, et
al., v. COUNTY OF RIVERSIDE, et al.

DATE & DEPT:
04/11/12 D10

MASTER NUMBER:
RIC10007572

RELATED CASES:
RIC10007574
RIC10007586

COUNSEL:
NONE

REPORTER:
NONE

PROCEEDING:
PROPOSED STATEMENT OF DECISION

This is a consolidated matter in which Friends of Northern San Jacinto Valley, Sierra Club, Center for Biological Diversity, San Bernardino Valley Audubon Society, and the City of Riverside all challenge the approval of a project proposed by real party in interest Nuevo Development Company. The Project is the Villages of Lakeview extending over 2,800 acres consisting of 11,350 dwellings, a mixed use town center including some 500,000 square feet of retail, office and commercial uses, public facilities including four schools and a library, and nearly 1,000 acres of open space/conservation areas. Respondent County of Riverside approved the Project and certified the Environmental Impact Report on March 23, 2010. Petitioners filed a joint opening and reply brief. Respondents and real party also filed a joint opposition and will be referred to collectively as "Respondents."

DISCUSSION

I. The EIR failed to adequately evaluate GHG impacts and possible mitigation of these impacts.

Petitioners contend that the County failed to proceed in the manner required by CEQA in that the EIR improperly assessed the significance of the greenhouse gas (GHG) emissions by

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comparing them to a potentially unrealistic, unreasonable hypothetical scenario rather than to existing conditions as required by *CBE vs. SCAQMD* (2010) 48 Cal. 4th 310, 322.

Respondents contend they first measured the Project's total GHG emissions against the baseline of existing conditions (zero emissions) to generate the Project's GHG inventory, quantified as 137,637 tons of CO₂e annually and that this satisfied CEQA's mandate that project impacts be disclosed and compared to the existing physical environment which serves as a baseline for CEQA purposes. Next, the County exercised its discretion by utilizing compliance with AB 32 as the threshold against which to evaluate the impact on GHG, and compared the Project's GHG inventory against a business-as-usual (BAU) scenario to make its impact significance determination. This approach, according to respondents, provided an opportunity to evaluate the Project's emissions reduction strategy. According to respondents, the BAU hypothetical used represents the Project as proposed absent its voluntary design features, GHG reduction commitments and mitigation measures not require by existing mandates. Respondents contend that the analysis was reasonable and supported by substantial evidence in the record.¹

It is true that agencies can exercise discretion in formulating and establishing thresholds of significance for each potentially adverse environmental effect (Guidelines §15064(b)), and may use performance standards or guidance documents adopted or issued by regulatory agencies as thresholds of significance (§15126.4(a)(1)(B)). It is also true that, at this time, no agency with particular expertise or jurisdiction over the Project's air quality and GHG emissions has established a quantitative or numeric threshold for determining when or to what extent emissions are significant for CEQA purposes in relation to GHG.

¹ In support of their contention that this BAU approach was proper, respondents ask the court to take judicial notice of a decision from a Kern County trial court proceeding and an appellant's opening brief. The request is denied.

Nevertheless, the hypothetical project proposed for the EIR does not accurately reflect business as usual because it uses an unrealistic scenario which ignores local planning and zoning laws, strips all vegetation from the project, and contemplates development on mountainous portions of the project site. In addition, the hypothetical scenario fails to account for the fact that project approval under CEQA contemplates a process whereby the adverse environmental effects of a project of this nature are identified and analyzed; alternatives are considered; and potential impacts are eliminated or mitigated. The hypothetical project, which ignores not only local planning and zoning laws as well as potential adverse impacts, is not one that could ever be expected to actually occur in the County let alone on the project site. It does not appear the EIR used a “business as usual” approach but instead adopted a “worst-case” scenario as it began its evaluation of the GHG emissions.

Respondents’ reliance on *Citizens for Responsible Equitable Environmental Development v. City of Chula Vista* (2011) 197 Cal.App.4th 327 is misplaced. While the *Chula Vista* case did conclude that compliance with AB 32 was a proper threshold of significance and implicitly approved use of a “business as usual analysis” in assessing the significance of the impact, that case is factually distinguishable. In that case, business as usual was based on the existing store – not some hypothetical scenario like here.

Chula Vista simply does not support respondents’ use of a hypothetical “BAU” that has no correlation to baseline conditions or to the project as proposed and is not even based on what could be realistically developed in this area in light of existing zoning and other land use regulations.

As the Supreme Court noted in *CBE v. SCAQMD*, *supra*, 48 Cal.4th 310 at p. 322: “An approach using hypothetical allowable conditions as the baseline results in ‘illusory’ comparisons that ‘can only mislead the public as to the reality of the impacts and subvert full consideration of

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the actual environmental impacts,' a result at direct odds with CEQA's intent. [Internal Citation Omitted.] The District's use of the prior permits' maximum operating levels as a baseline appears to have had that effect here, providing an illusory basis for a finding of no significant adverse effect despite an acknowledged increase in NOx emissions exceeding the District's published significance threshold."

Notwithstanding that the Supreme Court was addressing the issue of baseline conditions whereas here we are discussing a proper BAU model, the concerns expressed in *CBE* are the same. The use of this hypothetical "BAU" here which is tied neither to existing conditions or reasonably likely conditions serves only to mislead the public and the decision-makers in their understanding of the actual significance of the GHG emissions, and their effect on the environment. Further, because the EIR improperly assessed the significance of GHG emissions, the EIR could not and did not properly analyze and evaluate feasible mitigation for GHG impacts.

II. The County was required to recirculate the EIR.

The Court finds that new information was added after the close of the public comment period that revealed a substantial increase in the severity of environmental impacts.

In response to comments to the DEIR, a transportation analysis was conducted which indicated an increase of 100 million additional vehicle-miles traveled (VMT) per year (50% increase), and PM_{2.5} concentrations 300% greater than previously disclosed and 95 times higher than Air District's threshold for determining the significance of impacts. Petitioners contend that an agency is required to recirculate an EIR when it adds significant new information after the public comment period has closed, citing §21092.1 and *American Canyon Community vs. City of American Canyon* (2006) 145 Cal.App.4th 1062, 1075-76).

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Respondents argue that substantial evidence supports the County's determination that the new information merely clarified, amplified, or made insignificant modifications to the general assumptions that were presented in the draft EIR. According to respondents, the new information did not change the severity of the Project's impacts on global climate changes (GCC) or air quality. They contend that even with the new VMT estimates, the Project would still reduce emissions consistent with AB 32. They conclude that the County's decision not to recirculate was proper, citing *Silverado Modjeska Recreation and Parks vs. County of Orange* (2011) 197 Cal.App.4th 282.

The Court finds that the new information did constitute a substantial increase in the severity of GCC and air quality impacts which required recirculation. (Guidelines §15088.5; Pub. Res. §21092.1, §21166.) The new analysis which revealed the substantial increase in GHG and fine particulates was conducted after the comment period. This new information did not merely supply additional requested details or merely explain the DEIR's analysis. Instead, the methodology used in connection with the DEIR was discarded. A new, more accurate methodology disclosed air quality impacts more severe than previously disclosed.

In addition, the County's reliance on its BAU hypothetical and analysis fails. The County cannot rely on alleged consistency with AB 32 as discussed above.

Petitioners did not have an adequate opportunity to comment on the newly disclosed impacts. The determination that the increased impacts did not warrant recirculation is not supported by substantial evidence.

III. The EIR did not adequately analyze the project's impacts on air quality and the related health impacts.

The Court finds that there is inadequate analysis in the EIR as to the Project's impacts on air quality and related health effects. In discussing significant environmental impacts, direct and

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indirect significant effects of the project should be clearly identified and described, giving due consideration to both the short-term and long-term effects on matters including health and safety problems caused by the physical changes. (*Guidelines §15126.2(a).*) Here, the EIR makes only general references to respiratory and pulmonary conditions and cancer health risks. However, it provides little information or analysis as to the specific impacts on the general population versus sensitive receptors, or as to the degree of impacts and the specific effects on the public's health. When the informational requirements of CEQA are not met, an agency has failed to proceed in a manner required by law. (*Bakersfield Citizens for Local Control vs. City of Bakersfield* (2004) 124 Cal. App. 4th 1184, 1220).

The County's reliance on the South Coast Air Basin region-wide Air Quality Management Plan does not relieve it of its obligation to provide a reasonable analysis of the Project's cumulative impacts. (*Guidelines §15130(b).*) Pursuant to *Berkeley Keep Jets Over the Bay Committee vs. Bd. of Port Commissioners of the City of Oakland* (2001) 91 Cal. App. 4th 1344, 1371, the County is required to use its best efforts to find out and disclose all that it reasonably can. Here, Petitioners provided the County with numerous studies addressing the health effects of particulate pollution, yet County's only response was to discredit one of the reports, and to continue to rely on the SCAQMD methodology. Absent any attempt to use its best efforts to find out and disclose all that it reasonably can, the County failed to meet its obligations.

IV. The EIR failed to conduct an adequate review of the project's impacts on regional traffic.

The Court finds that the EIR failed to conduct adequate environmental review of the Project's impacts on regional traffic. The record establishes that the Project will result in over 85,000 vehicle trips per day, and will add 17,000 new car trips to the I-215 each day. Many of the residents will be driving to Moreno Valley and Riverside via the I-215, and those commuting

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to Orange and Los Angeles Counties will contribute to the existing problems at the I-15/SR91 interchange.

The EIR failed to analyze the impacts on any of these freeways, and instead restricted its analysis based upon the Riverside County Traffic Impact Analysis Preparation Guide (TIA) and a supplemental analysis. In accordance with the TIA, County studied the area within a five-mile radius of the Project site and conducted a supplemental analysis including 17 additional intersections and 10 additional street segments. An EIR must include a description of the environment in the vicinity of the Project from both a local and regional perspective. (*Bozung vs. Local Agency Formation Comm. (1975) 13 Cal. 3d 263, 283; Guidelines §15125.*) By failing to analyze the Project impacts on the surrounding freeways, County failed to proceed as required by CEQA.

County also argues that it specifically noted there would be a need for subsequent environmental review related to potential traffic impacts and that significant changes with respect to development of regional transportation systems are expected to occur. CEQA, however, requires that the impacts of a proposed project are to be compared to the actual environmental conditions existing at the time of the analysis. (*Sunnyvale West Neighborhood Assn. vs. City of Sunnyvale (2010) 190 Cal. App. 4th 1351, 1380-1384.*) The EIR fails to provide any specific analysis as to the impacts of the Project on the existing freeways.

V. The EIR project description was adequate.

The question concerning which acts constitute the “whole of an action” for purposes of Guidelines §15738 is a question of law. (*Tuolumne County Citizens for Responsible Growth, Inc. vs. City of Rancho Cordova (2007) 155 Cal. App. 4th 1214, 1224.*) As such, it is to be determined by the trial court’s independent judgment. In this case, the Court finds that the

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construction of the electrical substation and transmission lines, as well as the training dike, are not part of the Project.

The EIR does acknowledge that the new electric substation is necessary to the Project: the existing Nuevo substation only has the capacity to meet projected demands through 2012, after which additional substation capacity (and the extension of transmission lines) will be necessary to provide power to support the current and future growth. The construction of the off-site training dike is necessary to significantly reduce flooding within the Project. However, neither the substation nor the dike, are component parts of the Project and there has been no improper segmentation.

There are general principles used to determine whether a particular act is part of the activity that constitutes a CEQA project. One way is to evaluate how closely the related acts are to the overall objective of the project (the relationship being sufficiently close when the proposed act is among the "various steps which taken together obtain an objective"). (*Tuolumne, supra, p. 1226.*) Another is to consider how closely the act and project are related in time and physical location, and the entity undertaking the action. (*Id.*, at p. 1227.)

In this case, both the substation and dike were planned independently of the Project, and will serve development in addition to the Project. The substation will be built by a separate entity, Southern California Edison to accommodate regional development growth beyond 2012. The dike is part of a previously approved County infrastructure plan to serve regional needs. As such, neither the substation and transmission lines nor the dike are component parts of the Project. (See *Anderson First Coalition vs. City of Anderson* (2005) 130 Cal. App. 4th 1173.)

VI. The EIR adequately addressed the project's noise impacts.

Petitioners contend that the EIR does not properly account for the already existing noise environment attributable to some of the roadways which will serve the Project. They argue that

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the EIR improperly uses thresholds of significance to avoid having to confront the possibility that any additional amount of noise might well be significant given the already existing problems. Petitioners contend that the EIR also fails to consider that the Project's incremental noise impacts might be cumulatively considerable. Petitioners conclude that the EIR avoids having to adopt feasible measures to mitigate the Project's contributions to noise.

On the contrary, the EIR acknowledges that because the cumulative noise without the Project is significant, any additional noise contributed by the Project would be significant. The EIR admits that the effect of the Project together with other cumulative impacts will result in significant area-wide cumulative noise impacts. Instead of refusing to examine mitigation for the noise impacts, the EIR considered the use of sound walls to mitigate the significant noise impacts. This mitigation was found not to be feasible, and the EIR concluded that the noise impacts were therefore significant and unavoidable. Petitioners do not dispute the finding that sound walls were not feasible. Nor do they suggest that there were other mitigation measures that could have been considered.

Petitioners also contend that the EIR fails to analyze specific noise impacts resulting from construction of the Project. However, the County was not required to speculate regarding construction activity for project buildup expected to take place over a 20-year period. (See *Tracy First v. City of Tracy* (2009) 177 Cal.App.4th 912, 932-933.) Instead, given the conceptual level of the Project, the County properly considered construction impacts to the extent possible and identified mitigation measures.

VII. EIR did not adequately address concerns raised with respect to the Habitat Conservation Plan.

CEQA requires the lead agency to respond to each significant environmental issue that is raised by commenters. (Pub. Res. C. §21091(d)(2).) Major environmental issues raised when

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the lead agency's position is at variance with recommendations and objections should be addressed in detail with reasons why specific comments and suggestions were not accepted. (Guidelines §15088(c).) Responses to comments should at least demonstrate a good faith reasoned analysis. (*Eureka Citizens for Responsible Government v. City of Eureka* (2007) 147 Cal.App.4th 357, 378.)

Commenters pointed out that the Project's plan to construct "JJ Street" interferes with so-called "Constrained Linkage 20," a habitat block identified in the MSHCP. The Constrained Linkage allows space for migration, plant propagation, and increased mating opportunities between other habitat blocks. JJ Street will be constructed across the Constrained Linkage and will create another barrier to wildlife attempting to travel between the Wildlife Area and the Lakeview Mountains.

The County's responses to comments first maintained that JJ Street does not actually cross the wildlife corridor. But JJ Street is in fact perpendicular to the linkage and will be constructed directly across it.

The County also took the position that JJ Street should be considered part of the planned Mid-County Parkway, which includes the existing Ramona Expressway. This roadway also crosses the linkage and was already anticipated and contemplated by the MSHCP. Comment responses contend that the culvert/wildlife corridor under the Mid-County Parkway will be extended and will run under JJ Street. Petitioners point out that the MSHCP indicates that small mammals are not known to use culverts longer than 64 meters. With the addition of JJ Street, even if parallel to the Mid-County Parkway, the culvert will be at least 87 meters in length. The MSCHP anticipated a 67-meter wildlife crossing, and extending it an additional 20 meters for JJ Street may make the undercrossing unusable for the species and may compromise the integrity

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of the Constrained Linkage. The County's analysis failed to address the additional length of the culvert which will be required in order to extend the undercrossing under JJ Street.

VIII. The EIR failed to adequately address the project's growth-inducing impacts.

Petitioners argue that EIR's brief analysis of growth-inducing impacts fails to meet the requirements of Guidelines §15126.2(d). The Project includes improvements to roads, the extension of energy services, and the extension of water lines and sewer services to serve future projects and urbanization. Petitioners further argue that pursuant to *Napa Citizens for Honest Government vs. Bd. of Supervisors* (2001) 91 Cal. App. 4th 342, 370, the EIR should have disclosed information about the housing units the infrastructure will accommodate, and the effect of the additional growth on public services.

The Court agrees that additional information about the Project's growth-inducing impacts should have been provided and analyzed. Although the County submits that such would be speculative, the record indicates that existing information is available which makes such discussion viable. The County references the expansion of the Ramona Expressway and incremental roadway improvements; the construction of new roads; and water and sewer improvements and infrastructure sized to serve future urbanization within the area. It also references "developing communities," and states how the infrastructure improvements and expansions could eliminate potential constraints for future development in the area. Given the extent of vacant and unimproved land surrounding the Project, the County should have been able to provide additional information and analysis about growth-inducing impacts.

IX. The EIR's Discussion of Project Alternatives was adequate.

Petitioners first argue that the Project's objectives are so narrow that they preclude consideration of a reasonable range of alternatives, citing *National Parks & Conservation Assn. vs. Bureau of Land Management* (9th Cir. 2010) 606 F.3d 1058, 1072. The Court finds that

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argument unavailing. While certain Project objectives may be possible due to the existing circumstances (e.g., single ownership and location), the objectives overall reflect the County's goals as evidenced in Chapter 2 of the County's General Plan. This is distinguishable from *National Parks*, where only one of the four project objectives served the needs of the BLM. (*National Parks*, supra, at pp.1071-72.)

Petitioners then argue that the EIR improperly failed to analyze an off-site alternative, which is necessary given the significant amendments and zoning changes and the inconsistencies with the General Plan. (*Citizens of Goleta Valley vs. Bd. of Supervisors* ("Goleta I") (1988) 197 Cal. App. 3d 1167, 1179-80; Guidelines §15126.6.) Again, the Court disagrees and finds that the EIR properly considered and then rejected an alternate site. Guidelines §15126.6 requires the EIR identify alternatives that were considered and rejected as infeasible during the scoping process, and briefly explain the reasons underlying the determination. The factors that may be used to eliminate alternatives from detailed consideration in an EIR are failure to meet most of the project objectives, infeasibility, or inability to avoid significant environmental impacts. (§15126.6(c).) Here, the County included such discussion at AR 3403-04. The Court finds that discussion sufficient and distinguishable from that in *Goleta I*, supra.

X. The Project is inconsistent with the General Plan Circulation Element.

Petitioners argue that the Project is inconsistent with various General Plan policies: Land Use (L.U.) Policy 2.1(e) (to concentrate growth near or within existing urban and suburban areas to maintain the rural and open space character to the greatest extent possible); L.U. Policy 17.3 (to ensure development does not adversely impact the open space & rural character of the surrounding area); L.U. Policy 10.1 (to provide sufficient opportunities to increase local employment levels and minimize long-distance commuting); L.U. Policy 7.12 (to improve the

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relationship and ratio between jobs and housing); L.U. Policy 2.1(a) (to provide a land use mix at the countywide and area plan levels based on projected need); and Air Quality Policy 8.2 (to emphasize job creation and reductions in VMTs in job poor areas to improve air quality. Petitioners also contend the project is inconsistent with General Plan Circulation Element 2.1 which requires the County to maintain target Levels of Service: LOS "C" along all County-maintained roads and conventional state highways.

The question is whether the Project is compatible with and will not frustrate the General Plan's goals and policies. (*Napa Citizens for Honest Government vs. Napa County Board of Supervisors* (2001) 91 Cal. App. 4th 342, 379.) If the Project will frustrate the General Plan's goals and policies, it is inconsistent with the General Plan unless it also includes definite affirmative commitments to mitigate the adverse effect or effects. (*Id.*)

Here, the record establishes that the Project will frustrate the General Plan's policy of maintaining the County's Level of Service standards as described in the General Plan Circulation Element. The EIR admits that at full build-out of both the current General Plan roadway system and the Project, some roadway segments and intersections will not meet the required standards. The General Plan Circulation Element establishes definite standards regarding traffic congestion, not mere guidelines or flexible goals. The County cannot establish specific traffic requirements and at the same time approve a project that will cause unacceptable congestion without taking affirmative steps to handle that increased congestion. (*Napa Citizens, supra*, 91 Cal.App.4th, at p. 380; *Endangered Habitats League v. County of Orange* (2005) 131 Cal.App.4th 777, 782-783.) No such affirmative steps or mitigation measures have been developed. This is particularly unacceptable given the improper/inadequate analysis concerning traffic impacts from the Project discussed previously.

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Otherwise, the Court accepts the Board's findings of consistency as being supported by substantial evidence despite some inconsistency with a handful of land use policies articulated in the General Plan. A given project need not be in conformity with each and every land use policy. It need only be compatible with the objectives, general land uses and programs set forth in the General Plan. (*Families Unafraid To Uphold Rural El Dorado County v. Board of Supervisors* (1988) 62 Cal.App.4th 1332, 1336.) The County's determination of consistency with its own General Plan is entitled to great deference. It has the unique competence to balance the plan's policies when applying them and has the broad discretion to construe its policies in light of the plan's purposes. (See *Eureka Citizens for Responsible Government v. City of Eureka* (2007) 147 Cal.App.4th 357, 373-374.)

XI. One of the County's findings in support of the extraordinary amendment to the general plan is inadequate.

The County's General Plan discourages amendments to the foundational elements of the Plan outside of the County's regular five-year amendment cycle. Foundational elements may not be amended outside of the five-year cycle unless specific findings are made that the amendment is justified as a result of extraordinary events. This "Extraordinary Amendment" procedure requires three particular findings to justify an Extraordinary Amendment. (General Plan, Ch. 10 at A-12; Riv. Co. Code §17.08.060(F)). These findings were necessary here because the Project included General Plan Amendment 720 which raised development densities in connections with existing foundational elements. As discussed below, the Court finds the second and third required findings were sufficient and are supported by substantial evidence.

The second required finding to support an extraordinary amendment is that a condition exists or an event has occurred that is "unusually compelling." The County's finding regarding the unusually compelling event cites "an opportunity that is presented by having 2,786 acres

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under the control of one entity...to pursue a comprehensive master plan.” This finding is sufficient and is supported by substantial evidence.

The third required finding is that a component change is necessary to facilitate implementation of open space or transportation corridor designations arising from MSHCP and CETAP programs that could not be accomplished by a lesser change in the General Plan. The County supports this finding with the real party’s commitment to widen the Ramona Expressway, the fact that real party has much of the land necessary for the expansion without the County having to condemn it, and the fact that the Project’s circulation system is designed to align with planned access points for the Expressway obviating the need for a frontage road. This third finding is sufficient and is supported by substantial evidence.

The first required finding is that new conditions or circumstances justify modifying the General plan, that the modifications do not conflict with the overall County Vision, and that the modifications would not create an internal inconsistency among the elements of the General plan. Unlike the second and third findings discussed above, when the board made this required finding it did so merely by quoting the language in the extraordinary amendment procedure. The “new conditions or circumstances” are not defined and there is no indication as to what evidence the board relied on to support this finding.

To be adequate, a finding must apprise the reviewing court of the basis for the board’s actions. In other words, the finding must “bridge the analytic gap between the raw evidence and the ultimate decision or order.” (*Topanga Assn. for a Scenic Community vs. County of Los Angeles* (1974) 11 Cal. 3d 506, 514.) It is not the responsibility of the reviewing court to comb the record to find some evidence that might have supported the board’s finding. (*Id.*, at p. 516.)

Here, because the board merely quoted the language of the required finding, this Court does

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not know and cannot determine the basis for the county's decision. This first finding is not sufficient.

CONCLUSION

Pursuant to California Rules of Court rule 3.1590(c), this tentative decision is the Court's proposed statement of decision with respect to the petitions for writ of mandate filed in RIC10007572, RIC10007574 and RIC10007586 subject to any party's objection under rule 3.1590(g). If timely objections are not filed and served within 15 days of service of this statement of decision, petitioners in RIC10007572 and RIC10007574 are hereby ordered to prepare, serve and submit proposed judgments and peremptory writs of mandate. In RIC10007586, this proposed statement of decision addressed only the first and second causes of action. Unless the City wishes to dismiss its third and fourth causes of action for declaratory relief and injunctive relief, respectively, a final judgment cannot be entered in that case at this time.

A hearing for receipt of proposed judgment in RIC10007572 and RIC10007574 and for status conference on the City's remaining causes of action in RIC10007586 is hereby set for April 30, 2012, at 8:30 a.m., in Dept. 10.

Sharon Waters, Judge
L. Hall (cmg), Clerk
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JUL 11 2012

SUPERIOR COURT OF THE STATE OF CALIFORNIA
COUNTY OF RIVERSIDE

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8	FRIENDS OF THE NORTHERN SAN)	CASE NO.: RIC10007572
9	JACINTO VALLEY and SIERRA CLUB,)	
10	Petitioners,)	JUDGMENT
11	vs.)	
12	COUNTY OF RIVERSIDE and BOARD OF)	
13	SUPERVISORS OF RIVERSIDE COUNTY,)	
14	and DOES 1-20,)	
15	Respondents.)	
16	-----)	
17	NUEVO DEVELOPMENT COMPANY,)	
18	LLC, and DOES 21-40,)	
19	Real Party in Interest.)	
20	-----		

Petitioners and Plaintiffs, Friends of the Northern San Jacinto Valley and Sierra Club, challenged the March 23, 2010, decision of Respondents and Defendants, the County of Riverside and its Board of Supervisions (collectively, "County") to adopt Resolution Nos. 2010-88 and 2010-89 and Ordinance No. 348.4679, approving the Villages of Lakeview Project ("Project") and certifying an environmental impact report for the Project. This case was consolidated with Riverside Superior Court case Nos. RIC10007574 and RIC10007586 for purposes of administrative record, briefing schedule and hearing; however the Court ordered that separate judgments be entered in each case.

JUDGMENT

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The hearing on the merits of the consolidated cases was held on March 2, 2012, before the Honorable Sharon J. Waters in Department 10 of the Riverside Superior Court. Daniel P. Selmi, Rachel B. Hooper, Erin Chambers and Sara A. Clark appeared as counsel for Petitioners Friends of the Northern San Jacinto Valley and Sierra Club; Matthew D. Vespa appeared on behalf of Petitioners Center for Biological Diversity and San Bernardino Valley Audubon Society; Anthony L. Beaumon appeared for Petitioner City of Riverside; Jack S. Yeh and Keli N. Osaki appeared on behalf of Real Party in Interest Nuevo Development Company, LLC and the County and Tiffany N. North appeared on behalf of the County.

The Court having reviewed the record of the proceedings in this matter, the briefs and papers submitted, and the argument of counsel and having issued its final statement of decision,

IT IS ORDERED AND ADJUDGED that:


1. For the reasons set forth in this Court's April 11, 2012, Statement of Decision, attached hereto as Exhibit A, judgment granting the petition for writ of mandate shall be entered in favor of Petitioners.
2. A peremptory writ of mandate directed to the County shall issue under seal of this Court, ordering the County to set aside all approvals related to Resolution Nos. 2010-88 and 2010-89 and Ordinance No. 348.4679 and to refrain from approving these same or new approvals relating to or implementing the Project until such time as the County fully complies with CEQA and State Planning and Zoning Law.
3. The County shall make its initial return to the writ no later than 60 days after service of the writ setting forth what it has done to comply with the writ.

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4. Pursuant to Public Resources Code section 21168.9(b) and Code of Civil Procedure section 1097, the Court shall retain jurisdiction over the County's proceedings by way of return to the peremptory writ of mandate until the Court has determined that the County has complied with CEQA, and State Planning and Zoning Law or other applicable laws.
5. Petitioners are awarded their costs of suit in an amount to be determined through post-judgment proceedings. The Court reserves jurisdiction to consider an award of attorney fees pursuant to any properly and timely filed motion by Petitioners.

Dated: July 11, 2012



Sharon J. Waters
Judge of the Superior Court

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**SUPERIOR COURT OF THE STATE OF CALIFORNIA
COUNTY OF RIVERSIDE**

FRIENDS OF THE NORTHERN SAN)
JACINTO VALLEY and SIERRA CLUB,)

Petitioners,)

vs.)

COUNTY OF RIVERSIDE and BOARD OF)
SUPERVISORS OF RIVERSIDE COUNTY,)
and DOES 1-20,)

Respondents.)

-----)
NUEVO DEVELOPMENT COMPANY,)
LLC, and DOES 21-40,)

Real Party in Interest.)

CASE NO.: RIC10007572

~~PROPOSED~~ PEREMPTORY
WRIT OF MANDATE

TO: Defendants and Respondents, County of Riverside and Board of Supervisors
of Riverside County (collectively, "County").

The Court having entered a judgment in this proceeding directing that a peremptory
writ of mandate issue from this Court,

YOU ARE HEREBY COMMANDED to comply with the following:

1. Within forty five (45) days of the service of this Writ, the County shall set aside
all approvals relating to Resolution Nos. 2010-88 and 2010-89 and Ordinance No. 348.4679,
and shall refrain from approving these same or new approvals relating to or implementing

1 the Villages of Lakeview Project ("Project") until such time as the County fully complies with
2 CEQA and State Planning and Zoning Law.

3 2. Under Public Resources Code §21168.9(c), this Court does not direct the
4 County to exercise its lawful discretion in any particular way.

5 3. Under Public Resources Code §21168.9(b) and Code of Civil Procedure
6 §1097, this Court will retain jurisdiction over the County's proceedings related to this Project
7 by way of a return to this Writ until the Court has determined that the County has complied
8 with the provisions of CEQA, State Planning and Zoning Law.
9

10 You are further commanded to make and file a return to this writ within 60 days from
11 the date a copy of this writ is served on you, showing what you have done to comply with
12 this writ.


13 Witness the Honorable Barbara Walters, Judge of the Superior Court. Attest
14 my hand and the seal of this Court this 11 day of July, 2012.
15

16 Sherril R. Carter
17 Clerk

18 By: Leticia Hall
19 Deputy Clerk
20 **LETICIA HALL**



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Current
Volume

Zero Sum Game: The Debate Over Off-Site Agricultural Mitigation Measures

VOLUME 9 **Joshua Safran**

VOLUME 8 I. Introduction

VOLUME 7 Current national development trends are expanding existing urban areas outward rather than upward. Across the country, low-density communities are spreading into open space areas historically devoted to agricultural uses. It is estimated that every year about 1.2 million acres of American farmland are converted into developed uses.[1] This translates into a loss of approximately two acres of agricultural land per minute.[2] Whatever the precise rate of loss, the pace of farmland conversion is quantitatively significant. The negative consequences of such loss and the corresponding importance of maintaining agricultural uses is an important issue to different people for different reasons.

VOLUME 3 Some emphasize the great practical benefits of agricultural operations, both as a source of food and fiber and as an integral part of the American economy.[3] Others champion the more intangible benefits of agriculture such as the important cultural role it plays in the American way of life.[4] Others stress the utility of farmland not necessarily for the agricultural uses it allows, but for its function as a sanctuary of undeveloped open space. Open space is said to provide both tangible benefits, such as serving as a buffer against urban sprawl and the pollution associated with it, as well as more intangible spiritual values associated with the aesthetic beauty of open views.[5]

Current
Volume

VOLUME 9 To stem the tide of agricultural land conversion, state and local governments are employing a number of strategies which range from outright mandatory prohibitions on development, such as traditional zoning restrictions, to incentive based programs that encourage the continuation of traditional agricultural practices, such as voluntary agricultural district programs.[6] Some jurisdictions use a variety of other methods, including comprehensive land planning, conservation easements, and the purchase or transfer of development rights.[7] As discussed below, Vermont and California address the loss of agricultural land through state-wide comprehensive land planning procedures. These procedures allow for the development of certain agricultural lands in exchange for off-site mitigation. Such mitigation usually involves the permanent preservation of existing farmland, which is in some proximity to the land being developed, through conservation easements or deeds of development rights.

VOLUME 5 Off-site mitigation programs provide benefits to both developers and agricultural preservation advocates. Such mitigation ideally allows farmland under the greatest development pressure, where long-term agricultural uses are least viable, to be developed as part of a comprehensive pattern of contiguous development. Simultaneously, this mitigation strategy provides for the permanent protection of viable agricultural lands that would otherwise be in the path of development in the future, creating a permanent buffer between developed areas and large areas of farmland. However, this trade-off of current development for future preservation is the subject of ongoing controversy in both Vermont and California, where the debate over the wisdom and effectiveness of such mitigation measures will likely continue long into the future. At the heart of the debate is whether the loss of a finite and unique resource such as agricultural land can be mitigated.

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As discussed below, Vermont's off-site agricultural mitigation program is not expressly authorized by statute, but was established in a 1991 administrative decision recognizing the need to provide flexibility to the development process.

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Under the mitigation program, developers and landowners are generally permitted to develop agricultural lands in exchange for paying an amount deemed sufficient to preserve two acres of primary agricultural soils, in roughly the same area for each acre developed. While such arrangements are largely negotiated on an *ad hoc* basis, lands to be developed are generally those deemed unlikely to be used for agricultural production in the future and physically isolated from other farm units.

Opposition to Vermont's program led to another administrative decision a decade later. This decision altered the face of off-site agricultural mitigation in the state by tightening requirements for onsite mitigation and the satisfaction of other findings. While off-site mitigation is still an available option to developers and landowners in Vermont, it is now much more difficult to develop agricultural lands because off-site agricultural mitigation may only be used as a "last resort."

Unlike Vermont, California has not yet made up its mind about the fundamental question of whether the permanent preservation of off-site agricultural lands actually mitigates the loss of farmland. Litigants, the courts, State agencies, and the Office of the Attorney General are split on the mitigation issue. Because the three key legal decisions on the issue in California are unpublished or depublished and may not be cited as legal precedent or relied on by a court or party in any action or proceeding, the status of off-site agricultural mitigation measures in California is far from clear. Until the California Legislature or the California courts take affirmative action in this arena, the threshold question of whether the loss of agricultural land can be mitigated will remain unanswered.

California's unsettled approach to off-site agricultural mitigation is due, at least in part, to the nature of land use planning in the State. The legal basis for all land use regulation in both Vermont and California is the State's police power to protect the public health, safety, and welfare of its residents.[8] In Vermont, the State Legislature and State governmental bodies exercise the police power and generally dictate, implement, and oversee the land use policies and procedures for the State.[9] In contrast, land use regulations in California are not an exercise of authority delegated by the State Legislature, but are a manifestation of the police powers conferred on cities and counties by the California Constitution.[10] For example, in California, state zoning, planning, and environmental review requirements are not intended as specific grants of authority by the Legislature, but are minimum standards to be observed within the local planning practice and process.[11] As a consequence, although the California Legislature has passed legislation allowing for the preservation of off-site agricultural lands in the development process, the real power to require such a practice rests largely in the broad local police power of each jurisdiction. Hence, without a specific mandate from the State or a ruling by the courts, the off-site mitigation question in California will be decided jurisdiction by jurisdiction.

II. Off-Site Agricultural Mitigation in Vermont

A. Overview of Title 10, Sections 6001-8221 of the Vermont Statutes Annotated, Commonly Known as Act 250

Vermont's primary agricultural land protection laws are contained in the Land Use and Development Law, title 10, sections §§ 6001-8221 of the Vermont Statutes Annotated, commonly known as Act 250. In 1970, Act 250 was passed in response to a rapid and largely unregulated development boom.[12] In passing Act 250, the Vermont Legislature declared that it was necessary "to regulate and control the utilization and usages of lands and the environment" and to ensure that "the only usages which will be permitted are not unduly detrimental to the environment, will promote the general welfare through orderly growth and development and are suitable to the demands and needs of the people of this state." [13]

Act 250 establishes a comprehensive state-wide land use permitting system that requires developers and landowners to obtain public agency approvals prior to developing or subdividing certain real property.[14] To obtain a permit, developers and landowners must apply to a local District Environmental Commission and undergo a public hearing process. During the public hearing process, the probable environmental impacts of the proposed project are evaluated by the Commission.[15] This public review and evaluation process is designed to "protect the environment; balance development with local, regional and state issues; and to provide a forum for neighbors, municipalities and other interest groups to voice their concerns." [16]

The Commission has discretion to approve, conditionally approve, or deny a permit application based on a review of the significant environmental, aesthetic, and/or community impacts associated with the proposed project.[17] Specifically, the Commission must base its review and decision on a set of ten criteria established by Act 250. The criteria focus on the project's projected impacts on air and water quality, water supplies, traffic, educational and municipal services, and historic and natural resources, including scenic beauty and necessary wildlife habitat.[18]

Any party with standing may appeal Commission decisions to the State Environmental Court.[19] Prior to January 31, 2005, appeals of Commission decisions were heard by an administrative State Environmental Board.[20] The main body of current Act 250 jurisprudence results from formal, precedential decisions issued by the Environmental Board.[21] The Environmental Court considers issues on appeal *de novo* and its decisions may be appealed directly to the Vermont Supreme Court for judicial review, but only by certain limited statutory parties.[22]

While there are nominally only ten criteria for the Commission to consider, some criteria have discrete subparts that

stand alone in terms of their substantive requirements and treatment within Act 250 jurisprudence. Criteria 9(B) and 9(C) focus specifically on the proposed project's likely impacts to agricultural lands.[23] Criterion 9(B) focuses on "primary agricultural soils," requiring that the project applicant demonstrate that the project will not "significantly reduce the agricultural potential" of such soils.[24] Where agricultural potential of the subject land will likely be subject to significant reduction, the applicant must demonstrate that four additional subcriteria are satisfied, namely that:

- (i). The applicant can only realize a "reasonable return" on the fair market value of his or her land through uses which will significantly reduce agricultural potential;[25]
- (ii). The applicant does not own or control other lands which are "reasonably suited" for the proposed project;[26]
- (iii). The project has been planned to minimize impacts on agricultural soils;[27] and
- (iv). The project will not "significantly interfere with or jeopardize" the continuation of adjoining agricultural uses or reduce the potential of adjoining agricultural lands.[28]

Criterion 9(C) focuses on "secondary agricultural soils," requiring the project applicant to demonstrate that the project will not "significantly reduce the agricultural potential" of such soils or of adjacent primary agricultural soils for commercial agriculture.[29] As under Criterion 9(B), where the agricultural potential of the soils involved will likely be significantly reduced, the applicant must satisfy additional subcriteria, demonstrating that:

- (i). The applicant can only realize a "reasonable return" on the fair market value of his or her land through uses which will significantly reduce agricultural potential;
- (ii). The applicant does not own or control other lands which are "reasonably suited" for the proposed project; and
- (iii). The project has been planned to minimize impacts on agricultural soils.[30]

Despite their nominal designation as separate criteria, 9(B) and 9(C) are usually reviewed concurrently at Commission hearings and the method of analysis employed by the Board has been generally the same for both criteria.[31] The central issue of preservation of agricultural land expressed in both criteria is one of great importance under Vermont law. For example, the State Legislature has declared that:

[p]roducts of the land . . . as well as the beauty of our landscape are principal natural resources of the state. Preservation of the agricultural and forest productivity of the land, and the economic viability of agricultural units . . . and protection of the beauty of the landscape are matters of public good. Uses which threaten or significantly inhibit these resources should be permitted only when the public interest is clearly benefited thereby.[32]

In light of this declaration by the Legislature, it is no surprise that the requirements of Criteria 9(B) and 9(C) are lengthier and more involved than almost any of the other criteria.[33]

B. Establishment of Off-Site Agricultural Mitigation Under Act 250

On its face, Act 250 makes no provision for off-site agricultural mitigation, nor does it allow a project likely to significantly reduce agricultural potential to move forward without satisfying all of the subcriteria. However, in *Re: J. Philip Gerbode, #6F0357-EB*, Findings of Fact, Conclusions of Law, and Order (Mar. 26, 1991), the Environmental Board found that a project applicant had satisfied the requirements of 9(B) despite significant reductions in the agricultural potential of the land and a failure to demonstrate compliance with the subcriteria where he had entered into a Mitigation Agreement with the State of Vermont Department of Agriculture, Food and Markets ("DAG") which required the applicant to pay a fee to the Vermont Housing Conservation Board ("VHCB") for the permanent preservation of off-site soils elsewhere in the same town.[34] The proposed project involved the subdivision of a 150-acre tract of land currently used for crop production into a technology park composed of sixteen commercial and industrial lots with internal roadways and municipal water and wastewater services in the Town of St. Albans, Vermont. [35] The District Commission concluded that the project application did not comply with Criteria 9(B), and the applicant filed an appeal with the Board and sought a mitigation agreement with the Department.[36] Under the terms of the mitigation agreement subsequently presented to the Board, the applicant was to pay the VHCB an amount deemed sufficient to preserve two acres of primary agricultural soils in St. Albans for each of the 150 acres developed. [37] The Selectmen of the Town endorsed the mitigation agreement.[38]

The Board stated that in previous Criteria 9(B) cases, the Board's analysis regarding reduction in agricultural soils was limited to the project site, i.e., the land actually proposed for development.[39] The Board took the novel approach in the *Gerbode* case, however, of directing its inquiry into the net loss of agricultural soils on separate, non-contiguous lands, concluding that the proposed technology park would not significantly reduce the agricultural potential of the soils because, in the aggregate of the project site and land identified in the mitigation agreement, only one-third of the total amount of combined agricultural soils would be developed, while two-thirds of the agricultural potential would be permanently preserved.[40] Although the 150-acre project site was then under cultivation and had been historically used as a dairy farm, the Board based its decision, at least in part, on the conclusion that the subject land was not likely to be used for agricultural production "in the future." [41] The project site was in an area designated as commercial/industrial by the Town; was close to the railroad, an Interstate interchange, and commercial and industrial development; and was physically isolated from other farm units.[42] The Board's inquiry did not proceed to assess compliance with the subcriteria, presumably because it found, in the first instance, that no significant reductions in the agricultural potential of the aggregated lands as a whole would occur.

C. Off-Site Agricultural Mitigation Under Gerbode

Recognizing that there is no statute, regulation, or other express legislative authority which allows for mitigation agreements within the context of Criterion 9(B), subsequent cases characterized the *Gerbode* decision as "establishing," or giving birth to, primary agricultural soils mitigation agreements in Vermont.[43] Subsequent cases have described the Board's holding in *Gerbode* as based on recognition that "there would be instances where satisfaction of the strict requirements of Criterion 9(B) was not feasible." [44] Practically, an alternative to the four subcriteria was created in *Gerbode*, whereby applicants could "side-step" the requirements of the subcriteria.[45] Mitigation agreements became a third means by which applicants could pass Criterion 9(B) muster, instead of complying with the subcriteria, or demonstrating that no significant reduction in agricultural potential was likely.[46] Beginning with the *Gerbode* decision and until a subsequent change in the law, the "Board and . . . District Commissions . . . allowed applicants in particular cases to use mitigation agreements to fully compensate for the negative effects under Criterion 9(B) of their projects and thereby satisfy the criterion." [47] By entering into an agricultural mitigation agreement with DAG and agreeing to pay for the preservation of other, off-site primary agricultural soils, an applicant could, in effect "mitigate a project's way into compliance with the criterion." [48]

Following the *Gerbode* decision, "once a mitigation agreement had been signed by [the applicant and DAG], the Board generally accepted the agreement without further inquiry" into compliance with Criterion 9(B).[49] The Board's deference to DAG's discretion in setting the terms of mitigation agreements became controversial as did DAG's informal approach to mitigating the conversion of agricultural lands.[50] DAG's management of the mitigation process and the administration and spending of mitigation funds were undertaken on a relatively *ad hoc* basis after the *Gerbode* decision.[51] No formal process, rules, or procedures were established by DAG for the terms, implementation, or enforcement of mitigation agreements.[52]

While DAG's policy was to use funds collected under mitigation agreements to fund agricultural projects in the same Act 250 District as the lands to be developed, it did not necessarily dedicate funds to permanently preserve agricultural soils in the same municipality or county.[53] Similarly, no assurance was provided that the funds would serve to "protect soils of comparable quality or quantity to those [being] developed." [54]

As a matter of policy, DAG would generally only enter into a mitigation agreement (a)(i) if the agricultural land proposed for development was within an area designated for development under an approved municipal plan; or (a)(ii) if project designs minimizing the reduction in the agricultural potential of the soils had been considered and an onsite cluster development would not have resulted in the conservation of agricultural land with the ability to contribute to commercial agricultural enterprise; and (b)(i) if the development of the project site would not jeopardize the continuance of farming on nearby land (i.e. subcriterion iv); or (b)(ii) if the lands to be developed were in an area under conversion or likely to be converted to uses incompatible with farming or which would not support farming.[55] However, DAG did not always apply these policy considerations when determining whether off-site mitigation was appropriate for a project.[56]

In addition, while DAG required that developers contribute a calculated "price per acre" sufficient to permanently preserve two acres of land for each acre developed, its price per acre did not reflect the actual cost of purchasing or protecting any particular acre or group of acres of farmland in the same county.[57] The price per acre for primary agricultural soils was based on a county-average of the value of agricultural lands, "many of which [were] not under development pressure and [were] therefore less expensive" than lands in the path of development.[58] Consequently,

the price per acre for primary agricultural soils was actually less than the fair market value for lands under development pressure.[59]

D. Vermont's Current Approach to Off-Site Agricultural Mitigation

Criticism of the *Gerbode* decision and controversy surrounding DAG's subsequent administration of the mitigation fee program came to a head in *Re: Southwestern Vermont Health Care Corporation ("SVHC")*, #8B0537-EB, Findings of Fact, Conclusions of Law, and Order (Feb. 22, 2001), which altered the face of off-site agricultural mitigation in Vermont. In *SVHC*, the applicant filed a land use permit application with the Commission seeking authorization to construct a non-profit retirement facility with sixty-six assisted living units and fifteen duplex cottages for independent living on 51.5 acres.[60] The District Commission denied the project application and SVHC filed an appeal with the Board alleging, in part, that the Commission erred in its conclusions concerning Criterion 9(B) and its mitigation agreement with DAG.[61] In addition to the statutory parties, SVHC and DAG, the Board granted party status to several project opponents, including neighboring landowners and a countywide conservation district which filed a cross-appeal with the Board challenging the Board's authority to order off-site mitigation under Criterion 9(B).[62]

The project opponents attacked the validity of DAG's mitigation program in general and its application to the subject mitigation agreement, arguing that where the requirements of Criterion 9(B) and its subcriteria are not met, Act 250 requires denial of the land use permit.[63] The opponents argued that because there is no express language within Criterion 9(B) allowing protection of lands outside of the development site as a means by which to satisfy the criterion, mitigation agreements are unauthorized under the law.[64] The opponents also argued that while "the Environmental Board has broad authority to tailor conditions within an Act 250 permit," it does not have the inherent authority to impose conditions, such as the use of a mitigation agreement, that are contrary to the express criteria of Act 250.[65] In addition, the opponents contended that if off-site mitigation was to be employed, it should be effectuated through concrete guidelines, and that without such established standards, the use of mitigation agreements should be found invalid.[66] In this vein, the opponents asserted that the State's process for determining what agricultural land would be protected through a mitigation agreement took place "in a vacuum," with no information about the types of land to be protected, the quantity of land involved, the monetary value associated therewith, or whether lands with comparable soil types were located close enough to a proposed project's location such that off-site mitigation would really work.[67] Because of the informal nature of the process, the opponents argued, DAG's mitigation program allowed lands subject to development pressure to be developed while protecting lands which, because of their location, might never be developed anyway.[68]

The Board rejected the opponents' arguments regarding the validity of mitigation agreements and the Board's power to authorize their use, but conceded that the existing mitigation program was flawed. The Board held that authorizing off-site mitigation agreements was within the Board's police power and that "Act 250 provides the Board with broad authority to tailor permit conditions in order to ensure that proposed projects will comply with [Act 250's] ten criteria." [69] The Vermont Legislature expressly provided the Board with discretion to apply the requirements of Act 250 to unforeseen circumstances.[70] Citing subcriterion (iii)'s language encouraging onsite agricultural mitigation techniques, the Board stated that "the use of off-site mitigation to protect specifically targeted agricultural lands can be equally consistent with the legislative intent to protect 'economically viable agricultural units.'" [71] The Board held that "[a] narrow reading of criterion 9(B), resulting in the onsite preservation of a portion of agricultural soils on a project site, may not sufficiently preserve the economic viability of the agricultural soils involved;" and may, in the long run, fail to carry out the Legislature's goals "by attempting to preserve farmland which will ultimately be overwhelmed and fragmented by development at the expense of protecting large[r] parcels of land which are more amenable to preservation." [72] "Instead, the public's interest may be better served by a decision which approves the development of a project site in exchange for other economically viable agricultural lands of comparable quality." [73] Regarding its authority to implement mitigation agreements, the Board concluded that an off-site mitigation program "provides both DAG and the Board a reasonable means of achieving the Legislature's goal to preserve viable agricultural lands through an informed planning process." [74]

However, upon further consideration of the issues raised by the opponents, the Board stated that closer evaluation of the validity of mitigation agreements on an individual basis was warranted as part of the planning process.[75] The Legislature's consideration of the protection of primary agricultural soils in Vermont as a matter of great importance constituted a "clear signal" to the Board that it should "tread very carefully" when approving any procedure including mitigation agreements which could have the effect of reducing the potential of Vermont's primary soils.[76] To this end, the Board emphasized that going forward, mitigation agreements should be used only as a last resort: only after an applicant has "seriously attempted, but failed," to meet the subcriteria.[77] The Board cautioned that if efforts to reduce the impacts of a project are not even attempted, then "mitigation agreements will be seen as no more than a cost of

doing business."^[78]

The Board held that before a mitigation agreement would be accepted by the Board in the future, "an applicant must also design its project to meet subcriteria (ii) and (iii)" to the extent reasonably feasible.^[79] Thus, for example, if an applicant owns or controls other lands which would be suitable for the project but chooses not to use those lands or if the project could be planned to minimize the reduction of the potential of the primary agricultural soils, but the applicant chooses not to implement such a plan "the Board [could] not accept a mitigation agreement in lieu of meeting the subcriteria."^[80]

In addition, the Board reinforced the practice of DAG not to enter into mitigation agreements unless the project meets subcriterion (iv); thus, the Board formally required that all projects avoid significantly interfering with or jeopardizing adjoining agricultural uses.^[81] Finally, the Board required "assurances that funds donated under a mitigation agreement will be of an amount sufficient to ensure that at least two acres of farmland will be purchased or otherwise protected for every acre of primary agricultural soils that will be lost to development."^[82]

Applying its holding to the mitigation agreement at issue, the Board held that the agreement was too vague and uncertain to be accepted. Significantly, the project site was the largest parcel of primary agricultural land to ever participate in the off-site mitigation program, and the Board held that the mitigation agreement was flawed when reviewed under the heightened scrutiny deserved.^[83] The agreement was deficient because the mitigation fee amount was derived by using countywide average costs for farmland and did not provide assurances that soils of a comparable quality to those lost by the project would actually be protected.^[84] Upon application of the individual subcriteria to the project, the Board concluded that although it complied with subcriteria (ii) and (iv), it did not satisfy subcriteria (i) and (iii), and therefore the agreement did not conform with Criterion 9(B).^[85]

Subsequent Board decisions have recognized that the *SVHC* decision established a "new test" considerably limiting the acceptability of mitigation agreements in Vermont.^[86] Under the new standards for mitigation agreements, the Board has consistently treated them as a "last resort" and has made it more difficult to satisfy Criterion 9(B) by entering into them.^[87]

In response to the *SVHC* decision, DAG has promulgated detailed criteria and adopted formal procedures for the implementation and administration of mitigation agreements.^[88] As of November 30, 2002, mitigation agreements have led to the purchase of conservation easements on 22 farms containing a total of 5,183 acres of land.^[89]

III. Off-Site Agricultural Mitigation in California

A. Overview of Title 14 of the California Public Resources Code, Sections 21000 California Environmental Quality Act ("CEQA")

Like Vermont, California requires most major development projects to undergo a public environmental review process in order to assess the potentially significant impacts associated with the proposed project. The California Environmental Quality Act, California Public Resources Code §§ 21000-21006 is one of California's most important environmental laws.^[90] CEQA was passed in 1970 in response "to a general and growing awareness and acceptance of the importance of the natural environment in the lives of [California] citizens, and the vital necessity of its protection and preservation."^[91] The fundamental purpose of CEQA is to "develop and maintain a high-quality environment now and in the future, and take all action necessary to protect, rehabilitate, and enhance the environmental quality of the state" by regulating development so that "major consideration is given to preventing environmental damage, while providing a decent home and satisfying living environment for every Californian."^[92]

CEQA requires formal environmental review prior to public agency decisions to carry out, authorize, or approve projects that could have adverse effects on the environment.^[93] CEQA is primarily a procedural requirement in that it does not regulate project implementation through substantive regulatory standards, or prohibitions.^[94] Instead of prohibiting public agencies from approving projects with adverse environmental impacts, CEQA requires only that the agencies inform themselves about the environmental effects of their proposed actions, carefully consider all relevant information before they act, give the public an opportunity to comment on the environmental issues, and avoid or reduce potential harm to the environment when that is feasible.^[95]

To this end, after performing an initial study to identify any potential environmental impacts of a project, the public agency approving the project, the lead agency, must generally prepare an Environmental Impact Report ("EIR") if it

finds that any of the identified impacts may be "significant."^[96] The general purpose of the EIR is to provide state and local agencies and the general public with detailed information on the potentially significant environmental effects which the proposed project is likely to have, to list ways which the significant environmental effects may be minimized through mitigation, and to indicate alternatives to the project.^[97] CEQA's implementing regulations, 14 C.C.R. §§ 15000-15387 (the "Guidelines"), set forth a set of sixteen broad environmental factors that may be potentially affected by a project.^[98]

Potential impacts to "agricultural resources" must be studied as part of the environmental review process under CEQA.^[99] The term "agricultural resources" generally refers to agricultural land or agricultural uses.^[100] Impacts to agricultural resources include the conversion of agricultural land to non-agricultural uses and conflicts with existing zoning for agricultural use or a Williamson Act contract.^[101] Where impacts to agricultural resources are found to be significant, any feasible mitigation measures that would avoid or substantially lessen such environmental effects must be adopted.^[102] Specifically, mitigation under CEQA includes:

- (a) Avoiding the impact altogether by not taking a certain action or parts of an action;
- (b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation;
- (c) Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment;
- (d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and
- (e) Compensating for the impact by replacing or providing substitute resources or environments.^[103]

Mitigation measures need not be adopted, however, where specific economic, social, technological, or other considerations make infeasible the mitigation measures identified in the EIR process.^[104] In addition, where implementation of the mitigation measures proposed are within the responsibility and jurisdiction of another public agency and not the lead agency, the project may be approved if the lead agency simply makes findings that the proposed mitigation measures have been or "can and should be" adopted by the other agency.^[105]

B. The Debate Over Off-Site Agricultural Mitigation Under CEQA

CEQA does not provide for the specific type of mitigation measures that can or should be adopted to mitigate significant impacts on agricultural resources, leaving the determination of how best to mitigate such impacts to the discretion of local agencies. Unlike Vermont, where Act 250 jurisprudence has established off-site agricultural mitigation measures as common practice, California has not yet made up its mind. CEQA litigants and the courts are still engaged in a debate over the fundamental question of whether significant impacts to agricultural resources can be or are mitigated through the permanent preservation of off-site agricultural lands. Ironically, because CEQA does not require mitigation where mitigation is deemed infeasible, project proponents in California often argue that agricultural lands are a finite resource which, once lost, are irreplaceable. Under this logic, any loss of agricultural lands is unmitigable through the long-term preservation of off-site agricultural land because development still results in a net loss of agricultural lands in the State. Conversely, project opponents in California often argue that agricultural lands are not a finite resource and that the conversion of agricultural lands may be mitigated to a level less than significant or even that conversion of non-agricultural lands to agricultural uses is a feasible way of offsetting any net decrease.

Unfortunately for all stakeholders involved, the three key CEQA decisions addressing this debate are unpublished or depublished and may not be cited as legal precedent or relied on by a court or party in any action or proceeding.^[106] This has left the state of the law in this area in considerable disarray, particularly because the decisions represent a split in California's appellate districts, entail conflicting approaches by different state agencies, and were litigated under contradictory theories raised by the Office of the Attorney General.

1. County of Santa Cruz

The issue of off-site mitigation for impacts to agricultural resources was first addressed by the California Court of Appeal in *County of Santa Cruz v. City of San Jose*, where Santa Cruz County and environmental groups challenged the sufficiency of an EIR for a large-scale campus industrial development in the City of San Jose.^[107] The project entailed the conversion of 688 acres of farmland and open space into an industrial research park in which 269 acres would be devoted to open space and flood control improvements including a flood detention basin.^[108] The use proposed by the

project conformed with the City's adopted general plan.[109] The EIR provided that the loss of farmland and other open space due to the construction of the project could not be mitigated.[110]

The project opponents argued that the EIR's treatment of impacts to agricultural lands and open space was inadequate and that the City should have required the project applicant to purchase conservation easements or other off-site agricultural land to offset the loss, and thus, mitigate the impact.[111] The City responded by arguing that the loss of farmland and open space could not be "feasibly mitigated" because the land converted by the project to industrial use could not be replaced and was, in any event, designated by the general plan for industrial use.[112] The opponents responded that because the City did not even consider the purchase of other agricultural lands or easements, it was unknown whether this would have been a feasible mitigation measure. In the view of the project opponents, it was "environmentally unconscionable" for the City to adopt a policy that allowed for destruction of prime agricultural land without any attempt to mitigate this effect.[113]

The EIR for the project concluded that the loss of agricultural lands could not be mitigated by adopting the measures suggested by the opponents. The EIR explained its conclusion as follows:

There is a finite amount of land that is suitable for agricultural use. The purchase of fee title or of agricultural conservation easements over other agricultural parcels off-site would not avoid, reduce or compensate for the impact of converting land on the site to campus industrial use because it would not offset the loss of agricultural land caused by the Project -- i.e., there would still be a net reduction in the total amount of land suitable for agricultural use that is available for such use. At most, the suggested measures would prevent the conversion of other agricultural lands as a result of other hypothetical future projects on any parcels that were purchased or had a conservation easement placed on them.[114]

The EIR noted that because 269 acres of the 688-acre site would be preserved as open space, the loss of land was smaller than what was envisioned in the general plan. The City recognized that the impacts on agricultural lands could not be mitigated but concluded that they were acceptable in light of the significant benefits related to the development of the site in accordance with the goals of the general plan.[115] In ruling for the City, the court held that while CEQA authorizes the type of off-site mitigation proposed by the opponents and that other jurisdictions may have policies requiring purchases of easements or open space to offset the loss of agricultural land to development, CEQA does not require the adoption of such measures in every case.[116] The court stated that the City did not have any policies providing for offsetting purchases but did have a policy that land designated for development in its general plan should be developed in accordance with that plan. The plan included consideration of land use, housing, conservation, and open space issues. This was reflected in the long-term goals, objectives, and policies relating to the appropriate balance between development of housing, industrial, commercial and other uses on the one hand, and the preservation of agricultural land and open space on the other. The court concluded by holding that the EIR's explanation was sufficient and adequately supported the City's findings regarding the feasibility of mitigating the loss of open space and agricultural lands.[117]

2. Kangaroo Rat

The next case to rule on the off-site agricultural mitigation issue was *Friends of the Kangaroo Rat v. California Department of Corrections*, [118] where project opponents challenged the legal sufficiency of a subsequent EIR ("SEIR") [119] certified by the California Department of Corrections ("CDC") for a prison construction project in Kern County. [120] The SEIR stated that "the project would convert 480 acres of farmland to an institutional use," representing a significant impact to agricultural resources that could not be mitigated because no mitigation was available to reduce the impact. [121] During environmental review of the project, the project opponents commented that this conclusion was not supported by any evidence in the record and was not based on any analysis or discussion. The opponents stated that the SEIR should have examined "the possibility that the impact of this conversion could be reduced by creating agricultural easements over important farmlands [off-site] in the vicinity of the project site." [122] CDC responded to the opponents' comments as follows:

The [SEIR] does not discuss mitigation for the conversion of Important Farmland to non-agricultural uses because there is no known mitigation for this impact. The State CEQA Guidelines require that an EIR discuss feasible measures that would avoid or substantially reduce a project's significant environmental effects. They also require that if mitigation exists that is considered infeasible, the infeasibility be discussed. The State CEQA Guidelines, however, do not require that a lead agency present evidence of the non-existence of mitigation The same commenter proffered previously . . . that this impact was not mitigated, but provided no suggested mitigation As we can only infer the suggestion here, CDC would pay the owner of existing agricultural land to continue to farm the land. This would not mitigate the loss of farmland; it would not create new farmland or compensate for the loss of farmland that has already

occurred. The only other options would be to acquire for conversion to agricultural use (1) land that is presently undeveloped and not in agricultural use but that could be suitable for cultivation as Important Farmland (i.e., fallow land) or (2) land that is already developed. Based on field visits and a review of [the area Habitat Conservation Plan], it can be concluded that fallow agricultural land or natural open space land is likely to contain natural habitat that may potentially be used by special-status wildlife species . . . ; converting such land to agricultural use to mitigate a land use impact could therefore entail introducing disturbance (agricultural operations) into potential habitat, which would result in impacts on these species. This is not environmentally beneficial. Converting land developed with residential, commercial, or industrial uses to Important Farmland is infeasible for obvious reasons.[123]

In ruling for the CDC, the court held that the creation of an off-site agricultural easement would not constitute "mitigation" under CEQA.[124] The court stated that the suggested agricultural easement would presumably not create any new farmland where no farmland presently exists. "Thus, an agricultural easement would not compensate for a loss of farmland 'by replacing or providing substitute resources or environments.'"[125] At best, the court reasoned, such an easement might prevent the future conversion of some as yet unidentified parcel of farmland to a nonagricultural use. The court concluded that although the opponents might deem this future preservation function to be a desirable result, the desire for such a result did not turn the proposed action into mitigation of the project's impacts on agricultural resources.[126]

3. South County Citizens

In *South County Citizens for Responsible Growth v. City of Elk Grove*, the California Office of the Attorney General on behalf of the California Department of Conservation, took a totally contrary position to its stance in *Kangaroo Rat*, arguing that CEQA does require consideration of off-site mitigation for the loss of agricultural land.[127] At issue in this case was the development of approximately 295 acres of open space and farmland in the City of Elk Grove.[128] The City's general plan designated the project site for potential urban development by 2010 and the City approved the construction of extensive commercial uses, including a regional shopping mall, and some 280 residential units.[129] The "EIR identified the conversion of farmland as a significant environmental effect" of the project but "concluded that there [was] no feasible mitigation measure available to offset the loss of farmland." [130] It reasoned that "while preservation of other existing farmland or the payment of fees for the purchase of conservation easements would help to limit future losses, such measures would not reduce the specific loss of farmland converted to urban use through the project," and that it was impossible to create or manufacture more viable farmland.[131]

During the public comment period on the EIR, a number of commentators suggested that the loss of farmland could be mitigated by adopting a Sacramento County policy that for every acre developed, "the applicant would preserve .63 acres of agricultural land within the area or would contribute 950 dollars into a fund for the purchase of conservation easements or similar instruments." [132] Although it contacted a number of State and local agencies for information on agricultural conservation programs, City staff continued to recommend against the imposition of a conservation mitigation requirement for the project.[133] Staff "asserted that conversion of the land to urban use would result in permanent loss of [an agricultural] resource that could not be avoided, minimized, or rectified." [134] Staff also "noted that to impose a mitigation measure under CEQA, there must be an essential nexus between the mitigation measure and a legitimate governmental interest, and the measure must be roughly proportional to the impacts of the proposed project." [135] Staff concluded that because there had been no nexus study or ordinance in place requiring such mitigation, the imposition of such a requirement would not meet this test.[136]

During the environmental review process, the applicants informed the City that they would be willing to pay a mitigation fee and the City adopted a development agreement which required the payment of such a mitigation fee. However, "the City found that [the] payment of the fee would not mitigate the impact of the project [on agricultural resources] below a level of significance." [137] In ruling against the City, the court found that nothing in CEQA would support the view that a public agency was relieved of the duty to adopt a feasible mitigation measure which would substantially lessen the significant environmental effects of a project simply because those measures would not reduce the impact below a level of significance.[138] The Court also found that the applicants, "by agreeing to pay, and the City by agreeing to accept, mitigation fees tacitly agreed the loss of farmlands can be mitigated through the payment." [139]

With regard to the underlying issue of whether the loss of farmland can be mitigated under CEQA, the project applicants pointed to the *Kangaroo Rat* case and asserted that because a conservation easement would not create new farmland, it would not constitute mitigation for the conversion of existing farmland.[140] In reaching the opposite conclusion, the court, in a 2-1 decision, expressly disagreed with the Fifth Appellate District's holding in *Kangaroo Rat*. [141] The court reviewed a number of legislative pronouncements including provisions of the Williamson Act,

California's conservation easement law, the Agricultural Land Stewardship Program Act, and CEQA itself, and concluded that these legislative acts reflect that conversion of agricultural land to other uses has been a matter of significant concern to the Legislature for nearly four decades.[142] The court concluded that the California Legislature recognizes that conversion of farmland to other uses, particularly urban use, "inevitably creates development pressures that have a profound impact on the ability of the public and private sectors to conserve other land for agricultural use" and regards conservation easements as an important and necessary means of combating the development pressures created by the conversion of farmland.[143]

The court held that while it is obvious that off-site agricultural mitigation measures will not replace the converted land, they can diminish the development pressures created by the conversion of farmland and "can provide important assistance to the public and private sectors in preserving other farmland against the danger of the domino effect created by the project." [144] In this respect, the court held that off-site "conservation easements [fell] well within the concept of mitigation under CEQA" and that the EIR was deficient because it did not discuss the issue of conservation fees as a mitigation measure for the project.[145]

In a dissenting opinion, one Justice stated that the reasoning of the *Kangaroo Rat* case was persuasive and that a conservation easement does not lessen the loss of agricultural land caused by this or other past and probable future projects.[146] Rather, agricultural land is "unique, and once it is developed with urban uses, it is lost permanently." [147] Emphasizing that off-site conservation easements do not constitute mitigation under CEQA, the Justice wrote that the only means of mitigating or lessening the impacts on agricultural resources is by not approving the project and called for the Legislature to address the conflict between its desire to preserve agricultural land under the CEQA process and the fact the loss of such land cannot be substantially lessened or mitigated when approving a project under CEQA.[148]

Until the Legislature does act to clarify the law in this regard, or until the California Courts of Appeal publish some decisions in this arena, the status of off-site agricultural mitigation measures under CEQA is unclear.[149]

IV. Conclusion

Unlike agricultural district programs and other voluntary farmland preservation systems, off-site agricultural mitigation requirements can have teeth. If developers or landowners want to convert agricultural lands to developed uses, onsite concessions to project design generally have to be made and funds and resources have to be expended to arrange for the permanent preservation of nearby agricultural lands off-site, whether through conservation easement, deeds of development rights, or some other mechanism. Unlike agricultural zoning ordinances which "lock-up" existing farmland, and which are often viewed as unfair or too subject to political caprice, off-site mitigation programs allow for some development to occur, depending on site-specific conditions and the developer or landowner's willingness to compromise.

Ideally, off-site agricultural mitigation enables farmland subject to the greatest development pressure, where long-term agricultural uses are least viable, to be developed as part of a comprehensive pattern of contiguous development while simultaneously providing permanent protection for other viable farmland that might otherwise be in the path of future development. In practice, however, this balance between current development and future preservation is very difficult to maintain. After a decade of employing fairly loose mitigation standards, Vermont recently tightened its requirements and now permits off-site mitigation only as a "last resort." California is still wrestling with the fundamental question of whether the loss of farmland can even be mitigated. Because farmland is a finite resource and because there is no bright line delineating too much development from too little, states like Vermont and California are likely to host heated debates over where to draw the line for years to come.

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[1] See Farmland Information Center, Revised 1997 National Resources Inventory: Changes in Land Cover/Use (Jan. 2003).

[2] See American Farmland Trust, Farming On The Edge, available at <http://www.farmland.org/farmingontheedge/> r_findings.htm (last visited Jan. 25, 2005).

- [3] Cal. Pub. Res. Code § 10201 (West 1996 & Supp. 2004); Cal. Gov't Code §§ 51201, 51220; Kathryn L. Lipton, et al., U.S. Dept. of Agric. The Food and Fiber System: Contributing to the U.S. and World Economies, Agriculture Information Bulletin No. 742 (1998).
- [4] See, e.g., *Worth County Friends of Agriculture v. Worth County*, 688 N.W.2d 257, 259-60 (2004) (indicating that the presence of agriculture in Iowa impacts "the world beyond" and is "woven into the very fabric" of the state); Sean F. Nolon & Cozata Solloway, *Preserving Our Heritage: Tools to Cultivate Agricultural Preservation in New York State*, 17 *Pace L. Rev.* 591 (1997).
- [5] See, e.g., *Sod Farm Associates v. Springfield Township Planning Board*, 298 N.J. Super. 84, 90 (1995) (discussing New Jersey's State Development and Redevelopment Plan which prevents sprawl through preservation of large contiguous masses of farmland); *Shea Homes Limited Partnership v. County of Alameda*, 110 Cal. App. 4th 1246, 1256 (2003). See e.g., *Sierra Club v. City of Hayward*, 28 Cal.3d 840, 863 (1981) (referring to agricultural lands as a "welcome scenic respite from the cluttered urban landscape.").
- [6] See Elisa Paster, *Preservation of Agricultural Lands Through Land Use Planning Tools and Techniques*, 44 *Nat. Resources J.* 283 (2004). See generally Joshua Safran, *Contracting for Preservation: An Overview of State Agricultural District Programs*, Vol. 27, No. 7 *Zoning and Plan. L. Rep.* (July/Aug. 2004) (discussing a comprehensive overview of agricultural district programs in America).
- [7] See generally Robert H. Freilich, , *From Sprawl to Smart Growth: Successful Legal, Planning, and Environmental Systems* (Am. Bar Ass'n, 1999).
- [8] See *Berman v. Parker*, 348 U.S. 26, 32-33 (1954); *Metromedia, Inc. v. City of San Diego*, 26 Cal. 3d 848, 861 (1980); *State v. Quattropani*, 133 A. 352, 353 (1926).
- [9] See 10 Vt. Stat. Ann. § 6086(c) [hereinafter Act 250]; Re: Clarence and Norma Hurteau, # 6F0369-EB, Memorandum of Decision (March 25, 1988); State of Vermont Environmental Board, Act 250 -- A Guide to Vermont's Land Use Law, State of Vermont Environmental Board (Nov. 2000) at 2.
- [10] See CAL. Const. art. XI, § 7; *DeVita v. County of Napa*, 9 Cal. 4th 763, 782 (1995); Daniel J. Curtin, Jr. & Cecily T. Talbert, *Curtin's California Land Use and Planning Law* 2 (24th ed. 2004)
- [11] *Id.* at chs. 1-4, 6 (providing a comprehensive and authoritative overview and practice guide to land use planning law in California).
- [12] See *State Land Use and Development Plans (Act 250)*, Vt. Stat. Ann. tit. 10, §§ 6089, 6102 (1997 & Supp. 2004).
- [13] See *id.* at 6 (quoting Findings and Declaration of Intent Vermont's Land Use and Development Law Title 10, Chapter 151).
- [14] See Cindy Corlett Argentine, *Vermont Act 250 Handbook* ch. 1 (1998) (providing an excellent guide for the practical navigation of Act 250). See Michelle Henrie, *Large Development Meets Vermont's Act 250: Does Phasing Make a Monster or Tame It?*, 23 *Vt. L. Rev.* 393 (1998) (for a discussion of other aspects of Act 250 being currently debated); Robert F. Gruenig, *Killington Mountain and Act 250: An Eco-Legal Perspective*, 26 *Vt. L. Rev.* 543 (2002).
- [15] See Act 250 §§ 6081, 6083, 6085, 6086.
- [16] Argentine, *supra* note 14, at 1.
- [17] See Act 250 § 6086(c). As a matter of law, conditions are limited as they must be valid exercises of the state's police power and they must be designed to prevent or mitigate impacts under Act 250's criteria. When permits are granted they are typically subject to conditions covering a broad range of issues. Argentine, *supra* note 14, at 57.
- [18] See Act 250 § 6086(a). Projects must also conform to local and regional land-use plans. *Id.*

[19] See Act 250 §§ 6085, 6089, 8504(a).

[20] See Act of the Vermont General Assembly No. 115, §§ 7, 58 (May 13, 2004) (abolishing State Environmental Board and granting appellate jurisdiction of Commission decisions to the State Environmental Court).

[21] See generally Vermont Environmental Board, Board Decisions, available at <http://www.state.vt.us/envboard/decisions.htm> (last visited Mar. 15, 2005).

[22] See Act 250 §§ 8504(h), 8505. The Supreme Court did not review Environmental Board decisions de novo and the facts established by the Board were deemed to be conclusive where supported by substantial evidence. See, e.g., *In re Wal-Mart Stores, Inc.*, 702 A.2d. 397, 400-401 (1997) (noting that the Supreme Court gave "deference to the Environmental Board's interpretation of Act 250."). It is expected that the Supreme Court will afford similar deference to Environmental Court decisions.

[23] See Act 250 §§ 6086(a)(9)(B) & (C).

[24] See *Argentine*, supra note 14, at 189-190. Agricultural soils are "primary" when they have a potential for growing food and forage crops, are sufficiently well drained to allow sowing and harvesting with mechanized equipment, are well supplied with plant nutrients or highly responsive to the use of fertilizer, and have few limitations for cultivation or limitations which may be easily overcome. In order to qualify as primary agricultural soils, the average slope of the land containing such soils may not exceed 15 percent, and such land must be of a size capable of supporting or contributing to an economic agricultural operation. See Act 250 § 6001(15). The reduction in the potential of such soils is "significant" when the soils are paved, built upon, or divided into parcels too small to contribute to an economic agricultural operation.

[25] See Act 250 §§ 6086(a)(9)(B)(i); *Re: Thomas W. Bryant and John P. Skinner*, No. 4C0795-EB, Findings of Fact, Conclusions of Law, and Order at 26, 28-29 (Vt. Env'tl. Bd. Jun. 26, 1991). Applicants must demonstrate that there is no land use through which they can secure a reasonable rate of return on their investment which does not significantly reduce agricultural potential. See *Re: Marvin T. Gurman*, No. 3W0424-EB, Findings of Fact, Conclusions of Law, and Order at 19 (Vt. Env'tl. Bd. Jun. 10, 1985); *Re: Richard and Napoleon LaBrecque*, No. 6G0217-EB, Findings of Fact, Conclusions of Law, and Order at 6 (Vt. Env'tl. Bd. Nov. 17, 1980).

[26] See Act 250 §§ 6086(a)(9)(B)(ii).

[27] See Act 250 §§ 6086(a)(9)(B)(iii). Projects designed to minimize impacts generally utilize "clustered" housing plans. See, e.g., *Re: Nile and Julie Dupstadt and John and Deborah Alden*, # 4C1013 (Corrected)-EB, Findings of Fact, Conclusions of Law, and Order at 39-40 (Apr. 30, 1999); *Steven L. Reynolds and Harold and Eleanor Cadreact*, No. 4C1117-EB, Findings of Fact, Conclusions of Law, and Order 11-19 (Vt. Env'tl. Bd. May 27, 2004).

[28] See Act 250 §§ 6086(a)(9)(B)(iv). This subcriterion also examines impacts on adjoining forestry uses.

[29] Criterion 9(C) also examines impacts to forestry. See Act 250 § 6086(a)(9)(C).

[30] See Act 250 §§ 6086(a)(9)(C)(i), (ii) & (iii).

[31] See, e.g., *Re: Thomas W. Bryant and John P. Skinner*, No. 4C0795-EB, Findings of Fact, Conclusions of Law, and Order at 23-29 (Vt. Env'tl. Bd. June 26, 1991). It is anticipated that the Environmental Court will employ the same method of analysis for both criteria.

[32] See Vt. Stat. Ann. tit. 10, § 6042 (2004).

[33] *Argentine*, supra note 14, at 185-86.

[34] *In re: J. Philip Gerbode*, No. 6F0357R-EB, 1991 WL 87026, at 3, 4, 9, 14 (Vt. Env'tl. Bd. Mar. 26, 1991).

[35] *Id.* at 1, 3.

[36] *Id.* at 1, 4.

[37] *Id.* at 4.

[38] *Id.* at 5.

[39] *Id.* at 9.

[40] *Id.*

[41] *Id.* at 3, 9.

[42] *Id.* at 9.

[43] *Allen Brook Investments, LLC and Raymond Beaudry*, No. 4C1110-EB, 2004 WL 226387, at 13 (Vt. Env'tl. Bd. Jan. 27, 2004); see also *Southwestern Vermont Health Care Corporation*, No. 8B0537-EB, 2001 WL 190438, at 17 (Vt. Env'tl. Bd. Feb. 22, 2001) [hereinafter SVHC] (noting that the Mitigation Program arises out of the Environmental Boards decision in *Gerbode*).

[44] *Id.* at 7.

[45] See *John A. Russell Corporation*, No. 1R0849-EB, 2004 WL 226387, at 58 (Vt. Env'tl. Bd. Jul. 10, 2001); *Ingleside Equity Group*, Declaratory Ruling #397, 2001 WL 933661, at 12 (Vt. Env'tl. Bd. Aug. 15, 2001); *The Van Sicklen Limited Partnership*, No. 4C1013R-EB, 2002 WL 31856147, at 4 (Vt. Env'tl. Bd. May 16, 2002).

[46] See *Allen Brook Investments, LLC and Raymond Beaudry*, 2004 WL 226387, at 7.

[47] See *John A. Russell Corporation*, 2004 WL 226387, at 57.

[48] See *Ingleside Equity Group*, 2001 WL 933661, at 12; *Allen Brook Investments, LLC and Raymond Beaudry*, 2004 WL 226387, at 7.

[49] See *John A. Russell Corporation*, 2004 WL 226387, at 57-58.

[50] SVHC, 2001 WL 190438, at 16-17 (Feb. 22, 2001).

[51] *Id.* at 17 (noting that "DAG attempts to follow the guidelines set out in Act 250.>").

[52] *Id.*

[53] *Id.*

[54] *Id.*

[55] *Id.* at 17-18.

[56] See *id.* at 18 (noting that DAG did not examine the Bennington Town Plan when it decided to enter into a mitigation agreement with the applicant).

[57] *Id.* at 18.

[58] *Id.*

[59] *Id.*

[60] Id. at 1.

[61] Id. at 1.

[62] Id. at 2.

[63] Id. at 38.

[64] Id.

[65] Id. at 39.

[66] Id.

[67] Id.

[68] Id.

[69] Id. at 40.

[70] Id. at 42; See also Vincent v. Vt. State Ret. Bd., 148 Vt. 531, 535 (1987); Vt. Home Mortgage Credit Agency v. Montpelier Nat'l Bank, 128 Vt. 272, 278 (1970).

[71] SVHC, 2001 WL 190438, at 42.

[72] Id. at 42-43.

[73] Id. at 42.

[74] Id. at 43.

[75] Id. at 44.

[76] Id.

[77] Id.

[78] Id.

[79] Id.

[80] *Id.* at 44, 59 n.6.

[81] Id. at 44, 51.

[82] Id. at 44.

[83] Id. at 45.

[84] Id.

[85] Id. at 53.

¹⁸⁶¹ See, e.g., *Re: The Van Sicklen Limited Partnership*, No. 4C1013R-EB, 2002 WL 31856147 at 5 (rejecting a

project opponent's argument that the *SVHC* decision was a clarification of the *Gerbode* decision); *Allen Brook Investments, LLC and Raymond Beaudry*, 2004 WL 226387 at 13.

[87] See, e.g., *Allen Brook Investments, LLC and Raymond Beaudry*, 2004 WL 226387 (permit for in-fill project between existing commercial and residential uses denied although project was subject to a mitigation agreement and designated as Medium Density Residential by the Town of Williston's Plan and Zoning Ordinance because the applicant made no effort to design the development to avoid onsite reduction of primary agricultural soils); *John A. Russell Corporation*, 2004 WL 226387 (denying a mitigation agreement approved by DAG); *Ingleside Equity Group*, 2001 WL 933661; *Re: The Van Sicklen Limited Partnership*, 2002 WL 31856147 at 33.

[88] See Vermont Department of Agriculture, Food and Markets Act 250 Off-Site Mitigation Procedure for Criteria 9 (B) (Jan. 1, 2002).

[89] See Act 250 Off-Site Mitigation: Criterion 9(B) and Mitigation Agreements -- How Mitigation Funds are Used to Protect Vermont Farmland Forever, Vermont Department of Agriculture, Food and Markets & Vermont Housing and Conservation Board at 2 (Jan. 31, 2003).

[90] See Cal. Code Reg. tit. 14, §§ 15000-15387 (CEQA Guidelines), Appendix G § II. While CEQA is not California's main agricultural protection law, it is the arena in which impacts of the conversion of agricultural lands are debated and litigated. California's primary farmland preservation law is the California Land Conservation Act of 1965, Cal. Gov't Code §§ 51200 *et seq.*, commonly known as the Williamson Act, is a voluntary program. The Williamson Act sets forth a framework for placing restrictions on agricultural lands in exchange for tax breaks and other incentives and is based on traditional contract law whereby landowners *voluntarily* place their lands within locally designated agricultural preserves. See *County of Marin v. Assessment Appeals Board*, 64 Cal.App.3d 319, 325-326 (1976) (holding that Williamson Act contracts are to be interpreted like any other form of contract to achieve its objectives and to give each party the benefit of its bargain). Impacts on lands subject to Williamson Act contracts are analyzed as part of the CEQA process.

[91] See *County of Inyo v. Yorty*, 32 Cal.App. 3d 795, 802 (1973).

[92] California Public Resources Code (CEQA) §§ 21000(g), 21001(a), (West 2005). See *Friends of Mammoth v. Board of Supervisors*, 8 Cal.3d 247, 252 (1972) (CEQA described by the California Supreme Court as a "milestone" in the campaign for "maintenance of a quality environment for the people of this state"); see also *Napa Valley Wine Train, Inc. v. Public Utilities Commission*, 50 Cal.3d 370, 376 (1990) (acknowledging the importance of CEQA's purpose).

[93] See CEQA § 21002.1; CEQA Guidelines §§ 15002-15003.

[94] See Stephen L. Kostka & Michael H. Zischke, *Practice Under the California Environmental Quality Act* (CEB 2004), at § 1.1, and generally for an excellent guide to the CEQA process.

[95] See, e.g., CEQA § 21002.1; *Laurel Heights Improvement Assn. v. Regents of University of California*, 47 Cal.3d 376, 393 (1988) (holding that CEQA does not require agencies to select the alternative course most protective of the environmental status quo; CEQA does not and cannot guarantee that the agency's decisions will always be those that favor environmental considerations); *Citizens of Goleta Valley v. Board of Supervisors*, 52 Cal.3d 553, 564 (1990) (holding that courts may not pass upon the correctness of an EIR's conclusions but merely on its sufficiency as an informative document).

[96] See CEQA § 21068 (1996, Supp. 2005). Guidelines, §15382, expands on the statute and defines "significant effect on the environment" as "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, mineral, flora, fauna, ambient noise, and objects of historic and aesthetic significance." An effect on the environment need not be "momentous" or "important" to meet the CEQA test for significance. The term "significant" covers a broad spectrum ranging from "not trivial" through "appreciable" to "important" and even "momentous." See, e.g., *No Oil, Inc. v. City of Los Angeles*, 13 Cal.3d 68, 83 (1974).

[97] See CEQA §§ 21002.1, 21061; CEQA Guidelines §15003.

[98] See CEQA Guidelines, Appendix G. The 16 factors are Aesthetics, Agriculture Resources, Air Quality, Biological Resources, Cultural Resources, Geology/Soils, Hazards & Hazardous Materials, Hydrology/Water Quality, Land Use/Planning, Mineral Resources, Noise, Population/Housing, Public Services, Recreation, Transportation/Traffic and

Utilities/Service Systems.

[99] See CEQA Guidelines, Appendix G § II.

[100] See CEQA §§ 21095, 21060.1; CEQA Guidelines, Appendix G § II.

[101]. See CEQA Guidelines, Appendix G; CEQA Guidelines, Appendix G § II *supra* note 96, *supra* re Williamson Act contracts. While impacts to "farmland," generally must be assessed, environmental review must also look specifically at the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency.

[102] See CEQA §§ 21002, 21002.1; CEQA Guidelines § 15091. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies *may* refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. See also CEQA § 21095.

[103]. See CEQA Guidelines § 15370. This definition of the term "mitigation" adopts the definition contained in the federal National Environmental Policy Act ("NEPA") regulations. The federal definition is used so that this term will have identical meanings under NEPA and CEQA for projects which are subject to both Acts.

[104] See CEQA Guidelines §§ 15091, 15093.

[105] CEQA, §§ 21002, 21002.1; .See CEQA Guidelines §§ 15091, 15093; CEQA, §§ 21002, 21002.1.

[106] Under California Rule of Court 976, opinions of a Court of Appeal are not published unless a majority of the three-Justice panel rendering the decision affirmatively certifies the case for publication. Cases for which no certification is obtained are referred to as "unpublished." Under Rule 979, the California Supreme Court may order a published Court of Appeal decision "depublished" without reason and without expressing an opinion of the Supreme Court "of the correctness of the result reached by the decision." The Court of Appeal may also depublish its own published decision on its own motion. Under Rule 977, unpublished and depublished cases may not be cited or relied on by a court or a party in any other action or proceeding.

[107] *County of Santa Cruz v. City of San Jose*, No. H023956, WL 1596613, at 2. This case was unpublished under Rule 976 and under Rule 977 may not be cited or relied on by a court or a party in any other action or proceeding.

[108] *Id.* at 2, 30.

[109] *Id.* at 2.

[110] *Id.* at 29.

[111] *Id.*

[112] *Id.*

[113] *Id.* at 30.

[114] *Id.*

[115] *Id.*

[116] *Id.* at 31.

[117] *Id.*

[118] *Kangaroo Rat v. California Department of Corrections*, 4 Cal. Rptr. 3d 558, 560 (Cal. Dist. Ct. App. 2003). After

rendering its decision in the case and considering the inconsistent position taken by the California Department of Conservation and the contradictory position taken by the California Office of Attorney General in the pending case of *South County Citizens for Responsible Growth v. City of Elk Grove*, the court certified the decision for partial publication. See generally *South County Citizens for Responsible Growth v. City of Elk Grove*, No. C042302, 2004 WL 219789, at *1 (Cal. Dist. Ct. App. Feb. 5, 2004) (indicating the decision was subsequently modified on Sept. 17, 2003 and then ordered depublished without explanation by the California Supreme Court on Feb. 18, 2004).

[119] Cal. Code Reg. tit. 14 § 15162 (2005). When an EIR has been certified for a project and certain changes to the project or its circumstances occur or new information becomes available, a subsequent EIR must be prepared to examine the impacts associated with such changes or information. *Id.*

[120] *Kangaroo Rat*, supra note 118, at 560. The *Kangaroo Rat* case was preceded by a related published decision in *Protect Our Water v. County of Merced*, involving an EIR which concluded that "the project [at issue] would create a significant unavoidable impact on agriculture by converting approximately 421 acres of agricultural land to a gravel mining and reclamation operation," but stated that there were no feasible measures that would fully mitigate for the loss of productive prime agricultural soils. *Protect Our Water v. County of Merced*, 110 Cal. App. 4th 362, 366 (2003). However, the court of appeal did not rule on this issue, instead holding the EIR inadequate under CEQA because it failed to prepare an adequate and complete administrative record as required under the law. *Id.* at 373-74.

[121] *Id.* at 564.

[122] *Id.*

[123] *Id.* at 565.

[124] *Id.* at 566.

[125] *Id.* at 567 (quoting Cal. Code Reg. tit. 14 § 15370 (2004)).

[126] *Id.*

[127] See *South County Citizens for Responsible Growth v. City of Elk Grove*, No. C042302, 2004 WL 219789, at heading (Cal. Dist. Ct. App. Feb. 5, 2004) (noting that this case was unpublished under Rule 976 and under Rule 977; therefore, it may not be cited or relied on by a court or a party in any other action or proceeding).

[128] *Id.* at 1.

[129] *Id.* at 2.

[130] *Id.* at 3.

[131] *Id.*

[132] *Id.* at 4.

[133] *Id.*

[134] *Id.*

[135] *Id.* See Cal. Code Reg. tit. 14 § 15126.4(a)(4) (2005) (indicating the staff considered these CEQA guidelines); See also *Dolan v. City of Tigard*, 512 U.S. 374 (1994) (reversing the Oregon Supreme Court's decision concerning city exactions on commercial property); *Nollan v. California Coastal Comm'n*, 483 U.S. 825 (1987) (holding that the Commission could not impose a condition to approve a rebuilding permit requirement that owners provide lateral access to the public to pass and repass across property).

[136] *South County*, 2004 WL 219789, at 4.

[137] Id.

[138] Id. at 5.

[139]. Id. The court also noted that the general plan did call "for mitigation of the loss of prime farmlands or lands with intensive agricultural investments" to provide protection of nearby farmland but that this policy did not apply to the project site because it was not prime farmland or subject to intensive agricultural investment. Id. at 3 n.5.

[140] See Id. at 6 (noting project proponents relied upon the *Kangaroo Rat* case and the court considered it before it was ordered depublished).

[141] Id.

[142] Id. at 6-7. See Cal. Code Reg. tit. 5, §§ 51200-51207 (2005); Cal. Civ. Code § 815-816 (2005); Cal. Pub. Res. Code §§ 10200-10277 (2005); Cal. Pub. Res. Code §§ 21000-21006 (2005).

[143] South County, 2004 WL 219789, at 7. See Cal. Pub. Res. Code §§ 10201(b-d) (2005); Cal. Civ. Code § 815 (2005).

[144]. South County, 2004 WL 219789, at 8.

[145] Id.

[146] Id. at 28-29.

[147]. Id. at 29.

[148] Id.

[149] *Defend the Bay v. City of Irvine*, 119 Cal. App. 4th Supp. 1261, 1271-72 (2004). Recently, in this related published opinion, the court rejected the project opponents' argument that an EIR was deficient for not adopting mitigation measures for the loss of agricultural land because the EIR "failed to consider the possibility of converting non-agricultural lands to agricultural use as a means of mitigating the present loss." Id. at 1270.

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Appendix G

Emissions Inventory Methodology and Results

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List of Acronyms

ARB	Air Resources Board
BACT	Best Available Control Technology
BOE	Board of Equalization
BTS	Bureau of Transportation Statistics
CHP	California Highway Patrol
CRC	Coordinating Research Council
CY	Calendar Year
DMV	Department of Motor Vehicles
DOF	Department of Finance
DPF	Diesel Particulate Filter
DR	Deterioration Rate
ECE	Electronically Controlled Engines
EGR	Exhaust Gas Recirculation
FE	Fuel Economy
GDP	Gross Domestic Product
GVWR	Gross Vehicle Weight Rating
HH	Heavy Heavy (Duty Diesel Trucks)
HHDDT	Heavy Heavy Duty Diesel Trucks
IFTA	International Fuel Tax Agreement
IRP	International Registration Plan
LESBP	Lower Emissions School Bus Program
LA/LB	Los Angeles/Long Beach
MCPP	Motor Carrier Permit Program
MH	Medium Heavy (Duty Diesel Trucks)
MHDDT	Medium Heavy Duty Diesel Trucks
MY	Model Year
NOOS	Neighboring out-of-state
NNOOS	Non-neighboring out-of-state
PM	Particulate Matter
POAK	Port of Oakland
POLA/LB	Ports of Los Angeles and Long Beach
PTO	Power Take Off
SCR	Selective catalytic reduction
TIAX	TIAX LLC Consultants
USDOE	United States Department of Energy
USEPA	United States Environmental Protection Agency
VIN	Vehicle Identification Number
VIUS	Vehicle Inventory and Use Survey
VMT	Vehicle Miles Traveled
ZMR	Zero-mile rate

A. Introduction

Commercial heavy-duty diesel trucks and buses (defined as commercial diesel buses and trucks exceeding 14,000 lbs gross vehicle weight rating (GVWR)) are currently the single largest source of nitrogen oxide (NO_x) emissions in California, accounting for 30% of statewide NO_x emissions (ARB, 2008). These same trucks buses are also the largest source of diesel particulate matter (diesel PM) in California, representing about 40% of statewide diesel PM emissions.

On-road mobile source emissions in California are currently calculated using the ARB's EMFAC2007 model that was released in December of 2006 (ARB, 2006). Since the last EMFAC release, Staff members have conducted a comprehensive re-evaluation of the heavy duty diesel truck emissions inventory. In developing this new analysis, we have integrated new data and assumptions into an expanded methodology that builds upon current modeling in EMFAC2007. With this methodology, we incorporate detail for different types of trucking operations and truck configurations that are referred to as "inventory categories". Emission factors differ from those in EMFAC2007 and reflect our enhanced knowledge of trucking operations in California that has been developed through this effort. With this document we describe our approach and the results from its application. With this document we also provide emissions estimates for each category of vehicles that would be regulated under the proposed Statewide Truck and Bus Regulation.

B. Methodology

Fundamentally the EMFAC model uses a simple, vehicle population-based technique for estimating emissions for any type of on-road vehicle. We calculate emissions as the product of a population of vehicles, the number of miles traveled per vehicle, and emission rates for each vehicle per mile. Beneath this simple equation lies a series of data and assumptions about the population, miles traveled, and emission rates per vehicle model year in a given calendar year, growth and attrition estimates, deterioration rates, and other factors that affect emissions estimates.

Our revised approach for estimating commercial heavy-duty diesel truck emissions builds upon this concept by applying it separately for each category of trucks. These categories were selected by evaluating different groups of trucks that have similar travel, service, size, age or other characteristics within the category but differing between categories.

The methodology used to develop the proposed rule inventory is based on the following equation:

$$EMS_{CY} = \sum_{MY, C} (POP_{MY, C} \times AC_{MY, C} \times ER_{MY, C})$$

where: EMS_{CY} is the emissions calculated in tons per day for a given calendar year CY.

$POP_{MY, C}$ is the population of trucks for model year MY within each inventory category C for a given calendar year;

$AC_{MY, C}$ is the accrual rate (miles traveled per year) per truck by model year MY and inventory category C in a given calendar year;

$ER_{MY, C}$ is the calculated emission rate, in grams pollutant per mile driven, assuming statewide speed travel distributions in EMFAC2007 and category-specific cumulative mileage accrual over the life of the truck, by model year MY and inventory category C;

With this new analysis, we developed a population and model year distribution for each vehicle category. We also estimated accrual by model year for the category and cumulative mileage accrual (odometer) by model year. Because trucks can move between categories as they age, we assessed the movement of used trucks between categories in order to develop cumulative mileage accrual estimates that reflect this movement. As a result, cumulative odometer readings by model year will not necessarily be consistent with accrual schedules for each inventory category. We developed emission rates using EMFAC2007 and statewide speed distributions, and we adjusted emission rates for modeled odometer readings by category. A more complete discussion of the data sources used is provided in the following section.

C. Data Sources

We have used many different data sources to develop input data to the methodology described above. In this section we provide a general description of each data source as well as links for further information.

1. Motor Vehicle Registration Data

The California Department of Motor Vehicles (DMV) is responsible for the process of vehicle registration in California (DMV, 2001). As part of this program, commercial trucks and buses are required to pay registration annually; however, vehicle owners have the option of registering their vehicles on a seasonal basis. Staff have an agreement with the DMV to get registration data downloads in April and October of each year. Staff process the data in order to compile a list of vehicles by vehicle class, body type, rated weight, and other parameters.

Using each vehicle's license plate configuration, which separates International Registration Plan (IRP) vehicles from non-IRP vehicles, each vehicle's rated weight, and each vehicle's body type data, we separated vehicles into different inventory categories. As such DMV registration was the primary source for vehicle population

and model year by category. We also used the DMV registration data to group trucks by fleet and thus fleet size. With these data we could assess the fraction of owner-operators in each category. We did this by sorting data by owner/operator name and address before grouping trucks into trucking categories. Overall, owner-operator trucks tend to be older than other trucks within the same inventory category. These results will be discussed in detail in subsequent sections of this report describing each inventory category.

2. International Registration Plan (IRP)

The International Registration Plan is a program administered by the American Association of Motor Vehicle Administrators to transfer registration fees assessed to commercial and other vehicles that cross state boundaries, in accordance with the number of miles affected vehicles travel in each participating U.S. State or Canadian Province (IRP Inc., 2008). IRP-registered vehicles most often include commercial heavy-duty trucks and buses but can also include government vehicles and smaller vehicles. Under this program a fleet of vehicles has the option of registering their vehicles in any state where a portion of their fleet is domiciled.

IRP recordkeeping varies by state with some states maintaining electronic databases and others paper files. To facilitate data analysis, Staff obtained IRP data from states in electronic format whenever possible. Staff received in electronic format comprehensive reports representing mileage driven by California-registered IRP trucks in calendar years 2000-2006, and obtained hardcopy samples of IRP data from a number of other jurisdictions for miles driven by their IRP trucks in California.

IRP data representing California trucks were used to directly assess the population and model year distribution of these trucks, as well as the fraction of IRP-registered vehicles' mileage accrual that occurs within California. To evaluate out-of-state IRP data, we copied and analyzed one month's worth of IRP updates by fleet. This represents about 9% of all fleets operating in a given state because a similar number of fleets are required to report each month. Data were collected from four neighboring states (Arizona, Idaho, Nevada, Oregon) as well as eight non-neighboring states (Alabama, Indiana, Nebraska, New Jersey, Oklahoma, Tennessee, Texas, and Wisconsin). Of these states, Alabama, Nebraska, New Jersey, and Oklahoma each provided a model year or Vehicle Identification Number (VIN) for each truck in each fleet, allowing detailed age distributions for each of these states to be developed. Staff relied on roadside survey data to develop age distributions for other states.

All IRP data are provided at the level of a fleet rather than the level of an individual vehicle. Each fleet registered with the IRP reports the total number of power units or trucks in the fleet, the total miles traveled by that fleet, and the total miles traveled in California by that fleet. Reporting is completed annually. Many fleets reporting to IRP are large; as a result, the population of trucks reflected in that fleet's report will reflect a large number of trucks that do not enter California even though they may be authorized to do so. In addition, each state's data format is different; some states provide information such as VIN or model year for each truck in the fleet, while other states

don't. Where model year data were available, staff used the information directly. Where model year data were not available but VIN data were, staff decoded the VIN to derive model year. Staff also received a summary report from DMV that provided the total population of trucks in the IRP program from each state. This report provided an estimate of the number of trucks in fleets cleared to come into California from other states.

3. Motor Carrier Permit Program (MCP)

The California Department of Motor Vehicles and California Highway Patrol (CHP) jointly administer the Motor Carrier Permit Program (MCP), which applies to any operator of a commercial vehicle in California exceeding 10,000 lbs GVWR or truck and trailer combinations exceeding 40 feet in length. The program generally applies to all commercial vehicle operators with an office in California. MCP data provide information on the number of vehicles per fleet and the number of fleets operating in California; the data are separated between for-hire and private carriers. The database does not provide license plate, VIN or GVWR of trucks in each fleet.

We obtained the DMV/CHP 2005 database and used it to estimate the fraction of truck owner-operators in California. These data were compared to similar estimates derived from DMV registration data. Because the MCP database does not provide information on individual truck size, activity, or model year, we ultimately chose to use DMV registration data to assess the fraction of total owners that are owner-operators.

4. International Fuel Tax Agreement (IFTA)

The International Fuel Tax Agreement (IFTA) is an agreement among U.S. states and Canadian provinces to simplify the reporting of fuel use taxes by interstate motor carriers. In California, IFTA is administered by the Motor Carrier Section of the Board of Equalization (BOE) (BOE, 2008). The program operates similarly to IRP in that motor carriers may choose a state for filing fuel tax returns and then each state distributes fuel taxes among other states depending on the fraction of fuel burned and miles traveled by each fleet in each jurisdiction.

Staff obtained 2005 aggregated IFTA data as well as 2006 and 2007 IFTA data summarized for each state by the California BOE. For each state, BOE provided information on the number of miles traveled and the amount of fuel burned within California by trucks from each reported state. However, data for 2006 and 2007 were incomplete with about 10% of the data in each of those years not summarized. For states with incomplete data, we extrapolated estimates using overall population data from IRP. Staff used the 2005 IFTA aggregated out-of-state records to estimate the miles traveled in California by out-of-state heavy-duty trucks; Staff used the 2006 and 2007 data to develop the ratio between trucks from neighboring and non-neighboring states.

5. Vehicle Inventory and Use Survey (VIUS)

The main intent of the Vehicle Inventory and Use Survey (VIUS) is to provide data on the physical and operational characteristics of the nation's private and commercial truck population (US Census Bureau, 2002), including national and state-level estimates of the total number of trucks. Up until 2002, this survey was conducted every 5 years by the U.S. Census Bureau as part of the national census but VIUS is no longer being updated due to lack of funding. Nevertheless, VIUS provides a wealth of information on truck body types, mileage accrual, odometer, and many other factors.

We used VIUS data reported by trucks operating in California to develop mileage accrual rates and cumulative odometer by model year for interstate trucks and by model year and body type for California-based trucks.

6. ARB Vehicle Surveys

As part of this rule development, staff developed an on-line survey for truck and bus fleets in general (ARB, 2008), as well as industry-specific surveys of individual truck categories including agricultural trucks, dump trucks, and others. These surveys provided information such as truck age, miles traveled, body type, and other factors useful for inventory development.

7. Estimated Emission Rates

The EMFAC2007 model (ARB, 2006a and 2006b) was used as the starting point for developing emission rates used in this inventory. EMFAC2007 emission rates are based on analysis of chassis dynamometer testing conducted by the Coordinating Research Council (CRC) under the E55/59 testing program (CRC, 2007). Although both heavy-heavy and medium-heavy duty trucks were tested in the E55/59 study, only heavy-heavy duty truck emission rates were updated for EMFAC2007.

As part of this rule development, staff made three revisions to EMFAC emission rates. Medium-heavy duty truck emission rates were updated with new data made available through the CRC E55/59 program. Staff re-evaluated assumed penetration rates of new technologies into truck sales between 2006 and 2011, and assessed the emissions impact of these revised assumptions. Carbon dioxide emission rates were updated based upon new analysis of several different data sources. Each of these revisions is discussed further in this document. We anticipate incorporating these revised emission rates into the next EMFAC update scheduled for 2010.

8. UC Davis Out-of-State Truck Travel Surveys

In 2006 the ARB contracted with researchers at the University of California at Davis (UC-Davis) to develop and administer truck surveys at major border crossings into California from Oregon, Nevada, Arizona, and Mexico (Lutsey, 2008). For these surveys, interstate trucks were assumed to be those trucks that were registered, domiciled, and/or refueled outside California. Researchers administered 433 surveys of truck drivers at seven weigh stations near state borders with high commercial truck

traffic (Lutsey, 2008). These surveys provided estimates of annual travel activity in California for each of the respondents, allowing staff to estimate the number of out-of-state trucks, their mileage, fuel usage, and fueling locations. Based on results of this study, staff examined whether estimates of interstate truck age, mileage, and fuel usage assumed in EMFAC2007 were reasonable.

Staff also used raw data from this analysis to validate estimates of model year distribution for out-of-state trucks that were developed using IRP data. In an accompanying report, UC Davis estimated the fraction of total VMT in California represented by out-of-state trucks relative to EMFAC2007. ARB did not use these estimates because, subsequent to the Lutsey (2008) report being finalized, staff received IFTA data from the BOE that provided direct mileage reports by state of registration. These issues will be described in greater detail later in this document.

D. Base Year Population and Activity by Age

In Table 1 below, we provide a list of the data sources underlying each of the truck inventory categories to be discussed in the next section including how each data source was used to help develop truck population and activity estimates.

Table 1. Data Sources Used to Develop Population and Activity Estimates

Type / Category	Population	Activity
Heavy-Heavy / Out-of-State	CA Dept. of Motor Vehicles (DMV) International Registration Plan (IRP) reports; adjusted to account only for trucks that enter California. Model-year distribution from IRP data and surveys. Category split between neighboring states (WA, OR, NV, AZ, ID) vs non-neighboring states.	Vehicle Inventory and Use Survey (2002) - Fraction of mileage accrued in California estimated using IRP data samples and International Fuel Tax Agreement Data (IFTA)
Heavy-Heavy / California-Interstate	DMV CA-IRP reports provide population by model year	VIUS for nationally registered trucks in IRP as above. CA-IRP reports fraction of mileage accrued in CA, and IFTA reports for total mileage.
Heavy-Heavy / In-State Tractor	DMV Registration data, adjusted to subtract vehicles from specific categories such as Utility, Drayage, and others.	VIUS 2002 data
Heavy-Heavy / In-State Single	DMV Registration data, adjusted to subtract specific vehicles from specific categories such as Utility, Drayage, and others.	VIUS 2002 data
Heavy-Heavy / Drayage Tractors	License plate and gate count surveys conducted at the Ports of Los Angeles, Long Beach, and Oakland.	Trip-based model developed for ARB Drayage Truck Regulation; mileage accrual assumed flat at total mileage divided by total number of trucks.
Heavy-Heavy / Agricultural Trucks	Age distribution from survey; population extrapolated from survey results; specialty trucks estimated from survey and registration data.	Accrual from survey
Heavy-Heavy / Utility Trucks	Population and age of trucks registered to public utilities in DMV database.	Surveys conducted for ARB Public Fleet Rule.

Type / Category	Population	Activity
Medium-Heavy / In-State Trucks	DMV registration data	VIUS 2002 data
Medium-Heavy / Interstate Trucks	IRP reports	VIUS 2002 data
Medium-Heavy / Agricultural Trucks	Age distribution from survey; population extrapolated from survey results; specialty trucks estimated from survey and registration data.	Accrual from survey
Medium-Heavy / Utility Trucks	DMV registration data.	Surveys conducted for ARB Public Fleet Rule.
Buses / School	California Highway Patrol Data	ARB Surveys
Buses / Other	EMFAC2007	EMFAC2007
Other / Power Take-Off	No population estimated. Total fuel usage provided by California State Board of Equalization; age distribution assumed same as in-state single-unit trucks	Fuel usage converted to equivalent mileage assuming EMFAC speed distributions and fuel economy.

One of the key assumptions in the development of this inventory is that trucks and buses that are grouped by vocation or body type have a common age distribution and accrual schedule. This assumption has been verified through analysis of the data sources described above.

Another assumption that applies to many truck inventory categories is that trucks typically move between categories as they age and accrue mileage. Staff recognized this through analysis of DMV data. For example, heavy-heavy duty diesel trucks (HHDDTs) that are used for interstate travel (e.g. by CA IRPs) are often retired from interstate travel after a few years due to increasing maintenance costs and bought for intrastate travel where reliability is less of a concern. Vehicles are driven many more miles during interstate travel than during intrastate travel. As a result, a ten year old truck that was used during its first five years for interstate travel and its last five for intrastate travel would, on average, have a higher odometer reading than a vehicle used strictly for intrastate travel during those ten years. Staff used estimated as to when vehicles would most typically be transferred between inventory categories and adjusted the odometer readings from those assumed in EMFAC2007 appropriately.

This section describes each vehicle category including the key assumptions and data analysis results that underlie the development of the inventory. For each category we show the age distribution in calendar year 2008 as well as the anticipated mileage accrual of vehicles of different age. We developed age distributions for trucks ranging between ages -1 and 44. Trucks of age -1 represent vehicles sold and operated in the calendar year prior to the model year (e.g. MY2009 trucks sold in CY2008). Model years beyond age 44 were included in the 44 age bin since the EMFAC model handles only 45 model years. We also show the distribution of trucks in each category between

different fleet sizes where appropriate and the difference in the average age of vehicles between different-size fleets.

1. Utility Fleets

In October 2006, the ARB adopted a regulation designed to reduce emissions from diesel trucks that are owned or operated by private utilities that operate in California (ARB, 2006). The utility truck category as defined by the regulation includes both medium-heavy (14,000 – 33,000 lbs gross vehicle weight rating or GVWR - MHDDT) and heavy-heavy (>33,000 lbs GVWR - HHDDT) trucks but does not include refuse haulers or fire trucks and other emergency vehicles operated by public agencies. The regulation required fleet operators to reduce diesel PM emissions on a defined schedule by purchasing newer regulation-compliant engines or installing diesel particulate filters. The following methodology was used to develop a Utility Fleet emissions inventory.

a) Base Year Population and Age Distribution by Fleet Size

Staff used an identical methodology for assessing the utility truck population and model year distribution as was used in development of the utility fleet regulation (ARB, 2005). Staff developed a list of utility names and used those names to extract vehicles from DMV registration data. Those vehicles were then separated by model year and weight category (MHDDT vs HHDDT). The population-weighted average age of a vehicle in the utility fleet category was estimated at 8.2 years for HHDDT, 7.2 years for MHDDT. Figure 1 provides the distribution of the California utility truck population by age for calendar year 2008.

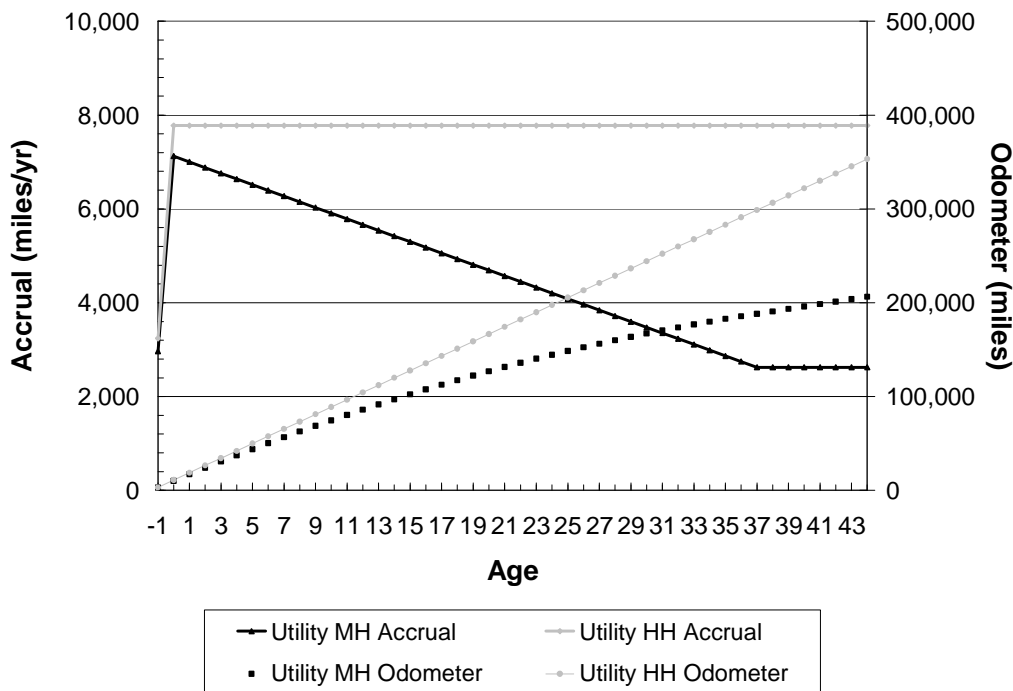
Figure 1: Utility Truck Population and Model Year Distribution (2008)



b) Base Year Accrual, Lifetime Accrual, and Mileage Thresholds

Staff used accrual rates and cumulative odometer readings that were published in the utility fleet rule staff report (ARB, 2005). These were developed by TIAX (2003); results showed that utility trucks accrue between 6,000 and 8,000 miles per year, with slightly more miles accrued per year by HHDDT. The estimated annual average mileage accrual was 7,800 miles per year for HHDDT and 6,200 miles per year for MHDDT, all of which is assumed to occur in California. The estimated average odometer reading was 122,000 miles for HHDDT and 78,000 miles for MHDDT. In Figure 2 we plot annual accrual and cumulative modeled odometer readings for utility category trucks.

Figure 2: Utility Truck Category Accrual and Modeled Odometer Readings (2008)



c) Base Year Vehicle Miles Traveled by Fleet Size and Mileage Thresholds

Utility fleet vehicles were not separated into different categories by fleet size or mileage threshold. This vehicle and emissions inventory evaluates only the fleets of privately owned utilities. The utility fleets of larger municipal agencies are not included in this assessment.

2. Drayage Trucks Serving California’s Ports and Railyards

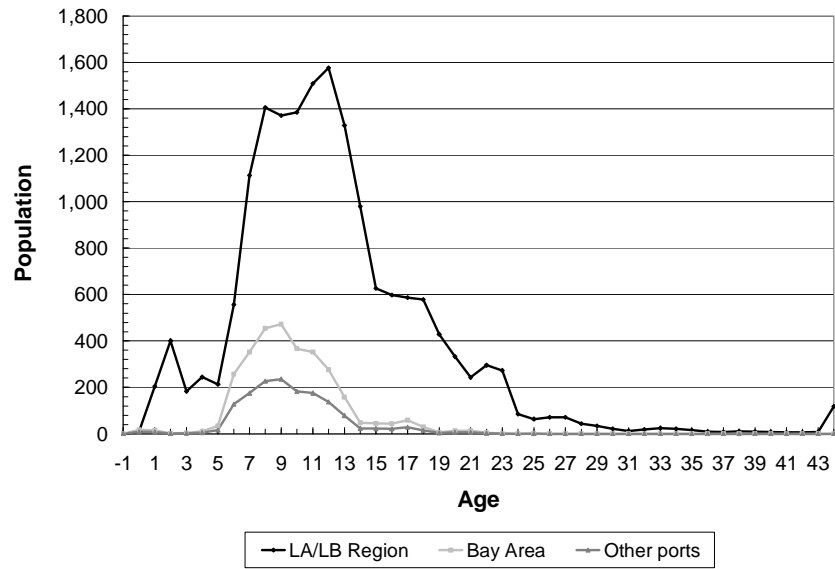
In 2007 the ARB passed a regulation requiring NO_x and diesel PM emissions reductions from drayage trucks serving California’s ports and railyards (ARB, 2007a). Drayage trucks are typically older than other trucks in California and primarily serve the Ports of Los Angeles, Long Beach and Oakland along with railyards near those ports. Drayage

truck travel is predominantly regional; in general, these trucks make multiple trips to and from the facilities each week. Drayage trucks are all heavy-heavy duty vehicles, exceeding 33,000 lbs GVWR. According to the regulation, by calendar year 2010 all drayage trucks must meet at a minimum model year 1994 or later emissions standards with a diesel particulate filter and by 2014 all trucks must meet 2007 truck emission standards. The following methodology was used to develop the drayage truck emissions inventory:

a) Base Year Population and Age Distribution by Fleet Size

Drayage trucks are defined by their operation rather than body type. Since DMV registration records provide information on body type but not vehicle operator, DMV registration cannot be used alone to estimate the statewide drayage truck population. The population of trucks serving the Ports of Los Angeles and Long Beach and associated railyards was derived from an analysis of one year of gate count and license plate information from approximately half of the terminals at the two Ports; these data were provided by officials from the ports. Staff compared observed license plates to DMV data to assess model year distribution; we then extrapolated results to all terminals at both Ports. A similar approach was used for the Port of Oakland and associated railyards. Regulatory documentation (ARB, 2007b) describes in more detail the methodology used to assess the population of drayage trucks. We estimated the age of drayage trucks serving other ports and railyards in California by assuming that these trucks were similar to those in the HHDDT (instate) tractor category (ARB, 2007b). The population-weighted average age of a vehicle in the drayage category was estimated at 12.4 years for trucks serving the Ports of Los Angeles and Long Beach and regional intermodal railyards and 9.7 years for drayage trucks serving Oakland and associated railyards and for trucks serving the remainder of California ports. In Figure 3 we provide drayage truck population by model year for calendar year 2008. As shown, trucks serving the Ports of Los Angeles and Long Beach are typically several years older than drayage trucks serving other California ports.

Figure 3. Drayage Truck Population and Model Year Distribution (2008)

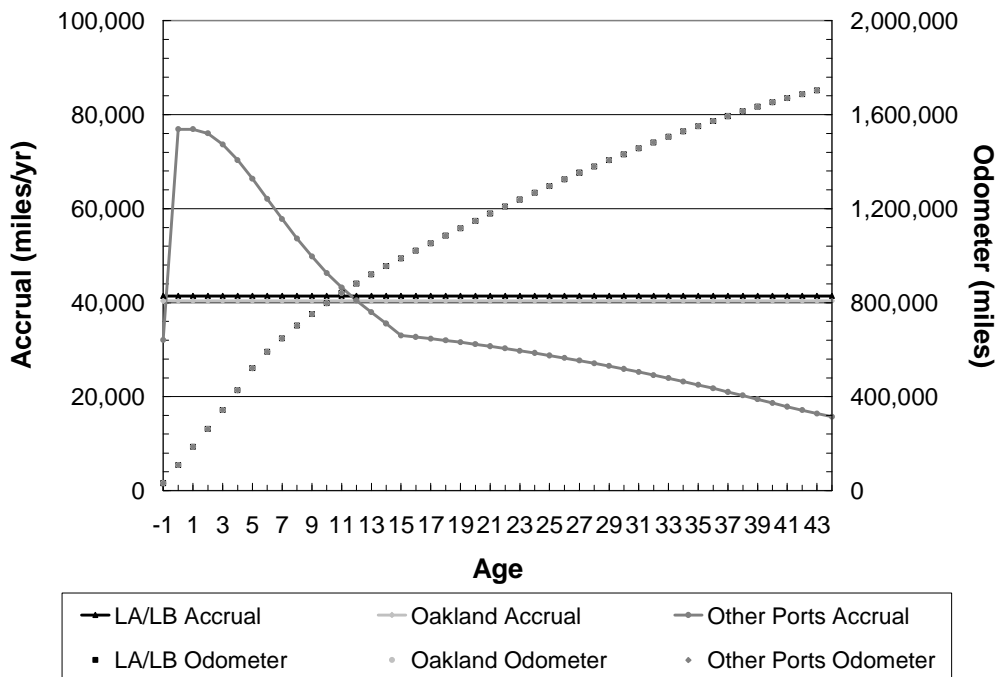


b) Base Year Accrual, Lifetime Accrual, and Mileage Thresholds

Staff used accrual rates and cumulative odometer readings published in the drayage truck rule staff report (ARB, 2007b) to estimate the vehicle miles traveled (VMT) associated with drayage trucks in each region. Staff then assumed that accrual rates were independent of age for drayage trucks and that the vehicle population increased in proportion to the overall VMT for the inventory category.

Drayage trucks serving the Ports of Los Angeles and Long Beach were estimated to drive around 41,000 miles per year. Drayage trucks serving the Port of Oakland drive, on average, around 40,000 miles per year. Drayage trucks serving other ports in California are assumed to have travel characteristics similar to in-state HHDDT tractors and therefore drive, on average, 49,000 miles per year. All drayage-related VMT are assumed to accrue in California. Odometer readings are modeled assuming that drayage trucks were purchased used from larger national fleets that drive hundreds of thousands of miles in their first several years of operation. This assumption is described in detail in the in-state tractor category. The resulting average odometer reading as estimated was 860,000 miles for LA/LB trucks and 770,000 miles for trucks serving Oakland and other ports/railyards; the apparent difference from the mileage if projected from the accrual rate and the age results from the trucks likely having been used for other purposes before being converted to drayage trucks. In Figure 4 we plot annual accrual and cumulative modeled odometer readings for drayage trucks.

Figure 4. Drayage Truck Category Accrual and Modeled Odometer Readings (2008)



c) Base Year Vehicle Miles Traveled by Fleet Size and Mileage Thresholds

Drayage trucks were categorized by fleet size as single truck fleets, two truck fleets, three truck fleets, and fleets of more than three trucks. No differentiation was made for drayage trucks with regard to mileage threshold, on the assumption that nearly all drayage fleets are operated in a similar manner. In Table 2, Table 3, and Table 4 we show the distribution of VMT among drayage fleets of various fleet sizes and VMT-weighted ages for trucks near the Ports of Los Angeles/Long Beach, Oakland, and all other California ports/railyards, respectively. The age distribution of drayage trucks was also assumed not to differ with regard to fleet size. With regard to the VMT-weighted average age within each category, drayage trucks near LA/LB were estimated to be older, on average, than drayage trucks near other facilities. In Table 5 we provide a summary of the VMT driven by different size drayage trucks fleets serving all California facilities.

Table 2. Distribution of VMT among POLA/LB Drayage Trucks by Fleet Size (2008)

Fleet Size	Daily VMT	Share	VMT-weighted Average Age
1 truck	1,219,969	53.7%	12.4
2 trucks	135,552	6.0%	12.4
3 trucks	152,496	6.7%	12.4
> 3 trucks	762,481	33.6%	12.4
Total	2,270,498	100.0%	

Table 3. Distribution of VMT among Port of Oakland Drayage Trucks by Fleet Size (2008)

Fleet Size	Daily VMT	Share	VMT-weighted Average Age
1 truck	210,556	53.7%	9.7
2 trucks	23,395	6.0%	9.7
3 trucks	26,319	6.7%	9.7
> 3 trucks	131,597	33.6%	9.7
Total	391,868	100.0%	

Table 4. Distribution of VMT among Drayage Trucks at Other Ports/Railyards by Fleet Size (2008)

Fleet Size	Daily VMT	Share	VMT-weighted Average Age
1 truck	127,097	53.7%	9.1
2 trucks	14,122	6.0%	9.1
3 trucks	15,887	6.7%	9.1
> 3 trucks	79,436	33.6%	9.1
Total	236,542	100.0%	

Table 5. Distribution of VMT among Drayage Trucks at all California Ports/Railyards by Fleet Size (2008)

Fleet Size	Daily VMT	Share	VMT-weighted Average Age
1 truck	1,557,622	53.7%	11.8
2 trucks	173,069	6.0%	11.8
3 trucks	194,703	6.7%	11.8
> 3 trucks	973,513	33.6%	11.8
Total	2,898,907	100.0%	

3. Trucks Serving the Agricultural Economic Sector

Agricultural trade associations, in conjunction with staff, administered a survey to farmers, ranchers, and other agricultural businesses designed to identify and characterize trucks associated with agricultural businesses. The stakeholder survey was designed primarily to capture trucks owned and operated by farms, ranches, and first processing facilities, and was similar in format to the on-line survey used to collect information on the broader truck fleet as part of this rule development (ARB, 2008). Results from the survey were used to assess the population of MHDDT and HHDDT that operate in California for agricultural purposes, either seasonally or annually. The survey was also used to assess the model year distribution and mileage accrual of these trucks, as well as the fraction that would be captured by proposed rule exemptions.

a) Base Year Population and Age Distribution by Fleet Size

To assess the model year distribution of agricultural trucks, we compiled survey results for MHDDT and HHDDT separately, and modeled the data in order to smooth trends in model year variability. Based on analysis of the survey data, the population-weighted average ages of HHDD and MHHD agricultural trucks were found to be very similar (17.3 years for HHDDTs and 17.2 years for MHDDTs).

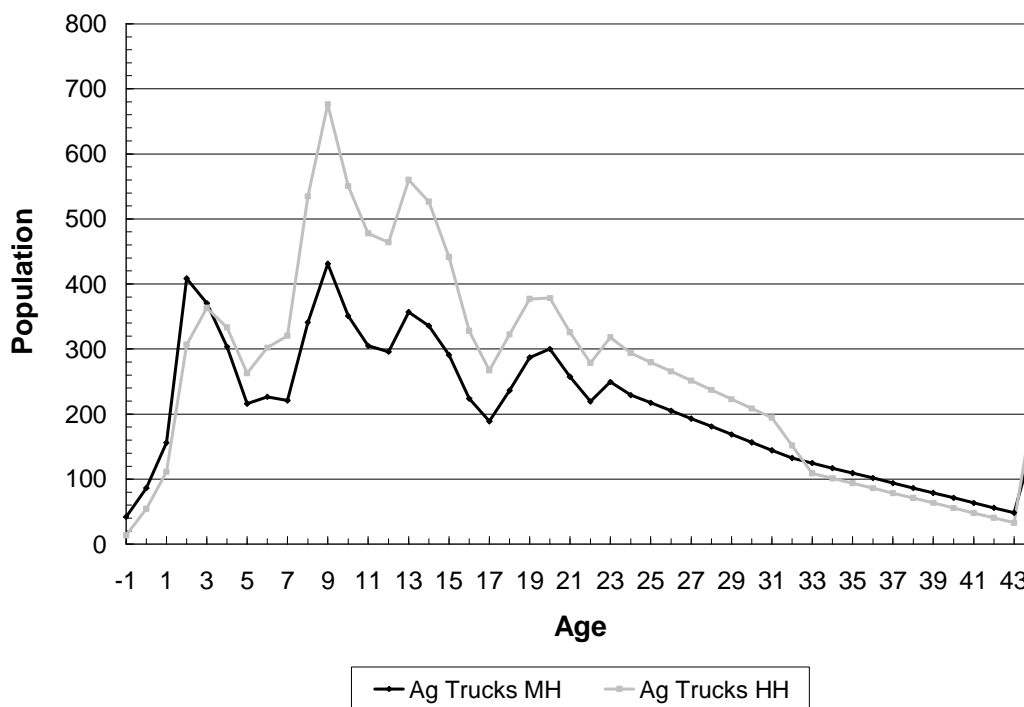
To assess population, we compiled the survey results and extrapolated the survey sample to a statewide population using the numbers of acres farmed and other metrics collected in the survey as scaling factors. Using this methodology, Staff estimated a statewide agricultural truck population of between 40,000 and 60,000 vehicles. However, when staff compared the model year specific truck populations estimated using the extrapolated data to model year specific DMV registration data, they found that the extrapolated agricultural truck populations for certain model years exceeded the total number of trucks of that model year in the DMV database. This suggested that the directly extrapolated survey results were overestimating the agricultural truck population, at least for those model years.

In reviewing the surveys, staff found that very few were administered to farms or organizations that do not own agricultural trucks. In effect, these businesses were excluded from the survey; thus, extrapolating the population using the metrics described above would overestimate the agricultural truck population.

To correct for this overestimation, we used the DMV registration data as an upper bound of the possible number of agricultural trucks of a given model year.

Using the statewide truck population, we back-calculated an agricultural truck population assuming that the agricultural truck population, in any model year, could not exceed 80% of the total trucks registered in that model year. With this technique, we assessed a likely population of 22,150 agricultural trucks in California, of which 45% are MHDDT and 55% are HHDDT. In Figure 5 we show the California agricultural truck population and model year distribution estimated for the 2008 calendar year.

Figure 5. Agricultural Truck Population and Model Year Distribution (2008)

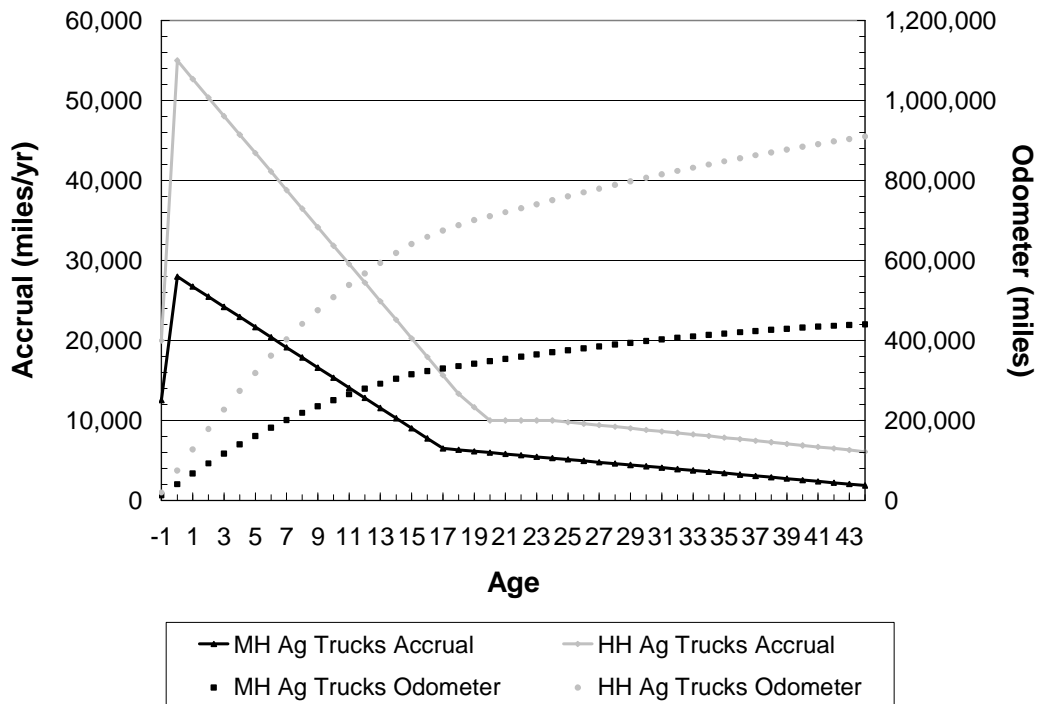


b) Base Year Accrual, Lifetime Accrual, and Mileage Thresholds

We analyzed survey results in order to estimate mileage accrual for agricultural trucks. Because agricultural HHDDT are assumed to be purchased used, their modeled odometer follows a composite that accounts for the mix of single-unit and combination trucks entering the category as well as the likelihood that most tractors currently in the agricultural category were previously in other categories. Because in-state tractors and single-unit trucks are driven more, on average, than agricultural trucks, the composite odometer reading is projected to be higher than the odometer reading of a truck that had been used exclusively for agriculture. These trucks then follow the agricultural truck accrual rate upon transition. Agricultural MHDDT also followed a composite rate, since in-state MHDDT were also assumed to migrate toward the agricultural category. The average odometer reading for agricultural was estimated to be approximately

601,000 miles for HHDDT and 293,000 miles for MHDDT. The average annual mileage accrual was estimated to be 23,000 miles for HHDDT agricultural trucks and 11,000 miles for MHDDT agricultural trucks. All miles are assumed to accrue in California. We present the results in Figure 6.

Figure 6. Agricultural Truck Category Mileage Accrual and Modeled Odometer (2008)



c) Base Year Vehicle Miles Traveled by Size and Mileage Thresholds

Staff did not categorize agricultural trucks by fleet size. With regard to application, both medium-heavy and heavy-heavy trucks were categorized into specialty and non-specialty vehicles. Specialty vehicles are specifically defined under the proposed regulation as water trucks used on the farm, nurse rigs, cotton module movers, or feed or mixer feed trucks owned by a cattle or calf feedlot. Using this definition, by analyzing the DMV registration data, we found that 10% of agricultural trucks or approximately 2200 agricultural trucks statewide were specialty vehicles.

Non-specialty agricultural trucks were categorized according to mileage thresholds, since the regulation is to be applied differently to vehicles driven different mileage thresholds each year. The regulation sets the low use mileage threshold for trucks in general at 10,000 miles per year. Vehicles that exceed 10,000 miles per year but do not exceed an upper mileage threshold need to turnover or retrofit their trucks prior to 2017. Agricultural trucks are below the upper mileage threshold if they fall into one of the following three categories:

- MY 1995 or earlier, and driven less than 15,000 miles/year
- MY 1996-2005, and driven less than 20,000 miles/year, or
- MY 2006 or newer, and driven less than 25,000 miles/year

These categories of agricultural truck are subject to regulatory requirements at the beginning of calendar year 2017 and are categorized as “between mileage thresholds”. The third category consists of trucks that exceed the upper VMT threshold; these trucks are subject to the ARB regulation according to the standard turnover and retrofit timeline.

In Table 6 we show the distribution of daily VMT among medium-heavy agricultural trucks in California in calendar year 2008. In Table 7 we show the distribution of daily VMT among heavy-heavy agricultural trucks in California in 2008. In each table we also show the average VMT-weighted age by mileage threshold. For both heavy-heavy and medium-heavy agriculture truck weight classes, the trucks driven the fewest miles tended to be older than other vehicles.

Table 6. Distribution of VMT among Medium-Heavy Agricultural Trucks by Fleet Size (2008)

Vehicle Type	Daily VMT	Share	VMT-weighted Average Age
Non specialty, below lower threshold	46,021	13.4%	16.0
Non specialty, between thresholds	78,768	23.0%	10.3
Non specialty, above upper threshold	183,598	53.6%	9.2
Ag specialty vehicle	34,265	10.0%	10.5
Total	342,652	100.0%	

Table 7. Distribution of VMT among Heavy-Heavy Agricultural Trucks by Fleet Size (2008)

Vehicle Type	Daily VMT	Share	VMT-weighted Average Age
Non specialty, below lower threshold	82,489	9.4%	17.1
Non specialty, between thresholds	62,773	7.1%	12.5
Non specialty, above upper threshold	645,375	73.5%	10.5
Ag specialty vehicle	87,849	10.0%	11.4
Total	878,486	100.0%	

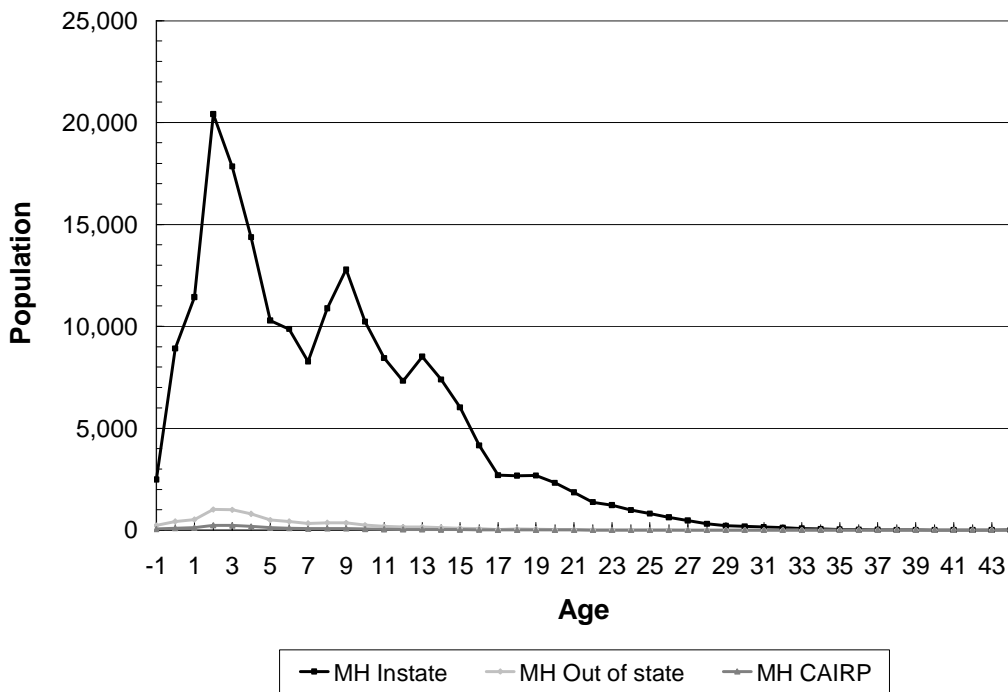
4. *Medium Heavy Duty Diesel Trucks*

Staff estimate that more than 200,000 MHDDT are registered in and operate in California. These trucks are primarily lighter weight delivery trucks with a GVWR between 14,000 and 33,000 lbs that travel during the work day within the area where they are registered. Most of these trucks are registered in and never leave California, although a few are California-registered and in the IRP program, and a few enter California from other states. Most MHDDTs are found in fleets of two or more although some are single-truck-fleet.

a) Base Year Population and Age Distribution by Fleet Size

Staff identified MHDDT in the DMV registration database by selecting all diesel powered vehicles with a GVWR between 14,000 and 33,000 lbs. The data were then analyzed in two ways. First, staff sorted the registration data by owner name and address to identify the number of vehicle records associated with a unique owner. This list was then used to develop the fleet size distribution, including the number of owner-operators and small fleets. Staff then used a combination of license plate and IRP registration data to estimate how many of the MHDDT are registered in California compared to other states, as well as what fraction of their travel is solely within California. Staff found that the vast majority of MHDDT that are registered in California never leave California. Also, using IRP data, staff estimated that very few out-of-state trucks fall into the MHDDT category. Since both the public and agricultural truck categories include MHDDT, we subtracted these by model year from the in-state MHDDT category to avoid double counting. We estimated the population-weighted average age of an out-of-state or IRP MHDDT at 5.4 years as compared to 8.0 years for an in-state MHDDT. In Figure 9 we show the population and age distribution estimated for MHDDTs operating in California.

Figure 7. MHDDT Population and Model Year Distribution (2008)



b) Base Year Accrual, Lifetime Accrual, and Mileage Thresholds

Staff used the most recent VIUS database (calendar year 2002) to estimate annual mileage accrual and modeled odometer readings for MHDDT. We did not differentiate between in-state and interstate MHDDT with modeled odometer readings. Staff used CA IRP data to calculate the fraction of total mileage accrual that occurs in California on average. Staff estimated that CA IRP MHDDT drive 63% and out-of-state registered

MHDDT 8% of their total annual miles in California. We estimated the average odometer reading as 161,000 miles for out-of-state MHDDT and CA IRP MHDDT and 207,000 miles for instate MHDDT. We estimated the average annual mileage accrual to be 22,000 miles for out-of-state and CA IRP MHDDT and 20,000 miles for instate MHDDT. Of the 22,000 miles driven annually by out-of-state and CA IRP MHDDTs, it was assumed that out-of-state vehicles drive only 8% (1,800 miles) of their annual miles in California as compared to 64% (14,000 miles) for CA IRP vehicles. The difference in average annual accrual resulted from the different age distribution representing the population within each category. In Figure 8 we plot the annual accrual in California and cumulative modeled odometer readings for MHDDT by age and category.

Figure 8. MHDDT Accrual and Modeled Odometer (2008)

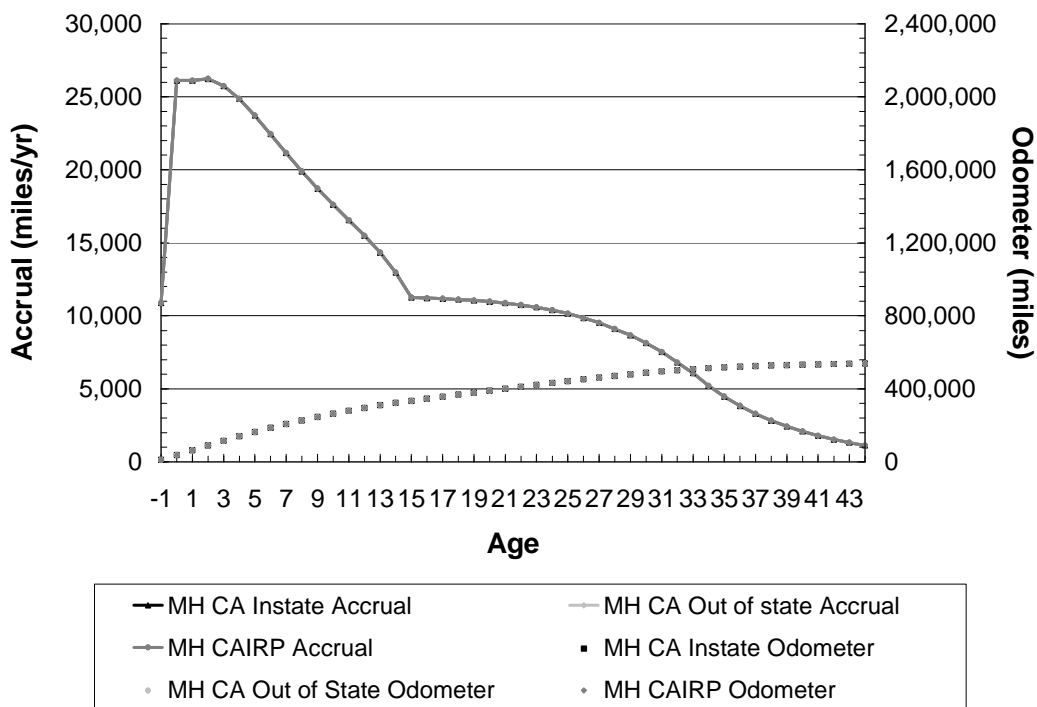
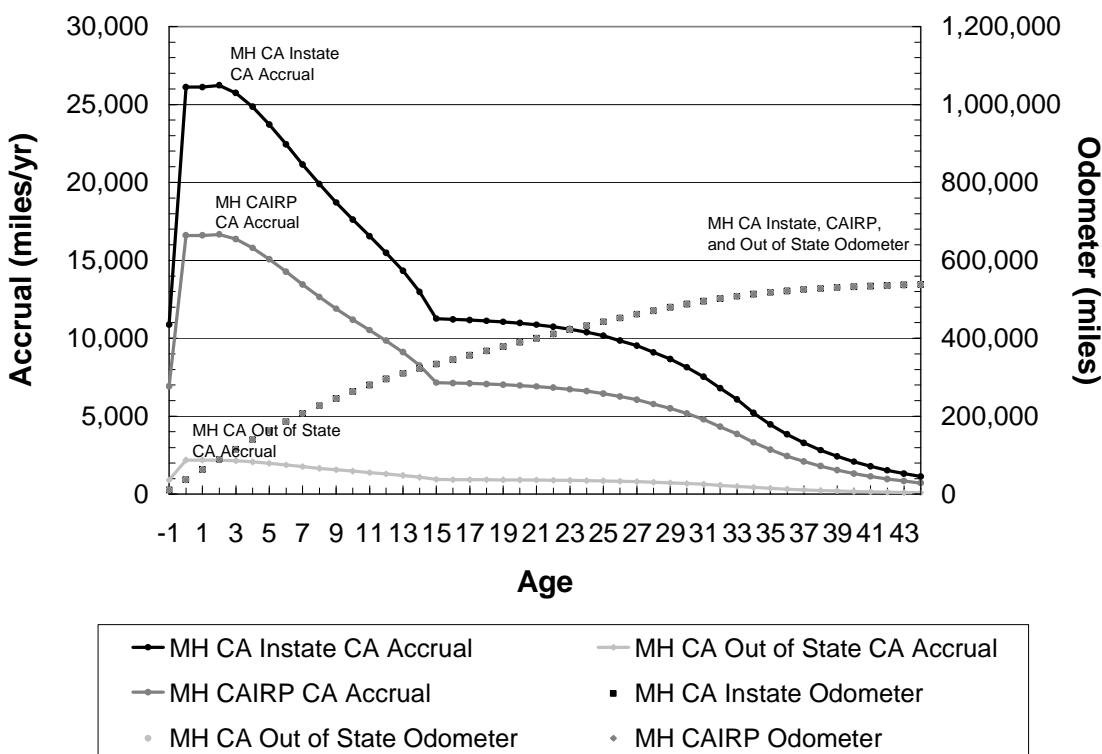


Figure 8 shows the annual mileage accrual rates to be similar for medium-heavy duty diesel CA Instate, CA Out-of-State, and CA IRP-registered trucks. However, these accrual rates are simply the total accrual rates for the vehicles in each inventory category; they do not represent the accrual rate for vehicles in each category within California. Because the share of annual travel within California varies between categories (8% for Out-of-State; 63% for CA-IRP; 100% for MHDDT Instate), the accrual rate for vehicles within California also varies for each category. We show these accrual rates in Figure 9; because California-registered MHDDT are assumed to spend 100% of their time in California, they have the highest CA accrual rate.

Figure 9. MHDDT Accrual in California and Modeled Odometer (2008)



c) Base Year Vehicle Miles Traveled by Fleet Size and Mileage Thresholds

We categorized medium-heavy duty diesel trucks by fleet size as single-truck fleets, two-truck fleets, three-truck fleets, and fleets of more than three trucks. We also categorized MHDDT based on their annual miles driven since the regulation is to be applied differently to vehicles used at differing mileage levels. The mileage threshold of significance for MHDDT from a regulatory perspective is 5,000 miles per year. In Table 8, Table 9, and Table 10 we show the distribution of daily VMT driven in California in calendar year 2008 by different size fleets of in-state, CA-IRP, and out-of-state MHDDTs, respectively. Each table also shows the VMT-weighted average age of the trucks as a function of fleet size. For all categories of MHDDT, regardless of miles driven or state of registration, the smaller the fleet, the older the truck. Also, very little

(less than 2%) of the total statewide MHDDT VMT is driven by vehicles in fleets driving less than 5,000 miles a year. In addition, MHDDTs driving less than 5,000 miles a year are significantly older (4 to 6 years older) than those in comparable size fleets that drive more than 5,000 miles a year.

Table 8. Distribution of VMT among Medium-Heavy Instate Vehicles by Fleet Size (2008)

	Fleet Size	Daily VMT	Share	VMT-weighted Average Age
Below 5000 miles	1 truck	80,942	0.6%	13.4
	2 trucks	25,478	0.2%	13.1
	3 trucks	15,111	0.1%	13.0
	> 3 trucks	107,142	0.8%	11.6
Above 5000 miles	1 truck	3,786,410	29.7%	7.0
	2 trucks	1,244,223	9.8%	6.8
	3 trucks	740,914	5.8%	6.9
	> 3 trucks	6,731,027	52.9%	5.7
	Total	12,731,247	100.0%	

Table 9. Distribution of VMT among Medium-Heavy CAIRP Vehicles by Fleet Size (2008)

	Fleet Size	Daily VMT	Share	VMT-weighted Average Age
Below 5000 miles	1 truck	95	0.1%	8.2
	2 trucks	61	0.1%	8.4
	3 trucks	68	0.1%	9.2
	> 3 trucks	616	0.8%	9.4
Above 5000 miles	1 truck	9,684	13.0%	4.3
	2 trucks	6,018	8.0%	4.3
	3 trucks	5,943	7.9%	4.5
	> 3 trucks	52,292	69.9%	4.7
	Total	74,777	100.0%	

Table 10. Distribution of VMT among Medium-Heavy Out-of-state Vehicles by Fleet Size (2008)

	Fleet Size	Daily VMT	Share	VMT-weighted Average Age
Below 5000 miles	1 truck	54	0.1%	8.2
	2 trucks	35	0.1%	8.4
	3 trucks	39	0.1%	9.2
	> 3 trucks	353	0.8%	9.4
Above 5000 miles	1 truck	5,552	13.0%	4.3
	2 trucks	3,450	8.0%	4.3
	3 trucks	3,407	7.9%	4.5
	> 3 trucks	29,980	69.9%	4.7
	Total	42,871	100.0%	

5. California Registered Heavy Heavy Duty Diesel Trucks

California is somewhat unique in the United States in that it has a comparatively large population of older heavy-heavy duty diesel trucks. These trucks, with an average age of 10 to 12 years, generally do not travel outside California, operating practically as a captive fleet. These California registered trucks drive fewer miles per truck than IRP trucks registered in California, both because they are older and less mechanically reliable and because they are engaged in more localized trucking services than their out-of-state registered counterparts. Consequently, California registered HHDDT are much more likely to drive in the air basin in which they are primarily based.

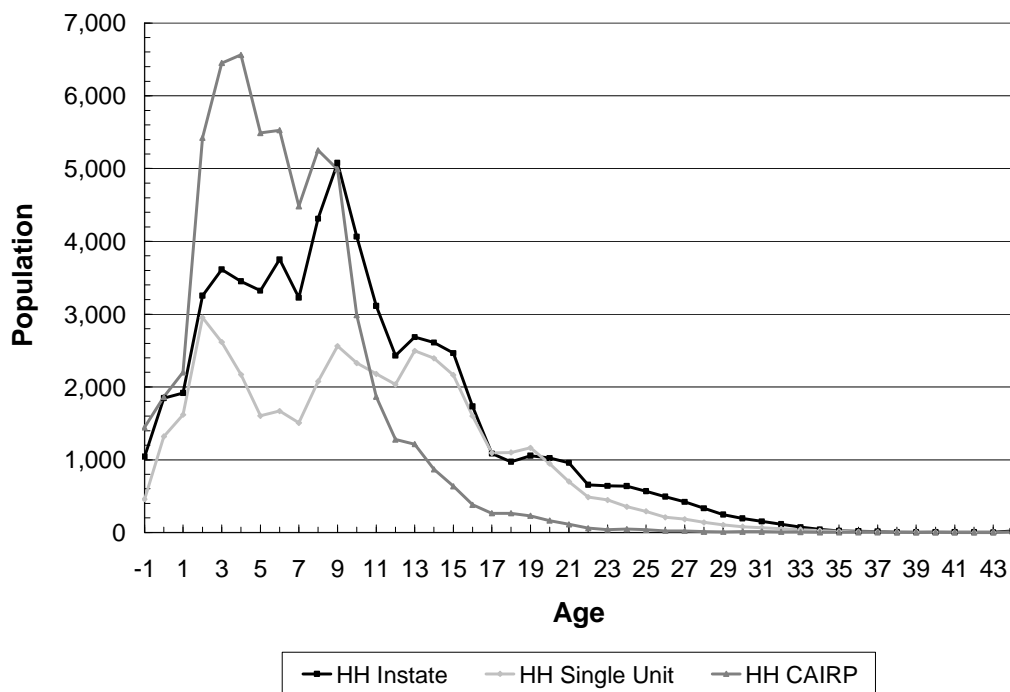
When evaluating VIUS data we realized there is a significant difference in the mileage a truck travels depending upon whether it is a single-unit truck or a combination tractor. On average, combination tractors drive more miles per year than single-unit trucks. We also found that while single-unit trucks tend to be purchased new in California and then operate in California for the life of the truck, in-state tractors tend to begin their life as interstate trucks and then transition into in-state usage as they age and accrue miles. Analysis of the VIUS data indicates interstate trucks are generally sold into the in-state fleets between 2 and 6 years of age, having accrued approximately 500,000 miles in interstate service.

a) Base Year Population and Age Distribution by Fleet Size

To develop population estimates for in-state HHDDT, staff used DMV registration data (license plate number and GVWR) to identify those HHDDT that operate solely within California (in-state). Staff then analyzed DMV and IRP data to identify only California registered IRP trucks. Next, staff used the DMV data to assess the body type of each in-state truck. We then used the DMV data to estimate the population and model year distribution of in-state single-unit trucks, in-state tractors, and California IRP trucks. We subtracted the populations of utility trucks, drayage trucks, and agricultural trucks estimated elsewhere from the in-state HHDDT category, by body type and registration, to estimate the number of in-state tractors and avoid double counting.

In Figure 10 we provide the estimated population and age distribution for in-state HHDDT categories in California in calendar year 2008. In general, vehicles traveling only in California are older than those traveling out-of-state and single unit trucks are slightly older than comparable model year tractors. As shown in Figure 10, CA IRP trucks have a population-weighted average age of 6.2 years, while in-state tractors average age 9.9 years, and single-unit trucks average 10.2 years old.

Figure 10. California-Registered In-State HHDDT Population and Model Year Distribution (2008)



b) Base Year Accrual, Lifetime Accrual, and Mileage Thresholds

Staff used VIUS to assess annual mileage accrual rates by body type for in-state HHDDT and CA-IRP trucks. This analysis indicated that California IRP trucks drive about 55% of their total miles in California. Because used trucks are sold into the in-state tractor category from interstate categories, and interstate category tractors drive more miles than in-state tractors during their early years, we developed a composite modeled odometer to represent in-state tractors. The composite odometer estimate assumes a high annual mileage in early model years when a tractor is in long-haul service and lower annual mileage once a tractor begins shorter haul service in the in-state category. For comparative purposes, a vehicle of a given model year that had been used exclusively for interstate purposes would have a higher odometer reading than a vehicle of the same age that had been used exclusively for instate purposes; a vehicle that had been used earlier in its life for interstate purposes and later for instate purposes would likely have an odometer reading between the two. The average odometer reading estimated using this approach was 723,000 miles for instate HHDDT, 338,000 miles for single-unit HHDDT, and 668,000 miles for CAIRP HHDDT. The

average annual mileage accrual was estimated to be 51,000 miles for in-state HHDDT, 25,000 miles for single-unit HHDDT, and 75,000 miles for CAIRP HHDDT (of which 43,000 miles are driven in California). Figure 11 provides in-state HHDDT mileage accrual and modeled odometer by model year; these data reflect the assumption of composite use. For comparative purposes, in Figure 12 we provide the composite odometer reading for in-state trucks of various model years in calendar year 2008 compared with the modeled odometer reading for similar trucks used purely for in-state or interstate long-haul traffic.

Figure 11. HHDDT In-state and Interstate Fleet Accrual and Modeled Odometer (2008)

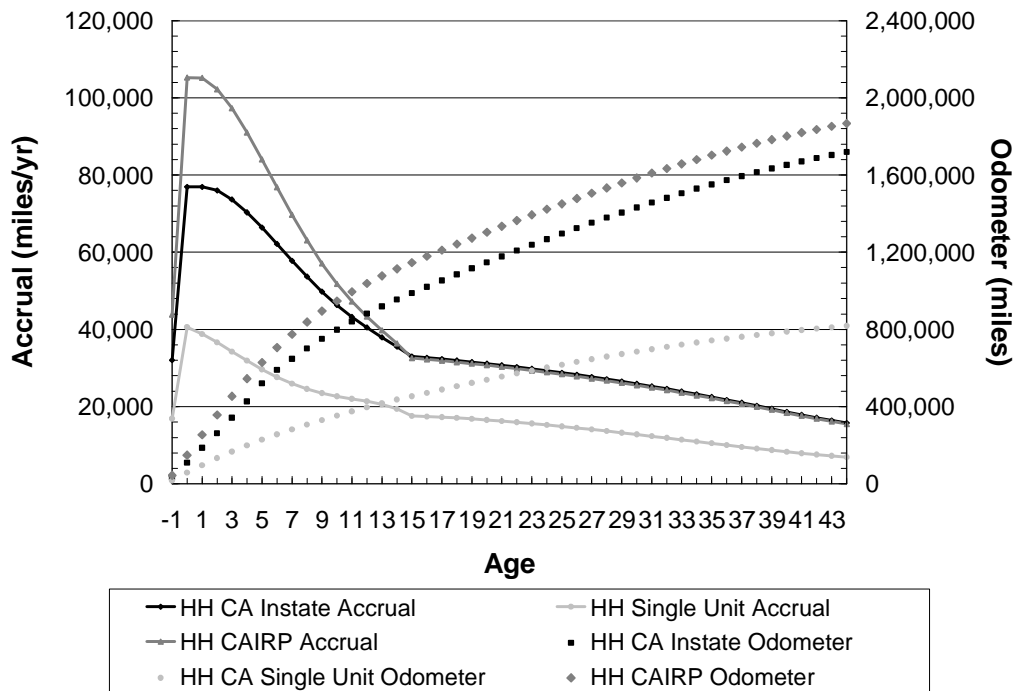
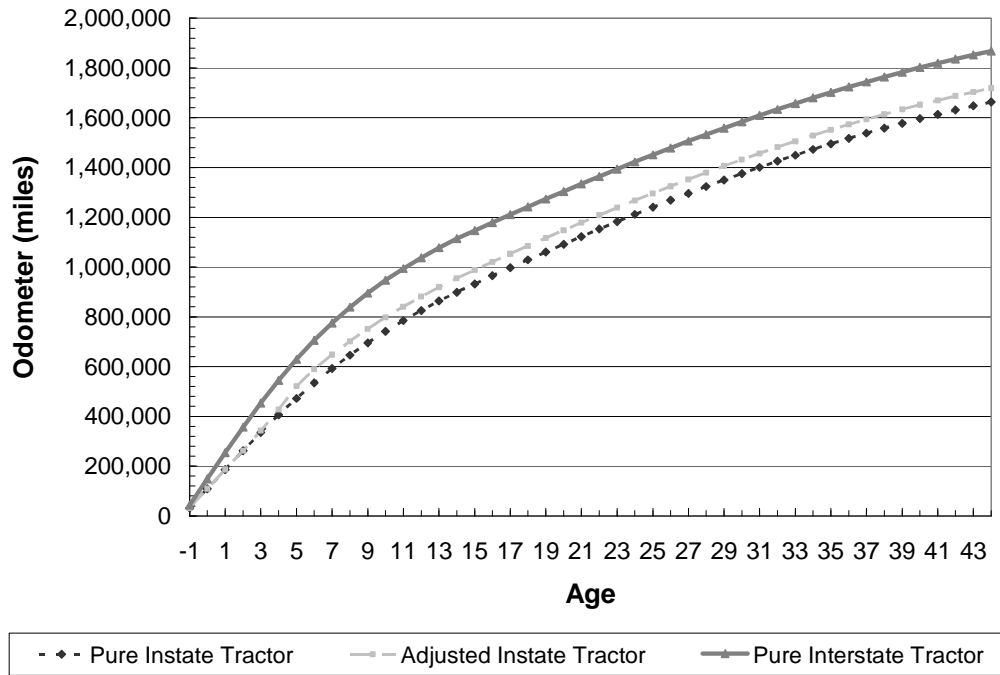


Figure 12. HHDDT In-State Tractor Modeled Odometer (2008)



c) Base Year Vehicle Miles Traveled by Fleet Size and Mileage Thresholds

We categorized heavy-heavy duty diesel trucks by fleet size as single-truck fleets, two-truck fleets, three-truck fleets, and fleets of more than three trucks. We also categorized the fleets by their annual VMT since the regulation is to be applied differently to trucks driven at different mileages each year. The mileage threshold of significance for HHHDT from a regulatory perspective is 7,500 miles per year. In Table 11 we show the distribution of daily VMT and the VMT-weighted average age as a function of fleet size and annual miles driven for heavy-heavy instate trucks in California in 2008. Heavy-heavy duty diesel instate trucks driving less than 7,500 miles a year are significantly older (5 years) than their counterparts driving more than 7,500 miles a year and contribute less than 2% of the total VMT driven each year by in-state HHDDTs. Regardless of miles driven, HHDDT in smaller fleets are on average older than those in larger fleets.

Table 11. Distribution of Daily VMT among California Instate Tractors Heavy-Heavy Duty Vehicles by Fleet Size (2008)

	Fleet Size	Daily VMT	Share	VMT-weighted Average Age
Below 7500 miles	1 truck	44,925	0.4%	15.2
	2 trucks	12,992	0.1%	15.4
	3 trucks	7,370	0.1%	15.3
	> 3 trucks	48,792	0.5%	13.6
Above 7500 miles	1 truck	3,031,868	29.1%	10.1
	2 trucks	902,069	8.7%	9.7
	3 trucks	529,836	5.1%	9.5
	> 3 trucks	5,835,899	56.0%	6.4
	Total	10,413,751	100.0%	

In Table 12 we show the distribution of daily VMT as a function of fleet size and mileage driven for heavy-heavy single-unit trucks operating in California in calendar year 2008. In Table 13 we show the distribution of daily VMT as a function of fleet size and mileage driven in California for heavy-heavy trucks licensed in California under the International Registration Program in California in 2008. Each table also shows the average VMT-weighted age of vehicles within the fleets of different sizes; in each case, the trucks driven fewer miles tended to be older than trucks driven more miles, and the average age of vehicles within a fleet was also estimated to decrease with the size of the fleet.

Table 12. Distribution of Daily VMT among Single-Unit Heavy-Heavy Duty Vehicles by Fleet Size (2008)

	Fleet Size	Daily VMT	Share	VMT-weighted Average Age
Below 7500 miles	1 truck	37,585	1.1%	15.6
	2 trucks	13,153	0.4%	15.5
	3 trucks	7,951	0.2%	14.8
	> 3 trucks	63,491	1.9%	13.5
Above 7500 miles	1 truck	766,081	22.5%	10.3
	2 trucks	279,769	8.2%	9.9
	3 trucks	185,491	5.4%	9.2
	> 3 trucks	2,057,340	60.3%	7.1
Total		3,410,860	100.0%	

Table 13. Distribution of Daily VMT among California International Registration Program Vehicles in California by Fleet Size (2008)

	Fleet Size	Daily VMT	Share	VMT-weighted Average Age
Below 7500 miles	1 truck	5,804	0.1%	10.8
	2 trucks	2,096	0.0%	10.9
	3 trucks	1,223	0.0%	11.4
	> 3 trucks	9,801	0.1%	11.3
Above 7500 miles	1 truck	2,198,998	26.5%	6.0
	2 trucks	812,823	9.8%	5.8
	3 trucks	460,037	5.6%	5.7
	> 3 trucks	4,791,942	57.9%	4.6
Total		8,282,725	100.0%	

6. Out-of-State Heavy Heavy Duty Diesel Trucks

According to the California Department of Finance, California's economy is the eighth largest in the world (DOF, 2008). Foreign trade, construction, and transportation are all major contributors to California's economy, and these economic sectors attract the services of national trucking fleets including large numbers of out-of-state heavy-heavy duty diesel trucks.

a) Base Year Population and Age Distribution by Fleet Size

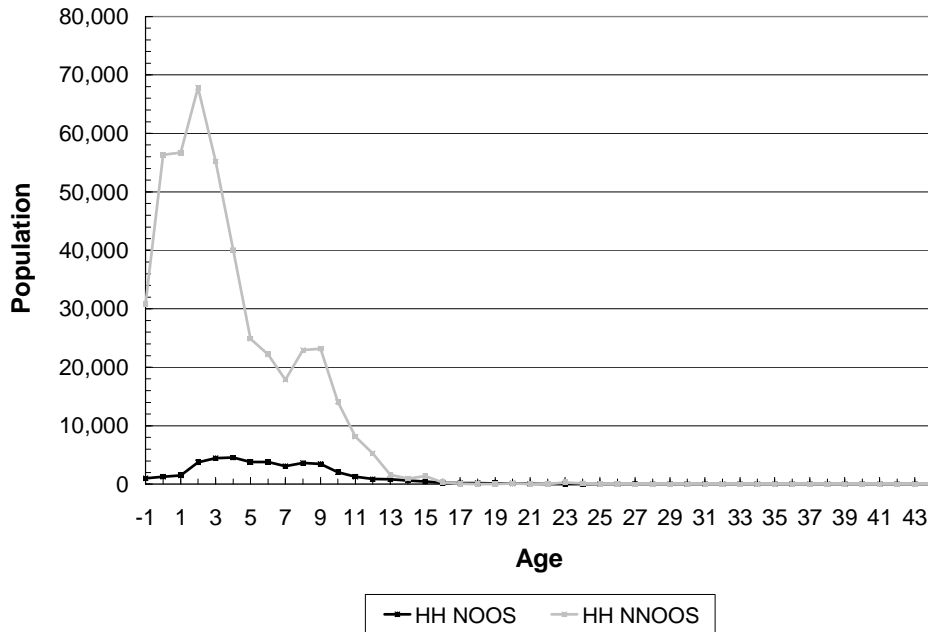
No single source of information describes out-of-state truck activity in California. To develop an inventory, staff conducted detailed research into the IRP and IFTA programs. The California DMV provided staff with a report providing the total number of out-of-state trucks, by state, that are enrolled in the IRP program and in fleets that reported any travel in California. These data suggested that more than one million trucks are in fleets that report mileage in California. However, this is likely to be an upper estimate as not all of the trucks in these fleets actually enter California. To better constrain the number of out-of-state trucks entering California, staff analyzed IRP data in greater detail, as described below.

In analyzing the age distribution of out-of-state trucks, staff divided heavy-heavy duty trucks into two groups based on their proximity to California under the assumption that trucks traveling longer distances are younger. Neighboring states were considered to include British Columbia, Washington, Oregon, Idaho, Nevada, and Arizona while non-neighboring states included all other states and Canadian provinces. Staff sampled IRP data from 12 states to obtain a statistically representative sample of data. IRP data suggested neighboring state trucks are on average 6.1 years old and have a model year distribution similar to that of California interstate trucks while non-neighboring state trucks are on average around 3.3 years old, much younger than other interstate trucks. Recent field studies supported by the ARB have confirmed this trend (Lutsey, 2008).

To better understand the population of out-of-state trucks that actually operate in California, staff developed a methodology to assess the number of trucks in a fleet likely to enter California. We evaluated all of the collected non-California registered IRP data by fleet. For each fleet we calculated the number of miles traveled in California per truck as reported in the IRP data. We then assumed an average trip length depending on the registered location of each fleet and where those trucks would most likely travel in California. In many cases the assumed trip length was longer than the calculated number of miles traveled per truck in the IRP data. In those cases, we calculated the population operating in California as the total miles traveled in California divided by the assumed trip length. For all other fleets we assumed all of the reported trucks in that fleet actually enter California. Staff then recompiled the population for trucks from neighboring states and non-neighboring states. The results suggested for fleets in states neighboring California, approximately 60% of trucks in those fleets authorized to enter California actually do so. Of fleets in states not neighboring California, approximately 40% of the trucks authorized to enter California are estimated to actually do so.

The fraction of owner-operators in the out-of-state category was based on the IRP samples collected. The population-weighted average age of HHDDT from neighboring states was estimated to be 6.2 years while HHDDT from non-neighboring states were estimated to be on average 3.6 years old. These estimates were each close to the IRP estimates. In Figure 13 we provide estimates of the out-of-state population and model year distribution of heavy-heavy duty diesel trucks operating in California in calendar year 2008.

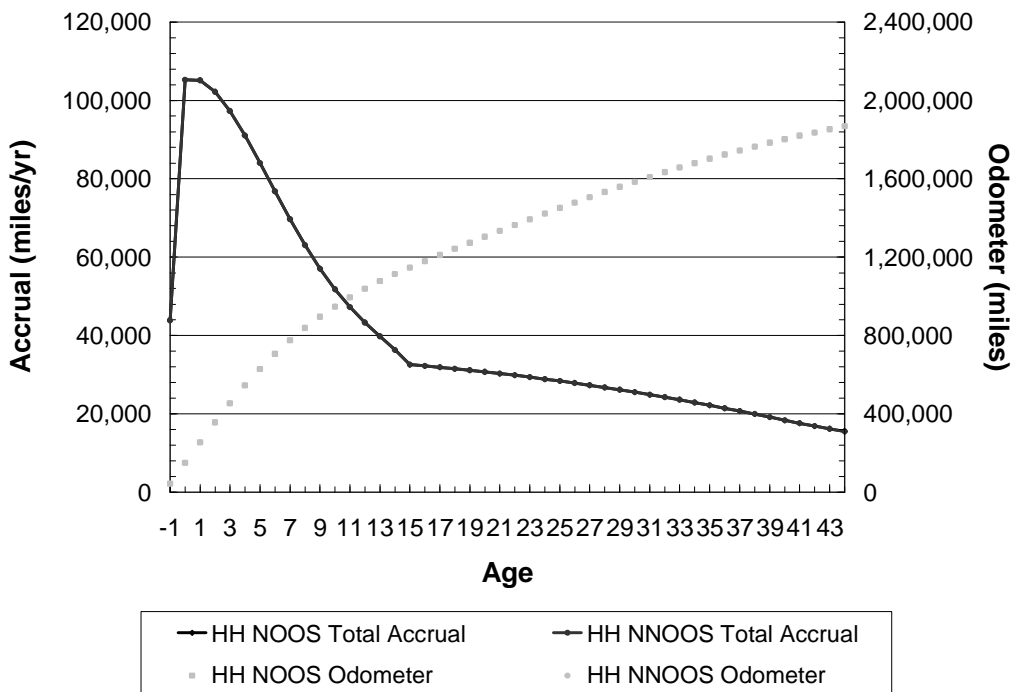
Figure 13. Out-of-State HHDDT Population and Model Year Distribution (2008)



b) Base Year Accrual, Lifetime Accrual, and Mileage Thresholds

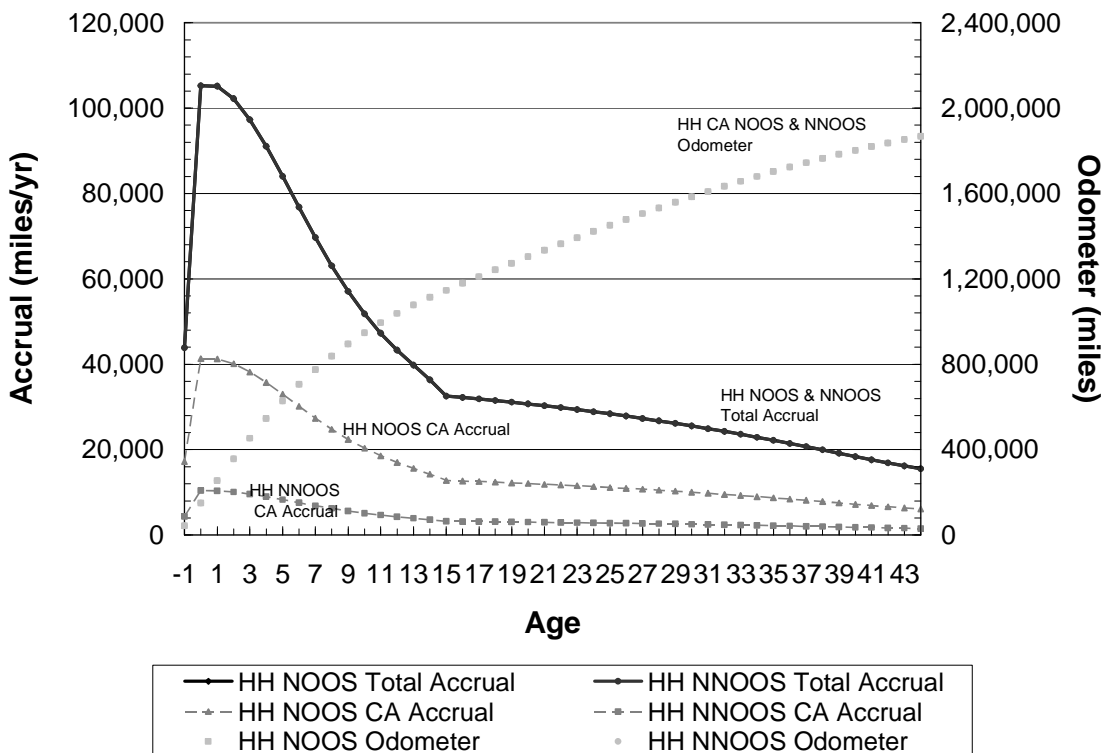
Staff used VIUS to assess accrual rates for the nationwide IRP truck category traveling in California. Staff then evaluated IRP sample data to estimate the fraction of miles accrued in California and 2005 IFTA records to quantify the total miles traveled in California by out-of-state HHDDT. Results suggested that trucks from neighboring states travel on average 40% of their total mileage in California, while trucks from non-neighboring states travel around 10% of their total mileage in California. The average odometer reading was estimated to be 668,000 miles for neighboring out-of-state HHDDT and 473,000 miles for non-neighboring out-of-state HHDDT. The average annual mileage accrual was estimated as 75,000 miles per year (30,000 miles per year in CA) for neighboring out-of-state HHDDT and 85,000 miles per year (8,400 miles per year in CA) for non-neighboring out-of-state HHDDT. In Figure 14 we provide estimates of the average annual mileage accrual and modeled odometer by model year for out-of-state heavy-heavy duty diesel trucks operating in California in calendar year 2008.

Figure 14. Out-of-State Truck Accrual and Modeled Odometer (2008)



In Figure 14, the accrual rates for HHDDT NOOS and NNOOS trucks are shown to be equal, but these rates represent the overall accrual for the trucks. Because trucks from states neighboring California drive a larger fraction of their annual miles in California than trucks from non-neighboring states, the model used for this analysis reflects different accrual rates for vehicles in each category in California. We show these in Figure 15.

Figure 15. Out-of-State Truck Accrual within California and Modeled Odometer (2008)



c) Base Year Vehicle Miles Traveled by Fleet Size and Mileage Thresholds

Staff also categorized heavy-heavy duty diesel trucks from outside California by fleet size as single truck fleets, two truck fleets, three truck fleets, and fleets of more than three trucks. We also categorized fleets based on the annual VMT of trucks, since the regulation is to be applied differently to fleets used at differing mileage levels. The mileage threshold of significance for HHDDT from a regulatory perspective is 7,500 miles per year. In Table 14 we show the distribution of daily VMT driven in California in calendar year 2008 by heavy-heavy diesel trucks of different fleet sizes registered in states neighboring California. In Table 15 we show the distribution of daily VMT driven in California in calendar year 2008 by heavy-heavy diesel trucks registered in non-neighboring states in 2008. Each table also shows the average VMT-weighted age of vehicles within each fleet size; we estimated the average age to be higher for vehicles

driven fewer miles. We estimated the average age to be independent of the fleet size for vehicles registered outside California.

Table 14. Distribution of Daily California VMT among Heavy-Heavy Duty Diesel Trucks Registered in Neighboring States by Fleet Size (2008)

	Fleet Size	Daily VMT	Share	VMT-weighted Average Age
Below 7500 miles	1 truck	1,149	0.0%	11.1
	2 trucks	357	0.0%	11.1
	3 trucks	261	0.0%	11.1
	> 3 trucks	7,253	0.2%	11.1
Above 7500 miles	1 truck	501,599	12.7%	5.1
	2 trucks	155,808	3.9%	5.1
	3 trucks	113,815	2.9%	5.1
	> 3 trucks	3,167,429	80.2%	5.1
	Total	3,947,672	100.0%	

Table 15. Distribution of Daily VMT among Heavy-Heavy Duty Diesel Trucks Registered in States not Neighboring California by Fleet Size (2008)

	Fleet Size	Daily VMT	Share	VMT-weighted Average Age
Below 7500 miles	1 truck	188	0.0%	8.3
	2 trucks	58	0.0%	8.3
	3 trucks	41	0.0%	8.3
	> 3 trucks	11,610	0.1%	8.3
Above 7500 miles	1 truck	192,875	1.6%	3.1
	2 trucks	58,926	0.5%	3.1
	3 trucks	41,740	0.3%	3.1
	> 3 trucks	11,889,217	97.5%	3.1
	Total	12,194,654	100.0%	

7. Buses

The proposed regulation achieves emissions reductions for two classes of buses: school buses and other buses. School buses may be either privately- or publicly-owned, but must be used exclusively for transporting students in accordance with the definition of school buses in the California Vehicle Code. Other buses are defined as all buses identified in the DMV database that cannot be categorized as school buses and are not owned by public transit agencies. This category includes intercity buses, charter buses, and church buses. This section describes the assumptions used to develop a baseline emissions inventory for school buses and other buses.

a) Base Year Population and Age Distribution by Fleet Size

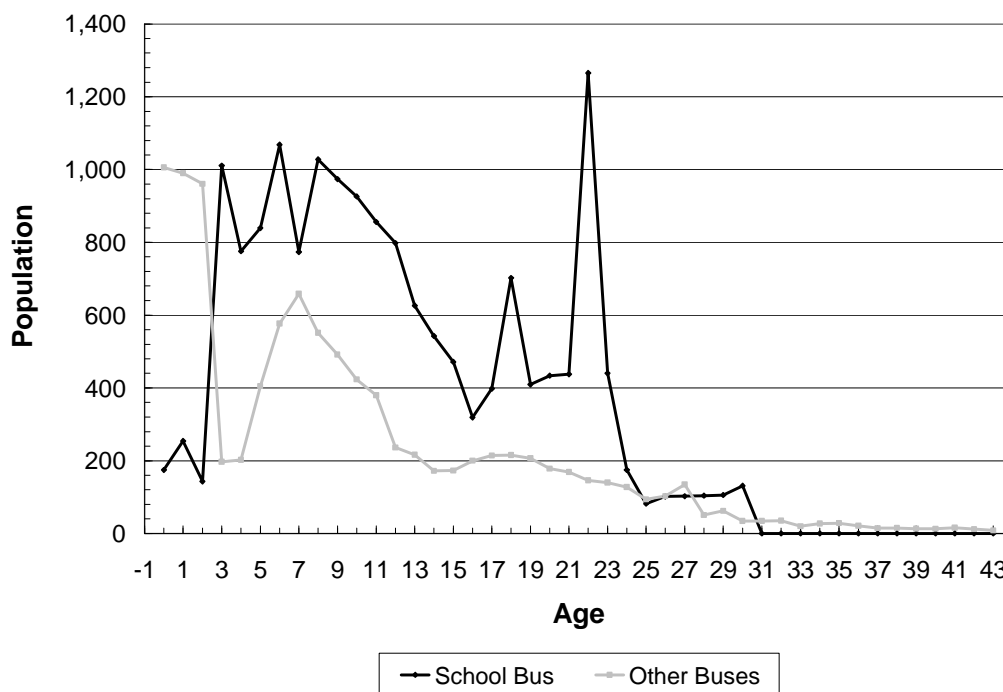
Staff used a calendar year 2005 database of school buses compiled by the CHP to estimate the population and age distribution of school buses in California in 2005 (California Highway Patrol, 2006). The age distribution of school buses in 2005 was

assumed to be consistent with the age distribution of school buses between 2000 and 2004.

Staff used the survival rate of school buses in EMFAC2007 and the existing Lower Emissions School Bus Program (LESBP) to estimate the age distribution of school buses in future years. Specifically, the impact of the LESBP was modeled as though: i) all pre-1985 model year school buses will be replaced by buses that meet 2007 emission standards as of December 31, 2009, and ii) 50% of 1985 and 1986 model year school buses will be replaced with school buses that meet 2007 emission standards by December 31, 2010. In addition, the maximum age for a school bus was set at thirty years; any school bus older than thirty years was assumed to be replaced with a new bus. Any school bus that was retired due to age or attrition was assumed to be replaced in the population with a new school bus. The aggregate population of diesel school buses was assumed to remain unchanged; any increases to the total school bus population were assumed to represent new vehicles using natural gas or some other alternative fuel entering the fleet.

Other buses were assumed to follow the age distribution of such vehicles as modeled in EMFAC2007. The population-weighted average age was estimated to be 12.2 years for school buses and 9.6 years for other buses. We compare the age distribution of school buses and other buses operating in California as modeled for calendar year 2008 in Figure 16.

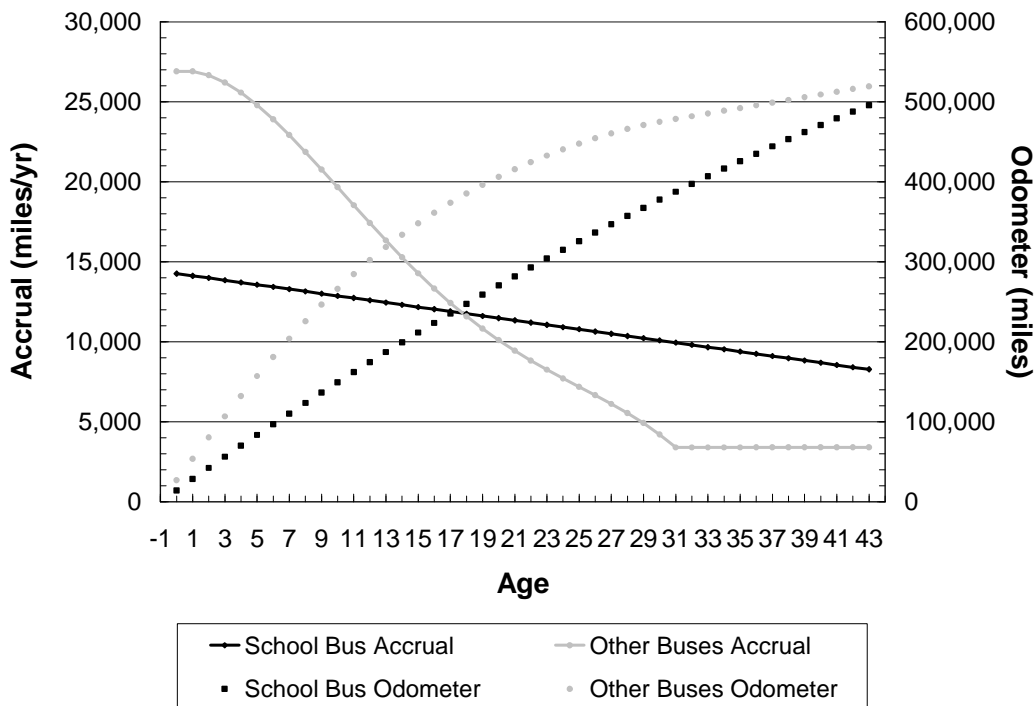
Figure 16. Bus Population and Model Year Distribution (2008)



b) Base Year Accrual, Lifetime Accrual, and Mileage Thresholds

In the absence of new information, staff used the average annual mileage accrual and odometer estimates assumed for buses in EMFAC2007 to estimate the benefits of the proposed rule. The average odometer reading was estimated to be 173,000 miles for school buses and 222,000 miles for other buses. The average annual mileage accrual was estimated to be approximately 13,000 miles for school buses and 22,000 miles for other buses. All such miles are assumed accrue in California. We show in Figure 17 the average annual mileage accrual and odometer estimates for school buses and other buses in California in calendar year 2008..

Figure 17. Bus Accrual and Modeled Odometer (2008)



c) Base Year Vehicle Miles Traveled by Fleet Size and Mileage Thresholds

Buses were not differentiated by fleet size or mileage threshold in this inventory as buses are not treated differently in the proposed regulation based on these criteria.

8. Power Take Off Operations in California

Power Take Off (PTO) operations are those that result in emissions related to activities other than travel, such as a crane lifting objects or a cement mixer processing raw materials. Emissions associated with these operations are more accurately quantified using fuel consumption than vehicle miles traveled, the usual activity metric for on-road vehicles.

a) Estimating Fuel Usage

Staff did not estimate the actual population or distribution of PTO activity. Instead we used fuel consumption data for PTO operations in California in calendar year 2005 as reported by the California Board of Equalization.

b) Converting Fuel Usage to Activity by Age

The age distribution PTO equipment was assumed to follow the same age distribution as HHDDT single-unit trucks. This distribution was given earlier in Figure 10.

Mileage accrual was not directly estimated for PTO operations since, as mentioned previously, emissions generally occur while the equipment is stationary. Staff used the fuel consumption rate in EMFAC2007 for HHDDT single-unit trucks at twenty miles-per-hour with the fuel consumption estimated by the CA Board of Equalization to back-calculate the VMT-equivalent for PTO activity in California, assuming the speed profile embedded in EMFAC2007.

E. Emission Rates

For most categories, staff have used EMFAC2007 and modeled cumulative mileage to develop category-specific emission rates. We have also updated several estimates of emission rates based upon recent data analysis. In this section we describe the methods used to estimate emission rates. In each case, a reference is provided for more detailed information as to the basis for the emission rates. The specific emission rates assumed for vehicles of each fleet will be provided in a database scheduled to be released in conjunction with the staff report..

1. Updated MHDDT Emissions

In EMFAC2007, staff did not update the emission factors for medium heavy heavy-duty trucks (MHDDT). Subsequent to the release of EMFAC2007, the CRC made emissions test data available for MHDDT available to staff through its E55/59 project final report. This proposed regulation incorporates updated MHDDT emission factors developed by staff using the latest E55/59 study results.

To revise the MHDDT emission factors for this analysis, staff merged the E55/59 data into the data set that was used to develop MHDDT emission factors for EMFAC2002. From this combined data set, staff then recalculated revised zero-mile rates (ZMR) and deterioration rates (DR) for MHDDT.

The method for deriving MHDDT ZMR and DR is the same as that used for calculating emission factors for heavy heavy-duty trucks (HHDDT); the methodology has been described in detail in an EMFAC2007 technical memo (ARB, 2006f).

In Table 16 we provide the zero-mile emission and deterioration rates for medium-heavy duty diesel trucks assumed in EMFAC2007. The deterioration rates are used to model the increase in emissions relative to the zero-mile (or new-vehicle) emission rate due to

a vehicle aging and accruing miles. In Table 17 we give the updated emission rates reflecting incorporation of the latest E55/59 data, as discussed previously.

Table 16. EMFAC2007 MHDDT Zero-Mile Emission Rate (ZMR, g/mi) and Deterioration Rate (DR, g/mi/10,000 mi)

MY GROUP	HC		CO		NO _x		PM ₁₀	
	ZMR	DR	ZMR	DR	ZMR	DR	ZMR	DR
Pre 1975	0.34	0.011	3.17	0.100	18.50	0.032	1.07	0.016
1975-76	0.34	0.011	3.17	0.100	18.50	0.032	1.07	0.016
1977-79	0.34	0.011	3.17	0.100	18.50	0.032	1.07	0.016
1980-83	0.34	0.011	3.17	0.100	18.50	0.032	1.07	0.016
1984-86	0.33	0.014	2.99	0.131	17.91	0.043	1.00	0.021
1987-90	0.21	0.016	1.80	0.140	15.74	0.034	0.73	0.017
1991-93	0.18	0.018	1.43	0.139	13.11	0.078	0.45	0.022
1994-97	0.11	0.017	0.78	0.121	11.55	0.048	0.27	0.018
1998	0.09	0.014	0.64	0.097	10.52	0.032	0.24	0.012
1999-02	0.09	0.014	0.64	0.097	10.52	0.032	0.24	0.012
2003	0.09	0.007	1.04	0.074	5.79	0.018	0.29	0.009
2004-06	0.09	0.006	1.04	0.074	5.48	0.017	0.29	0.009
2007-09	0.058	0.006	0.666	0.074	3.01	0.017	0.029	0.009
2010+	0.025	0.006	0.291	0.074	0.548	0.017	0.029	0.009

Table 17. Revised MHDDT Zero-Mile Emission Rate (ZMR, g/mi) and Deterioration Rate (DR, g/mi/10,000 mi)

MY GROUP	HC		CO		NO _x		PM ₁₀	
	ZMR	DR	ZMR	DR	ZMR	DR	ZMR	DR
Pre 1986	0.83	0.047	2.79	0.159	15.61	0.033	0.97	0.038
1987-90	0.65	0.056	2.19	0.189	15.39	0.044	1.05	0.034
1991-93	0.29	0.025	1.12	0.095	11.51	0.053	0.57	0.026
1994-97	0.21	0.028	0.83	0.109	11.30	0.068	0.31	0.017
1998-02	0.22	0.028	0.84	0.108	11.11	0.078	0.35	0.015
2003-06	0.14	0.013	0.37	0.033	7.35	0.077	0.22	0.008
2007	0.12	0.008	0.31	0.020	4.78	0.065	0.022	0.001
2008	0.12	0.008	0.31	0.020	4.39	0.064	0.022	0.001
2009	0.12	0.008	0.31	0.020	3.78	0.062	0.022	0.001
2010	0.10	0.002	0.26	0.005	1.01	0.054	0.022	0.001
2011	0.10	0.002	0.26	0.005	0.86	0.054	0.022	0.001
2012	0.10	0.002	0.26	0.005	0.67	0.053	0.022	0.001
2013+	0.10	0.002	0.26	0.005	0.67	0.041	0.022	0.001

2. Revised engine market information

Staff also updated the emission factors for heavy heavy-duty diesel trucks (HHDDT) and medium heavy-duty diesel trucks (MHDDT) to reflect manufacturers' compliance with the 2007 engine standard and the anticipated compliance with the 2010 engine standard between 2006 and 2011. Staff estimated that the adjustment to 2006-2011 model year emission factors would result in lower NO_x emission rates for 2006 and 2009 model years but higher NO_x emission rates for 2007, 2008, 2010, and 2011 model years than the rates currently assumed in EMFAC2007.

The latest information available to staff indicates that at least one engine manufacturer does not plan to use selective catalyst reduction technology in their 2010-2011 model year heavy-duty diesel engines. In addition, review of the certification data shows that some engine manufacturers introduced 1.2 g/bhp-hr NO_x heavy duty engines one year earlier than required. As a result, staff decided to update the emission factors in EMFAC2007 to reflect the latest information from manufacturers and certification data.

For the earlier introduction of engines meeting 1.2 g/bhp-hr NO_x and 0.01 g/bhp-hr PM standards, the current zero-mile rates (ZMR) and deterioration rates (DR) for 2003-06 and 2007-09 model year groups were weighted by the sales fractions of 2007 standard compliant engines in 2006 model year.

For the introduction of 0.5 g/bhp-hr NO_x engines in 2009 model year, staff estimated the ZMR by adjusting the current ZMR for 2006-2009 model year group (1.2 g/bhp-hr NO_x engines) but assumed that the deterioration rate for 2006-09 model year would still apply to the 0.5 g/bhp-hr NO_x engines. The assumption of unchanged DR is largely based on the fact that the engine manufacturers will achieve a 0.5 g/bhp-hr NO_x level with an integrated technology solution based on their 2006-09 model year technologies (advanced fuel system, air management, combustion and electronic controls, and enhanced cooled exhaust gas recirculation).

Staff estimated the 2005-2008 model year sales fractions of heavy and medium heavy-duty diesel engines based on the sales fraction data reported by the manufacturers and projected the 2009-2012 model year sales fractions from the information currently available. We show the ARB-estimated penetration rates for 2005 to 2012 model years in Table 18.

Table 18. ARB Estimated Penetration Rates of 2005-2012 Model Year Engines

Model Year	Certified NO _x (g/bhp-hr)				Certified PM ₁₀ (g/bhp-hr)	
	2.2	1.2	0.5	0.25/0.2*	0.1	0.01
Heavy Heavy-Duty Diesel						
2005	100%					
2006	99%	1%			98%	2%
2007	14%	86%			1%	99%
2008	7%	93%				100%
2009		90%	10%			100%
2010			10%	90%		100%
2011			10%	95%		100%
2012				100%		100%
Medium Heavy-Duty Diesel						
2005	100%					
2006	100%				98%	2%
2007	23%	77%				100%
2008	12%	88%				100%
2009		90%	10%			100%
2010			10%	90%		100%
2011			10%	90%		100%
2012				100%		100%

* 0.25 g/bhp-hour applies to 2010 model year only.

Using the sales fractions in Table 18, staff calculated the NO_x ZMRs and DRs of both HHDDT and MHDDT for 2006-2011 model years by weighting the ZMRs and DRs of the corresponding model year groups. Staff did not revise the PM emission factors for HHDDT and MHDDT. As can be seen in Table 18, the sales of PM filter-equipped engines in 2006 account for only about 2% for both HHDDT and MHDDT categories; thus the impact of DPF engines on the PM emission rates for the 2006 model year is negligible.

In Table 19 we show the current and revised NO_x ZMR and DR of both HHDDT and MHDDT for 2006 to 2011 model years.

Table 19. NO_x Emission Factors for 2006-2011 MY Heavy-Duty Diesel Trucks (ZMR in g/mi, DR in g/mi/10,000 mi)

Model Year	HHDDT				MHDDT			
	Current		Revised		Current		Revised	
	ZMR	DR	ZMR	DR	ZMR	DR	ZMR	DR
2006	12.54	0.0522	12.48	0.0521	7.35	0.0765	7.35	0.0765
2007	6.84	0.0465	7.66	0.0573	4.01	0.0621	4.78	0.0654
2008			7.25	0.0468			4.39	0.0638
2009			6.44	0.0464			3.78	0.0621
2010	1.14	0.0407	1.72	0.0413	0.669	0.0531	1.01	0.0540
2011			1.46	0.0413			0.859	0.0540

3. Carbon Dioxide (CO₂) Emission Rates

Reducing carbon dioxide (CO₂) emissions is a primary goal of the State of California. CO₂ emissions are generated through the combustion of fuels and in particular by combustion of fuels in trucks and buses that operate in California. CO₂ emissions are a function of engine size, load, speed, miles traveled, and many other factors. This section describes how the staff derived CO₂ emission rates to develop emissions inventories in support of the proposed regulation.

Although EMFAC2007 provides CO₂ emission rates for heavy duty diesel trucks, it assumes them to be constant regardless of model year, technology group, activity and other factors. To develop more finely resolved CO₂ emission rates for trucks, staff used fuel economy data as a surrogate for CO₂ since there is a larger database of fuel economy data available for trucks than CO₂ data. Fuel economy estimates were converted to CO₂ emission rates based on the carbon content of diesel fuel, as discussed in more detail later in this section.

In this analysis we have evaluated available data to determine how improvements in engine technology and increasingly stringent criteria pollutant emission control requirements have affected the fuel economy of HHDDT and, consequently, CO₂ emission rates. Staff has recently reviewed the following data sources to develop model year-specific fuel economy values for HHDDTs operating in California:

- Department of Energy: Calendar Year Fleet Average from 1970-2006 (United States Department of Transportation, 2007)
- CRC E55/59 study by West Virginia University: Model Year 1988-2003
- International Fuel Tax Agreement (IFTA) for trucks operating in California
- Consent Decree, in-use study by West Virginia University: Model Year 1994-2003

We chose to not use the Department of Energy (DOE) fuel economy data directly since those are national data and therefore not representative of the truck fleet or driving conditions found in California. Also, the DOE data do not provide information on how fuel economy and CO₂ emission rates vary as a result of technology. DOE data were used instead as an independent check on our technical analysis.

Our technical analysis shows differences in fuel economy between different technology groups (represented as model year groups), as shown in Table 20. This table provides the estimated HHDDT fuel economy by model year group, as well as the assumptions that are embedded in those estimates.

Table 20. Proposed Fuel Economy Values for HHDDT Operating in California

MY	MPG	Note
Pre-1988	5.20	100% Mechanically controlled engines (100% @ 5.2 mpg)
1988-1990	5.39	25% Phase-in of electronic control (75% @ 5.2 mpg and 25% @ 5.95 mpg)
1991-1993	5.58	50% Phase-in of electronic control (50% @ 5.2 mpg and 50% @ 5.95 mpg)
1994-1995	5.76	75% Phase-in of electronic control (25% @ 5.2 mpg and 75% @ 5.95 mpg)
1996	5.95	100% Phase-in of electronic control (100% @ 5.95 mpg)
1997-1998	5.95	Same Fuel Economy as MY 1996 engines
1999-2002	5.48	Post consent Decree Engines with 8% loss in Fuel Economy (Timing Retarding)
2003-2006	5.75	5% gain in Fuel Economy (Better Combustion Strategies)
2007	5.61	3% loss in Fuel Economy due to EGR + DPF (86% @ 5.58 mpg; 14% @ 5.75 mpg)
2008	5.59	3% loss in Fuel Economy due to EGR + DPF (93% @ 5.58 mpg; 7% @ 5.75 mpg)
2009	5.58	3% loss in Fuel Economy due to EGR + DPF (100% @ 5.58 mpg)
2010	5.78	4% gain in Fuel Economy due to SCR (90% @ 5.80 mpg and 10% @ 5.58 mpg)
2011	5.78	4% gain in Fuel Economy due to SCR (90% @ 5.80 mpg and 10% @ 5.58 mpg)
2012	5.80	4% gain in Fuel Economy due to SCR (100% @ 5.80 mpg)

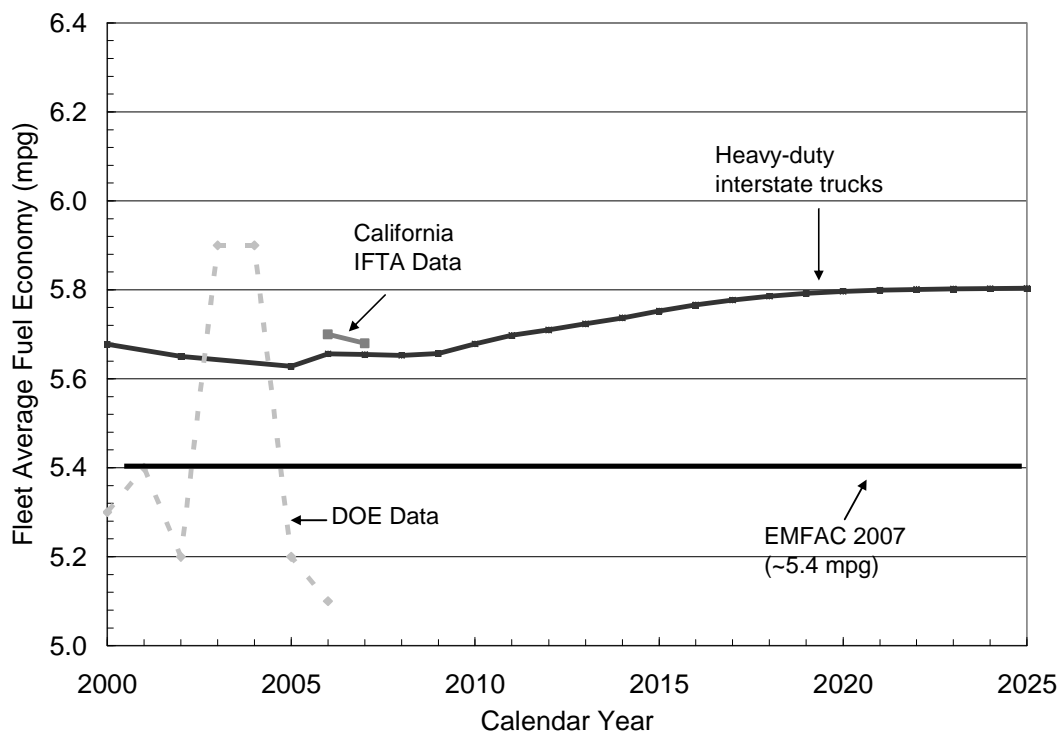
The assumptions described in Table 20 are estimated based on the following assumptions that were derived from analysis of available data:

- Mechanical vs. Electronically Controlled Engines (ECE)
 - 5.95 mpg fuel economy for electronic engines from CRC E55/59 data
 - 0.75 mpg difference in fuel economy between mechanical control and electronic control from CRC E55/59 data
 - Assume all model year mechanical control engines have same fuel economy (5.20 mpg)
 - Phase-in of Electronically Controlled Engines
 - MY 1988 to 1990: 25%
 - MY 1991 to 1993: 50%
 - MY 1994 to 1995: 75%
 - MY 1996: 100%

- Off-Cycle operation in Electronic Controlled Engines
 - MY 1993-1998
 - Higher fuel economy and higher NO_x than mechanical control engines.
 - Model year fuel economy of 5.95 mpg does not reflect chip reflash
 - Adjusted for chip reflash beginning calendar year 2002
- MY 1999-2002:
 - 8% fuel penalty
 - Post-Consent Decree engines with injection timing retarding for NO_x control
- MY 2003-2006:
 - 5% gain in fuel economy
 - Introduction of advanced combustion technologies including exhaust gas recirculation (EGR)
- MY 2007-2009:
 - Introduction of diesel particulate filter (DPF) used for PM control
 - 3% fuel penalty for meeting 2007 emissions standards
 - 86% of engines would meet 2007 emissions standards in CY 2007 (ARB, 2008a)
 - 93% of engines would meet 2007 emissions standards in CY 2008
 - 100% of engines would meet 2007 emissions standards in CY 2009
- MY 2010-2012:
 - Introduction of selective catalytic reduction (SCR) for NO_x control
 - 4% gain in fuel economy for engines equipped with (SCR)
 - 90% of engines would meet 0.2 g/bhp-hr NO_x standards in 2010 and 2011
 - 10% of engines would meet 0.5 g/bhp-hr NO_x standards with fuel economy of 5.58 mpg in 2010 and 2011
 - 100% of engines would meet 0.2 g/bhp-hr NO_x standards in 2012 (ARB, 2008c)

We applied the fuel economy estimates for each model year across each inventory category to develop a composite fuel economy by calendar year. Figure 18 compares fuel economy estimates by calendar year against values derived from DOE, IFTA, and EMFAC2007. This figure shows that HHDDT fuel economy is estimated to improve over time due initially to the introduction of electronically controlled engines and later due to the introduction of SCR-equipped engines. These results compare remarkably well with EMFAC, DOE, and IFTA data. For example, the composite fuel economy reported by all trucks operating in California in the IFTA program is 5.7 miles per gallon, which is equivalent to our estimates for interstate trucks. DOE data appear more variable across calendar years, probably due to varying sample size and representativeness in each year of reported data. Even so, DOE data are within 10% of ARB estimates, and EMFAC2007 is lower than current estimates by only 4 to 7%. In Figure 18 we show HHDDT fuel economy for interstate trucks only. In-state trucks, which are older on average than their interstate counterparts, are estimated to have slightly lower fuel economy (3% to 5%) than interstate trucks.

Figure 18. Fleet Average Fuel Economy for Trucks Operating in California



To convert fuel economy data to CO₂ emission rates, staff used the following methodology:

- estimate the fuel consumption, in gallons, for each truck category based upon the model year fuel economies and model year distribution
- multiply the estimated fuel consumption by the carbon content of diesel fuel (2,778 g carbon/gallon diesel (USEPA (2008))) to estimate the carbon emitted by each truck category
- multiply the estimate of carbon emitted by each category by the ratio between the molecular weight of CO₂ and the molecular weight of carbon (44/12) to estimate the CO₂ emissions from each category if 100% efficient
- assume 99% efficiency, multiplying the CO₂ emitted at 100% efficiency by 0.99, to estimate the final CO₂ emissions estimate for each category.

The application of this process is equivalent to applying an estimate of 22.2 lbs CO₂/gallon diesel fuel (10.08 kg CO₂/gallon diesel fuel) to the estimate of fuel consumed by vehicles in each category.

Fuel economy in MHDDT was assumed to be 33% higher than for HHDDT in the same model year, based on analysis of data described above. CO₂ emission rates for buses were taken directly from EMFAC2007.

4. Final emissions rates

Staff estimated the emission rates for each truck inventory category for two types of activity – vehicles in motion and vehicles idling. We estimated emission rates for vehicles in motion in terms of tons/day for the average vehicle; these are shown in the database provided in conjunction with this appendix. We estimated the emission rates for vehicles while idling in terms of tons/hour; these, too, are shown in the database provided with this appendix.

F. Forecasting the Baseline Inventory

In this section we describe the methods used to estimate the growth of future truck populations and truck VMT in the emissions inventory.

1. Growth

In modeling the emissions for future years, staff needed to estimate the amount of vehicular travel in future years. The emissions are in general proportional to the vehicle miles traveled. The growth rate for VMT is likely to vary between inventory categories; thus we estimated the VMT growth on a category-specific basis.

For utility trucks in this inventory, staff assumed the same growth rate (2.0%) as was assumed in the regulation adopted by the ARB for public and utility fleets (ARB, 2005).

Staff projected the population of drayage trucks to increase at 2.5% per year near the Ports of Los Angeles, Long Beach, and Oakland. We estimated the VMT associated with the drayage trucks at each of these ports/railyards to grow at a slightly faster rate. We estimated the population of drayage trucks at other California ports/railyards to increase at a rate between 1.5% and 1.6% per year, with the VMT also increasing at a slightly faster rate. We estimated future VMT using factors such as projected container traffic and projected vessel traffic that resulted from past data and survey data.

For agricultural trucks, staff assumed a negative growth rate of 0.31% statewide to reflect anticipated ongoing loss of farmland. This growth rate, which actually varies regionally, was developed in 2005 based on analysis of historical farmland acreage trends and with the assistance of agricultural stakeholders. The average annual mileage accrual of each agricultural truck was assumed to remain constant; thus the total annual VMT for agricultural trucks is assumed to decrease proportional to the truck population.

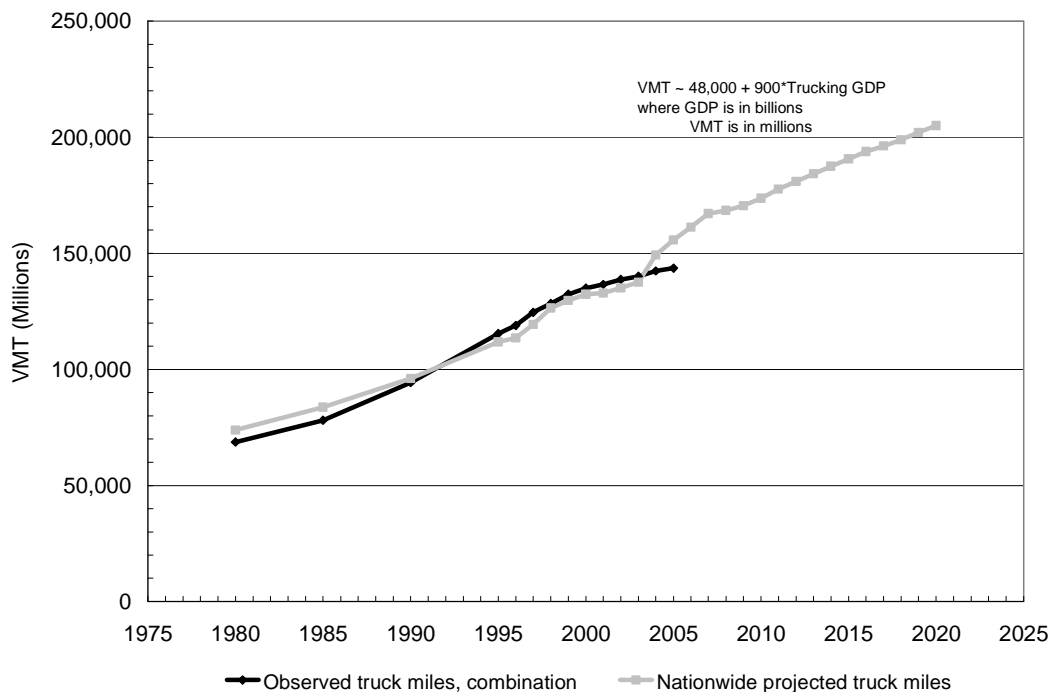
For all other truck types, we projected the VMT to grow at a rate equivalent to the overall VMT growth rate for trucks reported in EMFAC2007 which is 2.66% for heavy-heavy duty trucks and 1.62% for medium-heavy duty trucks. The annual VMT accrual of vehicles in these categories was assumed to remain constant; thus the population of the vehicles, in each category, was assumed to grow in proportion to the VMT. In Table 21 we summarize the annual growth rate estimated for VMT within each truck category.

Table 21. Annual VMT Growth Rates Projected by Category, 2008-2023

Inventory Category	VMT Growth Rate
MH Utility	2.00%
HH Utility	2.00%
HH Drayage near Oakland	5.38%
HH Drayage near LA/LB	4.93%
HH Drayage elsewhere	1.58%
MH Agriculture	-0.31%
HH Agriculture	-0.31%
MH Instate	1.62%
MH CAIRP	1.62%
MH Out of State	1.62%
HH Instate	2.66%
HH Single-unit	2.66%
HH CAIRP	2.66%
HH Non-neighboring Out-of-State	2.66%
HH Neighboring Out-of-State	2.66%
School Bus	-0.50%
Other Bus	3.65%
Power Take Off	2.64%
VMT-weighted Average	2.48%

Staff revisited VMT growth to examine the extent to which more current economic data could result in a revised VMT growth rate, different from that currently assumed in EMFAC2007. Staff regressed national VMT data from the Bureau of Transportation Statistics (BTS) against the US Gross Domestic Product (GDP) for the trucking industry nationwide, which was also released by the BTS. This relationship was then projected with a prediction of the future trucking GDP to estimate the future VMT, again on a federal level. The future nationwide trucking GDP was predicted by extending the relationship regressed earlier between the nationwide trucking GDP and the employment in the transportation sector predicted in the State of California Economic Forecast for the Sacramento Forecast Project. We show the results of this model in Figure 19.

Figure 19. The Historic and Projected Relationship between VMT and GDP on a Nationwide Level



The scale factor between nationwide VMT projected for future years and the nationwide VMT in 2007 was used with the VMT in California in 2007 to project future growth in California VMT. The resulting projections did not differ significantly from those that were estimated in the EMFAC2007 model; thus, staff decided to maintain the growth rates in EMFAC2007 as those for the overall California heavy duty truck fleet.

2. Attrition

For each vehicle category, staff assumed that, outside of regulatory impacts, the age distribution of vehicles within each inventory category would remain constant. Thus, the fraction of a vehicle class represented by vehicles of a certain age would remain

constant; for example, the fraction of MY 2000 vehicles in the category in calendar year 2008 was assumed to be equivalent to the fraction of MY 2001 vehicles in the category in calendar year 2009.

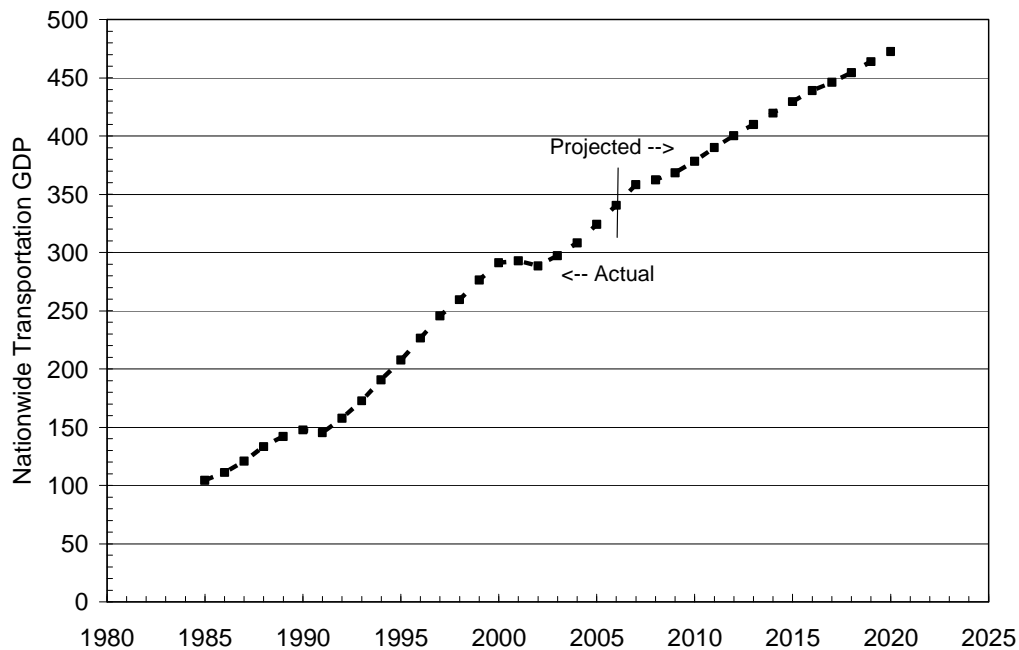
3. *Pre-buy*

When regulations are approved, past experience has indicated that the impact of these regulations can shift the purchase pattern of truck operators. A technology that is required in one year but not in another year may cause trucks from one year to be more expensive than, and thus preferred to, trucks of another year. A trucking firm might wish to not buy a truck with unproven technology; thus, they may delay their purchase for several years until the technology is more proven or purchase trucks with known technology in the year(s) preceding the regulation. Although our analysis has indicated that the shift in purchasing behavior related to “pre-buy” is less than that from general economic trends, we have attempted to incorporate this behavioral pattern in our assessment of model year distribution for each inventory category.

To approximate the sales of trucks in future years, and thus the impact to the age distribution of trucks, staff first estimated the historic annual nationwide truck sales as a function of the historic nationwide GDP associated with transportation activities. Staff used data regarding nationwide truck sales, as estimated by the website WardsAuto.com for 1985-2007, and GDP, as estimated for transportation services nationwide by the US Department of Commerce’s Bureau of Economic Analysis to establish the historical model of truck sales as a function of time and the nationwide transportation GDP. The approximation of this model indicated that GDP had a stronger positive correlation with truck sales than did time itself; while truck sales had a positive correlation with time itself, the correlation that also existed between GDP and time lessened the positive impact of time when truck sales were regressed against both. The strongest relationship was also found to exist between truck sales in Year y and the GDP from Year $y+1$, the time lag indicating that the trucking industry could foresee the decline in economic activity and deferred the purchase of new trucks before the decline was experienced.

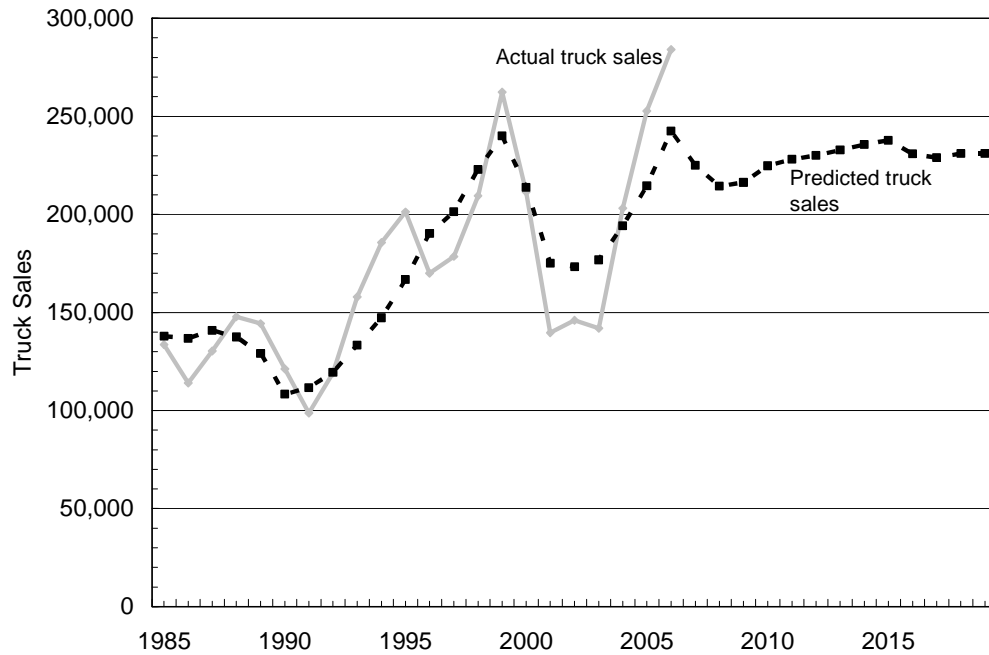
Staff then approximated the historic relationship between the historic nationwide transportation GDP and the historic California transportation employment, as estimated by a UCLA business forecast released in July 2007 (UCLA, 2007). We assumed that the growth rate for transportation employment in California was approximated by the growth rate for nationwide transportation GDP. We used this relationship with the projections to 2020 for California transportation employment from the UCLA forecast to project the nationwide transportation GDP until 2020 as shown in Figure 20.

Figure 20. Nationwide Transportation GDP Trends: Historic and as Projected from Forecast Transportation Employment



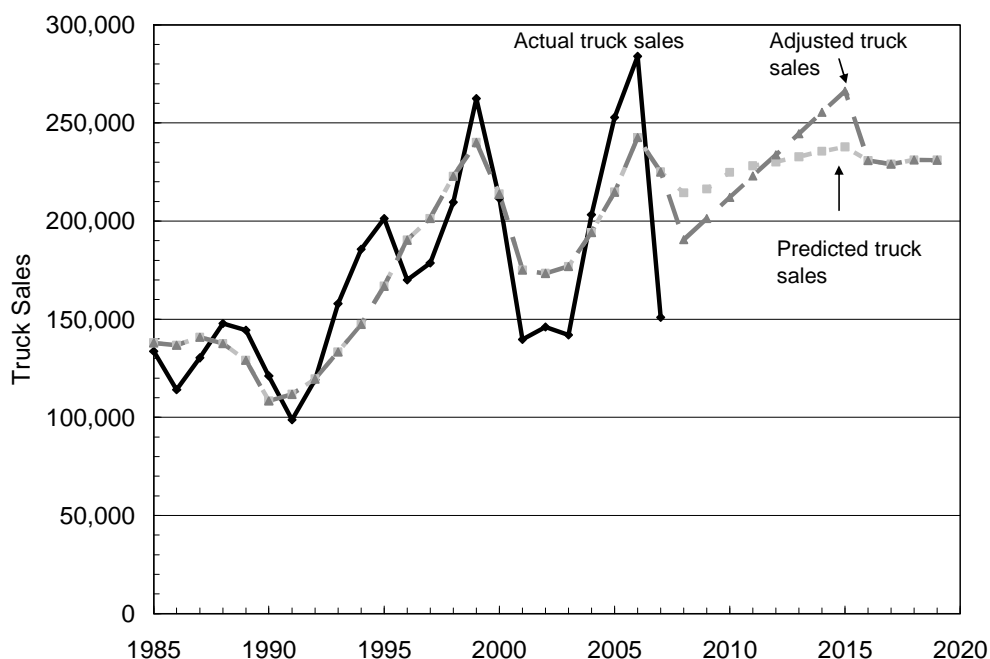
As a first step toward projecting truck sales, staff developed a regression model between nationwide transportation-related GDP and historic truck sales. We then used the estimates of the future transportation-related GDP to estimate future truck sales. In Figure 21 we compare the actual truck sales between 1985 and 2006 with the sales that would have been predicted by the model as well as the truck sales initially predicted from this model beyond 2006.

Figure 21. The Modeled Relationship between Nationwide Transportation GDP and Nationwide Truck Sales



The modeled relationship did not account for what appeared to be extremes. During periods of slow sales, the model underpredicted the decrease in sales; during periods of higher sales, the model underpredicted the increase in sales. To account for this, staff estimated a correction factor by which the 2008 truck sales were lowered. This correction factor, the adjustment made to the estimate resulting from the model, was equivalent in proportion to the difference between earlier estimates and corresponding actual results. Staff then adjusted truck sales between 2008 and 2015 by an amount appropriate to ensure that the aggregate number of trucks sold within this period remained constant. We show the resulting estimate of truck sales, the “adjusted truck sales”, in Figure 22.

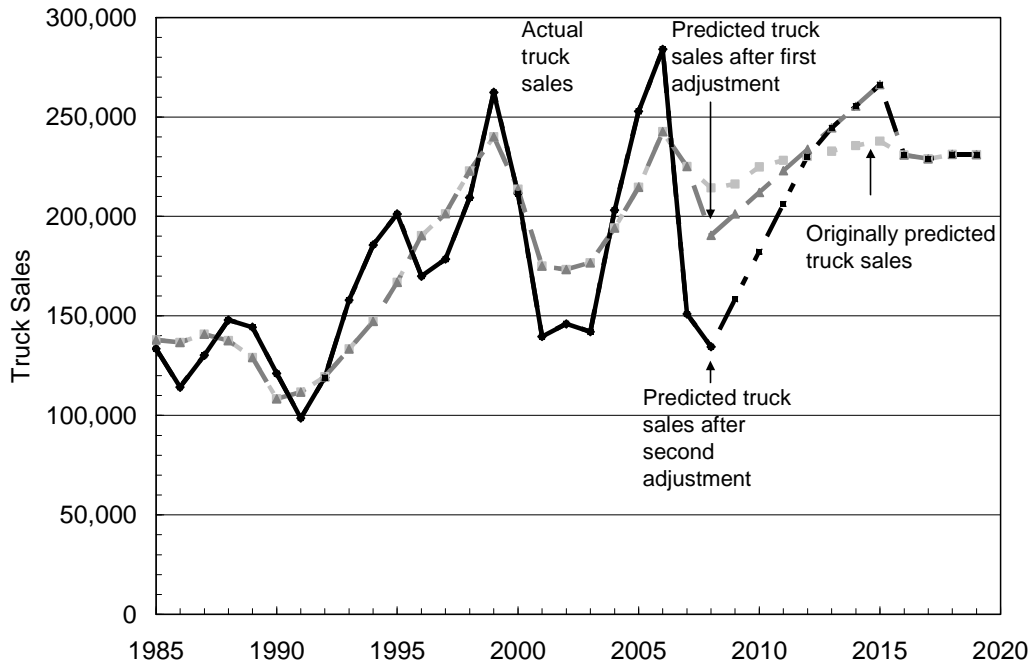
Figure 22. The Modeled Relationship between Nationwide Transportation GDP and Nationwide Truck Sales, Adjusted



Transportation employment within California was already projected to grow at a slightly slower rate after 2015; hence sales for this time period were projected to grow at a slower rate.

Finally, staff received additional data regarding truck sales to date in 2008. These sales were even lower than those projected by the adjusted model. To account for this difference, staff adjusted the model even further, decreasing the sales projected for 2008 and adjusting those in future years to account for the difference – sales in between 2008 and 2011 were adjusted downward, sales after 2011 were unchanged. We show the results of these adjustments in Figure 23.

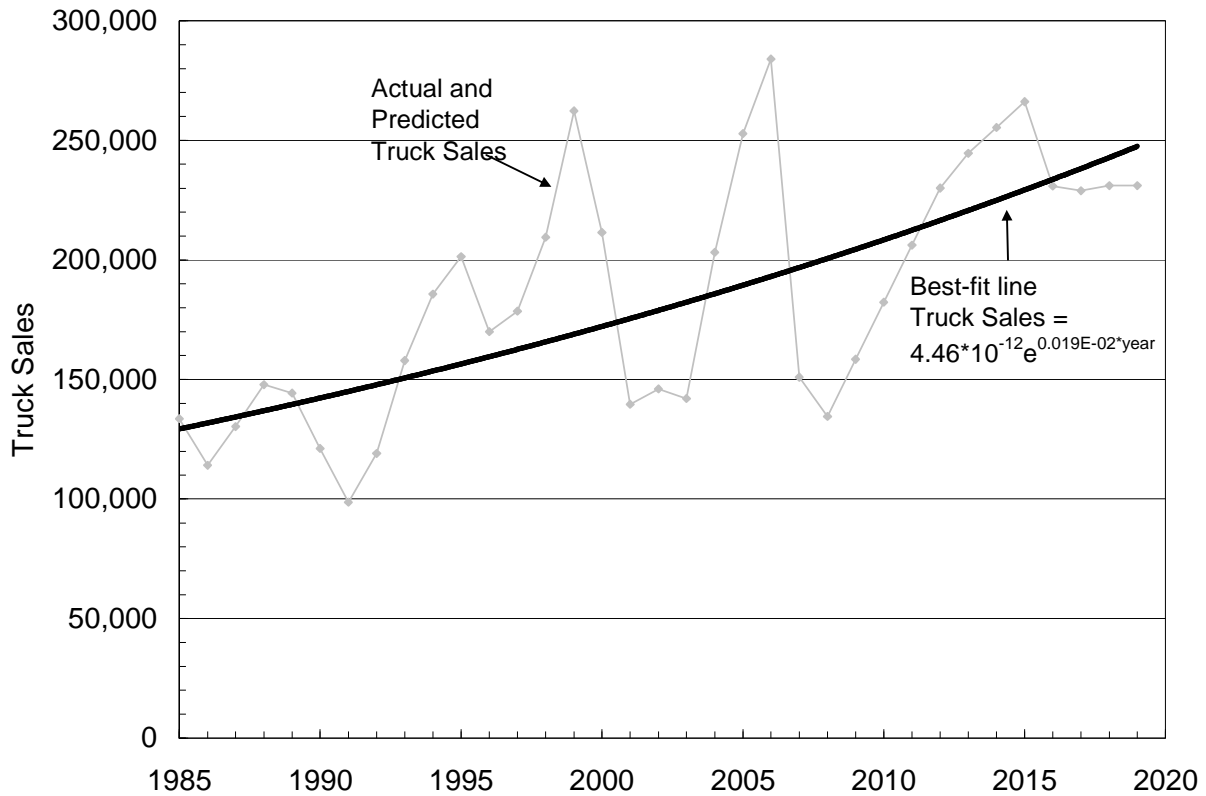
Figure 23. (Estimated) Truck Sales for Future Years



Because no data were available at the time for prediction of GDP past 2020 with the model used in this analysis, we assumed that trucks were sold in the years beyond 2020 at the same ratio as has happened historically.

Finally, to incorporate these estimates in the populations, staff calculated the ratio between sales of trucks in one model year and the expected number of sales if no factor (e.g. GDP) had caused variation. We show the actual sales and the sales predicted from the pre-buy model in Figure 24.

Figure 24. Actual and Predicted Truck Sales



The ratio between the actual/predicted truck sales and the best-fit value (the ratio assumed to be 1.0 for future years beyond 2019) was used to adjust the representation of each model year within future calendar years. (Adjusting the sales upward/downward for new trucks in a calendar year would have the same impact on the representation of trucks of that model year in later calendar years.) The representation of each model year was then scaled as appropriate to allow the cumulative representation of model years to be 100%. This adjustment was not made for the age distribution of drayage trucks, since the age distribution from the ARB drayage regulation was used.

G. Statewide Baseline Activity and Emissions

We discussed the population of each vehicle type earlier in the Base Year Population and Activity section, but we provide a summary table (Table 22) here to describe the emission sources included in this inventory.

Table 22. Population and VMT by Inventory Category

CY	Category	Population	Share of CA Population	CA Share of VMT	Share of VMT in CA
2008	HH Out-of-State	492,340	52.3%	12.1%	28.5%
2008	HH CA-IRP	60,263	6.4%	57.0%	14.6%
2008	HH Tractor	63,684	6.8%	100.0%	18.4%
2008	HH Single Unit	43,275	4.6%	100.0%	6.0%
2008	HH Drayage	21,650	2.3%	100.0%	5.1%
2008	HH Agriculture	11,998	1.3%	100.0%	1.6%
2008	HH Utility	1,357	0.1%	100.0%	0.1%
2008	MH In-State	198,525	21.1%	100.0%	22.5%
2008	MH Interstate	8,896	0.9%	18.7%	0.2%
2008	MH Agriculture	9,438	1.0%	100.0%	0.6%
2008	MH Utility	2,798	0.3%	100.0%	0.1%
2008	Buses	26,443	2.8%	100.0%	2.3%
2008	PTO				

For this table and later analyses, some categories have been combined to allow for simpler evaluation. Specifically, HH Out-of-State trucks include those trucks from neighboring states as well as non-neighboring states. HH Drayage trucks includes all drayage trucks in service in California, including those serving areas around the Ports of Los Angeles, Long Beach, Oakland, and other California ports. MH Interstate trucks include the medium-heavy trucks registered in other states as well as those registered in the CA-IRP program. Buses include those in the “school bus” and “other bus” inventory categories.

The population shown in Table 22 represents the estimated number of trucks and buses operating in California that fall under this proposed rule in calendar year 2008, including vehicles registered in-state and out-of-state. The share of California population represents the percentage of the total truck and bus population represented by each category. The California share of VMT represents the percentage of total annual VMT driven by vehicles in each category that occurs in California; this is assumed to be 100% for the majority of inventory categories but can be small for interstate categories. The share of VMT in California represents the contribution made by each inventory category to the total truck and bus VMT estimated for California.

As shown in Table 22, heavy-heavy duty diesel trucks registered outside California account for the majority of trucks traveling in California. Because these trucks do not travel exclusively in California, however, their portion of VMT in California, at 28.5%, is not as large as their representation among the population (52.3%). In addition, because trucks in this inventory category tend to be newer than trucks in other categories, their

emission rates are lower and their contribution relatively less than from their in-state counterparts.

1. Base Year Age Distributions across Inventory Category

In an earlier section, we provided the age distribution of trucks within each inventory category. In Figure 25 we compare the age distributions for the different categories. (Note that trucks from non-neighboring states, because they outnumber trucks from other categories by such a large share, are plotted against the secondary axis.) From this figure one can see from the relative peaks of each age distribution that trucks from non-neighboring states tend to be newer than CA-IRP registered trucks and trucks from neighboring states, which in turn are newer than tractors registered in-state. This is logical, in that the trucks traveling the farthest distances to California need to be the most reliable and therefore on average younger. In addition, the trucks representing the CA in-state tractor category are frequently those transferred from the out-of-state and IRP categories in their later years. The oldest trucks represent the agriculture category and the drayage category; these trucks tend to travel, on average, the shortest distances. Staff used this age distribution when estimating emissions.

Figure 25. Comparison of Vehicle Age Distributions between Combination Tractors (2008)

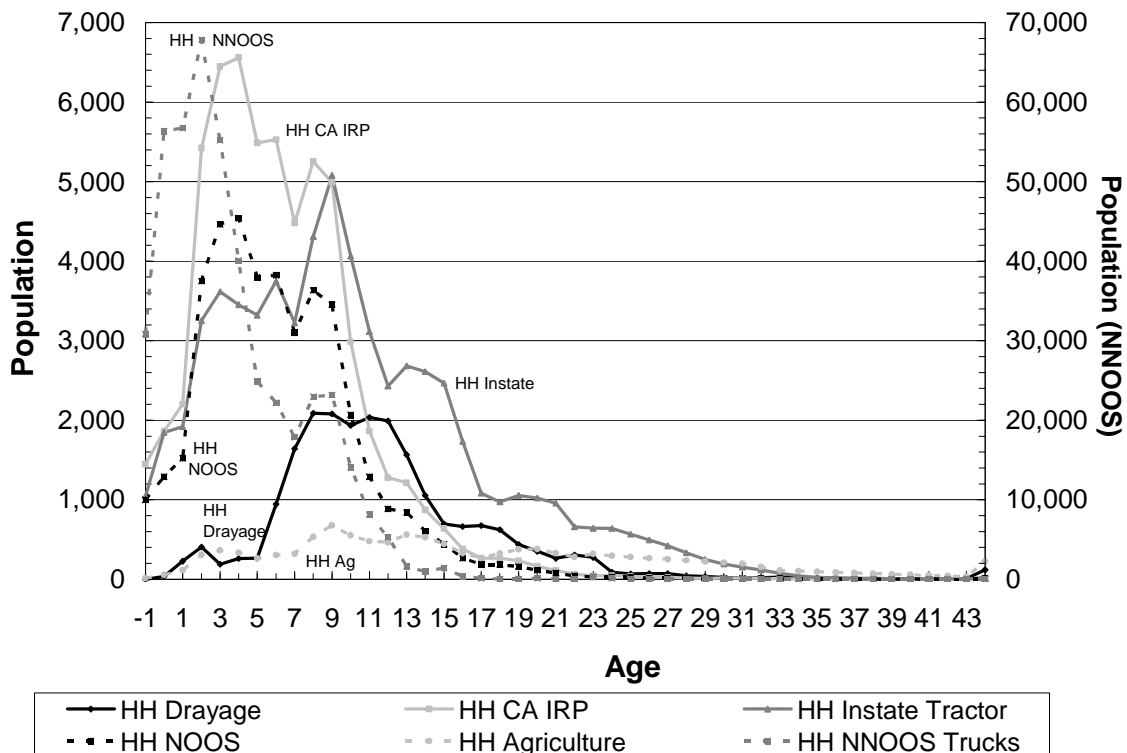
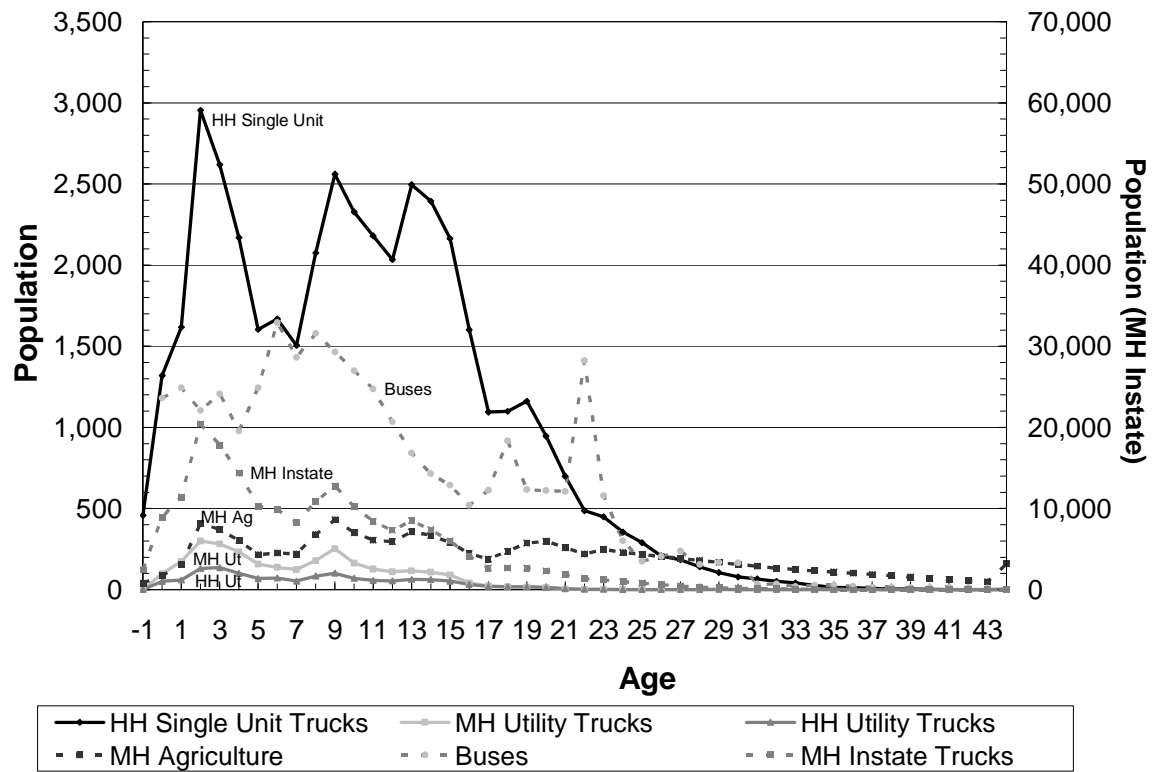


Figure 26 gives a similar representation of the trucking categories more representative of single unit trucks. (In this figure, the MHDDT Instate Trucks are plotted on the secondary axis to allow for better comparison.) As this figure shows, the age

distribution for single-unit trucks does not vary so much between categories as the age distribution does for combination trucks. With regard to single-unit categories in particular, medium-heavy instate trucks are relatively newer and medium-heavy agriculture trucks relatively older.

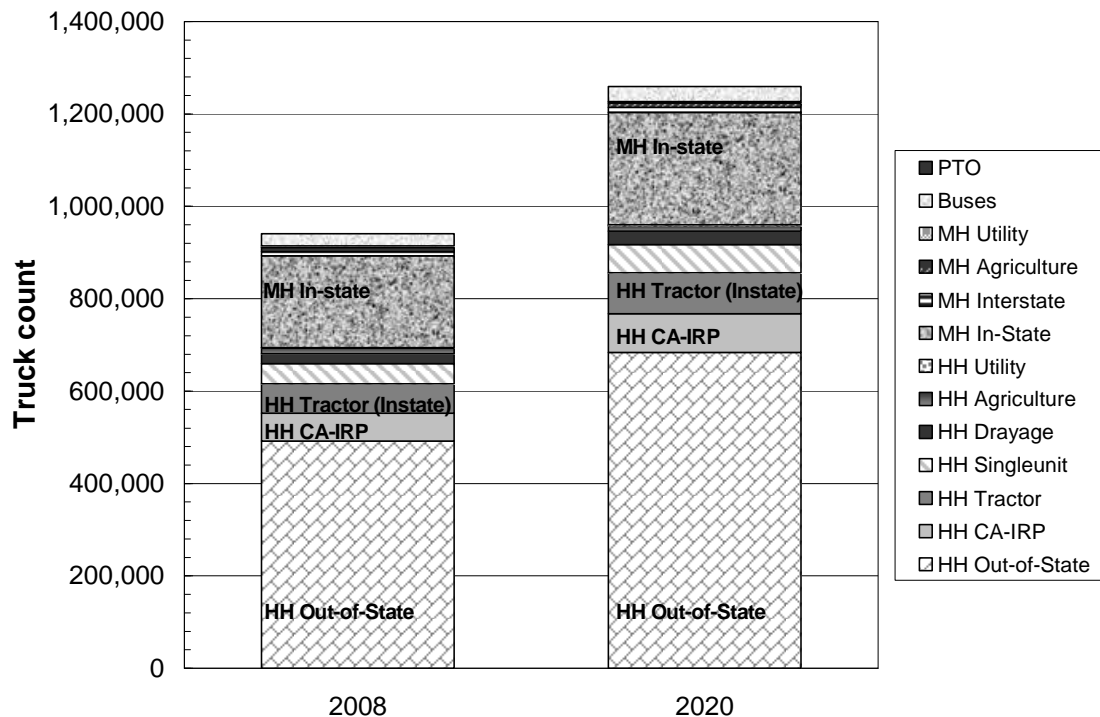
Figure 26. Comparison of Vehicle Age Distributions between Single-Unit Trucks and Buses (2008)



2. Base Year and Forecasted Population by Inventory Category

In Figure 27 we show the distribution of trucks assumed to visit California in 2008 and 2020. In both years the majority of individual trucks represent one of four categories: heavy-heavy trucks registered outside California, California-registered heavy-heavy trucks in the International Registration Program, heavy-heavy tractors registered in California, and medium-heavy trucks registered in California. In a later section we show the distribution of California VMT between the categories; for two primary reasons, the distribution of VMT differs slightly from the distribution of the unique trucks themselves. First, trucks registered outside California do not travel entirely within California. Second, trucks within differing categories typically do not exhibit the same travel patterns with regard to distance.

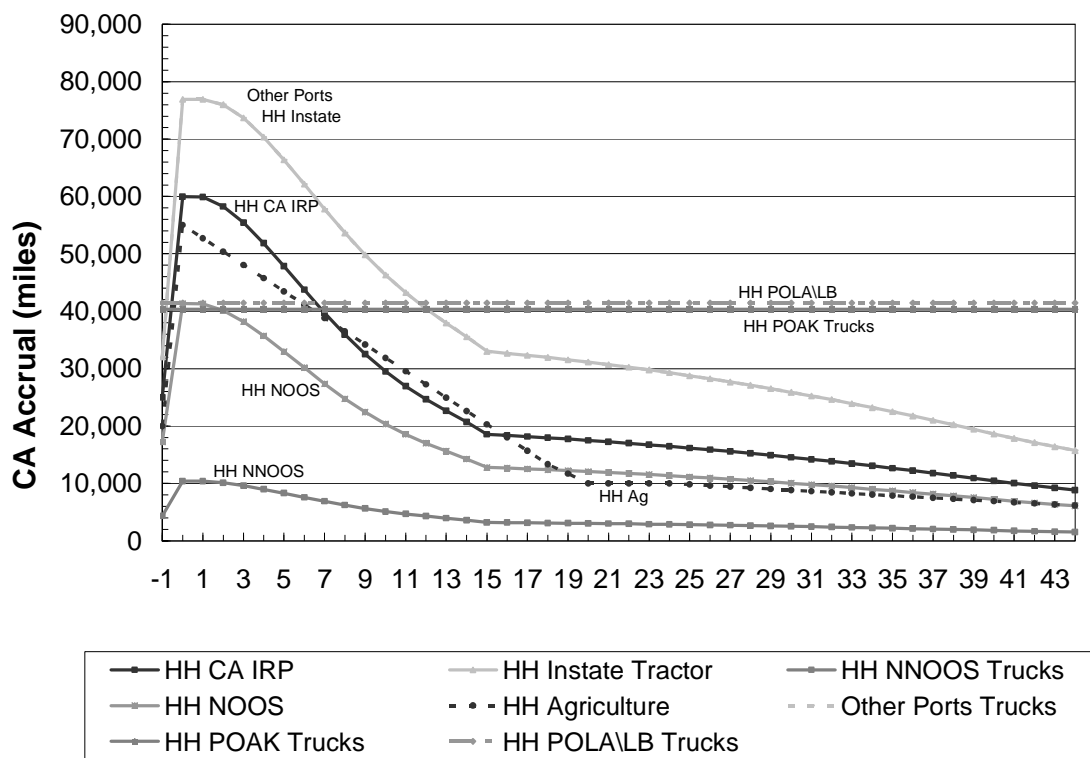
Figure 27. A Comparison of Truck Population by Category (2008 and 2020)



3. Comparing Accrual Rates by Inventory Category

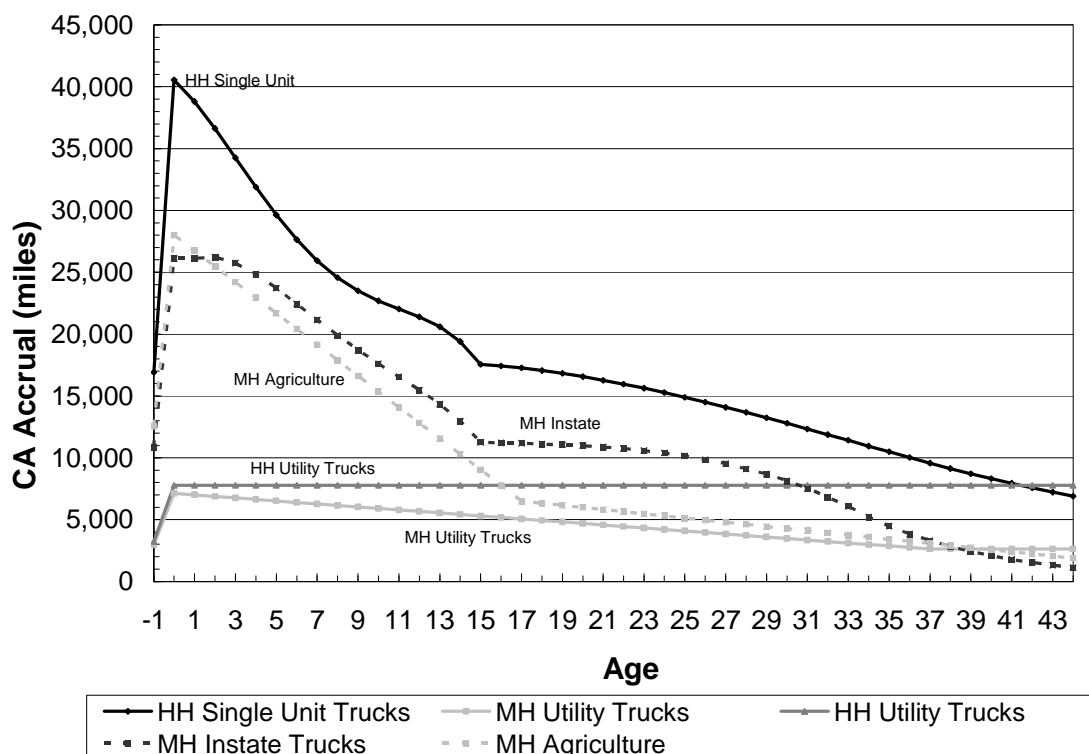
In Figure 28 we show the variation in VMT accrual rates between inventory categories in California. Note that this figure shows only the VMT estimated to be accrued within California's borders and does not include the VMT estimated to be accrued elsewhere. This is particularly relevant in the context of trucks registered in states that do not border California, of which more than 90% of the annual VMT are assumed to be accrued outside California. In the context of virtually all heavy vehicles except drayage trucks, the annual VMT for a vehicle is estimated to decrease with the age of the vehicle; drayage trucks are assumed to maintain a steady amount of usage throughout their lives.

Figure 28. Accrual Rates for Combination Trucks in California (2008)



In Figure 29 we show a similar distribution in accrual rates for single unit trucks. As shown, the average accrual rate is estimated to be highest for single unit trucks. The accrual rate is estimated to decrease with age for single unit trucks as well as medium-heavy instate trucks, buses, and medium-heavy trucks used for agriculture. The accrual rates estimated for heavy-heavy trucks from the utility category, however, start at a lower level and remain more stable throughout their lifetimes.

Figure 29. Accrual Rates for Single Unit Trucks in California (2008)



4. Base Year and Forecasted Vehicle Miles Traveled by Inventory Category

In Figure 30 and Table 23 we show the distribution of VMT driven by trucks in different categories in California between calendar years 2005 and 2025. Figure 30 shows the aggregate VMT for each year; the table lists the daily VMT for each truck category in select years. The five most significant contributors to VMT driven in California in calendar year 2008 are:

- MHDDT CA-registered instate trucks (22.5%)
- HHDDT Non-neighboring out-of-state trucks (21.5%)
- HHDDT CA-registered instate tractor (18.4%)
- HHDDT International Registration Plan, CA-IRP (14.6%)
- HHDDT Neighboring out-of-state trucks (7.0%)

Staff estimated these five categories together represent over 81% of all VMT associated with bus and truck travel in California in 2008. Though not necessarily in the same order, we project these five categories to remain the largest heavy duty truck VMT contributors in 2025, collectively accounting for over 83% of all heavy duty truck VMT driven within California's borders. (The HHDDT from states not neighboring California are projected to represent the single largest share in 2025 at 22.1%.)

Figure 30. California Vehicle Miles Traveled by Truck Category

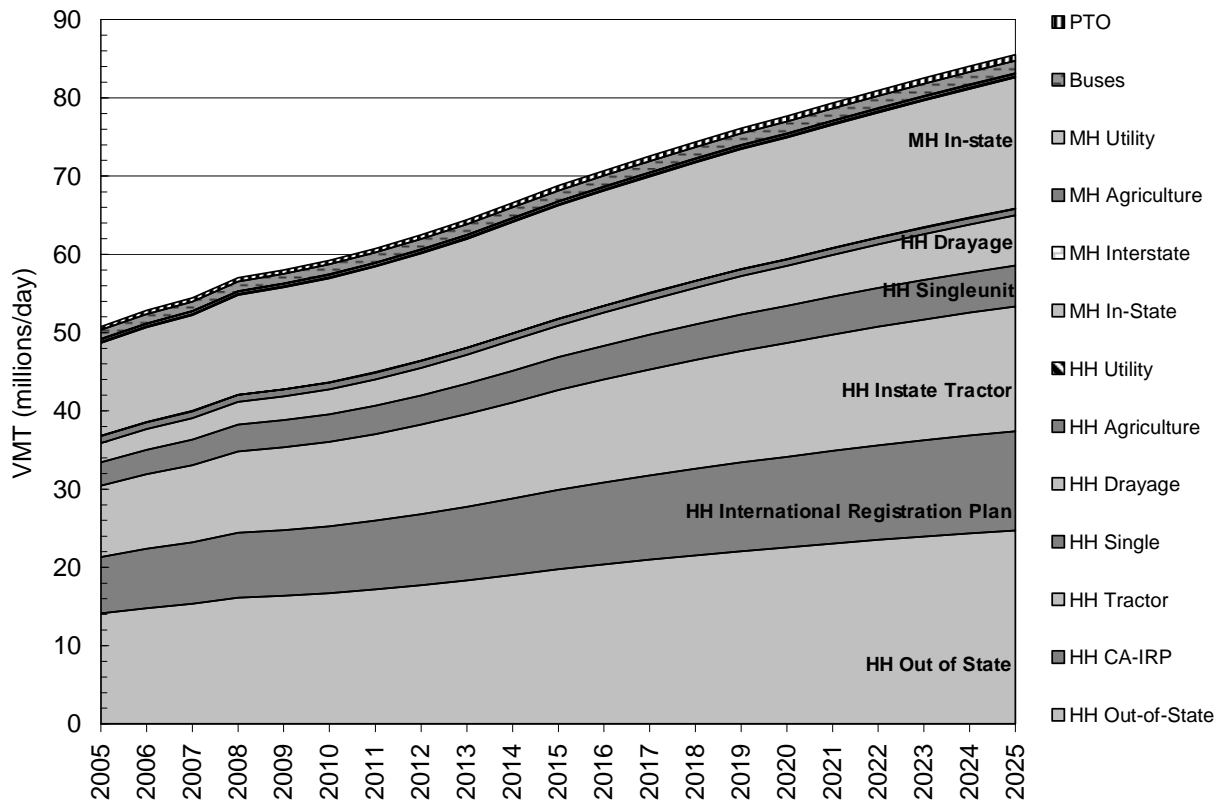


Table 23. Distribution of Estimated Daily VMT in Select Calendar Years

Inventory Category	2000	2005	2010	2015	2020	2025
HH Out-of-State	11,763,164	14,094,931	16,694,413	19,776,058	22,554,003	24,722,681
HH CA-IRP	6,035,750	7,232,194	8,566,004	10,147,215	11,572,595	12,685,357
HH Tractor	7,588,662	9,092,933	10,769,913	12,757,947	14,550,057	15,949,116
HH Single	2,485,547	2,978,247	3,527,515	4,178,664	4,765,642	5,223,882
HH Drayage	1,992,437	2,501,164	3,177,789	4,017,716	5,063,470	6,407,181
HH Agriculture	900,850	886,807	872,982	859,373	845,976	832,788
HH Utility	28,849	31,852	35,167	38,827	42,868	47,330
MH In-State	10,188,740	11,871,644	13,287,487	14,478,516	15,531,621	16,717,215
MH Interstate	94,153	109,705	122,789	133,795	143,526	154,482
MH Agriculture	351,375	345,897	340,505	335,197	329,972	324,828
MH Utility	47,746	52,716	58,203	64,260	70,949	78,333
Buses	890,204	1,125,836	1,259,711	1,371,993	1,500,120	1,617,738
PTO	358,622	429,614	509,088	601,588	685,075	751,094
Total	42,726,100	50,753,540	59,221,565	68,761,149	77,655,874	85,512,024

In Figure 31 we show the percentage of VMT associated with each category between 2005 and 2025. As the figure shows, the share of VMT represented by drayage traffic is expected to grow at the expense of other categories (e.g. MHDDT instate) due to the relatively higher growth in goods movement related truck categories.

Figure 31. Share of California Vehicle Miles Traveled by Truck Category

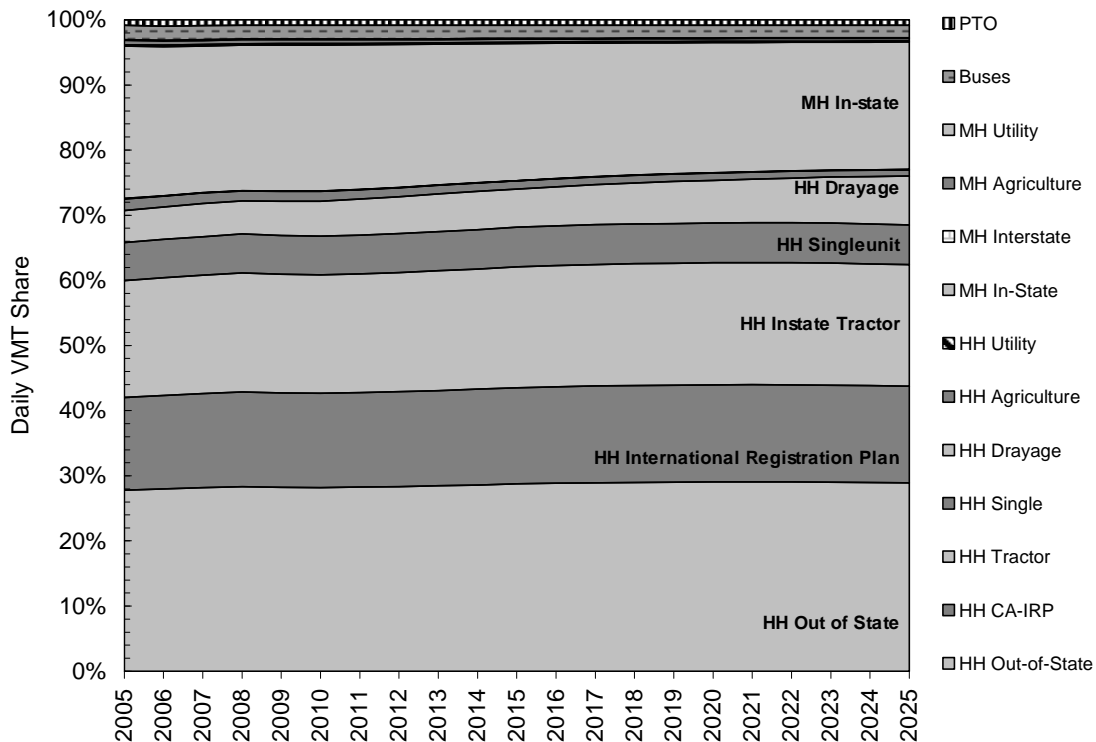


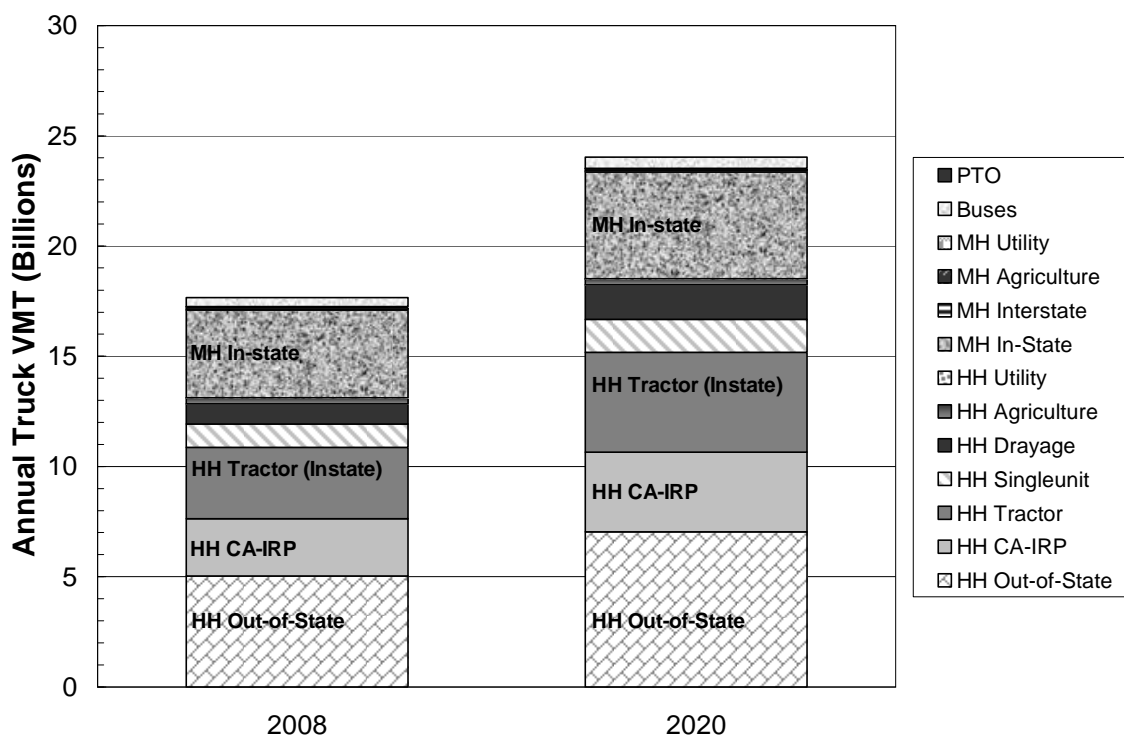
Table 24 provides the estimated population, average age, average odometer reading, and total VMT for each category of heavy duty truck in calendar year 2008.

Table 24. Assumptions made regarding truck categories in calculations.

CY	Inventory Category	Population	Average Age	Average Odometer	Total Accrual
2008	HH Out-of-State	492,340	3.8	489,526	41,666,633,775
2008	HH CA-IRP	60,263	6.2	668,314	4,535,889,834
2008	HH Tractor	63,684	9.9	722,999	3,249,093,053
2008	HH Single unit	43,275	10.3	338,253	1,064,186,055
2008	HH Drayage	21,650	11.8	839,789	904,462,366
2008	HH Agriculture	11,998	17.0	601,454	273,775,114
2008	HH Utility	1,357	8.2	74,611	10,545,996
2008	MH In-State	198,525	8.0	206,852	3,972,137,620
2008	MH Interstate	8,896	5.4	161,306	196,581,895
2008	MH Agriculture	9,438	17.3	293,027	106,907,874
2008	MH Utility	2,798	7.2	56,377	17,455,166
2008	Buses	26,443	11.2	191,829	406,667,394
2008	PTO				

In Figure 32 we show the distribution of annual truck VMT graphically. Four categories again represent the majority of truck VMT: heavy-heavy tractors registered outside California, heavy-heavy tractors registered in the International Registration Program, heavy-heavy tractors registered in California, and medium-heavy trucks registered in California.

Figure 32. A Comparison of Annual Truck VMT by Category (2008 and 2020)



5. Statewide Baseline Emissions Estimates

a) Baseline Emissions

Prior to implementation of the proposed regulation, approximately 941,000 trucks and buses were operating in California in calendar year 2008 and are estimated to contribute 859.3 tons per day NO_x, 33.1 tons per day PM_{2.5}, and 108,429 tons per day CO₂. We show these data in Table 25.

Table 25. Statewide Emissions (2008)

CY	Category	Truck Population	Truck CA VMT/day	NO _x (tons/day)	PM _{2.5} (tons/day)	CO ₂ (tons/day)
2008	All	940,667	57,009,437	859.3	33.1	108,429

b) Baseline Emissions by Inventory Category

We provide in Table 26 the baseline heavy duty truck and bus emissions inventory for the entire state of California in 2008, broken down by inventory category.

Table 26. Statewide Emissions by Inventory Category (2008)

CY	Inventory Category	Truck Population	Truck CA VMT/day	NO _x (tons/day)	PM _{2.5} (tons/day)	CO ₂ (tons/day)
2008	HH Out-of-State	492,340	16,142,326	221.9	8.0	32,766
2008	HH CA-IRP	60,263	8,282,725	139.6	5.2	16,783
2008	HH Tractor	63,684	10,413,751	194.1	7.9	20,897
2008	HH Single-unit	43,275	3,410,860	57.8	1.9	6,876
2008	HH Drayage	21,650	2,898,907	70.0	3.2	6,006
2008	HH Agriculture	11,998	878,486	17.3	0.7	1,788
2008	HH Utility	1,357	33,801	1	0	79
2008	MH In-State	198,525	12,731,247	125.0	4.6	19,067
2008	MH Interstate	8,896	117,648	1.0	0.0	176
2008	MH Agriculture	9,438	342,652	4.0	0.2	521
2008	MH Utility	2,798	55,942	1	0	85
2008	Buses	26,443	1,208,769	15.0	0.4	2,036
2008	PTO	0	492,322	12.2	0.8	1,349
2008	All	940,667	57,009,437	859.3	33.1	108,429

c) Baseline Emissions by Fleet Size

The baseline heavy duty truck emissions inventory for the entire state of California, broken down by inventory category, fleet size, and mileage threshold, is shown in Table 27.

Table 27. Baseline Emissions by Inventory Category and Fleet Size (2008)

Inventory Category	Fleet Size	Truck Population	Truck CA VMT/day	NO _x (tons/day)	PM _{2.5} (tons/day)	CO ₂ (tons/day)
HH Out of State	1 truck/above 7500 miles	12,011	694,474	10.92	0.40	1,411.3
	1 truck/below 7500 miles	432	1,337	0.04	0.00	4.2
	2 truck/above 7500 miles	3,695	214,735	3.38	0.12	436.4
	2 truck/below 7500 miles	133	414	0.01	0.00	1.3
	3 truck/above 7500 miles	2,652	155,555	2.45	0.09	316.1
	3 truck/below 7500 miles	96	301	0.01	0.00	1.0
	4+ truck/above 7500 miles	460,630	15,056,647	204.54	7.36	30,535.2
HH CAIRP	4+ truck/below 7500 miles	12,690	18,863	0.56	0.02	60.5
	1 truck/above 7500 miles	15,980	2,198,998	41.85	1.49	4,470.2
	1 truck/below 7500 miles	883	5,804	0.17	0.01	17.0
	2 truck/above 7500 miles	5,850	812,823	15.01	0.54	1,649.9
	2 truck/below 7500 miles	318	2,096	0.06	0.00	6.1
	3 truck/above 7500 miles	3,297	460,037	8.28	0.31	933.0
	3 truck/below 7500 miles	183	1,223	0.04	0.00	3.6
HH Tractor	4+ truck/above 7500 miles	32,273	4,791,942	73.95	2.83	9,674.7
	4+ truck/below 7500 miles	1,479	9,801	0.28	0.01	28.7
	1 truck/above 7500 miles	16,792	3,031,868	65.83	2.71	6,110.9
	1 truck/below 7500 miles	4,089	44,925	1.16	0.07	99.4
	2 truck/above 7500 miles	4,928	902,069	18.70	0.80	1,815.4
	2 truck/below 7500 miles	1,189	12,992	0.33	0.02	28.8

Inventory Category	Fleet Size	Truck Population	Truck CA VMT/day	NO _x (tons/day)	PM _{2.5} (tons/day)	CO ₂ (tons/day)
	3 truck/above 7500 miles	2,876	529,836	10.87	0.46	1,066.2
	3 truck/below 7500 miles	673	7,370	0.19	0.01	16.3
	4+ truck/above 7500 miles	28,859	5,835,899	95.82	3.82	11,652.5
	4+ truck/below 7500 miles	4,278	48,792	1.20	0.07	107.2
HH Single Unit	1 truck/above 7500 miles	7,819	766,081	14.15	0.49	1,545.2
	1 truck/below 7500 miles	3,358	37,585	0.88	0.04	82.8
	2 truck/above 7500 miles	2,826	279,769	5.01	0.18	563.7
	2 truck/below 7500 miles	1,171	13,153	0.31	0.01	29.0
	3 truck/above 7500 miles	1,857	185,491	3.26	0.11	373.0
	3 truck/below 7500 miles	703	7,951	0.18	0.01	17.4
	4+ truck/above 7500 miles	20,001	2,057,340	32.54	1.03	4,125.9
	4+ truck/below 7500 miles	5,540	63,491	1.44	0.06	138.9
HH Drayage	1 truck	11,633	1,557,622	37.64	1.69	3,227.1
	2 truck	1,293	173,069	4.18	0.19	358.6
	3 truck	1,454	194,703	4.70	0.21	403.4
	4+ truck	7,270	973,513	23.52	1.06	2,017.0
HH Agriculture	Ag non specialty higher VMT	4,098	645,375	12.41	0.49	1,301.8
	Ag non specialty lower VMT	5,258	82,489	1.89	0.10	178.5
	Ag non specialty midrange VMT	1,442	62,773	1.27	0.06	128.9
	Ag specialty vehicle	1,200	87,849	1.73	0.07	178.8
HH Utility		1,357	33,801	0.74	0.01	79.3
MH Instate	1 truck/above 5000 miles	51,066	3,786,410	39.01	1.48	5,672.2
	1 truck/below 5000 miles	11,592	80,942	1.20	0.06	127.6
	2 truck/above 5000 miles	16,710	1,244,223	12.65	0.47	1,862.8
	2 truck/below 5000 miles	3,621	25,478	0.37	0.02	40.1
	3 truck/above 5000 miles	9,964	740,914	7.59	0.28	1,109.6
	3 truck/below 5000 miles	2,143	15,111	0.22	0.01	23.8
	4+ truck/above 5000 miles	88,520	6,731,027	62.45	2.24	10,063.3
	4+ truck/below 5000 miles	14,908	107,142	1.50	0.07	167.8
MH Interstate	1 truck/above 5000 miles	1,014	15,237	0.13	0.00	22.7
	1 truck/below 5000 miles	107	149	0.00	0.00	0.2
	2 truck/above 5000 miles	638	9,468	0.08	0.00	14.1
	2 truck/below 5000 miles	70	97	0.00	0.00	0.2
	3 truck/above 5000 miles	638	9,351	0.08	0.00	14.0
	3 truck/below 5000 miles	77	106	0.00	0.00	0.2
	4+ truck/above 5000 miles	5,648	82,272	0.70	0.02	122.7
	4+ truck/below 5000 miles	703	969	0.01	0.00	1.5
MH Agriculture	Ag non specialty higher VMT	1,750	183,598	2.04	0.09	277.0
	Ag non specialty lower VMT	4,799	46,021	0.66	0.04	72.6
	Ag non specialty midrange VMT	1,946	78,768	0.89	0.04	119.5
	Ag specialty vehicle	944	34,265	0.40	0.02	52.1
MH Utility		2,798	55,942	0.54	0.01	85.4
Buses		26,443	1,208,769	15.04	0.44	2,035.8
PTO			492,322	12.19	0.83	1,348.7
All		940,667	57,009,437	859.28	33.07	108,429.2

We show in Table 28 the baseline emissions inventory for the entire state of California, broken down only by fleet size and annual mileage thresholds.

Table 28. Baseline Emissions by Fleet Size and Mileage Threshold (2008)

CY	Fleet Size	Truck Population	Truck CA VMT/day	NO _x (tons/day)	PM _{2.5} (tons/day)	CO ₂ (tons/day)
2008	1 truck/above threshold	116,314	12,050,689	209.5	8.26	22,460
2008	1 truck/below threshold	20,462	170,742	3.4	0.17	331
2008	2 truck/above threshold	35,941	3,636,157	59.0	2.30	6,701
2008	2 truck/below threshold	6,502	54,229	1.1	0.05	105
2008	3 truck/above threshold	22,739	2,275,887	37.2	1.46	4,215
2008	3 truck/below threshold	3,876	32,062	0.6	0.03	62
2008	4+ truck/above threshold	643,202	35,528,640	493.5	18.36	68,191
2008	4+ truck/below threshold	39,598	249,058	5.0	0.22	505
2008	Ag non specialty higher VMT	5,848	828,973	14.5	0.58	1,579
2008	Ag non specialty lower VMT	10,057	128,510	2.6	0.14	251
2008	Ag non specialty midrange VMT	3,388	141,541	2.2	0.10	248
2008	Ag specialty vehicle	2,144	122,114	2.1	0.09	231
2008	Unspecified	30,597	1,790,835	28.5	1.29	3,549
2008	All	940,667	57,009,437	859.3	33.07	108,429

We show the emissions as estimated with the baseline scenario for each category of pollutant in the following figures: NO_x in Figure 33, PM_{2.5} in Figure 34, and CO₂ in Figure 35. As shown, the statewide emissions for NO_x and PM_{2.5} are expected to decrease in the absence of regulation, due to the natural replacement of older trucks with newer, cleaner trucks. Baseline CO₂ emissions, however, are projected to increase since improvements in fuel economy are not expected to keep pace with increased heavy duty truck VMT. ARB is proposing to improve fuel economy and reduce CO₂ emissions from heavy duty trucks in future years through other programs and technologies, including increased usage of aerodynamic fairings and tires of lower rolling resistance.

Figure 33. California Statewide NO_x emissions from Trucks, Baseline 2008 - 2023

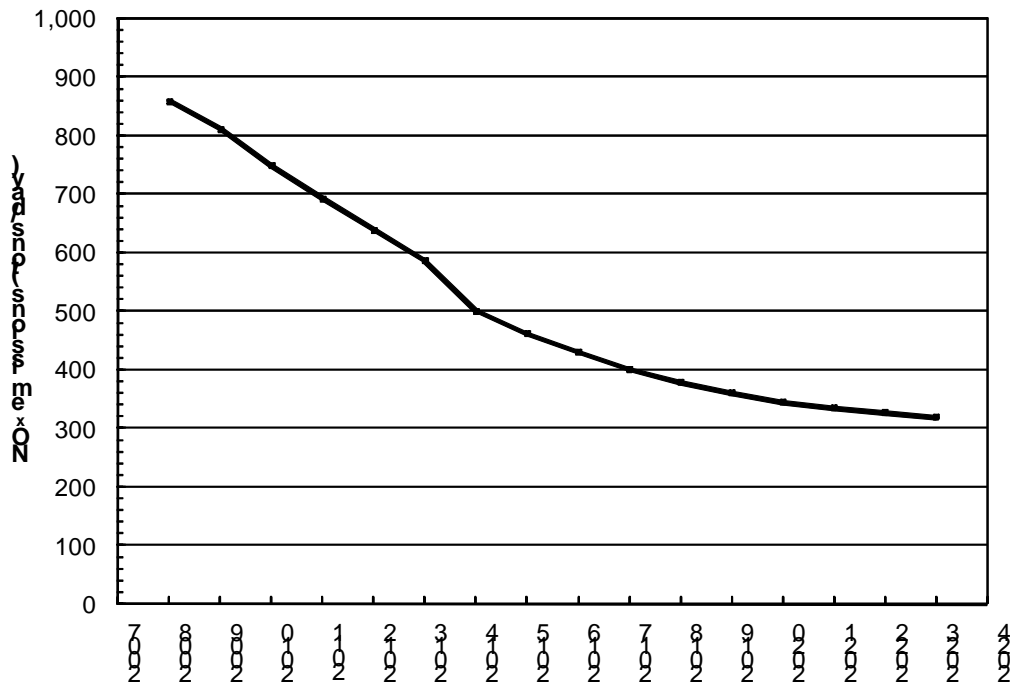


Figure 34. California Statewide PM_{2.5} Emissions from Trucks, 2008-2023

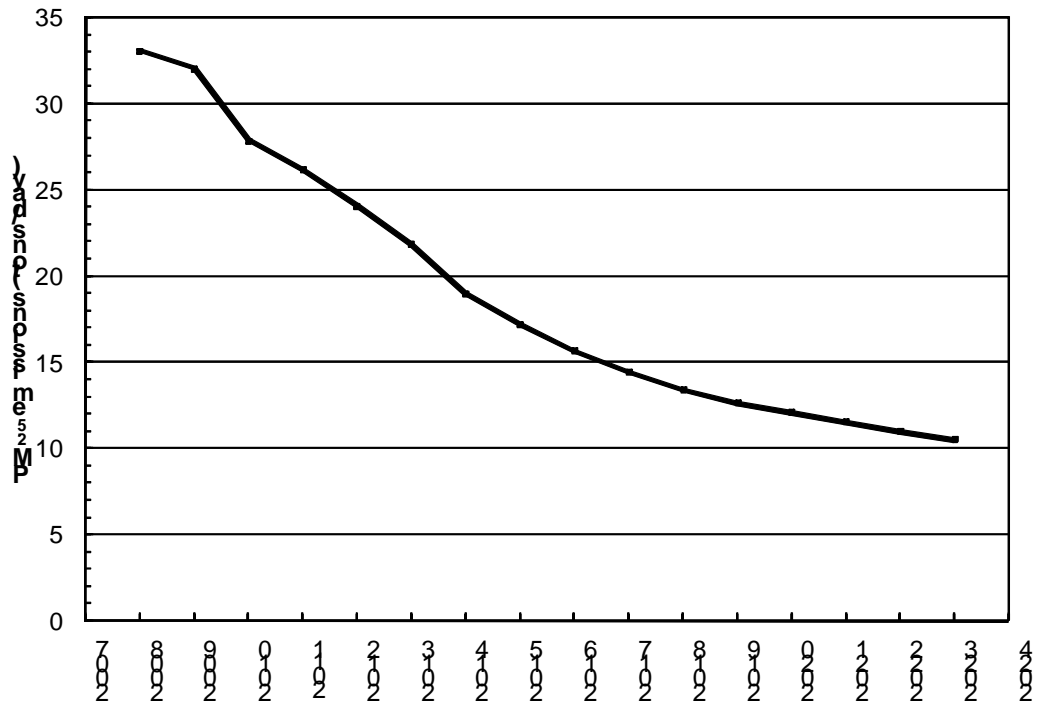
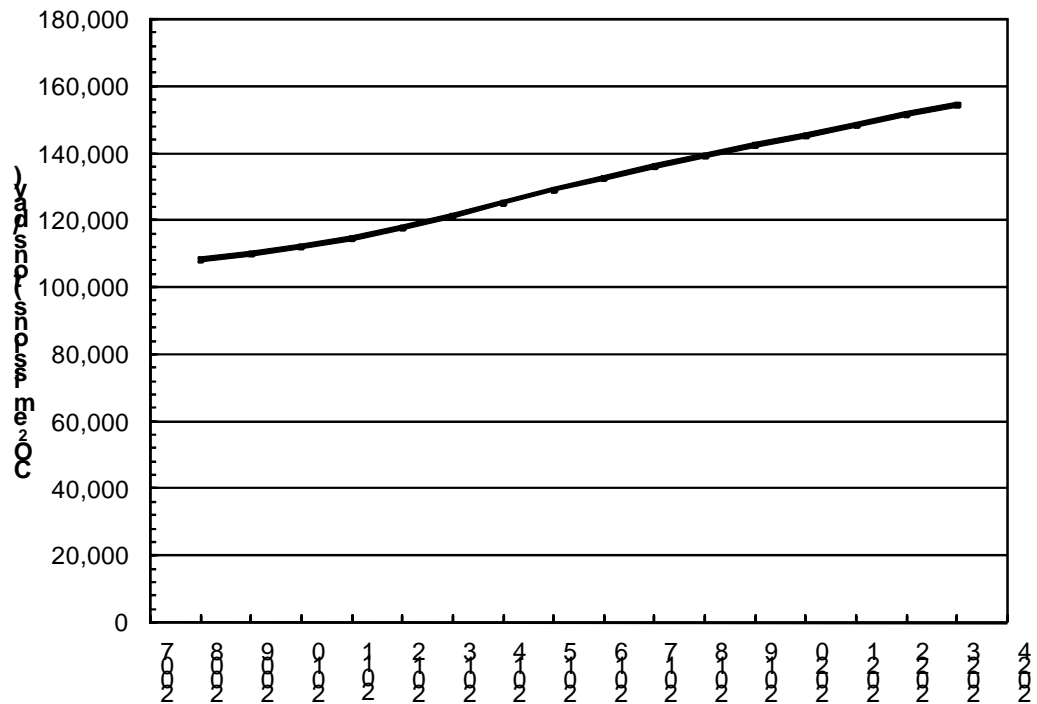


Figure 35. California Statewide CO₂ Emissions from Trucks, Baseline 2008-2023



H. Statewide Truck and Bus Regulation Benefits

The proposed Statewide Truck and Bus Regulation would initially require older vehicles to install diesel particulate filters. Several years later, the regulation would require operators to either purchase a newer compliant vehicle to replace an older non-compliant vehicle or retrofit the older non-compliant vehicle with emissions controls that would enable each vehicle to comply with regulatory emission standards. Under the proposed regulation, a fleet operator may choose among multiple compliance options on a per-pollutant and per-calendar year basis. Options include: (1) best available control technology (BACT) schedule; (2) fleet average requirements; (3) percent limit requirements; (4) low mileage thresholds with alternative compliance schedules; (5) small fleet compliance options; (6) regional compliance options; and (7) other special provisions.

To estimate the emissions benefits generated by the proposed regulation, one must understand how individual fleet operators may choose to comply with the regulation. Each operator's response may ultimately depend on the age, body type, and other characteristics of vehicles in each fleet and the relationship between vehicles in each fleet to the inventory categories. One of the ways we assess potential compliance patterns is by evaluating previous vehicle buying patterns by fleets based on survey data collected by staff. We input this information to the cost-model developed to assess capital costs under the baseline scenario and the scenario with regulation. We based the cost and economic model, described in greater detail in the *Appendix on Cost and Economic Analysis Methodology* upon survey data representing 6,700 vehicles from 688 individual company fleets.

Another way we can assess potential compliance patterns is by evaluating the base year age distribution in the inventory by category. As discussed above, the age distribution of non-neighboring out-of-state trucks suggests that trucks engaged in the longest hauls tend to be purchased new. After several years in long-haul operation, trucks tend to be sold to regional fleets, and a few years after that to local fleets. This type of purchase behavior may not be entirely true of all fleets or trucks within an inventory category, but it likely is representative of the majority. In addition to evaluating the age distribution for each inventory category, we also evaluated age distributions for each fleet size and mileage threshold group within each inventory category.

Our benefit calculations are also fundamentally based on the idea that newer vehicles drive more than older vehicles, but that the regulation will not affect the number of vehicle miles traveled within California. As a result, as new vehicles are purchased due to regulatory requirements, we redistribute VMT across age distributions by inventory category to ensure VMT is conserved, and to ensure that newer vehicles continue to be driven more than older vehicles.

1. Methodology to Assess Statewide Benefits

To calculate emission benefits, we used a methodology that separated vehicles into five groups: (a) high mileage large fleets, (b) high mileage small fleets, (c) low mileage

vehicles in large or small fleets, (d) agricultural trucks, and (e) buses. For each group we developed a compliance schedule based upon our best estimate of anticipated purchase decisions. Our compliance schedules developed for each inventory category and compliance group assumed that larger, newer fleets will comply with the regulation by purchasing new or near-new vehicles and that where possible fleets will choose to avoid installing retrofits (especially on mechanically controlled engines that are more costly to control) – instead opting to purchase 2007 standard compliant trucks.

a) High Mileage Trucks in Fleets of Four or Greater

Large, high-mileage truck fleets are well-represented in the cost model. The cost model uses previous purchase behavior to predict future purchases for regulatory compliance by fleet, based on the compliance schedules available to these fleets. We assigned an inventory category to each truck in each fleet so that model results could be summarized into four general categories: in-state heavy-heavy tractors, in-state heavy-heavy single-unit trucks, medium heavy duty trucks, and heavy-heavy interstate trucks. We then compiled and analyzed model results to develop a compliance schedule for the four categories.

We show those compliance schedules in Table 29. As shown in the table, we assume large fleets will choose to replace, rather than retrofit, pre-2003 model year vehicles to meet PM BACT requirements. We do assume fleets will choose to retrofit 2003-2006 model year trucks in order to gain maximum use out of recently purchased vehicles. We also assume that, as in-state fleets purchase compliant replacement vehicles, they will purchase a vehicle that is four or five year old. This assumption is a schematic representation that some fleets will choose to purchase older compliant vehicles relatively cheaply, while other fleets will choose to purchase new or near-new vehicles. Table 29 shows that interstate fleets will replace trucks with newer trucks more frequently than in-state fleets.

Table 29. Compliance Assumptions for High-Mileage Trucks in Fleets of Four or Greater

Heavy-Heavy Duty Diesel In-state Tractors

As of January 1,	Model Year	Turnover						Percent with DPF (85% Control)
		Percent	Calendar Year	Percent	Calendar Year	Percent	Calendar Year	
2011	pre-1994	95.5%	2008	4.5%	2010	0.0%	2012	
2012	pre-1994	95.5%	2008	4.5%	2010	0.0%	2012	
2012	2003-2004							100%
2013	pre-2000	59.5%	2008	35.8%	2010	4.7%	2012	
2013	2005-2006							100%
2014	pre-2003	45.2%	2008	30.1%	2010	24.7%	2012	
2015	pre-2003	45.2%	2008	30.1%	2010	24.7%	2012	
2016	pre-2005	41.2%	2008	26.6%	2010	32.2%	2012	
2017	pre-2007	37.1%	2008	24.0%	2010	38.8%	2012	
2018	pre-2007	37.1%	2008	0.0%	2010	62.9%	2013	
2019	pre-2007	37.1%	2008	0.0%	2010	62.9%	2014	
2020	pre-2007	37.1%	2008	0.0%	2010	62.9%	2015	
2021	pre-2008	21.7%	2008	0.0%	2010	78.3%	2016	
2022	pre-2009	0.0%	2008	0.0%	2010	100.0%	2016	
2023	pre-2010	0.0%	2008	0.0%	2010	100.0%	2017	
2024	pre-2010	0.0%	2008	0.0%	2010	100.0%	2018	
2025	pre-2010	0.0%	2008	0.0%	2010	100.0%	2019	

Heavy-Heavy Duty Diesel In-State Single-Units and Power-Take Off

		Turnover						
As of January 1,	Model Year	Percent	Calendar Year	Percent	Calendar Year	Percent	Calendar Year	Percent with DPF (85% Control)
2011	pre-1994	100.0%	2008	0.0%	2010	0.0%	2012	
2012	pre-1994	100.0%	2008	0.0%	2010	0.0%	2012	
2012	2003-2004							100%
2013	pre-2000	61.1%	2008	37.0%	2010	1.9%	2012	
2013	2005-2006							100%
2014	pre-2003	47.9%	2008	37.4%	2010	14.7%	2012	
2015	pre-2003	47.9%	2008	37.4%	2010	14.7%	2012	
2016	pre-2005	44.8%	2008	33.9%	2010	21.3%	2012	
2017	pre-2007	38.5%	2008	30.5%	2010	31.0%	2012	
2018	pre-2007	38.5%	2008	0.0%	2010	61.5%	2013	
2019	pre-2007	38.5%	2008	0.0%	2010	61.5%	2014	
2020	pre-2007	38.5%	2008	0.0%	2010	61.5%	2015	
2021	pre-2008	22.6%	2008	0.0%	2010	77.4%	2016	
2022	pre-2009	0.0%	2008	0.0%	2010	100.0%	2016	
2023	pre-2010	0.0%	2008	0.0%	2010	100.0%	2017	
2024	pre-2010	0.0%	2008	0.0%	2010	100.0%	2018	
2025	pre-2010	0.0%	2008	0.0%	2010	100.0%	2019	

Medium-Heavy-Duty In-State and Interstate

		Turnover						
As of January 1,	Model Year	Percent	Calendar Year	Percent	Calendar Year	Percent	Calendar Year	Percent with DPF (85% Control)
2011	pre-1994	93.3%	2008	6.7%	2010	0.0%	2012	
2012	pre-1994	93.3%	2008	6.7%	2010	0.0%	2012	
2012	2003-2004							100%
2013	pre-2000	72.5%	2008	27.0%	2010	0.5%	2012	
2013	2005-2006							100%
2014	pre-2003	56.4%	2008	25.5%	2010	18.2%	2012	
2015	pre-2003	56.4%	2008	25.5%	2010	18.2%	2012	
2016	pre-2005	49.8%	2008	21.5%	2010	28.6%	2012	
2017	pre-2007	47.9%	2008	20.7%	2010	31.4%	2012	
2018	pre-2007	47.9%	2008	0.0%	2010	52.1%	2013	
2019	pre-2007	47.9%	2008	0.0%	2010	52.1%	2014	
2020	pre-2007	47.9%	2008	0.0%	2010	52.1%	2015	
2021	pre-2008	28.8%	2008	0.0%	2010	71.2%	2016	
2022	pre-2009	0.0%	2008	0.0%	2010	100.0%	2016	
2023	pre-2010	0.0%	2008	0.0%	2010	100.0%	2017	
2024	pre-2010	0.0%	2008	0.0%	2010	100.0%	2018	
2025	pre-2010	0.0%	2008	0.0%	2010	100.0%	2019	

Heavy-Heavy Duty Interstate Trucks

As of January 1,	Model Year	Turnover						Percent with DPF (85% Control)
		Percent	Calendar Year	Percent	Calendar Year	Percent	Calendar Year	
2011	pre-1994	85.4%	2008	14.6%	2010	0.0%	2012	
2012	pre-1994	85.4%	2008	14.6%	2010	0.0%	2012	
2012	2003-2004							100%
2013	pre-2000	48.8%	2008	42.9%	2010	8.3%	2012	
2013	2005-2006							100%
2014	pre-2003	23.0%	2008	26.8%	2010	50.2%	2012	
2015	pre-2003	23.0%	2008	26.8%	2010	50.2%	2012	
2016	pre-2005	20.4%	2008	23.8%	2010	55.8%	2012	
2017	pre-2007	19.2%	2008	22.4%	2010	58.4%	2012	
2018	pre-2007	19.2%	2008	0.0%	2010	80.8%	2013	
2019	pre-2007	19.2%	2008	0.0%	2010	80.8%	2014	
2020	pre-2007	19.2%	2008	0.0%	2010	80.8%	2015	
2021	pre-2008	10.3%	2008	0.0%	2010	89.7%	2016	
2022	pre-2009	0.0%	2008	0.0%	2010	100.0%	2016	
2023	pre-2010	0.0%	2008	0.0%	2010	100.0%	2017	
2024	pre-2010	0.0%	2008	0.0%	2010	100.0%	2018	
2025	pre-2010	0.0%	2008	0.0%	2010	100.0%	2019	

b) High Mileage Trucks in Fleets of Three or Fewer

Under the proposed regulation, small fleets are exempt from performance requirements through 2011. In 2012 a small fleet must upgrade its first truck to a maximum emission rate equivalent to a 2004 engine with a retrofit DPF. Other vehicles in small fleets must be upgraded between 2013 and 2022. Using this information, we developed the compliance schedule identified in Table 30.

Table 30. Compliance Assumptions for High Mileage Trucks in Fleets of Three or Fewer

First truck in one-, two-, or three-truck fleet

As of January 1,	Model Year	Turnover to	Percent with DPF (85% Control)
2013	pre-2003	2007	
2013	2003-2006		100%
2018	2003-2006	2011	
2021	2007	2013	
2022	2008	2014	
2023	2009	2015	

Second truck in two-truck fleet

As of January 1,	Model Year	Turnover to	Percent with DPF (85% Control)
2014	pre-2003	2009	
2014	2003-2006		100%
2016	2003-2004	2010	
2017	2005-2006	2010	
2021	2007	2013	
2022	2008	2014	
2023	2009	2015	

Second truck in three-truck fleet

As of January 1,	Model Year	Turnover to	Percent with DPF (85% Control)
2014	pre-2003	80% to 2009	
2014	pre-2003	20% to 2010	
2014	2003-2006		100%
2016	2003-2004	2010	
2017	2005-2006	2010	
2021	2007	2014	
2022	2008	2015	
2023	2009	2017	

Third truck in three-truck fleet

As of January 1,	Model Year	Turnover to	Percent with DPF (85% Control)
2014	pre-2003	80% to 2009	
2014	pre-2003	20% no turnover until 2015	
2014	2003-2006		100%
2016	2003-2004	2010	
2016	pre-2003	80% to 2009	
2016	pre-2003	20% to 2010	
2017	2005-2006	2010	
2021	2007	2015	
2022	2008	2016	
2023	2009	2017	

c) Low Mileage Trucks in Any Fleet Size

Under the proposed regulation, low mileage trucks (defined as heavy-heavy duty diesel trucks driving less than 7,500 miles/yr and medium-heavy duty diesel trucks driving less

than 5,000 miles/yr) are allowed to delay compliance with turnover requirements until 2020. Using this information we applied the compliance schedule shown in Table 31.

Table 31. Compliance Assumptions for Low Mileage Trucks in Fleets of Any Size

As of January 1,	Model Year	Turnover to	Percent with DPF (85% Control)
2012	pre-2007		20%
2013	pre-2007		60%
2014	pre-2007		100%
2021	pre-2008	2010	
2022	2008	2010	
2023	2009	2010	

d) Agricultural Trucks

Under the proposed regulation, agricultural fleets are allowed the choice of opting into an alternative compliance scenario. In this scenario, high mileage non-specialty trucks in agricultural fleets, defined as pre-1996 model year trucks driven more than 15,000 miles per year, 1996-2005 model year trucks driven more than 20,000 miles per year, and 2006 and newer model year trucks driven more than 25,000 miles per year, must comply with regulatory provisions. Non-specialty trucks driving fewer miles are not required to install retrofit DPFs and are not required to meet turnover requirements until 2016 or 2022 depending on the number of miles traveled per year. In 2016, the mileage threshold is reduced to 10,000 miles per year. Trucks above that threshold which had not previously been complying with regulatory provisions are required to upgrade to a 2010 model year truck. Trucks below that threshold, and all specialty agricultural vehicles, are required to upgrade to meet 2010 model year equivalent emissions standards by the beginning of 2023. In Table 32 we provide our compliance assumptions for agricultural trucks.

Table 32. Compliance Assumptions for Agricultural Trucks

Below 10,000 miles/yr and specialty agricultural trucks

As of January 1,	Model Year	Turnover to	Percent with DPF (85% Control)
2023	pre-2010	2012	

Above 10,000 miles/yr but below first mileage threshold

As of January 1,	Model Year	Turnover to	Percent with DPF (85% Control)
2017	pre-2007	2010	
2021	2007	2012	
2022	2008	2012	
2023	2009	2012	

Above first mileage threshold (15,000-25,000 miles/yr depending on model year)

As of January 1,	Model Year	Turnover to	Percent with DPF (85% Control)
2011	pre-1994		100%
2012	2003-2004		100%
2013	2005-2006		100%
2013	1994-1999	2008	
2014	2000-2002	2009	
2015	pre-1994	2011	
2016	2003-2004	2011	
2017	2005-2006	2011	
2021	2007	2015	
2022	1994-1999	2016	
2022	2008	2016	
2023	2000-2002	2017	
2023	2009	2017	

e) Buses

Under the proposed regulation, non-school buses that are privately owned are assumed to follow BACT provisions in the proposed regulation. Due to the cost of replacing these vehicles we assume bus operators will achieve compliance with the least-cost option; this typically involves the oldest compliant vehicle available. Under the proposed regulation, school buses are required to install DPFs but are not required to meet NO_x emission standards. These requirements apply in addition to previous regulatory requirements developed under the Lower Emissions School Bus program. We provide bus compliance schedules in Table 33.

Table 33. Compliance Assumptions for Buses

School Buses

As of January 1,	Model Year	Turnover to	Percent with DPF (85% Control)
2011	2000 and after		100%
2012	1994-1999		100%
2013	1987-1993		100%
2014	pre-1987	2007	

Other Buses

As of January 1,	Model Year	Turnover to	Percent with DPF (85% Control)
2011	pre-1994		100%
2012	2003-2004		100%
2013	2005-2006		100%
2013	1994-1999	2010	
2014	2000-2002	2010	
2015	pre-1994	2010	
2016	2003-2004	2010	
2017	2005-2006	2010	
2021	2007	2010	
2022	2008	2010	
2023	2009	2010	

2. Statewide Benefits

In this section we present the statewide emissions reductions anticipated from the proposed regulation.

a) Statewide Emissions Benefits

In Figure 36 we show the NO_x emissions reduction estimated to result from the proposed regulation. We estimate the greatest absolute NO_x emissions benefit to be achieved in calendar year 2014, with a reduction of 123.7 tons NO_x/day relative to baseline emissions. In Figure 37 we show the emissions reduction estimated to result from the regulation, in terms of PM_{2.5}. We anticipate the greatest emissions reduction to be achieved for PM_{2.5} in 2013, with a reduction of 13.6 tons PM_{2.5}/day relative to baseline emissions. We estimate the CO₂ emissions benefit resulting from the regulation to be negligible, with the greatest reduction of 570.8 tons CO₂/day occurring in 2023. In some years the CO₂ emissions are estimated to slightly increase due to the decreased fuel efficiency resulting from the technologies used to reduce NO_x and PM_{2.5}. We show the emissions reduction estimate for CO₂ in Figure 38.

Figure 36. Statewide NO_x Emissions Estimates with Regulation

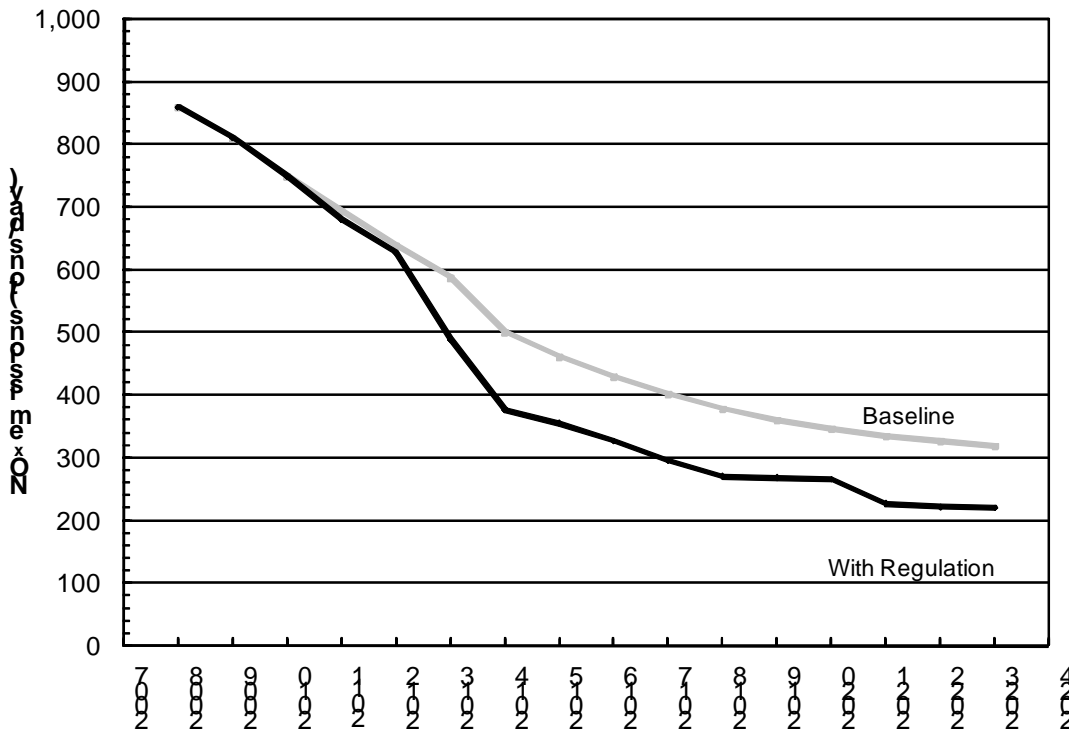


Figure 37. Statewide PM_{2.5} Emissions Estimates with Regulation

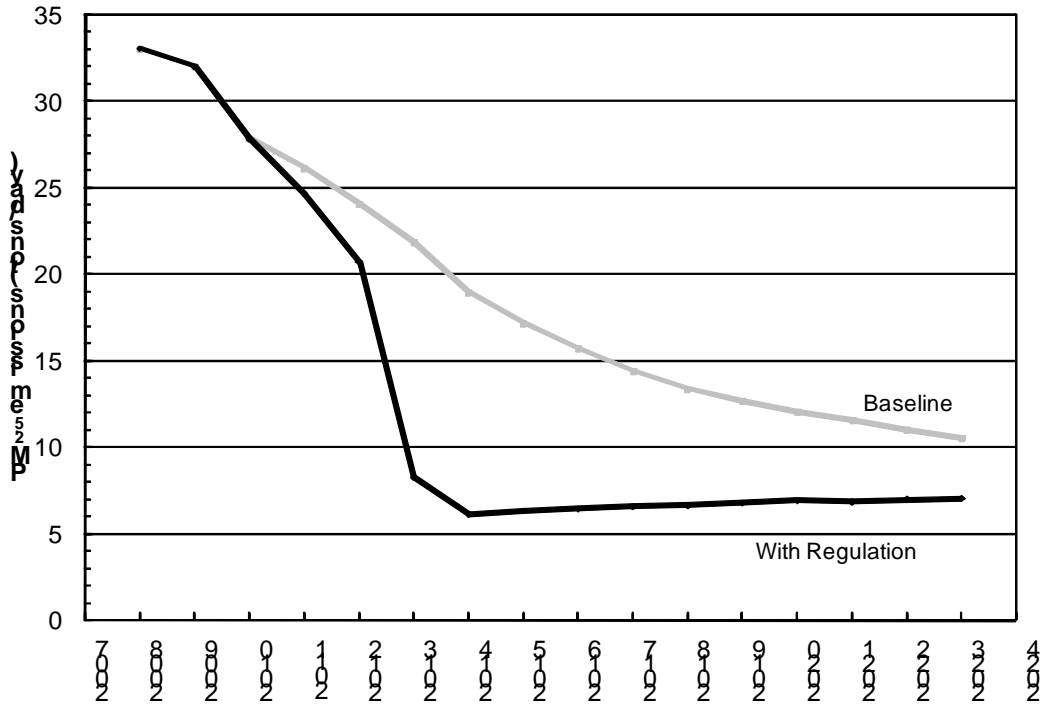
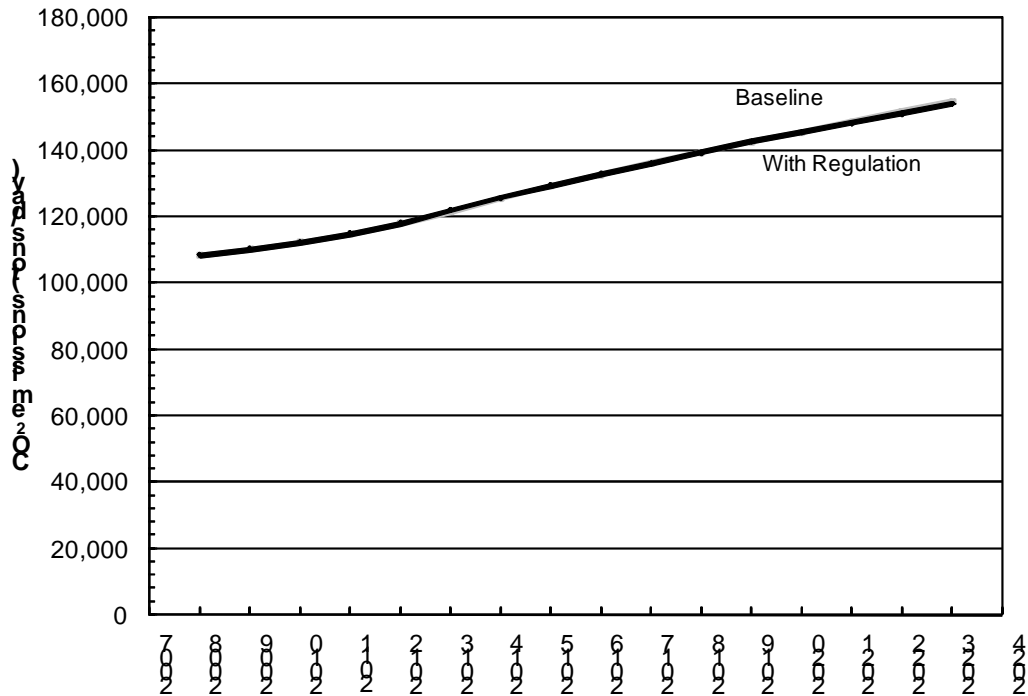


Figure 38. Statewide CO₂ Emissions Estimates with Regulation



b) Statewide Emissions Benefits by Inventory Category

In Table 34 we provide statewide NO_x reductions achieved by the proposed regulation in calendar years 2014 and 2020 for each inventory category. As the table shows, we estimate that single-unit trucks will provide the greatest percent NO_x reduction relative to their baseline, achieving 45% reductions in 2014 and 2020. (The reduction achieved by the proposed regulation with regard to drayage trucks is negligible for NO_x and other pollutants in 2014 and 2020 as a result of the ARB drayage truck regulation adopted in 2007, which will already require significant emissions reductions prior to 2014 (ARB, 2007a; ARB, 2007b); the regulation proposed herein requires further reductions after 2020). When considering all truck categories in aggregate, the largest share of the overall NO_x reduction to be achieved by the proposed rule will be provided by in-state heavy-heavy duty tractors (42% of total reductions in 2014, 45% in 2020) and medium-heavy duty diesel trucks (20%; 17%).

Table 34. California Statewide NO_x Future Emissions Reductions by Inventory Category, 2014 and 2020 (tons/day)

Inventory Category	2014				2020			
	Base ¹	Reg ²	Reduction ³	Share ⁴	Base	Reg	Reduction	Share
HH Out-of-State	96.3	88.2	-8.4%	6.5%	62.6	59.9	-4.3%	3.4%
HH CA-IRP	74.0	64.1	-13.3%	8.0%	40.8	36.8	-9.9%	5.1%
HH Tractor	140.0	88.3	-36.9%	41.7%	92.3	56.3	-39.0%	45.2%
HH Single unit	44.9	24.5	-45.4%	16.4%	30.6	16.8	-45.2%	17.4%
HH Drayage	33.4	33.4	0.0%	0.0%	51.4	51.4	0.0%	0.0%
HH Agriculture	12.4	10.2	-17.6%	1.8%	7.5	4.6	-38.2%	3.6%
HH Utility	0.6	0.6	-1.6%	0.0%	0.5	0.5	-1.3%	0.0%
MH In-State	72.6	47.7	-34.2%	20.1%	40.2	26.3	-34.5%	17.4%
MH Interstate	0.4	0.3	-22.2%	0.1%	0.2	0.2	-19.3%	0.1%
MH Agriculture	2.7	2.5	-9.3%	0.2%	1.7	1.1	-38.7%	0.8%
MH Utility	0.3	0.3	-0.8%	0.0%	0.2	0.2	-1.4%	0.0%
Buses	11.3	9.2	-18.8%	1.7%	8.4	6.8	-19.7%	2.1%
PTO	11.4	7.1	-37.5%	3.4%	9.2	5.4	-41.8%	4.8%
All	500.2	376.5	-24.7%	100.0%	345.6	266.1	-23.0%	100.0%

¹ The emissions estimated from each category, under the baseline scenario in the absence of regulation

² The emissions estimated from each category, under the scenario with the proposed regulation

³ The percent reduction estimated from each category with the proposed regulation

⁴ The share of total emissions reductions (e.g. 123.7 tons/day, for all, in 2014) represented by the category

In Table 35 we provide statewide PM_{2.5} reductions achieved by the proposed regulation in calendar years 2014 and 2020 for each inventory category. We predict that trucks in many categories will achieve large PM_{2.5} reductions but we predict the largest reductions to come from the single-unit category as well as the in-state medium- and heavy-heavy duty tractors, in terms of reductions relative to individual category baseline emissions. When considering all truck categories in aggregate, the largest share of the overall PM_{2.5} reduction to be achieved by proposed rule should be provided by in-state

heavy-heavy duty tractors (38% of total reductions in 2014; 47% of total reductions in 2020) and medium-heavy duty diesel trucks (16%; 17%).

Table 35. California Statewide PM_{2.5} Future Emissions Reductions by Inventory Category, 2014 and 2020 (tons/day)

Inventory Category	2014				2020			
	Base ¹	Reg ²	Reduction ³	Share ⁴	Base	Reg	Reduction	Share
HH Out-of-State	3.7	1.7	-53.3%	15.5%	2.2	2.0	-9.0%	3.9%
HH CA-IRP	2.9	1.1	-63.8%	14.4%	1.5	1.2	-19.8%	5.8%
HH Tractor	6.1	1.3	-79.4%	37.7%	3.9	1.5	-61.2%	46.7%
HH Single Unit	1.4	0.3	-79.1%	8.5%	1.0	0.3	-66.9%	13.5%
HH Drayage	0.5	0.5	0.0%	0.0%	0.8	0.8	0.0%	0.0%
HH Agriculture	0.5	0.3	-52.6%	2.2%	0.3	0.2	-52.4%	3.3%
HH Utility	0.0	0.0	-4.7%	0.0%	0.0	0.0	-2.7%	0.0%
MH In-State	2.7	0.6	-77.1%	16.3%	1.5	0.6	-60.9%	17.3%
MH Interstate	0.0	0.0	-65.7%	0.1%	0.0	0.0	-37.2%	0.1%
MH Agriculture	0.1	0.1	-33.4%	0.3%	0.1	0.0	-52.1%	0.8%
MH Utility	0.0	0.0	-0.8%	0.0%	0.0	0.0	-0.8%	0.0%
Buses	0.4	0.1	-65.2%	1.9%	0.3	0.2	-53.2%	3.4%
PTO	0.6	0.2	-63.9%	3.1%	0.4	0.1	-74.3%	5.4%
All	19.0	6.1	-67.7%	100.0%	12.1	6.9	-42.7%	100.0%

¹ The emissions estimated from each category, under the baseline scenario in the absence of regulation

² The emissions estimated from each category, under the scenario with the proposed regulation

³ The percent reduction estimated from each category with the proposed regulation

⁴ The share of total emissions reductions (e.g. 12.9 tons/day, for all, in 2014) represented by the category

In Table 36 we provide statewide CO₂ reductions achieved by the proposed regulation in calendar years 2014 and 2020 for each inventory category. The overall CO₂ reduction for each category is negligible, with none exceeding 1% and some actually increasing CO₂ emissions. When considering all the categories in aggregate, the largest share of the overall CO₂ reduction in 2014 is again represented by the tractors, the heavy-heavy tractors from out-of-state as well as California, and the medium-heavy trucks from in-state. In aggregate, we anticipate a slight increase in emissions for 2014 and a slight reduction for 2020.

Table 36. California Statewide CO₂ Future Emissions Reductions by Inventory Category, 2014 and 2020 (tons/day)

Inventory Category	2014				2020			
	Base ¹	Reg ²	Reduction ³	Share ⁴	Base	Reg	Reduction	Share
HH Out-of-State	37,997	38,058	0.2%	23.9%	44,681	44,678	0.0%	7.1%
HH CA-IRP	19,564	19,618	0.3%	20.8%	22,881	22,876	0.0%	12.4%
HH Tractor	24,309	24,363	0.2%	21.2%	28,441	28,424	-0.1%	42.2%
HH Single Unit	8,006	8,022	0.2%	6.2%	9,401	9,394	-0.1%	16.0%
HH Drayage	8,000	8,000	0.0%	0.0%	10,393	10,393	0.0%	0.0%
HH Agriculture	1,735	1,747	0.7%	4.5%	1,680	1,674	-0.4%	15.2%
HH Utility	88	88	-0.2%	-0.1%	98	98	-0.1%	0.2%
MH In-State	20,993	21,051	0.3%	22.6%	22,752	22,751	0.0%	1.9%
MH Interstate	193	194	0.2%	0.1%	210	210	0.0%	0.0%
MH Agriculture	505	507	0.4%	0.8%	489	487	-0.4%	5.1%
MH Utility	95	95	0.0%	0.0%	105	105	0.0%	0.1%
Buses	2,280	2,280	0.0%	0.0%	2,529	2,529	0.0%	-0.1%
PTO	1,589	1,589	0.0%	0.0%	1,878	1,878	0.0%	0.0%
All	125,354	125,612	0.2%	100.0%	145,537	145,496	0.0%	100.0%

¹ The emissions estimated from each category, under the baseline scenario in the absence of regulation

² The emissions estimated from each category, under the scenario with the proposed regulation

³ The percent reduction estimated from each category with the proposed regulation

⁴ The share of total emissions reductions (e.g. -258 tons/day, for all, in 2014) represented by the category

In Table 37 we show the distribution of all emissions reductions anticipated to result from the proposed regulation. We expect the largest reductions in NO_x and PM_{2.5} will come from trucks registered in California, with heavy-heavy instate trucks providing the greatest reductions followed by medium-heavy in-state trucks and single-unit trucks. These three categories alone represent over 74% of the overall NO_x and 67% of the overall PM_{2.5} emissions reductions anticipated between 2008 and 2023.

Table 37. Distribution of Total Future Emissions Reductions across Inventory Category , 2008-2023

Inventory Category	NO _x Share	PM _{2.5} Share
HH Out-of-State	4.4%	10.8%
HH CA-IRP	5.8%	10.3%
HH Tractor	41.1%	40.7%
HH Single Unit	16.0%	10.4%
HH Drayage	6.0%	1.1%
HH Agriculture	2.9%	3.0%
HH Utility	0.0%	0.0%
MH In-State	17.4%	16.4%
MH Interstate	0.1%	0.1%
MH Agriculture	0.6%	0.6%
MH Utility	0.0%	0.0%
Buses	1.7%	2.7%
PTO	4.1%	4.1%
Total	100.0%	100.0%

c) Statewide Emissions Benefits by Fleet Size

In Table 38 we subdivide the statewide benefits for NO_x reductions for 2014 and 2020 by truck fleet size. As shown in the table, we expect the reductions in both 2014 and 2020 to come primarily from trucks that are driven above the respective mileage thresholds that are included for application of the regulation. When pooling the fleets together, we expect that the largest share of the overall emission reduction will come from fleets operating more than three trucks, with the second largest share coming from single-truck fleets. We expect the reduction rates, however, to be largest for fleets of 3 or fewer vehicles. In addition, we expect that nearly 45% of the NO_x emissions reductions anticipated in 2014, and more than 47% of the reductions anticipated in 2020, will come from fleets with three or fewer vehicles. These projections result largely from the fact that smaller fleets tend to have on average older trucks than do larger fleets. In Table 39 we show the future NO_x baseline emissions and reductions as a function of inventory category and fleet size.

Table 38. California Statewide NO_x Future Emissions Reductions by Fleet Size, 2014 and 2020 (tons/day)

Fleet Size	2014				2020			
	Base	Reg	Red	Share	Base	Reg	Red	Share
1 truck/above threshold	134.8	98.2	-27.2%	29.6%	98.3	73.3	-25.5%	31.5%
1 truck/below threshold	3.8	3.8	0.0%	0.0%	3.1	3.1	0.0%	0.0%
2 truck/above threshold	38.7	26.5	-31.4%	9.8%	25.5	17.6	-31.1%	10.0%
2 truck/below threshold	1.2	1.2	0.0%	0.0%	1.0	1.0	0.0%	0.0%
3 truck/above threshold	23.7	17.0	-28.6%	5.5%	16.6	11.9	-28.1%	5.9%
3 truck/below threshold	0.7	0.7	0.0%	0.0%	0.6	0.6	0.0%	0.0%
4+ truck/above threshold	253.6	194.2	-23.4%	48.0%	169.3	136.4	-19.4%	41.3%
4+ truck/below threshold	5.1	5.1	0.0%	0.0%	4.0	4.0	0.0%	0.0%
Ag non specialty higher VMT	8.9	6.4	-27.5%	2.0%	4.9	2.3	-52.1%	3.2%
Ag non specialty lower VMT	2.5	2.5	0.0%	0.0%	1.8	1.8	0.0%	0.0%
Ag non specialty midrange VMT	2.2	2.2	0.0%	0.0%	1.6	0.6	-61.0%	1.3%
Ag specialty vehicle	1.5	1.5	0.0%	0.0%	0.9	0.9	0.0%	0.0%
Unspecified	23.5	17.2	-27.1%	5.2%	18.2	12.7	-30.2%	6.9%
All	500.2	376.5	-24.7%	100.0%	345.6	266.1	-23.0%	100.0%

Table 39. California Statewide NO_x Future Emissions Reductions by Inventory Category and Fleet Size, 2014 and 2020 (tons/day)

Inventory Category	Fleet Size	2014				2020			
		Base	Reg	Red	Share	Base	Reg	Red	Share
HH Out of State	1 truck/above 7500 miles	5.45	4.93	-9.5%	0.4%	3.16	2.93	-7.3%	0.3%
	1 truck/below 7500 miles	0.04	0.04	0.0%	0.0%	0.03	0.03	0.0%	0.0%
	2 truck/above 7500 miles	1.69	1.52	-10.0%	0.1%	0.98	0.91	-7.2%	0.1%
	2 truck/below 7500 miles	0.01	0.01	0.0%	0.0%	0.01	0.01	0.0%	0.0%
	3 truck/above 7500 miles	1.23	1.11	-9.7%	0.1%	0.71	0.66	-7.3%	0.1%
	3 truck/below 7500 miles	0.01	0.01	0.0%	0.0%	0.01	0.01	0.0%	0.0%
	4+ truck/above 7500 miles	87.40	80.10	-8.3%	5.9%	57.36	55.01	-4.1%	3.0%
	4+ truck/below 7500 miles	0.47	0.47	0.0%	0.0%	0.37	0.37	0.0%	0.0%

Inventory Category	Fleet Size	2014				2020			
		Base	Reg	Red	Share	Base	Reg	Red	Share
HH CAIRP	1 truck/above 7500 miles	23.01	20.90	-9.2%	1.7%	11.77	10.84	-7.9%	1.2%
	1 truck/below 7500 miles	0.16	0.16	0.0%	0.0%	0.12	0.12	0.0%	0.0%
	2 truck/above 7500 miles	8.17	7.32	-10.4%	0.7%	4.29	3.94	-8.4%	0.5%
	2 truck/below 7500 miles	0.06	0.06	0.0%	0.0%	0.04	0.04	0.0%	0.0%
	3 truck/above 7500 miles	4.53	4.03	-11.1%	0.4%	2.42	2.18	-9.9%	0.3%
	3 truck/below 7500 miles	0.04	0.04	0.0%	0.0%	0.03	0.03	0.0%	0.0%
	4+ truck/above 7500 miles	37.72	31.32	-16.9%	5.2%	21.91	19.40	-11.4%	3.2%
	4+ truck/below 7500 miles	0.30	0.30	0.0%	0.0%	0.22	0.22	0.0%	0.0%
HH Tractor	1 truck/above 7500 miles	52.13	32.96	-36.8%	15.5%	33.68	19.74	-41.4%	17.5%
	1 truck/below 7500 miles	1.31	1.31	0.0%	0.0%	1.14	1.14	0.0%	0.0%
	2 truck/above 7500 miles	14.90	8.86	-40.5%	4.9%	9.90	5.67	-42.7%	5.3%
	2 truck/below 7500 miles	0.39	0.39	0.0%	0.0%	0.34	0.34	0.0%	0.0%
	3 truck/above 7500 miles	8.51	5.24	-38.4%	2.6%	5.65	3.22	-43.0%	3.1%
	3 truck/below 7500 miles	0.22	0.22	0.0%	0.0%	0.19	0.19	0.0%	0.0%
	4+ truck/above 7500 miles	61.24	38.05	-37.9%	18.7%	40.27	24.90	-38.2%	19.3%
	4+ truck/below 7500 miles	1.31	1.31	0.0%	0.0%	1.11	1.11	0.0%	0.0%
HH Single Unit	1 truck/above 7500 miles	12.31	6.24	-49.3%	4.9%	8.54	4.06	-52.5%	5.6%
	1 truck/below 7500 miles	1.04	1.04	0.0%	0.0%	0.90	0.90	0.0%	0.0%
	2 truck/above 7500 miles	4.28	2.08	-51.4%	1.8%	3.01	1.42	-53.0%	2.0%
	2 truck/below 7500 miles	0.36	0.36	0.0%	0.0%	0.32	0.32	0.0%	0.0%
	3 truck/above 7500 miles	2.68	1.41	-47.4%	1.0%	1.80	0.87	-51.7%	1.2%
	3 truck/below 7500 miles	0.22	0.22	0.0%	0.0%	0.18	0.18	0.0%	0.0%
	4+ truck/above 7500 miles	22.37	11.56	-48.3%	8.7%	14.54	7.72	-46.9%	8.6%
	4+ truck/below 7500 miles	1.60	1.60	0.0%	0.0%	1.31	1.31	0.0%	0.0%
HH Drayage	1 truck	17.94	17.94	0.0%	0.0%	27.62	27.62	0.0%	0.0%
	2 truck	1.99	1.99	0.0%	0.0%	3.07	3.07	0.0%	0.0%
	3 truck	2.24	2.24	0.0%	0.0%	3.45	3.45	0.0%	0.0%
	4+ truck	11.21	11.21	0.0%	0.0%	17.26	17.26	0.0%	0.0%
HH Agriculture	Ag non specialty higher VMT	7.79	5.60	-28.1%	1.8%	4.27	2.06	-51.7%	2.8%
	Ag non specialty lower VMT	1.92	1.92	0.0%	0.0%	1.38	1.38	0.0%	0.0%
	Ag non specialty midrange VMT	1.48	1.48	0.0%	0.0%	1.11	0.45	-59.3%	0.8%
	Ag specialty vehicle	1.24	1.24	0.0%	0.0%	0.75	0.75	0.0%	0.0%
HH Utility		0.60	0.59	-1.6%	0.0%	0.46	0.45	-1.3%	0.0%
MH Instate	1 truck/above 5000 miles	23.96	15.18	-36.6%	7.1%	13.48	8.05	-40.3%	6.8%
	1 truck/below 5000 miles	1.20	1.20	0.0%	0.0%	0.87	0.87	0.0%	0.0%
	2 truck/above 5000 miles	7.59	4.71	-37.9%	2.3%	4.22	2.55	-39.7%	2.1%
	2 truck/below 5000 miles	0.37	0.37	0.0%	0.0%	0.26	0.26	0.0%	0.0%
	3 truck/above 5000 miles	4.52	2.90	-35.9%	1.3%	2.50	1.50	-40.0%	1.3%
	3 truck/below 5000 miles	0.22	0.22	0.0%	0.0%	0.16	0.16	0.0%	0.0%
	4+ truck/above 5000 miles	33.36	21.77	-34.7%	9.4%	17.76	12.01	-32.4%	7.2%
	4+ truck/below 5000 miles	1.39	1.39	0.0%	0.0%	0.95	0.95	0.0%	0.0%
MH Interstate	1 truck/above 5000 miles	0.05	0.05	-11.2%	0.0%	0.03	0.02	-14.4%	0.0%
	1 truck/below 5000 miles	0.00	0.00	0.0%	0.0%	0.00	0.00	0.0%	0.0%
	2 truck/above 5000 miles	0.03	0.03	-17.6%	0.0%	0.02	0.01	-21.2%	0.0%
	2 truck/below 5000 miles	0.00	0.00	0.0%	0.0%	0.00	0.00	0.0%	0.0%
	3 truck/above 5000 miles	0.03	0.03	-21.8%	0.0%	0.02	0.01	-23.0%	0.0%
	3 truck/below 5000 miles	0.00	0.00	0.0%	0.0%	0.00	0.00	0.0%	0.0%
	4+ truck/above 5000 miles	0.31	0.23	-25.5%	0.1%	0.16	0.13	-20.6%	0.0%
	4+ truck/below 5000 miles	0.01	0.01	0.0%	0.0%	0.01	0.01	0.0%	0.0%
MH Agriculture	Ag non specialty higher VMT	1.08	0.83	-23.3%	0.2%	0.59	0.26	-55.5%	0.4%
	Ag non specialty lower VMT	0.60	0.60	0.0%	0.0%	0.44	0.44	0.0%	0.0%
	Ag non specialty midrange VMT	0.76	0.76	0.0%	0.0%	0.54	0.19	-64.4%	0.4%
	Ag specialty vehicle	0.27	0.27	0.0%	0.0%	0.17	0.17	0.0%	0.0%
MH Utility		0.32	0.32	-0.8%	0.0%	0.16	0.15	-1.4%	0.0%
Buses		11.27	9.15	-18.8%	1.7%	8.41	6.75	-19.7%	2.1%
PTO		11.35	7.10	-37.5%	3.4%	9.22	5.37	-41.8%	4.8%
All		500.23	376.48	-24.7%	100.0%	345.63	266.13	-23.0%	100.0%

In Table 40 we provide statewide PM_{2.5} reductions in 2014 and 2020 by truck fleet size and mileage threshold. We expect the reductions in both 2014 and 2020 to come from trucks of all different fleet sizes, regardless of whether the trucks are driven above the

respective thresholds included for application of the regulation. The only trucks not affected are agricultural trucks that are less-utilized. When considering all fleets in aggregate, the largest share of the overall reduction is again represented first by fleets operating more than three trucks, with the second largest share represented by single-truck fleets. The reduction rates, again, are greatest for fleets of 3 or fewer vehicles. We again expect that nearly 45% of the PM_{2.5} emissions reductions anticipated in 2014, and more than 47% of the reductions anticipated in 2020, will come from fleets with three or fewer vehicles. These projections again result largely from the fact that smaller fleets tend to have older vehicles than do larger fleets. In Table 41 we break down the future PM_{2.5} baseline emissions and reductions further as a function of inventory category and fleet size.

Table 40. California Statewide PM_{2.5} Future Emissions Reductions by Fleet Size, 2014 and 2020

Fleet Size	2014				2020			
	Base	Reg	Red	Share	Base	Reg	Red	Share
1 truck/above threshold	5.0	1.3	-74.4%	29.2%	3.2	1.6	-48.7%	30.3%
1 truck/below threshold	0.1	0.0	-84.0%	1.0%	0.1	0.0	-79.1%	1.7%
2 truck/above threshold	1.5	0.4	-76.0%	8.9%	0.9	0.4	-52.6%	9.5%
2 truck/below threshold	0.0	0.0	-83.9%	0.3%	0.0	0.0	-79.2%	0.5%
3 truck/above threshold	0.9	0.3	-71.9%	5.0%	0.6	0.3	-49.9%	5.5%
3 truck/below threshold	0.0	0.0	-83.9%	0.2%	0.0	0.0	-78.9%	0.3%
4+ truck/above threshold	9.4	3.5	-63.5%	46.7%	6.0	4.0	-32.2%	37.2%
4+ truck/below threshold	0.2	0.0	-82.8%	1.2%	0.1	0.0	-75.6%	2.0%
Ag non specialty higher VMT	0.4	0.1	-81.2%	2.5%	0.2	0.1	-72.7%	3.0%
Ag non specialty lower VMT	0.1	0.1	0.0%	0.0%	0.1	0.1	0.0%	0.0%
Ag non specialty midrange VMT	0.1	0.1	0.0%	0.0%	0.1	0.0	-79.8%	1.0%
Ag specialty vehicle	0.1	0.1	0.0%	0.0%	0.0	0.0	0.0%	0.0%
Unspecified	1.0	0.4	-64.1%	5.0%	0.7	0.3	-64.0%	8.8%
All	19.0	6.1	-67.7%	100.0%	12.1	6.9	-42.7%	100.0%

Table 41. California Statewide PM_{2.5} Future Emissions Reductions by Inventory Category and Fleet Size, 2014 and 2020 (tons/day)

Inventory Category	Fleet Size	2014				2020			
		Base	Reg	Red	Share	Base	Reg	Red	Share
HH Out of State	1 truck/above 7500 miles	0.21	0.08	-60.4%	1.0%	0.11	0.10	-15.7%	0.3%
	1 truck/below 7500 miles	0.00	0.00	-81.5%	0.0%	0.00	0.00	-65.3%	0.0%
	2 truck/above 7500 miles	0.07	0.03	-60.6%	0.3%	0.04	0.03	-15.8%	0.1%
	2 truck/below 7500 miles	0.00	0.00	-81.5%	0.0%	0.00	0.00	-65.4%	0.0%
	3 truck/above 7500 miles	0.05	0.02	-60.0%	0.2%	0.03	0.02	-15.8%	0.1%
	3 truck/below 7500 miles	0.00	0.00	-81.5%	0.0%	0.00	0.00	-65.4%	0.0%
	4+ truck/above 7500 miles	3.39	1.61	-52.4%	13.8%	2.04	1.87	-8.2%	3.2%
	4+ truck/below 7500 miles	0.02	0.00	-80.1%	0.1%	0.01	0.00	-55.4%	0.1%
HH CAIRP	1 truck/above 7500 miles	0.93	0.30	-67.8%	4.9%	0.42	0.35	-16.5%	1.4%
	1 truck/below 7500 miles	0.01	0.00	-81.9%	0.0%	0.00	0.00	-63.4%	0.0%
	2 truck/above 7500 miles	0.32	0.11	-66.4%	1.7%	0.16	0.13	-17.5%	0.5%
	2 truck/below 7500 miles	0.00	0.00	-81.8%	0.0%	0.00	0.00	-65.0%	0.0%
	3 truck/above 7500 miles	0.18	0.06	-66.0%	0.9%	0.09	0.07	-20.5%	0.4%
	3 truck/below 7500 miles	0.00	0.00	-82.3%	0.0%	0.00	0.00	-68.1%	0.0%
	4+ truck/above 7500 miles	1.44	0.58	-60.1%	6.8%	0.82	0.65	-21.0%	3.3%
	4+ truck/below 7500 miles	0.01	0.00	-82.0%	0.1%	0.01	0.00	-70.0%	0.1%

Inventory Category	Fleet Size	2014				2020			
		Base	Reg	Red	Share	Base	Reg	Red	Share
HH Tractor	1 truck/above 7500 miles	2.36	0.40	-82.8%	15.2%	1.45	0.51	-65.1%	18.3%
	1 truck/below 7500 miles	0.06	0.01	-84.3%	0.4%	0.05	0.01	-79.5%	0.7%
	2 truck/above 7500 miles	0.67	0.11	-82.9%	4.3%	0.43	0.15	-65.9%	5.5%
	2 truck/below 7500 miles	0.02	0.00	-84.3%	0.1%	0.01	0.00	-80.0%	0.2%
	3 truck/above 7500 miles	0.38	0.08	-79.2%	2.3%	0.25	0.09	-65.3%	3.1%
	3 truck/below 7500 miles	0.01	0.00	-84.3%	0.1%	0.01	0.00	-80.0%	0.1%
	4+ truck/above 7500 miles	2.54	0.63	-75.1%	14.9%	1.70	0.76	-55.0%	18.1%
HH Single Unit	4+ truck/below 7500 miles	0.06	0.01	-83.5%	0.4%	0.04	0.01	-78.0%	0.7%
	1 truck/above 7500 miles	0.38	0.07	-82.5%	2.5%	0.29	0.08	-71.5%	4.1%
	1 truck/below 7500 miles	0.03	0.00	-84.5%	0.2%	0.03	0.01	-81.0%	0.4%
	2 truck/above 7500 miles	0.13	0.02	-82.3%	0.9%	0.10	0.03	-71.2%	1.4%
	2 truck/below 7500 miles	0.01	0.00	-84.5%	0.1%	0.01	0.00	-81.0%	0.2%
	3 truck/above 7500 miles	0.08	0.02	-77.2%	0.5%	0.06	0.02	-68.8%	0.8%
	3 truck/below 7500 miles	0.01	0.00	-84.3%	0.0%	0.01	0.00	-80.4%	0.1%
HH Drayage	4+ truck/above 7500 miles	0.68	0.16	-76.0%	4.0%	0.50	0.20	-60.9%	5.9%
	4+ truck/below 7500 miles	0.05	0.01	-83.6%	0.3%	0.04	0.01	-78.7%	0.6%
	1 truck	0.24	0.24	0.0%	0.0%	0.43	0.43	0.0%	0.0%
	2 truck	0.03	0.03	0.0%	0.0%	0.05	0.05	0.0%	0.0%
HH Agriculture	3 truck	0.03	0.03	0.0%	0.0%	0.05	0.05	0.0%	0.0%
	4+ truck	0.15	0.15	0.0%	0.0%	0.27	0.27	0.0%	0.0%
	Ag non specialty higher VMT	0.35	0.06	-81.2%	2.2%	0.19	0.05	-71.8%	2.6%
	Ag non specialty lower VMT	0.08	0.08	0.0%	0.0%	0.06	0.06	0.0%	0.0%
HH Utility	Ag non specialty midrange VMT	0.05	0.05	0.0%	0.0%	0.04	0.01	-78.2%	0.7%
	Ag specialty vehicle	0.05	0.05	0.0%	0.0%	0.03	0.03	0.0%	0.0%
MH Instate	HH Utility	0.00	0.00	-4.7%	0.0%	0.00	0.00	-2.7%	0.0%
	1 truck/above 5000 miles	0.91	0.19	-79.2%	5.6%	0.50	0.17	-65.3%	6.3%
	1 truck/below 5000 miles	0.05	0.01	-83.6%	0.3%	0.03	0.01	-79.3%	0.5%
	2 truck/above 5000 miles	0.29	0.06	-78.5%	1.7%	0.15	0.06	-63.7%	1.9%
	2 truck/below 5000 miles	0.01	0.00	-83.5%	0.1%	0.01	0.00	-78.7%	0.2%
	3 truck/above 5000 miles	0.17	0.04	-75.6%	1.0%	0.09	0.03	-63.1%	1.1%
	3 truck/below 5000 miles	0.01	0.00	-83.5%	0.1%	0.01	0.00	-78.5%	0.1%
	4+ truck/above 5000 miles	1.23	0.31	-74.9%	7.2%	0.63	0.29	-54.1%	6.7%
MH Interstate	4+ truck/below 5000 miles	0.05	0.01	-82.6%	0.3%	0.03	0.01	-76.4%	0.5%
	1 truck/above 5000 miles	0.00	0.00	-59.3%	0.0%	0.00	0.00	-25.5%	0.0%
	1 truck/below 5000 miles	0.00	0.00	-77.3%	0.0%	0.00	0.00	-64.4%	0.0%
	2 truck/above 5000 miles	0.00	0.00	-62.2%	0.0%	0.00	0.00	-35.7%	0.0%
	2 truck/below 5000 miles	0.00	0.00	-78.6%	0.0%	0.00	0.00	-70.3%	0.0%
	3 truck/above 5000 miles	0.00	0.00	-63.3%	0.0%	0.00	0.00	-38.8%	0.0%
	3 truck/below 5000 miles	0.00	0.00	-80.1%	0.0%	0.00	0.00	-71.0%	0.0%
MH Agriculture	4+ truck/above 5000 miles	0.01	0.00	-66.6%	0.1%	0.01	0.00	-37.3%	0.0%
	4+ truck/below 5000 miles	0.00	0.00	-80.2%	0.0%	0.00	0.00	-69.9%	0.0%
	Ag non specialty higher VMT	0.05	0.01	-80.9%	0.3%	0.03	0.01	-79.0%	0.4%
	Ag non specialty lower VMT	0.03	0.03	0.0%	0.0%	0.02	0.02	0.0%	0.0%
MH Utility	Ag non specialty midrange VMT	0.03	0.03	0.0%	0.0%	0.02	0.00	-82.9%	0.4%
	Ag specialty vehicle	0.01	0.01	0.0%	0.0%	0.01	0.01	0.0%	0.0%
Buses		0.00	0.00	-0.8%	0.0%	0.00	0.00	-0.8%	0.0%
PTO		0.38	0.13	-65.2%	1.9%	0.33	0.15	-53.2%	3.4%
All		0.62	0.22	-63.9%	3.1%	0.38	0.10	-74.3%	5.4%
		18.96	6.12	-67.7%	100.0%	12.08	6.93	-42.7%	100.0%

In Table 42 we subdivide the statewide benefits for CO₂ reductions for 2014 and 2020 by truck fleet size. We anticipate a slight increase for CO₂ emissions in 2014 and a slight decrease for emissions in 2020. As noted earlier, these proposed regulations are not directed toward the reduction of CO₂ emissions. When pooling the fleets together, the largest share of the overall reduction is represented by larger fleets and single-truck fleets in both 2014 and 2020.

Table 42. California Statewide CO₂ Future Emissions Reductions by Fleet Size, 2014 and 2020

Fleet Size	2014				2020			
	Base	Reg	Red	Share	Base	Reg	Red	Share
1 truck/above threshold	26,009	26,102	0.4%	36.4%	30,703	30,689	0.0%	33.0%
1 truck/below threshold	394	400	1.6%	2.5%	433	438	1.1%	-12.0%
2 truck/above threshold	7,650	7,681	0.4%	12.1%	8,923	8,921	0.0%	5.3%
2 truck/below threshold	125	127	1.6%	0.8%	138	140	1.1%	-3.8%
3 truck/above threshold	4,854	4,872	0.4%	6.8%	5,674	5,670	-0.1%	8.0%
3 truck/below threshold	74	75	1.6%	0.5%	82	82	1.1%	-2.2%
4+ truck/above threshold	79,365	79,449	0.1%	32.6%	92,151	92,124	0.0%	65.6%
4+ truck/below threshold	591	600	1.4%	3.2%	655	661	0.9%	-14.3%
Ag non specialty higher VMT	1,446	1,459	1.0%	5.3%	1,361	1,356	-0.4%	12.9%
Ag non specialty lower VMT	256	256	0.0%	0.0%	245	245	0.0%	0.0%
Ag non specialty midrange VMT	315	315	0.0%	0.0%	346	343	-0.9%	7.5%
Ag specialty vehicle	224	224	0.0%	0.0%	217	217	0.0%	0.0%
Unspecified	4,052	4,052	0.0%	-0.1%	4,610	4,610	0.0%	0.2%
All	125,354	125,612	0.2%	100.0%	145,537	145,496	0.0%	100.0%

Table 43. California Statewide CO₂ Future Emissions Reductions by Inventory Category and Fleet Size, 2014 and 2020 (tons/day)

Inventory Category	Fleet Size	2014				2020			
		Base	Reg	Red	Share	Base	Reg	Red	Share
HH Out of State	1 truck/above 7500 miles	1,642	1,647	0.3%	1.9%	1,925	1,924	0.0%	0.6%
	1 truck/below 7500 miles	5	5	1.0%	0.0%	5	5	0.4%	-0.1%
	2 truck/above 7500 miles	508	509	0.3%	0.6%	595	595	0.0%	0.2%
	2 truck/below 7500 miles	2	2	1.0%	0.0%	2	2	0.4%	0.0%
	3 truck/above 7500 miles	368	369	0.3%	0.4%	431	431	0.0%	0.1%
	3 truck/below 7500 miles	1	1	1.0%	0.0%	1	1	0.4%	0.0%
	4+ truck/above 7500 miles	35,407	35,460	0.2%	20.7%	41,647	41,645	0.0%	6.7%
4+ truck/below 7500 miles	65	65	0.9%	0.2%	74	74	0.3%	-0.5%	
HH CAIRP	1 truck/above 7500 miles	5,084	5,110	0.5%	9.9%	6,183	6,183	0.0%	2.3%
	1 truck/below 7500 miles	20	20	1.1%	0.1%	22	22	0.4%	-0.2%
	2 truck/above 7500 miles	1,879	1,888	0.5%	3.4%	2,283	2,282	0.0%	1.1%
	2 truck/below 7500 miles	7	7	1.1%	0.0%	8	8	0.4%	-0.1%
	3 truck/above 7500 miles	1,065	1,070	0.5%	1.9%	1,270	1,269	0.0%	0.6%
	3 truck/below 7500 miles	4	4	1.1%	0.0%	5	5	0.5%	-0.1%
	4+ truck/above 7500 miles	11,469	11,483	0.1%	5.3%	13,073	13,069	0.0%	9.2%
4+ truck/below 7500 miles	35	35	1.1%	0.1%	37	38	0.5%	-0.5%	

Inventory Category	Fleet Size	2014				2020			
		Base	Reg	Red	Share	Base	Reg	Red	Share
HH Tractor	1 truck/above 7500 miles	6,995	7,030	0.5%	13.6%	8,158	8,152	-0.1%	15.2%
	1 truck/below 7500 miles	121	123	1.7%	0.8%	136	137	1.2%	-3.9%
	2 truck/above 7500 miles	2,093	2,103	0.5%	4.0%	2,443	2,443	0.0%	0.6%
	2 truck/below 7500 miles	35	36	1.7%	0.2%	40	40	1.2%	-1.2%
	3 truck/above 7500 miles	1,232	1,238	0.4%	2.1%	1,439	1,437	-0.1%	3.3%
	3 truck/below 7500 miles	20	20	1.7%	0.1%	22	23	1.2%	-0.7%
	4+ truck/above 7500 miles	13,682	13,681	0.0%	-0.5%	16,056	16,042	-0.1%	32.5%
	4+ truck/below 7500 miles	129	131	1.5%	0.8%	148	149	1.0%	-3.7%
HH Single Unit	1 truck/above 7500 miles	1,799	1,806	0.4%	2.6%	2,103	2,100	-0.1%	7.1%
	1 truck/below 7500 miles	101	102	1.7%	0.7%	116	117	1.3%	-3.7%
	2 truck/above 7500 miles	653	656	0.4%	1.1%	762	761	-0.1%	1.6%
	2 truck/below 7500 miles	35	36	1.7%	0.2%	41	41	1.3%	-1.3%
	3 truck/above 7500 miles	435	437	0.4%	0.7%	510	509	-0.2%	2.0%
	3 truck/below 7500 miles	21	22	1.7%	0.1%	24	25	1.3%	-0.8%
	4+ truck/above 7500 miles	4,793	4,792	0.0%	-0.3%	5,652	5,646	-0.1%	16.3%
	4+ truck/below 7500 miles	169	172	1.6%	1.0%	193	195	1.1%	-5.3%
HH Drayage	1 truck	4,299	4,299	0.0%	0.0%	5,584	5,584	0.0%	0.0%
	2 truck	478	478	0.0%	0.0%	620	620	0.0%	0.0%
	3 truck	537	537	0.0%	0.0%	698	698	0.0%	0.0%
	4+ truck	2,687	2,687	0.0%	0.0%	3,490	3,490	0.0%	0.0%
HH Agriculture	Ag non specialty high VMT	1,205	1,217	1.0%	4.5%	1,141	1,136	-0.4%	10.8%
	Ag non specialty lower VMT	183	183	0.0%	0.0%	175	175	0.0%	0.0%
	Ag non specialty mid VMT	173	173	0.0%	0.0%	197	195	-0.9%	4.4%
	Ag specialty vehicle	174	174	0.0%	0.0%	168	168	0.0%	0.0%
HH Utility		88	88	-0.2%	-0.1%	98	98	-0.1%	0.2%
MH Instate	1 truck/above 5000 miles	6,164	6,186	0.3%	8.3%	6,721	6,718	0.0%	7.8%
	1 truck/below 5000 miles	146	149	1.6%	0.9%	154	156	1.1%	-4.1%
	2 truck/above 5000 miles	2,024	2,032	0.4%	3.0%	2,203	2,202	0.0%	1.9%
	2 truck/below 5000 miles	46	46	1.6%	0.3%	48	49	1.1%	-1.2%
	3 truck/above 5000 miles	1,201	1,206	0.4%	1.6%	1,310	1,309	-0.1%	1.9%
	3 truck/below 5000 miles	27	27	1.6%	0.2%	29	29	1.0%	-0.7%
	4+ truck/above 5000 miles	11,193	11,211	0.2%	7.2%	12,087	12,086	0.0%	0.8%
	4+ truck/below 5000 miles	192	194	1.5%	1.1%	201	202	0.9%	-4.3%
MH Interstate	1 truck/above 5000 miles	25	25	0.3%	0.0%	28	28	0.0%	0.0%
	1 truck/below 5000 miles	0	0	0.9%	0.0%	0	0	0.4%	0.0%
	2 truck/above 5000 miles	16	16	0.3%	0.0%	17	17	0.0%	0.0%
	2 truck/below 5000 miles	0	0	1.1%	0.0%	0	0	0.6%	0.0%
	3 truck/above 5000 miles	15	15	0.3%	0.0%	17	17	0.0%	0.0%
	3 truck/below 5000 miles	0	0	1.2%	0.0%	0	0	0.6%	0.0%
	4+ truck/above 5000 miles	135	135	0.2%	0.1%	145	145	0.0%	0.0%
	4+ truck/below 5000 miles	2	2	1.2%	0.0%	2	2	0.6%	0.0%
MH Agriculture	Ag non specialty high VMT	240	242	0.9%	0.8%	221	220	-0.4%	2.1%
	Ag non specialty lower VMT	73	73	0.0%	0.0%	70	70	0.0%	0.0%
	Ag non specialty mid VMT	142	142	0.0%	0.0%	149	148	-0.8%	3.0%
	Ag specialty vehicle	50	50	0.0%	0.0%	49	49	0.0%	0.0%
MH Utility		95	95	0.0%	0.0%	105	105	0.0%	0.1%
Buses		2,280	2,280	0.0%	0.0%	2,529	2,529	0.0%	-0.1%
PTO		1,589	1,589	0.0%	0.0%	1,878	1,878	0.0%	0.0%
All		125,354	125,612	0.2%	100.0%	145,537	145,496	0.0%	100.0%

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

THE HEALTH EFFECTS OF AIR POLLUTION ON CHILDREN

Fall 2000

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Introduction

Air pollution has many effects on the health of both adults and children. The purpose of this article will be to examine what is known about how air pollution affects health, especially children's.

Over the past several years the incidence of a number of diseases has increased greatly. Asthma is perhaps the most important disease with an increasing incidence, but other diseases, such as allergic reactions, bronchitis and respiratory infections also have been increasing. The cause of these increases may be due at least in part to the effects of air pollution. This review will address the following questions:

1. Why are children more susceptible to the effects of air pollution than adults?
2. Which air pollutants have the greatest impact on the health of children and adults?
3. What can be done to reduce the effects of air pollution on children's health?

Why are Children More Susceptible to Air Pollution Than Adults?

In many health effects research studies, children are considered as if they were small adults. This is not really true. There are many differences between children and adults in the ways that they respond to air pollution. For example, children take in more air per unit body weight at a given level of exertion than do adults. When a child is exercising at maximum levels, such as during a soccer game or other sports event, they may take in 20 percent to 50 percent more air -- and more air pollution -- than would an adult in comparable activity.

Another important difference is that children do not necessarily respond to air pollution in the same way as adults. Adults exposed to low levels of the pollutant ozone will experience symptoms such as coughing, soreness in their chests, sore throats, and sometimes headaches. Children, on the other hand, may not feel the same symptoms, or at least they do not acknowledge them when asked by researchers. It is currently not known if children actually do not feel the symptoms or if they ignore them while preoccupied with play activities.

This probably does not mean that children are less sensitive to air pollution than adults. There are several good studies that show children to have losses in lung functions even when they don't cough or feel discomfort. This is important because symptoms are often warning signals and can be used to trigger protective behavior. Children may not perceive these warning signals and might not reduce their activities on smoggy days.

Children also spend more time outside than adults. The average adult, except for those who work mostly outdoors, spends most of their time indoors -- at home, work, or even at the gym. Children spend more time outside, and are often outdoors during periods when air pollution is at its highest.

The typical adult spends 85 percent to 95 percent of their time indoors, while children may spend less than 80 percent of their time indoors. Children may also exert themselves harder than adults when playing outside.

Perhaps the most important difference between adults and children is that children are growing and developing. Along with their increased body size, children's lungs are growing and changing, too.

The Lung's Important Role in Health

The lung is an extremely complex organ. While most organs in your body are made up of a few different types of cells, the lung contains more than 40 different kinds of cells. Each of these cells is important to health and maintaining the body's fitness.

Air pollution can change the cells in the lung by damaging those that are most susceptible. If the cells that are damaged are important in the development of new functional parts of the lung, then the lung may not achieve its full growth and function as a child matures to adulthood. Although very little research has been conducted to address this extremely important issue, this review will discuss the information that is available.

USC Children's Health Study

Recent results from the Children's Health Study, conducted by investigators at the University of Southern California, suggest that children with asthma are at much greater risk of increased asthma symptoms when they live in communities with higher levels of ozone and particles and participate in three or more competitive sports. Having said all this, the purpose of this review is not to discourage children or adults from normal daily activities and outdoor exercise. Exercise has very important, beneficial outcomes. Appropriate exercise and prudent exposures of children and adults should be encouraged even in an environment that may always contain some amount of air pollution.

Which Air Pollutants Have the Greatest Impact on the Health of Children and Adults?

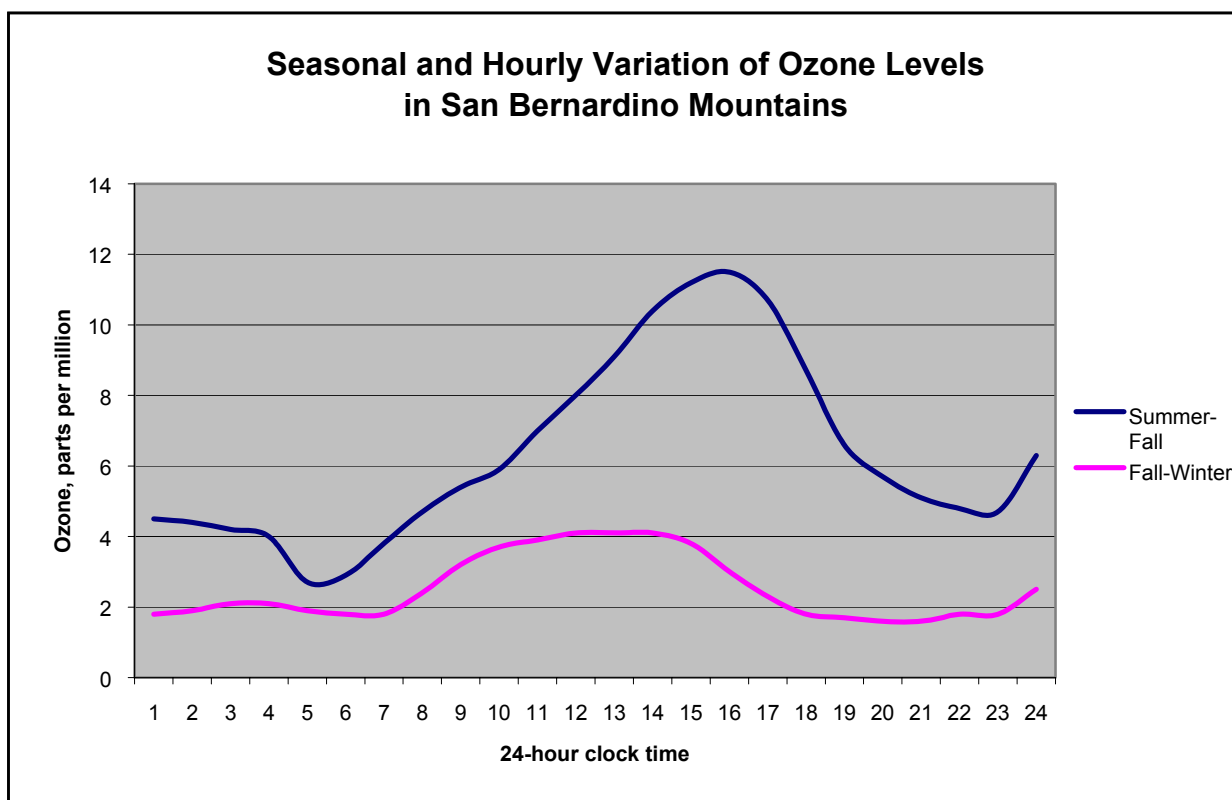
Ozone

Ozone is one of the most important air pollutants affecting human health in regions like Southern California.

Ozone (O₃) is a molecule built of three atoms of oxygen linked together in a very energetic combination. When ozone comes into contact with a surface it rapidly releases this extra force in the form of chemical energy. When this happens in biological systems, such as the respiratory tract, this energy can cause damage to sensitive tissues in the upper and lower airways.

Ozone formation

Because ozone forms as a product of solar energy and photochemical reactions of pollutants, it is not surprising that the highest concentrations of ozone in the atmosphere occur when sunlight is most intense. Thus, ozone generally reaches peak levels during the middle of the day in the summer months. These types of air pollution patterns are called diurnal and seasonal variations. The following graph shows that ozone levels in the San Bernardino Mountains are highest in the summer and fall, and peak in the late afternoon.



Ozone Air Quality Standards

Federal and state agencies have set air quality standards for ozone. An ozone level greater than 0.08 parts per million (ppm) averaged over eight hours is considered unhealthy. This level has been set because both laboratory and community studies have demonstrated measurable effects of ozone at or above that threshold.

The effects of ozone on people include:

- irritation of the nose and throat;
- increased mucus production and tendency to cough;
- eye irritation and headaches for some; and
- during severe episodes, chest pain and difficulty taking a deep breath without coughing.

How Ozone Damages Lungs

What happens when you breathe air that is contaminated with ozone? Like oxygen, ozone is soluble in the fluids that line the respiratory tract. Therefore some ozone can penetrate into the gas-exchange, or alveolar, region of the deep lung.

The following photos show how ozone affects the sensitive tissue in the deep lung. The pictures are from the lungs of rats exposed to ozone in a laboratory under carefully controlled conditions. The human lung is similar --although not identical -- to the rat's lung in terms of the types of cells and the overall structure of the alveolar region.

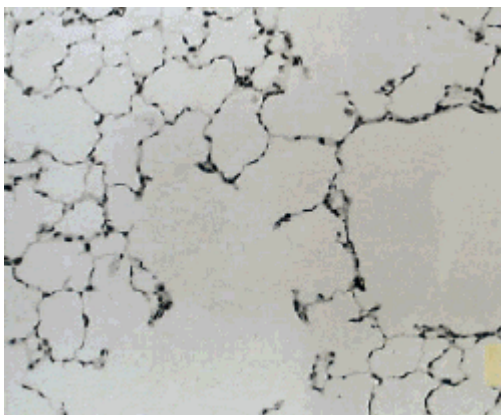


Figure 1

Figure 1 shows a magnified view of the structure of the normal gas-exchange region of the lung. It is called the gas-exchange region because oxygen inhaled from the air is transferred to the hemoglobin in blood in small blood vessels located inside the thin walls separating the alveolar air spaces.

At the same time, carbon dioxide, produced by normal metabolism and dissolved in the blood, is excreted into the air and expired when you breathe out.

The walls of a normal alveolus are very thin. There are only two layers of cells and a thin interstitial matrix separating the air in the alveolar space, or lumen, from the fluid inside the blood vessels. The cells that line the healthy alveoli are mostly very broad and very thin, and are called Type I lung cells or Type I pneumocytes. This provides a very large surface area across which gases can be efficiently transported.

Figure 2 shows the effects of breathing 0.2 ppm ozone for 4 hours. In Southern California air pollution levels can approach 0.2 ppm -- a Stage 1 ozone alert -- during the smoggiest summer days. The photo shows evidence of additional cells, called macrophages, and some material that may be fragments of ozone-injured alveolar wall cells inside the alveolar space.

Macrophages are immune system cells that respond to the injury of the delicate cells that line the alveolar lumen. These macrophages play important roles in protecting the lungs from inhaled bacteria,

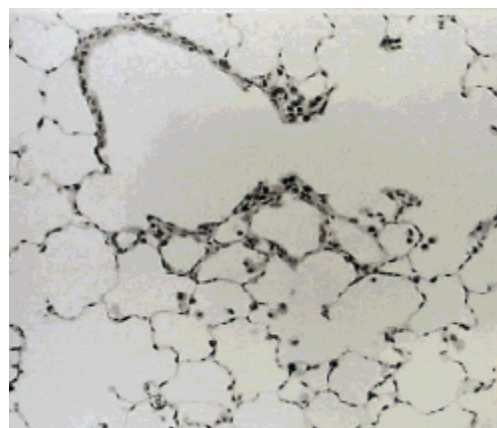


Figure 2

fungi and viruses, and are also important in helping to repair lung tissue injury caused by inhaled pollutants.

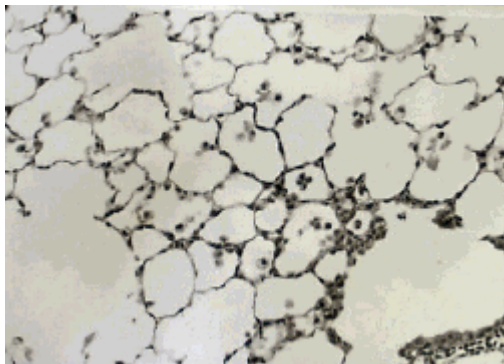


Figure 3

Figure 3 shows more extensive damage following exposure a higher concentration of ozone, 0.6 ppm. The alveolar walls are thicker and there is evidence of cells infiltrating within the walls. There are more macrophages in the alveolar spaces and the thin, Type I cells have been damaged and replaced with thicker Type II, almost cube-shaped cells that are more resistant to the toxic effects of ozone. All of these changes occurred within 48 hours after exposure. If exposure continues for more than three days, the evidence of cell injury seems to be reduced, except for the continuing presence of the Type II cells.

Is Ozone-Related Lung Damage Permanent?

People actually report that the symptoms they feel when first exposed to ozone seem to go away, even though their exposure continues.

Following ozone injury, if the lung is not exposed to ozone for approximately five to seven days, it can for the most part repair itself provided the injury is not too extensive. However, long-term studies with laboratory animals have shown that there may be residual and in some cases permanent damage. This damage might be thought of as accelerated aging of the lung. Thus, frequent exposures to ozone can cause transient damage. The lung's defenses can repair most but probably not all of that damage within a relatively short time in most healthy individuals.

Research and Air Quality Standards

Health scientists probably know more about the effects of ozone on human health than about any other pollutants. This is because ozone is pervasive in the environment. Also there are excellent methods of measuring ozone so the pollutant can be studied using epidemiological methods. The findings of these epidemiological studies can be verified using well-controlled laboratory studies with human volunteers and laboratory animals. Thousands of scientific papers on the health effects of ozone have been published and these have been critically reviewed in documents that provide the scientific basis for National and State Ambient Air Quality Standards. (Ambient refers to outdoor air.)

These so-called Criteria Documents are important because they are extensively reviewed by scientists, public agencies, industry representatives, environmental groups such as the American Lung Association and the Natural Resources Defense Council,

and the public. National and state ambient air quality standards set the goals for healthy air quality in Southern California and across the country.

Based upon the most recent studies, it is now apparent that ozone plays an important role in causing acute health effects, such as heightening asthma symptoms and developing bronchitis symptoms.

The role of ozone in producing long-term or chronic effects is less clear, at least from the available epidemiological studies. However, laboratory animal studies suggest that there can be long-term consequences.

How to Reduce Ozone Exposure

The U.S. Environmental Protection Agency (EPA) has recommended that ozone should not exceed 0.08 ppm averaged over an 8-hr period. When ozone exceeds this level, active children and adults, those with respiratory disease such as asthma, and other people with unusual susceptibility to ozone should limit prolonged outdoor exposure.

Incidentally, personal tobacco smoking during periods of high ozone exposure doubled the risk of asthmatic individuals needing to go to the emergency room for treatment of asthma symptoms.

Carbon Monoxide

Carbon monoxide (CO), a colorless, odorless gas, is a byproduct of combustion.

When inhaled, carbon monoxide reacts very rapidly with hemoglobin in the blood, preventing uptake and transport of oxygen. Because carbon monoxide readily and firmly attaches to hemoglobin, it stays in the blood for a relatively long time. Thus, during an exposure carbon monoxide concentrations in blood can rise in a matter of minutes, then stay high for hours.

Who is Most Sensitive to the Health Effects of Carbon Monoxide?

Most of the health effects directly associated with carbon monoxide are most likely due to decreases in oxygen delivery to vital organs such as the heart and the brain.

People with heart disease may be especially sensitive to the effects of carbon monoxide. In addition, people with lung diseases that limit efficient use of inhaled oxygen, such as asthma and emphysema, may also be susceptible. Even in people without heart or lung diseases, reduced delivery of oxygen to skeletal muscles, especially during exercise, can reduce the ability to perform strenuous work.

At high levels of carbon monoxide exposure, impaired delivery of oxygen to the central nervous system can reduce the ability to respond quickly to external stimuli. After exposures that convert 5 percent to 10 percent of the circulating hemoglobin to carboxyhemoglobin (COHb), people's ability to recognize and react to flashes of light in a test system are reduced. At 10 percent to 30 percent carboxyhemoglobin, nausea,

headaches, unconsciousness, and sometimes death can result. The severity of symptoms increases with the concentration of carboxyhemoglobin.

Air Quality Standards for Carbon Monoxide

Both the EPA and the State of California have set air quality standards for carbon monoxide based on the results of epidemiological and laboratory findings. Ambient levels of carbon monoxide should not exceed 9 ppm, when averaged over an 8-hour interval, and should not exceed 20 ppm in any one-hour period. (The USEPA has a slightly higher 1-hour standard of 35 ppm).

Sources of Carbon Monoxide

The major sources of carbon monoxide pollution are automotive exhaust and emissions from large industrial combustion sources such as electrical power plants. Because these sources produce many contaminants in addition to carbon monoxide -- such as fine particles and nitrogen oxides -- it is often difficult to isolate the health effects of ambient carbon monoxide from those of other pollutants.

In addition to carbon monoxide generated outside, there are also important indoor sources of the pollutant. The most important of these are combustion sources such as gas ovens, gas burners, water heaters, and heating systems. However, in most cases emissions from well-maintained and vented gas appliances are small.

Tobacco smoking is a more significant source of carbon monoxide. Tobacco smoke can contain very high concentrations of carbon monoxide (1,000 ppm to 50,000 ppm). Carbon monoxide levels in the homes of children whose relatives smoke tobacco products can be higher than the carbon monoxide levels outdoors.

Health Effects of Carbon Monoxide

There are hundreds of cases per year of deaths or severe illness due to carbon monoxide poisoning from faulty appliances, indoor emissions of automobile exhaust and industrial exposures. These cases show that carbon monoxide poisoning causes symptoms very similar to those of the flu. In fact, the true number of cases is not really known because many people may have been poisoned slightly and thought that they were just fighting off a cold or the flu. Thus it is very important to make sure that home appliances are well-maintained and that all combustion sources are properly vented to the outdoors.

Epidemiological studies have shown significant association between several health effects and carbon monoxide, although as mentioned earlier it is difficult to completely isolate carbon monoxide's effects from those of other air pollutants.

For example, asthmatic children in Taiwan who were exposed to high levels of traffic-related air pollution -- using carbon monoxide and nitrogen dioxide as marker compounds-- reported more respiratory symptoms than children with lower exposures.

A study of physician office visits in London showed associations between air pollution and doctor visits for asthma and other lower respiratory disease. For children, levels of nitrogen dioxide, carbon monoxide, and sulfur dioxide were associated with increased numbers of medical consultations. However, in adults, the only consistent association was with levels of airborne particles. This suggests that children and adults might respond differently to pollution exposures.

Prenatal Effects of Carbon Monoxide

Carbon monoxide may also have prenatal effects. Pregnant women who were exposed to high levels of ambient carbon monoxide (5 ppm to 6 ppm) were at increased risk of having low birth-weight babies. It has long been known that women who smoke cigarettes during pregnancy have low birth-weight babies, but this is the first study of similar findings in women exposed to environmental carbon monoxide.

Babies exposed to carbon monoxide during the maturation of their organs may suffer permanent changes to those organs. Studies using newborn rats showed that carbon monoxide exposure could cause changes in the heart muscle tissue. This in turn could increase the severity of effects of artery constrictions when they became adults. Other animal studies have shown that long-term carbon monoxide exposure can contribute to a disease called ventricular hypertrophy, in which the cells of the heart's ventricle chambers are enlarged and possibly weakened.

Airborne Particles

Particles, including nitrates, sulfates, carbon¹ and acid aerosols² are a complex group of pollutants.

Unlike ozone, which has a specific chemical composition, airborne particles vary in size and composition depending on time and location. Although the components of particles may have common sources, the types and amounts of particles collected at any one time and location may be unique.

To add to the problem, gaseous pollutants including ozone, sulfur dioxide, nitrogen dioxide and carbon monoxide often are present in the atmosphere at the same time as are particles. It is not always possible to clearly differentiate between the health effects of the gases, the particles, and possibly the combination of particles and gases. This complexity presents a tremendous challenge to the scientific community and to public in trying to understand how inhaled particles affect human health.

The Challenge of Measuring Particle Pollution

Precisely measuring particulate pollution is more difficult and labor intensive than measuring gaseous pollutants such as ozone. For this reason, particle concentrations are not measured on a daily basis in most communities. Frequently, they are measured once every six days.

¹ Both elemental and organic. Elemental carbon is pure carbon from combustion sources, including diesel particulate. Organic carbon is a semi-volatile hydrocarbon from combustion and some evaporative sources.

² Aerosol is the scientific term used to describe particles suspended in a fluid, such as air.

Particle samples are collected on filters that are then weighed. Particle concentrations are reported in terms of micrograms of particles per cubic meter ($\mu\text{g}/\text{m}^3$) of collected air.

Originally, the particle samples were relatively indiscriminate with respect to particle size and often contained very large particles. These large particles contributed a great deal to the weighed particle mass, but might not have been very important with respect to lung health. This is because most of the particles were too large to penetrate through the nasal and head airways to reach the lung. A more health-related sample was needed.

After a great deal of scientific consideration it was decided that particulate matter with aerodynamic diameters³ less than or equal to 10 microns (μm) should be collected. Ambient air quality standards were developed for this material, which is called PM_{10} .

Sources of Particle Pollution

Researchers noted that the sources of relatively large-size particles (greater than 3 microns in aerodynamic diameter) were quite distinct from the sources of particles less than 1 micron in diameter.

The larger, so-called "coarse" particles are mostly produced by mechanical processes, such as automobile tire wear on the road, industrial cutting, grinding and pulverizing processes and re-suspension of particles from the ground or other surfaces by wind and human activities. The chemical composition of coarse particles may be somewhat similar to the chemical composition of soil in that area, along with industrial compounds from activities such as mining or smelting operations. The coarse fraction of urban aerosols also contains bits of plants, molds, spores and some bacteria. Thus the characteristics of the coarse particles may vary greatly in different communities.

In contrast, the smaller or so-called "fine" particles in the urban aerosol come from combustion sources, such as power plants, automobile, truck, bus and other vehicle exhaust or from the reactions that transform some of the pollutant gases into solid or liquid particles. These distinctions may be important because the current air pollution health effects literature suggests, although not with certainty, that for some key health effects the fine particles are more important than the coarse particles. These findings have led EPA to propose a new nationwide $\text{PM}_{2.5}$ standard that would reduce exposure to particles that are 2.5 microns or less in diameter.

Historic Air Pollution Disasters

Epidemiological studies have consistently associated adverse health effects with exposures to particulate air pollution. Early studies implicated particulate and sulfur dioxide pollution in the acute illnesses and premature deaths associated with extremely

³ Aerodynamic diameter is used to define particles' size. Particle deposition on a surface, or in the lung, depends on the particle's aerodynamic and diffusion characteristics. A particle's aerodynamic characteristics depend on its density, shape, actual size, and velocity while its diffusion characteristics are functions of its size and the density of the air in which it is suspended.

severe pollution episodes in Donora, Penn., London, and New York in the 1940s, 1950s, and 1960s. The particle levels in a four-week pollution disaster in London in 1955 were more than 50 times higher than the California standard.⁴ Twenty percent of that aerosol was composed of acid sulfates -- probably sulfuric acid. The number of people hospitalized for lung or heart-related diseases was extraordinarily high, but more importantly there were more than 4,000 premature, or "excess," deaths in the London population.

Fortunately, major efforts by government agencies, the public, and industries have made it very unlikely there will ever be a similar episode in modern urban communities. However, the lessons learned from these disasters are still relevant. Despite the fact that our levels of airborne particles are much lower than those that occurred during the disasters, EPA estimates that there are still more than 6,000 excess deaths in the United States that could be associated with inhaled particles.

Health Effects of Particulate Pollution

Current ambient levels of PM₁₀ -- 30 to 150 micrograms per cubic meter -- are associated with increases in the numbers of people that die daily from heart or lung failure. Most of these deaths are among the elderly. However there is a strong body of evidence that some children are also adversely affected by particulate matter.

The American Thoracic Society's Environmental and Occupational Health Assembly reviewed current health effects literature. They report that daily fluctuations in PM₁₀ levels have been related to:

- acute respiratory hospital admissions in children;
- school and kindergarten absences;
- decreases in peak lung air flow rates in normal children; and
- increased medication use in children and adults with asthma.

The USC Children's Health Study suggests that children with asthma living in a community with high particle concentrations may have suppressed lung growth. After children moved into cleaner cities their lung growth returned to the normal rate, but they did not recover the lost potential growth, according to John Peters, the study's principle investigator.

It is difficult to positively assign a quantitative risk associated with particulate matter because nearly all studies of its health effects find other pollutants present that may account for some of the effects.

Part of the problem is due to the nature of the data being collected. The levels of particulate matter vary during the course of the day and peak values can be quite high. Few studies have evaluated the effect of these short-term "spikes." However, at least one epidemiological study of children with asthma suggested that changes in symptoms

⁴ The California standard for particulate matter (PM₁₀) is 50 micrograms per cubic meter averaged over 24 hours

and lung function correlate more strongly with 1-hour peaks than with 24-hour average concentrations.

Other studies, primarily with laboratory animals, suggest that the chemical composition⁵ and surface areas of the particles may be more important than particle mass. Scientists are continuing to study the health effects of particles and are developing better methods for measuring the important constituents. It may be possible in the near future to more accurately assess the effects of inhaled particles on human health.

Nitrogen Oxides

Nitrogen oxides are produced during most combustion processes. Mobile sources and power plants are the major contributors in Southern California.

About 80 percent of the immediately released nitrogen oxide is in the form nitric oxide (NO). Small amounts of nitrous oxide (N₂O) are also produced. Nitrous oxide is a "greenhouse" gas that is suspected of playing an important role in global warming.

Nitric oxide reacts with oxygen in the air to produce nitrogen dioxide (NO₂). Further oxidation during the day causes the nitrogen dioxide to form nitric acid and nitrate particles. In the dark, nitrogen dioxide can react with ozone and form a very reactive free radical. The free radical then can react with organic compounds in the air to form nitrogenated organic compounds, some of which have been shown to be mutagenic and carcinogenic.

Health Effects of Nitrogen Dioxide

Nitrogen dioxide is the most important nitrogen oxide compound with respect to acute adverse health effects. Under most chemical conditions it is an oxidant, as is ozone. However, it takes about 10 times more nitrogen dioxide than ozone to cause significant lung irritation and inflammation.

Nitrogen dioxide differs from ozone in that it suppresses the immune system to a much greater degree. As discussed below, some epidemiological studies have shown that children exposed to high levels of ambient nitrogen dioxide may be at increased risk of respiratory infections. Studies with laboratory animals have indeed shown that if mice are exposed first to nitrogen dioxide and later to bacteria at a level that would not infect a healthy control animal, their normal lung defense mechanisms are suppressed and the bacteria are able to infect the host.

⁵ The idea that all particles are equally toxic is not scientifically justified. There are many good examples that can be taken from studies of particles in the workplace. For example, certain types of particles that contain quartz -- a natural mineral composed of silicon dioxide but with a specific crystal structure -- are very potent lung irritants. Repeated exposures to this material can lead to a serious, permanent lung disease called lung fibrosis. Other mineral particles that are fibrous, such as specific forms of asbestos, can cause lung cancer. Other particles such as titanium dioxide do not seem to cause occupational diseases.

Average levels of nitrogen dioxide in the United States range from 0.02 to 0.04 ppm. Levels in major urban areas in Southern California may be higher, but the region has not exceeded the federal standard⁶ for nitrogen dioxide since 1991.

During the 1970s, one of the first studies relating respiratory illnesses and changes in lung function to ambient nitrogen dioxide concentrations reported that children living in areas with high nitrogen dioxide concentrations had greater incidences of lung-related illness than children living in areas with lower concentrations. Since then, other epidemiological studies have suggested that children with asthma are more likely than children without asthma to have reduced lung function and symptoms of respiratory irritation, such as cough and sore throat, when outdoor average nitrogen dioxide concentrations exceed about 0.02 ppm.

Some studies also have suggested that children younger than five years old may be more severely affected by nitrogen dioxide than older children. Several epidemiological studies have suggested that for children, the most important effect of ambient exposure to nitrogen dioxide might be increased susceptibility to respiratory infections and increased severity of responses to inhaled allergens.

Although many epidemiological studies show significant associations between outdoor nitrogen dioxide concentrations and adverse health outcomes, some studies do not corroborate these effects. In part, this is because it is often difficult to fully account for the influences of indoor sources of nitrogen dioxide.

Improvements in Nitrogen Dioxide Measurements

More recent studies have used special devices, called passive dosimeters, that can be worn by children to collect nitrogen dioxide for later analysis. These measurements give epidemiologists the ability to better assess a child's total nitrogen dioxide exposure over the course of the day. These studies show that there can be a great deal of individual variation in exposures, even for children living in the same communities. Thus, it is not surprising that epidemiological studies that do not estimate a nitrogen dioxide dose may reach different conclusions.

However, laboratory studies involving controlled exposures of human volunteers and laboratory animals have demonstrated plausible effects of nitrogen dioxide on human health. For example, if one exposes rats or other animals to nitrogen dioxide, and then examines their respiratory tract tissues, it is very evident that the pollutant can cause short-term injury similar to that seen after ozone exposure.

Long-term exposures to high concentrations of nitrogen dioxide can produce chronic damage to respiratory tract tissue that resembles the lung disease emphysema.

The pollutant's suppression of immune system functions reduces the ability of the host to fight off bacterial and viral infections. Human volunteers who inhaled weakened

⁶ 0.053 ppm as an annual average

influenza virus after being exposed to nitrogen dioxide in laboratories were more susceptible to the infection than a control group that did not inhale nitrogen dioxide.

Other studies show that nitrogen dioxide decreases the body's ability to generate antibodies when challenged by pathogens, and may reduce the ability of the respiratory system to remove foreign particles such as bacteria and viruses from the lung.

Lead

People can be exposed to lead (Pb) through air, food and water. Lead is a toxic heavy metal that causes nerve damage and impairs the body's ability to make hemoglobin, leading to a form of anemia.

Sources of Lead Pollution

Large amounts of lead were emitted to the atmosphere when it was used as a gasoline additive.⁷ The emitted lead could be inhaled. In addition, lead fallout from the air caused widespread contamination of soil, plants, food products, and water.

Lead is often measured in children's blood as an index of environmental exposure. Even low levels⁸ of lead in the blood of children aged 6 to 7 are linked to measurable changes in intelligence quotient and certain perceptual-motor skills. Higher levels of lead exposure can also result in kidney damage and may be related to high blood pressure in adults.

Sulfur Oxides

Most manmade emissions of the gas sulfur dioxide (SO₂) come primarily from the combustion of fossil fuels such as coal, oil, and diesel fuel.

Most of the sulfur in fossil fuel is converted sulfur dioxide, but a small amount is also converted to sulfuric acid. In the atmosphere, gaseous sulfur dioxide can also be converted to sulfuric acid and sulfate-containing particles. Thus, atmospheric concentrations of sulfur dioxide are often highly associated with acidic particles, sulfuric acid particles and sulfate particle concentrations.

The current National Ambient Air Quality Standards for sulfur dioxide are 18 micrograms per cubic meter averaged annually, and 365 micrograms per cubic meter averaged over 24 hours. Southern California does not exceed the national air quality standard because its industries primarily burn low-sulfur fuels such as natural gas. Much of the sulfur oxide air pollution in Southern California is likely to be associated with diesel emissions.

⁷ Lead in the form of tetraethyl lead was added to gasoline in the United States in large amounts from the 1950s until it was banned in the mid-1970s.

⁸ 10 to 30 micrograms per 100 milliliters

Sulfur dioxide is a very water-soluble gas and therefore most of the sulfur dioxide that is inhaled is absorbed in the upper respiratory tract and does not reach the lung's airways. However, the small amount of sulfur dioxide that does penetrate into the airways can provoke important health effects, primarily in individuals with asthma.

For those with asthma, even relatively short-term, low-level exposures to sulfur dioxide can result in airway constriction leading to difficulty in breathing and possibly contribute to the severity of an asthmatic attack.

A number of epidemiological studies have shown associations between ambient sulfur dioxide and rates of mortality (death) and morbidity (illness). However, because sulfur dioxide is often strongly correlated with fine particles and especially sulfate-containing particles, it is difficult to separate the effects of sulfur dioxide from those of the particle compounds.

A study in France found an increase of 2.9 visits to the emergency room for every 20 micrograms per cubic meter increase in atmospheric sulfur dioxide. The results pertained to days when the average sulfur dioxide levels were above 68 micrograms per cubic meter but below the U.S. health standard.

In London, asthma and other lower respiratory diseases in children were most significantly associated with exposures to nitrogen dioxide, carbon monoxide, and sulfur dioxide. In adults the only consistent association was with particulate matter.

Hospital admissions for children with asthma may increase by 20 percent following acute exposure to ozone peaks and possibly with sulfur dioxide. Chronic exposure to increased levels of fine particles, sulfur dioxide, and nitrogen dioxide may be associated with up to threefold increase in nonspecific respiratory symptoms. Thus, recent literature suggests that sulfur dioxide affects adults and children differently and that chronic and acute effects may also be different.

Diesel Emissions

Diesel fuel is burned to power buses, trucks, road-building equipment, trains, boats and ships and electricity-generating equipment. When diesel fuel is burned, the exhaust includes both particles and gases. Diesel emissions are important constituents of ambient air pollution.

What's in Diesel?

Diesel particles consist mainly of elemental carbon and other carbon-containing compounds. Hundreds of compounds have been identified as constituents of diesel particles. These include polycyclic aromatic hydrocarbons (PAHs) and other compounds that have been associated with tumor formation and cancer. In 1998, the California Air Resources Board designated diesel particulate a cancer-causing toxic air contaminant.

Diesel particles are microscopic. More than 90 percent of them are less than 1 micron in diameter. Due to their minute size, diesel particles can penetrate deeply into the lung. There is evidence that once in the lung, diesel particles may stay there for a long time.

In addition to particles, diesel exhaust contains several gaseous compounds including carbon monoxide, nitrogen oxides, sulfur dioxide and organic vapors, for example formaldehyde and 1,3-butadiene. Formaldehyde and 1,3-butadiene have been classified as toxic and hazardous air pollutants. Both have been shown to cause tumors in animal studies and there is evidence that exposure to high levels of 1,3-butadiene can cause cancer in humans.

AQMD's recent landmark research project, the Multiple Air Toxics Exposure Study II, found that diesel particulate is responsible for about 70 percent of the total cancer risk from all toxic air pollution in the greater Los Angeles metropolitan area.

Diesel emissions may also be a problem for asthmatics. Some studies suggest that children with asthma who live near roadways with high amounts of diesel truck traffic have more asthma attacks and use more asthma medication.

Some human volunteers, exposed to diesel exhaust in carefully controlled laboratory studies, reported symptoms such as eye and throat irritation, coughing, phlegm production, difficulty breathing, headache, lightheadedness, nausea and perception of unpleasant odors. Another laboratory study, in which volunteers were exposed to relatively high levels of diesel particles for about an hour, showed that such exposures could cause lung inflammation.

Thus current epidemiological and laboratory evidence suggests that at typical urban concentrations, diesel exhaust may contribute significantly to the health effects of air pollution.

What Can Be Done to Reduce the Effects of Air Pollution on Children's Health?

After reviewing the literature on how children's exposures differ from those of adults, it is evident that:

- children are outdoors more hours per day than most adults;
- they exert themselves to a greater degree while they are outside than most adults; and
- they participate in more organized activities than adults.

There are definite health benefits to having children participate in outdoor activities. However, scientific evidence also suggests that air pollution exposures can injure children's lungs and other organs.

Air quality information in the form of health reports and air quality advisories are now a regular part of life in California. One logical step is to reduce strenuous activities during pollution episodes and try to take advantage of those hours when airborne pollutant levels are lower.

At the public level there is a long-standing commitment to improve air quality. When you look at the air pollution levels in California today you can see that a great deal of progress has been made. There has been a cost for this progress. For instance, some products are more expensive. In return, the lower levels of pollutant exposure compared to 20 years ago should decrease the adverse effect of air pollution on the long-term health of our developing children.

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Diesel and Health in America: The Lingering Threat



CLEAN AIR TASK FORCE

Find out about the risks
of breathing diesel exhaust
where you live:

www.catf.us/goto/dieselhealth



CLEAN AIR TASK FORCE

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February 2005

Foreword

Scientists have been examining relationships between air pollution and death and disease for decades but only now are we beginning to understand the impacts of one of the most toxic sources of emissions today – the diesel engine. Diesels churn out a hazardous mix of gaseous and particle pollutants. What's more, diesel exhaust is emitted at ground level – where we breathe it – by trucks and buses around us in traffic, at school and transit bus stops, and by heavy construction or agricultural equipment. Diesel exhaust contains numerous dangerous compounds, ranging from respiratory irritants to carcinogens including a host of air toxics, particulate matter, carbon monoxide and nitrogen oxides.



While scientists have concluded that combustion-related particulate matter from all combustion sources is associated with premature death from heart attacks and cancer, we also are finding that carbon particles from mobile sources may be particularly unhealthy. These particles adsorb other metals and toxic gases produced by diesel engines – such as cancer causing-PAH (polycyclic aromatic hydrocarbons) – onto their surfaces making them even more dangerous. Furthermore, research on personal exposures demonstrates that these small particles easily penetrate our indoor environment where they may be trapped for days when ventilation is poor.

This report presents for the first time estimates of the health toll from diesel vehicle pollution. Using methodology approved by the U.S. Environmental Protection Agency's Science Advisory Board (SAB), the analysis finds that approximately 21,000 people die prematurely each year due to particulate matter pollution from diesels. Other serious adverse health impacts include tens of thousands of heart attacks, asthma attacks, and other respiratory ailments that can lead to days missed at work and at school.

Using more highly time-resolved studies we are increasingly able to understand the inflammation mechanism by which particles can lead to atherosclerosis, heart attacks, strokes and ultimately, untimely deaths. From all we know today, we can confidently say that reducing diesel exhaust in our environment will mean improving public health, and as this report demonstrates, reducing preventable premature deaths. We do not need to wait. Technology is available today that can reduce particulate matter emissions by up to 90 percent. Now is the time to clean up our old trucks, buses, heavy equipment and locomotives to provide a cleaner future for us and our children.

A handwritten signature in black ink, appearing to read 'Howard Frumkin'.

Howard Frumkin, M.D., Dr.P.H., FACP, FACOEM

*Professor and Chair, Department of Environmental and Occupational Health
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Executive Summary

Everyone has experienced it: getting hit right in the face by a cloud of acrid diesel smoke. Perhaps you were standing on a street corner when a bus or truck whizzed by. Or maybe you were standing at a bus stop or stuck behind a dump truck grinding up a hill. But breathing diesel exhaust isn't just unpleasant. It is hazardous to your health. In fact, health research indicates that the portion of the exhaust you can't see may be the most dangerous of all. Asthma attacks, respiratory disease, heart attacks, and even premature death – all of these are among the most serious public health problems linked to emissions from the nation's fleet of diesel vehicles. The good news is that the technology exists right now to clean up emissions from these engines, so that most of the adverse health impacts can be prevented.

Today in the U.S. more than 13 million diesel vehicles help to build our cities and towns, transport our food and goods, and take us to and from work. More than three quarters of all Americans live near intersections, bus stops, highways, bus and truck depots, or construction sites with heavy equipment – all of which are concentrated sources of diesel exhaust. In rural areas, those who live near heavy diesel agricultural equipment suffer their share of exposure to diesel as well.

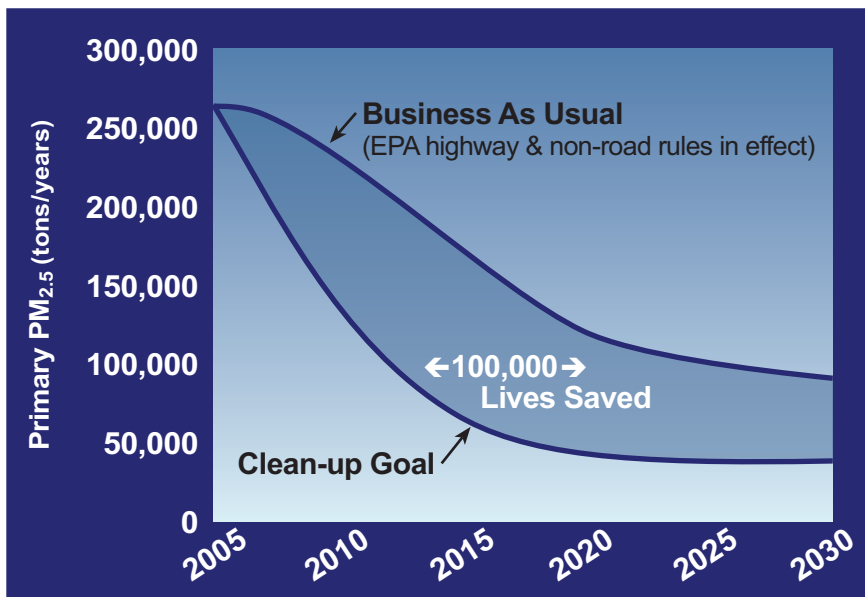
The U.S. Environmental Protection Agency has issued important regulations that will require dramatic reductions in emissions from new diesel vehicles starting in 2007 – but only the new ones. These regulations, to be phased in over the next quarter century, apply only to *new* engines. What about the diesels on the road today? The lifespan of the



average diesel vehicle is nearly 30 years. Many diesels are driven over a million miles. Because of this longevity, we will be left with the legacy of pollution from dirty diesel vehicles for decades to come. That is, *unless* we take action to reduce emissions from vehicles currently on the road. We don't have to wait. Control technologies exist right now that can significantly reduce deadly fine particle emissions from diesel vehicles, in some cases by upwards of 90 percent.

American know-how, witnessed by the success of the manufacturers of engines, control devices, and fuel refiners in developing innovative solutions for reducing diesel exhaust, provides a lifesaving opportunity we can seize today. Pollution from dirty diesels on the road now can be dramatically reduced using a combination of cleaner fuels, retrofit emission controls, rebuilt engines, engine repowerings, and accelerated purchase of new, cleaner

vehicles. Unlike so many other vexing environmental issues, these affordable solutions present a highly unusual opportunity to actually address a major risk to public health and the environment. In fact, we could virtually eliminate this problem if diesel manufacturers, fleet owners, environmentalists, concerned citizens, and government regulators make the commitment to work together.



An Aggressive Program to Reduce Diesel Emissions Could Save About 100,000 Lives between Now and the Year 2030.

What are the health impacts of these dirty diesel vehicles? What benefits will we realize if we act now to clean them up? The Clean Air Task Force commissioned Abt Associates, an highly-respected consulting firm that U.S. EPA and other agencies rely upon to assess the benefits of national air quality policies, to quantify for the first time the health impacts of fine particle air pollution from America's diesel fleet. Using this information, we were able to estimate the expected benefits – in lives saved – from an aggressive but feasible program to clean up dirty diesel buses, trucks, and heavy equipment across the U.S.

This report summarizes the findings of the Abt Associates study. It then reviews the degree to which diesel vehicles increase the level of fine particle pollution in the air we breathe, and recommends reduction measures that will save thousands of lives each year.

Key findings include:

- Reducing diesel fine particle emissions 50 percent by 2010, 75 percent by 2015, and 85 percent by 2020 would save nearly 100,000 lives between now and 2030. These are additional lives saved above and beyond the projected impact of EPA's new engine regulations.
- Fine particle pollution from diesels shortens the lives of nearly 21,000 people each year. This includes almost 3,000 early deaths from lung cancer.
- Tens of thousands of Americans suffer each year from asthma attacks (over 400,000), heart attacks (27,000), and respiratory problems associated with fine particles from diesel vehicles. These illnesses result in thousands of emergency room visits, hospitalizations, and

lost work days. Together with the toll of premature deaths, the health damages from diesel fine particles will total \$139 billion in 2010.

- Nationally, diesel exhaust poses a cancer risk that is 7.5 times higher than the **combined** total cancer risk from all other air toxics.
- In the U.S., the average lifetime nationwide cancer risk due to diesel exhaust is over 350 times greater than the level U.S. EPA considers to be "acceptable" (i.e., one cancer per million persons over 70 years).
- Residents from more than two-thirds of all U.S. counties face a cancer risk from diesel exhaust greater than 100 deaths per million population. People living in eleven urban counties face diesel cancer risks greater than 1,000 in a million – one thousand times the level EPA says is acceptable.
- People who live in metropolitan areas with a high concentration of diesel vehicles and traffic feel their impacts most acutely. The risk of lung cancer from diesel exhaust for people living in urban areas is three times that for those living in rural areas.

The vast majority of the deaths due to dirty diesels could be avoided by an aggressive program over the next 15 years to require cleanup of the nation's existing diesel fleet. Practical, affordable solutions are available that can achieve substantial reductions in diesel risk. The only thing that stands between us and dramatically healthier air is the political will to require these reductions and the funding to make it a reality.

What We Must Do to Protect Public Health from Today's Dirty Diesels.

Although the EPA has mandated the phase-in of cleaner new engines and fuels beginning in 2007 for highway vehicles and heavy equipment, EPA has limited authority to mandate emissions controls on the fleet of existing diesel vehicles. To date, EPA has adopted a "voluntary" approach. Nevertheless, in order to meet the new ambient air quality standards for fine particles, states and cities must require controls to reduce diesel emissions. Diesel cleanup is also an important next step in areas that are having difficulty meeting existing and new ambient air quality standards for ozone such as Houston and Dallas, Texas.

States can enact legislation requiring diesel cleanup as some, such as California and Texas, have already begun to do. States should also consider measures to require early engine retirement and speed fleet turnover. For vehicles like long-haul trucks, ships, and locomotives that are engaged in interstate transport, federal regulations, federal

legislation, or both may be needed. Funding for such initiatives may pose a challenge for public fleets (school buses, transit vehicles, garbage trucks, etc.), so support for expanded state and federal funding to help the cleanup of fleets owned by cash-strapped states and cities will be necessary. Local and state budget writers will need a strong commitment to come up with the necessary appropriations or bonds to fund the local share.

Particle filters combined with the use of Ultra Low Sulfur Diesel (ULSD) fuel have been found to reduce diesel particles and particle-bound toxics from diesel exhaust by up to 90 percent. Under the new engine rules, ULSD will be available for highway vehicles nationwide starting in 2006. It is already available in cities in 21 states. Not all vehicles can be retrofitted with a particle filter, but there are a variety of options available for the cleanup of every vehicle regardless of make or model year.

Cities and states should:

- Establish ambitious goals for reducing risk to their citizens by cleaning up existing diesels;
- Identify priority geographic areas and diesel “hotspots” for immediate attention;
- Adopt a package of options for reducing diesel exhaust including:
 - Retrofits accomplished by replacing mufflers with an optimal mix of filters or oxidation catalysts depending on vehicle age and type;
 - Requiring Ultra Low Sulfur Diesel and cleaner alternative fuels;
 - Closed crankcase ventilation systems to eliminate engine exhaust from penetrating the cabin of vehicles such as school and transit buses;
 - Engine rebuild and replacement requirements;
 - Truck stop electrification programs to give long-haul truckers a way to power their rigs overnight without running their engines;
 - Contract specifications requiring cleanup of trucks and construction equipment used in public works projects.
- Adopt diesel cleanup measures as federally-enforceable requirements in State Implementation Plans (SIPs) for the attainment of the fine particle and ozone air quality standards;
- Create and fund programs, such as California’s “Carl Moyer” and the Texas Emission Reduction Plan (TERP) program, which provide funding for diesel equipment

owners to replace or rebuild high-polluting diesel engines;

- Adopt and enforce anti-idling ordinances and legislation.

The Federal government should:

- Pass legislation providing funding for the cleanup of municipal and state fleet vehicles;
- Explore regulatory options for reducing emissions from existing interstate fleets such as long-haul trucks, shipping, and locomotives;
- Retain and enforce the tighter new engine and cleaner fuel standards for highway and non-road diesels.



Retrofits are effective in reducing particle emissions from heavy equipment. The tractor on the left is retrofitted with a particle emissions control device.

New Findings

While numerous medical studies have linked diesel exhaust to a host of serious adverse health outcomes, no single study has yet quantified the death and disease attributable to diesel across America – until now. Researchers estimate that as many as 60,000 people in the U.S. die prematurely each year because of exposure to fine particles from all sources.¹ And some researchers believe that this figure may even underestimate the total number of particle-related deaths.² A reanalysis of the major particle mortality study in over 150 cities suggests that particles from motor vehicles may be more toxic than average.³

We know that diesel exhaust is a hazardous mixture of gases and particles including carcinogens, mutagens, respiratory irritants or inflammatory agents and other toxins that cause a range of diverse health effects. Diesel particles act like magnets for toxic organic chemicals and metals. The smallest of these particles (ultrafine particles)

can penetrate deep into the lung and enter the bloodstream, carrying with them an array of toxins.⁴ Diesel exhaust can contain 40 hazardous air pollutants as listed by EPA, 15 of which are listed by the International Agency for Research on cancer (IARC) as known, probable or possible human carcinogens.⁵ Thousands of studies also have documented that fine particles are associated with respiratory and cardiovascular diseases and death. Additional studies have documented effects in infants and children such as Sudden Infant Death syndrome (SIDS) and retarded lung development.⁶

Now, for the first time, this report reveals the staggering toll of death and disease from diesel exhaust in our air – and the dramatic benefits of requiring the cleanup of the nation’s existing diesel fleet. Abt Associates, using peer-reviewed, state-of-the-art research methodology employed by U.S. EPA in assessing the national benefits of proposed

National Annual Diesel Fine Particle Health Impacts⁷

Annual Cases in the U.S., 2010

Premature Deaths	21,000
Lung Cancer Deaths	3,000
Hospital Admissions	15,000
Emergency Room Visits for Asthma	15,000
Non-fatal Heart Attacks	27,000
Asthma Attacks	410,000
Chronic Bronchitis	12,000
Work Loss Days	2,400,000
Restricted Activity Days	14,000,000

rules and legislation, finds that nearly 21,000 people will die prematurely in 2010 in the U.S. as a result of exposure to fine particle emissions from mobile diesel sources (i.e., all on-and non-road engines such as highway, construction, rail, and marine engines). The average number of life-years lost by those who die prematurely from exposure to fine particles is 14 years.⁸

The deaths from diesel fine particle pollution equal or exceed the death toll from other causes commonly understood to be major public policy priorities. For instance, drunk driving causes more than 17,000 deaths per year.⁹ There are more than 20,000 homicides in the U.S. each year.¹⁰ Moreover, the approximately 15,000 prema-

Cancer Risk

CATF has calculated the national average lifetime excess cancer risk posed by diesel. We base these estimates on 1999 modeled directly-emitted diesel fine particle concentrations and by applying both the EPA range of individual risk estimates and the California Air Resources Board (CARB) diesel risk factor for lung cancer over the U.S. population.¹⁵ Although EPA has found diesel exhaust to be a “likely” human carcinogen, EPA has not adopted a risk factor but has, instead, provided a range of lung cancer risk.¹⁶ Based on the national average diesel particulate matter concentration, we find average lung cancer risk ranges from 12 to 1210 per million people over a 70-year lifetime using EPA’s range of lung cancer risk.¹⁷ Using the same methodology, CATF finds that, based on the single CARB risk factor, the nationwide average lifetime cancer risk posed by diesel exhaust is over 350 times greater than EPA’s “acceptable” level of one cancer in a million.

For comparison, according to EPA’s 1999 NATA assessment, the combined risk from all other air toxics is

ture deaths per year that could be avoided by achieving a 75 percent diesel-risk-reduction target exceed the 11,000 automobile fatalities avoided each year through the use of safety belts.¹¹

The Abt Associates analysis further shows that hundreds of thousands of Americans suffer from asthma attacks, cardiac problems, and respiratory ailments associated with fine particles from diesels. These health damages result in thousands of respiratory and cardio-pulmonary related hospitalizations and emergency room visits annually as well as hundreds of thousands of lost work days each year. For instance, the study finds that diesel pollution leads to 27,000 heart attacks and 400,000 asthma attacks each year.¹²

You can find the adverse health impacts from diesel for your state, metropolitan area, and county on the web at: www.catf.us/goto/dieselhealth.

The risk from diesel exhaust can be virtually eliminated by the application of emissions control strategies available today. For example, an aggressive but feasible program to reduce diesel particle emissions nationwide 50 percent by 2010, 75 percent by 2015, and 85 percent by 2020 would save about 100,000 lives between now and 2030 – beyond those lives that will be saved under EPA’s new engine regulations.¹³ Indeed, in the year 2000, the State of California set a Diesel Risk Reduction goal of a 75 percent reduction in diesel risk by 2010 and 85 percent by 2020 and the California Air Resources Board over the past few years has begun to issue regulations to achieve it.¹⁴

48 per million.¹⁸ Therefore, diesel exhaust presents a lung cancer risk that is 7.5 times higher than the cancer risk of all other air toxics – **combined!**¹⁹ In addition, CATF has calculated the cancer risk posed by diesel for residents of each U.S. county. Residents of over two-thirds of U.S. counties experience a cancer risk greater than 100 in a million from diesel exhaust. Moreover, residents of eleven urban U.S. counties face a diesel cancer risk equal to 1,000 new cases of cancer in a population of one million.

People who live in metropolitan areas with a high concentration of diesel vehicles and traffic feel their impacts



most acutely. For example, the estimated risk of lung cancer from diesel in metropolitan areas is much higher than in areas with fewer diesels. In the rural counties we estimate a risk of 142 cancers per million based on the CARB unit risk, but three times that rate, 415 cancer per million, in urban counties. Therefore, the risk of lung cancer for people living in urban areas is three times that for those living in rural areas.²⁰

The Economic Toll of Health Effects

Respiratory distress severe enough to require a trip to the emergency room can be a terrifying experience for patients and their families. Victims of asthma attacks say that during an attack they wonder if and when their next breath will come. In addition to its serious physical and emotional costs, air pollution also takes a large monetary toll. Emergency room and hospital treatment costs can cripple a family financially, with the average stay for a respiratory ailment lasting about a week.²¹ Bouts of respiratory illness and asthma attacks mean lost workdays and lost productivity. Although life is priceless, the government often monetizes loss of life when setting policies related to health and environmental protection. Using accepted valuation methodology employed by EPA in recent regulatory impact analyses, Abt Associates finds that the total monetized cost of the U.S. diesel fleet's fine particle pollution is a staggering \$139 billion in 2010.

You can find the community cancer risk from diesel for your state, metropolitan area, and county on the web at: www.catf.us/goto/dieselhealth. Personal risk varies with location and lifestyle. For example, if you live near a bus, truck, or train terminal, highway, construction site, or warehouse, or commute to work on congested roadways, your exposure may be higher than indicated by the county-wide average estimated here.



Pollution from motor vehicles, including diesels, can obscure city vistas such as illustrated in this split view of Dallas, Texas.

State and Metropolitan Area Findings

Using modeled concentrations of directly-emitted diesel fine particles throughout the lower 48 states, Abt Associates developed health impact estimates for every state and major metropolitan area in 1999, the latest year for which EPA's best emissions inventory for diesel fine particles is available.²² Not surprisingly, heavily populated states with concentrated urban areas and significant diesel traffic fared the worst. Conversely, rural areas with a lower concentration of diesel vehicles fared much better. Similarly, metropolitan areas with large populations and heavy concentrations of diesel

vehicles feel the impacts of diesel pollution most acutely.²³ In such large metropolitan areas, many hundreds of lives are shortened every year. However, because these state and metropolitan-area health estimates include only fine particles that are **directly emitted** from diesels – excluding any secondarily-formed particles from diesel emissions of nitrogen or sulfur oxides – they significantly understate the total adverse impact of diesel-related particles on public health.²⁴ Moreover, these estimates exclude any health impacts due to diesel's contribution to ozone smog.



■ States: Health Impacts from Diesel Fine Particles (1999)

Rank	State	Deaths	Cancer Deaths	Heart Attacks	Asthma Attacks	Chronic Bronchitis	Work Loss Days	Restricted Activity Days
1	New York	2,332	169	3,692	51,251	1,499	318,532	1,827,525
2	California	1,784	144	2,263	49,499	1,356	292,622	1,683,642
3	Pennsylvania	1,170	103	1,660	19,021	575	110,404	643,926
4	New Jersey	880	77	1,382	17,926	535	107,364	620,975
5	Texas	879	83	1,070	25,348	664	148,394	854,045
6	Illinois	878	76	1,193	19,162	539	112,205	649,445
7	Florida	805	77	980	13,926	438	81,462	474,601
8	Ohio	769	72	1,002	14,464	422	83,963	489,355
9	Michigan	484	43	667	10,511	299	61,109	355,260
10	Massachusetts	475	43	727	9,925	289	61,842	355,473
11	Maryland	409	39	454	8,418	246	50,275	291,675
12	Indiana	369	36	483	7,372	209	42,730	249,056
13	Georgia	329	29	377	8,514	235	51,808	298,317
14	Louisiana	324	32	339	7,131	188	40,740	236,444
15	Missouri	305	28	377	5,435	157	31,476	183,033
16	North Carolina	301	29	347	6,518	189	39,589	229,591
17	Tennessee	269	26	283	5,169	150	30,870	179,656
18	Washington	248	23	308	6,201	181	37,787	218,889
19	Virginia	248	24	303	5,991	174	36,963	214,083
20	Wisconsin	226	18	320	4,789	137	27,923	162,404
21	Arizona	214	19	268	5,215	144	30,053	173,721
22	Connecticut	206	18	340	4,091	125	24,097	140,140
23	Kentucky	198	22	213	3,764	110	22,385	130,403
24	Minnesota	193	15	291	4,713	134	27,979	161,954
25	Alabama	175	16	184	3,200	92	18,646	108,961

■ Metro Areas: Health Impacts from Diesel Fine Particles (1999)

Metropolitan Area	Rank	Deaths	Cancer Deaths	Heart Attacks	Metropolitan Area	Rank	Deaths	Cancer Deaths	Heart Attacks
New York, NY	1	2,729	202	4,342	San Diego, CA	21	150	13	191
Los Angeles, CA	2	918	72	1,193	Portland, OR	22	140	13	157
Chicago, IL	3	755	65	1,021	Minneapolis, MN	23	133	11	205
Philadelphia, PA	4	727	69	990	New Orleans, LA	24	128	13	131
Boston, MA	5	391	36	602	Riverside, CA	25	123	10	142
Houston, TX	6	356	35	444	Baton Rouge, LA	26	102	10	109
San Francisco, CA	7	291	23	358	Milwaukee, WI	27	95	8	130
Miami, FL	8	288	23	358	Columbus, OH	28	84	9	113
Baltimore, MD	9	285	28	290	Indianapolis, IN	29	82	8	107
Detroit, MI	10	279	25	378	Louisville, KY	30	82	9	91
Pittsburgh, PA	11	237	21	340	Memphis, TN	31	81	7	79
Washington, DC	12	226	19	302	Kansas City, MO	32	79	8	109
St. Louis, MO	13	217	20	263	Providence, RI	33	76	7	119
Dallas, TX	14	205	19	258	Bridgeport, CT	34	69	6	121
Atlanta, GA	15	199	17	239	Beaumont, TX	35	65	7	65
Tampa, FL	16	185	18	210	Orlando, FL	36	65	7	85
Phoenix, AZ	17	183	16	230	Allentown, PA	37	65	5	101
Cleveland, OH	18	180	15	232	Hartford, CT	38	63	5	100
Cincinnati, OH	19	171	18	219	Las Vegas, NV	39	62	7	71
Seattle, WA	20	165	15	208	Virginia Beach, VA	40	62	6	65

■ Metro Areas: Per Capita Impacts from Diesel Fine Particles (1999)

Rank Based on Mortality Risk	MSA	Deaths per 100,000 Adults	Heart Attacks per 100,000 Adults	Cancer Risk per Million	Rank Based on Mortality Risk	MSA	Deaths per 100,000 Adults	Heart Attacks per 100,000 Adults	Cancer Risk per Million
1	Beaumont, TX	29	29	865	26	Portland, OR	13	14	488
2	Baton Rouge, LA	27	29	992	27	Bridgeport, CT	13	22	494
3	New York, NY	25	40	959	28	Harrisburg, PA	12	19	412
4	Philadelphia, PA	22	29	658	29	York, PA	12	21	460
5	Trenton, NJ	20	31	699	30	Wheeling, WV	12	14	309
6	Baltimore, MD	19	19	584	31	Lebanon, PA	12	19	373
7	Huntington, WV	18	18	477	32	Evansville, IN	12	15	368
8	New Orleans, LA	17	18	889	33	Memphis, TN	12	12	397
9	Pittsburgh, PA	15	22	415	34	Savannah, GA	12	13	376
10	Cincinnati, OH	15	19	504	35	Dayton, OH	12	16	389
11	Boston, MA	15	23	563	36	Vineland, NJ	12	17	365
12	Chicago, IL	15	20	539	37	Tampa, FL	12	14	365
13	Mobile, AL	14	15	435	38	Louisville, KY	12	13	384
14	Longview, WA	14	15	441	39	Sandusky, OH	12	15	345
15	Houston, TX	14	18	691	40	Kankakee, IL	12	14	336
16	Allentown, PA	14	22	450	41	San Francisco, CA	12	14	480
17	Cleveland, OH	14	18	416	42	Muncie, IN	11	14	327
18	Toledo, OH	14	17	423	43	Duluth, MN	11	14	308
19	Los Angeles, CA	14	18	633	44	Michigan City, IN	11	15	370
20	Lancaster, PA	14	22	463	45	Salt Lake City, UT	11	14	533
21	Scranton, PA	14	18	319	46	New Haven, CT	11	18	365
22	St. Louis, MO	14	17	405	47	Steubenville, OH	11	13	279
23	Reading, PA	14	21	428	48	Milwaukee, WI	11	15	376
24	Lake Charles, LA	14	14	437	49	South Bend, IN	11	15	342
25	Springfield, OH	13	16	356	50	Detroit, MI	11	15	381

The Dirty Diesel Legacy

Since 1997, the U.S. EPA has promulgated major regulations that impose stringent emissions controls on new diesel vehicles, requiring tight emission standards and cleaner diesel fuel. These standards go into effect in 2007 and phase in over the next few decades. For example, the table below illustrates the progressively tighter standards

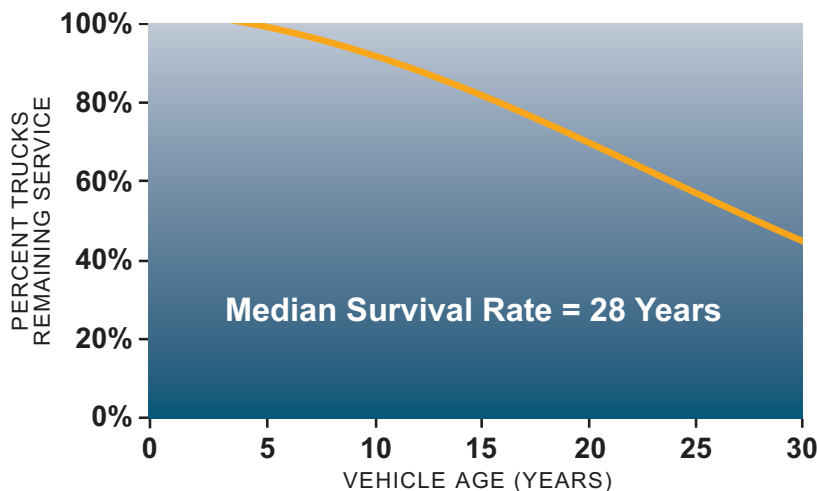
EPA Standards for New Trucks and Buses (g/bhphr)²⁵

YEAR	NO _x	PM _{2.5}
1984	10.7	0.60
1991	5.0	0.25
1998	4.0	0.10
2004	2.0	0.10
2007	0.2	0.01

for particulate matter and nitrogen oxides from trucks and buses over the next few years.

However, the emission rates of the diesel engines on the road and in use on construction sites and farms today are not affected by these rules. Considering that according to the U.S. Department of Energy the median lifetime for a heavy truck is nearly 30 years,²⁶ and a typical heavy duty diesel engine may power a truck for as long as one and a half million miles,²⁷ these vehicles will continue to pollute our air at unnecessarily high levels for years to come **unless** we act to clean them up now.





Median Heavy Truck Lifetime is Nearly 30 Years²⁸

The Most Widespread Air Pollution Risk in the U.S.

There are few other sources of widespread pollution in our environment that rival diesel exhaust as an airborne toxin. America's 13 million diesel engines release a host of harmful substances including fine particles, ozone smog-forming nitrogen oxides, carbon monoxide, and a variety of toxic metals and organic gases such as formaldehyde, acrolein, and polycyclic aromatic hydrocarbons (PAH).²⁹ In this report we focus on the respiratory, cardiovascular, and cancer effects of diesel fine particles only.³⁰

Fine Particles are Linked to Heart Attacks, Asthma Attacks, and Stunted Lung Growth.

Fine particles have been linked to a wide variety of serious health impacts, from upper and lower respiratory ailments, such as asthma attacks and possible asthma onset, to

heart attacks, stroke, and premature death, including crib death in children.³¹ How risky is breathing air polluted with particles? A study published in the Journal of the American Medical Association found that living in the most polluted U.S. cities poses a risk similar to living with a smoker.³² Based on thousands of studies compiled by EPA, federal health



How Particulate Matter Kills

Fine particles, known as "PM_{2.5}", are particles less than 2.5 microns in diameter or 1/100th the width of a human hair, so small that they are often invisible. They can be deposited deep in the lung where they can affect both the respiratory and cardiovascular systems. Researchers believe that many deaths caused by particulate matter are related to cardiovascular illness. Fine particles aggravate cardiovascular disease and trigger heart attacks by invading the bloodstream and initiating an inflammatory response, disrupting heart rate and increasing blood clotting. In a recent experimental study, diesel particles caused blood clots providing "a plausible explanation for the increase in cardiovascular morbidity and mortality accompanying urban air pollution."³³

standards were established for fine particles in 1997.³⁴

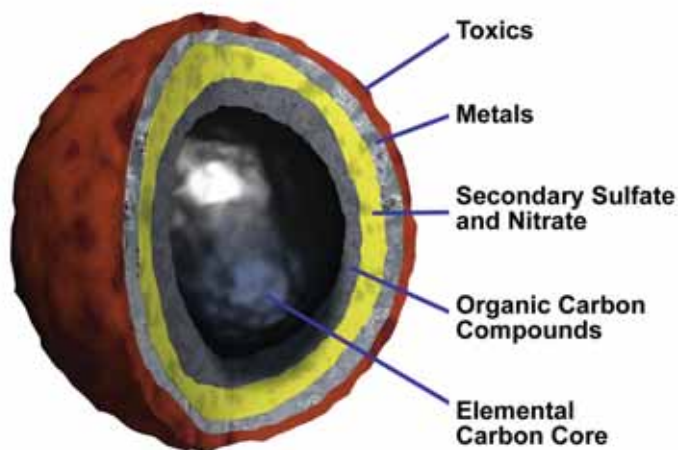
Health researchers have recently described serious health impacts of fine particles, including:

- Abnormal heart rhythms and heart attacks and atherosclerosis;³⁵
- Increased incidence of stroke;³⁶
- Permanent respiratory damage, characterized by fibrosis causing obstruction to airflow;³⁷
- Chronic adverse effects on lung development resulting in deficits in lung function.³⁸

Diesel Exhaust is a Likely Carcinogen that also Impairs Immune, Reproductive, and Nervous Systems.

In 1998, the Scientific Review Panel for the California Air Resources Board reviewed diesel exhaust as a toxic air contaminant and set a lifetime unit cancer risk from diesel particles at 3 in 10,000 persons for each microgram of annual average diesel exposure.³⁹ This is equivalent to 300 in a million excess lung cancers. In May 2002, EPA issued its Health Assessment for Diesel Exhaust which found diesel particulate matter to be a “likely” carcinogen. EPA did not settle on a unit risk factor but recommended a lifetime cancer risk range from 1 in 1,000 to 1 in 100,000.⁴⁰ The California unit risk falls within this range.⁴¹

Diesel particles are carbon at their core with toxics and carcinogenic substances attached to their surfaces.



Applying California’s cancer unit risk for diesel particulate matter to the national average concentration of directly-emitted diesel fine particles in 1999, results in a conservative estimate of 1,530 excess cases of lung cancer per year for 2005.⁴² An American Cancer Society study of 150 metropolitan areas across the U.S published in 2002 supports the particulate matter cancer link.⁴³

Other effects include:

- **Immune System Effects** – Diesel exposure is associated with numerous immune system responses in humans and animals culminating in increased allergic inflammatory responses and suppression of infection-fighting ability. These effects include disruption of chemical signals and production of antibodies, and an alteration in mobilization of infection-fighting cells.⁴⁴
- **Reproductive, Developmental, and Endocrine Effects** – Diesel emissions have also been associated with reproductive, developmental and endocrine effects in animals. Specifically, diesel exposure has been associated in animals with decreased sperm production,⁴⁵ masculinization of rat fetuses,⁴⁶ changes in fetal development (thymus,⁴⁷ bone⁴⁸ and nervous system⁴⁹) and endocrine disruption, i.e., production of adrenal and reproductive hormones.⁵⁰
- **Nervous System Effects** – In addition to animal studies that have shown neurodevelopmental effects, a human study of railroad workers suggested that diesel exposure may have caused serious permanent impairment to the central nervous system.⁵¹

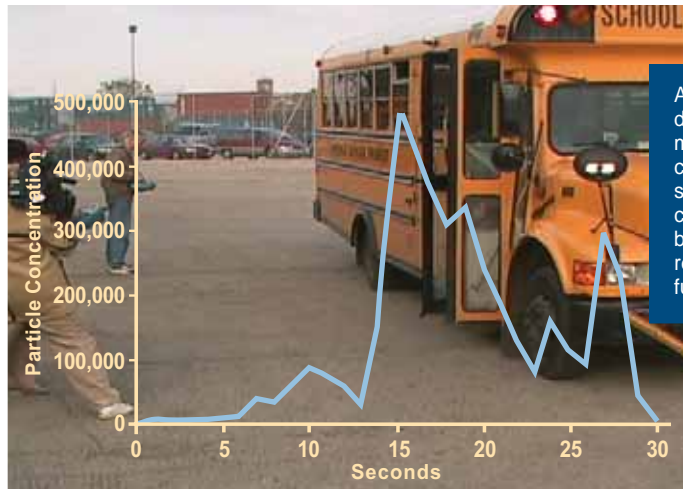
Cancer-causing Pollutants in Diesel Exhaust

Pollutant	Diesel Emissions % of all Mobile 1996 ⁵²	EPA Carcinogen Status	Cancer Risk (per million/microgram in 70-yr life)
Formaldehyde	52%	probable	1 in a million
Acetaldehyde	59%	probable	1 in a million
Butadiene	8%	probable	2 in a million
Acrolein	50%	possible	n/a
Benzene	5%	known	2-8 in a million
Diesel Particulate Matter	77%	probable ⁵³	EPA: 12 to 1210 in a million; CARB: 300 in a million ⁵⁴

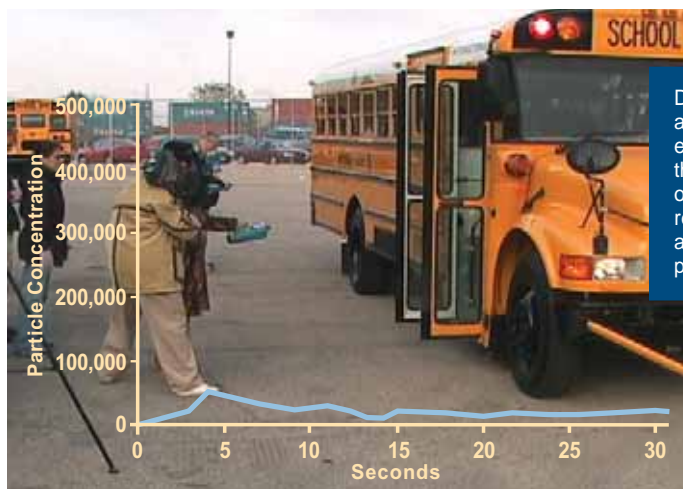
Children and Seniors are at Greatest Risk

Health researchers believe that children are more susceptible than adults to the adverse health effects of air pollution for a variety of reasons.⁵⁵ For example, children are more active than adults and therefore breathe more rapidly. Children also have more lung surface area compared to their body weight and therefore they inhale more air pound-for-pound than adults do. Compared to adults, children also have higher lung volume to body size, higher respiration rates, and spend more active time in the polluted outdoor environment. Fine particles have been linked in medical studies to serious health impacts in children such as slowed lung function growth, increased emergency room visits, increased incidences of asthma and bronchitis, and crib death. Furthermore, proximity to traffic has been linked to increased prevalence of asthma respiratory infections and allergic symptoms and asthma hospitalizations in children.⁵⁶

Seniors are another important population at risk. Studies of the impacts of fine particles on seniors in Boston and Baltimore suggest that changes in their heart rhythms and control mechanisms occur when particle levels rise. In Phoenix, daily mortality increased in



At a bus stop, diesel particles measured at the curb spike sharply from a conventional bus running on regular diesel fuel.



Diesel particles are virtually eliminated when the bus is run on ULSD and retrofitted with a diesel particulate filter.

Children Exposed on School Buses

CATF Study: Cabin particulate matter eliminated with retrofit emissions controls.

Twenty four million students ride to school every day on yellow school buses that travel a total of four billion miles a year. While riding on a school bus is the safest way a student can travel to school,⁵⁷ children may be exposed to harmful pollutants, a concern since students spend an average of an hour and a half a day on school buses.⁵⁸ A recent study undertaken by Clean Air Task Force in cooperation with Purdue University investigated cabin air quality on school buses in three cities (Chicago, IL; Atlanta, GA; and Ann Arbor MI). The study found that particulate matter routinely entered the bus cabin from the tailpipe and the engine through the open front door. At some stops, particulate matter in the bus

cabin exceeded levels in the outdoor air by as much as ten times. While idling or lined up in a schoolyard, rapid buildup of particulate matter in the buses also occurred. Most importantly, retrofit emissions controls worked: installation of a diesel particulate filter and the use of Ultra Low Sulfur Diesel (ULSD) fuel and a closed crankcase filtration device eliminated fine particles, ultrafine particles, black carbon and particle-bound PAH in the bus cabin. A closed crankcase filtration system by itself demonstrated major benefits and can provide immediate and low cost reductions in particulate matter levels on school buses. For a comprehensive report: www.catf.us/goto/schoolbusreport

seniors with increased levels of elemental and organic carbon (typical of diesels and other motor vehicles) and fine particles. Collectively, these studies demonstrate that

elevated fine particle levels put the elderly at risk and suggest a possible mechanistic link between fine particles and cardiovascular disease mortality.⁵⁹

Today's Dirty Diesels

- **“On-road” or highway diesels** include many types of vehicles, such as municipal and commercial trucks and buses. Heavy duty highway diesels range from 8,500 lbs to those exceeding 60,000 lbs, such as 18-wheelers. Of the seven million diesels on the road today, 400,000 are school buses and 70,000 are transit buses. Highway diesels released 100,000 tons of directly-emitted fine particles in 2002, about one third of the total from diesels. Highway diesels also released 3.4 million tons of nitrogen oxides (NO_x) in 2002, which accounted for 16 percent of all NO_x emissions and half of all diesel NO_x emissions in the U.S.⁶⁰

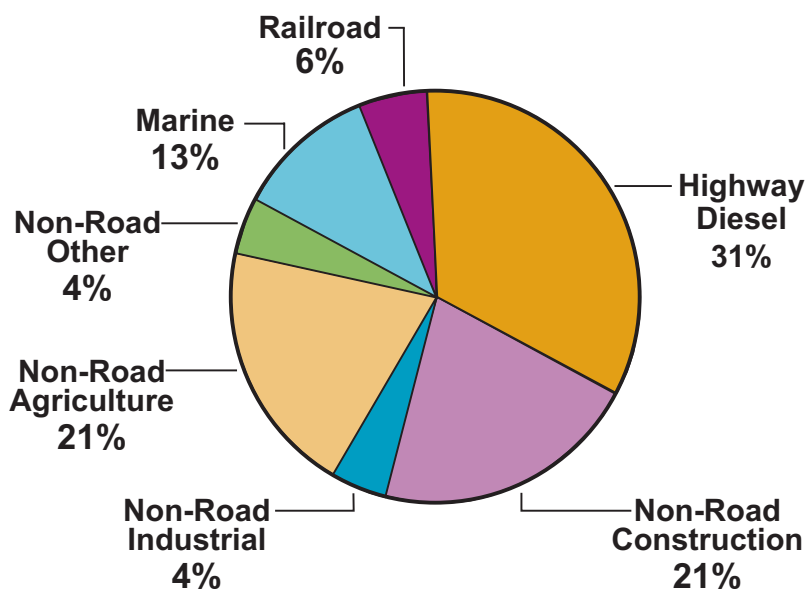


- **“Non-road” diesel engines and equipment** do not typically travel on roads or highways. There were approximately six million non-road diesel engines in service in 2003. Examples of these non-road diesels include construction equipment such as excavators, mining equipment and agricultural machinery. In 2002, 155,000 tons or half of all the fine particles directly emitted from diesels came from non-road engines. Non-road diesels also released 1.6 million tons of NO_x, 8 percent of all NO_x emissions and one quarter of all diesel NO_x emissions in the U.S. in 2002.⁶¹

- **Marine and river diesel** emissions are dominated by large commercial ships polluting our largest ocean and river port cities. Efforts to control pollution from shipping have focused on NO_x, although these engines also emit substantial quantities of fine particles. In 2002 marine diesel released 40,000 tons of directly-emitted fine particles, 13 percent of all diesel fine particles in the U.S. Marine diesels in the U.S. produced one million tons of diesel NO_x in 2002, 5 percent of all U.S. NO_x emissions and 14 percent of all diesel NO_x emissions.⁶²



- **Locomotive diesels** account for a significant fraction of mobile source emissions in the U.S. today. In many areas, diesel trains travel through and pollute core urban and industrial areas. Diesel locomotives released 20,000 tons of directly-emitted diesel fine particles (six percent of all diesel fine particles) and 900,000 tons NO_x (13 percent of diesel NO_x). Diesel locomotives typically have a useful life of 40 years and are commonly rebuilt 5-10 times during their long service lives. For this reason, cleaning up today's locomotives is an important priority.⁶³



Sources of Directly-Emitted Mobile Diesel Fine Particles

Source: EPA (2004)

Diesel “Hotspots”

Diesel Exhaust is Concentrated Near Roadways and Intersections.

Unlike industrial smokestack emissions, diesel typically is emitted at ground-level in places of concentrated population in our communities along busy streets and at our places of work. We often breathe diesel exhaust where it is fresh and most toxic. While air quality modeling, such as reported in our study, estimates average exposures in a community, your individual exposure may be much greater or smaller depending on a variety of factors. For example, the distance from where you live to major roadways and the nature of your commute to work may play a role.

Exposure to diesel exhaust is highest for those who:

- **Operate or work around diesel engines** – Occupational exposures to diesel are among the highest and have been associated with increased incidence of cancer. Furthermore, a study of diesel mechanics, train crewmen, and electricians working in a closed space near diesel generators suggests that diesel exposure may have caused both airway obstruction and serious impairment to the central nervous system. The report concludes that “impaired crews may be unable to operate trains safely.”⁶⁴
- **Live or work near areas where diesel emissions are concentrated** – Ambient diesel levels are highest near highways, busy roadways, bus depots, construction sites, railroad yards, ports and inland waterways with diesel boat traffic, major bridges, tunnels, or freight warehouses. People who live or work near these



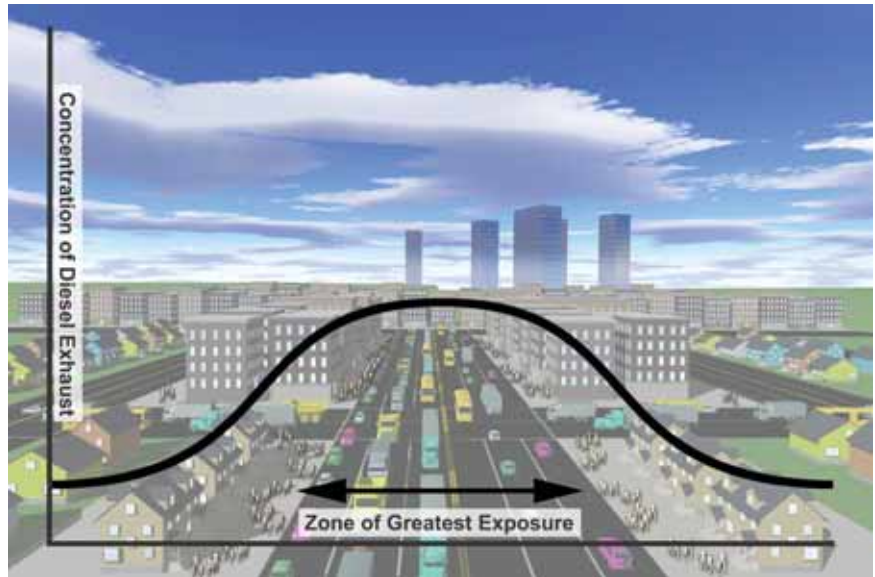
facilities face the greatest risk. Numerous recent medical studies have linked roadway proximity and traffic pollution to disease, asthma hospitalizations, and shortened life expectancy.⁶⁵ For example, a 2004 study in Ontario, Canada found increased risk of mortality from heart and lung disease in people living within 100 meters of a roadway.⁶⁶ New York City studies demonstrate that diesel trucks create air toxics hot spots at crossings, bus stops, and bus depots.⁶⁷ Rail yards can be diesel hotspots as well. For example, one study found elevated risk levels – up to 500 in a million – adjacent to a California rail yard.⁶⁸ Another study found elevated cancer risk for persons living near a ferry port.⁶⁹

- **Regularly ride on school or transit buses, or commuter trains** – Children are exposed to elevated levels of diesel as a result of the buildup of diesel exhaust inside school buses – especially with windows closed.⁷⁰ Diesel exhaust levels on commuter trains and

People living and working near concentrated diesel emissions such as busy roadways have the greatest exposure to diesel exhaust.

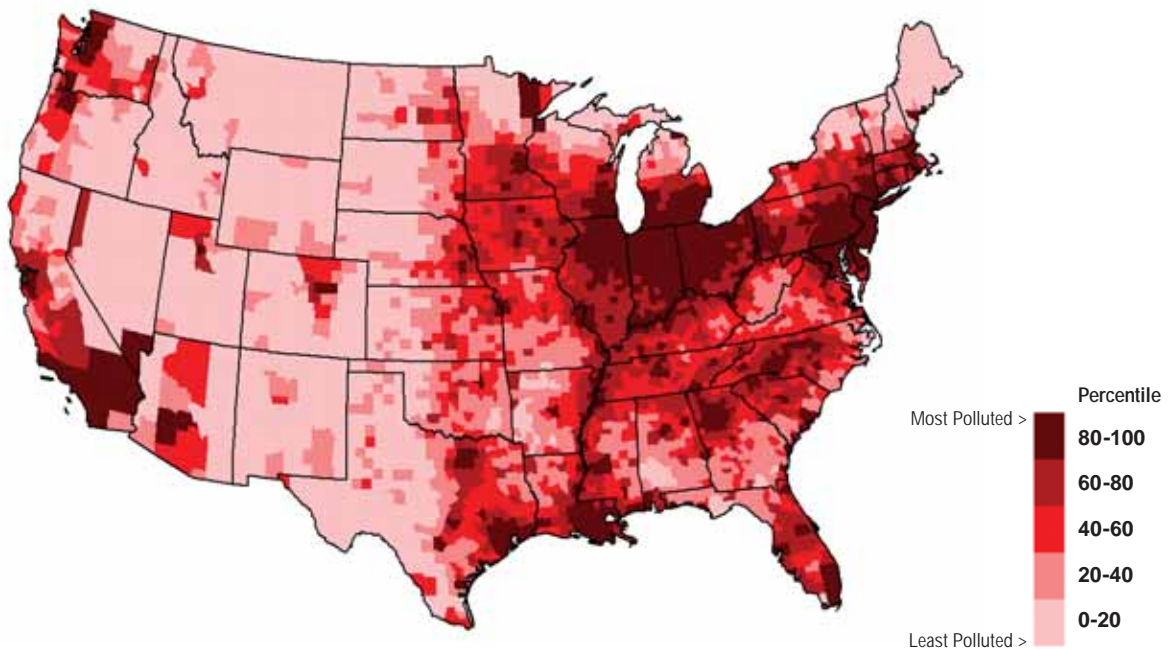
station platforms may also be high.⁷¹

- Commuter daily in heavy traffic** – Commuters are exposed to some of the highest diesel emissions in their cars due to pollutants released from trucks and buses on the road with them. Car occupants riding behind a diesel bus, for example, can experience extremely high levels of dangerous fine particles. Researchers in Los Angeles measured high fine particle levels (130 ug/m³) behind an urban transit bus making numerous stops.⁷² Exposures to drivers can have serious effects: a 2004 study suggests that young male state troopers experienced cardiac inflammation and heart rhythm changes from in-vehicle exposure to fine particles.⁷³



Diesel exhaust from trucks and buses can be found in places we don't expect. For example it can be trapped in "urban canyons" and penetrate buildings through HVAC systems.

Exposure to diesel exhaust is also an Environmental Justice issue. Concentration of minority and low-income populations are more likely to be found in cities near diesel sources. Because these neighborhoods are exposed to some of the highest diesel exhaust levels, residents are certain to experience disproportionate health impacts.



Directly-Emitted Diesel Fine Particle Concentrations by County in the U.S. (1999)

A Solution Within Our Reach

Diesel Fine Particles Can Be Virtually Eliminated by Emission Controls Available Today.

Virtually all of the health risk posed by diesel exhaust can be eliminated through the application of emissions control strategies available today. For example, an aggressive but feasible program to reduce diesel particle emissions nationwide 50 percent by 2010, 75 percent by 2015, and 85 percent by 2020 would save about 100,000 lives between now and 2030 – beyond those lives that will be saved under EPA’s new engine regulations.⁷⁴ Adopting this

“Retrofit, Rebuild, Replace”

A variety of practical strategies exist to reduce diesel particle levels in America: tailpipe retrofits, clean fuels, closed crankcase filtration systems, engine rebuild and replacement requirements, emission specifications for vehicles used in public works contracts, anti-idling ordinances and legislation, truck stop electrification programs, aggressive fleet turnover policies, and more.

The most cost-effective approach to reducing diesel exhaust is likely in many cases to be the direct application of retrofit technology. Although the purchase of new, much cleaner vehicles will remain an important remedial strategy, the replacement of the entire diesel fleet is an expensive proposition that will have to be phased in over time. What’s more, we can meet the challenge of reducing fine particles and related air toxics without replacing all vehicles right now. Current technology can easily remove particles from diesel exhaust. Retrofits that eliminate over 90 percent of fine particles from a heavy duty diesel bus engine typically cost \$3,000-\$7,500. This is a small expenditure when compared to the typical \$60,000-75,000 price tag for a new school bus or \$300,000 for a transit bus.⁷⁷

Retrofits are available from many engine manufacturers. They generally are easy to install especially on highway vehicles. Nonetheless, it is important to point out that retrofits are not a “one size fits all” proposition. Retrofitting a fleet calls for careful planning and, often, a mix of strategies that will depend on the make and model year of the engines being retrofitted and funds available. For example, some heavy-duty engines lack modern electronic engine controls and are therefore too old for some retrofit devices. Other diesel equipment simply does not have space for retrofit installation. Duty cycle is an important consideration too. Some engines do not run constantly which means that catalytic retrofit devices requiring consistent high engine temperatures do not operate as efficiently. Furthermore, some engines release

as a national goal would help states and municipalities set milestones for improvement and would be consistent with EPA’s recently announced goal of retrofitting the entire U.S. fleet of diesel vehicles by 2015.⁷⁵ Indeed, California has already set a Diesel Risk Reduction goal of 75 percent 2010 and 85 percent by 2020. Over the last few years the California Air Resources Board has begun to issue regulations to achieve these goals.⁷⁶



Installing a diesel particulate filter (DPF) in this Atlanta school bus simply required removal and replacement of the muffler and tailpipe.



pollution from crankcase ventilation in addition to the tailpipe. This calls for additional strategies. For some vehicles and model years, replacement may be the best option. As a result, fleets will need to develop individualized strategies that optimize emission reduction from their vehicles and equipment. Fortunately, this is not hard to do.

Catalyzed diesel particulate matter filters (DPF) can reduce emissions of fine particles and adsorbed air toxics by over 90 percent. DPFs have been used in thousands of on- and non-road diesel applications. Diesel oxidation catalysts (DOCs) represent a less expensive albeit less effective option. They are smaller and therefore easier to install. EPA has verified that they can reduce total particulate matter emissions by 10-30 percent. Like the DPF, the DOC is also attached to the exhaust system. Installing one on a diesel truck or bus costs about \$1,000. DOCs may be appropriate for vehicles built before 1995 that lack electronic controls and for construction equipment where there is inadequate space for a DPF to be installed. DOCs have been installed in more than 1.5 million trucks in the U.S.⁷⁸

Low Sulfur Diesel Fuels Are Requisite for Effective Retrofit Controls.

Diesel particulate filters require low sulfur fuels because sulfur in the fuel can foul the emission control device. Unfortunately, low sulfur fuels are not available everywhere in the U.S. today (see <http://www.epa.gov/otaq/retrofit/fuelsmap.htm> for the current fuel availability map). Where ULSD is available, decision makers should consider requiring installation of filters where possible. Federal regulations have established diesel fuel and additive formulation requirements for on-road vehicles, limiting fuel sulfur content to 15 ppm nationwide beginning in 2006 for use with 2007 highway vehicles. Starting in 2010, non-road equipment will be required to use ULSD.

Biodiesel is another potential low-sulfur fuel choice that



Ultra low sulfur diesel fuel will be available nationwide mid-2006.

can achieve modest reductions in emissions when used as a blend, or higher reductions when used at 100 percent. Biodiesel is an alternative diesel fuel made from either animal fats or plants such as soybeans.

Cleaning up All School Buses Within a Decade

With today's emissions controls, students need not be exposed to diesel exhaust while riding to school. EPA in the summer of 2004 announced the goal of retrofitting all existing school buses with pollution controls within a decade.⁷⁹ Funding retrofits and cleaner fuel presents the greatest obstacle facing school districts. To achieve this goal, adequate funds must be appropriated by states and the federal government.



Recommendations

Cities and States Must Act to Reduce Diesel.

The fine particle pollution problem is so widespread in the U.S. about one quarter of the U.S. population resides in areas that violate the standard. EPA recently formally designated over 200 counties in "nonattainment" with the annual fine particle standard.⁸⁰ Countless additional commuters may also spend significant time in areas exceeding the standard where they work. But the rest of the country is not safe from the risk posed by diesel particles – science tells us that particle-related health impacts don't stop once the standard is achieved. Health research has shown that there are adverse health impacts from particles even at very low concentrations.⁸¹

Cities and states that have been designated as "nonattainment" must act now to achieve meaningful reductions in fine particles. For those areas, state implementation plans must be developed and presented to EPA

for approval within three years. Controls must then be implemented and air quality standards achieved by 2010. For this reason, states and cities must start now to determine how to achieve substantial emissions reductions. With rules to reduce particles from power plants pending at EPA and expected to be finalized in the near future, diesel emissions will become the largest remaining share of the problem and the most cost-effective solution, one that largely is within the control of states and municipalities.



Cities should adopt and enforce anti-idling ordinances.

MA TURNPIKE AUTHORITY

Cities and states should:

- Establish ambitious goals for reducing risk to their citizens by cleaning up existing diesels;
- Identify priority geographic areas and diesel “hotspots” for immediate attention;
- Adopt a package of options for reducing diesel exhaust including:
 - Retrofits accomplished by replacing mufflers with an optimal mix of filters or oxidation catalysts depending on vehicle age and type;
 - Requiring Ultra Low Sulfur Diesel and cleaner alternative fuels;
 - Closed crankcase ventilation systems to eliminate engine exhaust from penetrating the cabins of school and transit buses;
 - Engine rebuild and replacement requirements;
 - Truck stop electrification programs to give long-haul truckers a way to power their rigs overnight without running their engines;
 - Contract specifications requiring cleanup of trucks and construction equipment used in public works projects.
- Adopt diesel cleanup measures as federally-enforceable requirements in State Implementation Plans (SIPs) for the attainment of the fine particle and ozone air quality standards;
- Create and fund programs to provide money for diesel equipment owners to replace or rebuild high-polluting diesel engines;
- Adopt and enforce anti-idling ordinances and legislation.

To meet this challenge, several states and cities have begun to take action. California continues to lead the way in reducing diesel emissions: adopting stricter fine particle air quality standards, developing a statewide diesel risk reduction plan, and establishing a state program to clean up on- and non-road diesel engines ranging from garbage trucks to stationary generators.⁸² When completed, the California program will regulate emissions from all existing diesels within its jurisdiction.

Washington Must Support States

States and cities cannot meet the challenge of diesel pollution alone. U.S. EPA has recognized the dangers and societal costs of diesel exhaust and set tighter emission standards for new highway and non-road diesel engines and mandated the availability beginning in 2006 of Ultra Low Sulfur Diesel (ULSD) fuel nationwide. These requirements must be retained with no backsliding. In addition, EPA has set a national goal of cleaning up all of America’s



Trucks parked at New York Thruway rest area shut off their engines and plug into IdleAire facility for heat and electricity.

In New York, over 120,000 kids now ride a school bus that has had a retrofit kit installed to reduce diesel emissions. Under city and state law all New York City-sponsored construction projects are required to use ULSD and all heavy equipment engines at the sites must be retrofitted. Likewise, Seattle, King County, and the State of Washington have made a solid start on diesel cleanup from on- and non-road vehicles, and ships including a commitment to retrofit up to 8,000 school buses using local, state, federal, and SEP monies and buy up to 250 new diesel/electric hybrid buses. Other cities also have made a start.⁸³

California and Texas have created funds – the “Carl Moyer” program in California and the Texas Emission Reduction Program (TERP) – to provide funding for diesel equipment owners to replace or rebuild high-polluting diesel engines.



NEW FLYER

Some cities are choosing Diesel Electric Hybrid buses as an alternative to conventional diesel buses.

existing diesels by 2015 and has established a voluntary retrofit program to begin to meet it.⁸⁴ However, this challenge will only be met with an aggressive set of policies and adequate funding to ensure the goal can be accomplished.

Many states do not have the resources to clean up state and municipally-owned vehicles. They will need the support of the federal government to achieve EPA’s goal.

Federal action may also be needed to clean up transient diesel vehicles, including long-haul trucks, marine diesel shipping in U.S. ports, and locomotives that typically travel from city to city dispersing their emissions along travel corridors. Because the Clean Air Act contains limited authority for EPA to establish national diesel retrofit rules, federal legislation will ultimately be needed to establish federal requirements and funding for a national retrofit program for all diesel engines as well as these interstate diesels.

The Federal government should:

- Pass legislation providing funding for the cleanup of municipal and state fleet vehicles;
- Explore regulatory options for reducing emissions from existing interstate fleets such as long-haul trucks, shipping, and locomotives;
- Retain and enforce the tighter new engine and cleaner fuel standards for highway and non-road diesels.

Endnotes

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- 12 This analysis is based on methodology approved by U.S. EPA's Science Advisory Board and used by EPA in the Regulatory Impact Analysis (RIA) of the non-road rule. EPA Final Regulatory Impact Analysis, "Control of Emissions from Nonroad Diesel Engines," EPA420-R-04-007. (May 2004) http://www.epa.gov/nonroad-diesel/2004fr/420r_04007.pdf. It begins with EPA emissions inventory data, models the dispersion of those emissions using the Regional Emissions Modeling System for Acid Deposition (REMSAD) air quality model, and then applies a damage function model using concentration-response relationships to estimate adverse health endpoints from modeled changes in air quality. This analysis estimates the adverse health endpoints attributable to diesel PM2.5 in the year 2010. For a summary of CATEF's methodology and FAQs please go to www.catf.us/goto/dieselhealth/ and click on "learn more." For Abt Associates' ASPEN and REMSAD reports please see: www.catf.us/goto/AbtASPEN/ and www.catf.us/goto/AbtREMSAD/.
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Item No. E.3

Dirty air triggers more heart attacks than cocaine



By *Kate Kelland, Health and Science Correspondent* Kate Kelland, Health And Science Correspondent – Thu Feb 24, 8:19 am ET

LONDON (Reuters) – Air pollution triggers more heart attacks than using cocaine and poses as high a risk of sparking a heart attack as alcohol, coffee and physical exertion, scientists said on Thursday.

Sex, anger, marijuana use and chest or respiratory infections and can also trigger heart attacks to different extents, the researchers said, but air pollution, particularly in heavy traffic, is the major culprit.

The findings, published in *The Lancet* journal, suggest population-wide factors like polluted air should be taken more seriously when looking at heart risks, and should be put into context beside higher but relatively rarer risks like drug use.

Tim Nawrot of Hasselt University in Belgium, who led the study, said he hoped his findings would also encourage doctors to think more often about population level risks.

"Physicians are always looking at individual patients -- and low risk factors might not look important at an individual level, but if they are prevalent in the population then they have a greater public health relevance," he said in a telephone interview.

The World Health Organization (WHO) describes air pollution as "a major environmental risk to health" and estimates that it causes around 2 million premature deaths worldwide every year.

Nawrot's team combined data from 36 separate studies and calculated the relative risk posed by a series of heart attack triggers and their population-attributable fraction (PAF) -- in other words the proportion of total heart attacks estimated to have been caused by each trigger.

The highest risk PAF was exposure to traffic, followed by physical exertion, alcohol, coffee, air pollution, and then things like anger, sex, cocaine use, smoking marijuana and respiratory infections.

"Of the triggers for heart attack studied, cocaine is the most likely to trigger an event in an individual, but traffic has the greatest population effect as more people are exposed to (it)," the researchers wrote. "PAFs give a measure of how much disease would be avoided if the risk was no longer present."

A report published late last year found that air pollution in many major cities in Asia exceeds the WHO's air quality guidelines and that toxic cocktails of pollutants results in more than 530,000 premature deaths a year.

While passive smoking was not included in this study, Nawrot said the effects of second-hand smoke were likely to be similar to that of [outdoor air pollution](#), and noted previous research which found that bans on smoking in public places have significantly reduced heart attack rates.

British researchers said last year that a ban on smoking in public places in England led to a swift and significant drop in the number of heart attacks, saving the health service 8.4 million pounds (\$13 million) in the first year.

Tim Chico, a heart specialist at the University of Sheffield who was not involved in this research, said it would help health authorities focus on which are the most important triggers.

"However, what triggers the heart attack should be considered the "last straw." The foundations of heart disease that lead to a heart attack are laid down over many years," he said in an emailed comment. "If someone wants to avoid a heart attack they should focus on not smoking, exercising, eating a healthy diet and maintaining their ideal weight."

(Editing by Paul Casciato)

Air pollution worse than cocaine for triggering heart attacks, says study

Research into 'final straw' risk factors says traffic fumes greater population-wide threat than drug because of numbers exposed

- Press Association
- guardian.co.uk, Wednesday 23 February 2011 18.37 GMT
- [Article history](#)



Air pollution hangs over London. A study suggests that air pollution triggers up to 7% of heart attacks in a population. Photograph: Mike Hewitt/Getty Images

Air [pollution](#) is a bigger trigger of heart attacks in the population than physical exertion, alcohol and taking cocaine, a study has shown. On an individual basis, cocaine raises the risk of a [heart attack](#) 23 times, says a study published in the Lancet.

But far more people are exposed to traffic fumes and factory emissions than cocaine so air quality is a far more important population-wide threat.

Scientists looked at "final straw" risk factors for triggering heart attacks, rather than underlying causes of heart disease. The highest risk factor was traffic exposure (7.4%), followed by physical exertion (6.2%) and alcohol (5%), coffee (5%), and higher levels of small air pollutant particles known as PM10s (4.8%).

Other risk factors included negative emotions, with a PAF of 3.9%, anger (3.1%), eating a heavy meal (2.7%), positive emotions (2.4%) and sexual activity (2.2%).

Air pollution triggers 5-7% of heart attacks in the population, they say. Cocaine accounts for just 0.9% of all heart attacks.

**Technical Support Document for Cancer Potency Factors:
Methodologies for derivation, listing of available values, and adjustments to allow for early
life stage exposures.**

April 2009

**California Environmental Protection Agency
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EXECUTIVE SUMMARY

The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588, Connelly) was enacted in September 1987. Under this Act, stationary sources of air pollution are required to report the types and quantities of certain substances their facilities routinely release into the air. The goals of the Air Toxics "Hot Spots" Act are to collect emission data, identify facilities having localized impacts, ascertain health risks posed by those facilities, notify nearby residents of significant risks and reduce emissions from significant sources.

The Technical Support Document for Cancer Potency Factors (TSD) contains cancer unit risks and potency factors for 107 of the 201 carcinogenic substances or groups of substances for which emissions must be quantified in the Air Toxics Hot Spots program. These unit risks are used in the cancer risk assessment of facility emissions.

The purposes of this revision to the TSD is to provide updated calculation procedures used to derive the estimated unit risk and cancer potency factors, and to describe the procedures used to consider the increased susceptibility of infants and children compared to adults to carcinogens. This updates cancer risk assessment methods originally laid out in the California Department of Health Services' Guidelines for Chemical Carcinogen Risk Assessment (CDHS, 1985), and more recently summarized in the previous Hot Spots technical support document Part II (OEHHA, 2005a). Summaries of cancer potency factors and the underlying data are provided in Appendix A and B. [these did not undergo revision and are not included in this review package.]

The procedures used to consider the increased susceptibility to carcinogens of infants and children as compared to adults include the use of age-specific weighting factors in calculating cancer risks from exposures of infants, children and adolescents, to reflect their anticipated special sensitivity to carcinogens

This document is one part of the Air Toxics Hot Spots Program Risk Assessment Guidelines. The other documents originally included in the Guidelines are Part I: Technical Support Document for the Determination of Acute Toxicity Reference Exposure Levels for Airborne Toxicants; Part III: Technical Support Document for Determination of Noncancer Chronic Reference Exposure Levels; Part IV: Technical Support Document for Exposure Assessment and Stochastic Analysis; Part V: Air Toxic Hot Spots Program Risk Assessment Guidelines. As a part of the same revision process which led to production of this revised TSD on cancer potencies, the original TSDs for Acute and Chronic Reference Exposure Levels have been replaced with a new unified TSD for Acute, 8-hour and Chronic Reference Exposure Levels.

The major changes to the TSD include the following:

- Based on the OEHHA analysis of the potency by lifestage at exposure, OEHHA proposes weighting cancer risk by a factor of 10 for exposures that occur from birth to 2 years of age, and by a factor of 3 for exposures that occur from 2 years through 15 years of age. We propose to apply this weighting factor to all carcinogens, regardless of purported mechanism of action, unless chemical-specific data exist to the contrary. In cases where

there are adequate data for a specific carcinogen of potency by age, we would use the data to make any adjustments to risk.

- OEHHA proposes to use the Benchmark Dose method to compute potency factors rather than the more traditional linearized multistage model (LMS), although the LMS will still be used in some instances. The BMDL model essentially uses an empirical fit to the data (usually best with the multistage model), and then extrapolates with a straight line from the 95 % lower confidence limit of the BMD (BMDL) to zero. This method is simpler and does not assume any underlying theoretical mechanisms at the low dose range. The BMDL method results in very similar estimates of potency as the LMS method.
- OEHHA will use scaling based on body weight to the $\frac{3}{4}$ power, rather than to the $\frac{2}{3}$ power.
- OEHHA's evaluations of the carcinogenicity of chemicals generally follow the guidelines laid out by IARC for identification and classification of potential human carcinogens, which are described in detail in the most recent revision of the *Preamble* to the IARC monographs series (IARC, 2006).

PREFACE

The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588, Connelly) was enacted in September 1987. Under this Act, stationary sources are required to report the types and quantities of certain substances their facilities routinely release into the air. The goals of the Air Toxics "Hot Spots" Act are to collect emission data, identify facilities having localized impacts, ascertain health risks posed by those facilities, notify nearby residents of significant risks and reduce emissions from significant sources.

The Technical Support Document for Cancer Potency Factors (TSD) contains cancer unit risks and potency factors for 107 of the 201 carcinogenic substances or groups of substances for which emissions must be quantified in the Air Toxics Hot Spots program. These unit risks are used in risk assessment of facility emissions. The TSD provides updated calculation procedures used to derive the estimated unit risk and cancer potency factors, and procedures to consider early-life susceptibility to carcinogens. Summaries of cancer potency factors and the underlying data are provided in Appendix A and B. [these did not undergo revision and are not included in this review package.]

In this document, OEHHA is responding to the requirements of the 1999 Children's Environmental Health Protection Act, (SB25, Escutia) by revising the procedures for derivation and application of cancer potency factors to take account of general or chemical-specific information which suggests that children may be especially susceptible to certain carcinogens (OEHHA, 2001a). The revised cancer potency derivation procedures described will not be used to impose any overall revisions of the existing cancer potencies, although they do reflect updated methods of derivation. However, individual cancer potency values will be reviewed as part of the ongoing re-evaluation of health values mandated by SB 25, and revised values will be listed in updated versions of the appendices to this document as necessary. The revisions also include the use of weighting factors in calculating cancer risks from exposures of infants, children and adolescents, to reflect their anticipated special sensitivity to carcinogens. Similar legal mandates to update risk assessment methodology and cancer potencies apply to the OEHHA program for development of Public Health Goals (PHGs) for chemicals in drinking water, and Proposition 65 No Significant Risk Levels (NSRLs). The NSRLs may also be revised to reflect concerns for children's health. Revising these numbers will require the originating program to reconsider the value in an open public process. For example, OEHHA would need to release any revised potency factors for public comment and review by the Scientific Review Panel on Toxic Air Contaminants (SRP) prior to adoption under the TAC program. The procedures for outside parties to request reevaluation of cancer potency values by the programs which originated those values are listed in Appendix G.

Appendices A and B provide previously adopted Cal/EPA values which were included in the previous version of the TSD for Cancer Potency Factors (OEHHA, 2005a). Cal/EPA values were developed under the Toxic Air Contaminant (TAC) program, the PHG program, the Proposition 65 program, or in some cases specifically for the Air Toxics Hot Spots program. All the Cal/EPA values are submitted for public comments and external peer review prior to adoption by the program of origin. In the future, new values developed by the Toxic Air

Contaminants or Hot Spots programs or other suitable sources will be added as these are approved.

Some U.S. EPA IRIS cancer unit risk values were adopted under the previous versions of these guidelines, and these values will continue to be used unless and until revised by Cal/EPA. U.S. EPA has recently revised its cancer risk assessment guidelines (U.S. EPA, 2005a). Some of the recommended changes in methodology could result in slightly different potency values compared to those calculated by the previous methodology, although in practice a number of the recommendations (for example, the use of $3/4$ power of the body weight ratio rather than $2/3$ power for interspecies scaling) have been available in draft versions of the revised policy for some time and appear in many more recent assessments. U.S. EPA has stated that cancer potency values listed in IRIS will not be revisited solely for the purpose of incorporating changes in cancer potency value calculation methods contained in the revised cancer risk assessment guidelines. U.S. EPA has also issued supplementary guidelines on assessing cancer risk from early-life exposure (U.S. EPA, 2005b).

OEHHA uses a toxic equivalency factor procedure for dioxin-like compounds, including polychlorinated dibenzo-*p*-dioxins, dibenzofurans and polychlorinated biphenyls (PCBs). The Toxicity Equivalency Factor scheme (TEF_{WHO-97}) developed by the World Health Organization/European Center for Environmental Health (WHO-ECEH) is used for determining cancer unit risk and potency values for these chemicals where individual congener emissions are available (Appendix C).

This document is one part of the Air Toxics Hot Spots Program Risk Assessment Guidelines. The other documents originally included in the Guidelines are Part I: Technical Support Document for the Determination of Acute Toxicity Reference Exposure Levels for Airborne Toxicants; Part III: Technical Support Document for Determination of Noncancer Chronic Reference Exposure Levels; Part IV: Technical Support Document for Exposure Assessment and Stochastic Analysis; Part V: Air Toxic Hot Spots Program Risk Assessment Guidelines. As a part of the same revision process which led to production of this revised TSD on cancer potencies, the original TSDs for Acute and Chronic Reference Exposure Levels have been replaced with a new unified TSD for Acute, 8-hour and Chronic Reference Exposure Levels.

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APPENDICES

Appendix A. A lookup table containing unit risk and cancer potency values.

Appendix B. Chemical-specific summaries of the information used to derive unit risk and cancer potency values.

Appendix C. A description of the use of toxicity equivalency factors for determining unit risk and cancer potency factors for polychlorinated dibenzo-*p*-dioxins, dibenzofurans and dioxin-like polychlorinated biphenyls.

Appendix D. A listing of Toxic Air Contaminants identified by the California Air Resources Board.

Appendix E. Descriptions of the International Agency for Research on Cancer (IARC) and U.S. Environmental Protection Agency (U.S. EPA) carcinogen classifications.

Appendix F. An asbestos quantity conversion factor for calculating asbestos concentrations expressed as 100 fibers/m³ from asbestos concentrations expressed as µg/m³.

Appendix G. Procedures for revisiting or delisting cancer potency factors by the program of origin.

Appendix H. Exposure routes and studies used to derive cancer unit risks and slope factors.

Appendix I. “Assessing susceptibility from early-life exposure to carcinogens”: Barton *et al.*, 2005 (from *Environmental Health Perspectives*).

Appendix J. “In Utero and Early Life Susceptibility to Carcinogens: The Derivation of Age-at-Exposure Sensitivity Measures” – conducted by OEHHA’s Reproductive and Cancer Hazard Assessment Branch.

Appendix K. Additions and corrections from prior document versions.

INTRODUCTION

The Technical Support Document (TSD) for Describing Available Cancer Potency Factors provides technical information support for the Air Toxics Hot Spots Program Risk Assessment Guidelines. The TSD consists of 12 sections:

1. The TSD introduction.
2. A description of the methodologies used to derive the unit risk and cancer potency values listed in the lookup table.
3. A lookup table containing unit risk and cancer potency values. (Appendix A)
4. Chemical-specific summaries of the information used to derive unit risk and cancer potency values. (Appendix B).
5. A description of the use of toxicity equivalency factors for determining unit risk and cancer potency factors for polychlorinated dibenzo-*p*-dioxins, dibenzofurans and dioxin-like polychlorinated biphenyls (Appendix C).
6. A listing of Toxic Air Contaminants identified by the California Air Resources Board (Appendix D).
7. Descriptions of the International Agency for Research on Cancer (IARC) and U.S. Environmental Protection Agency (U.S. EPA) carcinogen classifications (Appendix E).
8. An asbestos quantity conversion factor for calculating asbestos concentrations expressed as 100 fibers/m³ from asbestos concentrations expressed as µg/m³ (Appendix F).
9. Procedures for revisiting or delisting cancer potency factors by the program of origin (Appendix G).
10. Exposure routes and studies used to derive cancer unit risks and slope factors (Appendix H).
11. "Assessing susceptibility from early-life exposure to carcinogens": Barton *et al.*, 2005 (from *Environmental Health Perspectives*) (Appendix I).
12. "In Utero and Early Life Susceptibility to Carcinogens: The Derivation of Age-at-Exposure Sensitivity Measures" – conducted by OEHHA's Reproductive and Cancer Hazard Assessment Branch (Appendix J)

SELECTION OF CANCER POTENCY VALUES

The Office of Environmental Health Hazard Assessment (OEHHA) has developed a number of cancer potencies for use in the Toxic Air Contaminants and Air Toxics Hot Spots programs. This document also provides summaries of cancer potency factors which were originally developed for other California Environmental Protection Agency (Cal/EPA) programs, or by the U.S. EPA. These were reviewed for accuracy, reliance on up-to-date data and methodology, and applicability in the context of the Air Toxics Hot Spots program. Values found appropriate were adopted after public and peer review rather than devoting the resources necessary for a full *de novo* assessment. Thus, cancer potency values (CPF) included in the Technical Support Document (TSD) for Cancer Potency Factors were from the following sources:

1. Toxic Air Contaminant documents
2. Standard Proposition 65 documents
3. U.S.EPA Integrated Risk Information Systems (Office of Health and Environmental Assessment, U.S.EPA)
4. Expedited Proposition 65 documents
5. Other OEHHA assessments , for example for the drinking water program.

All the cancer potency value sources used generally follow the recommendations of the National Research Council on cancer risk assessment (NRC, 1983, 1994). All Cal/EPA program documents undergo a process of public comment and scientific peer review prior to adoption, although the procedures used vary according to the program. The publication procedure for Toxic Air Contaminant documents includes a public comment period and review by the Scientific Review Panel on Toxic Air Contaminants (SRP) before identification of a Toxic Air Contaminant by the Air Resources Board of the California Environmental Protection Agency (Cal/EPA). Furthermore, a petition procedure is available to initiate TAC document review and revision if appropriate because of new toxicity data. Documents developed for the Air Toxics Hot Spots program similarly undergo public comment and peer review by the SRP before adoption by the Director of OEHHA. The standard Proposition 65 document adoption procedure includes a public comment and external peer review by the Proposition 65 Carcinogen Identification Committee. The expedited Proposition 65 document adoption procedure included a public comment period. Risk assessments prepared for development of Public Health Goals (PHGs) for chemicals in drinking water are subject to two public comment periods before the final versions and responses to comments are published on the OEHHA Web site. PHG documents may also receive external peer review. Documents from U.S. EPA's Integrated Risk Information System (IRIS) receive external peer review and are posted on the Internet for public viewing during the external peer review period, and any public comments submitted are considered by the originating office. Additionally, public comment may be solicited during the document posting period. Future preference for use of developed cancer potency factors/unit risks will be done on a case by case basis. Preference will be given to those assessments most relevant to inhalation exposures of the California population, to the most recent derivations using the latest data sets and scientific methodology, and to those having undergone the most open and extensive peer review process.

CANCER RISK ASSESSMENT METHODOLOGIES

This section describes in general the methodologies used to derive the cancer unit risk and potency factors listed in this document. As noted in the Preface to this document, no new cancer unit risks or potency factors were developed for this document. All of the values contained here were previously developed in documents by Cal/EPA or U.S. EPA. Following the recommendations of the National Academy of Sciences (NRC, 1983), Cal/EPA and U.S. EPA have both used formalized cancer risk assessment guidelines, the original versions of which (California Department of Health Services, 1985; U.S. EPA, 1986) were published some time ago. Both these guidelines followed similar methodologies.

In the twenty years since these original guidelines were published there have been a number of advances in the methodology of cancer risk assessment. There have additionally been considerable advances in the quantity of data available not only from animal carcinogenesis bioassays and epidemiological studies, but also from mechanistic studies of carcinogenesis and related phenomena. Some of these advances have been incorporated into newer risk assessments by both agencies on a more or less *ad hoc* basis. There has also been an ongoing effort to provide updated risk assessment guidance documents. In 1995, U.S. EPA released for public comment the "Proposed and Interim Guidelines for Carcinogen Risk Assessment", which was the first of several drafts released for public comment. Many risk assessments appearing since then have used elements of the recommendations contained in that document, in spite of its draft status. A final version of the U.S. EPA's revised cancer risk assessment guidelines has now been released (U.S. EPA, 2005a). Although these new guidelines incorporate a number of substantial changes from their predecessors (U.S. EPA, 1986; 1995), U.S. EPA has stated that cancer potency values listed in IRIS will not be revisited solely for the purpose of incorporating changes in cancer potency value calculation methods.

Cal/EPA has not produced a revised cancer risk assessment guideline document to replace the original version (DHS, 1985). Rather, Cal/EPA has relied on incorporating new data and methodologies as these became available, and described the methods used on a case by case basis in the individual risk assessment documents where these went beyond the original guidance. However, this revision of the TSD for cancer potencies provides a convenient opportunity to summarize the current status of the methodology used by OEHHA for the air toxics programs, and also to highlight points of similarity to, and difference from, the recommendations of U.S. EPA (2005a).

In this document, OEHHA intends to follow the recommendations of the NRC (1994) in describing a set of clear and consistent principles for choosing and departing from default cancer risk assessment options. NRC identified a number of objectives that should be taken into account when considering principles for choosing and departing from default options. These include, "protecting the public health, ensuring scientific validity, minimizing serious errors in estimating risks, maximizing incentives for research, creating an orderly and predictable process, and fostering openness and trustworthiness". The OEHHA cancer risk methodologies discussed in this document are intended to generally meet those objectives cited above.

Hazard Identification

This section will describe: 1) how weight of evidence evaluations are used in hazard evaluation; 2) guidelines for inferring causality of effect; 3) the use of human and animal carcinogenicity data, as well as supporting evidence (e.g. genetic toxicity and mechanistic data); 4) examples of carcinogen identification schemes.

Evaluation of Weight of Evidence

In evaluating the range of evidence on the toxicity and carcinogenicity of a compound, mixture or other agent, a “weight-of-evidence” approach is generally used to describe the body of evidence on whether or not exposure to the agent causes a particular effect. Under this approach, the number and quality of toxicological and epidemiological studies, as well as the consistency of study results and other sources of data on biological plausibility, are considered. Diverse and sometimes conflicting data need to be evaluated with respect to possible explanations of differing results. Consideration of methodological issues in the review of the toxicological and epidemiological literature is important in evaluating associations between exposure to an agent and animal or human health effects. This aspect of the evaluation process has received particular emphasis with respect to epidemiological data, where concerns as to the statistical and biological significance and reliability of the data and the impacts of confounding and misclassification are pressing. Such concerns are also relevant to some extent in the interpretation of animal bioassay data and mechanistic studies. Although the test animals, laboratory environment and characterization of the test agent are usually much better controlled than the equivalent parameters in an epidemiological study, the small sample size can be problematic. In addition, there are uncertainties associated with extrapolation of biological responses from test animal species to humans.

Criteria for Causality

There has been extensive discussion over the last two centuries on causal inference. This has been particularly with regard to epidemiological data, but is also relevant to interpretation of animal studies. Most epidemiologists utilize causal inference guidelines based on those proposed by Bradford Hill (1971). OEHHA has relied on these and on recommendations by IARC (2006), the Institute of Medicine (2004), the Surgeon General’s Reports on Smoking (U.S. DHHS, 2004) and standard epidemiologic texts (e.g. Lilienfeld and Lilienfeld, 1980; Rothman and Greenland, 1998). The criteria for determination of causality used by OEHHA have been laid out in various risk assessment documents. The summary below is adapted from the Health Effects section of the document prepared to support the identification of environmental tobacco smoke (ETS) as a Toxic Air Contaminant (OEHHA, 2005b).

1. *Strength of Association.* A statistically significant strong association, which is easier to detect if there is a high relative risk, between a factor and a disease is often viewed as an important criterion for inferring causality because, all other things being equal, a strong and statistically significant association makes alternative explanations for the disease less likely. However, as discussed in Rothman and Greenland (1998), the fact that a relative risk is small in magnitude does not exclude a casual association between the risk factor

and the outcome in question. Since it is more difficult to detect (i.e., reach statistical significance) a small magnitude risk, ~~they are~~ it is just as likely to ~~be causal~~ indicate causality as a larger magnitude risks.

When assessing all evidence, it is important to consider the strength of the study design (particularly controlling for confounding variables, obtaining an unbiased sample, measurement error) and the level of statistical significance (i.e., the ability to exclude a Type I [false positive] error). The power of the study to detect biologically meaningful effects (i.e., the risk of a Type II [false negative] error) is important in considering studies that do not reach traditional (i.e., $P < .05$) statistical significance, particularly if the biological endpoint is serious. If the outcome is serious and the study small (i.e., low power), a larger P value (e.g., $P < .10$) may be adequate evidence for identifying an effect.

There are a number of examples of statistically significant, small magnitude associations that are widely accepted as causal, such as causal links between air pollution and cardiovascular/pulmonary mortality and between second-hand smoke exposure and various cancers and heart disease. From a public health perspective, even a small magnitude increase in risk for a common disease can mean large numbers of people affected by the health outcome when exposure is frequent and widespread, as measured by the population attributable risk or attributable fraction. Small magnitude of association must not be confused with statistical significance, which is much more important.

2. *Consistency of Association.* If several investigations find an association between a factor and a disease across a range of populations, geographic locations, times, and under different circumstances, then the factor is more likely to be causal. Consistency argues against hypotheses that the association is caused by some other factor(s) that varies across studies. Unmeasured confounding is an unlikely explanation when the effect is observed consistently across a number of studies in different populations.

Associations that are replicated in several studies of the same design or using different epidemiological approaches or considering different sources of exposure and in a number of geographical regions are more likely to represent a causal relationship than isolated observations from single studies (IARC, 2006). If there are inconsistent results among investigations, possible reasons are sought, such as adequacy of sample size or control group, methods used to assess exposure, or range in levels of exposure. The results of studies judged to be rigorous are emphasized over those of studies judged to be methodologically less rigorous. For example, studies with the best exposure assessment are more informative for assessing the association between ETS and breast cancer than studies with limited exposure assessment, all else being equal.

3. *Temporality.* Temporality means that the factor associated with causing the disease occurs in time prior to development of the disease. The adverse health effect should occur at a time following exposure that is consistent with the nature of the effect. For example, respiratory irritation immediately following exposure to an irritant vapor is temporally consistent, whereas ~~effects-irritation~~ noted only years later may not be. On the other hand, tumors, noted immediately following exposure, might be temporally

inconsistent with a causal relationship, but tumors arising after a latency period of months (in rodents) or years (in rodents or humans) would be temporally consistent.

4. *Coherence and Biological Plausibility.* A causal interpretation cannot conflict with what is known about the biology of the disease. The availability of experimental data or mechanistic theories consistent with epidemiological observations strengthens conclusions of causation. For example, the presence of known carcinogens in tobacco smoke supports the concept that exposure to tobacco smoke could cause increased cancer risk. Similarly, if the mechanism of action for a toxicant is consistent with development of a specific disease, then coherence and biological plausibility can be invoked. It should be noted that our understanding of the biology of disease, and therefore biological plausibility, changes in light of new information which is constantly emerging from molecular biology (including epigenetics), and from new clinical and epidemiological investigations revealing effects influenced by genetic polymorphisms, pre-existing disease, and so forth.
5. *Dose-Response.* A basic tenet of toxicology is that increasing exposure or dose generally increases the response to the toxicant. While dose-response curves vary in shape and are not necessarily always monotonic, an increased gradient of response with increased exposure makes it difficult to argue that the factor is not associated with the disease. To argue otherwise necessitates that an unknown factor varies consistently with the dose of the substance and the response under question. While increased risk with increasing levels of exposure is considered to be a strong indication of causality, absence of a graded response does not exclude a causal relationship (IARC, 2006).

The dose-response curves for specific toxic effects may be non-monotonic. Under appropriate circumstances, where the dose response shows saturation, the effect of exposures could be nearly maximal, with any additional exposure having little or no effect. In some instances, a response is seen strongly in susceptible subpopulations, and the dose-response is masked by mixing susceptible and non-susceptible individuals in a sample. Further, there are examples of U-shaped or inverted U-shaped dose-response curves, (e.g., for endocrine disrupters) (Almstrup et al., 2002; Lehmann et al., 2004). Finally, timing of exposure during development may mask an overall increase in risk with increasing dose.

6. *Specificity.* Specificity is generally interpreted to mean that a single cause is associated with a single effect. It may be useful for determining which microorganism is responsible for a particular disease, or associating a single carcinogenic chemical with a rare and characteristic tumor (e.g., liver angiosarcoma and vinyl chloride, or mesothelioma and asbestos). However, the concept of specificity is not helpful when studying diseases that are multifactorial, or toxic substances that contain a number of individual constituents, each of which may have several effects and/or target sites.
7. *Experimental evidence.* While experiments are often conducted over a short period of time or under artificial conditions (compared to real-life exposures), experiments offer the opportunity to collect data under highly controlled conditions that allow strong causal conclusions to be drawn. Experimental data that are consistent with epidemiological

results strongly support conclusions of causality. There are also “natural experiments” that can be studied with epidemiological methods, such as when exposure of a human population to a substance declines or ceases; if the effect attributed to that exposure decreases, then there is evidence of causality. One example of this is the drop in heart disease death and lung cancer risk after smoking cessation.

It should be noted that the causal criteria are guidelines for judging whether a causal association exists between a factor and a disease, rather than hard-and-fast rules. Lilienfeld and Lilienfeld (1980) note that “*In medicine and public health, it would appear reasonable to adopt a pragmatic concept of causality. A causal relationship would be recognized to exist whenever evidence indicates that the factors form part of the complex of circumstances that increases the probability of the occurrence of disease and that a diminution of one or more of these factors decreases the frequency of that disease. After all, the reason for determining the etiological factors of a disease is to apply this knowledge to prevent the disease.*” [Rothman and Greenland \(2005\) discuss the complexities of causation and the use of rules and deductive methods in causal inference. They also concur with Bradford Hill and others that a determination of causality is a pragmatic conclusion rather than an absolute verdict, and advocate that these criteria should be seen as “deductive tests of causal hypotheses”.](#)

Data sources

Human studies: epidemiology, ecological studies and case reports

The aim of a risk assessment for the California Air Toxics programs is to determine potential impact on human health. Ideally therefore, the hazard identification would rely on studies in humans to demonstrate the nature and extent of the hazard. However, apart from clinical trials of drugs, experimental studies of toxic effects in human subjects are rarely undertaken or justifiable. Pharmacokinetic studies using doses below the threshold for any toxic effect have been undertaken for various environmental and occupational agents, but are not usually regarded as appropriate for suspected carcinogens.

The human data on carcinogens available to the risk assessor therefore mostly consist of epidemiological studies of existing occupational or environmental exposures. It is easier to draw reliable inferences in situations where both the exposures and the population are substantial and well-defined, and accessible to direct measurement rather than recall. Thus, many important findings of carcinogenicity to humans are based on analysis of occupational exposures. Problems in interpretation of occupational epidemiological data include simultaneous exposure to several different known or suspected carcinogens, imprecise quantification of exposures and confounding exposures such as active or passive tobacco smoking. The historical database of occupational data has a bias towards healthy white adult males. Thus, the hazard analysis of these studies may not accurately characterize effects on women, infants, children or the elderly, or on members of minority ethnic groups. Nevertheless, the analysis of occupational epidemiological studies, [including meta-analyses](#), has proved an important source for unequivocal identification of human carcinogens.

Epidemiological evidence may also be obtained where a substantial segment of a general population is exposed to the material of interest in air, drinking water or food sources. Rigorous

cohort and case-control studies may sometimes be possible, in which exposed individuals are identified, their exposure and morbidity or mortality evaluated, and compared to less exposed but otherwise similar controls. More often at least the initial investigation is a cross-sectional study, where prevalence of exposures and outcomes is compared in relatively unexposed and exposed populations. Such studies are hypothesis-generating, but are important sources of information nevertheless, and can often also justify more costly and labor-intensive follow-up cohort and/or case-control studies.

The clinical medical literature contains many case reports where a particular health outcome is reported along with unusual exposures that might have contributed to its occurrence. These reports typically describe a single patient or a small group, and have no statistical significance. They are nevertheless useful as indications of possible associations that deserve follow-up using epidemiological methods, and as supporting evidence, addressing the plausibility of associations measured in larger studies.

Animal studies

Although the observation of human disease in an exposed population can provide definitive hazard identification, adequate data of this type are not always available. More often, risk estimates have to be based on studies in experimental animals, and extrapolation of these results to predict human toxicity. The animals used are mostly rodents, typically the common laboratory strains of rat and mouse.

Rats and mice have many similarities to humans. Physiology and biochemistry are similar for all mammals, especially at the fundamental levels of xenobiotic metabolism, DNA replication and DNA repair that are of concern in identifying carcinogens. However, there are also several important differences between rodents and humans. Rodents, with a short life span, have differences in cell growth regulation compared to longer-lived species such as the human. For instance, whereas laboratory investigations have suggested that mutations in two regulatory genes (*e.g.* H-ras and p-53) are sometimes sufficient to convert a rodent cell to a tumorigenic state, many human cancers observed clinically have seven or eight such mutations. In addition, cultured normal human cells have a very stable karyotype, whereas cultured rodent cells readily undergo tetraploidization and then aneuploidization in cell culture. Further, cultured human cells senesce and rarely undergo spontaneous immortalization (frequency is 10^{-7} or less), whereas cultured rodent cells readily undergo immortalization at frequencies on the order of 10^{-3} . The use of genomics to study chemical carcinogenesis is relatively new, but the differences at present appear to be a matter of degree rather than kind.

Differences in regulation of cell division are another likely reason for variation between species in the site of action of a carcinogen, or its potency at a particular site. A finding of carcinogenesis in the mouse liver, for instance, is a reasonably good indicator of potential for carcinogenesis at some site in the human, but not usually in human liver (Huff, 1999). The mouse liver (and to a lesser extent that of the rat) is a common site of spontaneous tumors. It is also relatively sensitive to chemical carcinogenesis. The human liver is apparently more resistant to carcinogenesis; human liver tumors are unusual except when associated with additional predisposing disease, such as hepatitis B or alcoholic cirrhosis, or exposure to aflatoxin B1, or simultaneous exposure to hepatitis B virus and aflatoxin B1. Conversely, other

tumor sites are more sensitive in the human than in experimental animals. Interspecies variation in site and sensitivity to carcinogenesis may also arise from differences in pharmacokinetics and metabolism, especially for carcinogens where metabolic activation or detoxification is important. This variability may cause important differences in sensitivity between individuals in a diverse population such as humans. Variability between individuals in both susceptibility and pharmacokinetics or metabolism is probably less in experimental animal strains that are bred for genetic homogeneity.

Animal carcinogenesis studies are often designed to maximize the chances of detecting a positive effect, and do not necessarily mimic realistic human exposure scenarios. Thus extrapolation from an experimentally accessible route to that of interest for a risk assessment may be necessary. Even for studies by realistic routes such as oral or inhalation, doses may be large compared to those commonly encountered in the environment, in order to counter the limitation in statistical power caused by the relatively small size of an animal experiment. Whereas the exposed population of an epidemiological study might number in the thousands, a typical animal study might have fifty individuals per exposure group. With this group size any phenomenon with an incidence of less than about 5% is likely to be undetectable. Statistically significant results may be obtained even with groups as small as ten animals per dose group, when incidence of a tumor that is rare in the controls approached 100% in a treated group. The consensus experimental design for animal carcinogenesis studies, which has evolved over the last 50 years of investigation, is represented by the protocol used by the U.S. National Toxicology Program (NTP) for studies using oral routes (diet, gavage or drinking water) or inhalation. These carcinogenesis bioassays usually involve both sexes of an experimental species, and most often two species. NTP has standardized the use of the C57BlxC3H F₁ hybrid mouse, and the Fischer 344 rat as the standard test species, although NTP has announced plans to substitute use of the Wistar Han rat for the Fisher 344 rat. There is now an extensive database of background tumor incidences, normal physiology, biochemistry, histology and anatomy for these strains, which aids in the interpretation of pathological changes observed in experiments. Nevertheless, there is enough variation in background rates of common tumors that the use of concurrent controls is essential for hazard identification or dose-response assessment. "Historical control" data are mainly used to reveal anomalous outcomes in the concurrent controls. The fact that a significantly elevated incidence of a tumor relative to the concurrent control group is within the range of historical controls at that site for the test sex and strain is not necessarily grounds for dismissing the biological significance of the finding.

Groups of fifty animals of each sex and species are used, with control groups, and several dose groups, the highest receiving the maximum tolerated dose (MTD). Recent study designs have emphasized the desirability of at least three dose levels covering a decade with "logarithmic" spacing (*i.e.* MTD, 1/2 MTD or 1/3 MTD, and 1/10 MTD). This extended design is aimed at providing better dose-response information, and may contribute important additional information, such as mechanistic insights, for the hazard identification phase.

Supporting evidence: genetic toxicity, mechanistic studies

Investigators have developed additional data sources that can support or modify the conclusions of animal carcinogenesis bioassays, and provide information on mechanisms of action of agents suspected of being carcinogenic based on epidemiological studies or animal bioassays.

Genetic damage in exposed organisms includes both gene mutations (point or frameshift), and larger scale effects such as deletions, gene amplification, sister-chromatid exchanges, translocations and loss or duplication of segments or whole chromosomes. These genetic effects of chemical exposures are deleterious in their own right. In addition, since carcinogenesis results from somatic mutations and similar genetic alterations, agents that cause genetic damage generally have carcinogenic potential. Conversely, many known carcinogens are also known to be genotoxic, although there is also a significant class of carcinogens that are not directly genotoxic according to the usual tests. These latter agents presumably work by some other mechanism, such as methylation of tumor suppressor genes or demethylation of cellular proto-oncogenes, although recent genetic studies have shown that even tumors induced by these agents may show mutations, deletions or amplification of growth regulatory genes.

Experimental procedures to demonstrate and measure genetic toxicity may involve exposure of intact animals, and examination of genetic changes in, for example, bone marrow cells (or cells descended from these e.g. the micronucleus test, which detects remnants of chromosomal fragments in immature erythrocytes), mutations in flies (*Drosophila*), or appearance of color spots in the coat of mice. However, many tests have employed single celled organisms or mammalian cells in culture. The best known of these tests is the *Salmonella* reverse mutation assay, popularly known as the Ames test after its inventor. This is representative of a larger class of tests for mutagenic activity in prokaryotic organisms (bacteria), which necessarily only look at gene-level mutations. Similar tests in eukaryotic microorganisms (yeasts, *Aspergillus*) and cultured mammalian cells also detect chromosomal effects. Many tests using microorganisms *in vitro* involve addition of activating enzymes (e.g. liver postmitochondrial supernatant – “S9”) to mimic the metabolism of promutagenic chemicals *in vivo*. Another type of test examines the induction in mammalian cells of morphological transformation or anchorage-independent growth. These two chemically induced, *in vitro* changes are considered two of the many changes that fibroblastic cells must undergo on their route to neoplastic transformation (tumorigenicity). These various genetic tests contribute different information, which may be used to amplify and confirm conclusions drawn from human studies or animal bioassays, or to draw conclusions in the absence of epidemiological or bioassay data. In the latter case they have also been used in prioritizing agents for further evaluation by means of bioassays.

Carcinogen Identification schemes

Some regulatory programs, such as California’s Safe Drinking Water and Toxics Enforcement Act (“Proposition 65”) and various activities of the U.S. EPA, require that explicit lists of substances having the potential to act as human carcinogens be maintained. Other such lists are developed by non-regulatory research organizations, such as the U.S. National Toxicology Program and the International Agency for Research on Cancer (IARC), an international program of the World Health Organization. The California air toxics programs do not have any statutory requirement to “identify” carcinogens. The requirement instead is to identify hazardous substances as Toxic Air Contaminants, and to determine whether or not a threshold concentration, below which no adverse effects are expected, is likely to exist:

HEALTH AND SAFETY CODE, Division 26 (Air Resources), § 39660.

(2) *The evaluation shall also contain an estimate of the levels of exposure that may cause or contribute to adverse health effects. If it can be established that a threshold of adverse health effects exists, the estimate shall include both of the following factors:*

(A) *The exposure level below which no adverse health effects are anticipated.*

(B) *An ample margin of safety that accounts for the variable effects that heterogeneous human populations exposed to the substance under evaluation may experience, the uncertainties associated with the applicability of the data to human beings, and the completeness and quality of the information available on potential human exposure to the substance. In cases in which there is no threshold of significant adverse health effects, the office shall determine the range of risk to humans resulting from current or anticipated exposure to the substance.*

In practice however this requirement amounts to the need to establish whether or not a substance is carcinogenic. Any such effects are clearly harmful. Whereas the great majority of non-cancer health effects of chemicals are regarded as having a threshold, the default assumption for carcinogens is that there is no threshold (as described below). OEHHA follows the guidelines laid out by IARC for identification and classification of potential human carcinogens, which are described in detail in the most recent revision of the *Preamble* to the IARC monographs series (IARC, 2006). The IARC Monograph series provides evaluations of the carcinogenicity of individual substances or commonly occurring mixtures. The evaluation guidelines used are similar to those used by other scientific or regulatory authorities, including U.S.EPA.

The data inputs to hazard identification for carcinogens are human epidemiological studies, animal bioassays, along with supporting evidence such as mechanistic and genotoxicity data and structure-activity comparisons. IARC also assembles data on the structure and identity of the agent. The list of agents considered includes specific chemicals and also complex mixtures, occupational and lifestyle factors, physical and biological agents, and other potentially carcinogenic exposures.

IARC evaluations determine the quality of evidence for both animal and human evidence as falling into one of four categories: sufficient evidence of carcinogenicity, limited evidence of carcinogenicity, inadequate evidence of carcinogenicity and evidence suggesting lack of carcinogenicity. Stringent requirements for data quality are imposed. In view of their crucial importance, these definitions are quoted directly from the *Preamble* (IARC 2006):

“(a) Carcinogenicity in humans

Sufficient evidence of carcinogenicity: The Working Group considers that a causal relationship has been established between exposure to the agent and human cancer. That is, a positive relationship has been observed between the exposure and cancer in studies in which chance, bias and confounding could be ruled out with reasonable confidence. A statement that there is *sufficient evidence* is followed by a separate sentence that identifies the target organ(s) or tissue(s) where an increased risk of cancer was observed in humans. Identification of a specific target organ or tissue does not preclude the possibility that the agent may cause cancer at other sites.

Limited evidence of carcinogenicity: A positive association has been observed between exposure to the agent and cancer for which a causal interpretation is considered by the Working Group to be credible, but chance, bias or confounding could not be ruled out with reasonable confidence.

Inadequate evidence of carcinogenicity: The available studies are of insufficient quality, consistency or statistical power to permit a conclusion regarding the presence or absence of a causal association between exposure and cancer, or no data on cancer in humans are available.

Evidence suggesting lack of carcinogenicity: There are several adequate studies covering the full range of levels of exposure that humans are known to encounter, which are mutually consistent in not showing a positive association between exposure to the agent and any studied cancer at any observed level of exposure. The results from these studies alone or combined should have narrow confidence intervals with an upper limit close to the null value (e.g. a relative risk of 1.0). Bias and confounding should be ruled out with reasonable confidence, and the studies should have an adequate length of follow-up. A conclusion of *evidence suggesting lack of carcinogenicity* is inevitably limited to the cancer sites, conditions and levels of exposure, and length of observation covered by the available studies. In addition, the possibility of a very small risk at the levels of exposure studied can never be excluded.

(b) Carcinogenicity in experimental animals

Carcinogenicity in experimental animals can be evaluated using conventional bioassays, bioassays that employ genetically modified animals, and other in-vivo bioassays that focus on one or more of the critical stages of carcinogenesis. In the absence of data from conventional long-term bioassays or from assays with neoplasia as the end-point, consistently positive results in several models that address several stages in the multistage process of carcinogenesis should be considered in evaluating the degree of evidence of carcinogenicity in experimental animals.

The evidence relevant to carcinogenicity in experimental animals is classified into one of the following categories:

Sufficient evidence of carcinogenicity: The Working Group considers that a causal relationship has been established between the agent and an increased incidence of malignant neoplasms or of an appropriate combination of benign and malignant neoplasms in (a) two or more species of animals or (b) two or more independent studies in one species carried out at different times or in different laboratories or under different protocols. An increased incidence of tumours in both sexes of a single species in a well-conducted study, ideally conducted under Good Laboratory Practices, can also provide *sufficient evidence*.

A single study in one species and sex might be considered to provide *sufficient evidence of carcinogenicity* when malignant neoplasms occur to an unusual degree with regard to incidence, site, type of tumour or age at onset, or when there are strong findings of tumours at multiple sites.

Limited evidence of carcinogenicity: The data suggest a carcinogenic effect but are limited for making a definitive evaluation because, e.g. (a) the evidence of carcinogenicity is

restricted to a single experiment; (b) there are unresolved questions regarding the adequacy of the design, conduct or interpretation of the studies; (c) the agent increases the incidence only of benign neoplasms or lesions of uncertain neoplastic potential; or (d) the evidence of carcinogenicity is restricted to studies that demonstrate only promoting activity in a narrow range of tissues or organs.

Inadequate evidence of carcinogenicity: The studies cannot be interpreted as showing either the presence or absence of a carcinogenic effect because of major qualitative or quantitative limitations, or no data on cancer in experimental animals are available.

Evidence suggesting lack of carcinogenicity: Adequate studies involving at least two species are available which show that, within the limits of the tests used, the agent is not carcinogenic. A conclusion of *evidence suggesting lack of carcinogenicity* is inevitably limited to the species, tumour sites, age at exposure, and conditions and levels of exposure studied.”

IARC utilizes the evaluations of animal and human data, along with supporting evidence including genotoxicity, structure-activity relationships, and identified mechanisms, to reach an overall evaluation of the potential for carcinogenicity in humans. The revised *Preamble* (IARC, 2006) includes a description of the data evaluation criteria for this supporting evidence, and indications as to the situations where the availability of supporting evidence may be used to modify the overall conclusion from that which would be reached on the basis of bioassay and/or epidemiological evidence alone. The overall evaluation is expressed as a numerical grouping, the categories of which are described below, as before by directly quoting IARC (2006):

“Group 1: The agent is *carcinogenic to humans*.

This category is used when there is *sufficient evidence of carcinogenicity* in humans. Exceptionally, an agent may be placed in this category when evidence of carcinogenicity in humans is less than *sufficient* but there is *sufficient evidence of carcinogenicity* in experimental animals and strong evidence in exposed humans that the agent acts through a relevant mechanism of carcinogenicity.

Group 2.

This category includes agents for which, at one extreme, the degree of evidence of carcinogenicity in humans is almost *sufficient*, as well as those for which, at the other extreme, there are no human data but for which there is evidence of carcinogenicity in experimental animals. Agents are assigned to either Group 2A (*probably carcinogenic to humans*) or Group 2B (*possibly carcinogenic to humans*) on the basis of epidemiological and experimental evidence of carcinogenicity and mechanistic and other relevant data. The terms *probably carcinogenic* and *possibly carcinogenic* have no quantitative significance and are used simply as descriptors of different levels of evidence of human carcinogenicity, with *probably carcinogenic* signifying a higher level of evidence than *possibly carcinogenic*.

Group 2A: The agent is *probably carcinogenic to humans*.

This category is used when there is *limited evidence of carcinogenicity* in humans and *sufficient evidence of carcinogenicity* in experimental animals. In some cases, an agent may be classified in this category when there is *inadequate evidence of carcinogenicity* in humans and *sufficient evidence of carcinogenicity* in experimental animals and strong evidence that the carcinogenesis is mediated by a mechanism that also operates in humans. Exceptionally, an agent may be classified in this category solely on the basis of *limited evidence of carcinogenicity* in humans. An agent may be assigned to this category if it clearly belongs, based on mechanistic considerations, to a class of agents for which one or more members have been classified in Group 1 or Group 2A.

Group 2B: The agent is *possibly carcinogenic to humans*.

This category is used for agents for which there is *limited evidence of carcinogenicity* in humans and less than *sufficient evidence of carcinogenicity* in experimental animals. It may also be used when there is *inadequate evidence of carcinogenicity* in humans but there is *sufficient evidence of carcinogenicity* in experimental animals. In some instances, an agent for which there is *inadequate evidence of carcinogenicity* in humans and less than *sufficient evidence of carcinogenicity* in experimental animals together with supporting evidence from mechanistic and other relevant data may be placed in this group. An agent may be classified in this category solely on the basis of strong evidence from mechanistic and other relevant data.

Group 3: The agent is *not classifiable as to its carcinogenicity to humans*.

This category is used most commonly for agents for which the evidence of carcinogenicity is *inadequate* in humans and *inadequate* or *limited* in experimental animals.

Exceptionally, agents for which the evidence of carcinogenicity is *inadequate* in humans but *sufficient* in experimental animals may be placed in this category when there is strong evidence that the mechanism of carcinogenicity in experimental animals does not operate in humans.

Agents that do not fall into any other group are also placed in this category.

An evaluation in Group 3 is not a determination of non-carcinogenicity or overall safety. It often means that further research is needed, especially when exposures are widespread or the cancer data are consistent with differing interpretations.

Group 4: The agent is *probably not carcinogenic to humans*.

This category is used for agents for which there is *evidence suggesting lack of carcinogenicity* in humans and in experimental animals. In some instances, agents for which there is *inadequate evidence of carcinogenicity* in humans but *evidence suggesting lack of carcinogenicity* in experimental animals, consistently and strongly supported by a broad range of mechanistic and other relevant data, may be classified in this group.”

The IARC hazard evaluation system provides a detailed and generally accepted scheme to classify the strength of evidence as to the possible human carcinogenicity of chemicals and other agents. This includes careful consideration of mechanistic data and other supporting evidence, the evaluation of which is also important to inform selection of models or defaults used in dose response assessment, as is described below. The extended consideration of supporting evidence is in fact the primary difference between more recent versions of the guidance from IARC, and also by other organizations including U.S. EPA, and the original versions of that guidance. In fact, the basic criteria for hazard identification based on bioassay and epidemiological data have not changed substantially in other respects from earlier guidance documents, including that originally published by California (DHS, 1985). Although as noted earlier the California Air Toxics programs do not categorize identified carcinogens, it has generally been the practice to regard any agent with an IARC overall classification in Group 1 or Group 2 as a known or potential human carcinogen. This implies the selection of various policy-based default options, including absence of a threshold in the dose-response curve, unless specific data are available to indicate otherwise. The same basic identification criteria are used by OEHHA scientific staff to determine the appropriate treatment of agents not evaluated by IARC, or for which newer data or revised interpretations suggest that an earlier IARC determination is no longer appropriate.

U.S. EPA has also proposed a scheme for carcinogen hazard identification and strength of evidence classification in their recently finalized Guidelines for Carcinogen Risk Assessment (U.S. EPA, 2005). These principally differ from the IARC guidance in recommending a more extensive narrative description rather than simply a numerical identifier for the identified level of evidence, and also to some degree in the weight accorded to various types of supporting evidence. However, for most purposes they may be regarded as broadly equivalent to the scheme used by IARC, and OEHHA has chosen to cite the IARC (2006) *Preamble* as representing the most up-to-date and generally accepted guidance on this issue.

Dose Response Assessment

The dose-response phase of a cancer risk assessment aims to characterize the relationship between an applied dose of a carcinogen and the risk of tumor appearance in a human. This is usually expressed as a cancer slope factor [“potency” – in units of reciprocal dose - usually $(\text{mg}/\text{kg}\text{-body weight}\cdot\text{day})^{-1}$ or “unit risk” – reciprocal air concentration – usually $(\mu\text{g}/\text{m}^3)^{-1}$] for the lifetime tumor risk associated with lifetime continuous exposure to the carcinogen at low doses. Cancer potency factors may also be referred to as “cancer slope factors”. (As will be described later, additional algorithms may need to be applied to determine risk for specific age groups, or at higher doses where toxicokinetic factors have significant effect.) The basic methodologies recommended in this document are similar to those described by U.S. EPA (2005a) in their Carcinogen Risk Assessment Guidelines. This document therefore refers to U.S. EPA (2005a) for explanation of detailed procedures, and will provide only a brief summary except in cases where OEHHA recommendations are different from or more explicit than those of U.S. EPA.

The following descriptions of methods for dose response assessment, and considerations in their application, apply in principle to the analysis of both animal and human (epidemiological) cancer incidence data. Indeed, the original formulation of the multistage model (Armitage and Doll, 1954) described below was developed based on human cancer incidence. Nevertheless, the

number and quality of human cancer incidence datasets is limited. The more complex analyses have usually only been possible for animal experimental data, where the interindividual variability and the exposure conditions can be both measured and controlled. Most commonly, epidemiological studies have necessarily used a form of multivariate analysis to separate the effects of several different variables relating to exposure, demographics and behaviors (e.g. smoking). In these analyses it is usually assumed that the effect measure(s) vary linearly with the exposure: any more complex variance assumptions might exceed the power of the data to determine the required model parameters. However, there are exceptions, especially for occupational studies where the critical exposure is measured as a continuous variable (rather than just categorical) and where the effect of this exposure is substantial relative to other confounding factors. For example, OEHHA (1998) used a multistage model dealing with both exposure intensity and duration in the analysis of cancer incidence in railroad workers exposure to diesel exhaust (Garshick et al., 1988)

Interspecies Extrapolation

The procedures used to extrapolate low-dose human cancer risk from epidemiological or animal carcinogenicity data are generally health-protective in that they determine an upper confidence bound on the risk experienced by an exposed population. As statistical estimates they cannot be regarded as definite predictions of the risk faced by any one specific individual, who might for a variety of reasons, including individual exposure and susceptibility, experience a risk different from the estimate. The risk assessment procedures used aim to include the majority of variability in the general human population within the confidence bound of the estimate, although the possibility that some individuals might experience either lower or even no risk, or a considerably higher risk, cannot be excluded. Additionally, differences may exist between the characteristics of the general public and those of studied populations. For example, healthy workers, the subject of most epidemiological studies, are often found to have lower rates of morbidity and mortality than the general population (Wen et al., 1983; Monson, 1986; Rothman and Greenland, 1998). Most human data are derived from studies of largely male adult workers and risk estimates cannot take into account specific physiological factors of women, children, and older populations that may affect the potency of a carcinogen, including early age-at-exposure.

Dose-response assessment based on environmental epidemiological studies may involve evaluation of health impacts at exposure levels within the range of those measured in the study population. However, more usually the source data are studies of occupationally exposed humans or of animals, in which case the exposures in the study are likely to be much higher than those of concern for risk assessments relating to community or ambient exposures. Further, even when extrapolation from animal species to humans is not required, the general population to which the URF is applied may differ in characteristics relative to the occupational population studied. It is therefore necessary to extrapolate from the available data to the population and exposure range of concern, which is done by using a dose-response model derived from the source data. The models used fall into three main classes; mechanistically based models, empirical models and (where data are lacking to support a true data-based model) default assumptions. The factors affecting the dose-response relationships for carcinogenesis may also be divided into those relating to absorption, distribution, metabolism and excretion on the one hand (*i.e.* toxicokinetics), and those relating to the underlying dose-response characteristics of carcinogenesis at the tissue or cellular level (*i.e.* toxicodynamics). In this sense the problem of

dose response assessment for carcinogens is similar to that for non-cancer toxic effects. The toxicokinetic models used may in fact be similar for both situations, but the toxicodynamic models are generally different.

Intraspecies Extrapolation and Inter-individual Variability

In estimating the impact of a particular level of exposure to a carcinogen on a target human population, it is necessary to consider the range of susceptibility in the target population. In the present case this is typically defined as the general population of the State of California, including of course women (some of whom are pregnant), infants and children, the elderly, the sick, and those with genetic polymorphisms or acquired differences which affect their susceptibility to carcinogens. In general it has been assumed that the upper-bound risk estimates obtained from the standard toxicodynamic models described below are sufficiently health-protective to cover the intrinsic variability of the adult human target population, in spite of the fact that these models do not explicitly address this type of variability, except in the few cases where an estimate is based on epidemiological data from a large and unselected study group (U.S. EPA, 2005a). However, various analyses (Drew et al., 1983; Barton et al., 2005; Appendix J) have suggested that this assumption is inadequate to cover the expected variability within a human population that includes infants and children. Accordingly both U.S. EPA (2005b) and this document (~~page 30 et seq.~~) now offer guidance on the use of age-specific adjustment factors to allow for the potentially greater sensitivity of infants and children to chemical carcinogenesis.

The ability to accommodate human variability with regard to the toxicokinetic factors affecting susceptibility to carcinogens varies with the level of detail used in the particular assessment. If the generic interspecies extrapolation approach based on body weight is used without any explicit toxicokinetic model then the assumption is made, as in the case of toxicodynamic variability, that the overall health-protective assumptions made are sufficient to cover the toxicokinetic variability. On the other hand if explicit models such as those referenced in the following paragraph are used, this variability may be more explicitly accommodated by using parameter values which are taken as point estimates from measured distributions of population values, or by using Monte Carlo techniques to include those distributions in the model (Bois et al., 1996; OEHHA, 1992; 2001b).

Toxicokinetic Models

Considerable literature exists showing the importance of understanding the toxicokinetics of carcinogens in understanding their mechanism of action, sites of impact and dose-response relationships. U.S. EPA (2005) in Section 3.1 refers to the importance of identifying an appropriate dose metric for the dose-response analysis. Early cancer risk assessments typically used applied dose as the dose metric, which is adequate in simple cases provided appropriate correction factors are applied for interspecies extrapolation. However, it is often observed that the uptake, metabolism and elimination of the carcinogenic substance (and/or a procarcinogen and metabolites) is non-linear, especially at the higher doses employed in experimental animal studies (Hoel *et al.*, 1983, Gaylor *et al.*, 1994). Extrapolation to lower doses where such relationships tend to linearity (Hattis, 1990) is aided by the use of toxicokinetic models. These may be relatively simple compartment models, or sophisticated “physiologically based pharmacokinetic (PBPK) models” which to a greater or lesser degree model the actual

biochemical and physiological events of toxicokinetic importance. Applications of both types of model may be found in various risk assessment documents prepared for the Toxic Air Contaminants program (and other OEHHA risk assessments). Since the details vary widely according to the nature of the chemical and the availability of appropriate kinetic data these general guidelines will defer to those examples rather than attempt a fuller exposition here. Further analysis of the use of toxicokinetic modeling in extrapolation from animals to humans, and in accounting for interindividual variability among adult humans, infants and children is presented in the Air Toxics Hot Spots *Technical Support Document for the Derivation of Noncancer Reference Exposure Levels* (OEHHA, ~~2007: Public Review Draft~~2008). Although this refers to the use of toxicokinetic modeling in non-cancer risk assessment, the primary considerations are similar for cancer risk assessment.

Toxicodynamic Models

An early use of mechanistic analysis to support risk assessment was the development of the Armitage-Doll multistage model of dose-response for carcinogenesis. The multistage model was initially developed on theoretical grounds, and by examination of epidemiological and animal data on time to tumor incidence. Subsequent discovery of the molecular biology of proto-oncogenes has provided a basis for explaining the model in terms of actual biological events and systems (Barrett and Wiseman, 1987). This model was developed by Crump and others into the “linearized multistage model”, which has been extensively used for carcinogen risk assessment. It leads to a number of partially verifiable predictions, including linearity of the dose-response relationship at low doses, which is observed for many genotoxic carcinogens. It also predicts the form of the dose-response relationship at higher doses, which generally follow a polynomial form (subject to sampling and background corrections) except where other identifiable factors such as pharmacokinetics intervene.

It has been argued that the simple linearized form of the multistage model has limitations as a description of carcinogenic mechanisms, which detract from its usefulness and generality. Cell proliferation is known to be important in the progression of cancer. It may actually be the primary mechanism of action for a few carcinogens, as opposed to the direct modification of DNA by the carcinogen or a metabolite which is assumed to cause the mutational event at each stage in the original multistage description. A cell proliferation model has been developed (Moolgavkar and Knudson, 1981), which retains the concept of an initiating mutational event (in most cases caused by interaction of the chemical with DNA, although it could also be a spontaneous mutation) as in the original multistage model, but also considers proliferation, death or terminal differentiation of both normal and initiated cells. This model is thought to better describe the biological events in carcinogenesis. However, it has not been used extensively in risk assessment because it requires many parameters that are difficult to define and measure (such as proliferation and death rates for various classes of cell). If these cannot be accurately determined, the model has too many free parameters and is not helpful in defining extrapolated values for risk assessment purposes. This highlights a general problem in using mechanistic models in carcinogen risk assessment, which is that the carcinogenesis data themselves are generally insufficient to define fully the dose response curve shape at low doses or provide much mechanistic information. The analysis is therefore supplemented with policy-based assumptions (such as the expectation of linearity at low doses) and, wherever possible, additional

experimental measurements relating to the mechanism of action, in order to make meaningful prediction of risk from environmental exposures to humans.

Because of the difficulties in validating simplified mechanistic models such as the basic multistage model, and the additional difficulty of parameter estimation with more complex mechanistic models, the new U.S. EPA guidelines (U.S. EPA, 2005a) and some recent California risk assessments have chosen instead to use a less overtly mechanistic approach. This approach combines benchmark dose methodology (described below) with an explicit choice of the method for low-dose extrapolation, either assuming low-dose linearity or, for certain carcinogens where data indicate that this is appropriate, a “margin of exposure” or safety/uncertainty factor based approach. This benchmark method is now normally recommended for carcinogen dose response analysis, and the results generally differ little from those derived by the linearized multistage model. Although the linearized multistage method is no longer recommended as the default approach for cancer potency estimation it remains a plausible alternative in many cases, and still has useful applications, such as for time-to-tumor analyses for which benchmark methods are not yet widely available. Additionally, a considerable number of existing cancer potencies in Appendices A and B, and used in the Air Toxics Hot Spots program were derived by this method. Many of these would not be significantly different if calculated by the benchmark approach, and are unlikely to be replaced soon by newly calculated values. The linearized multistage method will therefore also be briefly described here.

Benchmark dose methodologies

The use of benchmark dose methodology has been explored by various investigators [including Gaylor et al. (1998); van Landingham et al. (2001) and Crump (1984, 1995, 2002)] as a tool for dose response extrapolation. This has been recommended in regulatory guidelines for both carcinogenic (U.S. EPA, 2005a) and non-carcinogenic (U.S. EPA, 1995) endpoints. The basic approach is to fit an arbitrary function to the observed incidence data, and to select a “point of departure” (POD) (benchmark dose) *within the range of the observed data*. From this a low dose risk estimate or assumed safe level may be obtained by extrapolation, using an assumed function (usually linear) or by application of uncertainty factors. The critical issue here is that no assumptions are made about the nature of the underlying process in fitting the data. The assumptions about the shape of the dose response curve (linear, threshold, etc.) are explicitly confined to the second step of the estimation process, and are chosen on the basis of policy, mechanistic evidence or other supporting considerations. The benchmark chosen is a point at the low end of the observable dose-response curve. Usually a dose at which the incidence of the tumor is 10% is chosen for animal studies, although lower effect levels may be appropriate for large epidemiological data sets. Because real experimental data include variability in the response of individual subjects, and measurement errors, likelihood methodology is applied in fitting the data. A lower confidence bound (usually 95%) of the effective dose (LED₁₀), rather than its maximum likelihood estimate (MLE), is used as the point of departure. This properly reflects the uncertainty in the estimate, taking a cautious interpretation of highly variable or error-prone data. It also reflects the instability of MLE values from complex curve-fitting routines, which has been recognized as a problem also with the linearized multistage model.

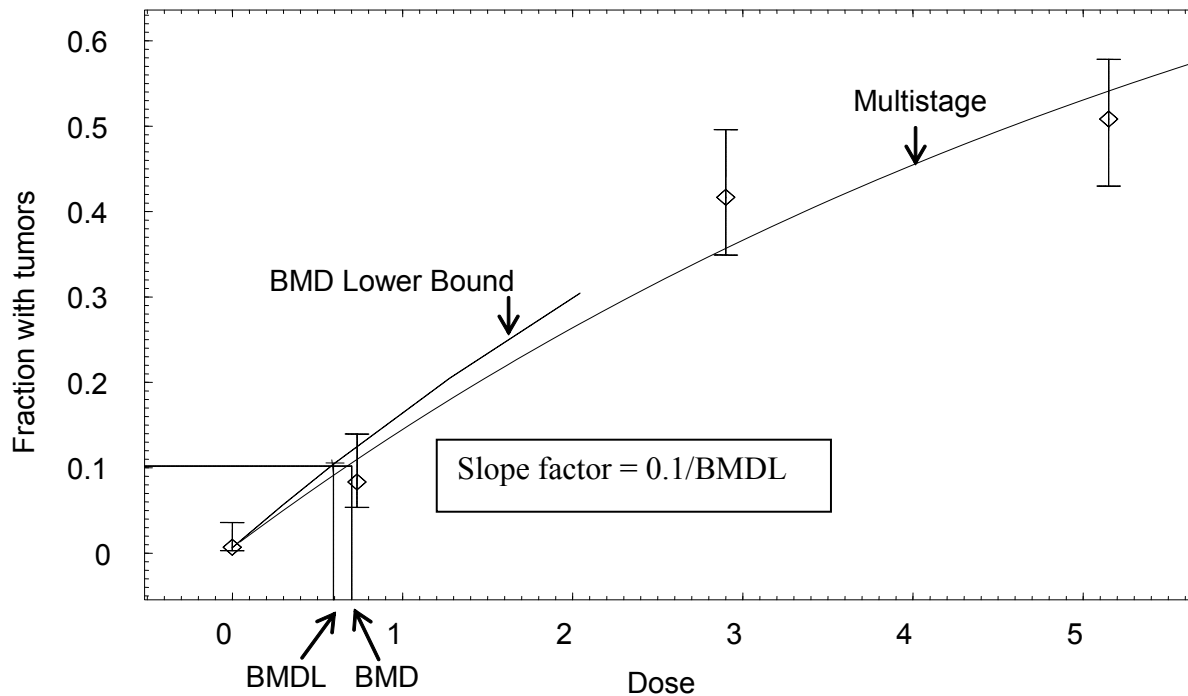
For cancer dose-response estimation using the benchmark dose method, either animal bioassay data or epidemiological data provide a suitable basis. In the absence of a pharmacokinetic model

(which could provide tissue-specific dose metrics), the potency would ordinarily be based on the time-weighted average exposure during the exposure or dosing period. The model used to fit the data can be chosen from a range of available alternative quantal models, depending on which provides the best fit to the data in the observable range. In practice, the multistage polynomial fit developed for the linearized multistage model works well for most tumor data sets. Here it is being used merely as a mathematical curve-fitting tool, where the model well fits the data set, without making assumptions about its validity as a biological model of carcinogenesis.

Suitable polynomial fits and estimates of the benchmark may be obtained using U.S. EPA's BMDS software. The benchmark often used is the 95% lower confidence bound on the dose producing 10% tumor incidence. However, if data are available which include a significant dose-response at less than 10% tumor incidence, then that lower benchmark should be used (e.g. LED₀₅ or LED₀₁). Other software such as Tox_Risk, which was used for the linearized multistage model, has been used successfully, although the earlier GLOBAL program and its relatives are less suitable as curve-fitting tools for benchmark dose analysis.

Since it is usually assumed in cancer risk estimation that the low-dose response relationship is linear, risk estimates and a potency value (slope factor) may be obtained by linear extrapolation from an appropriate benchmark dose. The potency is the slope of that line ($0.1/\text{LED}_{10}$). The low dose linearity assumption is a general default for any carcinogen, and it is unlikely to be altered for genotoxic carcinogens.

A calculation using the benchmark dose approach (using a polynomial model with exponents restricted to zero or positive values), and linear extrapolation from the LED₁₀ to obtain a potency estimate is shown in Figure 1 (the figure was generated by the U.S. EPA's BMDS program). This is based on tumor incidence data from an actual experiment with vinyl bromide in rats (Benya *et al.*, 1982), with metabolized dose calculated by means of a pharmacokinetic model (Salmon *et al.*, 1992). The value of q_1^* obtained by this calculation would then be corrected for the duration of the experiment if it had lasted for less than the standard rat lifetime, and for bodyweight and route-specific pharmacokinetic factors as described below. This is in addition to the correction for exposure duration that would be necessary if the study had not lasted for 105 weeks, and the interspecies correction, both of which are described below.

Figure 1. Benchmark dose calculation for tumor data in rats exposed to vinyl bromide

From Salmon *et al.* (1992), based on data from Benya *et al.* (1982)

Linearized Multistage Model

Quantal analyses

A "multistage" polynomial (U.S. EPA, 1986, 2005a; Anderson *et al.*, 1983), based on the mechanistic insights of the original Armitage and Doll model of cancer induction and progression, has been used extensively by U.S. EPA, OEHHA and other risk assessors to model the dose response for lifetime risk of cancer. It usually is used for analysis of animal bioassay data, although related approaches have occasionally been used with epidemiological data. In mathematical terms, the probability of dying with a tumor (P) induced by an average daily dose (d) is:

$$P(d) = 1 - \exp[-(q_0 + q_1d + q_2d^2 + \dots + q_jd^j)]$$

with constraints

$$q_i \geq 0 \text{ for all } i.$$

Equivalently,
$$A(d) = 1 - \exp [- (q_1 d + q_2 d^2 + \dots + q_k d^k)],$$
 where
$$A(d) = \frac{P(d) - P(0)}{1 - P(0)}$$
 is the extra risk over background at dose d .

The q_i model parameters are constants that can be estimated by fitting the polynomial to the data from the bioassay, *i.e.* the number of tumor bearing animals (as a fraction of the total at risk) at each dose level, including the controls. The fit is optimized using likelihood methodology, assuming that the deviations from expected values follow a χ^2 distribution, with the number of degrees of freedom (and hence the maximum number of terms allowed in the polynomial) determined by the number of points in the data set. All the coefficients of the terms are constrained to be zero or positive, so the curve is required to be straight or upward curving, with no maxima, minima or other points of inflection. In addition to the maximum likelihood estimates of the parameters, the upper 95% confidence ~~bounds-limits~~ on these parameters are calculated.

The parameter q_0 represents the background lifetime incidence of the tumor. The 95% upper confidence limit of the slope factor q_1 , ~~or more usually its upper bound~~ (q_1^*), is termed the cancer potency. The maximum likelihood estimate (MLE) of q_1 is not usually regarded as a reliable estimate for several reasons. First, it fails to reflect the uncertainty and variability in the data which affect the value of the estimate. This is an important issue for protection of public health, which is emphasized by current regulatory guidelines. Secondly, due to the variable order of the polynomial and the effect of some terms being zero as opposed to having a small but finite value, the MLE is unstable, and may show large and unpredictable changes in response to very slight changes in the input data. It may also erratically have a zero value, even when the data imply a significant positive dose-response relationship. The MLE is not a measure of central tendency for this estimate distribution (which is always asymmetrical and often multi-peaked). For small doses, the cancer potency is the ratio of excess lifetime cancer risk to the average daily dose received. Details of the estimation procedure are given in Crump (1981) and Crump, Guess, and Deal (1977). Several software programs are available to perform the necessary calculations, including U.S. EPA's BMDS, Tox_Risk and the earlier GLOBAL programs by Crump and colleagues, and Mstage, written by Crouch (1987).

When dose is expressed in units of mg/kg-d, the potency is given in units of (mg/kg-d)⁻¹. Likewise, when the model input is in units of concentration ($\mu\text{g}/\text{m}^3$, ppb), the potency is given in units of ($\mu\text{g}/\text{m}^3$)⁻¹ or (ppb)⁻¹. As in the case of potencies obtained by the benchmark approach, the experiment-based potency value needs to be corrected for less-than lifetime or intermittent exposure, and extrapolated from the test species to humans. Risk calculations using potency value estimated using the linearized multistage model predict the cancer risk at low doses only, with the higher order terms of the fitted polynomial being ignored since their contribution is negligible at low doses.

Selection of Site and Tumor Type

In developing cancer potency estimates from animal data, standard practice has been to use dose-response data for the most sensitive tumor site as the basis of the estimate (CDHS, 1985). Where tumors of more than one histological type (e.g. adenomas and carcinomas) are observed at a single site, the combined incidence, *i.e.* proportion of animals affected with at least one tumor of

any of the relevant types, is used for dose-response assessment. The same rules for combining tumor types are generally applied in determining statistical significance for carcinogen identification (IARC, 2006). Tumor types considered to represent different stages of progression following initiation of a common original normal cell type are combined, whereas tumor types having different cellular origins are generally not combined by this procedure. Other considerations that may influence choice of site for dose response estimation include the quality of the data (especially, the statistical impact of a high or variable rate of a particular tumor type and site in control animals), and biological relevance to humans. However, it is an important principle that, just as for the hazard identification phase, concordance of site or tumor type between animal models and human health effects may occur but is not assumed or required.

Carcinogens inducing tumors at multiple sites

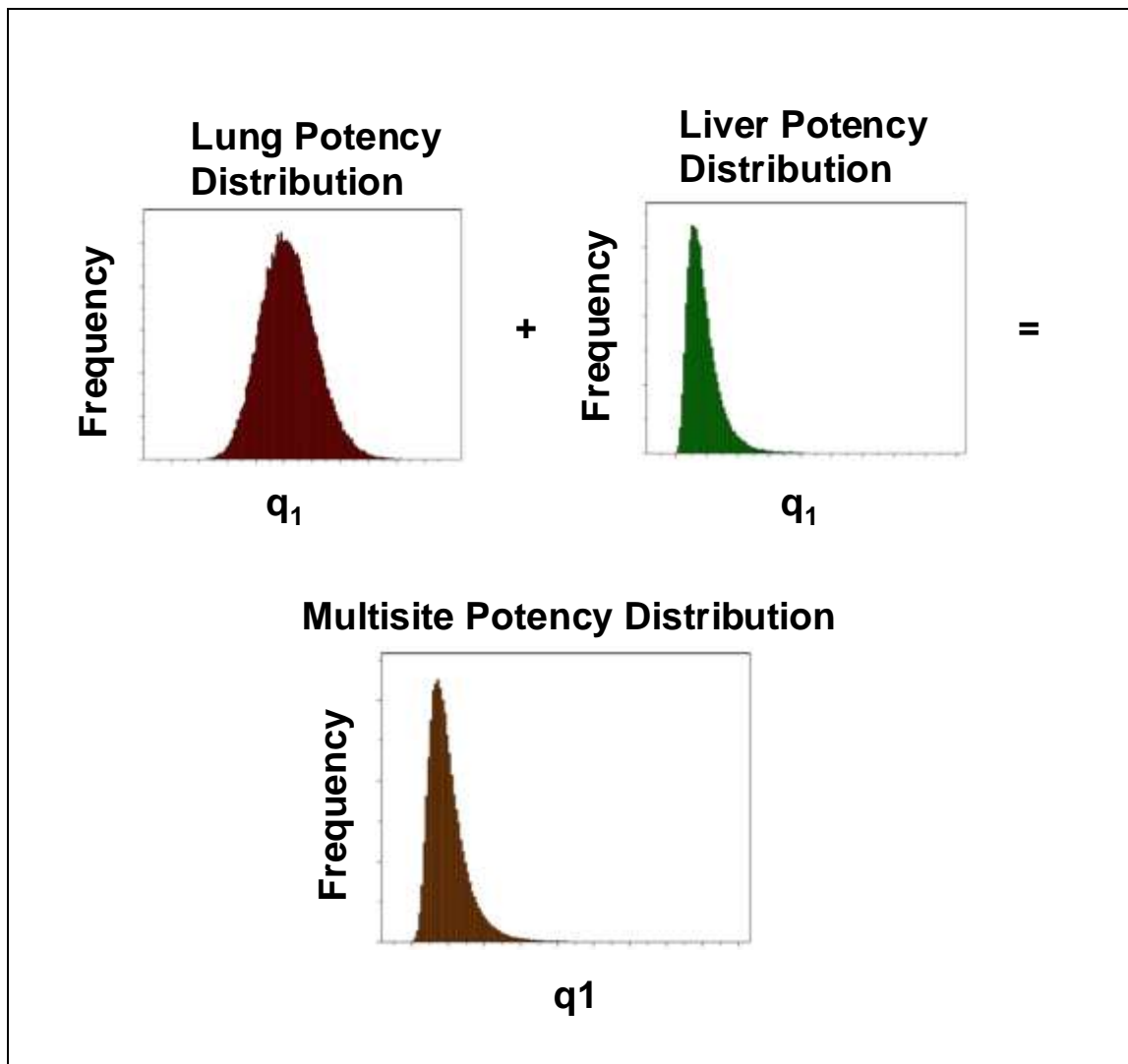
For most carcinogens, the selection of the most sensitive site in the animal studies is recognized as providing a risk estimate which is appropriate to protect human health. However, for chemicals that induce tumors at multiple sites, the single-site approach may underestimate the true carcinogenic potential. For example, the overall assessment of cancer risk from cigarette smoking (U.S. DHHS, 1982) or ionizing radiation (NRC, 1990) is not based on risk at one site, such as lung cancer. Instead, total cancer risk is estimated from all the sites at which agent-induced tumors are observed (lung, bladder, leukemia, etc), combined.

For carcinogens that induce tumors at multiple sites and/or with different cell types in a particular species and sex, OEHHA derives the animal cancer potency by probabilistically summing the potencies from the different sites and/or cell types. Using the combined potency distribution takes into account the multisite tumorigenicity and provides a basis for estimating the cumulative risk of all treatment-related tumors.

The linear term (q_1) of either the multistage model or the multistage-in-dose, Weibull-in-time model is first estimated based on the dose-response data for each of the treatment-related tumor sites. Statistical distributions, rather than point estimates, are generated at each site by tracing the profile likelihood of the linear term (q_1) (Zeise et al., 1991). The distributions of q_1 for each of the treatment-related sites are then statistically summed using a Monte Carlo approach and assuming independence (Figure 2). The sum is created by adding the linear term for each tumor site, according to its distribution, through random sampling. The upper 95 percent confidence limit on the summed distribution is taken as the multisite animal cancer potency estimate (McDonald et al., 2003, McDonald and Komulainen, 2005).

OEHHA has applied this approach in several recent dose-response analyses, including that for naphthalene presented in Appendix B of this document.

Figure 2. Addition of potency distributions for multi-site cancer potency derivations.



Early-Lifestage Cancer Potency Adjustments

In recent years, there have been growing concerns regarding the exposure of children to environmental chemicals, including the possibility that they may be more susceptible than adults to injury caused by those chemicals. The California Legislature passed the Children's Environmental Health Protection Act (Senate Bill 25, Escutia; Chapter 731, Statutes of 1999; "SB 25") to help address these concerns. Under SB25, OEHHA is mandated to consider infants and children specifically, where data permit, in evaluating the health effects of Toxic Air Contaminants (TACs).

The development of cancer is one of the adverse health effects that may occur in children as a result of exposure to environmental chemicals. The document "Prioritization of Toxic Air Contaminants under the Children's Environmental Health Protection Act" (OEHHA, 2001a) noted that risks of cancer from exposures to carcinogens occurring from conception through puberty can be different than those from exposures occurring in adulthood. Exposure to a carcinogen early in life may result in a greater lifetime risk of cancer for several reasons:

1. Cancer is a multistage process and the occurrence of the first stages in childhood increases the chance that the entire process will be completed, and a cancer produced, within an individual's lifetime.
2. Tissues undergoing rapid growth and development may be especially vulnerable to carcinogenic agents. During periods of increased cell proliferation there is rapid turnover of DNA, and more opportunity for misrepair of damage (e.g., DNA breaks, crosslinks, adducts) or alterations to result in permanent changes to the DNA (e.g., mutations, altered DNA methylation) that may ultimately lead to cancer.
3. During early development, a greater proportion of the body's cells are relatively undifferentiated stem cells, and as such represent a large target population of somatic cells capable of passing along permanent changes to the DNA during future cell divisions.
4. There may be greater sensitivity to hormonal carcinogens early in life since the development of many organ systems is under hormonal control (e.g., male and female reproductive systems, thyroid control of CNS development).
5. Other factors that may play a role in increased cancer risk from exposures during critical developmental periods include differences in immunological activity, intestinal absorption, biliary and kidney excretion, blood and fat distribution, and expression of enzyme systems that activate or detoxify carcinogens.

Data in humans and animals for a variety of carcinogens suggest that exposures to such carcinogens early in life may result in a greater lifetime risk of cancer compared to exposures later in life. Examples of this effect in humans are carcinogenicity due to ionizing radiation, diethylstilbestrol (DES), [chemotherapeutic agents](#), and [tobacco smoke](#).

Ionizing radiation exposure carries an increased risk of cancer when exposures occur early in life compared to adult exposures for a number of tumor types. Children exposed to ionizing radiation (diagnostic X-rays) *in utero* demonstrate a larger excess of leukemia cases than

children exposed to ionizing radiation postnatally (NRC, 1990). Exposure to radioisotopes (^{131}I , ^{137}Cs , ^{134}Cs , ^{90}Sr) as a consequence of the 1986 Chernobyl nuclear accident resulted in an elevated thyroid cancer incidence in children but not adults (Moysich, 2002). Treatment of children for Hodgkins lymphoma with both chemotherapeutic agents and irradiation has been shown to increase the risk of secondary tumors (Swerdlow et al., 2000; Franklin et al., 2006).

Age at irradiation in Hodgkin's disease patients treated with radiotherapy strongly influenced the risk of developing breast cancer. The relative risk (RR) of developing breast cancer was 136 for women treated before 15 years of age, 19 for women 15-24 years of age, and 7 for those 24-29 years of age. In women above 30 years of age, the risk was not increased (Hancock *et al.*, 1993).

DES was administered to pregnant women in the 1940s-1960s for the purpose of preventing pregnancy loss. In 1970, Herbst and Scully described 7 cases of vaginal adenocarcinoma (6 cases of the clear-cell type) in women aged 15-22 years. This type of cancer is extremely rare in that age range. A follow-up epidemiological study included an additional case, and noted the fact that the mothers of 7 of the 8 patients had been treated with DES during their pregnancy (Herbst *et al.*, 1971). Reports by other investigators confirmed the association between maternal use of DES during pregnancy and the development of vaginal adenocarcinoma in their female offspring (Preston-Martin, 1989). It was observed that *in utero* DES exposure resulted in female genital tract morphological changes which correlated with both dose and duration of exposure, and those changes were not related to the maternal conditions which were the reason for the DES administration. Additionally, the risk of occurrence of those morphological changes declined with increasing gestational age at first exposure (O'Brien *et al.*, 1979; Preston-Martin, 1989). In contrast, vaginal adenocarcinoma incidence did not increase in the exposed mothers themselves, indicating an increased early-life susceptibility to the carcinogenic effects of DES.

There is evidence in the epidemiological literature indicating that exposure to tobacco smoke during puberty may increase risk of breast cancer later in life, particularly among women who are NAT2 slow deacetylators (Marcus *et al.*, 2000; Morabia *et al.*, 2000; Lash and Aschengrau, 1999). Wiencke et al. (1999) report that early age at initiation of smoking is associated with a higher level of DNA adducts in lung tissue of former-smokers with lung cancer.

It has also been observed by Smith *et al.* (2006) that human *in utero* or early childhood exposure to arsenic in drinking water results in significantly increased lung cancer incidences during adult life.

Data from animal studies provide additional examples of increased sensitivity to early life (typically postnatal and juvenile) exposures. These effects span a range of target tissues, including the liver (vinyl chloride, safrole), brain (methylnitrosourea), reproductive tract (DES, tamoxifen), and lung (urethane) (OEHHA, 2001a).

In the following sections we summarize two efforts to evaluate quantitatively the effect of lifestage at exposure on carcinogenic response in experimental animal studies. The first section provides a description of OEHHA's analysis of data on the effect of age at exposure on carcinogenic potency. (Details of this analysis are in Appendix J.) The second section describes U.S. EPA's work in this area. (We also provide the published paper in Appendix I that presents the U.S. EPA analyses.) Both analyses used extant data available in the published literature. U.S. EPA used their analysis to modify the procedures they have used to estimate cancer risk by

weighting risk by specific factors for childhood exposures. The weighting factors are a policy choice supported by U.S. EPA's data analysis. The results of OEHHA's analysis, summarized below and described in detail in Appendix J, support the decision to modify policy to weight risk when exposure occurs during childhood. Thus, OEHHA is also proposing to weight risk when exposure occurs in childhood.

OEHHA Analysis of the Effect of Age at Exposure on Cancer Potency

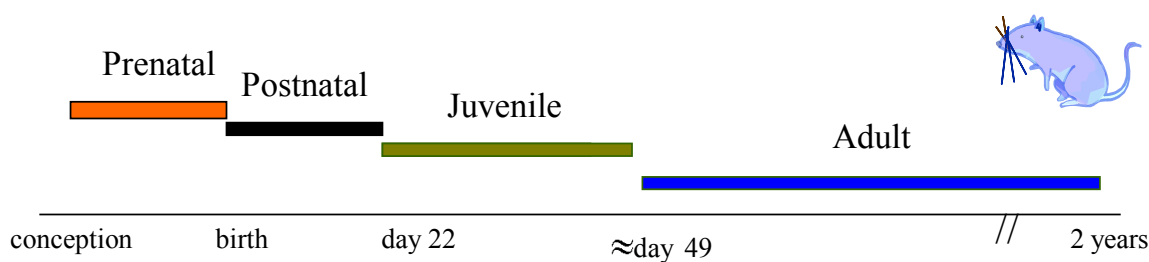
The analysis of animal cancer studies which include early life exposure by the Reproductive and Cancer Hazard Assessment Branch (RCHAB) of OEHHA also supports the application of lifestage-specific cancer potency factor adjustments. This analysis is provided in detail as Appendix J of this document.

Early-in-life susceptibility to carcinogens has long been recognized by the scientific community and clinicians as a public health concern. Numerous scientific publications and symposia have addressed this issue over the years and the scientific literature contains a number of human clinical findings and epidemiological studies of early life cancer susceptibility. While there are many indications of increased human cancer susceptibility in early life, the magnitude of the impact has been difficult to gauge. Until recently risk assessment procedures have not in general addressed the issue. As described in the next section, in 2005 the U.S. EPA adopted an approach to weight carcinogens by age at exposure if they act via a mutagenic mode of action. The California legislature in 2000 directed OEHHA to assess methodologies used in addressing early-in-life risk, compile animal data to evaluate those methods, and develop methods to adequately address carcinogenic exposures to the fetus, infants, and children (Children's Environmental Health Initiative [AB 2872, Shelly]; California Health and Safety Code [HSC] section 901 [a] through [e]).

OEHHA assessed cancer risk assessment methodologies, and found that the existing risk assessment approaches did not adequately address the possibility that risk from early-in-life and adult exposures may differ. OEHHA further concluded that there was a need to address early-in-life cancer risk, and undertook studies to develop methods for doing so. Age-related cancer susceptibility data were identified from published animal cancer bioassays in which these issues were addressed. Two types of studies with early-in-life exposures were compiled. The first type are "multi-lifestage exposure studies." These studies have at least two groups exposed during different lifestages: One dose group is exposed to a chemical only during one of the following lifestages (Figure 3):

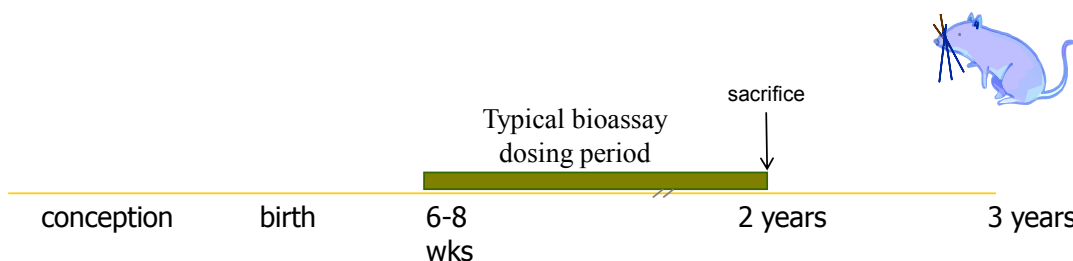
- prenatal (from conception to birth),
- postnatal (from birth to weaning),
- juvenile (from weaning to sexual maturity).

The second dose group is exposed for some period of time at an older age, preferably during the adult lifestage, that is, after sexual maturity. This group served as the reference group. In some cases where there was no adult exposure group, animals exposed as juveniles served as the reference group. Multi-lifestage exposure studies are available for many chemicals, enabling the exploration of patterns in early-life susceptibility across chemicals.

Figure 3. Definition of Rodent Lifestage Adopted in the OEHHA Analyses

OEHHA also conducted “chemical-specific case studies” of early-life sensitivity for two carcinogens, ethyl-N-nitrosoamine (DEN) and N-ethyl-N-nitrosourea (ENU) that combine data from a number of studies. These “chemical-specific case studies” were conducted to explore the feasibility of analyzing chemical-specific data on age susceptibility from single-lifestage exposure experiments. For these chemicals, OEHHA compiled from the literature a second type of study, “single-lifestage exposure experiments.” In these experiments dose groups were exposed only during a particular lifestage and, unlike the “multi-lifestage exposure studies,” there was no requirement that the same study also include groups exposed during a different lifestage. Thus, single-lifestage exposure experiments were identified as being either prenatal, postnatal, juvenile, or adult exposure studies. For each of the two chemicals, there were many prenatal studies conducted that were compiled, analyzed, and grouped together. Postnatal studies from different publications were similarly compiled, analyzed and grouped together, as were juvenile studies. Adult studies were not available for either DEN or ENU, thus for both chemicals juvenile exposure studies served as the referent for prenatal studies, and for postnatal studies.

Typical cancer bioassays such as those conducted in rats and mice by NTP involve exposing animals starting at six to eight weeks of age, which is the time at which these animals reach sexual maturity (late teenagers relative to humans). The experiments are run for two years, ending when the animal is in late middle age. Thus, early and very late life exposures are not included in the typical rodent bioassay (see Figure 4). If the NTP bioassay is used as a basis for estimating cancer potency, the potency and resulting risk estimates may be too low. Thus OEHHA focused on finding studies that evaluated early in life exposures.

Figure 4. Dosing Period for Typical Rodent Bioassays.

Since bioassays examining the effect of age at exposure on carcinogenesis were conducted by various investigators for different purposes, there is a great deal of variation across studies in terms of dose selection, duration of exposure, number of animals, and length of study duration. To be included in the compilation of studies with early life exposure, a study or an experimental group in a study had to meet minimum requirements.

The criteria for study inclusion are as follows:

- Treated groups were exposed to a single chemical carcinogen or a single carcinogenic chemical mixture.
- Study groups were not compromised by severe treatment-related non-cancer toxicity.
- Overall the duration of exposure period plus observation period exceeded 40 weeks, unless animals died of tumor.
- For included dose groups, the study must report age at dosing, age at sacrifice, and site-specific tumor incidence.
- Each lifestage exposure treatment group has an appropriate concurrent control group, or, for rare tumors only, an appropriate historical control.
- The studies were on mammals.
- Each treatment and control group consists of at least ten animals, unless the conduct and design of the study was well done in all other aspects (e.g., the length of the study was sufficiently long to observe treatment-related tumors) and tumor incidence was high in treated groups and very low in controls.
- Site specific tumor data were reported, not only total number of tumor bearing animals.
- The test compound was administered in the diet, water, via gavage, or by intraperitoneal (i.p.), intravenous (i.v.), or subcutaneous (s.c.) injection. For dermal and subcutaneous injection studies, distal tumor findings are utilized (for dermal, other than skin tumors; for injection, non-injection site tumors).

- While studies designed to histopathologically examine tumors at multiple sites were preferred, studies that examined only a select set of organ/tissue sites were not excluded if the sites examined were known with confidence to be the only target tissues for the chemical and lifestage in question in that particular strain of animal.

Different approaches were taken to identify animal cancer studies that included groups of animals exposed during early life stages. First, MEDLINE and TOXLINE (National Library of Medicine) databases were searched using combinations of various key words for cancer (e.g., tumor(s), neoplasm(s), cancer, neoplasia, cancerous, neoplasms-chemically induced) and for early-life exposure (e.g., age, age-at-exposure, development (al), prenatal, *in utero*, gestation (al), postnatal, neonatal, juvenile, weaning, weanling, adolescent, adolescence, young). Second, the extensive compilation of bioassays in the *Survey of Compounds which have been Tested for Carcinogenic Activity*, was reviewed. This survey, formerly maintained by the National Cancer Institute as Public Health Service Publication Number 149, or PHS 149, is now available from a private source electronically as CancerChem, 2000. Third, from bibliographies from relevant published papers additional studies were identified. Finally the Single Dose Database developed by Calabrese and Blain (1999) was obtained and utilized to identify additional publications that appeared to contain potentially useful data. All of these publications were evaluated to determine if the study dosed separate groups of animals early in life and at or near adulthood. A total of 145 publications, providing data on 84 chemicals, were identified as meeting the criteria for study inclusion. A subset of these met the criteria for inclusion in the multi-lifestage exposure analysis.

Finally, for the OEHHA multi-lifestage analyses, we define “experiment” as a study component consisting of a control group as well as a treated group(s) exposed during the same lifestage (i.e., prenatal, postnatal, juvenile or adult), and using the same experimental protocol (e.g., route of exposure, strain, species, laboratory). Thus, by our definition one publication may report multiple experiments.

In the OEHHA analysis, data from studies on 23 unique carcinogens, 20 of which are considered to act via primarily genotoxic modes of action, were analyzed. Of these 20 carcinogens, 15 are thought to require metabolic activation to the ultimate carcinogenic species ([Table 1](#)[Table 1](#)[Table 4](#)). Fourteen carcinogens, including one thought to act via primarily nongenotoxic modes of action, were included in the prenatal multi-lifestage exposure studies. Eighteen carcinogens, including two thought to act via primarily nongenotoxic modes of action, were included in the postnatal multi-lifestage exposure studies. Five carcinogens were included in the juvenile multi-lifestage exposure studies. The case study chemicals, DEN and ENU, are both genotoxic. ENU is a direct acting alkylating agent, while DEN requires metabolic activation.

Table 1. Carcinogens for which studies with multi-lifestage exposures in animal studies are available**Genotoxic carcinogens requiring metabolic activation**

Benzidine
 Benzo[a]pyrene
 Dibutylnitrosamine
 Diethylnitrosamine (DEN)
 7,12-Dimethylbenz[a]anthracene (DMBA)
 Dimethylnitrosamine (DMN)
 Di-n-propylnitrosamine (DPN)
 1-Ethyl-nitrosobiuret
 2-Hydroxypropylnitrosamine
 3-Hydroxyxanthine
 3-Methylcholanthrene (3-MC)
 4-(Methylnitrosamino)-1-(3-pyridyl)-1-butanone (NNK)
 Safrole
 Urethane
 Vinyl chloride

Genotoxic carcinogens not requiring metabolic activation

Butylnitrosourea
 1,2-Dimethylhydrazine
 Ethylnitrosourea (ENU)
 Methylnitrosourea (MNU)
 β -Propiolactone

Nongenotoxic carcinogens

1,1-Bis(p-chlorophenol)-2,2,2-trichloroethane (DDT)
 Diethylstilbestrol (DES)
 2,3,7,8-Tetrachlorodibenzodioxin (TCDD)

Cancer Potency Estimation

Statistical methods were developed and used to analyze the data and derive measures of early-life susceptibility. These are described in detail in Appendix J. In brief, a cancer potency (the slope of the dose response curve) was developed for each of the experiments selected using the linearized multistage model. This model was chosen because of widespread use in risk assessment, and its flexibility in being able to fit many different data sets needed to evaluate the effect of lifestage-at-exposure on cancer potency. The dose metric used for the potency analyses is cumulative dose normalized to body weight. The cancer potency is thus expressed as the increase in tumor probability with increasing cumulative dose in units of mg/kg body weight.

To take into account uncertainty in potency estimation, cancer potencies are depicted by a statistical distribution, rather than by a single, fixed value, using methods described in Appendix J. While these methods have typically been used to obtain and report the 95th percentile of the cancer slope parameter for cancer risk assessment purposes, here OEHHA utilized the full distribution of the cancer slope parameter to derive measures of early-life susceptibility to carcinogens. This was done to systematically take into account uncertainty in the analysis.

For experiments where treatment related tumors were observed at multiple sites or at the same site but arising from different cell types, slopes from these sites were statistically combined by summing across the potency distributions (assuming independence across the sites that were observed) to create an overall multisite cancer potency. It is not uncommon that a carcinogen causes more than one type of cancer or causes tumors at different sites depending on lifestage at exposure. For example, in humans tobacco smoke causes cancers of the lung, bladder, and certain other organs. This multi-site carcinogenicity is frequently observed in animal experiments as well. In order to account for this, all treatment-related tumors that were observed in a given lifestage were taken into account in estimating cancer potency from that particular experiment.

Addressing Early-Age Sensitivity in Estimating Cancer Risk: Age Sensitivity Factors

Inherent Sensitivity of Lifestages – Lifestage Potency Ratios

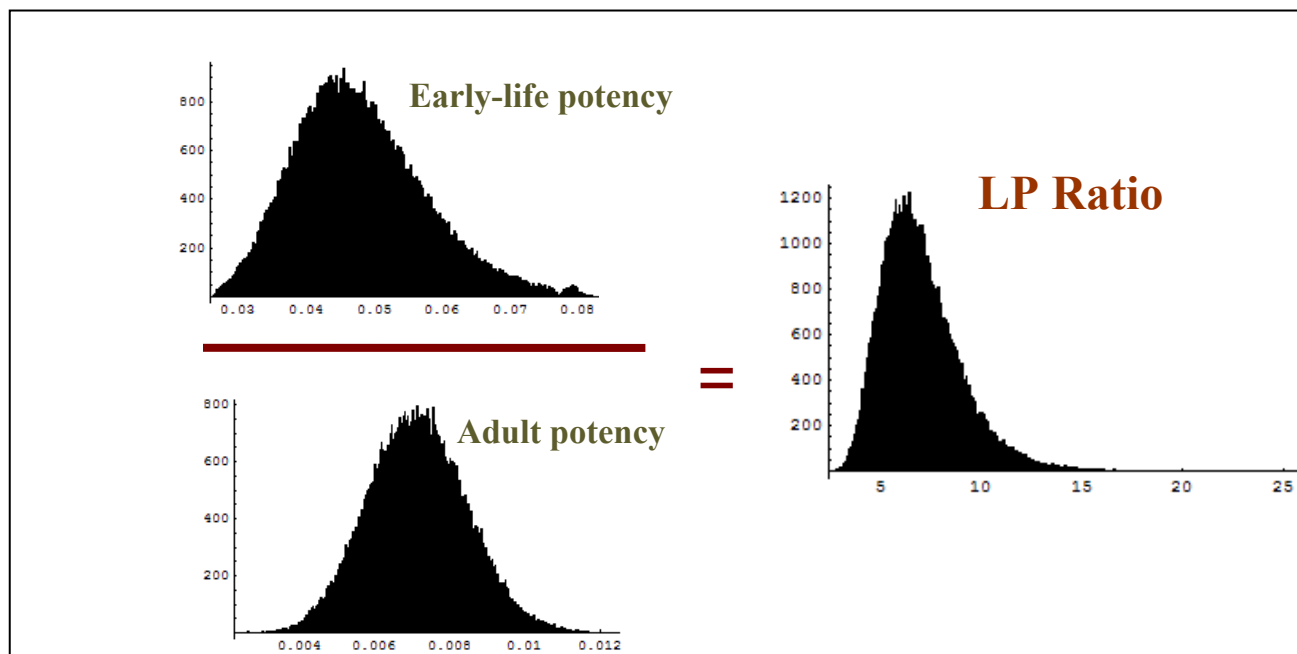
For this analysis, OEHHA calculates the ratio of cancer potency derived from an early lifestage exposure experiment(s) to that derived from an experiment(s) conducted in adult animals. OEHHA used the potency distributions for the individual lifestage exposures, rather than a point estimate, to derive the ratios. The lifestage cancer potency ratio is then described as a distribution and one can select specific percentiles from the distribution to better understand and bound the uncertainty (Figure 5). Of particular importance is the location of the ratio distribution in relation to the reference value of 1.0, which would mean no difference in risk from exposures at early versus adult lifestages. A lifestage cancer potency ratio distribution that primarily lies above the value of 1.0 indicates early life exposures to a carcinogen result in a stronger tumor response relative to adult exposure. Conversely, a lifestage cancer potency ratio distribution that mainly lies below the value of 1.0 indicates early life exposure to a carcinogen results in a weaker tumor response relative to adult exposure.

A lifestage potency (LP) ratio distribution was derived for each multi-lifestage study, resulting in 22 prenatal ratio distributions representing 14 unique carcinogens, 55 postnatal LP ratio distributions representing 18 unique carcinogens, and seven juvenile LP ratio distributions representing five unique carcinogens. The LP ratio distributions for a given early lifestage were combined into a single “LP ratio mixture distribution,” in order to show the range of susceptibilities of that lifestage to the carcinogens studied.

LP ratio mixture distributions for a given early lifestage were developed by (1) obtaining a single LP ratio distribution for each chemical (when a chemical is represented by more than one study) and then (2) equally sampling across all chemicals. When a chemical is represented by more than one study, then the LP ratio distributions from all studies of that chemical were combined by equally sampling from each LP ratio distribution via Monte Carlo methods to obtain a single

LP ratio distribution for that chemical. (Appendix J describes this in more detail, as well as a sensitivity analysis that included two alternative sampling methods.) Once each chemical is represented by a single LP ratio distribution, then the LP ratio mixture distribution for each early lifestage (prenatal, postnatal, and juvenile) is obtained by equally sampling across all of the chemicals via Monte Carlo methods.

Figure 5. Lifestage Potency Ratio (LPR) distribution.



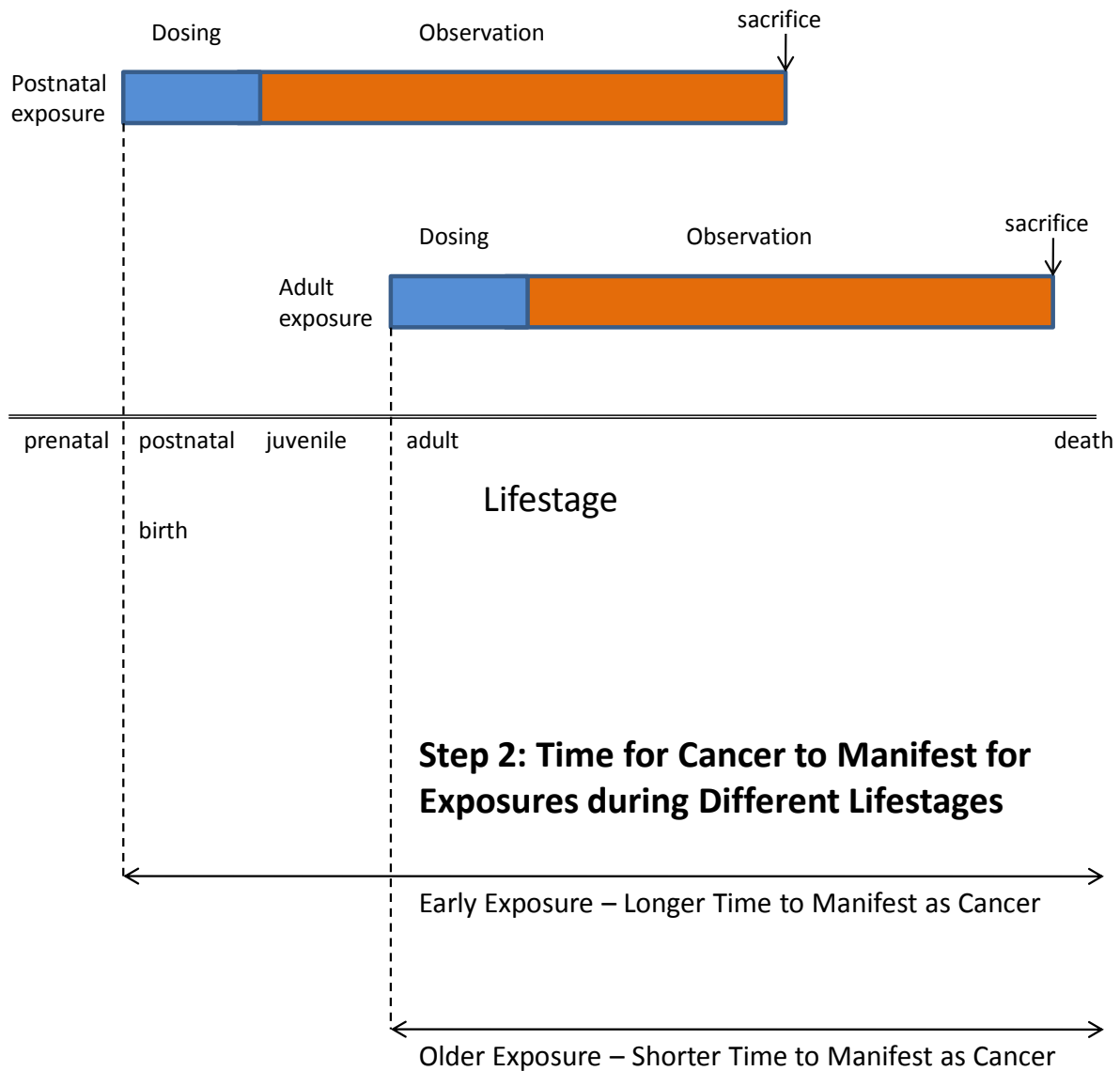
Effect of longer time period for cancer to manifest

The LP ratios described above characterize the inherent susceptibility of early lifestages to carcinogen exposure, by comparing potencies for individuals followed for similar periods of time and similarly exposed, but exposed during different lifestages. Age-specific adjustments to the cancer potency must also take into account the longer period of time that carcinogen exposure to the young has to manifest as cancer. Empirical data from studies of both humans and animals demonstrate that, for many cancers, cancer risk increases with age, or time since first exposure. While some cancers have been seen to increase by as much as the sixth power of age, a general approach taken for example by the National Toxicology Program in analyzing tumor incidences in its chronic bioassays is to assume that cancer risk increases by the third power of age. Thus, consistent with the approach used by the NTP in analyzing rodent cancer bioassay data, the longer period of time that exposed young have to develop tumors is addressed by taking into account time-of-dosing. This was done by multiplying the LP ratio by a time-of-dosing factor, to yield an age sensitivity factor (ASF). Specifically, the prenatal LP ratio is multiplied by a factor of 3.0, the postnatal LP ratio is multiplied by a factor of 2.9, and the juvenile LP ratio is multiplied by 2.7. Thus, ASFs were developed for each experiment, by first calculating the LP ratio to address inherent susceptibility of early lifestages relative to adults, and then accounting for the effect of years available to manifest a tumor following carcinogen exposure. (see Figure

6) Note that we are not using the term “sensitivity” in the immunologic sense (e.g., sensitization), but rather are using the term more generically.

Figure 6. Issues addressed by the Age-Sensitivity Factor (ASF)

Step 1: Inherent Susceptibility of Different Lifestages



Application of this approach for risk associated with lifetime exposures would include an ASF of less than 1 for exposures during the latter part of adult life for carcinogens that act on early stages. Therefore, the addition of this adjustment to the younger lifestages but not to the later part of the adult period could overestimate the risk of whole-life exposures. On the other hand, the 70 year “lifetime” used in estimating lifetime cancer risk does not reflect the longer lifespan of the U.S. population. Further, as noted above, the animal bioassays on which potency was based typically exclude pre-weaning dosing and sacrifice animals during their late middle-age. Use of cancer potencies calculated from standard assays can therefore understate lifetime cancer risk. The ASF calculated for carcinogens includes both inherent sensitivity of developing animals and the available time since exposure to develop cancer.

Results of OEHHA Analysis

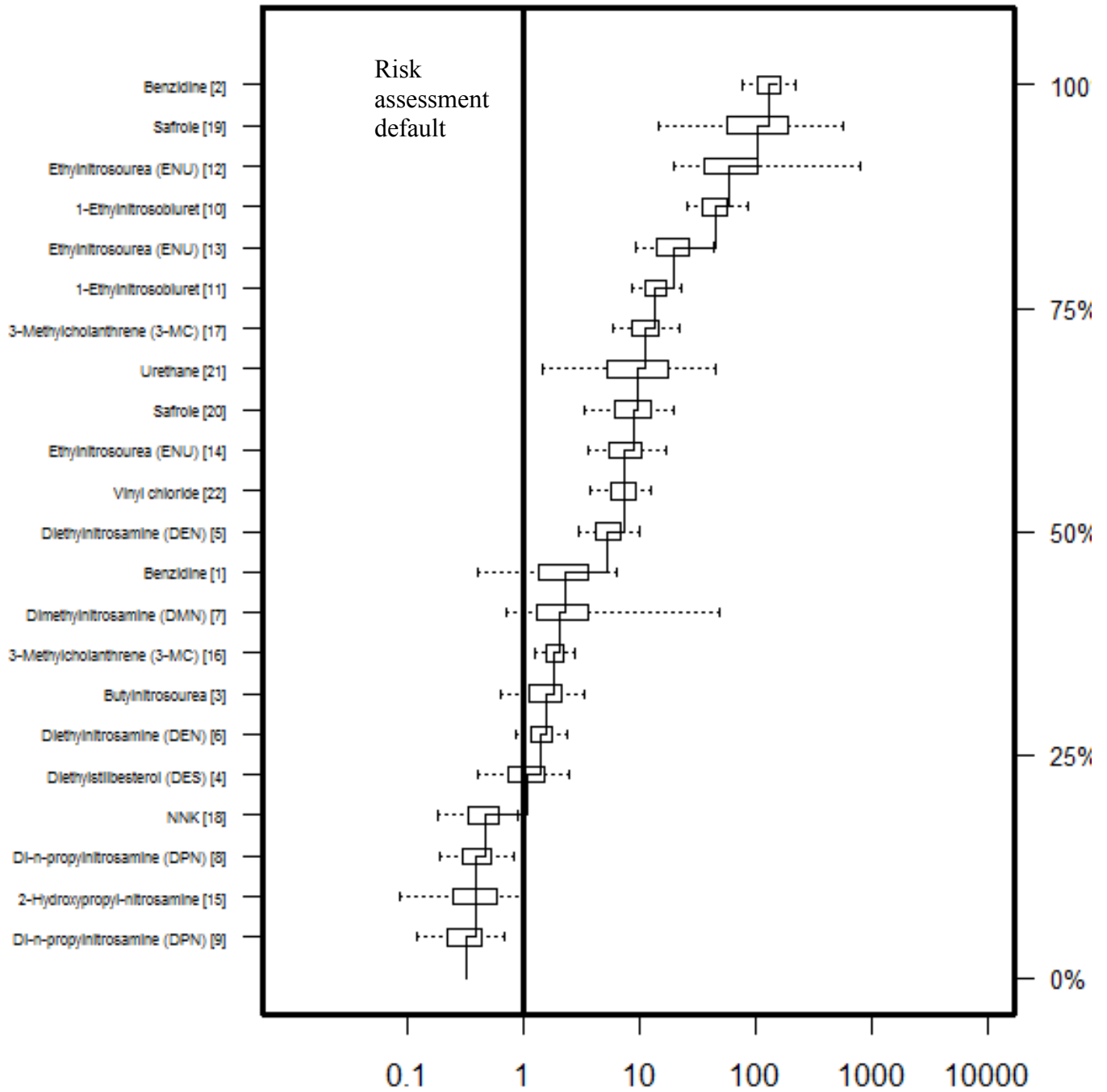
The analyses indicate that both the prenatal and postnatal lifestages can be, but are not always, much more susceptible to developing cancer than the adult lifestage. The analyses also indicated that the ASFs for these age windows vary by chemical, gender and species.

Regarding prenatal lifestage exposure, few cases were indicative of equal inherent adult and prenatal susceptibility, with an LP ratio of unity. The LP ratio distribution was roughly bimodal, with LP ratios for several studies significantly greater than unity and several others significantly less than unity. Figure 7 below shows the ASFs from each of the prenatal multi-lifestage exposure studies, displayed as a cumulative frequency profile. The median of the prenatal ASF mixture distribution was 2.9 (see also Table 6 in Appendix J),

The modality in the prenatal LP ratio distribution was reflected in the DEN and ENU case studies, with results for DEN suggesting inherently less sensitivity than older animals from exposure *in utero*, and for ENU just the opposite. For the DEN and ENU case studies, the referent groups were juvenile rather than adult animals, and the results may have underestimated the LP ratio and ASF, to the extent that some of the apparent sensitivity for DEN and ENU in the prenatal period carries through to the juvenile period. ENU is a direct acting carcinogen that does not require metabolic activation, whereas DEN can not be metabolized to any significant extent by fetal tissues until relatively late in gestation. This may explain the lower fetal susceptibility of DEN. However, prenatal metabolic status is not the sole determinant of prenatal susceptibility; e.g., benzidine and safrole require metabolic activation and exhibit greater susceptibility from prenatal exposure.

The median of the postnatal ASF mixture distribution was 13.5 (see Table 7 in Appendix J). Figure 8 below shows the ASFs from each of the postnatal multi-lifestage exposure studies, displayed as a cumulative frequency profile. Thus, for the chemicals studied, there was generally greater susceptibility to carcinogens during the early postnatal compared to the adult period, particularly when the ASF accounts for the longer period cancer has to manifest when exposure occurs early in life. The DEN and ENU case studies also exhibited substantial extra susceptibility during the postnatal period. To summarize, for most of the carcinogens studied here, animals are inherently more sensitive in the postnatal period, as indicated by Figure 8.

Figure 7. Prenatal ASF Cumulative Frequency Profile

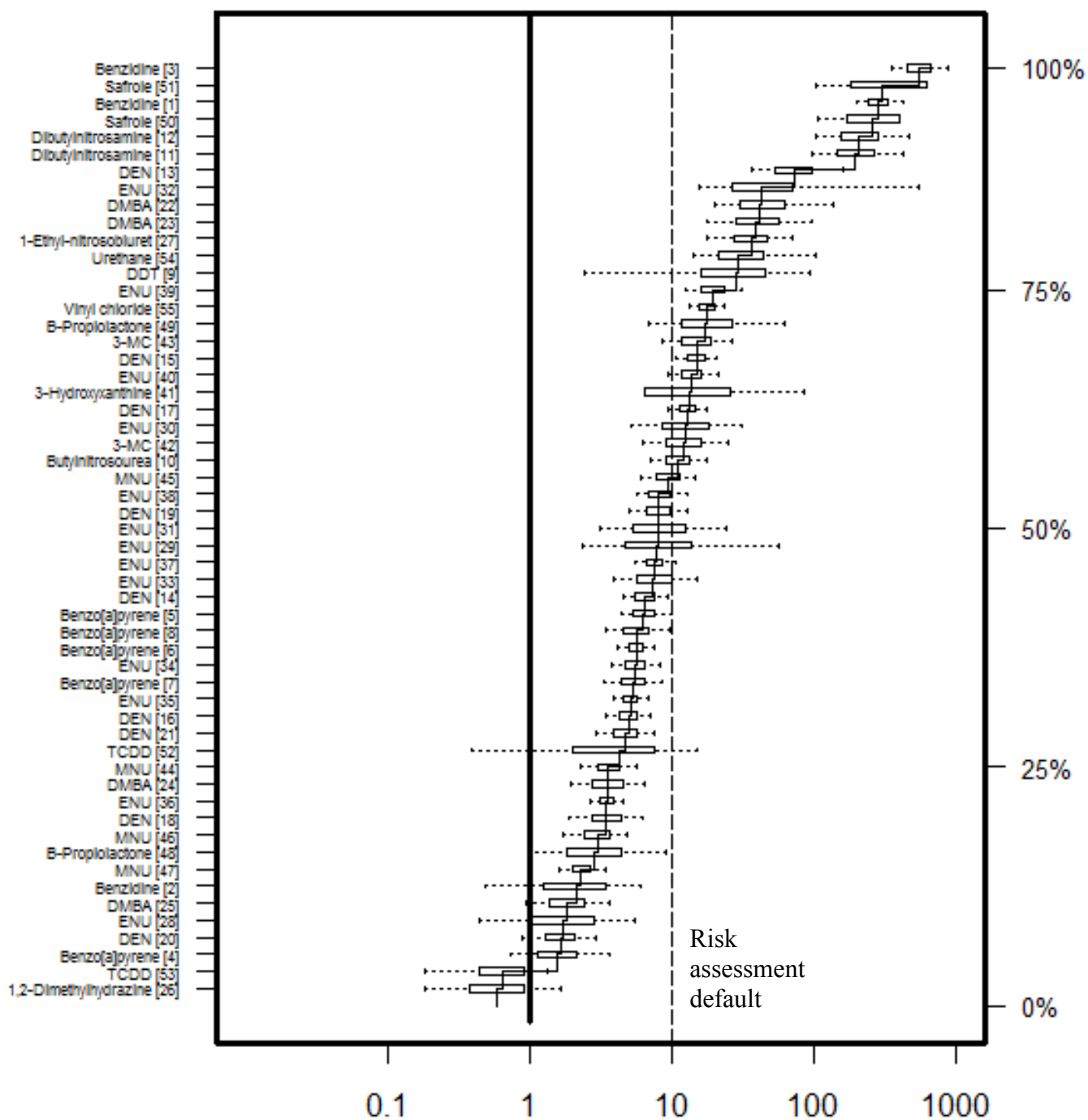


The median of the prenatal ASF mixture distribution was 2.9 (see also Table 6 in Appendix J). References are given in the legend on the next page

Figure 7 Legend (References as in Appendix J)

1. Vesselinovitch *et al.* (1979a), mouse, B6C3F₁, F, day -9 to 21
2. Ibid, M, day -9 to 21
3. Zeller *et al.* (1978), rat, Sprague Dawley, M/F day -2
4. Turusov *et al.* (1992), mouse, CBA, F, day -2
5. Mohr *et al.* (1975), hamster, Syrian Golden, day -15 to -1
6. Mohr *et al.* (1995), hamster, Syrian Golden, F, day -3
7. Althoff *et al.* (1977), hamster, Syrian Golden, M/F, day -9 to -3
8. Ibid, day -9 to -3
9. Althoff and Grandjean (1979), hamster, Syrian Golden, F, day -9 to -3
10. Druckrey and Landschutz (1971), rat, BD IX, M/F, day -10
11. Ibid, day -3
12. Naito *et al.* (1981), rat, Wistar, day -9
13. Ibid, day -9
14. Tomatis *et al.* (1977), rat, BDVI, F, day -5
15. Althoff and Grandjean (1979), hamster, Syrian Golden, M/F, day -9 to -3
16. Tomatis *et al.* (1971), mouse, CF-1, F day -4 to -1
17. Turusov *et al.* (1973), mouse, CF-1, F, day -2
18. Anderson *et al.* (1989), mouse, C3H & B6C3 F₁, M/F day -8 to -4
19. Vesselinovitch *et al.* (1979a), mouse, B6C3 F₁, M, day -9 to -3
20. Vesselinovitch *et al.* (1979b), mouse, B6C3 F₁, F day -9 to -3
21. Choudari Kommineni *et al.* (1970), rat, MRC, M/F, day -4
22. Maltoni *et al.* (1981), rat, Sprague Dawley, M/F day -13 to -7

Figure 8. Postnatal ASF Cumulative Frequency Profile



The median of the postnatal ASF mixture distribution is 13.5. The dotted line represents the default ASF for weighting risk for carcinogen exposures between birth and 2 years of age (see next section). References are given in the legend on the next page.

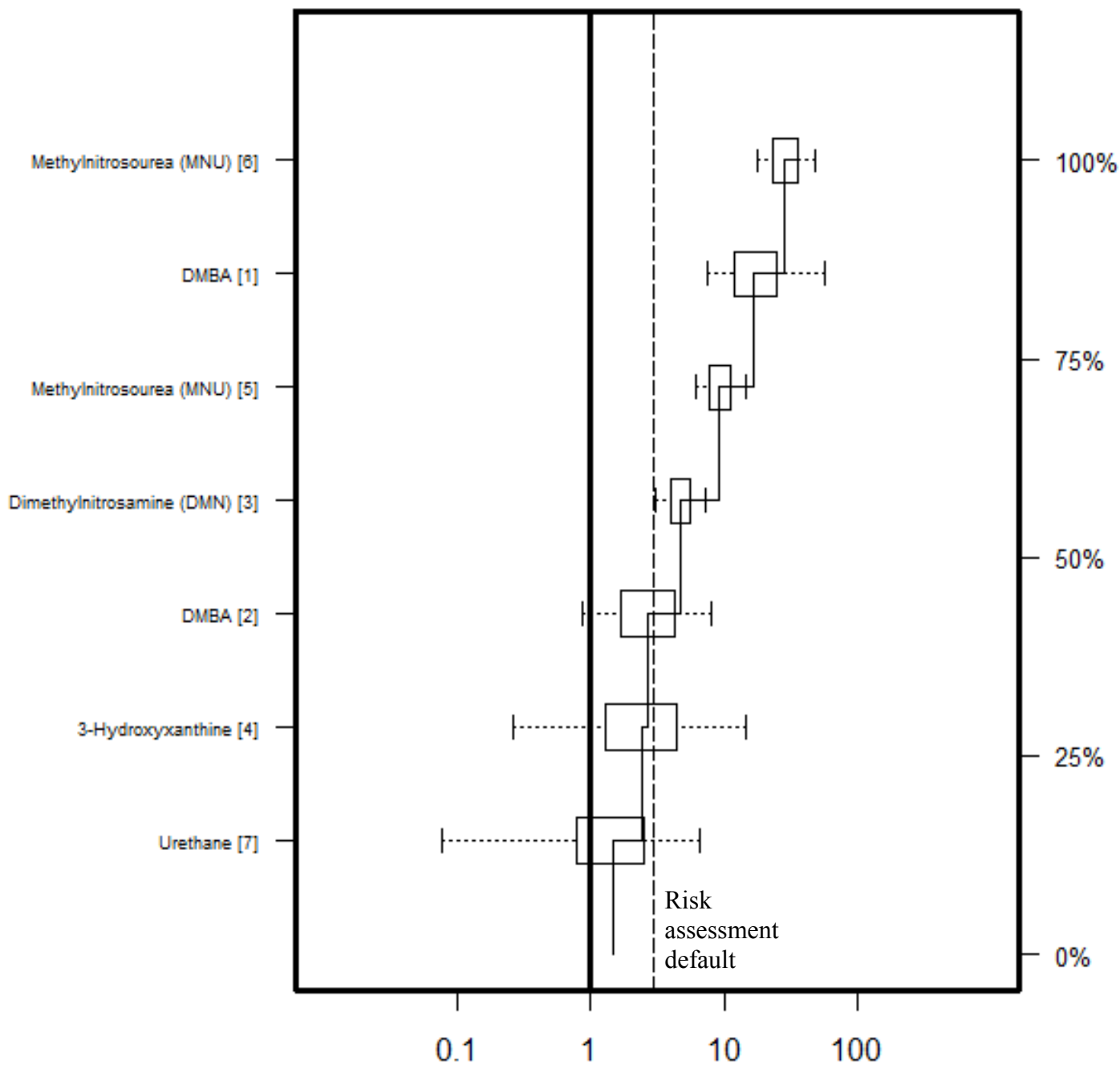
Figure 8 ~~Figure 8~~ ~~Figure 8~~ Legend (References as in Appendix J)

- | | |
|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| 1 Vesselinovitch <i>et al.</i> (1975b), mouse, B6C3F ₁ , M, day 7-27 | 29 Ibid, M, day 1 |
| 2 Vesselinovitch <i>et al.</i> (1979), mouse, B6C3F ₁ , F, day 1-21 | 30 Bosch (1977), rat, WAG, F, day 8 |
| 3 Ibid, M, day 1-21 | 31 Ibid, M, day 8 |
| 4 Truhaut <i>et al.</i> (1966), mouse, swiss, M/F, day 1 | 32 Naito <i>et al.</i> (1981), rat, Wistar, F, day 7 |
| 5 Vesselinovitch <i>et al.</i> (1975a), mouse, B6C3F ₁ , F, day 1 | 33 Ibid, M, day 7 |
| 6 Ibid, M, day 1 | 34 Vesselinovitch <i>et al.</i> (1974), mouse, B6C3F ₁ , F, day 1 |
| 7 Ibid, C3A F ₁ , F, day 1 | 35 Ibid, M, day 1 |
| 8 Ibid, M, day 1 | 36 Ibid, F, day 15 |
| 9 Vesselinovitch <i>et al.</i> (1979a), mouse, B6C3F ₁ , M, day 1-28 | 37 Ibid, M, day 15 |
| 10 Zeller <i>et al.</i> (1978), rat, Sprague Dawley, M/F, day 2 | 38 Ibid, C3A F ₁ , F, day 1 |
| 11 Wood <i>et al.</i> (1970), mouse, IF x C57, F, day 1-15 | 39 Ibid, M, day 1 |
| 12 Ibid, M, day 1-15 | 40 Ibid, M, day 15 |
| 13 Rao and Vesselinovitch (1973), mouse, B6C3F ₁ , M, day 15 | 41 Anderson <i>et al.</i> (1978), rat, Wistar, F, day 9 |
| 14 Vesselinovitch <i>et al.</i> (1984), mouse, B6C3F ₁ , F, day 1 | 42 Klein (1959), mouse, A/He, F, day 8-31 |
| 15 Ibid, M, day 1 | 43 Ibid, M, day 8-31 |
| 16 Ibid, F, day 15 | 44 Terracini and Testa (1970), mouse, B6C3F ₁ , F, day 1 |
| 17 Ibid, F, day 15 | 45 Ibid, M, day 1 |
| 18 Ibid, C3A F ₁ , F, day 1 | 46 Terracini <i>et al.</i> (1976), mouse, C3Hf/Dp, F, day 1 |
| 19 Ibid, M, day 1 | 47 Ibid, M, day 1 |
| 20 Ibid, F, day 15 | 48 Chernoziemski and Warwick (1970), mouse, B6A F ₁ , F, day 9 |
| 21 Ibid, M, day 15 | 49 Ibid, M, day 9 |
| 22 Meranze <i>et al.</i> (1969), rat, Fels-Wistar, F, day 10 | 50 Vesselinovitch <i>et al.</i> (1979a), mouse, B6C3F ₁ , M, day 1-21 |
| 23 Ibid, M, day 10 | 51 Vesselinovitch <i>et al.</i> (1979b), mouse, B6C3F ₁ , M, day 1-21 |
| 24 Walters (1966), mouse, BALB/c, F, day 17 | 52 Della Porta <i>et al.</i> (1987), mouse, B6C3F ₁ , F, day 10-45 |
| 25 Ibid, M, day 17 | 53 Ibid, M, day 10-45 |
| 26 Martin <i>et al.</i> (1974), rat, BDIX, M/F, day 10 | 54 Choudari Kommineni <i>et al.</i> (1970), rat, MRC, M/F, day 1-17 |
| 27 Druckrey and Landschutz (1971), rat, BDIX, M/F, day 10 | 55 Maltoni <i>et al.</i> (1981), rat, Sprague Dawley, M/F, day 1-35 |
| 28 Naito <i>et al.</i> (1985), gerbil, mongolian, F, day 1 | |

There were only five chemicals and seven studies, two of which were not independent, available to examine susceptibility in the juvenile period. The juvenile LP ratios indicated significantly greater susceptibility in this period for three independent studies, with the remaining studies consistent with equal inherent susceptibility to adult animals (see Figure 16 in Appendix J).

~~Figure 9~~ ~~Figure 9~~ ~~Figure 9~~ below shows the ASFs from each of the juvenile multi-lifestage exposure studies, displayed as a cumulative frequency profile. The median of the juvenile ASF mixture distribution was 4.5 (see Table 8 in Appendix J).

Figure 9. Juvenile ASF Cumulative Frequency Profile



The median of the juvenile ASF mixture distribution is 4.5. The dotted line represents the default value for weighting risk from carcinogen when exposures occur between 2 and 15 years of age (see next section).

Figure 9 Legend (References as in Appendix J)

- | | |
|--------------------------------------------------------------|----------------------------------------------------------------------|
| 1. Meranze <i>et al.</i> (1969), rat, Fels-Wistar, F, day 45 | 5. Grubbs <i>et al.</i> (1983), rat, Sprague Dawley, F, day 50-57 |
| 2. <i>Ibid.</i> , M, day 451 | 6. <i>Ibid.</i> , M, day 50-57 |
| 3. Noronha and Goodall (1984), rat, CRL/CDF, M, day 46 | 7. Choudari Kommineni <i>et al.</i> (1970), rat, MRC, M/F, day 28-43 |
| 4. Anderson <i>et al.</i> (1978), rat, Wistar, F, day 28 | |

The studies that comprise the set of multi-lifestage exposure studies available for these analyses were not homogeneous. That is, they do not represent observations from the same distribution. Sensitivity analyses were conducted to test the robustness of the findings to different procedures for analyzing data and combining results. Of the methods used to combine the LC ratio distributions for underlying studies within each lifestage, the method of equally weighting studies within a chemical appeared to best represent the available data.

In calculating the ASF, to take into account the longer period of time for early carcinogen exposures to result in tumors, the hazard function was assumed to increase with the third power of age. This assumption is standard and has been borne out by a number of observations (Bailer and Portier, 1988). If the true rate of increase with age is greater than that, then the use of these ASFs may result in underestimates of the true sensitivity of these early life stages.

As the multi-lifestage exposure and case studies show, there appears to be considerable variability in age-at-exposure related susceptibility across carcinogens. There is also variability in age-at-exposure related susceptibility among studies of the same carcinogen. The sources of variability evident in the analyzed studies include timing of exposure within a given age window, and gender, strain, and species differences in tumor response. The set of studies identified and analyzed was not sufficiently robust to fully describe the variability quantitatively. This variability raises concerns that selection of the median (the 50th percentile) estimates may considerably underestimate effects for certain agents or population groups. Relatively large variability in humans in response to carcinogens is expected to be common (Finkel, 1995). On the other hand, the numbers of carcinogens represented in the available data are limited and may not be representative of the population of carcinogens to which we are exposed (e.g., greater than 500 on the Proposition 65 list alone). Thus, the size of the weighting factors used to weight risk by age at exposure is a policy decision.

Several of the carcinogens studied induced tumors at multiple sites in the same experiment, and at different sites, depending upon the lifestage during which exposure occurred. For these cases the combined multisite potency distribution referred to above was the basis for the lifestage comparison. This approach differs from other researchers investigating early vs. late in life differences who focused on tumor site-specific measures of carcinogenic activity (e.g., Barton *et al.*, 2005; Hattis *et al.*, 2004, 2005). OEHHA believes that use of combined multisite potency distributions provides a more complete approach for considering age specific differences in carcinogenic activity. However, the observation that early life is generally a period of increased susceptibility was similarly found using the tumor site-specific approach by these other researchers.

One limitation of the approach was the focus on lifestages, without attempting to describe changes in susceptibility that occur within a lifestage. Timing of carcinogen exposure within a given age window can affect the cancer outcome. For example, experiments with 1-ethyl-1-nitroso-biuret in prenatal and adult rats showed a three-fold difference in activity between groups exposed on prenatal day -10 versus prenatal day -3. In a second example, female rats exposed early in the adult period were more than three times as sensitive to the breast cancer effects of MNU as females exposed six weeks later. In general, the adult comparison groups in the multi-lifestage exposure studies were fairly young. The extent to which this may result in an overall bias of the results presented here is unclear. Also for several cases, juvenile animals were used as the later life exposure group. In these cases the ASFs are likely underestimates of the relative sensitivity of the prenatal and postnatal lifestages, compared to that of the adult lifestage.

Excluded from the analysis were early in life studies in which the period of exposure for a specific exposure group crossed multiple lifestages. An example of results from studies of this type is provided by mouse studies for two non-genotoxic carcinogens, diphenylhydantoin (Chhabra *et al.*, 1993a) and polybrominated biphenyls (PBBs) (Chhabra *et al.*, 1993b), in which exposures began prior to conception, and continued throughout the prenatal, postnatal, and post-weaning period, up to the age of eight weeks. The data demonstrate an increased sensitivity of the early life period. Some studies that crossed multiple lifestages were included in the analyses of Barton *et al.* (2005) (Appendix I), which are consistent with the general conclusions discussed above.

Selection of Default Age-Sensitivity Factors (ASF)

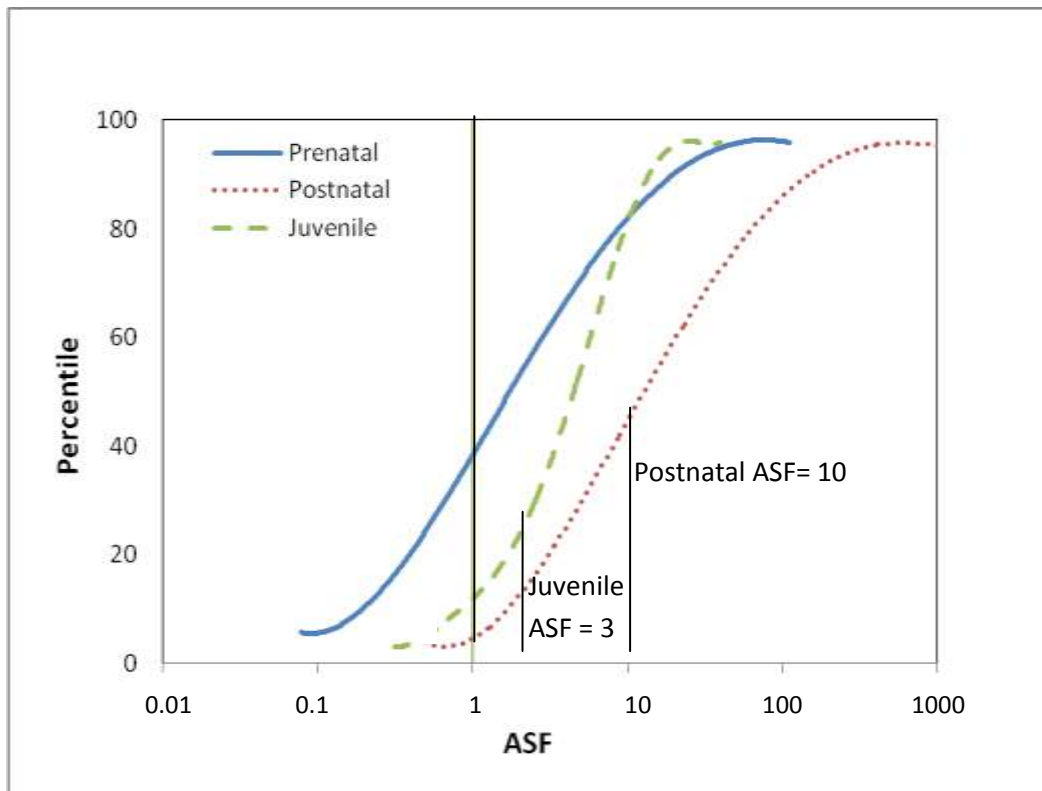
Selection of appropriate values to use to weight exposures that occur early in life using default ASFs for prenatal, postnatal and juvenile exposures is complicated by the limited database of chemicals and studies available for analysis, and the broad distribution of results for different chemicals as is shown in Figure 7, Figure 8, and ~~Figure 9~~Figure 9 (see also Appendix J). In view of the variability thus shown, and the considerable uncertainty in applying conclusions from this relatively small set of chemicals to the much larger number of chemicals of concern, it is probably unreasonable to specify a default ASF with greater than half-log precision (*i.e.* values of 1, 3, 10, 30 etc.). Therefore, in the absence of chemical-specific data, OEHHA ~~will propose~~ to apply a default ASF of 10 for ages birth to 2 years, and a factor of 3 for ages 2 through 15 years to account for potential increased sensitivity to carcinogens during childhood. A factor of 10 for postnatal exposures falls just below the median estimate of the ASF for postnatal studies. This is also the value selected by U.S. EPA; while it is consistent with the OEHHA analysis, it may underestimate risk for some chemicals. The broad distribution of observed chemical-specific sensitivity ratios clearly indicates ~~certain number of~~ that there are some chemicals for which the sensitivity ratio is much larger than 10. Further research is needed to develop criteria for identifying these cases. Similarly, a factor of 3 for juvenile exposures is consistent with the range of estimates derived from the multi-lifestage exposure studies, and falls close to the median juvenile ASF estimate. It is acknowledged that there are few data available on which to base an estimate for the juvenile period. A factor of 3 adjusts for the longer time available for cancer to manifest, but may not fully account for some inherent differences in susceptibility to cancer, for example ~~those observed~~ the observed susceptibility of ~~in~~ breast tissue of pubescent girls exposed to radiation. For specific carcinogens where data indicate enhanced sensitivity during lifestages other than the immediate postnatal and juvenile periods, or demonstrate ASFs

different from the default ASFs, the chemical-specific data should be used in order to adequately protect public health.

The ASFs will be applied to all carcinogens, regardless of the theorized mode of action. While U.S. EPA currently intends to apply weighting factors only to those carcinogens with “a mutagenic mode of action” (U.S.EPA, 2005), OEHHA notes that there is evidence that early life is a susceptible time for carcinogens that are thought to act via non-mutagenic mode of action (DES is a prime example). Defining a mutagenic mode of action may be problematic if approached narrowly (ERG, 2008). Further, carcinogens may have multiple modes of action and one mode may predominant over other modes at different lifestages. The complexity of carcinogenesis argues against restricting the ASF to chemicals acting via a mutagenic mode of action.

~~Figure 10~~~~Figure 10~~~~Figure 10~~ provides a visual comparison of the ASF mixture distributions for the three early-life stages, prenatal, postnatal, and juvenile. In this figure, which is in log space, the policy choice for weighting factors of 10 for birth to age 2 years and 3 for the period of life from 2 to 15 years of age are indicated on the figure. ~~The x-axis represents the exponent (the figure is in log space).~~ It is apparent from this figure that weighting risk from exposures to carcinogens early in life is well-supported.

Figure 10. Prenatal, Postnatal, and Juvenile ASF Mixture Distributions and relation to default ASFs



OEHHA recognizes the limitations in the data and analyses presented, as discussed above. However, the analyses do provide some guidance on the extent risk may be over or underestimated by current approaches. While there is a great deal of variability across chemicals in the prenatal ASFs, the data indicate that the potency associated with prenatal carcinogen exposure is not zero. A factor of 3 is close to the median ASF, while a factor of 10 falls roughly at the 70th percentile of the prenatal ASF estimate. ~~This value~~An ASF could be applied as a default ~~ASF to the potency estimate~~ when calculating lifetime cancer risk in humans arising from carcinogen exposures that occur *in utero*. In view of the considerable variability in the data for different carcinogens and the limited database available for analysis, OEHHA is not ~~including~~ proposing the application of ~~this a specific~~ factor to cancer potency estimates for prenatal exposures as a default position in these Guidelines. However, given that the rodent is born at a stage of maturation similar to a third trimester fetus, it may be reasonable to include the third trimester in the potency weighting proposed for birth to age 2 years. ~~T~~the applicability of a cancer potency adjustment factor for prenatal exposure will be evaluated on a case-by-case basis, and may be used as evidence develops that supports such use. The consideration of prenatal exposures, including application of an appropriate susceptibility factor, would not make a large difference for risk estimates based on continuous lifetime exposures, due to the relatively short duration of gestation. However, risk estimates for short-term or intermittent exposures ~~might~~ would be ~~significantly-slightly~~ increased by inclusion of the risks to the fetus during the prenatal period. Thus, risk may be underestimated when this lifestage is excluded from the analysis.

Age Bins for Application of ASFs

~~The choice of human ages to which the ASFs apply is based on toxicodynamic information on functional maturation of major organ systems and toxicokinetic considerations. Important toxicodynamic factors related to susceptibility to carcinogens include and the concept that the rate of cellular proliferation and differentiation, which is quite high during organ maturation processes renders the tissue more susceptible to carcinogenesis. In addition, toxicokinetic differences by age are important, as noted earlier, due to impacts on detoxification and clearance of xenobiotics carcinogens (see following section). OEHHA's analysis of the influence of age-at-exposure on carcinogenesis broke the experimental rodent age bins data into age bins that we termed "lifestages" into including prenatal, "postnatal" (birth to weaning, about day 21) and "juvenile" (weaning to sexual maturation, or about day 22 to about day 49). Experiments were placed into the lifestage bins if exposure occurred at some time during the experimental rodent age bin. The investigations of age at exposure and cancer potency used in OEHHA's analysis were all done with dissimilar protocols, and the windows of susceptibility are quite varied by chemical and organ system.~~

~~There is no simple way to compare the rodent age groups used in the OEHHA analysis of available data to equivalent age groups in humans. Complicating factors include variations in organ system structural and functional maturation both within and between species. Further, the rodent age bins were chosen by gross indicators of development namely birth, weaning and sexual maturation, not on the basis of known susceptibility to carcinogenesis. Thus, critical factors relating to carcinogen susceptibility by age are the focus of the choice of human age bins to which the ASFs of 10 and 3 apply, rather than an attempt at exact correlation of rodent lifestage bin with human age.~~

The investigations of age at exposure and cancer potency used in OEHHA's analysis were not conducted by standardized protocol. Further, the windows of susceptibility are quite varied by chemical and organ system, even within the lifestages defined in the OEHHA analysis. Additional complications in This complicates choosing a default ASF and the human age bin to which it applies are associated with changes in the potency by age at exposure that can be large for specific chemicals. Examples from animal studies provided in the appendix include the chemical diethylnitrosamine (DEN). The cancer potency varied over several orders of magnitude depending on when during gestation and postnatal life the exposure occurred. While the inability to metabolize DEN in early gestation influences the carcinogenicity of the compound, it is unlikely the only explanation. Benzidine and saffrole also require metabolic activation but are more potent with prenatal exposure. A three-fold difference in potency between exposure on postnatal day 3 and postnatal day 10 is noted for 1-ethyl-1-nitrosobiuret in rats. There are also human examples of extensive variation of potency by age at exposure, including radiation, DES, and chemotherapeutic agents. The diversity of responses to different agents obviously underscores uncertainty in the choice of age bins to apply the default ASFs. However, the ASFs are a *default* to use when you have no chemical-specific data on influence of age-at-exposure on potency in order to protect public health. There will always be specific chemical examples where the ASF for either the birth-<2 yrs or 2-<16 yrs age bin is quite a bit larger or quite a bit smaller than the default.

In the following sections, we discuss our logic in choosingproposing age bins of birth to age <2 years, and 2 to age <16 years to which the ASFs of 10 and 3 apply, respectively, and offer risk estimate results from other possible age bins.

Toxicokinetic Factors Relevant to Age Bins

Choice of the age-bins to which the default ASFs are applied is based on our understanding of the two primary drivers of age-related sensitivity to carcinogens, namely age-related toxicokinetic factors and toxicodynamic factors. In the case of toxicokinetics, the largest postnatal differences in xenobiotic metabolic capability occur between infants and adults. As noted in OEHHA (2001) and reviewed in detail elsewhere (e.g., Cresteil et al., 1998; Ginsberg et al., 2004), hepatic drug metabolism by the cytochrome p450 family of enzymes and the Phase II conjugating enzymes undergoes a maturation process during the first few years of life. The hepatic cytochrome p450 enzymes exist in fetal isoforms at birth, and progressively change to adult isoforms at a relatively early stage of postnatal development. Thus, in humans the metabolic capability towards prototypical substrates develops over the first year of life towards adult levels. Similarly, the largest differences in metabolic capability of Phase II enzymes (conjugation of xenobiotic metabolites prior to excretion) tend to be between infants and adults. Other factors such as renal capability also are most different between neonates and adults. Thus, the first 2 years of life would encompass the increased sensitivity of early life stages due to toxicokinetic differences between early life and adulthood.

Ontogeny of cytochrome P-450 Enzymes in Humans.

Creteil (1998) describes three groups of neonatal cytochrome P450: Cyp3A7 and Cyp4A1 present in fetal liver and active on endogenous substrates; an early neonatal group including Cyp2D6 and 2E1 which surge within hours of birth; and a later developing group, Cyp3A4,

Cyp2Cs, and Cyp1A2. Total Cyp 3A protein, a major cytochrome p450 enzyme responsible for biotransformation of many xenobiotics, is relatively constant in neonates and adults. However, Cyp3A7 is the primary fetal form (Hakkola et al., 1998), while Cyp3A4 is the primary adult hepatic form of the 3A series. At one month there is about one-third of the Cyp3A4 activity as an adult liver (Lacroix et al., 1997; Hakkola et al., 1998). Allegaert *et al.* (2007) stated that Cyp3A4 (testosterone-6 β -hydroxylase) activity equaled or exceeded adult activity after 1 year of age. Cyp2E1, which metabolizes benzene, trichloroethylene and toluene, among others, increases gradually postnatally, reaching about one-third of adult levels by one year of age and attains adult levels by 10 years of age (Vieira et al., 1996; Cresteil, 1998). Cyp1A2, and Cyp2C9 and 2C19, the most abundant Cyp2 enzymes in adult human liver, appear in the weeks after birth, and reach 30% to 50% of adult levels at about 1 year of age (Treluyer et al., 1997; Hines and McCarver, 2002). Cyp1A1 is expressed in fetal liver where it can activate such xenobiotics as benzo[a]pyrene and aflatoxin B1 (Shimada et al., 1996), but is less important in adult liver (Hakkola et al., 1998).

Ontogeny of cytochrome P-450 Enzymes in Rodents.

Hart et al. (2009) report developmental profiles of a number of cytochrome P-450 enzymes (measured as levels of mRNA transcripts of the specific genes) in mice. They identified three groups of isoforms. Group 1 (Cyp3A16 in both sexes; Cyp3A41b in males) appeared rapidly after birth but declined to essentially zero at 15-20 days, which is the period of weaning in mice. A second group (Cyp2E1, Cyp3A11 and Cyp4A10 in both sexes; Cyp3A41b in females) also increased rapidly after birth, but reached a stable maximal level by postnatal day 5. The third group (Cyp1A2, Cyp2A4, Cyp2B10, Cyp2C29, Cyp2D22, Cyp2F2, Cyp3A13 and Cyp3A25) were expressed only at low levels until days 10 to 15, but reached high stable levels by day 20.

ElBarbry et al. (2007) examined the developmental profiles of two toxicologically significant cytochrome P-450 enzymes, Cyp1A2 and Cyp2E1 in rats. mRNA transcripts of these genes were very low postnatally, but thereafter increased to reach a peak at weaning (postnatal day 21 - 28 for rats). Immunoreactive Cyp1A2 and Cyp2E1 proteins were first detectable at postnatal day 3 and reached 50% of adult levels at weaning and adult levels at puberty. Differences in profiles between gene expression as MmRNA and appearance of specific proteins as determined by immunoassay may reflect changes in the relative importance of transcription and translation control process at various phases in development. Enzyme activities characteristic of Cyp1A2 and Cyp2E1 were found to parallel gene expression levels (ElBarbry et al., 2007) rather than immunodetectable protein levels, so there may also be issues of cross-reactivity between these two isoenzymes and others for which gene expression was not measured in these experiments.

In summary, the gene expression data in rats and mice show differences in details, but broadly resemble one another in that the main changes occur in the early postnatal period, with the major adjustments completed at or around the time of weaning, although the adult pattern may not be completely established until puberty. There do not appear to be substantive data for experimental species other than rats and mice, although the situation in humans appears similar in general outline and one may conclude that this pattern or some variant of it is a characteristic of mammalian species in general.

Ontogeny of Phase II enzymes

Phase II conjugating enzymes are generally less active in the neonate than the adult (Milsap and Jusko, 1994). Hence, there is concern that detoxification and elimination of chemicals is slower in infants. Expression of some of the UGT enzymes matures to adult levels in two months after birth, although glucuronidation of some drugs by the UGT1A subfamily does not reach adult levels until puberty (Levy et al., 1975; Snodgrass, 1992; McCarver and Hines, 2002). Reduced glucuronidation in neonates slows the clearance of N-hydroxyarylamines, phenol, and benzene metabolites. Acetylation by the N-acetyltransferases and sulfation by sulfotransferases are generally somewhat comparable to adult levels, although it varies by tissue and by specific sulfotransferase (McCarver and Hines, 2002). Glutathione (GSH) sulfotransferase (GST) is present as a fetal isoform which decreases postnatally, while GST-alpha and GST-mu increase over the first few years of life to adult levels (McCarver and Hines, 2002). Epoxide hydrolase, important in detoxifying reactive epoxide metabolites, is present in neonatal liver although at much reduced activity relative to adults (McCarver and Hines, 2002).

Clearances of drugs in infants and children vs. adults

Several investigators have evaluated age-related drug disposition (Renwick, 1998; Renwick et al., 2000; Ginsberg et al., 2002; Hattis et al., 2003). Renwick et al. (2000) noted higher internal doses in neonates and young infants versus adults for seven drugs that are substrates for glucuronidation, one with substrate specificity for CYP1A2, and four with substrate specificity for CYP3A4 metabolism. Ginsberg et al (2002) evaluated toxicokinetic information on 45 drugs in children and adults metabolized by different cytochrome P450 pathways, Phase II conjugations, or eliminated unchanged by the kidney. These authors noted half-lives in infants 3-9-fold longer than those of adults. It was also shown that the bulk of the elevated child/adult half-life ratios occurred primarily in the 0 to 6 month age range, and that for some compounds the clearance is actually higher in the 6 month to 2 year age grouping. In evaluating the interindividual variability by age, Hattis et al (2003) note that the largest interindividual variability occurs in the youngest children, apparently due to variability in development of critical metabolism and elimination pathways. Anderson and Holford (2008) noted that a comparison of three early-life drug clearance models (surface area, allometric $\frac{3}{4}$ power and per kilogram scaling) all demonstrated an increase in clearance over the first year of life due to the maturation of metabolic capacity.

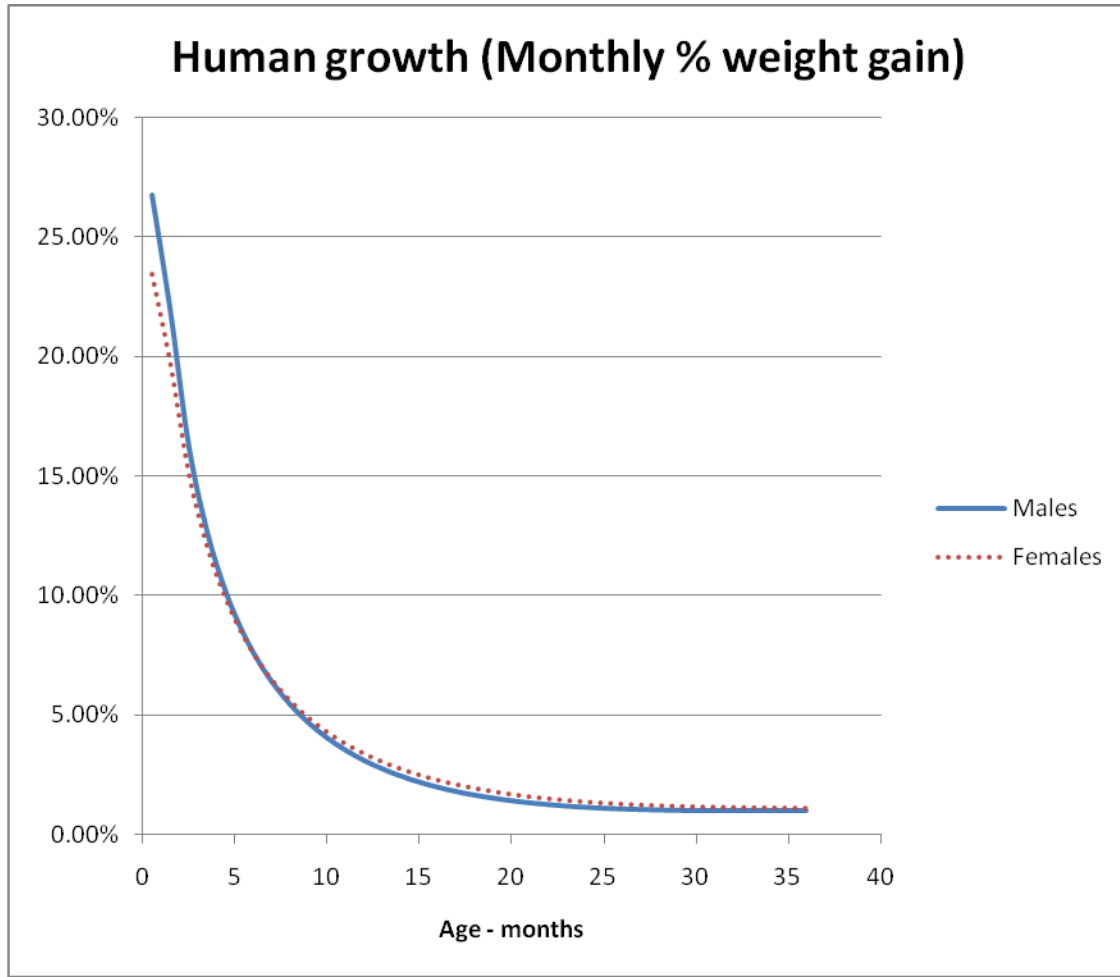
Renal elimination depends on maturity of processes related to tubular reabsorption and secretion, and glomerular filtration rates. At birth, the glomerular filtration rate (GFR) is low (2-4 ml/min), increases in the first few days (8-20 ml/min) and slowly increases to adult values in 8-12 month old infants (Plunkett et al., 1992; Kearns et al, 2003).

Newborn and young animals have less capacity to excrete chemicals into the bile than do adult animals. A number of chemicals are excreted more slowly via bile in neonates than adult rats, including ouabain, the glucuronide conjugate of sulfobromophthalein (Klaassen, 1973), and methyl mercury (Ballatori and Clarkson, 1982), resulting in a longer half-life in neonates.

Toxicodynamic Factors Relevant to Age Bins

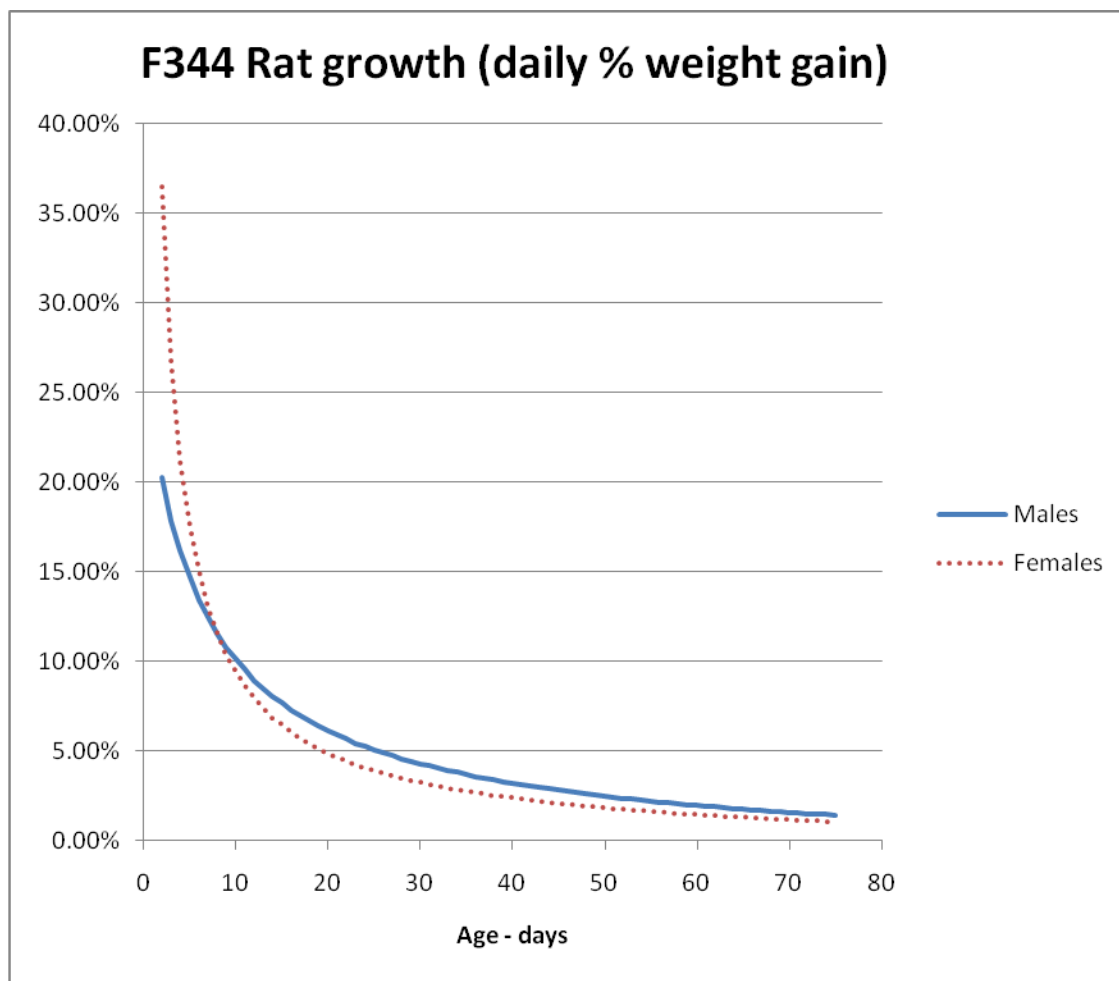
Important as the developmental changes in toxicokinetics are in determining sensitivity to carcinogens and other toxicants, it is likely that the toxicodynamic differences, i.e. intrinsic differences in susceptibility to carcinogenesis at the tissue or cellular level are even more influential. Changes in cell division rates and differentiation, which are thought to be important toxicodynamic determinants of susceptibility to carcinogenesis, peak in the first 2 years of life for most major organ systems. Cell division continues to accommodate growth throughout childhood and adolescence, extending in some cases even into the young adult period in both humans and experimental animals. Adolescence is an important period for organ cell division and differentiation for the mammary gland and reproductive organs.

As noted above, one of the key factors influencing susceptibility to carcinogenesis is believed to be cell division rate, which acts both by forcing error-prone repair which fixes DNA damage as mutated gene sequences (McLean et al, 1982) and by promoting expansion of mutated clones (Moolgavkar and Knudson, 1981). Actual cell division rates as a function of age are hard to determine for practical and (in the human case) ethical reasons. However, growth curves expressed as the proportional increment in body weight with time may be regarded as a reasonable although not perfect surrogate since for most tissues of the body cell size does not change markedly during growth. Both humans and rodents show remarkably high growth rates in infancy, which then drop steeply to a lower but still significant period during childhood. A growth spurt at the beginning of adolescence is noticeable in its absolute magnitude, especially in males, but does not approach the proportional growth rate seen in infancy. The time intervals proposed to reflect the period of highest sensitivity to carcinogenesis (birth to weaning, about 21 days in rodents, up to 24 months in humans) encompass the period of highest growth rate and thus is assumed the highest cell division rates, as show in the following charts:



Data from CDC NHANES 2000:

<http://www.cdc.gov/nchs/about/major/nhanes/growthcharts/datafiles.htm>



Data from [Tables A3 and A4 of Appendix J](#)

Cell division rates in adult rodents and humans are harder to relate to growth curves since at least some tissues retain active cell division as part of their ongoing functionality and repair. In humans growth in body weight slows to essentially zero at the end of adolescence (and any later increments represent tissue specific changes such as increase in muscle or adipose tissue mass rather than overall growth). On the other hand, rodents continue to increase in body size (at a modest rate compared to that seen in earlier lifestages) throughout the adult period. However, it appears reasonable to conclude from the body weight data that an essentially adult pattern of overall cell division is established by the late adolescent period (age six weeks in rodents; 16 years in humans). This clearly does not include the marked growth and increases in cell division and physiological activities seen in the reproductive system and its accessories during puberty.

Organ development

The age intervals chosen for the ASFs are generally supported by human organ system development data. Examples of supporting data are available for the lung, brain, immune system and liver. Zeltner and Burri (1987) stated that postnatal lung development consists of an alveolar stage, which lasts to about 1-1.5 years of age, and a stage of microvascular maturation, which

exists from the first months after birth to the age of 2-3 years. Pinkerton and Joad (2006) describe alveolar proliferation as occurring most prominently in the 0-2 year age range, with alveolar expansion continuing in the 2-8 year age range. Ballinoti et al. (2008) demonstrated that addition of alveoli rather than expansion is a major mode of lung growth in infants and toddlers by measuring a constant carbon monoxide diffusion capacity to lung volume from 3 through 23 months of age. Kajekar (2007) also considered the 0-2 age range to be the primary period of alveolar development, although there is continued cellular proliferation resulting in lung growth and expansion up to approximately 18 years of age.

Rice and Barone (2000) note that most of the cell proliferation phase of human radial glia and neuronal growth is finished by 2 years of age, based on evidence in Bayer et al. (1993). They note further that numerous studies have shown actively proliferating brain regions are more susceptible to anti-mitotic agents than the same structures after active proliferation ceases. Peak brain growth as a percentage of body weight occurs at birth and around post-natal day (PND) 7-8 in humans and rats, respectively (Watson *et al.*, 2006). De Graaf-Peters and Hadders-Algra (2006) reviewed the ontogeny of the human central nervous system and found that a large amount of axon and dendrite sprouting and synapse formation and the major part of telencephalic myelination take place during the first year after birth. While the brain continues to remodel itself throughout life, cellular proliferation in the whole brain peaks by about one year of age and is relatively complete by age 2. Development of the blood-brain barrier (BBB) appears to continue in humans until approximately 6 months of age. Rat BBB functionality is essentially complete by approximately two weeks after birth (Watson *et al.*, 2006).

The immune system development occurs in stages primarily prenatally in primates and both pre- and post-natally in rodents (Dietert et al., 2000). Formation and expansion of hematopoietic stem cells is followed by expansion of lineage-specific stem cells, colonization of bone marrow and thymus, and maturation of cells to immunocompetence. In the primate, this is largely complete by 1 to 2 years of age (Holsapple et al., 2003), although establishment of immune memory develops throughout childhood and beyond. In the rodent, maturation to immunocompetence occurs postnatally from birth to about 30 days of age. In terms of carcinogenesis, perhaps one of the more important immune cells is the NK cell, thought to be responsible for immune surveillance and killing of circulating transformed cells. Based on immunohistochemistry, the principal cell lines including NK cells are present at gestation day 100 in the monkey and are at about 60% of adult values at birth (Holladay and Smialowicz, 2000).

As noted above, renal and hepatic clearance are both lower in humans at birth than in adults. Nephrogenesis is complete by 35 ~~month~~weeks gestation in humans and before birth in the mouse (but after birth in the rat). The ability to concentrate urine and the development of acid-base equilibrium ~~occur~~appear in the first few months after birth (Zoetis and Hurtt, 2003). Renal clearance of drugs, a function of a number of processes in the kidney, appears to be comparable to adults within the first few months of life (Hattis et al., 2003; Ginsberg et al., 2002), while glomerular filtration, which rises rapidly over the first few postnatal months, is at adult values by two years of age (Zoetis and Hurtt, 2003). While complete anatomic maturity of the human liver is noted by 5 years of age (Walthall et al, 2005), liver function also appears to mature within the first year of life as seen by drug clearance studies cited above.

Critical Windows of Susceptibility to Carcinogens

It has been shown that there are critical windows during development both pre-and postnatally where enhanced susceptibility to carcinogenesis occurs (Anderson et al, 2000). Some of these observations relate to factors affecting the incidence of cancers in childhood, resulting from prenatal or preconception mutational events. For example, prenatal exposure to ionizing radiation and DES can result in leukemia and vaginal carcinoma, respectively, in childhood. Although obviously a source of great concern, these cancers appearing during childhood are relatively rare compared to cancers appearing later in life. Thus the concern in risk assessment for early in life exposures is to address the lifetime cancer incidence as a result of these exposures, including both cancers appearing during childhood and those appearing later.

OEHHA (see Appendix J) and other investigators (U.S. EPA, 2005; Barton et al, 2005; Hattis et al., 2004) have examined the available rodent data on sensitivity to carcinogenic exposures early in life. All these investigators found substantial increases in sensitivity to carcinogens in animal studies where exposures to young animals were compared to similar exposures to adults. Hattis et al. (2004) reported maximum likelihood estimates for the ratio of carcinogenic potency during the period from birth to weaning to the adult potency of between 8.7 and 10.5, whereas Barton et al (2005) reported a weighted geometric mean of 10.4 for the ratio of juvenile (less than 6-8 weeks) to adult potency in rodents. However, the number of experiments which provide information of this type, and the carcinogenic agents which have been studied, are relatively limited. Hattis examined several different datasets and study designs, but these covered only 13 different chemicals, while Barton et al. reported analyses for six of the 18 chemicals which they examined. OEHHA's analysis included data in rodents on 23 chemicals, and found median potency ratios of 13.5 for the postnatal period (birth to day 22) and 4.5 for the juvenile period (postnatal days 22 to 49) relative to adults (day 49 to 2 years). These potency ratios include the adjustment for time to manifest tumor (e.g., age to the power of three), unlike the earlier investigations. All these investigations identified variations in the observed lifetime potency ratio depending on the type of experimental design, the sex of the animals, the time of exposure and especially between chemicals. Nevertheless these analyses, although falling far short of a comprehensive evaluation of the age dependence of carcinogenic potency for all the chemicals of interest, do show a consistent overall trend of increasing potency for exposures early in life, especially soon after birth.

An evaluation of cancer induction by ionizing radiation also provides support for the concept of enhanced sensitivity to carcinogenesis at younger ages. Various studies of this phenomenon have been undertaken in animal models, but the important point for the present discussion is that epidemiological data exist which indicate age-dependent sensitivity in humans (U.S. EPA, 1994; 1999). The most extensive data set showing age-dependent effects is that for Japanese survivors of the atomic bomb explosions at Hiroshima and Nagasaki. Analysis of these data shows linear increases in tumor incidence at a number of sites with increasing radiation dose and younger age at exposure. There are other data suggesting humans are more susceptible to chemical carcinogens when exposure occurs in childhood. These data exist for tobacco smoke (Marcus et al., 2000; Wiencke et al., 1999) and chemotherapy and radiation (Mauch et al., 1996; Swerdlow et al., 2000; Franklin et al., 2006).

Proposed Age bins for application of default age sensitivity factors

In developing a default science-based risk assessment policy to address this general conclusion, one key variable to define is the age interval or intervals over which age-dependent sensitivity factors should be applied. Different investigators have considered different age ranges, but in general the more sensitive period has at least been defined as including the time from birth up to mid-adolescence when the major phases of growth and hormonal change are complete. ~~This can be somewhat consistently defined in the case of laboratory rodents whose genetic and environmental factors are relatively constant: a transition point in the range of 6 to 8 weeks is generally identified as the start of adulthood. For humans there is inevitably a lot more variation in the timing of developmental landmarks. The comparison of human development with that of rodents is complicated by the fact that the various organ systems have markedly different pre- and postnatal timetables, both between species and between organ systems. Thus there is no single timeline of developmental equivalence for humans and rodents. Nevertheless there is a general similarity for all mammals.~~

It is also recognized that, apart from the dramatic prenatal developmental events, the earliest postnatal stages represent the greatest differences in physiology and biochemistry from the adult. ~~This reflectsing the immaturity of many organ systems, extremely rapid growth and the incomplete maturation of various metabolic capabilities. In animal studies, as reflected in the analysis of carcinogenesis by OEHHA, an important developmental milestone is generally identified at the time of weaning, which in rodents occurs at or about postnatal day 21. As noted earlier, the rodent age bins in OEHHA's analysis were based on gross developmental milestones (birth, weaning, sexual maturity). OEHHA's analysis of studies that included exposure sometime between birth and weaning indicated this period as having the highest sensitivity to carcinogenesis. The data for the later juvenile period (postnatal days 22 to 49) are somewhat sparse, covering only three carcinogens and only one where there are corresponding data for both infant and juvenile lifestages. However, it appears based on the overall range of potency ratios observed for the juvenile period that sensitivity to many carcinogens is elevated in this period also, but to a lesser extent than during the first 22 days. [Hattis et al. (2005) and Barton et al. (2005) report analyses for exposures at any time during the juvenile period, i.e. up to 6-8 weeks, and do not separate by additional age bins].~~

Weaning is not such an obvious or consistently timed transition for humans, being subject to a wide range of cultural and economic variables. However, it is generally considered that the human infant period encompasses the first two years of life. This period includes the most rapid periods of cellular division and differentiation for the major organ systems (excluding the breast and reproductive organs). Although there is linear growth between 2 and 8 years of age, the organ development is largely although not entirely complete.

Thus, considering both the development of major organ systems and the associated differences in toxicodynamic and toxicokinetic factors, OEHHA ~~ehoseproposes~~ to apply the postnatal ASF derived from rodent studies (birth to ~21 days) to the human age intervals of ~~4~~birth - <2years. Similarly, OEHHA chose to apply the "juvenile" ASF derived from rodent studies (~22- ~49 days) to the human ages 2 - <16 years. This timetable was also selected by U.S. EPA (2005) in their supplemental guidance for assessing early-life susceptibility to carcinogens. They describe their choice of critical periods as follows:

“The adjustments described below reflect the potential for early-life exposure to make a greater contribution to cancers appearing later in life. The 10-fold adjustment represents an approximation of the weighted geometric mean tumor incidence ratio from juvenile or adult exposures in the repeated dosing studies (see Table 8). This adjustment is applied for the first 2 years of life, when toxicokinetic and toxicodynamic differences between children and adults are greatest (Ginsberg et al., 2002; Renwick, 1998). Toxicokinetic differences from adults, which are greatest at birth, resolve by approximately 6 months to 1 year, while higher growth rates extend for longer periods. The 3-fold adjustment represents an intermediate level of adjustment that is applied after 2 years of age through <16 years of age. This upper age limit represents middle adolescence following the period of rapid developmental changes in puberty and the conclusion of growth in body height in NHANES data (Hattis et al., 2005). Efforts to map the approximate start of mouse and rat bioassays (i.e., 60 days) to equivalent ages in humans ranged from 10.6 to 15.1 years (Hattis et al., 2005).”

There is general agreement that rodents are born at a maturational stage approximately equivalent to a third trimester human fetus. Thus, there is good rationale to include the third trimester of pregnancy in the age bin for application of the ASF of 10.

While there is strong evidence that growth and therefore cell proliferation rates and cell differentiation are extremely high prior to age 2, there is still residual uncertainty with respect to the cutpoint for application of the ASFs of 10 and 3. Thus, another possible approach is to move the cut point for the application of the ASF of 10 to a later age to account for this uncertainty. We present the effect on risk estimates of varying cutpoints in Tables 2 and 3.

Special consideration of puberty

In addition to the general concerns over increased sensitivity to carcinogenesis during infancy and childhood, there are specific concerns for exposure during the period when hormonal and developmental changes associated with puberty are in process, especially for carcinogens with hormonal modes of action or with impacts on the reproductive system and its accessory organs. At puberty, there is increased development of breast and reproductive organs that clearly involves rapid cellular division and differentiation. Thus, for carcinogens that induce mammary and reproductive organ cancers, puberty represents a time of increased sensitivity. As noted in the section on Selection of Default Age-Sensitivity Factors (page 48), if the risk assessor is evaluating a chemical with the potential for more than usually enhanced potency during this period, such as those which induce mammary or reproductive organ tumors (e.g., a polycyclic aromatic hydrocarbon), then the risk assessment may use a larger ASF to calculate risk from exposure during puberty. OEHHA may recommend chemical-specific ASFs for puberty to the local air quality management districts for use in the Air Toxics Hot Spots program.

Application of ASFs in Risk Assessment

The effect of using the proposed default ASFs in calculating cancer risk over a 70 year lifetime, and for a 9 year exposure common in the Hot Spots program risk assessments is demonstrated in Table 2 and Table 3 below. Ignoring for the moment the increased exposures to carcinogens that children experience, the effect of the weighting factors is to increase the lifetime cancer risk by about 2. For risks from shorter exposures, such as the commonly used 9 year exposure scenario, OEHHA proposes to evaluate risk starting at age 0 in the surrounding general population. The weighting factors in this case increase the risk to a larger extent. Depending on the exposure scenario, the use of age-specific distributions for uptake rates for air, food and water would also increase the risk estimates significantly independent of any application of ASFs. This is because the uptake rates for all these media per unit of body weight are higher in children and, especially, infants.

Assessing risks to short-term exposures to carcinogens involves additional uncertainties. The cancer potency factors are generally based on long-term exposures. However, in reality, the local air districts in California are frequently assessing risk from short term activities related to construction, mitigation of contaminated soils, and so forth. OEHHA recommends that when assessing such shorter term projects, the districts assume a minimum of 2 years of exposure and apply the slope factors and the 10 fold ASF to such assessments. Exposure durations longer than 2 years would use the method for the remaining years as noted above.

Table 2. Example of default ASF use for a lifetime exposure (not adjusted for age-specific exposure)Carcinogen Potency = 1 (mg/kg-d)⁻¹Exposure = 0.0001 mg/kg-dNo consideration of differences of exposureNo adjustment: Lifetime Risk = potency × dose**70 year Lifetime risk = 1 × 0.0001**Risk**1.0 × 10⁻⁴**With proposed default ASF of 10 for birth to age 2 and 3 for age 2 to 16 years: LR = Σ (potency x dose x ASF x fraction of lifetime)R (birth to age 2 yrs)ASFDurationRisk102/700.286 × 10⁻⁴R (age 2 to 16 yrs)313/700.557 × 10⁻⁴R (age 16 to 70 yrs)155/700.786 × 10⁻⁴**70 year Lifetime Risk****1.6 × 10⁻⁴**With proposed default ASF of 10 for third trimester to age 2 and 3 for ages 2 to 16 years: LR = Σ (potency x dose x ASF x fraction of lifetime)R (third trimester to age 2 yrs)ASFDurationRisk102.25/70.250.320 × 10⁻⁴R (age 2 to age 16 yrs)313/70.250.555 × 10⁻⁴R (age 16 to 70 yrs)155/70.250.783 × 10⁻⁴**70 year Lifetime Risk****1.66 × 10⁻⁴**With proposed default ASF of 10 for birth to age 5 and 3 for the ages 5 to 16 years: LR = Σ (potency x dose x ASF x fraction of lifetime)R (birth to age 5)ASFDurationRisk104/700.571 × 10⁻⁴R (age 5 to 16 yrs)311/700.471 × 10⁻⁴R (age 16 to 70 yrs)155/700.786 × 10⁻⁴**70 year Lifetime Risk****1.8 × 10⁻⁴**

Table 3. Example of default ASF use for a 9-year exposureCarcinogen Potency = 1 (mg/kg-d)⁻¹Exposure = 0.0001 mg/kg-dNo consideration of differences of exposureNo adjustment: Total Risk = potency × dose ×
fraction of lifetime**9-year Total Risk**

<u>Duration</u>	<u>Risk</u>
<u>9/70</u>	<u>0.13 × 10⁻⁴</u>

With default ASF of 10 for birth to age 2, and 3
thereafter: LR = Σ (potency × dose × ASF ×
fraction of lifetime)R (birth to age 2 yrs)

<u>ASF</u>	<u>Duration</u>	<u>Risk</u>
<u>10</u>	<u>2/70</u>	<u>0.286 × 10⁻⁴</u>

R (age 3 to 9 yrs)

<u>3</u>	<u>7/70</u>	<u>0.300 × 10⁻⁴</u>
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9 year Total Risk**0.59 × 10⁻⁴**With default ASF of 10 for third trimester to
age 2 and 3 thereafter: LR = Σ (potency × dose
× ASF × fraction of lifetime)R (third trimester to age 2 yrs)

<u>ASF</u>	<u>Duration</u>	<u>Risk</u>
<u>10</u>	<u>2.25/70.25</u>	<u>0.325 × 10⁻⁴</u>

R (age 2 to 9 yrs)

<u>3</u>	<u>7/70.25</u>	<u>0.300 × 10⁻⁴</u>
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9 year Total Risk**0.625 × 10⁻⁴**With default ASF of 10 to age 5 and 3
thereafter: LR = Σ (potency × dose × ASF ×
fraction of lifetime)R (birth to age 5 yrs)

<u>ASF</u>	<u>Duration</u>	<u>Risk</u>
<u>10</u>	<u>4/70</u>	<u>0.571 × 10⁻⁴</u>

R (age 5 to 9 yrs)

<u>3</u>	<u>5/70</u>	<u>0.214 × 10⁻⁴</u>
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9 year Total Risk**0.785 × 10⁻⁴***U.S.EPA Analysis of the Effect of Age at Exposure on Cancer Potency*

U.S. EPA addressed the potential for increased susceptibility to cancer caused by environmental chemicals when the exposure occurs during an early lifestage in “Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens” (U.S. EPA, 2005b) (referred to henceforth as the Supplemental Guidance). This document is intended to be a companion to the revised “Guidelines for Carcinogen Risk Assessment” (U.S. EPA, 2005a). We present a summary of their analysis, which support the policy decision to weight cancer potency and therefore risk by age-at-exposure. As previously noted, there are several methodological differences between the U.S. EPA analysis and the OEHHA analysis. Of note, in the OEHHA analysis all treatment-related tumors that were observed in a given lifestage exposure experiment were taken into account in estimating cancer potency. Thus in comparing cancer potencies

associated with early life vs. adult exposure, OEHHA compared the total cancer risk associated with exposure during a given lifestage, rather than comparing the risk for cancers at one single site in each lifestage, as the U.S. EPA did. In addition, the age groupings are a bit different in the U.S. EPA analysis than those used by OEHHA in their analysis (described above). For example, prenatal (*in utero*) exposures were not part of the analysis performed by U.S. EPA, and that Agency's analyses did not distinguish between postnatal and juvenile exposures.

U.S. EPA oral exposure cancer risk methodology relies on estimation of the lifetime average daily dose, which can account for exposure factor differences between adults and children (e.g. eating habits and body weight). However, early lifestage susceptibility differences have not been taken into consideration when cancer potency factors were calculated. The Supplemental Guidance document focused on studies that define the potential duration and degree of increased susceptibility that may arise from early-life exposures. An analysis of those studies including a detailed description of the procedures used was published in Barton *et al.* (2005) (included as Appendix I). The criteria used to decide if a study could be included in the quantitative analysis are as follows (excerpted from U.S. EPA, 2005b):

1. Exposure groups at different post-natal ages in the same study or same laboratory, if not concurrent (to control for a large number of potential cross-laboratory experimental variables including pathological examinations),
2. Same strain/species (to eliminate strain-specific responses confounding age-dependent responses),
3. Approximately the same dose within the limits of diets and drinking water intakes that obviously can vary with age (to eliminate dose-dependent responses confounding age-dependent responses),
4. Similar latency period following exposures of different ages (to control for confounding latency period for tumor expression with age-dependent responses), arising from sacrifice at >1 year for all groups exposed at different ages, where early-life exposure can occur up to about 7 weeks. Variations of around 10 to 20% in latency period are acceptable,
5. Postnatal exposure for juvenile rats and mice at ages younger than the standard 6 to 8 week start for bioassays; prenatal (*in utero*) exposures are not part of the current analysis. Studies that have postnatal exposure were included (without adjustment) even if they also involved prenatal exposure,
6. "Adult" rats and mice exposure beginning at approximately 6 to 8 weeks old or older, i.e. comparable to the age at initiation of a standard cancer bioassay (McConnell, 1992). Studies with animals only at young ages do not provide appropriate comparisons to evaluate age-dependency of response (e.g., the many neonatal mouse cancer studies). Studies in other species were used as supporting evidence, because they are relatively rare and the determination of the appropriate comparison ages across species is not simple, and
7. Number of affected animals and total number of animals examined are available or reasonably reconstructed for control, young, and adult groups (i.e., studies reporting only percent response or not including a control group would be excluded unless a reasonable estimate of historical background for the strain was obtainable).

Cancer potencies were estimated from a one-hit model (a restricted form of the Weibull time-to-tumor model), which estimates cumulative incidence for tumor onset. U.S. EPA (2005b) compared the estimated ratio of the cancer potency from early-life exposure to the estimated cancer potency from adult exposure. The general form of the equation for the tumor incidence at a particular dose, [P(dose)] is:

$$P(\text{dose}) = 1 - [1 - P(0)] \exp(-\text{cancer potency} * \text{dose})$$

where $P(0)$ is the incidence of the tumor in controls. The ratio of juvenile to adult cancer potencies at a single site were calculated by fitting this model to the data for each age group. The model fit depended upon the design of the experiment that generated the data. Studies evaluated by U.S. EPA had two basic design types: experiments in which animals were exposed either as juveniles or as adults (with either a single or multiple dose in each period), and experiments in which exposure began either in the juvenile or in the adult period, but once started, continued through life.

The model equations for the first study type are:

$$P_A = P_0 + (1 - P_0) (1 - e^{-m_A \delta_A})$$

$$P_J = P_0 + (1 - P_0) (1 - e^{-m_A e^{\lambda} \delta_J})$$

where A and J refer to the adult and juvenile period, respectively, λ is the natural logarithm of the juvenile:adult cancer potency ratio, P_0 is the fraction of control animals with the particular tumor type being modeled, P_x is the fraction of animals exposed in age period x with the tumor, m_A is the cancer potency, and δ_x is the duration or number of exposures during age period x .

The goal of the model is to determine λ , which is the logarithm of the estimated ratio of juvenile to adult cancer potencies. This serves as a measure of potential susceptibility for early-life exposure.

For the second study type, the model equations take into account that exposures that were initiated in the juvenile period continue through the adult period. The model equations for the fraction of animals exposed only as adults with tumors in this design are the same as in the first study type, but the fraction of animals whose first exposure occurred in the juvenile period is:

$$P_J = P_0 + (1 - P_0) (1 - e^{-m_A e^{\lambda} (\delta_J - \delta_A) - m_A \delta_A})$$

δ_J includes the duration of exposure during the juvenile period and the subsequent adult period.

Parameters in these models were estimated using Bayesian methods and all inferences about the ratios were based on the marginal posterior distribution of λ . A complete description of these procedures (including the potential effect of alternative Bayesian priors that were examined) was published in Barton *et al.* (2005) (Appendix I). This method produced a posterior mean ratio of the early-life to adult cancer potency, which is an estimate of the potential susceptibility of early-life exposure to carcinogens. Ratios of greater or less than one indicate greater or less susceptibility from early-life exposure, respectively.

U.S. EPA reviewed several hundred studies reporting information on 67 chemicals or complex mixtures that are carcinogenic via perinatal exposure. Eighteen chemicals were identified which had animal study designs involving early-life and adult exposures in the same experiment. Of those 18 chemicals, there were overlapping subsets of 11 chemicals involving repeated exposures during early postnatal and adult lifestages and 8 chemicals using acute exposures (usually single doses) at different ages. Those chemicals are listed in [Table 4](#).

Table 4 Chemicals having animal cancer study data available with early-life and adult exposures in the same experiment.

Chemical	Study Type
Amitrole	repeat dosing
Benzidine	repeat dosing
Benzo[a]pyrene (BaP)	acute exposure
Dibenzanthracene (DBA)	acute exposure
Dichlorodiphenyltrichloroethane (DDT)	lifetime exposure, repeat dosing
Dieldrin	lifetime exposure, repeat dosing
Diethylnitrosamine (DEN)	acute exposure, lifetime exposure
Dimethylbenz[a]anthracene (DMBA)	acute exposure
Dimethylnitrosamine (DMN)	acute exposure
Diphenylhydantoin, 5,5-(DPH)	lifetime exposure, repeat dosing
EthylNitrosourea (ENU)	acute exposure
Ethylene thiourea (ETU)	lifetime exposure, repeat dosing
3-Methylcholanthrene (3-MC)	repeat dosing
Methylnitrosourea (NMU)	acute exposure
Polybrominated biphenyls (PBBs)	lifetime exposure, repeat dosing
Safrole	lifetime exposure, repeat dosing
Urethane	acute exposure, lifetime exposure
Vinyl chloride (VC)	repeat dosing

U.S. EPA calculated the difference in susceptibility between early-life and adult exposure as the estimated ratio of cancer potency at specific sites from early-life exposure over the cancer potency from adult exposure for each of the studies that were determined qualitatively to have appropriate study designs and adequate data. The results were grouped into four categories: 1) mutagenic chemicals administered by a chronic dosing regimen to adults and repeated dosing in the early postnatal period (benzidine, diethylnitrosamine, 3-methylcholanthrene, safrole, urethane and vinyl chloride); 2) chemicals without positive mutagenicity data administered by a chronic dosing regimen to adults and repeated dosing in the early postnatal period (amitrole, dichlorodiphenyltrichloroethane (DDT), dieldrin, ethylene thiourea, diphenylhydantoin, polybrominated biphenyls); 3) mutagenic chemicals administered by an acute dosing regimen

(benzo[*a*]pyrene, dibenzanthracene, diethylnitrosamine, dimethylbenzanthracene, dimethylnitrosamine, ethylnitrosourea, methylnitrosourea and urethane); 4) chemicals with or without positive mutagenicity data with chronic adult dosing and repeated early postnatal dosing.

The acute dosing animal cancer studies were considered qualitatively useful by U.S. EPA because they involve identical exposures with defined doses and time periods demonstrating that differential tumor incidences arise exclusively from age-dependent susceptibility. However, they were not used to derive a quantitative cancer potency factor age adjustment, primarily because most of the studies used subcutaneous or intraperitoneal injection as a route of exposure. These methods have not been considered quantitatively relevant routes of environmental exposure for human cancer risk assessment by U.S. EPA, for reasons including the fact that these routes of exposure are expected to have a partial or complete absence of first pass metabolism which could affect potency estimates. Additionally, U.S. EPA decided that cancer potency estimates are usually derived from chronic exposures, and therefore, any adjustment to those potencies should be from similar exposures.

The repeated dosing studies with mutagenic chemicals using exposures during early postnatal and adult lifestages were used to develop a quantitative cancer potency factor age adjustment. Studies with repeated early postnatal exposure were included in the analysis even if they also involved earlier maternal and/or prenatal exposure, while studies addressing only prenatal exposure were not used in the analysis. The weighted geometric mean susceptibility ratio (juvenile to adult) for repeated and lifetime exposures in this case was 10.4 (range 0.12 – 111, 42% of ratios greater than 1).

USEPA suggests the use of age-dependent-adjustment factors (ADAF) for chemicals acting through a mutagenic mode of action, based on the results of the preceding analysis, which concluded that cancer risks generally are higher from early-life exposure than from similar exposure doses and durations later in life:

1. For exposures before 2 years of age (i.e., spanning a 2-year time interval from the first day of birth until a child's second birthday), a 10-fold ADAF.
2. For exposures between 2 and <16 years of age (i.e., spanning a 14-year time interval from a child's second birthday until their sixteenth birthday), a 3-fold ADAF.
3. For exposures after turning 16 years of age, no adjustment (ADAF=1).

The ADAF of 10 used for the 0 – 2 years of age range is approximately the weighted geometric mean cancer potency ratio from juvenile versus adult exposures in the repeated dosing studies. U.S. EPA considered this period to display the greatest toxicokinetic and toxicodynamic differences between children and adults. Data were not available to calculate a specific dose-response adjustment factor for the 2 to <16-year age range, so EPA selected an ADAF of 3 because it was half the logarithmic scale difference between the 10-fold adjustment for the first two years of life and no adjustment (i.e., 1-fold) for adult exposure. The ADAF of 3 represents an intermediate level of adjustment applied after 2 years of age through <16 years of age. The upper age limit (16 years of age) reflects the end of puberty and the attainment of a final body height. U.S. EPA recognizes that the use of a weighted geometric mean of the available study

data to develop an ADAF for cancer potencies may either overestimate or underestimate the actual early-life cancer potency for specific chemicals, and therefore emphasizes in the Supplemental Guidance that chemical-specific data should be used in preference to these default adjustment factors whenever such data are available.

U.S. EPA is recommending the ADAFs described above only for mutagenic carcinogens, because the data for non-mutagenic carcinogens were considered to be too limited and the modes of action too diverse to use this as a category for which a general default adjustment factor approach can be applied. OEHHA considers this approach to be insufficiently health protective. There is no obvious reason to suppose that the toxicokinetics of non-mutagens would be systematically different from those of mutagens. It would also be inappropriate to assume by default that non-mutagenic carcinogens are assumed to need a toxicodynamic correction factor of 1. Most if not all of the factors that make individuals exposed to carcinogens during an early-lifestage potentially more susceptible than those individuals exposed during adulthood also apply to non-mutagenic carcinogen exposures (*e.g.*, rapid growth and development of target tissues, potentially greater sensitivity to hormonal carcinogens, differences in metabolism). It should also be noted that carcinogens that do not cause gene mutations may still be genotoxic by virtue of causing chromosomal damage. Additionally, many carcinogens do not have adequate data available for deciding on a specific mode of action, or do not necessarily have a single mode of action. For these reasons, OEHHA will apply the default cancer potency factor age adjustments described above to all carcinogens unless data are available which allow for the development of chemical-specific cancer potency factor age adjustments. In those cases, an agent-specific model of age dependence (based on observational or experimental data) might be used, or alternative (larger or smaller) adjustment factors and age ranges may be applied where understanding of the mechanism of action and target tissues makes this appropriate.

Other Source Documents for Cancer Risk Assessment Guidance

As noted previously, the cancer potencies and unit risks tabulated in this technical support document have been developed by various programs over a number of years. The methods used therefore necessarily varied according to the date of the assessment and the program responsible. The following section summarizes the sources and procedures most commonly applied, and their historical context where this is apposite.

United States Environmental Protection Agency (U.S. EPA)

The U.S. EPA was one of the first regulatory agencies to develop and apply cancer risk assessment methodology. Their guidance documents and technical publications have been influential for many programs, including the California Air Toxics (Toxic Air Contaminants and Hot Spots) programs.

Guidelines for Carcinogen Risk Assessment (U.S. EPA, 1986)

Prior to the more recent guidelines updating project which, after nearly ten years of internal and public review drafts culminated in the 2005 final revision (see below), U.S. EPA carcinogen risk assessment procedures were generally as described in Anderson *et al.* (1983) and “Guidelines for Carcinogen Risk Assessment” (U.S. EPA, 1986). These methods, which are outlined below, were used to calculate the Integrated Risk Information System (IRIS) cancer potency values, some of which are cited in this document. U.S. EPA has always indicated that cancer risk estimates based on adequate human epidemiologic data are preferred if available over estimates based on animal data. Although the newer guidelines offer alternative methods for dose-response analysis of animal bioassays, and updated consideration of specific topics such as lifestage-related differences in sensitivity, and mechanism of action for some types of carcinogen, the underlying principles, and many of the specific procedures developed in these original guidelines are still applicable and in use.

U.S. EPA Calculation of Carcinogenic Potency Based on Animal Data

In extrapolating low-dose human cancer risk from animal carcinogenicity data, it is generally assumed that most agents that cause cancer also damage DNA, and that the quantal type of biological response characteristic of mutagenesis is associated with a linear non-threshold dose-response relationship. U.S. EPA stated that the risk assessments made with this model should be regarded as conservative, representing the most plausible upper limit for the risk. The mathematical expression used by U.S. EPA in the 1986 guidelines to describe the linear non-threshold dose-response relationship at low doses is the linearized multistage procedure developed by Crump (1980). This model is capable of fitting almost any monotonically increasing dose-response data, and incorporates a procedure for estimating the largest possible linear slope at low extrapolated doses that is consistent with the data at all experimental dose levels. A description of the linearized multistage procedure has been provided above (page [292928](#)). U.S. EPA used an updated version (GLOBAL86, Howe *et al.*, 1986) of the computer program GLOBAL79 developed by Crump and Watson (1979) to calculate the point estimate and the 95% upper confidence limit of the extra risk $A(d)$.

U.S. EPA separated tumor incidence data according to organ sites or tumor types. The incidence of benign and malignant tumors was combined whenever scientifically defensible. U.S. EPA considered this incidence combination scientifically defensible unless the benign tumors are not considered to have the potential to progress to the associated malignancies of the same histogenic origin. The primary comparison in carcinogenicity evaluation is tumor response in dosed animals as compared to contemporary matched control animals. However, U.S. EPA stated that historical control data could be used along with concurrent control data in the evaluation of carcinogenic responses, and notes that for the evaluation of rare tumors, even small tumor responses may be significant compared to historical data. If several data sets (dose and tumor incidence) are available (different animal species, strains, sexes, exposure levels, exposure routes) for a particular chemical, the data set used in the model was the set where the incidence is statistically significantly higher than the control for at least one test dose level and/or where the tumor incidence rate shows a statistically significant trend with respect to dose level. The data set generating the highest lifetime cancer risk estimate (q_1^*) was chosen where appropriate. An example of an inappropriate data set would be a set which generates an artifactually high risk estimate because of a very small number of animals used. If there are 2 or more data sets of comparable size for a particular chemical that are identical with respect to species, strain, sex and tumor sites, the geometric mean of q_1^* estimated from each of those data sets was used for risk estimation. U.S. EPA assumed that mg/surface area/day is an equivalent dose between species. Surface area was further assumed to be proportional to the $2/3$ power of the weight of the animal in question. Equivalent dose was therefore computed using the following relationship:

$$d = \frac{l_e * m}{L_e * W^{2/3}}$$

where L_e = experimental duration, l_e = exposure duration, m = average dose (mg/day) and W = average animal weight. Default average body weights for humans, rats and mice are 70, 0.35 and 0.03 kg, respectively.

Exposure data expressed as ppm in the diet were generally converted to mg/day using the relationship $m = \text{ppm} * F * r$, where ppm is parts per million of the chemical in the diet, F is the weight of the food consumed per day in kg, and r is the absorption fraction (assumed to be 1 in the absence of data indicating otherwise). The weight of food consumed, calories required, and animal surface area were generally all considered to be proportional to the $2/3$ power of the animal weight, so:

$$m \propto \text{ppm} * W^{2/3} * r, \text{ or } \frac{m}{rW^{2/3}} \propto \text{ppm}$$

The relationship could lead to the assumption that dietary ppm is an equivalent exposure between species. However, U.S. EPA did not believe that this assumption is justified, since the calories/kg food consumed by humans is significantly different from that consumed by laboratory animals (primarily due to differences in moisture content). An empirically derived food factor, $f = F/W$ was used, which is the fraction of a species' body weight consumed per day as food. U.S. EPA (1986) gave the f values for humans, rats and mice as 0.028, 0.05 and 0.13, respectively.

Dietary exposures expressed as concentrations in ppm were converted to mg/surface area using the following relationship:

$$\frac{m}{r * W^{2/3}} = \frac{\text{ppm} * F}{W^{2/3}} = \frac{\text{ppm} * f * W}{W^{2/3}} = \text{ppm} * f * W^{2/3}$$

Exposures expressed as mg/kg/day ($m/Wr = s$) were converted to mg/surface area using the relationship:

$$\frac{m}{rW^{2/3}} = s * W^{2/3}$$

The calculation of dose when exposure is via inhalation was performed for cases where 1) the chemical is either a completely water-soluble gas or aerosol and is absorbed proportionally to the amount of inspired air, or 2) where the chemical is a partly water-soluble gas which reaches an equilibrium between the inspired air and body compartments. After equilibrium is attained, the rate of absorption is proportional to metabolic rate, which is proportional to the rate of oxygen consumption, which is related to surface area.

Exposure expressed as mg/day to completely water-soluble gas or aerosols can be calculated using the expression $m = I * v * r$, where I is the inspiration rate/day in m^3 , v is the concentration of the chemical in air (mg/m^3), and r is the absorption fraction (assumed to be the same for all species in the absence of data to the contrary; usually 1). For humans, the default inspiration rate of 20 m^3 has been adopted. Inspiration rates for 113 g rats and 25 g mice have been reported to be 105 and 34.5 liters/day, respectively. Surface area proportionality can be used to determine inspiration rate for rats and mice of other weights; for mice, $I = 0.0345 (W / 0.025)^{2/3} \text{ m}^3/\text{day}$; for rats, $I = 0.105 (W / 0.113)^{2/3} \text{ m}^3/\text{day}$. The empirical factors for air intake/kg/day (i) for humans, rats and mice are 0.29, 0.64 and 1.3, respectively. Equivalent exposures in mg/surface area can be calculated using the relationship:

$$\frac{m}{W^{2/3}} = \frac{Ivr}{W^{2/3}} = \frac{iWvr}{W^{2/3}} = iW^{1/3}vr$$

Exposure expressed as mg/day to partly water-soluble gases is proportional to surface area and to the solubility of the gas in body fluids (expressed as an absorption coefficient r for that gas). Equivalent exposures in mg/surface area can be calculated using the relationships $m = kW^{2/3} * v * r$, and $d = m/W^{2/3} = kvr$. The further assumption is made that in the case of route-to-route extrapolations (e.g., where animal exposure is via the oral route, and human exposure is via inhalation, or vice versa), unless pharmacokinetic data to the contrary exist, absorption is equal by either exposure route.

Adjustments were made for experimental exposure durations shorter than the lifetime of the test animal; the slope q_1^* was increased by the factor $(L/L_e)^3$, where L is the normal lifespan of the experimental animal and L_e is the duration of the experiment. This assumed that if the average dose d is continued, the age-specific rate of cancer will continue to increase as a constant function of the background rate. Since age-specific rates for humans increase by at least the 2nd power of the age, and often by a considerably higher power (Doll, 1971), there is an expectation

that the cumulative tumor rate, and therefore q_1^* , will increase by at least the 3rd power of age. If the slope q_1^* is calculated at age L_e , it would be expected that if the experiment was continued for the full lifespan L at the same average dose, the slope q_1^* would have been increased by at least $(L/L_e)^3$.

U.S. EPA Calculation of Carcinogenic Potency Based on Human Data

U.S. EPA stated that existing human epidemiologic studies with sufficiently valid exposure characterization are always used in evaluating the cancer potency of a chemical. If they showed a carcinogenic effect, the data were analyzed to provide an estimate of the linear dependence of cancer rates on lifetime cancer dose (equivalent to the factor q_1^*). If no carcinogenic effect was demonstrated and carcinogenicity had been demonstrated in animals, then it was assumed that a risk does exist, but it is smaller than could have been observed in the epidemiologic study. An upper limit of cancer incidence was calculated assuming that the true incidence is just below the level of detection in the cohort studied, which is largely determined by the cohort size. Whenever possible, human data are used in preference to animal data. In human epidemiologic studies, the response is measured as the relative risk of the exposed cohort of individuals compared to the control group. The excess risk ($R(X) - 1$, where $R(X)$ is relative risk) was assumed to be proportional to the lifetime average exposure X , and to be the same for all ages. The carcinogenic potency is then equal to $[R(X) - 1]/X$ multiplied by the lifetime risk at that site in the general population. According to this original procedure, the confidence limit for the excess risk was not usually calculated: this decision was ascribed to the difficulty in accounting for inherent uncertainty in the exposure and cancer response data. More recent assessments have taken the opposite view and attempted to calculate and characterize this uncertainty by determining confidence limits, *inter alia*.

Guidelines for Carcinogen Risk Assessment (U.S. EPA, 2005a)

U.S. EPA revised its “Guidelines for Carcinogen Risk Assessment” (referred to henceforth as the “U.S. EPA Guidelines”) in 2005. Compared to the 1986 version of this document, more emphasis is placed on establishing a “mode of action” (MOA). The following excerpt provides a definition of this term:

“The term “mode of action” is defined as a sequence of key events and processes, starting with interaction of an agent with a cell, proceeding through operational and anatomical changes, and resulting in cancer formation. A “key event” is an empirically observable precursor step that is itself a necessary element of the mode of action or is a biologically based marker for such an element. Mode of action is contrasted with “mechanism of action,” which implies a more detailed understanding and description of events, often at the molecular level, than is meant by mode of action”.

Cancer risk assessments performed under the prior U.S. EPA Guidelines sometimes included a MOA description. However, the 1986 U.S. EPA Guidelines did not explicitly mandate the development of a MOA description in cancer risk assessments.

The MOA information is then used to govern how a cancer risk assessment shall proceed. Tumor incidence data sets arising from a MOA judged to be not relevant to humans are not used

to extrapolate a cancer potency factor. If an MOA cannot be determined or is determined to have a low-dose linear dose-response and a nonmutagenic MOA, then a linear extrapolation method is used to develop a cancer potency factor. The same linear extrapolation is used for all lifestages, unless chemical specific information on lifestage or population sensitivity is available. Carcinogens that act via an MOA judged to have a nonlinear low-dose dose response are modeled using MOA data, or the RfD/RfC risk assessment method is used as a default. Adjustments for susceptible lifestages or populations are to be performed as part of the risk assessment process.

If a carcinogen is deemed to act via a mutagenic MOA, then the data from the MOA analysis is evaluated to determine if chemical-specific differences between adults and juveniles exist and can be used to develop a chemical-specific risk estimate incorporating lifestage susceptibility. If this cannot be done, then early-life susceptibility is assumed, and age-dependent adjustment factors (ADAFs) are applied as appropriate to develop risk estimates. In cases where it is not possible to develop a toxicokinetic model to perform cross-species scaling of animal tumor data sets which arise from oral exposures, the U.S. EPA Guidelines state that administered doses should be scaled from animals to humans on the basis of equivalence of $\text{mg/kg}^{3/4}\text{-d}$ (milligrams of the agent normalized by the $3/4$ power of body weight per day). This is a departure from the 1986 U.S. EPA guidelines, which used a $2/3$ power of body weight normalization factor. Other adjustments for dose timing, duration and route are generally assumed to be handled in similar fashion to that described for the 1986 guidelines, although of course updated parameter values would be used where available.

The 2005 U.S. EPA Guidelines also use benchmark dose methodology (described above, page 27) to develop a “point-of departure” (POD) from tumor incidence data. For linear extrapolation, the POD is used to calculate a cancer potency factor, and for nonlinear extrapolation the POD is used in the calculation of a reference dose (RfD) or reference concentration (RfC).

It should be noted that none of the cancer potency factors listed in this document were obtained from U.S. EPA risk assessments performed under the 2005 U.S. EPA Guidelines. All U.S. EPA IRIS cancer potency values contained in this document were obtained from risk assessments using the 1986 U.S. EPA Guidelines.

Office of Environmental Health Hazard Assessment (OEHHA), California Environmental Protection Agency

The cancer risk assessment procedures originally used by the Office of Environmental Health Hazard Assessment (OEHHA) are outlined in “Guidelines for Chemical Carcinogen Risk Assessments and their Scientific Rationale” (referred to below as the Guidelines) (CDHS, 1985). These procedures were generally used in generating Toxic Air Contaminant (TAC) cancer potency values, standard Proposition 65 cancer potency values and Public Health Goal (PHG) cancer potency values. Expedited Proposition 65 cancer potency values depart somewhat from those procedures and are discussed separately below.

OEHHA cancer risk assessment methodology as described by CDHS (1985) generally resembled that used at that time by U.S. EPA (Anderson *et al.*, 1983; U.S. EPA, 1986). OEHHA risk

assessment practice similarly reflects the evolution of the technical methodology (e.g. as described in U.S. EPA, 2005a) since the original guidelines were published. The basic principles and procedures described below are still considered applicable. More recent additions to OEHHA cancer risk assessment methods such as the use of benchmark dose methodologies and early-lifestage cancer potency adjustments are discussed above. The Guidelines state that both animal and human data, when available, should be part of the dose-response assessment.

OEHHA Calculation of Carcinogenic Potency Based on Animal Data

The procedures used to extrapolate low-dose human cancer risk from animal carcinogenicity data assumed that a carcinogenic change induced in a cell is transmitted to successive generations of cell descendants, and that the initial change in the cell is an alteration (e.g. mutation, rearrangement, etc.) in the cellular DNA. Non-threshold models are used to extrapolate to low-dose human cancer risk from animal carcinogenicity data.

Several models were proposed for extrapolating low-dose human cancer risk from animal carcinogenicity data in the original Guidelines. These models include the Mantel-Bryan method (log-probit model), the one-hit model, the linearized multistage procedure, the gamma multihit model, and a number of time-to-tumor models. The Guidelines stated that time-to-tumor models (i.e., a Weibull-in-time model) should be used for low-dose extrapolation in all cases where supporting data are available, particularly when survival is poor due to competing toxicity. However, the Guidelines also noted the difficulty of determining the actual response times in an experiment. Internal tumors are generally difficult to detect in live animals and their presence is usually detected only at necropsy. Additionally, use of these models often requires making the determination of whether a tumor was the cause of death, or was found only coincidentally at necropsy when death was due to other causes. Further, competing causes of death, such as chemical toxicity, may decrease the observed time-to-tumor for nonlethal cancers by allowing earlier necropsy of animals in higher dose groups. The linearized multistage (LMS) procedure was noted as being an appropriate method for dose extrapolation in most cases, with the primary exception being a situation in which sufficient empirical data are available to indicate a dose-response curve of a “quasi-threshold” type (e.g., flat for two or three dose levels, then curving sharply upwards). In this case, the LMS procedure may underestimate the number of stages and overestimate the low-dose risks. In this case, the gamma multihit model was suggested as being a potential alternative. The Mantel-Bryan model was described as having little biological basis as applied to carcinogenesis, and being likely to underestimate risks at low doses. The Guidelines stated that this model should not be used for low dose extrapolation. More recent practice has departed from these original guidelines in some respects, for instance by experimenting with cell-proliferation based models in a few cases: however the LMS model remained the preferred extrapolation model for most purposes. Some of the difficulties in achieving a satisfactory fit to tumor incidence data were found to be alleviated by application of toxicokinetic models and use of an internal rather than applied dose metric with the LMS model. This has resulted in the alternative models originally advocated (Gamma multihit, Mantel-Bryan) being mostly abandoned. As noted above (Dose-Response Assessment, page 23), the use of allegedly biologically based statistical models such as LMS has fallen from favor in recent years, and benchmark dose methodology has become the preferred method for extrapolating cancer potency values from animal cancer incidence data. However, it should also be noted that results

generated by the LMS model and benchmark dose methodology from the same data set are often quite similar.

The 1985 Guidelines stated that both animal and human data, when available, should be part of the dose-response assessment. Although preference was given to human data when these were of adequate quality, animal studies may provide important supporting evidence. Low-dose extrapolation of human cancer risk from animal carcinogenicity data was generally based on the most sensitive site, species and study demonstrating carcinogenicity of a particular chemical, unless other evidence indicates that the data set in question is not appropriate for use. Where both benign and malignant tumors are induced at the same site and the benign tumors are considered to have the potential to progress to malignant tumors, the incidence data for both types of tumors could be combined to form the basis for risk assessment. Pharmacokinetic data on chemical metabolism, effective dose at target site, or species differences between laboratory test animals and humans were considered in dose-response assessments when available. In performing exposure scaling from animals to humans, the “surface area” correction (correcting by the 2/3 power of body weight) was used unless specific data indicates that this should not be done. The Guidelines assumed that in the absence of evidence to the contrary, chemicals that cause cancer after exposure by ingestion will also cause cancer after exposure by inhalation, and vice versa. These original proposals have continued in use with little change except that currently, TAC and PHG cancer potency factor calculations use a 3/4 power of body weight correction for interspecies scaling, in line with current U.S. EPA practice. The standard Proposition 65 cancer potency factor calculations still use a 2/3 power correction because the cancer potency calculation method is specified in regulation (California Health and Safety Code 25249.5 *et seq.*).

Cancer unit risk factors [in units of $(\mu\text{g}/\text{m}^3)^{-1}$] have been calculated from cancer potency factors [in units of $(\text{mg}/\text{kg}\text{-day})^{-1}$] using the following relationship:

$$\text{UR} = \frac{\text{CPF} * 20 \text{ m}^3}{70 \text{ kg} * \text{CV}}$$

where UR is the cancer unit risk, CPF is the cancer potency factor, 70 kg is the reference human body weight, 20 m³ is the reference human inspiration rate/day, and CV is the conversion factor from mg to μg (= 1000). The cancer unit risk describes the excess cancer risk associated with an inhalation exposure to a concentration of 1 $\mu\text{g}/\text{m}^3$ of a given chemical; the cancer potency factor describes the excess cancer risk associated with exposure to 1 mg of a given chemical per kilogram of body weight.

It should be noted that although this default method is still used in deriving published cancer unit risk values, for site-specific risk assessments age-appropriate distributions and percentile values are used in the current version of the Hot Spots exposure assessment document. Where exposure to children occurs (as it does in most exposures to the general population surrounding a source site) it is also necessary to apply the age-specific adjustment factors for the appropriate durations in accordance with the guidance offered above (Page 30 *et seq.*).

OEHHA Calculation of Carcinogenic Potency Based on Human Data

Human epidemiologic studies with adequate exposure characterization are used to evaluate the cancer potency of a chemical. If they show a carcinogenic effect, the data are analyzed to provide an estimate of the linear dependence of cancer rates on lifetime cancer dose. The 1985 Guidelines stated that with continuous exposure, age-specific incidence continues to increase as a power function (e.g., t^3 or t^4) of the elapsed time since initial exposure. Lifetime risks can be estimated by applying such a power function to the observed data and extrapolating beyond the actual followup period. OEHHA has generally undertaken the calculation of study power and confidence bounds on the potency estimate as important tools to establish the credibility of the estimate obtained and in comparing this with other estimates (from other human studies or from animal data). Due to the diversity in quality and type of epidemiological data, the specific approaches used in OEHHA risk assessments based on human epidemiologic studies vary on a case by case basis rather than following explicit general guidelines. Examples of the methods used can be observed in the Toxic Air Contaminant documents (these documents are listed in Appendix D: the methods used are described in the compound summaries provided in Appendix B).

Expedited Proposition 65 Cancer Risk Assessment Methodology

Expedited cancer potency values developed for several agents listed as carcinogens under Proposition 65 (California Health and Safety Code 25249.5 *et seq.*) were derived from selected animal carcinogenicity data sets of the Carcinogenic Potency Database (CPDB) of Gold *et al.* (1984, 1986, 1987, 1989, 1990, 1997) using default procedures specified in the administrative regulations for Proposition 65 (Title 22 California Code of Regulations [CCR] 12703). OEHHA hazard assessments usually describe all relevant data on the carcinogenicity (including dose-response characteristics) of the chemical under examination, followed by an evaluation of any pharmacokinetic and mechanistic (e.g. genotoxicity) data. An evaluation of the data set for the chemical may indicate that adjustments in target dose estimates or use of a dose response model different from the default are appropriate. The procedure used to derive expedited Proposition 65 cancer potency values differs from the usual methodology in two ways. First, it relies on cancer dose response data evaluated and extracted from the original literature by Gold *et al.* Second, the choice of a linearized multistage procedure for generating cancer potency values is automatic, and pharmacokinetic adjustments are not performed. The methods used to develop expedited cancer potency values incorporate the following assumptions:

1. The dose response relationship for carcinogenic effects in the most sensitive species tested is representative of that in humans.
2. Observed experimental results can be extrapolated across species by use of the interspecies factor based on "surface area scaling."
3. The dose to the tissue giving rise to a tumor is assumed to be proportional to the administered dose.
4. The linearized multistage polynomial procedure can be used to extrapolate potency outside the range of experimental observations to yield estimates of "low" dose potency.
5. Cancer risk increases with the third power of age.

The Carcinogenic Potency Database of Gold *et al.* (1984, 1986, 1987, 1989, 1990) contains the results of more than 4000 chronic laboratory animal experiments on 1050 chemicals by combining published literature with the results of Federal chemical testing programs (Technical Reports from the Carcinogenesis Bioassay Program of the National Cancer Institute (NCI)/National Toxicology Program (NTP) published prior to June 1987). The published literature was searched (Gold *et al.*, 1984) through the period December 1986 for carcinogenicity bioassays; the search included the Public Health Service publication "Survey of Compounds Which Have Been Tested for Carcinogenic Activity" (1948-1973 and 1978), monographs on chemical carcinogens prepared by the International Agency for Research on Cancer (IARC) and Current Contents. Also searched were Carcinogenesis Abstracts and the following journals: British Journal of Cancer, Cancer Letters, Cancer Research, Carcinogenesis, Chemosphere, Environmental Health Perspectives, European Journal of Cancer, Food and Cosmetics Toxicology, Gann, International Journal of Cancer, Journal of Cancer Research and Clinical Oncology (formerly Zeitschrift für Krebsforschung und Klinische Onkologie), Journal of Environmental Pathology and Toxicology, Journal of Toxicology and Environmental Health, Journal of the National Cancer Institute, and Toxicology and Applied Pharmacology. Studies were included in the database if they met the following conditions:

1. The test animals were mammals.
2. Chemical exposure was started early in life (100 days of age or less for hamsters, mice and rats).
3. Route of administration was via the diet, drinking water, gavage, inhalation, intravenous injection or intraperitoneal injection.
4. The test chemical was administered alone (not in combination with other chemicals).
5. Chemical exposure was chronic (*i.e.*, duration of exposure was at least one-fourth the standard lifespan for that species), with not more than 7 days between exposures.
6. The experiment duration was at least half the standard lifespan for the species used.
7. The study design included a control group and at least 5 animals/exposure group.
8. No surgical interventions were performed.
9. Pathology data were reported for the number of animals with tumors (not total number of tumors).
10. All results reported were original data (not analysis of data reported by other authors).

Included in their data set tabulations are estimates of average doses used in the bioassay, resulting tumor incidences for each of the dose levels employed for sites where significant responses were observed, dosing period, length of study and histopathology. Average daily dose levels were calculated assuming 100% absorption. Dose calculations follow procedures similar to those of Cal/EPA and U.S. EPA; details on methods used and standard values for animal lifespans, body weights, and diet, water and air intake are listed in Gold *et al.* (1984). OEHHA (1992) reviewed the quality assurance, literature review, and control procedures used in compiling the data and found them to be sufficient for use in an expedited procedure. Cancer potency estimates were derived by applying the mathematical approach described in the section below to dose response data in the Gold *et al.* database.

The following criteria were used for data selection:

1. Data sets with statistically significant increases in cancer incidence with dose ($p \leq 0.05$) were used. (If the authors of the bioassay report considered a statistically significant result to be unrelated to the exposure to the carcinogen, the associated data set was not used.)
2. Data sets were not selected if the endpoint was specified as "all tumor-bearing animals" or results were from a combination of unrelated tissues and tumors.
3. When several studies were available, and one study stood out as being of higher quality due to numbers of dose groups, magnitude of the dose applied, duration of study, or other factors, the higher quality study was chosen as the basis for potency calculation if study results were consistent with those of the other bioassays listed.
4. When there were multiple studies of similar quality in the sensitive species, the geometric mean of potencies derived from these studies was taken. If the same experimentalists tested two sexes of the same species/strain under the same laboratory conditions, and no other adequate studies were available for that species, the data set for the more sensitive sex was selected.
5. Potency was derived from data sets that tabulate malignant tumors, combined malignant and benign tumors, or tumors that would have likely progressed to malignancy.

Cancer potency was defined as the slope of the dose response curve at low doses. Following the default approach, this slope was estimated from the dose response data collected at high doses and assumed to hold at very low doses. The Crump linearized multistage polynomial (Crump *et al.*, 1977) was fit to animal bioassay data:

$$\text{Probability of cancer} = 1 - \exp[-(q_0 + q_1d + q_2d^2 + \dots)]$$

Cancer potency was estimated from the upper 95 % confidence bound on the linear coefficient q_1 , which is termed q_1^* .

For a given chemical, the model was fit to a number of data sets. As discussed in the section above, the default was to select the data for the most sensitive target organ in the most sensitive species and sex, unless data indicated that this was inappropriate. Deviations from this default occur, for example, when there are several bioassays or large differences exist between potency values calculated from available data sets.

Carcinogenicity bioassays using mice and/or rats will often use an exposure duration of approximately two years. For standard risk assessments, this is the assumed lifespan for these species. Animals in experiments of shorter duration are at a lower risk of developing tumors than those in the standard bioassay; thus potency is underestimated unless an adjustment for experimental duration is made. In estimating potency, short duration of an experiment was taken into account by multiplying q_1^* by a correction factor equal to the cube of the ratio of the assumed standard lifespan of the animal to the duration of the experiment (T_e). This assumes that the cancer hazard would have increased with the third power of the age of the animals had they lived longer:

$$q_{\text{animal}} = q_1^* * (104 \text{ weeks}/T_e)^3$$

In some cases excess mortality may occur during a bioassay, and the number of initial animals subject to late occurring tumors may be significantly reduced. In such situations, the above described procedure can, at times, significantly underestimate potency. A time-dependent model fit to individual animal data (i.e., the data set with the tumor status and time of death for each animal under study) may provide better potency estimates. When Gold *et al.* indicated that survival was poor for a selected data set, a time-dependent analysis was attempted if the required data were available in the Tox Risk (Crump *et al.*, 1991) data base. The Weibull multistage model (Weibull-in-time; multistage-in-dose) was fit to the individual animal data.

To estimate human cancer potency, q_{animal} values derived from bioassay data were multiplied by an interspecies scaling factor (K; the ratio of human body weight (bw_h) to test animal body weight (bw_a), taken to the 1/3 power (Anderson *et al.*, 1983)):

$$K = (bw_h/bw_a)^{1/3}$$

Thus, cancer potency = $q_{\text{human}} = K * q_{\text{animal}}$

Chemical-specific Descriptions of Cancer Potency Value Derivations

Unit Risk and potency values for chemicals whose cancer potency values were obtained from Toxic Air Contaminant documents, standard or expedited Proposition 65 documents, U.S. EPA's Integrated Risk Information System (IRIS) documents and Health Effects Assessment Summary Table (HEAST) entries, or from other documents prepared by OEHHA's Air Toxicology and Epidemiology Branch or Pesticide and Environmental Toxicology Branch are presented in Appendix A. Information summaries for these chemicals are presented in Appendix B.

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Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning

A Reference for Local Governments Within the South Coast Air Quality Management District

This guidance document is prepared by the South Coast Air Quality Management District (AQMD) as a reference for cities and counties within AQMD's jurisdiction. It provides suggested policies that local governments can use to prevent or reduce potential air pollution impacts and protect public health in their General Plans or through local planning. The objective of the guidance document is to facilitate stronger collaboration between local governments and the AQMD to reduce community exposure to source-specific and cumulative air pollution impacts. It is recognized that local governments, to make the best decisions for the benefit of their residents, must weigh and balance multiple issues, demands and concerns, including, but not limited to, the need for housing, existing development and development patterns, environmental responsibilities and more when making land use decisions.

May 6, 2005

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PREFACE

The South Coast Air Quality Management District (AQMD) environmental justice program is designed to protect the rights of the residents in the South Coast basin to live and work in an environment of clean air, free of airborne health threats. The guiding principle of the program is based on “equitable environmental policymaking and enforcement to protect the health of all residents, regardless of age, culture, ethnicity, gender, race, socioeconomic status, or geographic location, from the health effects of air pollution.” In suggesting enhancements to the AQMD’s 2002 environmental justice program, stakeholders proposed the development of a model air quality element for cities and counties within AQMD’s jurisdiction that considers the health risks to community residents associated with local government land use planning and decision-making. To that end, the AQMD is making this guidance document available to local governments as a tool to assist them as they develop or update their General Plans and make other planning decisions. The primary users will likely be local government planners within the geographic boundaries of the South Coast air district; however, the ideas, technical issues, and references in the guidance document are also intended for use by private developers, residents, and community organizations. The use of this document by local governments is strictly voluntary. The AQMD recognizes that local governments, to make the best decisions for the benefit of their residents, must weigh and balance multiple issues, demands and concerns, including, but not limited to, the need for housing, existing development and development patterns, environmental responsibilities and more when making land use decisions.

Neither state or federal law mandates separate air quality elements in General Plans. Similarly, the AQMD does not require that cities or counties include a “stand alone” air quality element in their plans, but we encourage local governments to use the information presented in this guidance document to: (1) help develop a separate air quality element, (2) update their current air quality element or (3) integrate air quality policies in other elements of their General Plans such as Land Use and Circulation. We recognize that each community must address a unique combination of air quality and community development issues in their General Plans; therefore, the suggested goals, objectives and policies/strategies presented in this document will not apply uniformly in every jurisdiction. The format and scope of suggested air pollution policies and strategies for each local jurisdiction should be tailored to be consistent with the structure and content of the existing General Plan. Local jurisdictions have complete discretion to select the appropriate mix of pertinent air quality goals and objectives and determine the level of detail of policies and implementation measures that will effectively reduce air pollution and protect public health in their communities.

The combined implementation of the suggested strategies throughout the region will strengthen the local government partnership with the AQMD to achieve state and federal clean air standards and demonstrate the resolve of cities and counties in the district to provide environmental equity and protect public health. The AQMD will

update this document periodically to make available the most current air quality information, the results of local health effects studies related to air pollution and the state of air pollution control technologies to help local governments update their General Plans and make other planning decisions.

CHAPTER 1

INTRODUCTION

- **REGULATED AIR POLLUTANTS**
- **EFFECTS OF AIR POLLUTION ON HEALTH AND WELFARE**
- **THE ROLE OF FEDERAL, STATE, AND LOCAL AGENCIES TO REDUCE AIR POLLUTION**
- **THE REGIONAL COMPREHENSIVE PLAN**
- **THE REGIONAL AIR QUALITY MANAGEMENT PLAN**
- **ENVIRONMENTAL JUSTICE**
- **FORMAT OF THE DOCUMENT**

INTRODUCTION

California state law requires each city and county to adopt a General Plan “for the physical development of the county or city, and any land outside its boundaries which bears relation to its planning”. The General Plan must contain seven “elements:” land use, circulation, housing, open-space, conservation, noise and safety. The policies in the required General Plan elements are the basis for most land use decisions. General Plan policies and practices have the potential to exacerbate localized air pollution impacts and adversely affect public health. State law offers the flexibility to go beyond the mandatory elements, to adopt “any other elements or address any other subjects, which in the judgment of the legislative body, relate to the physical development of the county or city.” Many cities and counties in the district have addressed air quality in other sections of their General Plan, such as land use, circulation, and conservation. While an air quality element is not mandatory, two counties (San Bernardino and Riverside) and 44 cities within AQMD’s jurisdiction have adopted separate air quality elements in their General Plans (see Appendix A). The fact that Southern California continues to be faced with some of the most serious air pollution problems in the United States is a strong case for the topic of air quality to be included as a stand alone element in General Plans. It is recognized that local governments, to make the best decisions for the benefit of their residents, must weigh and balance multiple issues, demands and concerns, including, but not limited to, the need for housing, existing development and development patterns, environmental responsibilities and more when making land use decisions.

The South Coast basin exceeds federal standards for ozone and particulate matter (PM₁₀ and PM_{2.5}). Although the AQMD is moving forward in implementing both near and long term control measures that aggressively seek to reduce air quality emissions, the basin is currently one of only two areas in the nation classified as “extreme” non-attainment for ozone. Clean air for all the residents in the basin cannot be accomplished by air quality agencies alone. Achieving the mutual goals of protecting public health and providing environmental equity to residents throughout the basin can only be accomplished through a strong partnership with local jurisdictions. The involvement of local governments to establish public policies that support AQMD strategies is essential for this region to meet state and federal air quality goals. The General Plan, as the foundation for all local planning and development, is an important tool to implement local government policies and programs that are vital to achieving clean air standards. Cities and counties have the flexibility and authority to address air quality issues through General Plans that guide the development of local circulation systems, transportation services, and land use. The AQMD and CARB have strong, comprehensive regulatory programs in place for new and existing sources of air pollution. However, local policies in conjunction with air agency efforts can greatly enhance the effectiveness of these programs by addressing cumulative impacts in local areas. Many land use decisions that involve siting, zoning and permitting actions provide opportunities to complement local and state air regulations and prevent or

minimize adverse health impacts. The development of land use policy and the authority to site sensitive land uses are local government functions. In local planning and policy development, sensitive land uses should be given special consideration to best protect those individuals that are especially vulnerable to the effects of air pollution. The intent of this document is to provide information that will lead to general plan policies and local decision making that considers potential air quality impacts on public health. The suggested policies and strategies are intended to guide land use planners in developing approaches tailored to their community that reduce exposure to source-specific air pollution and lower the health risk associated with cumulative air pollution impacts.

Chapter 1 presents an overview of regulated air pollutants in the South Coast air district and summarizes the effects of air pollution on public health and welfare.

REGULATED AIR POLLUTANTS

Air pollutants regulated by the federal and California Clean Air Acts or other laws fall under three categories:

- criteria air pollutants,
- toxic air contaminants (TAC),
- global warming and ozone-depleting gases.

Pollutants in each of these categories are monitored and regulated differently. Criteria air pollutants are measured by sampling concentrations in the ambient air; toxic air contaminants are measured at the source and in the general atmosphere; and, global warming and ozone-depleting gases are not monitored but are subject to federal and regional policies that call for their reduction and eventual phase out. The U.S. Environmental Protection Agency (USEPA) has established ambient air quality standards for the following air pollutants:

- ozone (O₃)
- nitrogen dioxide (NO₂)
- carbon monoxide (CO)
- sulfur dioxide (SO₂)
- lead (Pb)
- particulate matter (PM₁₀ and PM_{2.5})

The California Air Resources Board (CARB) has also established ambient air quality standards for the six pollutants regulated by the USEPA. Some of the California ambient air quality standards are more stringent than the national ambient air quality standards (NAAQS). In addition, California has established ambient air quality standards for the following pollutants or air quality conditions:

- hydrogen sulfide
- sulfates

- vinyl chloride
- visibility

NAAQS and California ambient air quality standards for the criteria pollutants are listed in Appendix B.

Criteria Air Pollutants

Criteria air pollutants are defined as those pollutants for which the federal and state governments have established air quality standards for outdoor or ambient concentrations to protect public health. The national and state ambient air quality standards have been set at levels to protect human health with a determined margin of safety. For some pollutants, there are also secondary standards to protect the environment. The following is a description of the ambient air pollutants and the attainment status of each pollutant in the South Coast basin. A discussion of the health effects of the ambient air pollutants is found in Appendix C.

Carbon Monoxide. Carbon monoxide (CO) is a colorless, odorless gas formed by the incomplete combustion of fuels. Motor vehicles are the main source of this gas. CO competes with oxygen, often replacing it in the blood, thus reducing the blood's ability to transport oxygen to vital organs in the body. The ambient air quality standard for carbon monoxide is intended to protect persons whose medical condition already compromises their circulatory system's ability to deliver oxygen. These medical conditions include certain heart ailments, chronic lung diseases, and anemia. Persons with these conditions have reduced exercise capacity even when exposed to relatively low levels of CO. Fetuses are at risk because their blood has an even greater affinity to bind with CO. Smokers are also at risk from ambient CO levels because smoking increases the background level of CO in their blood. The South Coast basin is designated as a serious non-attainment area for carbon monoxide by both USEPA and CARB. However, there have been no violations of the CO standard in the past three years, and AQMD has submitted to EPA a request for redesignation to attainment status.

Nitrogen Dioxide. Nitrogen dioxide (NO₂) is a byproduct of fuel combustion. The principal form of nitrogen oxide produced by combustion is nitric oxide (NO), but NO reacts quickly to form NO₂, creating the mixture of NO and NO₂ commonly called NO_x. NO₂ acts as an acute irritant and, in equal concentrations, is more injurious than NO. At atmospheric concentrations, however, NO₂ is only potentially irritating. There is some indication of a relationship between NO₂ and chronic pulmonary fibrosis. Some increase in bronchitis in young children has also been observed at concentrations below 0.3 parts per million (ppm). NO₂ absorbs blue light which results in a brownish red cast to the atmosphere and reduced visibility. Although NO₂ concentrations have not exceeded national standards since 1991 and the state hourly standard since 1993, NO_x emissions remain of concern because of their contribution to the formation of O₃ and particulate matter.

Ozone. Ozone (O_3) is one of a number of substances called photochemical oxidants that are formed when volatile organic compounds (VOC) and NO_x react in the presence of ultraviolet sunlight. O_3 concentrations in the South Coast basin are typically among the highest in the nation, and the damaging effects of photochemical smog, which is a popular name for a number of oxidants in combination, are generally related to the concentrations of O_3 . Individuals exercising outdoors, children, and people with pre-existing lung disease, such as asthma and chronic pulmonary lung disease, are considered to be the subgroups most susceptible to O_3 effects. Short-term exposures (lasting for a few hours) to O_3 at levels typically observed in southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes. In recent years, a correlation between elevated ambient O_3 levels and increases in daily hospital admission rates, as well as mortality, has also been reported. The South Coast basin is designated by both the USEPA and the CARB as an extreme non-attainment area for ozone. Although O_3 concentrations declined between 1991 and 2004 to the lowest levels since monitoring began, the South Coast basin continues to have peak O_3 levels that exceed both state and federal standards. In 2004, the peak concentration (1-hr standard) exceeded the federal standard 131 percent and the state standard 163 percent.

In 1997, the USEPA issued a new ozone air quality standard based on an 8-hour average exposure (the current federal ozone air quality standard is based on a 1-hour average period). The new 8-hour average ozone air quality standard provides for greater health protection. Current regulatory controls which are directed toward attaining the 1-hour ozone standard will also have benefits toward attaining the 8-hour ozone standard.

Particulate Matter. Inhalable fine particulate matter (PM_{10}) consists of extremely small suspended particles or droplets 10 microns or smaller in diameter that can lodge in the lungs, contributing to respiratory problems. PM_{10} arises from such sources as re-entrained road dust, diesel soot, combustion products, tire and brake abrasion, construction operations, and fires. It is also formed in the atmosphere from NO_x and SO_2 reactions with ammonia. PM_{10} scatters light and significantly reduces visibility.

Inhalable particulates pose a serious health hazard, alone or in combination with other pollutants. More than half of the smallest particles inhaled will be deposited in the lungs and can cause permanent lung damage. Inhalable particulates can also have a damaging effect on health by interfering with the body's mechanism for clearing the respiratory tract or by acting as a carrier of an absorbed toxic substance. USEPA designates the South Coast basin as serious non-attainment for PM_{10} , while CARB designates the South Coast basin simply as non-attainment.

In 1997, the USEPA established a new particulate matter $PM_{2.5}$ standard, in addition to the PM_{10} standard. $PM_{2.5}$ is defined as particulate matter with a diameter less than 2.5 microns and is a subset of PM_{10} . $PM_{2.5}$ consists mostly of products from the reaction of NO_x and SO_2 with ammonia, secondary organics, finer dust particles, and the

combustion of fuels including diesel soot. Deadlines for meeting this standard will be ten years after the region is designated as non-attainment by the USEPA.

Sulfur Dioxide. Sulfur dioxide (SO₂) is a colorless, pungent gas formed primarily by the combustion of sulfur-containing fossil fuels. Health effects include acute respiratory symptoms and difficulty in breathing for children. Individuals with asthma may experience constriction of airways with exposure to SO₂. Though SO₂ concentrations have been reduced to levels well below state and federal standards, further reductions in SO₂ emissions are needed because SO₂ is a precursor to sulfate and PM₁₀. The South Coast basin is considered a SO₂ attainment area by USEPA and CARB.

Lead. Lead (Pb) concentrations once exceeded the state and federal air quality standards by a wide margin, but have not exceeded state or federal air quality standards at any regular monitoring station since 1982. Though special monitoring sites immediately downwind of lead sources recorded very localized violations of the state standard in 1994, no violations were recorded at these stations in 1996. Consequently, the South Coast basin is designated as an attainment area for lead by both the USEPA and CARB.

Volatile Organic Compounds. It should be noted that there are no state or federal ambient air quality standards for VOCs because they are not classified as criteria pollutants. VOCs are regulated, however, because a reduction in VOC emissions reduces certain chemical reactions which contribute to the formation of ozone. VOCs are also transformed into organic aerosols in the atmosphere, contributing to higher PM₁₀ and lower visibility levels.

Although health-based standards have not been established for VOCs, health effects can occur from exposures to high concentrations of VOC. Some hydrocarbon components classified as VOC emissions are hazardous air pollutants. Benzene, for example, is a hydrocarbon component of VOC emissions that is known to be a human carcinogen.

Criteria air pollutant concentrations are typically higher in the South Coast basin than in any other area of the country because of the region's climate, geographical setting, and high concentrations of industry and motor vehicles. Although still high, pollutant concentrations have declined sharply throughout the 1990s. Air quality in 2004, aided by favorable weather conditions, was the best recorded since air pollution agencies began monitoring air pollution in this region in the 1940s prior to the creation of the AQMD. Table 1-1 lists the primary emission sources of the criteria pollutants and some of the harmful effects of the pollutants.

Table 1-1

Primary Sources and Effects of Criteria Pollutants

Pollutants	Source	Primary Health and Welfare Effects
Lead (Pb)	Contaminated soil	Behavioral and hearing disabilities in children; Nervous system impairment
Sulfur Dioxide (SO ₂)	Combustion of sulfur-containing fossil fuels; Smelting of sulfur-bearing metal ores; Industrial processes	Aggravation of respiratory diseases (asthma, emphysema); Reduced lung function
Carbon Monoxide (CO)	Incomplete combustion of fuels and other carbon-containing substances, such as motor vehicle exhaust; Natural events, such as decomposition of organic matter	Aggravation of some heart diseases (angina); Reduced tolerance for exercise; Impairment of mental function; Impairment of fetal development; Death at high levels of exposure
Nitrogen Dioxide (NO ₂)	Motor vehicle exhaust; High-temperature stationary combustion; Atmospheric reactions	Aggravation of respiratory illness
Ozone (O ₃)	Atmospheric reaction of organic gases with nitrogen oxides in sunlight	Aggravation of respiratory and cardiovascular diseases; Reduced lung function, Increased cough and chest discomfort
Fine Particulate Matter (PM ₁₀ and PM _{2.5})	Stationary combustion of solid fuels; Construction activities; Industrial processes; Atmospheric chemical reactions	Reduced lung function; Aggravation of respiratory & cardio-respiratory diseases; Increases in mortality rate; Reduced lung function growth in children

The AQMD measures current air quality and provides forecasts on the AQMD website in several formats. Current information on air pollution levels may be viewed in text form on the "Current Air Quality Readings" page, or retrieved from a clickable map on the "Animated Air Quality Map" page. Air quality data, trends, and studies are available via the "Air Quality Data" page, and a forecast of pollution levels for the following day is available on the "Daily Air Quality Forecast" page. Also, meteorological data needed for the air dispersion model applications may be downloaded from this website at no charge.

Toxic Air Contaminants

Toxic Air Contaminants (TACs) are often referred to as "non-criteria" air contaminants because ambient air quality standards have not been established for them. There are hundreds of TACs, and exposure to these pollutants is associated with elevated risk of cancer and non-cancer health effects such as birth defects, genetic damage, and other

adverse health effects. Effects may be chronic (i.e., of long duration) or acute (i.e., of short duration) on human health. Acute health effects are attributable to short term exposure to air toxics. These effects include nausea, skin irritation, respiratory illness, and, in extreme cases, death. Chronic health effects result from long-term exposure. The effect of major concern for this type of exposure is cancer, which may develop up to 30 years after exposure. The USEPA regulates TACs through technology-based requirements which are implemented by state & local agencies. California regulates TACs through the air toxics program (H&SC §§ 39660 et seq.) and the Air Toxics “Hot Spots” Information and Assessment Act (H&SC §§ 44300 et seq.).

The CARB, working in conjunction with the Office of Environmental Health Hazard Assessment (OEHHA), identifies TACs. Air Toxic Control Measures (ATCMs) must then be adopted by CARB to reduce the identified TACs. Where there are federal standards, CARB must, at minimum, adopt the standards established by the USEPA. If there is a threshold below which there would be no significant adverse health impacts, CARB must create an ATCM to reduce emissions so there are no adverse health effects. If there is not a threshold below which there would be no significant adverse health impacts CARB must create an ATCM that reduces TAC emissions using the best available control technologies. Local air quality control agencies must implement ATCMs, or adopt equal or more stringent control measures as rules, within six months of adoption by CARB.

The Air Toxics “Hot Spots” Information and Assessment Act, codified in the Health and Safety Code, requires operators of specified facilities in the South Coast air district to submit to the AQMD comprehensive emissions inventories and reports by specified dates. The AQMD reviews the reports and then places the facilities into high-, intermediate-, and low-priority categories, based on the potency, toxicity, quantity, and volume of emissions and on the proximity of receptors, including sensitive receptors, to the facility. Facilities designated as high priority must prepare a health risk assessment. If the risk is above specified levels, facilities are required to notify the surrounding population and may be required to develop and implement a risk reduction plan.

The AQMD has also developed “industry-wide” inventories and assessed risks of small business facilities with emissions that are easily characterized. Some of the facilities in the industry-wide program are gas stations, small auto body shops, small dry cleaners, plating shops, and fiberglass product manufacturers. This information can then be used as an initial screening tool to determine whether a particular site is advisable for siting a sensitive receptor, or vice versa. Additional information is available on control strategies to minimize cumulative impacts of toxic emissions at http://www.aqmd.gov/rules/CIWG/final_white_paper.pdf and the AQMD Air Toxics “Hot Spots” Program (AB2588) at <http://www.aqmd.gov/prdas/AB2588/AB2588.html>. Information is also available from the AQMD Office of Engineering and Compliance to determine if a facility is operating under AQMD permits and what types of pollutants are emitted.

AQMD also adopts other rules that are not part of the federal or state programs and works with other agencies to encourage TAC reductions in their purview. The emissions inventory data are to be updated every four years. In addition to implementing federal and state toxic requirements, AQMD has an Air Toxics Control Plan and a Cumulative Impacts Reduction Strategy to further reduce TACs and their impacts on the communities in the South Coast basin.

Global Warming and Ozone-Depleting Gases

“Stratospheric ozone depletion” refers to the slow destruction of naturally occurring ozone, which lies in the upper atmosphere (called the stratosphere) and which protects Earth from the damaging effects of solar ultraviolet radiation. Certain compounds, including chlorofluorocarbons (CFCs,) halons, carbon tetrachloride, methyl chloroform, and other halogenated compounds, accumulate in the lower atmosphere and then gradually migrate into the stratosphere. In the stratosphere, these compounds participate in complex chemical reactions to destroy the upper ozone layer. Destruction of the ozone layer increases the penetration of ultraviolet radiation to the Earth’s surface, a known risk factor that can increase the incidence of skin cancers and cataracts, contribute to crop and fish damage, and further degrade air quality.

Some gases in the atmosphere affect the Earth’s heat balance by absorbing infrared radiation. This layer of gases in the atmosphere functions much the same as glass in a greenhouse (i.e., both prevent the escape of heat). This is why global warming is also known as the “greenhouse effect.” Gases responsible for global warming and their relative contribution to the overall warming effect are carbon dioxide (55 percent), CFCs (24 percent), methane (15 percent), and nitrous oxide (6 percent). It is widely accepted that continued increases in greenhouse gases will contribute to global warming although there is uncertainty concerning the magnitude and timing of the warming trend.

Global warming gases and ozone-depleting gases include, but are not limited to, the following:

- **Carbon dioxide.** Carbon dioxide results from fossil fuel combustion in stationary and mobile sources. It contributes to the greenhouse effect, but not to stratospheric ozone depletion. In the South Coast basin, approximately 48 percent of carbon dioxide emissions come from transportation, residential and utility sources contribute approximately 13 percent each, 20 percent come from industry, and the remainder come from a variety of other sources.
- **Chlorofluorocarbons.** Chlorofluorocarbons (CFCs) are emitted from blowing agents used in producing foam insulation. They are also used in air conditioners and refrigerators and as solvents to clean electronic microcircuits. CFCs are primary contributors to stratospheric ozone depletion and to global warming. Sixty-three percent of CFC emissions in the South Coast basin come from the industrial sector. Federal regulations require service practices that maximize recycling of ozone-depleting compounds (both CFCs, hydro-chlorofluorocarbons and their blends) during the servicing and disposal of air-conditioning and

refrigeration equipment. AQMD Rule 1415 – Reduction of Refrigerant Emissions from Stationary Refrigeration and Air Conditioning Systems requires CFC refrigerants to be reclaimed or recycled from stationary refrigeration and air conditioning systems. AQMD Rule 1405 – Control of Ethylene Oxide and Chlorofluorocarbon Emissions From Sterilization or Fumigant Processes requires recovery of reclamation of CFCs at certain commercial facilities and eliminates the use of some CFCs in the sterilization processes. Some CFCs are classified as TACs and regulated by AQMD Rule 1401 – New Source Review of Toxic Air Contaminants and AQMD Rule 1402 Control of Toxic Air Contaminants from Existing Sources.

- **Halons.** These compounds are used in fire extinguishers and behave as both ozone-depleting and greenhouse gases. Halon production ended in the United States in 1993. AQMD Rule 1418 – Halon Emissions From Fire Extinguishing Equipment requires the recovery and recycling of halons used in fire extinguishing systems and prohibits the sale of halon in small fire extinguishers.
- **Hydro-chlorofluorocarbons.** HCFCs are solvents, similar in use and chemical composition to CFCs. The hydrogen component makes HCFCs more chemically reactive than CFCs, allowing them to break down more quickly in the atmosphere. These compounds deplete the stratospheric ozone layer, but to a much lesser extent than CFCs. HCFCs are regulated under the same AQMD rules as CFCs.
- **Methane.** Methane is emitted from biogenic sources, incomplete combustion in forest fires, landfills, and leaks in natural gas pipelines. It is a greenhouse gas and traps heat 40-70 times more effectively than carbon dioxide. In the South Coast basin, more than 50 percent of human-induced methane emissions come from natural gas pipelines, while landfills contribute 24 percent. Methane emissions from landfills are reduced by AQMD Rule 1150.1 - Control of Gaseous Emissions from Active Landfills. Methane emissions from petroleum sources are reduced by a number of rules in AQMD Regulation XI that control fugitive emissions from petroleum production, refining and distribution.
- **1,1,1-trichloroethane (TCA).** TCA (methyl chloroform) is a solvent and cleaning agent commonly used by manufacturers. It is less destructive on the environment than CFCs or HCFCs, but its continued use will contribute to global warming and ozone depletion. 1,1,1-trichloroethane (TCA) is a synthetic chemical that does not occur naturally in the environment. No TCA is supposed to be manufactured for domestic use in the United States after January 1, 2002 because it affects the ozone layer. TCA had many industrial and household uses, including use as a solvent to dissolve other substances, such as glues and paints; to remove oil or grease from manufactured metal parts; and as an ingredient of household products such as spot cleaners, glues, and aerosol sprays. AQMD regulates this compound as a toxic air contaminant under Rules 1401 and 1402.

The Montreal Protocol on Substances That Deplete the Ozone Layer controls the phase-out of ozone depleting compounds (ODCs). Under this international agreement, several organizations report on the science of ozone depletion, implement projects to help move away from ODCs, and provide a forum for policy discussions. The AQMD supports state, federal and international policies to reduce levels of ozone depleting gases through its Global Warming Policy and rules. Further, AQMD has developed ODC Replacement Guidelines to facilitate transition from ODCs to substances that are the most environmentally benign.

EFFECTS OF AIR POLLUTION ON HEALTH AND WELFARE

The residents of Southern California bear the cost of air pollution by:

- reduced visibility
- increased episodes of respiratory infections and other illnesses
- increased number of days of discomfort
- absent days from work and school
- increased symptoms related to respiratory disease, including asthma
- slowed lung function growth and increased asthma risk in children
- heart disease
- shortened life spans

Polluted air also damages agriculture, the natural environment, and human-made materials. Improving air quality enhances public health and produces economic benefits that more than offset the costs of attaining clean air. The overall strategy for reducing air pollution for criteria pollutants in the South Coast air district is contained in the Air Quality Management Plan (AQMP). The AQMP provides control measures that reduce emissions to attain federal ambient air quality standards by their applicable deadlines. The cost benefit analysis for the plan is conducted as part of the AQMP development. However, not all the health benefits associated with implementing the AQMP can be quantified. Further, the Air Toxic Control Plan amended in 2003 outlines the strategies pursued by the AQMD, CARB, and USEPA to reduce air toxic emissions.

THE ROLE OF FEDERAL, STATE, AND LOCAL AGENCIES TO REDUCE AIR POLLUTION

U.S. Environmental Protection Agency

The U.S. Environmental Protection Agency (USEPA) is responsible for establishing the national ambient air quality standards and enforcing the federal Clean Air Act. This agency also regulates emission sources under the exclusive authority of the federal government, such as aircraft, certain types of ships and locomotives. The USEPA has jurisdiction over emission sources outside state waters (e.g., beyond the outer continental shelf) and establishes various emission standards, including those for

vehicles sold in states other than California. Automobiles sold in California must also meet the often stricter emission standards established by the California Air Resources Board (CARB). For additional information about the USEPA, contact the USEPA's general internet address at www.epa.gov. Information on the programs and activities in USEPA Region IX, which includes California, can be found at www.epa.gov/region9, and additional information on mobile source emissions is available from the Office of Mobile Sources at www.epa.gov/otaq/index.htm.

California Air Resources Board

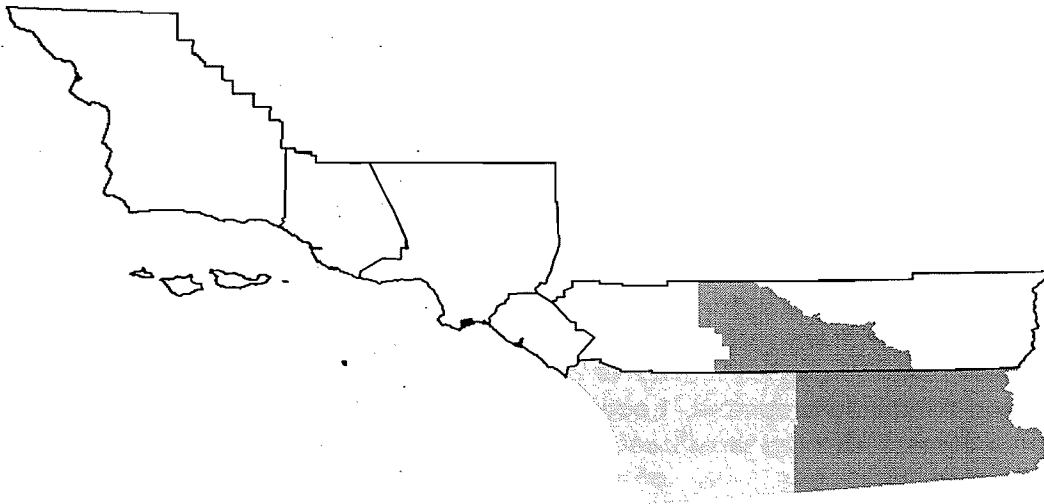
The CARB became part of the California Environmental Protection Agency (CalEPA) in 1991. The agency is responsible for ensuring implementation of the California Clean Air Act, meeting state requirements of the federal Clean Air Act, and establishing state ambient air quality standards. It is also responsible for setting vehicle emission standards and fuel specifications, and regulating emissions from other sources such as consumer products and certain types of mobile equipment (e.g., lawn & garden equipment, industrial forklifts). The internet address for CalEPA is www.calepa.ca.gov; the internet address for CARB is www.arb.ca.gov.

South Coast Air Quality Management District

Because Southern California has one of the worst air quality problems in the nation, the AQMD was created by the 1977 Lewis Air Quality Management Act. Four county air pollution control agencies were merged into one regional district to better address the issue of improving air quality in Southern California. Under the act, revised and renamed the Lewis-Presley Air Quality Management Act in 1988, the AQMD is the agency principally responsible for comprehensive air pollution control in the South Coast basin. Specifically, the AQMD is responsible for monitoring air quality and planning, implementing, and enforcing programs designed to attain and maintain state and federal ambient air quality standards in the district. Programs developed include air quality rules and regulations that regulate stationary source emissions, including area and point sources and certain mobile source emissions. The AQMD is also responsible for establishing permitting requirements and issuing permits for stationary sources and ensuring that new, modified, or relocated stationary sources do not create net emissions increases. The AQMD enforces air quality rules and regulations through a variety of means, including inspections, educational and training programs, and fines.

The AQMD has jurisdiction over an area of 10,743 square miles, referred to in this document as the South Coast air district. This area includes all of Orange county, all of Los Angeles county except for the Antelope Valley, the non-desert portion of western San Bernardino county, and the western and Coachella Valley portions of Riverside county. The South Coast basin is a sub-region of the district and covers an area of 6,745 square miles. The South Coast basin includes all of Orange county and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. Figure 1-1 shows the jurisdictional boundaries of the South Coast air district and the South Coast basin.

Both the district and the South Coast basin are surrounded by mountains, which tend to restrict air flow and concentrate pollutants in the valleys or "basins" below. The South Coast basin is almost entirely urban, and its pollution is typically related to dense population and associated area sources, heavy vehicular traffic, and industrial sources. In the Coachella Valley, pollution problems are associated primarily with ozone transport from the South Coast basin and with particulate emissions from heavy construction, travel on paved and unpaved roads, and agriculture.



public. This committee, therefore, offers local governmental agencies the opportunity to comment on the AQMD's rule-making and planning processes.

The second branch of the AQMD is the Hearing Board, which is a quasi-judicial panel authorized to provide relief to regulated facilities from AQMD regulations. Relief from regulations can only occur under specific circumstances, such as emergencies, etc. State law requires that the Hearing Board be appointed by the Governing Board, but the Hearing Board acts independently of the Governing Board. The third branch is management/staff, which is the bulk of the agency and reports to the AQMD Governing Board. This branch includes the divisions responsible for: developing rules and rule amendments; permitting of air pollution sources and rule compliance; planning programs such as the AQMP; air quality monitoring; public outreach and small business assistance; and prosecuting cases of rule violations. Additional information on the AQMD is available at AQMD's internet address - www.aqmd.gov.

Local Governments

Air quality issues in the South Coast air district are addressed through the efforts of federal, state, regional, and local government agencies. These agencies and the legislation that authorizes them to regulate air quality are shown in Figure 1-2. Local governments work in concert with their Councils of Governments and the AQMD to improve air quality through a variety of programs, including regulatory actions, policy making, and education programs. **Local governments have the flexibility to address air quality issues through ordinances, local circulation systems, transportation services, and land use. No other level of government has that authority, including the AQMD.** This document recognizes the vital role of local government policies and programs that are designed to complement and support both local and state air regulations. These policies, particularly in land use, transportation and energy, are essential to achieve state and federal air pollution standards and reduce localized air pollution impacts. For many local governments in the district, the General Plans consolidate air quality related goals, objectives and policies into an optional air quality element. A stand alone air quality element gives direction for sound decision making on air quality-related issues and provides a solid basis to inform the public, as well as developers, about air quality policies to protect public health.

Local governments, which include both city and county agencies, have the ability to control or mitigate air pollution through their police powers and land use decision-making authority. Local ordinances can also provide mechanisms for reducing air pollution. Many cities in the South Coast air district have adopted air quality elements into their General Plans, coordinating these elements with the Air Quality Management Plan (AQMP) and the congestion management program requirements required by state law. Local design standards such as requirements for bicycle racks and bicycle paths may result in reducing motor vehicle trips, and administrative actions can be taken that reduce air pollution, such as creating a telecommunication program that enables employees to work at home. Also, capital improvement programs can fund transportation infrastructure projects such as bus turnouts, energy-efficient street lights, and synchronized traffic signals that contribute to improved air quality.





Government	Legislation	Implementing Agencies
 <p>Federal</p>	Clean Air Act	U.S. Environmental Protection Agency (USEPA)
 <p>State</p>	California Clean Air Act (H&S §§ 39660 et seq.)	California EPA (Cal-EPA) and California Air Resources Board (CARB)
	AB 1807, Air Toxics Contaminants Act	Office of Environmental and Health Hazard Assessments (OEHHA)
 <p>Regional</p>	Assembly Bill 2588, Air Toxics "Hot Spots" Information and Assessment Act of 1987	South Coast Air Quality Management District (AQMD)
	Lewis-Presley Air Quality Management Act	
 <p>Local</p>	Local Ordinances and Air Quality Elements in General Plans (Gov't. 65303) CEQA mitigation measures (PRC §21000, et seq.)	Public Agencies Including Local Governments and County Transportation Commissions

Figure 1-2
Authorizing Legislation with Air Quality Components

THE REGIONAL COMPREHENSIVE PLAN

The Regional Comprehensive Plan (RCP) is being developed by SCAG as a useful resource for local governments within the SCAG region to implement regional plans and policy objectives. The goals, policies and strategies of four regional plans are described in the RCP:

- 2004 Regional Transportation Plan
- 2004 Regional Transportation Plan Environmental Impact Report
- 2004 Transportation Improvement Plan
- Regional Growth Strategy ("Compass Growth Vision")

Similar to this Guidance Document for Addressing Air Quality in General Plans and Local Planning, the RCP is an advisory document that lays out steps that local governments and other stakeholders may take to support regional objectives.

THE REGIONAL AIR QUALITY MANAGEMENT PLAN

The AQMD has authority to reduce emissions from stationary sources, some area sources, and certain indirect sources. The AQMD is the lead agency in charge of, with input from the Southern California Association of Governments (SCAG) and CARB, developing the AQMP. The AQMP is a comprehensive plan that includes control strategies for stationary and area sources, as well as for on-road and off-road mobile sources. SCAG has the primary responsibility for providing future growth projections and the development and implementation of transportation control measures. CARB in coordination with federal agencies provides the control element for mobile sources.

ENVIRONMENTAL JUSTICE

California state law defines environmental justice as the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies (California Government Code sec.65040.12). In 1997, AQMD implemented 10 environmental justice initiatives designed to protect district residents' right to live and work in an environment of clean air, free of airborne health threats. The AQMD defines environmental justice as "equitable environmental policymaking and enforcement to protect the health of all residents, regardless of age, culture, ethnicity, gender, race, socioeconomic status, or geographic location, from the health effects of air pollution."

AQMD's environmental justice program was expanded in 2002 to include 23 enhancements that serve as the basis for further outreach and problem-solving activities regarding environmental justice issues. The goal of developing a model air quality element for local government General Plans is one of the program enhancements established to reduce health risks associated with exposure to air pollution. The progress of AQMD's environmental justice program is reviewed each year and a new workplan is established for the coming year. Public input on the workplan is solicited through a series of public consultation meetings. Prior to being adopted by the AQMD Governing Board, environmental justice work plans are reviewed by the Ethnic Community Advisory Group, an ethnically-diverse committee of residents and businesspeople. For an update on AQMD's environmental justice initiatives, visit <http://www.aqmd.gov/ej/index.htm>.

Often, local governments broadly define "environmental justice" in general plans to balance air quality with other environmental, economic, and social objectives. Broad definitions supported by specific goals, objectives and polices prevent possible procedural inequities (e.g., public meeting times that limit attendance by certain groups)

and geographical inequities (e.g., heavy industrial land uses adjacent to certain neighborhoods). California General Plan Guidelines recommend incorporating policies that support environmental justice in all mandatory and optional elements. Local jurisdictions may choose to define “environmental justice” and consolidate all environmental justice policies in an optional environmental justice element. As stated in the California General Plan Guidelines, the definition of environmental justice clearly leads to policies and planning principles that prevent incompatible land uses that pose threats to the health, safety, and welfare of the community. Furthermore, the definition of “environmental justice” and the policies to achieve environmental equity in an air quality element must not conflict with policies in other elements.

FORMAT OF THE DOCUMENT

This guidance document is formatted with six topics that are typically addressed in an air quality element of a general plan. Air quality issues are described as they are related to each topic, and a menu of strategies and suggested policies are listed that will integrate air quality issues into the general plan. Not all suggested policies are pertinent or applicable for all jurisdictions. The severity of local air pollution problems in various regions of the district (e.g., windblown dust or localized TAC concentrations) will influence the number and scope of air pollution-related strategies that jurisdictions consider for adoption in their General Plans.

The six topics discussed in this document are:

- Chapter 2 - Land Use
- Chapter 3 - Transportation
- Chapter 4 - Stationary Sources of Pollution
- Chapter 5 - Reduction of Fugitive Dust Emissions
- Chapter 6 - Energy Conservation
- Chapter 7 - Public Awareness and Education

The State Guidelines closely adhere to statute and case law and rely upon commonly accepted principles of contemporary planning practice. A four-tier format for general plan elements is suggested, using the terms “goal,” “objective,” “policy,” and “implementation measure” as follows:

1. **Goal** - A goal statement expresses an end, not an action.
2. **Objective** - An objective describes a specified end, condition, or state that is an intermediate step toward attaining a goal. It should be achievable and, when possible, measurable and time-specific.
3. **Policy** - A policy statement guides decision-making and indicates a commitment of the local legislative body to a particular course of action. A policy is based on and

helps implement a general plan's objectives. A policy is carried out by implementation measures.

4. **Implementation Measure** - An implementation measure is an action, procedure, program, or technique that carries out general plan policy. Each policy has at least one corresponding implementation measure.

This guidance document includes a three-tier format (goals, objectives, and policies/strategies) which closely parallels the four-tier format outlined in state guidelines. A number of stakeholders suggested that the "policies/strategies" category is more helpful and less prescriptive, and allows more flexibility to interpret and craft policy statements that are specific to the needs of the local jurisdiction. During the implementation phase, staff will continue to solicit feedback from stakeholders. If necessary, AQMD staff will move toward a four-tier format in the future and consider an additional subcategory of "implementation measures".

CHAPTER 2

AIR QUALITY ISSUES REGARDING LAND USE

- **LOCAL GOVERNMENT SITING CRITERIA FOR SENSITIVE RECEPTORS**
- **JOB-HOUSING BALANCE**
- **SUGGESTED GOAL, OBJECTIVES AND POLICIES/STRATEGIES RELATED TO LAND USE**

AIR QUALITY ISSUES REGARDING LAND USE

Local government land use authority in planning, zoning, and permitting can be a very effective tool to minimize air pollutant emissions and associated health risks. However, it is important to recognize that traditional assumptions about planning and zoning compatibility to protect the public may not always eliminate adverse health impacts of air pollution. While it is recognized that local governments, to make the best decisions for the benefit of their residents, must weigh and balance multiple issues, demands and concerns, including, but not limited to, the need for housing, existing development and development patterns, environmental responsibilities and more when making land use decisions, some projects being considered by local land use decision-makers may comply with zoning and air pollution control requirements but still result in adverse health impacts on nearby sensitive receptors. These health impacts may result from emissions released at a single site, along a transportation corridor or a combination of co-located air pollution sources in a community. For example, the co-location of residential and commercial zones often minimize transportation-related emissions, but in some situations this mixed land use may also increase health risks if commercial facilities that emit toxic chemicals are over concentrated. While mixed-use zoning offers economic, social, and environmental benefits compared to single-use zoning, this chapter describes certain industrial, commercial and transportation uses that may pose health concerns with residences, schools, and other sensitive sites. This document introduces land use related policies that rely on design and distance parameters to minimize emissions and lower potential health risk.

LOCAL GOVERNMENT SITING CONSIDERATIONS FOR SENSITIVE RECEPTORS

There is a strong connection between health risk and the proximity of the source of air pollution. Local jurisdictions have the responsibility for determining land use compatibility for sensitive receptors. A sensitive receptor is a person in the population who is particularly susceptible to health effects due to exposure to an air contaminant. The following are land uses (sensitive sites) where sensitive receptors are typically located:

- schools, playgrounds and childcare centers
- long-term health care facilities
- rehabilitation centers
- convalescent centers
- hospitals
- retirement homes
- residences

Facilities and Operations That Emit Odors and Dust

Both the AQMD and local governments receive complaints about dust and offensive odors. Odors and dust are air pollutants that can have negative health impacts. While

almost any source may emit objectionable odors, some land uses will be more likely to produce odors or dust because of their operation. The types of facilities or operations that are prone to generate odors, and dust, and other air pollutants can be identified from complaints received by the AQMD (Table 2-1). While AQMD records indicate these facilities have the potential to emit odor or dust that may impact sensitive receptors, individual equipment and operations within each source category do not necessarily generate dust or odor. Special care needs to be given to the initial siting and design of operations and facilities listed in Table 2-1. Assessing potential impacts depends on a number of variables such as wind speed and direction, design features of the proposed facility such as stack height, and the physical distance from the source and the sensitive receptors. Local governments should identify both new projects that have a probability of pollution-related complaints and new developments that may be affected by existing upwind sources. Ideally, potential odor and dust emissions from new projects should be identified and evaluated while the project is still in its initial design phase. This early effort could provide an opportunity to change the project design to minimize or eliminate emissions before the facility becomes operational. Potential odor and dust sources that can be identified and mitigated before construction of a project begins will minimize health impacts and enforcement problems. Local governments are advised to contact the AQMD's Office of Engineering and Compliance to determine if complaints have been filed by property owners or occupants in the general vicinity of a proposed project site to help evaluate the potential for dust or odor complaints.

Table 2-1

Sources of Odor and Dust Complaints Received by the AQMD

Sources of Odors	Sources of Dust
Agriculture (farming and livestock) Chemical Plants Composting Operations Dairies Fiberglass Molding Landfills Refineries Rendering Plants Rail Yards Wastewater Treatment Plant	Agricultural (Land Tilling) Asphalt and Cement Plants Auto Body Facilities Construction Activities Diesel Engines/Vehicles Composting Operations Fertilizer Operations Fiberglass Molding Furniture Manufacturing - Sawdust Landfills and Transfer Stations Refineries Roofing Operations Rubber Manufacturing Sand and Gravel Operations Sandblasting Silk Screening Wood dust

Toxic Air Contaminants

Sensitive receptors (and the facilities that house them) in proximity to sources of air pollutants that emit TACs are of particular concern. Exposure to TACs can increase the risk of contracting cancer or result in adverse non-cancer health effects. Non-cancer health risks associated with TAC exposure include birth defects and other reproductive damage, neurological disorders, and damage to the respiratory system. A comprehensive monitoring study of TACs was initiated as part of AQMD's environmental justice program. The Multiple Air Toxics Exposure Study (MATES-II) included fixed sites characterizing neighborhood-scale conditions and a complementary microscale study to sample potential localized influences of toxic-emitting sources near residential neighborhoods. Inventories of TACs were utilized in computer simulation models to depict toxic risks for the entire South Coast basin. The MATES-II project represents one of the most comprehensive air toxics monitoring programs ever conducted in a major urban area in the country, and it has been recognized as a model program. Findings from the study revealed the following:

- Average cancer risk from ambient measurements in the South Coast basin was found to be 1400 in a million;
- Diesel exhaust is responsible for about 70 percent of the total cancer risk from air pollution;
- Emissions from mobile sources -- including cars and trucks as well as ships, trains and planes -- account for about 90 percent of the cancer risk. Emissions from businesses and industry are responsible for the remaining 10 percent; and
- The highest cancer risk occurs in south Los Angeles county -- including the port area -- and along major freeways.

In 2005, the AQMD plans to release the results of another intensive one-year study that examined current levels of cancer-causing TACs and the risk they pose to district residents. This study will help gauge the effectiveness of current regulations and serve as a vital tool in helping shape future air quality and environmental justice policies. MATES-III will monitor 21 TACs and four other substances at 10 sites across the Los Angeles basin. The AQMD will use mobile monitoring stations to sample at neighborhood sites near toxic emission sources or in areas where community members are concerned about health risks from air pollution. Such neighborhood sites could be near airports, rail yards, warehouses, landfills, high-volume vehicle traffic, or multiple commercial or industrial facilities. Sampling at each neighborhood site lasts for up to two months. The goal of MATES-III is to update TAC levels and toxic emission inventories, determine the cancer and non-cancer health risk from air toxics across the district. Also, the study will investigate potential toxic "hot spots" in local communities.

The potential impacts of new facilities on sensitive sites will depend on a variety of factors including the amount and toxicity of pollutants emitted, the type of air pollution control equipment at the facility, design features of the facility, the distance from the

source of emissions to the sensitive receptor, and local meteorology. All these factors should be carefully evaluated when siting a source of air pollution. Typically, the siting process followed by land use agencies to avoid the location of sensitive sites (e.g., residences, health clinics, etc.) near sources of air pollution does not involve the AQMD. The potential for public health impacts remains unchanged when siting sensitive receptors near a pollution source or a pollution source near a sensitive receptor. Therefore, local policies should allow for a thorough evaluation of the air quality impacts for both scenarios.

Where possible, CARB recommends a minimum separation between new sensitive land uses and the following eight categories of existing sources (Table 1-1 in CARB's Proposed Air Quality and Land Use Handbook: A Community Health Perspective, March 2005, or subsequent versions adopted by CARB):

- high-traffic freeways and roads
- distribution centers
- rail yards
- ports
- refineries
- chrome plating facilities
- perchloroethylene dry cleaners
- large gasoline stations

It is recommended that the AQMD be consulted to obtain facility-specific emissions information and accepted assessment methods for determining relative exposure and health risk for proposed projects.

Recent studies have found an increased incidence of adverse effects among those who live near busy roadways; these include increased respiratory disease and increased mortality (Wilhelm, M., et al 2003; Kim, J. et al 2004). These studies found that residential proximity to traffic was associated with increased risk of low birth weight, increased medical visits for asthma and increased respiratory symptoms in children. Studies conducted near freeways in Southern California show that traffic emissions, such as carbon monoxide, ultra-fine particulates, and black carbon (soot) are several times higher next to freeways than the background concentrations. These concentrations fell to lower levels with increasing distance from the roadway, decreasing about 60-80 percent within 100 meters (Zhu, Yifang, et al, 2002).

Recent results from the Children's Health Study have shown strong evidence of adverse effects in children exposed to ambient levels of traffic-related pollutants. This study followed children in 12 communities in Southern California from 4th grade through 12th grade (McConnell, K., et al, 2002). Children in communities with high levels of NO_x, PM_{2.5}, acid vapors, and elemental carbon showed reduced lung function growth over the study period. Additionally, a higher level of asthma was found in the children that lived nearest to busy roadways. In a report prepared for CARB, researchers concluded that the current levels of ambient air pollution in Southern California are associated with

clinically important chronic health effects that have substantial health and economic impacts (Peters, 2004).

The primary authority for siting public schools rests with local school districts which are the designated "lead agencies" for the CEQA environmental analyses. The California Education Code requires public school districts to notify the local planning agency when siting new public schools and the planning agency to determine if the proposed site conforms with the General Plan. If the proposed school is within 500 feet of the edge of a freeway or traffic corridor that has specified minimum average daily traffic counts, the school district is required to determine through specified risk assessment and air dispersion modeling that neither short-term nor long-term exposure poses significant health risks to pupils. Both the California Education Code section 17213 and the California Public Resources Code section 21151.8 require school districts to consult with the AQMD when preparing the environmental assessment. The AQMD verifies all permitted and non-permitted sources of air pollution that might significantly affect health have been identified and evaluated.

Generally, cancer risk will drop off with distance from a ground level pollution source, such as a freeway. Freeways and busy traffic corridors are defined as traffic volume of over 100,000 vehicles per day in urban areas and 50,000 vehicles per day in rural areas (Education Code Section 17312). CARB studies show that air pollution levels can be significantly higher within 500 feet (150 meters) of freeways or busy traffic corridors and then diminish rapidly. Actual concentration of diesel particulate matter will vary at a particular location depending on traffic volume, vehicle mix, prevailing winds and other variables. The decline in the relative concentration of diesel particulate matter as one moves away from the edge of a freeway is illustrated Figure 2-1. These data have been normalized to a receptor located 20 meters from the edge of freeway (i.e., at a distance of 20 m, the receptor is exposed to 100 percent of the diesel particulate matter emissions from the freeway). A downwind distance of 328 feet (100 m) will reduce cancer risk by over 60 percent. If the physical downwind distance is increased to 984 feet (300 m), the relative concentration is reduced over 80 percent.

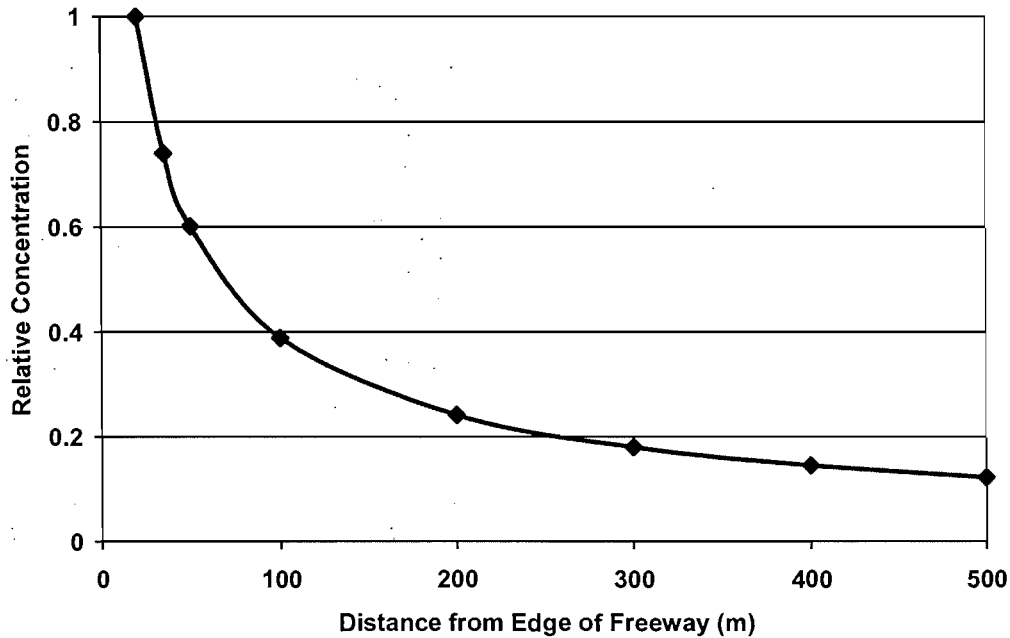


Figure 2-1

**Relative Concentration of Diesel Particulate Matter
in Relation to the Distance from The Edge of a Freeway**

Source: South Coast Air Quality Management District. Adapted from the California Air Resources Board's Diesel Risk Reduction Plan.

A comparison of total cancer risk and cancer risk from diesel particulate matter emissions in rural and urban areas shows that cancer risk associated with elevated levels of diesel particulate both decrease rapidly within the first 100 – 150 meters from the edge of a roadway (Table 2-2). Estimated cancer risk from diesel particulate matter along rural and urban roadways is decreased approximately 68 percent at a distance 150 m (492 ft) from the edge of the roadway. Clearly, these data demonstrate that a minimum distance that separates sources of diesel emissions from nearby receptors is effective in reducing potential cancer risk. The AQMD recognizes that physical separation of the receptors from the pollution sources is not always reasonable or feasible particularly in mature communities. For example, in southern Los Angeles county a sequence of land use decisions in urban areas allowed freeway construction through existing neighborhoods.

Table 2-2

**Cancer Risks from Diesel Particulate Matter at the
Edge of Roadways in Rural and Urban Areas**

Distance from Edge of Roadway (meters)	Diesel Particulate Matter Cancer Risk (in one million)		Total Cancer Risk (in one million)*	
	Rural	Urban	Rural*	Urban*
20 m	475	890	589	1104
150 m	151	277	187	343
500 m	86	159	107	197

Source: South Coast Air Quality Management District. Adapted from the California Air Resources Board's Diesel Risk Reduction Plan.

*To account for gasoline vehicle emissions, the diesel PM risk was multiplied by 1.24. This represents the relative risk contribution from benzene, 1, 3 butadiene, formaldehyde, and acetaldehyde on a basin-wide basis. It is assumed that the vast majority of benzene, 1, 3 butadiene, formaldehyde, and acetaldehyde emissions come from on-road gasoline vehicles.

The AQMD provides guidance for analyzing cancer risks from diesel particulate matter from mobile sources at facilities such as truck stops and warehouse distribution centers in the document titled Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis. This document may be downloaded at <http://www.aqmd.gov/ceqa/hdbk.html>. This guidance describes analysis of potential cancer risks associated with diesel particulates from truck idling and movement (such as truck stops, warehouse and distribution centers, or transit centers), ship hotelling at ports, and train idling. It is suggested that projects with diesel-powered mobile sources use this health risk guidance document to quantify potential cancer risks from the diesel particulate emissions.

Projects that incorporate transit nodes may include a range of multiple services ranging from a bus or light rail stop to a combination of services that may include bus, shuttles, light and heavy rail systems. The concept of a "clean" transit node refers to transit services that predominately operate with zero emission vehicles (e.g., electric light rail), clean fuel vehicles (e.g., compressed natural gas or hydrogen), or vehicles powered with low-emission engines (e.g., California certified Super Ultra Low Emissions Vehicles). Projects that emphasize "clean" transit nodes not only minimize VMT, but also reduce the potential health impacts associated with transit-related emissions on individuals living near transit services.

Current USEPA regulations establish fuel registration and formulation requirements. All diesel fuels and all additives for on-road motor vehicles are required to be registered with the USEPA, and all new diesel-fueled on-road and off-road engines and vehicles sold in California are required to meet both federal and state emission certification requirements. In addition, the Carl Moyer Program, administered by CARB and local air

districts, is a clean engine incentive program that incentivizes projects that substantially reduce emissions of oxides of nitrogen (NO_x) and fine particulate matter (PM) from heavy-duty diesel engines. Funds are distributed to project proponents through the AQMD to incentivize cost-effective projects. Funds, in the form of grants for private companies, public agencies, or individuals operating heavy-duty diesel engines, cover an incremental portion of the cost of cleaner on-road, off-road, marine, locomotive, and agricultural irrigation pump engines. This framework is also used to award grants for other equipment and for retrofitting or repowering existing engines.

The CARB Diesel Risk Reduction Plan proposes a three-pronged approach that would require use of low-sulfur diesel fuel; retrofitting existing engines with PM filters; and nearly a 90 percent reduction of PM emissions from all new diesel engines and vehicles. A number of adopted and proposed state regulations that will reduce diesel emissions target the following source categories: Heavy-Duty Public Fleets and Private Utilities; Cargo Handling Equipment; Non-Urban Transit Buses; Harbor Craft; Truck Idling from Sleeper Cabs; Off Road and Private On-Road Fleets; Agriculture Equipment; and Ships.

Further, the AQMD has adopted fleet rules that will gradually shift public agencies to lower emissions and alternative fuel vehicles whenever a fleet operator with 15 or more vehicles replaces or purchases new vehicles.

- Rule 1186.1 Less – polluting sweepers
- Rule 1191 Clean On-Road Light and Medium-Duty Public Fleet Vehicle
- Rule 1192 Clean On-Road Transit Buses
- Rule 1193 Clean On-Road Residential and Commercial Refuse Collection Vehicles
- Rule 1194 Commercial Airport Ground Access Vehicles
- Rule 1195 Clean On-Road School Buses
- Rule 1196 Clean On-Road Heavy-duty Public Fleet Vehicles

Air regulatory agencies have collaborated closely with regulated industries, refineries and diesel vehicle manufacturers to establish cleaner fuel specifications and engine technologies. Although AQMD's fleet rules have been challenged, CARB is moving forward with its rulemaking to facilitate the implementation of fleet rules in the South Coast Air Basin that will result in significant emission reductions. In addition, state and federal requirements are the cornerstone of the clean air strategy to clean up diesel pollution in the South Coast district. Combined, the current and planned regulatory efforts by USEPA, CARB and AQMD are expected to substantially lower the average level of diesel emissions per vehicle. CARB or AQMD staff can be contacted to obtain additional information on the current status of rule development.

The goals established by the CARB plan call for a statewide reduction in diesel particulate emissions of 75 percent by 2010 and 85 percent by 2020. AQMD's 2004 addendum to the 2000 Air Toxics Control Plan indicates that full implementation of the 2003 AQMP, including CARB's measures to reduce diesel particulate matter, would reduce basin-wide toxic-weighted emissions by 50 percent. While there continues to be

an overall reduction in air pollution for the region, the emission reductions expected from cleaner engine standards that employ new control technologies often require a lengthy "fleet turnover" time to be effective. Given projections for future growth and additional vehicles that will utilize the regions transportation corridors, there are no guarantees that localized cancer risk and non-cancer impacts will diminish rapidly in the short term or adequately in the long run. Cities are encouraged to join the AQMD in a proactive approach to address existing health concerns in their communities identified in the AQMD's Multiple Air Toxics Emissions Study (MATES II). Policies and strategies suggested in this guidance document can offer a near-term remedy to lower cancer risk from exposure to air pollution, and at the same time, provide preventive measures that protect health over the long-term planning horizon of the general plan.

TACs from stationary sources are of particular concern with regard to sensitive receptors. For example, state law requires school districts to consider the impact of siting a new school close to existing facilities that emit TACs. This same principle should be applied in siting other sensitive sites such as retirement homes and hospitals. AQMD serves as a clearinghouse for publicly available information on stationary sources that emit TACs and associated public health risks. This information is compiled from documentation required of facilities that emit TACs by AQMD Rules 1401 & 1402, and Assembly Bill (AB) 2588 Air Toxics Hot Spots Program (H&SC §§ 39660 et seq.). Toxic risk assessments are routinely included in CEQA evaluations performed by the local governments in its land use decisions

Jurisdictions may conduct a current inventory of all major sources of air pollution within a specified radius of the proposed sensitive site. Examples of facilities with the potential to emit TACs that could pose a health risk are shown in Table 2-3. Also, AQMD staff are available to assist local governments in identifying sources of TACs within their jurisdictions and evaluating potential health risk from TAC exposure. Local governments may contact the AQMD to obtain recommended analytical methods.

Existing land use conflicts are best addressed on an individual basis. AQMD is available to assist cities and counties in evaluating local government options and strategies for minimizing existing pollution exposure problems. Options may include relocation, recycling, redevelopment, rezoning, process changes, incentive programs, and other types of measures.

Table 2-3

Examples of Facilities That Emit Toxic Air Contaminants

<u>Categories</u>	<u>Facility Type</u>	<u>Air Pollutants of Concern</u>
Commercial	Perchloroethylene Dry Cleaners ¹	Perchloroethylene
	Chrome Platers/Chrome Spraying Operations	Hexavalent Chromium
	Gas Stations	Benzene
	Auto Body Shops	Metals, Solvents
	Furniture Repair	Solvents ² , Methylene Chloride
	Film Processing Services	Solvents, Perchloroethylene
	Cold Storage Distribution Centers, Warehouses	Diesel Particulate Matter
	Printing Shops	Solvents
	Diesel Engines	Diesel Particulate Matter
	Industrial	Manufacturers
Metal Platers, Welders, Metal Spray (flame spray) Operations		Hexavalent Chromium, Nickel, Metals
Chemical Producers		Solvents, Metals
Gasoline Refineries		Benzene, Solvents, Metals, PAHs
Furniture Manufacturers		Solvents
Shipbuilding and Repair		Hexavalent Chromium and other metals, Solvents
Hazardous Waste Incinerators		Dioxin, Solvents, Metals
Power Plants		Benzene, Formaldehyde, Particulate Matter
Research and Development Facilities		Solvents, Metals, etc.
Freight Distribution Centers		Diesel Particulate Matter
Public	Landfills	Benzene, Vinyl Chloride, Diesel Particulate Matter
	Waste Water Treatment Plants	Hydrogen Sulfide
	Medical Waste Incinerators	Dioxin, Benzene, PAH, PCBs, 1,3-Butadiene
	Recycling, Garbage Transfer Stations	Diesel Particulate Matter
	Municipal Incinerators	Dioxin, Benzene, PAH, PCBs, 1,3-Butadiene
Transportation	Port Facilities	Diesel Particulate Matter, Methyl Bromide
	Airports	Benzene, Formaldehyde
	Rail Yards (diesel locomotives)	Diesel Particulate Matter
	Rail Corridors	Diesel Particulate Matter
	Intermodal Facilities	Diesel Particulate Matter
	Truck Stops	Diesel Particulate Matter
	Freeways and Roadways	Diesel Particulate Matter, Benzene, 1,3-Butadiene, Formaldehyde
Agricultural Operations	Farming Operations	Diesel Particulate Matter, VOCs, NOx, PM ₁₀ , CO, SOx, Pesticides
	Livestock and Dairy Operations	Ammonia, VOCs, PM ₁₀

Source: Adapted from the Proposed Air Quality and Land Use Handbook: A Community Health Perspective. CARB, March 2005.

¹Non-perc alternatives (e.g. wet cleaning and CO₂ cleaning) may eliminate TAC emissions.

²Many, but not all solvents contain TACs.

Mapping Sources of Toxic Air Contaminants. Land use/zoning maps should be utilized to identify the location of facilities and transit corridors that are potential sources of TACs and the locations of sensitive receptors. An internet-based mapping tool is available from CARB that allows local planners to view maps showing the locations of air pollution sources. The Community Health Air Pollution Information System (CHAPIS) was developed by ARB and the State's 35 local air districts. The AQMD provides the data for facilities in its jurisdiction. Facilities that emit 10 or more tons per year of nitrogen oxides, sulfur oxides, carbon monoxide, PM₁₀, or reactive organic gases are included in the database. AQMD facilities that emit TACs are being phased in by categories. The CHAPIS database includes chemical manufacturing, metal fabrication, and aerospace/electronics manufacturing facilities if they have conducted health risk assessments under California's Air Toxics "Hot Spots" program. The remaining "Hot Spot" facilities and other industries and smaller businesses, such as gas stations and dry cleaners will eventually be added. An example of a CHAPIS map for the Central Los Angeles - Port region is shown in Figure 2-2.

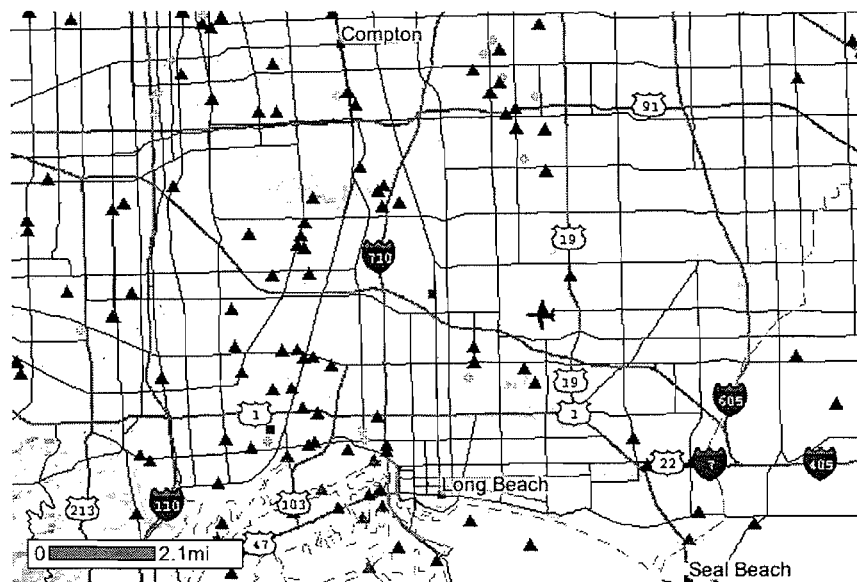


Figure 2-2
Example of a CHAPIS Map of Central Los Angeles Port Regions

CHAPIS maps may answer questions such as:

- What are the major sources of air pollution within several miles from a residence?
- What are the relative contributions of mobile and stationary source emissions?
- What are major sources of air pollution near schools?
- What air pollutants are emitted by a particular facility or from mobile sources?

While the CHAPIS information can serve as an indicator of local levels of air pollution, it is the exposure to emissions that influences health effects. Exposure is the amount of pollution that someone actually breathes or otherwise ingests. The degree of exposure varies with the distance from the source and the activities of the individual. Exposure is also dependent on how the emissions are released and dispersed into the atmosphere. Exposure to air pollutants can also occur from indoor sources such as cooking, cleaning, and smoking. Health risk, as it is related to exposure to air contaminants is influenced by the number of air pollutants an individual is exposed to and the relative toxicity of those pollutants. The air pollutant emission information contained in CHAPIS is provided for general informational purposes. This mapping tool does not address the contribution of indoor sources of air pollution, and it does not show exposure levels or the health risks associated with the pollutants and sources it tracks. Not all stationary source facilities that are required to be permitted by the AQMD can be identified by CHAPIS at this time. Also, there can be a lag time between when the emissions occurred and the reporting of the information to the AQMD or CARB emission inventory databases. The AQMD should be consulted for the most recent emissions data and for information on facilities that may not appear on CHAPIS maps.

Siting issues, with respect to sensitive receptors need to be identified early in the review process, preferably before projects are formally submitted to the public agencies' planning boards. The following three air quality questions related to land use compatibility should be considered for each project in close proximity to sensitive receptors:

- Will a sensitive receptor be located downwind from an existing source of dust or odors (Table 2-1)?
- Will a sensitive receptor be located in close proximity to a congested roadway or an existing facility that emits TACs (Table 2-3)?
- Is adequate separation provided, or are there established siting criteria to minimize exposure and health risk between sensitive receptors and sources of air pollution (see Table 1-1 in CARB's Draft Air Quality and Land Use Handbook: A Community Health Perspective. February 2005)?

Cities and counties could establish policies that provide for the location of sensitive sites and sources of air pollution in a manner that seeks to avoid the over-concentration of these facilities near sensitive sites. A number of strategies that may be employed to address over-concentration of emission sources and the cumulative impacts of the combined emissions include:

- physical separation between the source and the sensitive site
- design features at the source to minimize air pollution emissions
- siting, permitting and zoning policies
- capping cumulative impacts of various pollution sources

- changing the land use designations in areas where there are significant cumulative impacts

“Cumulative” air quality analyses describe health and nuisance impacts related to cumulative emissions from sources that individually comply with AQMD, state, and federal rules. For example, in local jurisdictions where there are neighborhoods near a relatively large number of industrial facilities or near heavy cross-town traffic, there is concern that there may be accumulated effects of numerous emission sources operating near residences, schools, or other sensitive sites. Cumulative impacts may be mitigated through siting and zoning policies that consider, where feasible, appropriate setbacks and buffer zones to disperse the air pollutants before they reach sensitive receptors. When physical separation of sensitive receptors from sources of air pollution is not a feasible option, particularly in older well-developed communities, the design features of a specific facility or project (e.g., barriers and walls, landscaping, stack height, and ventilation systems) should be evaluated as an alternative to physical land separation.

JOB-HOUSING BALANCE

Residents in urban areas in the South Coast basin have become increasingly concerned with increased traffic congestion and the failure of the region to achieve state and federal clean air standards. The concept of a “jobs/housing balance” is based on the premise that the number of vehicle trips and vehicle miles traveled (VMT) can be reduced when sufficient jobs are available locally to balance the employment demands of the community, and when commercial services are convenient to residential areas. Achieving a good balance requires planning the location and nature of jobs and housing in order to encourage a reduction in vehicle trips and VMT while increasing mass transit ridership and alternative modes of transportation, such as bicycles and walking. The AQMD and the SCAG both embrace jobs/housing balance as a viable tool available to local governments to reduce air pollution.

SUGGESTED GOAL, OBJECTIVES AND POLICIES/STRATEGIES RELATED TO LAND USE

- Goal 1** Land use policies that address the relationship between land use and air quality to protect public health and minimize impacts on existing land use patterns and future land use development
- Objective 1.1** Through land use plans provide heightened consideration of policies and strategies to minimize exposure of sensitive receptors and sites (e.g., schools, hospitals, and residences) to health risks related to air pollution.

Suggested Policies/Strategies to Protect Sensitive Receptors from Health Risks Related to Air Pollution:

- AQ 1.1.1** Develop mapping and inventory resources to identify sensitive receptors and sources of air pollution.
- AQ 1.1.2** Consider environmental justice issues as they are related to potential health impacts associated with air pollution and ensure that all land use decisions, including enforcement actions, are made in an equitable fashion to protect residents, regardless of age, culture, ethnicity, gender, race, socioeconomic status, or geographic location from the health effects of air pollution.
- AQ 1.1.3** Encourage site plan designs to provide the appropriate set-backs and/or design features that reduce TAC at the source.
- AQ 1.1.4** Encourage the applicants for sensitive land uses (e.g., residences, schools, daycare centers, playgrounds and medical facilities) to incorporate design features (e.g., pollution prevention, pollution reduction, barriers, landscaping, ventilation systems, or other measures) in the planning process to minimize the potential impacts of air pollution on sensitive receptors.
- AQ 1.1.5** Promote and support mixed-use land patterns that allow the integration of retail, office, institutional and residential uses. Consult with the AQMD when siting new facilities with dust, odors or TAC emissions to avoid siting those facilities near sensitive receptors and avoid siting sensitive receptors near sources of air pollution.
- AQ 1.1.6** Consider cumulative air quality impacts from both existing and new projects when making siting decisions.
- AQ 1.1.7** Facilitate communication among residents, businesses and the AQMD to quickly resolve air pollution nuisance complaints. Distribute information to advise residents on how to register a complaint with AQMD (AQMD's "Cut Smog" program).
- AQ 1.1.8** The owners of new developments that have the potential to emit air pollutants that would impact sensitive receptors are required, during the early stages of the business license, development or conditional use permit processes, to notify residents and businesses adjacent to the proposed site prior to starting construction. However, potential business and resident occupants newly locating near sites that may impact sensitive receptors should be encouraged to inquire through their local government or the AQMD about the air quality emissions from such sites.
- AQ 1.1.9** Consider all feasible alternatives to minimize emissions from diesel equipment (e.g., trucks, construction equipment, and generators).*
- AQ 1.1.10** Actively participate in decisions on the siting or expansion of facilities or land uses (e.g. freeway expansions), to ensure the inclusion of air quality

mitigation measures.

- AQ 1.1.11** Where decisions on land use may result in emissions of air contaminants that pose significant health risks, consider options, including possible relocation, recycling, redevelopment, rezoning, process changes, incentive programs, and other types of measures.

Objective 1.2 Reduce mobile source emissions by reducing vehicle trips and vehicle miles traveled associated with land use patterns.

Suggested Policies/Strategies to reduce vehicle miles traveled:

- AQ 1.2.1** For planned high density and mixed use developments, project proponents should consult with the local transit agency and incorporate all appropriate and feasible transit amenities into the plans.
- AQ 1.2.2** Establish a Mixed-Use Zoning District that offers incentives to mixed use developments.
- AQ 1.2.3** Encourage through the land use entitlement process or business regulation, design of commercial and residential areas to foster pedestrian circulation.
- AQ 1.2.4** Adopt and implement zoning codes that encourage community centers, telecommuting programs, and home-based businesses.*
- AQ 1.2.5** Create opportunities to receive State transportation funds by adopting incentives (e.g., an expedited review process) for planning and implementing infill development projects within urbanized areas that include job centers and clean transportation nodes (e.g., preparation of “transit village” plans).
- AQ 1.2.6** Collaborate with local, regional, state and federal agencies to create incentives for “job/housing opportunity zones,” to promote housing in job-rich areas and jobs in housing-rich areas.
- AQ 1.2.7** Design safe and efficient vehicle access to commercial land uses from arterial streets to ensure efficient vehicular ingress and egress.
- AQ 1.2.8** Locate public facilities and services so that they further enhance job creation opportunities.
- AQ 1.2.9** Ensure that development projects and zoning codes create the maximum opportunity for the use of bicycles as an alternative work transportation mode.*
- AQ 1.2.10** Encourage “walkable neighborhoods” by siting parks and community centers near residential areas.*

Objective 1.3 Reduce mobile source emissions by increasing population densities within one-half mile of clean transit nodes.

Suggested Policies/Strategies to Increase Densities:

AQ 1.3.1 Increase residential and commercial densities around clean rail and bus transit stations and corridors. Clean rail and bus transit nodes and corridors are those that are served by rail and buses that are powered by electricity, alternative fuels (i.e., CNG and LNG), or that meet or exceed SULEV emission standards.

AQ 1.3.2 Sponsor paratransit transportation systems, such as neighborhood electric vehicle “station cars” or jitneys for short trips to and from transit nodes.*

*Potential funding for these policies has been identified in Appendix E.

CHAPTER 3

TRANSPORTATION

- **CATEGORIES OF MOBILE SOURCE EMISSIONS**
- **TRANSPORTATION AND INDIRECT SOURCE CONTROL PROGRAMS**
- **CONGESTION AND TRANSPORTATION SYSTEM MANAGEMENT**
- **SUGGESTED GOAL, OBJECTIVES AND POLICIES/STRATEGIES**

TRANSPORTATION

CATEGORIES OF MOBILE SOURCE EMISSIONS

Mobile sources are motorized vehicles, which are classified as either on-road or off-road. On-road mobile sources typically include automobiles and trucks that operate on public roadways. Off-road mobile sources include aircraft, ships, trains, and self-propelled construction equipment that operate off public roadways. Mobile source emissions are accounted for as both direct source emissions (those directly emitted by the individual source) and indirect source emissions that by themselves do not emit air contaminants but indirectly cause the generation of air pollutants by attracting vehicles. Examples of indirect sources include office complexes, commercial and government centers, warehouses/distribution centers, sports and recreational complexes, rail yards, port terminals, and residential developments that attract mobile source emissions.

TRANSPORTATION AND INDIRECT SOURCE CONTROL PROGRAMS

Indirect sources are generally considered to be sources which generate or attract motor vehicle activity. State law is clear that the creation of the AQMD does not constitute an infringement on the existing authority of cities and counties to plan or control land use, and does not provide or transfer new land use authority to the AQMD, SCAG or CARB (H&SC § 40414). Historically, cities and counties in the South Coast basin have determined appropriate land uses through the planning process, while the AQMD imposes air quality requirements on sources of air pollution operating within the local jurisdictions. The relationship between the AQMD and the cities and counties is one of concurrent jurisdictional authority over sources of air pollution. Therefore, the regulation of indirect sources by the AQMD falls within the existing shared authority with the local jurisdictions and would not infringe on city and county land use decisions. This is supported by state law which specifies the authority of the AQMD to reduce or mitigate emissions from indirect and area wide sources of air pollution but does not constitute an infringement on the existing authority of counties and cities to plan or control land use (H&SC § 40716(a)).

The California Clean Air Act (CCAA) authorizes the AQMD to consider Indirect Source Control (ISC) programs in the development of the AQMP, and CARB has provided guidance for air districts and local governments that advocates the development of ISC programs as an effective tool to attain and maintain state ambient air quality standards. Generally the AQMD relies on the CEQA process to mitigate indirect source emissions. SCAG has the responsibility to coordinate the efforts of the counties and cities in the process of developing and reviewing plan elements which meet the requirements of state and federal law, and local needs relating to transportation, land use, demographic projections, employment, housing, and other matters of local concern (H&SC § 40464).

The CCAA defines the term “transportation control measure” (TCM) as “any strategy to reduce vehicle trips, vehicle use, vehicle miles traveled, vehicle idling, or traffic congestion for the purpose of reducing motor vehicle emissions” (H&SC § 40717(g)). The TCMs must be at a stringency level commensurate with the air quality designation (H&SC § 40918-40920). Indirect source control measures in the 2003 AQMP are broadly described in the TCMs developed by SCAG. There is inherent overlap between ISC strategies and TCMs, and the distinction between the two is subtle. Generally, TCMs are designed to implement a local or regional strategy to change travel behavior. In contrast, an indirect source control measure may rely on TCMs or stand alone to affect a change in travel behavior that occurs to and from a specific indirect source.

According to the CARB document, *Guidance for the Development of Indirect Source Control Programs*, land use design strategies that are sensitive to air quality issues, such as incorporating mixed uses into a land use project, can reduce vehicle trips by as much as 50 percent. Design strategies for site plans that are sensitive to air quality are also effective in reducing mobile source emissions. For example, a site plan design that incorporates amenities such as bicycle racks and pedestrian paths may reduce vehicle trips up to 10 percent.

CONGESTION AND TRANSPORTATION SYSTEM MANAGEMENT

Land use development may affect local transportation/circulation systems by increasing traffic to congested roadways and reducing vehicle speeds. The resulting increase in mobile source emissions adversely affects regional air quality, especially ozone levels and localized carbon monoxide concentrations. Under the regional Congestion Management Plan (CMP), local governments are required to adopt and implement a program to analyze the impacts of land use decisions on their portion of the CMP transportation system. If the project would cause traffic service at an intersection to deteriorate below level of service E (considerable congestion) or the level established in the CMP, the resulting congestion should be addressed by improvements, programs, or actions that either mitigate the deficiency or measurably improve the level of service of the system. In fact, the CMP requires that the impact be mitigated through the development of a deficiency plan. AQMD staff are available to assist local agencies identify areas where a project or series of projects may bring increased congestion to a segment of roadway.

The following questions should be asked regarding the potential of a development project to adversely affect air quality:

- Does the site design for public right-of-way and pedestrian walkways encourage pedestrian traffic? If not, can the site be modified to encourage pedestrian traffic?
- Is onsite traffic circulation designed to reduce vehicle queuing? If not, can the project layout be modified to minimize vehicle idling emissions?

- Are links between the project and bike/pedestrian pathways adequate to facilitate walking and bicycling rather than driving? If not, can the site be modified to accommodate bike/pedestrian pathways?
- Do residential-specific plans incorporate mixed uses such as banks, post offices, etc., to minimize vehicle miles traveled (VMT) but avoid incompatible land use between sensitive receptors and air pollution sources? If not, can mixed uses be incorporated?
- Is the project accessible to transit facilities? If not, can the project design be modified to access public transit facilities?
- Do developments in transit corridors provide sustainable densities to support transit ridership? If not, how could those developments be modified to achieve minimum densities?
- Could the project affect the levels of service on the Congestion Management Plan (CMP) transportation system? If so, what would be the impact on the transportation system?

Transportation System Management

Transportation System Management (TSM) is a means of improving the efficiency of the existing transportation system through more effective utilization of facilities. TSM programs that discourage single-occupant vehicle trips and promote flexible work hours may improve levels of service on city streets. Overall, effective TSM programs that reduce the existing traffic congestion and VMT while increasing the carrying capacity of the transportation system will reduce air pollution. The California Department of Transportation (CALTRANS) lists the following TSM measures that could be appropriately included in the air quality element:

- programs to improve traffic flow
- preferential treatments for transit and other HOV strategies
- provisions for pedestrians and bicyclists
- management/control of parking
- changes in work schedules, fares and tolls
- actions to reduce motor vehicle use in congested areas
- improved public transit

CALTRANS and local transit agencies recommend uniform design features that should be considered in the planning stages of some TSM measures. For example, the Riverside Transit Agency provides guidelines for local planners, developers and decision makers that outline uniform standards for the design and placement of bus-related facilities. The document, titled *Design Guidelines for Bus Transit*, defines criteria, dimensions, and space requirements for the following transit facilities and amenities:

- pedestrian and bicycle access-ways connecting with transit

- bus stops, signs, and hardware (e.g., benches, shelters, lighting)
- park and ride facilities
- transit centers

Cities are encouraged to consider all CALTRANS TSM measures in their air quality elements and to collaborate with CALTRANS and local transit agencies to reduce air pollution through efficient design and management of transportation facilities and fleets.

Cities may utilize a portion of the state motor vehicle registration fees to fund TSM measures. Assembly Bill 2766 authorizes a \$4 motor vehicle fee surcharge at the time motor vehicles are registered to be used solely to fund projects and programs that reduce air pollution from motor vehicles, as well as to fund mobile-source related planning, monitoring, enforcement, and technical studies necessary to implement the California Clean Air Act. The AQMD subvenes 40 percent of the total AB 2766 revenue Subvention Funds to cities and counties within the air district based on the prorated share of the jurisdiction's population. For many cities, the AB 2766 revenue provides a vital funding source to implement TSM measures and AQMP mobile source control measures. The AQMD provides an AB 2766 Resource Guide as a framework for use of the funds to help local governments evaluate and select cost-effective projects that are eligible for funding. The Resource Guide describes typical projects that reduce vehicle emissions from the following categories:

- purchase of alternative-fueled vehicles
- abatement of vehicle emissions
- implement land use strategies to reduce vehicle emissions
- public transportation programs
- traffic management projects
- transportation demand programs
- market-based strategies
- promote bicycle use
- PM₁₀ reduction strategies
- public education

A California statewide regulation now limits diesel-fueled commercial motor vehicle idling. Effective February 1, 2005, operators of diesel-fueled commercial motor vehicles over 10,000 pounds are prohibited from idling more than five minutes when not engaged in work activity. California state law prohibits the idling of a vehicle's primary diesel engine for greater than five minutes at any location with some exceptions. The use of diesel auxiliary power systems and main engines are limited to five minutes when within 100 feet of homes or schools while a driver is resting. The idling rules are among a series of rules adopted by the CARB as part of its Diesel Risk Reduction Plan. Efforts by local jurisdictions to encourage residents to turn their engines off when they park, saves fuel and emissions. Cities may adopt ordinances to impose more stringent engine idling requirements than those imposed by the state or the local air district.

Cities are encouraged to work collaboratively with non-government organizations and consult with the broader community about the mix of anti-idling initiatives (e.g., workplace-based, school-based, municipal by-law, and/or community outreach) that will work best in their area. Further, cities could determine if vehicle idling is a concern at municipally-owned or controlled facilities (e.g., city hall, community centers) and implement measures to discourage idling. Local jurisdiction environmental advisory or air quality committees are good forums to start to discuss the health effects of emissions from idling vehicles and the options available to reduce or eliminate those emissions. Local jurisdictions may consider partnering with other community organizations (e.g., environmental groups, school boards) to implement a community anti-idling campaign or project and consider participating in a “fleet challenge” with other municipalities or fleet owners in the community.

SUGGESTED GOAL, OBJECTIVES AND POLICIES/STRATEGIES

Goal 2 A reduction in air pollution from mobile sources

Objective 2.1 Reduce motor vehicle trips and vehicle miles traveled.

Suggested Policies/Strategies to Reduce Motor Vehicle Trips and VMT:

- AQ 2.1.1** Seek new cooperative relationships between employers and employees to reduce vehicle miles traveled (VMT).*
- AQ 2.1.2** Work with large employers and commercial/industrial complexes to create Transportation Management Associations and to implement trip/VMT reduction strategies. (For additional information please refer to AQMD’s Rule 2202 Employee Commute Reduction Program Guidelines).*
- AQ 2.1.3** Cooperate with surrounding jurisdictions to provide incentives, adopt regulations and develop transportation demand management programs that reduce and eliminate vehicle trips and VMT.*
- AQ 2.1.4** Collaborate with local transit agencies to:
 - develop programs and educate employers about employee rideshare and transit
 - establish mass transit mechanisms for the reduction of work-related and non-work related vehicle trips
 - promote mass transit ridership through careful planning of routes, headways, origins and destinations, and types of vehicles
- AQ 2.1.5.** Identify and develop non-motorized transportation corridors (e.g., bicycling & walking trails).*

- AQ 2.1.6 Provide merchants with fliers/posters that publicize public mass transit schedules to encourage their customers to use mass transit.*
- AQ 2.1.7 Outline a plan of mobile source enforcement methods such as periodic mobile source (e.g., trucks and buses) checkpoints throughout the City to enforce opacity regulations. Technical assistance can be sought from by CARB and the California Highway Patrol (CHP) on enforcement issues.
- AQ 2.1.8 Provide incentives such as preferential parking for alternative-fuel vehicles (e.g., CNG or hydrogen).

Objective 2.2 Establish necessary policies and requirements to reduce indirect source emissions.

Suggested Policies/Strategies Related to the Reduction of Mobile Source Emissions at Special Event Centers:

- AQ 2.2.1 Establish requirements for special event centers to provide off-site parking and park-n-ride facilities at remote locations. Remote parking should be as close as practicable to the event site and the operator should operate or provide alternative-fuel vehicles for shuttles.*
- AQ 2.2.2 Promote peripheral parking by increasing on-site parking rates and reduced peripheral parking rates.*
- AQ 2.2.3 Encourage special event center operators to provide discounted transit passes with event tickets or offer discounted on-site parking for carpooling patrons (four or more persons per vehicle).*

Objective 2.3 Reduce mobile source emissions through efficient management of transportation facilities and system infrastructure using cost-effective management and innovative demand-management techniques.

Suggested Policies/Strategies Related to TSM efficiency:

- AQ 2.3.1 Synchronize traffic signals throughout the City and with adjoining cities and counties while allowing free flow of mass transit systems.*
- AQ 2.3.2 Construct and improve traffic signals with Automated Traffic Surveillance and Control systems at appropriate intersections.*
- AQ 2.3.3 Reduce traffic delays through highway maintenance, rapid emergency

response, debris removal, and elimination of at-grade railroad crossings.*

- AQ 2.3.4** Encourage businesses to schedule deliveries at off-peak traffic periods through the land use entitlement or business regulation process.
- AQ 2.3.5** Encourage the construction of HOV lanes whenever necessary to relieve congestion and reduce air pollution. Emphasize the use of HOV lanes, as well as light rail and bus routes, and pedestrian and bicycle facilities to improve mobility and air quality.
- AQ 2.3.6** Monitor traffic and congestion to determine when and where the City needs new transportation facilities to achieve increased mobility efficiency.*
- AQ 2.3.7** Work with local transit providers to incorporate best design practices for transit into new development projects.*
- AQ 2.3.8** Adopt a Trip Reduction Ordinance that is equivalent to or more stringent than the requirements of AQMD Rule 2202 (refer to Rule 2202 (I)).*
- AQ 2.3.9** Implement the required components of the Congestion Management Plan (CMP), and continue to work with (applicable body/organization) on annual updates to the CMP.
- AQ 2.3.10** Support SCAG's Regional Growth Management Plan by developing intergovernmental agreements with appropriate governmental entities such as the (Council of Government), sanitation districts, water districts, and those sub-regional entities identified in the Regional Growth Management Plan.
- AQ 2.3.11** Replace existing vehicles in the city fleet with the cleanest vehicles commercially available.*

Objective 2.4 Secure all available funding from local, state and federal sources to improve TSM cost effectiveness

Suggested Policies/Strategies Related to Funding Resources:

- AQ 2.4.1** Develop and coordinate a plan with local agencies for cost-effective use of AB 2766 funds so that revenue is used for projects and programs identified in the AQMP.
- AQ 2.4.2** Develop and adopt a policy to utilize federal Congestion Mitigation and Air Quality Improvement (CMAQ) funds in coordination with regional agencies in a manner consistent with projects approved in the AQMP.

AQ 2.4.3 Apply annually to the AQMD Mobile Source Reduction Committee (MSRC) for AB 2766 "Local Government Match Program" grants for projects that reduce mobile source emissions (e.g., purchases of alternative-fueled vehicles).

AQ 2.4.4 Seek opportunities to pool AB 2766 revenue with neighboring cities to fund programs that will reduce mobile source emissions (e.g., traffic synchronization, fueling station infrastructure, teleconferencing facilities).

Objective 2.5 Advocate for stricter regulations on mobile source emissions.

Suggested Policies/Strategies Related to Advocacy:

AQ 2.5.1 Cooperate with federal and state agencies and the AQMD in their efforts to reduce exposure from railroad, truck, and ship emissions.

AQ 2.5.2 Collaborate with the USEPA, CARB, AQMD, and warehouse owners to create programs and ordinances to minimize the amount of diesel emissions related to warehousing operations.

Objective 2.6 Purchase and operate alternative fuel vehicles and encourage the greater use of alternative fuel vehicles

Suggested Policies/Strategies Related to the Increased Use of Alternative Fuels:*

AQ 2.6.1 Support full compliance with the AQMD's and CARB's Fleet Rules.

AQ 2.6.2 Manage the City's transportation fleet fueling standards to achieve the greatest number of alternative fuel vehicles in the City fleet.

AQ 2.6.3 Encourage City contractors who operate vehicles within the City boundaries to operate alternative fuel vehicles.

AQ 2.6.4 Support the development of alternative fuel infrastructure that is publicly accessible.

AQ 2.6.5 Establish programs for priority or free parking on City streets or in City parking lots for alternative fuel vehicles.

AQ 2.6.6 Join or continue current membership with a Clean Cities Coalition.

Objective 2.7 Reduce emissions from idling vehicles.

Suggested Policies/Strategies to Reduce Emissions From Idling Vehicles:*

- AQ 2.7.1** Enforce a statewide regulation that requires school buses and other heavy-duty vehicle operators to turn off their engines if they are idling within 100 feet of a school.

- AQ 2.7.2** Adopt an ordinance that restricts vehicle engine idling for the purpose of controlling or mitigating vehicle emissions or abating a nuisance.

- AQ 2.7.3** Design traffic plans, including the development of suggested routes, to minimize diesel truck idling.

*Potential funding for these policies has been identified in Appendix E.

CHAPTER 4

STATIONARY SOURCES OF AIR POLLUTION

- **CATEGORIES OF STATIONARY EMISSION SOURCES**
- **SUGGESTED GOAL, OBJECTIVES AND POLICIES/STRATEGIES**

STATIONARY SOURCES OF AIR POLLUTION

CATEGORIES OF STATIONARY EMISSION SOURCES

Air pollutant emissions sources are typically grouped into two categories: stationary and mobile sources. Stationary sources are further divided into two major subcategories: point and area sources. Point sources consist of a single emission source with an identified location point at a facility. Facilities could have multiple point sources located onsite. Point sources are usually associated with manufacturing and industrial processes, such as boilers, spray booths or degreasers. Area sources are small emission sources that are widely distributed, but may have substantial cumulative emissions; examples include residential water heaters, small engines, and consumer products, such as barbecue lighter fluid and hair spray.

Stationary source facilities that propose new or modified equipment, or want to relocate operations need to obtain or modify permits issued by the AQMD. For modifications at an existing facility, such as expansion of existing operations, it may be helpful for local governments to coordinate with the AQMD and the facility to obtain information about the facility's current operations. Further, AQMD will provide information on the type and quantity of pollutants that are currently emitted from the facility and the pollutants that are proposed after the modification. Information on permitted facilities can be obtained from the AQMD's Office of Engineering and Compliance.

The AQMP is a blueprint for achieving clean air that contains regulations and commitments to adopt regulations and programs to reduce pollution from stationary, mobile and area sources. Cities and counties are encouraged to act prospectively to support these strategies to improve air quality by including in their decision-making full consideration of the air quality impacts that will result in new receptors near existing sources of air pollution. For example, cities could consider incentives for existing businesses and new developments which complement AQMD strategies to reduce emissions. The air quality element could include a clear policy statement(s) that commits local agencies to work with the AQMD and other stakeholders to find cost-effective emission reductions and pollution prevention strategies that could be implemented at sources within their jurisdictions. SCAG and the AQMD provide forums for local jurisdictions to participate in control measure development when the AQMD is updated every three years. Control measures in the 2003 AQMP are classified in nine categories:

- coatings and solvents
- petroleum operations and fugitive VOC emissions
- combustion sources
- fugitive dust sources
- miscellaneous sources
- compliance flexibility programs

- mobile sources
- long term measures
- transportation conformity budget backstop

SUGGESTED GOAL, OBJECTIVES AND POLICIES/STRATEGIES

Goal 3 A reduction of air pollution emissions from stationary sources

Objective 3.1 Coordinate with the AQMD and operators of stationary source equipment or processes to minimize air pollution emissions

Suggested Policies/Strategies Related to Reduction of Emissions from Stationary Sources:

- AQ 3.1.1** Assist small businesses by developing training programs related to clean, innovative technologies to reduce air pollution (e.g., wet cleaning or CO₂ cleaning in lieu of perchloroethylene), and provide incentives to those businesses that use clean air technologies.*
- AQ 3.1.2** Encourage the use of building materials and methods that minimize air pollution.
- AQ 3.1.3** Support, through the use of development standards, the use of fuel-efficient heating equipment, and other appliances, such as water heaters, swimming pool heaters, cooking equipment, refrigerators, furnaces, boiler units, and low or zero-emitting architectural coatings. Provide incentives to encourage the use of clean air technology beyond what is required by AQMD. For example, encourage the use of fuel and material substitution, cleaner fuel alternatives, product reformulation, change in work practices, and air pollution control measures identified in the latest AQMP.*
- AQ 3.1.4** Encourage pollution prevention and source emission reduction strategies through:
- process change
 - best management practices
 - preventative inspection and maintenance programs
 - emergency response planning
- AQ 3.1.5** Provide incentives to promote siting or use of clean air technologies (e.g., fuel cell technologies, renewable energy sources, UV coatings, hydrogen fuel).

AQ 3.1.6 Consider support of legislation which promotes clean industrial technologies, and more efficient stationary source combustion equipment and energy generation.*

*Potential funding for these policies has been identified in Appendix E.

CHAPTER 5

REDUCTION OF FUGITIVE DUST

- **SUGGESTED GOAL, OBJECTIVES AND POLICIES/STRATEGIES**

REDUCTION OF FUGITIVE DUST

Fugitive dust is a generic term used to describe any solid particulate matter that becomes airborne, other than that emitted from an exhaust stack, directly or indirectly as a result of the activities of any person. Fugitive dust can vary in size and composition, depending on the location, wind direction, time of the day, and the time of season for its source. The AQMD includes two air basins that exceed State and federal ambient air quality standards for PM₁₀ (fine particulate matter less than 10 microns in diameter). Studies indicate that approximately one-third of the South Coast basin's ambient PM₁₀ concentrations and over ninety percent of Coachella Valley's ambient PM₁₀ levels are a result of fugitive dust.

AQMD regulates fugitive dust via several district rules. For example, Rule 403 (Fugitive Dust) requirements are applicable to the South Coast Air District and to the Coachella Valley portion of the Salton Sea Air Basin. The purpose of Rule 403 is to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (man-made) fugitive dust sources. Rule 403 requires implementation of control measures to prevent, reduce, or mitigate fugitive dust emissions and includes a performance standard that prohibits visible emissions from crossing any property line. Under Rule 403, large operations (projects greater than 50 acres and/or more than 5,000 cubic yards of daily earth-movement) are required to notify the AQMD of the project location and implement Table 2, and, if necessary Table 3, control measures and maintain recordkeeping. Rule 403 can be viewed or downloaded at: <http://www.aqmd.gov/rules/reg/reg04/r403.pdf> Forms for large operation submittals can be viewed or downloaded at: http://www.aqmd.gov/comply/Forms/403N_8_2004.doc.

Rule 403 requires all projects and activities in the South Coast Air Basin to control dust generation, with specified control measures for large operations of 50 acres or more. In spite of these basin-wide requirements, ground disturbances, geological conditions, or meteorological conditions may result in dust generation that constitutes a chronic public nuisance, or would prevent attainment of federal PM₁₀ standards. These limited areas may warrant additional dust control efforts on the part of local governments. A local dust control policy that requires preparation and approval of a dust control plan for all projects seeking a grading permit in such limited areas may be needed to supplement current Rule 403 requirements. Local governments may also choose to apply specific control measures crafted to address their chronic public nuisance dust problems or PM₁₀ exceedances.

Coachella Valley (Palm Springs area) local governments have adopted dust control ordinances that require approval of a dust control plan prior to local government issuance of grading permits. The Coachella Valley's response to its elevated levels of PM₁₀ illustrates how local dust control plans can work to address areas with elevated

particulate levels. AQMD and Coachella Valley local government staff have developed a guidance handbook to assist persons preparing and reviewing dust control plans. A copy of the model dust control ordinance for Coachella Valley is provided in Appendix D. AQMD Rule 403.1 (Supplemental Fugitive Dust Control Requirements for Coachella Valley Sources) is a companion regulation to Rule 403 that is only applicable to fugitive dust sources in the Coachella Valley. Rule 403.1 establishes special requirements for Coachella Valley fugitive dust sources under high-wind conditions and requires AQMD approval of dust control plans for sources not subject to local government ordinances (e.g., school districts). AQMD compliance staff ensures compliance with Rules 403 and 403.1 to complement the fugitive dust control programs developed by local Coachella Valley governments. Rule 403.1 can be viewed or downloaded at: <http://www.aqmd.gov/rules/reg/reg04/r403-1.pdf>.

SUGGESTED GOAL, OBJECTIVES AND POLICIES/STRATEGIES

Goal 4 Achieve ambient levels of particulate matter that meet state and federal clean air standards

Objective 4.1 Reduce the amount of fugitive dust that is re-entrained into the atmosphere from unpaved areas, parking lots and construction sites

Suggested Policies/Strategies Related to Controlling Fugitive Dust Emissions:*

- AQ 4.1.1** Where fugitive dust is causing a chronic public nuisance or the air quality is in exceedance of the PM₁₀ standards consider adopting a dust control policy that requires preparation and approval of a dust control plan. Please contact AQMD for the most recent local PM₁₀ air quality information.
- AQ 4.1.2** Adopt by ordinance, a regulation, after considering small business impacts that controls the use of leaf blowers in areas with sensitive receptors.
- AQ 4.1.3** Encourage vegetative thinning or mowing for weed abatement activities to minimize wind-blown dust.
- AQ 4.1.4** Identify and create a control plan for areas within the jurisdiction that are prone to wind erosion of soil and take measures to prevent illegal off-highway vehicle (OHV) use.
- AQ 4.1.5** Require conditions in a zoning or conditional use permit to require fugitive dust controls and compliance mechanisms for stationary sources (landfills, composting facilities, aggregate facilities, etc.).

- AQ 4.1.6** Ensure compliance with California Vehicle Code section 23113 provisions intended to prevent deposition and rapid removal of material from any highway or street.
- AQ 4.1.7** Adopt incentives, regulations, and/or procedures to reduce paved road dust emissions through targeted street sweeping of roads subject to high traffic levels and silt loadings.
- AQ 4.1.8** Pave currently unpaved roads and parking lots or establish and enforce 15 mile per hour speed limits on low-use unpaved roads as permitted under California Vehicle Code section 22365.
- AQ 4.1.9** Adopt incentives or procedures to limit dust from agricultural lands and operations.
- AQ 4.1.10** Consider the suspension of all grading operations, not including dust control actions, at construction projects when the source represents a public nuisance or potential safety hazard due to reduced visibility on streets surrounding the project.
- AQ 4.1.11** Cooperate with local, regional, state and federal jurisdictions to better control fugitive dust from stationary, mobile and area sources.
- AQ 4.1.12** Collaborate with the transportation agencies, utilities, railroads, etc., to minimize fugitive dust during construction and maintenance activities.
- AQ 4.1.13** Encourage, and support stricter state and federal legislation for vehicles that spill debris on roadways.
- AQ 4.1.14** Ensure that vehicles do not transport aggregate or similar material upon a highway unless the material is stabilized or covered, in accordance with state law and AQMD regulations.
- AQ 4.1.15** Encourage vegetation or chemical stabilization for disturbed land for phased construction projects.

*Potential funding for these policies has been identified in Appendix E.

CHAPTER 6

ENERGY

- **ENERGY CONSERVATION**
- **GREEN BUILDING OPPORTUNITIES**
- **PUBLIC FACILITIES AND FLEETS**
- **SUGGESTED GOAL, OBJECTIVES AND POLICIES/STRATEGIES**

ENERGY

ENERGY CONSERVATION

All new residential and non-residential buildings within California must meet minimum energy efficiency standards contained in Title 24, Part 6 of the California Code of Regulations. New 2005 standards were recently adopted by the California Energy Commission and the Building Standards Commission. These new standards become effective October 1, 2005, and will reduce energy demand from all new development, translating into emission reduction benefits. The Energy Commission estimates the standards will save \$57 billion by 2011. The previous 2001 standards have already saved more than \$20 billion in electricity and natural gas costs.

New development consumes energy in several ways. Gas-fired combustion equipment such as water heaters, pool heaters, space heaters, furnaces, boilers, steam generators, internal combustion engines, etc. are used throughout the South Coast basin in the residential, commercial, and industrial sectors. Residential uses of natural gas include space heating, water heating, laundry, cooking, dishwashers, and pool/hot tub heaters. The largest demand for natural gas from this sector is from space and water heating. Natural gas in the commercial sector is used for space heating, water heating, process heating, cooling, and food preparation. The industrial sector includes a wide range of manufacturing and industrial processes that use natural gas in a variety of processes such as steam generation, curing and drying processes, metal melting, and heat treatment.

Implementation policies in this chapter promote full implementation of Title 24 and, where possible, voluntary energy conservation beyond Title 24 to reduce emissions. Local governments may provide incentives to developers and proponents of facilities to incorporate energy efficiency measures to improve air quality.

GREEN BUILDING OPPORTUNITIES

Projects may be voluntarily designed to exceed energy efficiency standards established by Title 24 of the California Code of Regulations. Local governments have the voluntary option to provide incentives to implement energy-saving measures for projects, and energy performance targets beyond those required by Title 24 as appropriate. A comprehensive approach to energy conservation in building construction is known as "green building". Green building techniques integrate energy efficiency and sustainable building practices into the design and construction phases. Municipal buildings that follow green building design principles not only help create healthy workplaces, but also reduce the city's energy demand. This results in cost savings and a reduction in air pollution associated with energy production. There are several private and government rating systems for green buildings. One system for example, is the voluntary LEED

(Leadership in Energy and Environmental Design) standard developed by the U.S. Green Building Council, which has been extensively used to date for commercial projects. LEED standards have been adopted nationwide by federal agencies, state and local governments, and interested private companies as the guideline for sustainable building. Another example of a “green building” program is a voluntary program developed by the Building Industry Institute for residential development called the California Green Builder Program. Developers of Green Builder projects select measures that reduce energy consumption to levels that are 15 percent below Title 24 requirements.

Where opportunities exist to go beyond Title 24 energy efficiency requirements, those techniques and features that best fit the nature and economics of the development may be selected. Examples of energy conservation features incorporated into LEEDS and California Green Builder projects include the following:

- more energy efficient lighting, heating and cooling systems and appliances
- landscape treatments that reduce energy consumption use (e.g., planting of deciduous trees)
- use of passive daylight and heating (i.e., sun light)
- use of photovoltaic systems (solar energy)
- use of lighter colored building and roofing materials and coatings
- installation of recharging outlets for electric and hybrid vehicles
- remote sensors that adjust heating, cooling and lighting when rooms are occupied
- bicycle lockers and paths, preferred parking spaces and bus turnouts to encourage alternative modes of transportation

AQMD staff plan to establish a website that will provide examples of green building practices and policies.

PUBLIC FACILITIES AND FLEETS

Energy conservation efficiency and generation operations should be considered when building, acquiring, or retrofitting public facilities. Also, alternative-fuel vehicles are in operation in many local jurisdictions in the air district which help reduce mobile source emissions (see Chapter 3 -Transportation).

SUGGESTED GOAL, OBJECTIVES AND POLICIES/STRATEGIES

Goal 5 Reduction in air pollution resulting from greater energy efficiency and conservation, and the use of renewable resources

Objective 5.1 Increase energy efficiency of city facilities and private developments

Suggested Policies/Strategies Related to Energy Conservation:

- AQ 5.1.1** Utilize source reduction, recycling and other appropriate measures, to reduce the amount of solid waste disposed in landfills.
- AQ 5.1.2** Develop incentives that encourage the use of energy conservation strategies by private and public developments.
- AQ 5.1.3** Promote energy-efficient design features, including appropriate site orientation, use of lighter color roofing and building materials, and use of deciduous shade trees and windbreak trees to reduce fuel consumption for heating and cooling.
- AQ 5.1.4** Promote or provide incentives for “Green Building” programs that go beyond the requirements of Title 24 of the California Administrative Code and encourage energy efficient design elements as appropriate to achieve “green building” status.
- AQ 5.1.5** Promote the use of automated time clocks or occupant sensors to control central heating and air conditioning.
- AQ 5.1.6** Utilize all available renewable energy sources to reduce fuel consumption and demand on the power grid.
- AQ 5.1.7** Replace vehicles in the local government fleet with the most fuel-efficient vehicles that are commercially available.*

*Potential funding for these policies has been identified in Appendix E.

CHAPTER 7

PUBLIC AWARENESS AND EDUCATION

- **SUGGESTED GOAL, OBJECTIVES AND POLICIES/STRATEGIES**

PUBLIC AWARENESS AND EDUCATION

In Town Hall meetings held by the AQMD, residents throughout the South Coast basin have asked how the public can become more involved in reducing local air pollution impacts in their communities. Local governments are encouraged to invest in public outreach activities and programs to build strong public awareness of regional and local air quality issues and health studies. To foster greater community involvement and support in developing public policy, local jurisdictions should consider the following activities to improve awareness of air quality and environmental justice issues.

- identify an individual as a contact person for environmental justice issues.
- participate with the AQMD in Town Hall meetings to hear citizen concerns regarding air quality and environmental justice.
- schedule community meetings to update residents of proposed large development projects, the results of AQMD air monitoring programs (e.g., MATES-II), cumulative air quality impacts and evaluate various options to reduce health impacts from exposure to air pollution. To encourage greater participation, hold public meetings in centrally-located community meeting rooms, libraries, and schools. Schedule meetings at times that encourage public participation (e.g., evenings and weekends) and provide translation services, and childcare services, if needed.
- collaborate with local school districts and private schools to increase student awareness of air pollution and health effects issues.
- distribute air quality information, AQMD brochures and fact sheets on the health effects of air pollution, public service announcements, and web page links. Provide this information in languages of the major ethnic groups in the community.
- collaborate with AQMD and other public entities as appropriate on distribution of public notices for air emission related actions and events involving environmental justice, including, but not limited to, mailing lists, noticing venues, and content of notices to improve the effectiveness and efficiency of this outreach effort.
- dedicate a page of the local government website to address local land use policies as they relate to environmental justice programs and cumulative air quality impacts.

- allow, encourage, and promote community access to activities related to land use activities such as General Plan or Community Plan updates, zoning changes, special studies, CEQA reviews, variances, etc.
- create and distribute simple, easy-to-read, understandable material on public participation that describes how to contact the local jurisdiction or AQMD to obtain information and assistance regarding air quality, health effects and environmental justice programs. A model handbook is available from CARB titled "Public Participation Guidebook."

USEPA's Environmental Education Center provides curricula and creative activities on a variety of air quality topics. Kids' sites from the USEPA include educational material on air pollution and its effects on global warming. USEPA's Office of Air Quality Planning and Standards' Environmental Education Web site describes air quality training opportunities for teachers K-12, resource materials and available grants.

The AQMD provides a number of air quality curricula and materials to assist teachers at no charge. For example, a project titled: "Air Pollution - What's the Solution" has been developed for students, grades 6 – 12. This curriculum utilizes online, real-time data to guide student discovery of the science behind the causes and effects of ground level ozone in the context of an authentic real-world problem. The AQMD Student's Health Web Site is a resource for high school students and adults to learn about the health effects of air pollution in Southern California. Also, the website includes a "Kids' Page" that shows three colorful chameleons to teach children how to moderate their activity to safely play outside when air pollution levels are elevated.

SUGGESTED GOAL, OBJECTIVES AND POLICIES/STRATEGIES

Goal 6 Greater public awareness of the changes in personal behavior that can be chosen to minimize air pollution

Objective 6.1 Make air quality education a priority for the City's effort to protect public health and achieve state and federal clean air standards.

Suggested Policies/Strategies Related to Public Awareness:*

AQ 6.1.1 Provide regional and local air quality information on City's website, including links to the AQMD, CARB, USEPA and other environmental-based internet sites.

AQ 6.1.2 Organize city-sponsored events on topics that educate businesses and the public about compliance with air quality regulations (e.g., alternative fuels and low polluting clean household products).

AQ 6.1.3 Work with school districts to develop air quality curricula for students.

- AQ 6.1.4** Encourage, publicly recognize, and reward innovative approaches that improve air quality.
- AQ 6.1.5** Encourage the participation of environmental groups, the business community, civic groups, special interest groups, and the general public in the formulation and implementation of programs that effectively reduce air pollution.
- AQ 6.1.6** Encourage the purchase and use of low- or zero-emission vehicles, coordinate with AQMD and with local car dealerships and their associations to encourage and support the dealerships' participation in AQMD's "Clean Air Choice" vehicle information program.
- AQ 6.1.7** Provide public education to encourage local consumers to choose the cleanest paints, consumer products, etc.
- AQ 6.1.8** Publicize the AQMD's 1-800-CUT-SMOG number for the public to report air pollution complaints to the AQMD.

*Potential funding for these policies has been identified in Appendix E.

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GLOSSARY

AB 2766 Funds (AB 2766 (Sher) Motor Vehicle Fee Program): A program that permits air districts and local governments to allocate vehicle registration surcharge fees to projects that reduce motor vehicle emissions such as zero emission vehicles, alternative-fueled street sweepers and trip reduction programs.

Air Pollutants: Amounts of foreign and/or natural substances occurring in the atmosphere that may result in adverse effects on humans, animals, vegetation, and/or materials.

Area Sources: Stationary sources of pollution (e.g., water heaters, gas furnaces, fireplaces, and wood stoves) that are typically associated with homes and non-industrial sources. The CCAA requires districts to include area sources in the development and implementation of AQMPs.

Air Toxics: A generic term referring to a harmful chemical or group of chemicals in the air that has the potential to produce adverse health effects. Typically, substances that are especially harmful to health, such as those considered under USEPA's hazardous air pollutant program or California's AB 1807 toxic air contaminant program, are considered to be air toxics.

Alternative Fuels: Fuels such as methanol, ethanol, natural gas, and liquid propane gases that are cleaner burning and help to meet CARB's mobile and stationary emission standards.

Ambient Air: The air found at a particular time and place outside of structures. Often used interchangeably with "outdoor air."

Air Quality Management Plan (AQMP): A plan prepared by an air pollution control district or air quality management district, for a county or region designated as a non-attainment area, for the purpose of bringing the area into compliance with the requirements of the national and/or California Ambient Air Quality Standards. AQMPs are incorporated into the State Implementation Plan (SIP).

Best Available Control Technology (BACT): The most up-to-date methods, systems, techniques, and production processes available to achieve the greatest feasible emission reductions for given regulated air pollutants and processes. BACT is a requirement of NSR (New Source Review) and PSD (Prevention of Significant Deterioration) under the federal Clean Air Act. BACT, as used in federal law under PSD, is defined as an emission limitation based on the maximum degree of emission reductions allowable taking into account energy, environmental and economic impacts and other costs [CAA Section 169(3)]. The term BACT as used in state law means an emission limitation that will achieve the lowest achievable emission rates, which means

the most stringent of either the most stringent emission limits contained in the SIP for the class or category of source, (unless it is demonstrated that the limitation is not achievable) or the most stringent emission limit achieved in practice by that class in category of source. "BACT" under state law is more stringent than federal BACT and is equivalent to federal LAER (lowest achievable emission rate) which applies to NSR permit actions.

Best Available Retrofit Control Technology (BARCT): An air emission limitation that applies to existing sources and is based on the maximum degree of reduction achievable, taking into account environmental, energy, and economic impacts by each class or category of source.

Best Available Control Technology for Toxics (T-BACT): The most stringent emissions limitation or control technique which:

- has been achieved in practice for such permit unit category or class of source; or
- is any other emissions limitation or control technique, including process and equipment changes of basic and control equipment, found by the Executive Officer to be technologically feasible for such class or category of sources, or for a specific source.

Best Design Practice for Transit: An approach to transit planning that requires adherence to nationally recognized industry standards for physical facilities and services.

Buffer Zone: An area of land separating two distinct land uses that acts to soften or mitigate the effects of one land use on the other.

California Air Resources Board (CARB): The State's lead air quality agency, led by an eleven-member Governor-appointed board. It is responsible for attainment and maintenance of the State and federal air quality standards, and is chiefly responsible for motor vehicle pollution control. It oversees county and regional air pollution management programs.

California Ambient Air Quality Standards (CAAQS): Standards set by the State of California for the maximum levels of air pollutants which can exist in the outdoor air without unacceptable effects on human health or the public welfare. These are more stringent than NAAQS.

California Clean Air Act (CCAA): A California law passed in 1988 which provides the basis for air quality planning and regulation independent of federal regulations. A major element of the Act is the requirement that local air pollution control districts and air quality management districts in violation of state ambient air quality standards must prepare attainment plans which identify air quality problems, causes, trends, and actions to be taken to attain and maintain California's air quality standards by the

earliest practicable date utilizing all feasible measures and an expeditious adoption schedule.

Carbon Monoxide (CO): A colorless, odorless gas resulting from the incomplete combustion of hydrocarbon fuels. CO interferes with the blood's ability to carry oxygen to the body's tissues and results in numerous adverse health effects. Over 80% of the CO emitted in urban areas is contributed by motor vehicles. CO is a criteria air pollutant.

Congestion Management Plan (CMP): A state mandated program (Government Code Section 65089a), that requires each county to prepare a plan to relieve congestion and reduce air pollution.

Criteria Pollutant: An air pollutant for which acceptable levels of exposure can be determined and for which an ambient air quality standard has been set. Examples include: ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, and PM₁₀ and PM_{2.5}. The term "criteria air pollutants" derives from the requirement that the U.S. EPA must describe the characteristics and potential health and welfare effects of these pollutants. The U.S. EPA and CARB periodically review new scientific data and may propose revisions to the standards as a result.

Environmental Justice: California state law defines environmental justice as the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies (California Government Code section 65040.12). The AQMD defines environmental justice as equitable environmental policymaking and enforcement to protect the health of all residents, regardless of age, culture, ethnicity, gender, race, socioeconomic status, or geographic location, from the health effects of air pollution.

Environmental Protection Agency (USEPA): The United States agency charged with setting policy and guidelines, and carrying out legal mandates for the protection of national interests in environmental resources.

Federal Clean Air Act (CAA): A federal law passed in 1970 and amended in 1977 and 1990 which forms the basis for the national air pollution control effort. Basic elements of the act include national ambient air quality standards for major air pollutants, air toxics standards, acid rain control measures, and enforcement provisions.

Fugitive Dust: Dust particles which are introduced into the air through certain activities such as soil cultivation, off-road vehicles, or any vehicles operating on open fields or dirt roadways.

Fugitive Dust Control Plan: A document that describes fugitive dust sources at a site and the corresponding control measures.

Growth Management Plan: A plan for a given geographical region containing demographic projections (i.e., housing units, employment, and population) through some specified point in time, and which provides recommendations for local governments to better manage growth and reduce projected environmental impacts.

Hybrid Vehicles: Hybrid electric motor vehicles may operate using both electric and gasoline-powered motors. Emissions from hybrid electric motor vehicles can be substantially lower than conventionally powered motor vehicles.

Indirect Source: Any facility, building, structure, or installation, or combination thereof, which generates or attracts mobile source activity that results in emissions of any pollutant (or precursor) for which there is a state ambient air quality standard. Examples include employment sites, shopping centers, sports facilities, housing developments, airports, commercial and industrial development, and parking lots and garages.

Jobs/Housing Balance (Jobs/Housing Ratio): The availability of housing for employees. The jobs/housing ratio divides the number of jobs in an area by the total number of dwelling units. Jobs/housing balance is an indicator of the number of residents in an area that must travel outside their commute-shed for work. No jobs/housing ratio is recognized in state, regional or local plans and policies. However, SCAG considers South Coast Air Basin communities to be jobs –rich if they have more than 1.29 jobs per dwelling unit, and housing-rich if they have less than 1.0 jobs per household.

Land Use Recycling: Changing historic land uses to meet the changing needs and priorities of a community. For example, commercial or industrial land areas that are “recycled” to housing, mixed use or institutional use in order to facilitate and be consistent with the current and future needs of a community.

Lead: A gray-white metal that is soft, malleable, ductile, and resistant to corrosion. Sources of lead resulting in concentrations in the air include industrial sources and crystal weathering of soils followed by fugitive dust emissions. Health effects from exposure to lead include brain and kidney damage and learning disabilities. Lead is the only substance which is currently listed as both a criteria air pollutant and a toxic air contaminant.

Maximum Achievable Control Technology (MACT): Federal emissions limitations based on the best demonstrated control technology or practices in similar sources to be applied to major sources emitting one or more federal hazardous air pollutants.

Mixed Use: Properties on which various uses such as office, commercial, institutional, and residential are combined in a single building or on a single site in an integrated development project with significant functional interrelationships and a coherent physical design. A “single site” may include contiguous properties.

Mobile Sources: Sources of air pollution such as automobiles, motorcycles, trucks, off-road vehicles, boats and airplanes (contrast with stationary sources).

National Ambient Air Quality Standards (NAAQS): Standards established by the USEPA that apply for outdoor air throughout the country. There are two types of NAAQS. Primary standards set limits to protect public health and secondary standards set limits to protect the environment and public welfare.

New Source Review (NSR): A program used in development of permits for new or modified industrial facilities which are in a non-attainment area, and which emit non-attainment criteria air pollutants. The two major requirements of NSR are Best Available Control Technology and Emissions Offset.

Nitrogen Oxides: Oxides of Nitrogen, NO_x. A general term pertaining to compounds of nitric acid (NO), nitrogen dioxide (NO₂), and other oxides of nitrogen. Nitrogen oxides are typically created during combustion processes, and are major contributors to smog formation and acid deposition. NO₂ is a criteria air pollutant, and may result in numerous adverse health effects. It absorbs blue light, resulting in a brownish-red cast to the atmosphere and reduced visibility.

Non-Attainment Area: A geographic area identified by the USEPA and/or CARB as not meeting either NAAQS or CAAQS standards for a given pollutant.

Opacity Regulations: Rules, laws, and regulations that require the measurement of the amount of light obscured by particle pollution in the atmosphere and limit the amount of allowable emissions from pollution sources. Opacity is used as an indicator of changes in performance of particulate control systems.

Ozone: A strong smelling, pale blue, reactive toxic chemical gas consisting of three oxygen atoms. It is a product of the photochemical process involving the sun's energy. Ozone exists in the upper atmosphere ozone layer as well as at the earth's surface. Ozone at the earth's surface causes numerous adverse health effects and is a criteria air pollutant. It is a major component of urban smog.

Paratransit: Transportation systems such as jitneys, car pooling, van pooling, taxi services and dial-a-ride services.

Particulate matter (PM): Solid or liquid particles of soot, dust, smoke, fumes, and aerosols.

- **Particulate Matter less than 10 microns (PM₁₀) in size:** A major air pollutant consisting of tiny solid or liquid particles of soot, dust, smoke, fumes, and aerosols. The size of the particles (10 microns or smaller, about 0.0004 inches or less) allows them to easily enter the air sacs in the lungs where they may be deposited, resulting in adverse health effects. PM₁₀ also causes visibility reduction and is a criteria air pollutant.

- **Particulate Matter less than 2.5 microns (PM_{2.5}) in size:** A major pollutant consisting of tiny solid or liquid particles, generally soot and aerosols. The size of the particles (2.5 microns or smaller, about 0.0001 inches or less) allows them to easily enter the air sacs deep in the lungs where they may cause adverse health effects, as noted in several recent studies. PM_{2.5} also causes visibility reduction.

Permit: Written authorization from a government agency (e.g., air quality management district) that allows for the construction and/or operation of an emissions generating facility or its equipment within certain specified limits.

Redevelop: To demolish existing buildings; or to increase the overall floor area existing on a property; or both; irrespective of whether a change occurs in land use.

Rezoning: An amendment to the map and/or text of a zoning ordinance to effect a change in the nature, density, or intensity of uses allowed in a zoning district and/or on a designated parcel or land area.

Sensitive Receptor (Sensitive Individual): Those segments of a population such as children, athletes, elderly, and sick that are more susceptible to the effects of air pollution than the population at large.

Sensitive Sites: Land uses where sensitive receptors are most likely to spend time, including schools and schoolyards, parks and playgrounds, day care centers, nursing homes, hospitals, and residential communities.

Setback: In zoning parlance, a setback is the minimum amount of space required between a lot line and a building line.

State Implementation Plan (SIP): A document prepared by each state describing existing air quality conditions and measures which will be taken to attain and maintain national ambient air quality standards (see AQMP).

Smog Check Program: A motor vehicle inspection program implemented by the California Bureau of Automotive Repair. It is designed to identify vehicles in need of maintenance and to assure the effectiveness of their emission control systems on a biennial basis. Enacted in 1979 and strengthened in 1990.

Station Car: A vehicle that operates at transit stations for the use of patrons of these transit services. The availability of station cars facilitates and encourages the use of mass transit systems.

Stationary Sources: Non-mobile sources such as power plants, refineries, and manufacturing facilities which emit air pollutants.

South Coast basin: Includes all of Orange county and the non-desert portions of Los Angeles, Riverside and San Bernardino counties.

Sulfur Dioxide (SO₂): A strong smelling, colorless gas that is formed by the combustion of fossil fuels. Power plants, which may use coal or oil high in sulfur content, can be major sources of SO₂. SO₂ and other sulfur oxides contribute to the problem of acid deposition. SO₂ is a criteria pollutant.

Toxic Air Contaminant (TAC): An air pollutant, identified in regulation by the CARB, which may cause or contribute to an increase in deaths or in serious illness, or which may pose a present or potential hazard to human health. TACs are considered under a different regulatory process (California Health and Safety Code section 39650 et seq.) than pollutants subject to CAAQS. Health effects due to TACs may occur at extremely low levels, and it is typically difficult to identify levels of exposure which do not produce adverse health effects.

Transportation System Management (TSM): A comprehensive strategy developed to address the problems caused by additional development, increased vehicle trips, and a shortfall in transportation capacity. Transportation Systems Management focuses on more efficiently utilizing existing highway and transit systems rather than expanding them. TSM measures are characterized by their low cost and quick implementation time frame, such as computerized traffic signals, metered freeway ramps, and one-way streets.

Visibility: A measurement of the ability to see and identify objects at different distances. Visibility reduction from air pollution is often due to the presence of sulfur and nitrogen oxides, as well as particulate matter.

Zero Emission Vehicles (ZEV): Vehicles which produce no emissions from the on-board source of power (e.g. an electric or fuel cell vehicle).

APPENDIX A

**CITIES AND COUNTIES WITHIN THE
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
THAT HAVE ADOPTED
AIR QUALITY ELEMENTS IN GENERAL PLANS
&
EXAMPLE AIR QUALITY ELEMENTS***

*FOR ADDITIONAL EXAMPLES OF AIR QUALITY ELEMENTS LISTED IN ATTACHMENT A, PLEASE CONTACT LOCAL GOVERNMENTS DIRECTLY.

**Cities and Counties within the
South Coast Air Quality Management District
that have Adopted
Air Quality Elements in General Plans**

City/County	Date
Agoura Hills	1994
Baldwin Park	2002
Buena Park	1994
Calabasas	1995
Carson	1994
Cathedral City	2002
Cerritos	2002
Chino	1991
Colton	1992
Commerce	1991
Cudahy	1992
Cypress	2001
El Segundo	1992
Fontana	1990
Garden Grove	1995
Glendale	1994
Grand Terrace	1999
Hemet	1992
Huntington Beach	1996
Indian Wells	1996
La Cañada-Flintridge	1995
La Habra	1992
La Quinta	2002

City/County	Date
Laguna Hills	2002
Lakewood	1996
Lawndale	1992
Long Beach	1998
Los Angeles	1992
Montclair	1999
Palm Desert	1980
Palm Springs	1993
Rancho Cucamonga	2001
Rancho Mirage	1997
Rancho Palo Verdes	1975
Redlands	1995
Riverside County	1995
San Bernardino County	1989
Santa Clarita	1991
South Gate	1993
Temecula	1993
Upland	1991
Walnut	1974
West Hollywood	1988
Whittier	1993
Yorba Linda	1993
Yucaipa	1992

Source – The California Planners' Book of Lists 2004: Governor's Office of Planning and Research

AIR QUALITY ELEMENT

EXAMPLE #1

CITY OF CHINO

CITY OF CHINO

AIR QUALITY ELEMENT

City Council

Fred Aguiar, Mayor
Diane J. Erwin, Mayor Pro Tem¹
Richard Sawhill, Council Member
Eunice Ulloa, Council Member
Al Yankey, Council Member

City Manager

Richard D. Rowe

Planning Commission

Emil Torkar, Chairman
Pete Garcia, Vice Chairman
Reva Salter
Fred Nerio
Cal Morey
Earl C. Elrod
Kristi Smith

Prepared By

Community Development Department
Earl P. Nelson, A.I.C.P., Director of Community Development
Brent Arnold, Associate Planner

November 1991

City of Chino's Policy Committee Representative to the San Bernardino County, Regional Air Quality Plan.

RESOLUTION NO. 91-100

A RESOLUTION OF THE CHINO CITY COUNCIL AMENDING THE GENERAL PLAN TO INCLUDE AN AIR QUALITY ELEMENT AND REVISIONS TO THE CIRCULATION AND CONSERVATION/OPEN SPACE ELEMENTS TO ENSURE CONSISTENCY WITH THE AIR QUALITY ELEMENT. GENERAL PLAN AMENDMENT NO. 128.

WHEREAS, a draft Air Quality Element has been prepared in accordance with state law governing the content and intent of the General Plan Element, which includes the attached addendum of requested modifications for City Council action; and

WHEREAS, community workshops were held on October 21 and November 4, 1991 to receive citizen input and encourage citizen participation in the formulation of the Air Quality Element and its proposed goals, policies, and action programs; and

WHEREAS, the Development Review Committee reviewed the Element and recommended a Negative Declaration for the project; and

WHEREAS, the City Council discussed the Draft Air Quality Element at a regular hearing date on November 19, 1991, for the purpose of receiving public input; and

WHEREAS, the City Council recognizes the vital role that local governments must play in the attainment of state and federal air quality standards; and

WHEREAS, the City of Chino is committed to achieving healthful air standards in the City and other parts of the South Coast Air Basin at the earliest possible date; and

WHEREAS, the proposed Air Quality Element is the result of an extensive, cooperative effort between the County and 15 cities in San Bernardino County.

WHEREAS, the 1991 Air Quality Management Plan directs local governments to assume responsibility for implementation of 24 of the 126 control measures contained in the Plan, three of which expressly call for the adoption of an air quality element or its equivalent by local governments; and

WHEREAS, the Air Quality Management Plan calls for local government to take actions that will achieve an 8% region-wide reduction of reactive organic gases and oxides of nitrogen; and

WHEREAS, the General Plan is subject to amendment whenever conditions, study, public interest, and/or practices indicate such amendments to be in the interest of the public health, safety and welfare; and

WHEREAS, state law authorizes cities and counties to include an air quality element or its equivalent as part of their General Plan; and

WHEREAS, the Air Quality Element is designed to promote the health, safety and welfare of the public by seeking attainment of state and federal ambient air standards; and

WHEREAS, environmental documentation has been completed in accordance with the California Environmental Quality Act and local environmental guidelines; and

WHEREAS, the City Council has determined that the following conditions for self-certification have been met:

1. Consistency with the Regional Air Quality Management Plan
2. Consistency with the Regional Mobility Plan
3. Consistency with the Regional Growth Management Plan
4. Consistency with the Regional Housing Needs Assessment

WHEREAS, on November 4, 1991, the Planning Commission duly held a public hearing to consider the recommended Air Quality Element and public testimony with the following amendments to the Circulation and Conservation/Open Space Elements of the General Plan.

CIRCULATION ELEMENT

1. Page I-4, Policy 4: "The parking supply should be, to the maximum extent possible, managed in a fashion to encourage a reduction in single occupant vehicles utilizing parking facilities."
2. Page II-24, Parking 2B: "Off-street parking shall be provided in a manner to encourage multiple occupant vehicle use."

CONSERVATION/OPEN SPACE

1. The following actions located in the Implementation Table on page V-74 of the Conservation/Open Space Element shall delete all reference to the responsible

Agency/Department required to implement said action and all reference to time for action implementation. In place of these activities the timing column of the table shall read:

<u>Conservation/Open Space Actions</u>	<u>Corresponding CAQE Actions</u>
A5-2.1.1	A8-2.1.5*
A5-2.2.1	A8-5.1.2 and A8-5.1.4*
A5-2.3.1	A-5.1.2 and A8-5.1.4*

*Include in Time Information Column of Conservation/Open Space Element Implementation Table

In addition, action A5-7.3.1 shall be amended as requested by the Public Works Department.

2. Require High Pressure Sodium Vapor Lamps (HPSV). The City shall pursue the feasibility of requiring high sodium vapor lamps for all street lights and public parking lots.

WHEREAS, the proposed changes to the General Plan are reasonable and beneficial at this time because they will make the Chino General Plan Elements consistent with each other.

NOW, THEREFORE, BE IT RESOLVED, the Chino City Council approves the Air Quality Element of the Chino General Plan.

APPROVED and ADOPTED this 19th day of November, 1991.


Mayor, City of Chino

ATTEST:


City Clerk, City of Chino

Resolution No. 91-542
Page 4

State of California)
County of San Bernardino)§
City of Chino)

I, Kathleen A. Blomo, Chino City Clerk, hereby certify the foregoing Resolution of the City of Chino was duly adopted by said City Council at a regular meeting held on the 19th day of November, 1991, by the following vote:

AYES: COUNCIL MEMBERS AGUIAR, ERWIN, SAWHILL, YANKEY
NOES: COUNCIL MEMBERS NONE
ABSENT: COUNCIL MEMBERS ULLOA

K.A. Blomo
City Clerk, City of Chino

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Introduction

Why Prepare an Air Quality Element?

Southern California has the worst air pollution in the nation. Almost every day, smog stretches from the beach cities in Orange and Los Angeles Counties to the inland valleys of Riverside and San Bernardino Counties. The brown haze affects the health and scenic views of the approximate 12 million people who live within the 13,350 square mile region. This region is known as the South Coast Air Quality Management District (SCAQMD) (see Figure 1, page VIII-4).

With the aim of complying with all federal standards by 2007, the South Coast Air Quality Management District (SCAQMD) and Southern California Association of Governments (SCAG) jointly prepared the 1989 Air Quality Management Plan (AQMP). The AQMP calls upon local governments to achieve an 8% reduction region-wide in emissions from reactive organic gases and oxides of nitrogen. Specifically, local governments are asked to implement appropriate control measures contained in the AQMP to achieve this reduction. Each control measure that is required for local jurisdiction implementation is noted in parentheses, i.e., (AQMP Control Measure No. 2.a.) at the end of the action which addresses that particular measure. Local governments are required to address air quality strategies comprehensively in the General Plan. The adoption of an Air Quality Element is recognized as a decisive method for satisfying this requirement.

Air Quality and Southern California

The primary influence on air quality in Southern California is our climate and topography. Our climate features warm sunshine and soft easterly sea breezes. Our topography consists of a desert-like terrain bounded by the Pacific Ocean on the west and mountains on the north and east. These characteristics help create an inversion layer trapping pollutants within the basin region. Air quality in the South Coast Air Basin, as a whole, is characterized by high levels of ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2) and particulate matter (PM₁₀) (see Figures 2, 3, 4, 5 on pages VIII-5, -6, -7, -8).

The source of our air pollution problem is directly related to how we perform many daily activities, predominantly related to driving in an automobile. The motor vehicle, frequently with a single occupant, parked on a gridlock freeway, is responsible for about half of our air pollution. The other half is caused by stationary sources.

San Bernardino County regularly exceeds state and federal air quality standards for ozone, carbon monoxide, nitrogen dioxide, and particulate matter (see Table 1, page VIII-9). Violations of state and federal standards are acute during summer months when on-shore wind patterns transport pollutants from the western portion of the South Coast Air Basin—notably Los Angeles and Orange Counties—and combine with local emission sources in San Bernardino County to create some of the nation's worst air quality (see Figure 6, page VIII-10).

The last complete basin inventory was developed by the Air Quality Management District as part of the 1989 Air Quality Management Plan development process. The relative contribution of sources within San Bernardino County varies somewhat for each pollutant, but is well under 10% of the basin for each of the four criteria pollutants shown in Table 2, page VIII-11. The ability of the County, as a whole, to significantly influence air quality is limited by the fact that the County and the City of Chino currently contribute so little air pollution within the basin.

Southern California, as well as San Bernardino County, stands at a turning point in history. The growth of this region has made it the eleventh largest economic center in the world. In the next 20 years, the region's current population will grow by one third. Yet, with prosperity and growth also comes undesirable side effects. The freeways are extremely congested, housing prices continue to rise, and most of the region suffers from the effects of air pollution.

A new age of planning and cooperation will be needed to manage the projected growth in the region. Land use planning must emphasize air quality issues by understanding and coordinating the linkages between growth, housing, jobs, traffic, and air quality.

Difficult choices will be required by local governments if the region is to stay on a course which will guide us to cleaner air. This course is far different from before. The new approach will require a stronger

commitment to regional goals, which often contrast individual goals, by local government, business, and citizens. It will also require cooperation among local governments when issues cross jurisdictional boundaries.

Cooperative Approach

Beginning in early 1990, Chino participated with the County of San Bernardino and 15 other cities within the County to meet its responsibilities of preparing an Air Quality Element as outlined in the Air Quality Management Plan (AQMP). By doing so, the City made its first formal contribution to air quality planning since the district's creation of the AQMP.

San Bernardino County/cities, in recognition of the inter-jurisdictional nature of air quality, as individual entities, united to prepare a Regional Air Quality Plan. The plan set up a framework which provides participating jurisdictions with the necessary information to develop their own local air quality elements. The document layed out certain goals, policies, and action programs which were arrived at by appointed technical and policy committee members of the participating jurisdictions. Each jurisdiction agreed to adopt the basic goals and policies into their City's General Plan. The goals, policies, and actions in this document are derived from the Regional Air Quality Element and input by members of the Planning Commission and City Council, and various City staff.

Legal Mandate

State and Federal air quality legislation establishes roles and responsibilities for several agencies. Table 3 (page VIII-12) identifies the various air quality planning agencies and their primary responsibilities. Most of local governments' responsibilities relate to their land use planning authority.

The extent of legal obligation on the part of local government to meet air quality standards mandated at the state and federal levels has not been clearly resolved. The federal government has clearly stated its intent to withhold certain funds to the region, or a local agency, if significant steps to meet federal air quality standards are not taken. This is one reason why establishment of local commitments are most appropriately accomplished in an expeditious and cooperative manner.

The SCAQMD and SCAG highly recommend adoption of an air quality element and/or amending the general plan to include air quality considerations. Conversely, adoption of a general plan element or amendment will not, in and of itself, meet local government responsibilities. The key is to translate air quality policy statements into actions—that is the challenge that must be met by Chino and other communities within the air basin.

Relationship to Other General Plan Elements

In determining the relationship of the air quality element to other general plan elements, it is appropriate to remind the reader of the relationship between growth, housing, jobs, circulation, and air quality noted before. Implementation of the Housing, Land Use, and Circulation Elements have a profound impact on the type and amount of air quality impacts which may occur. These elements provide goals and policies which influence housing supply, housing density, jobs, and the necessary backbone infrastructure to support growth in jobs and housing. Likewise, the Open Space/Conservation Element provides goals and policies about energy conservation and air quality.

Citizen Participation

The City of Chino encourages citizen input on development of general plan goals, policies, and actions programs. Public workshops were held in October and November of 1991 before the Planning Commission and City Council. The purpose of the workshops were to discuss the air quality element, and ask for public input from community residents and other interested parties.

FIGURE 1

South Coast Air Quality Management District

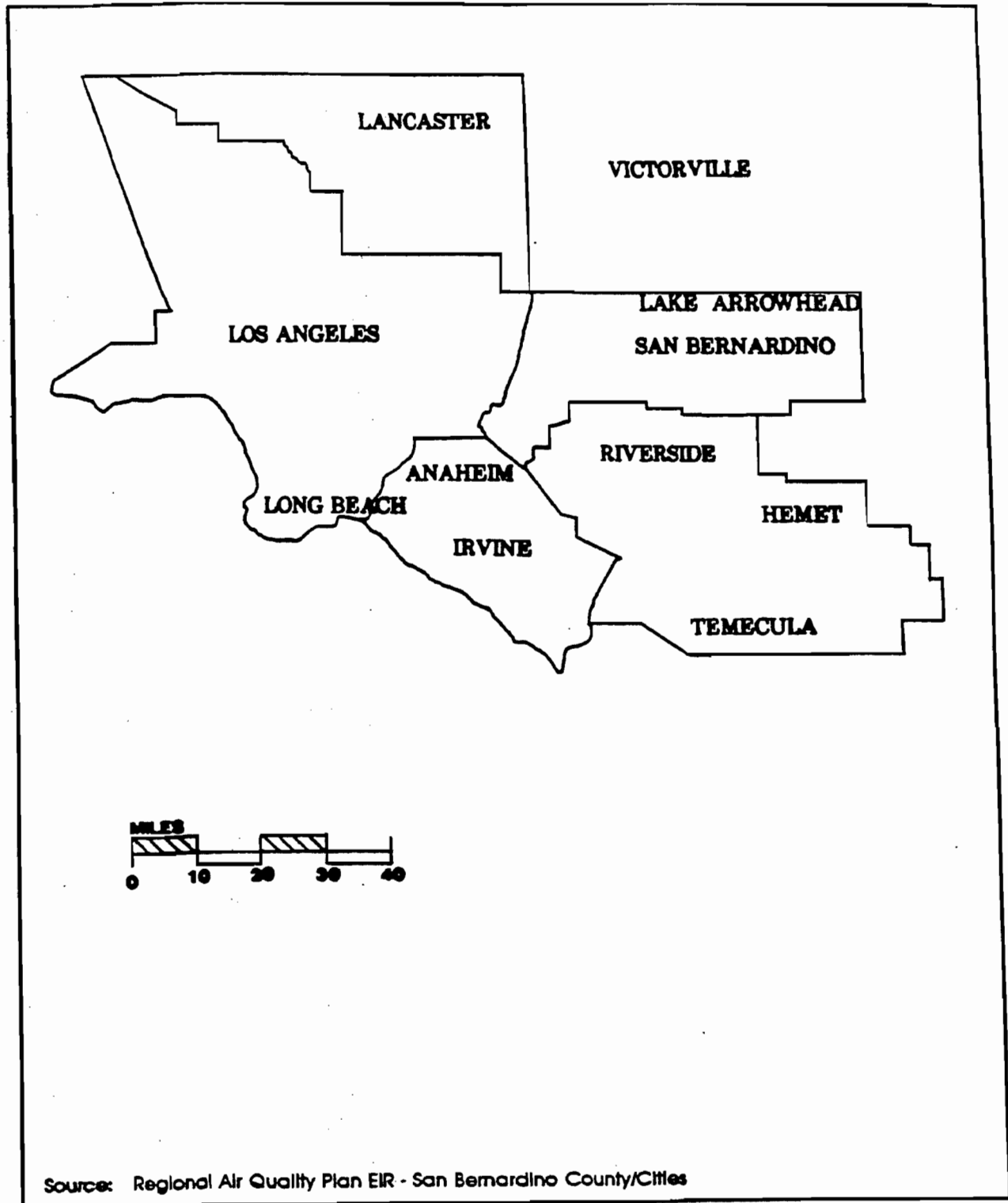


FIGURE 2

Annual Variation in San Bernardino County Ozone Exposure (1988)

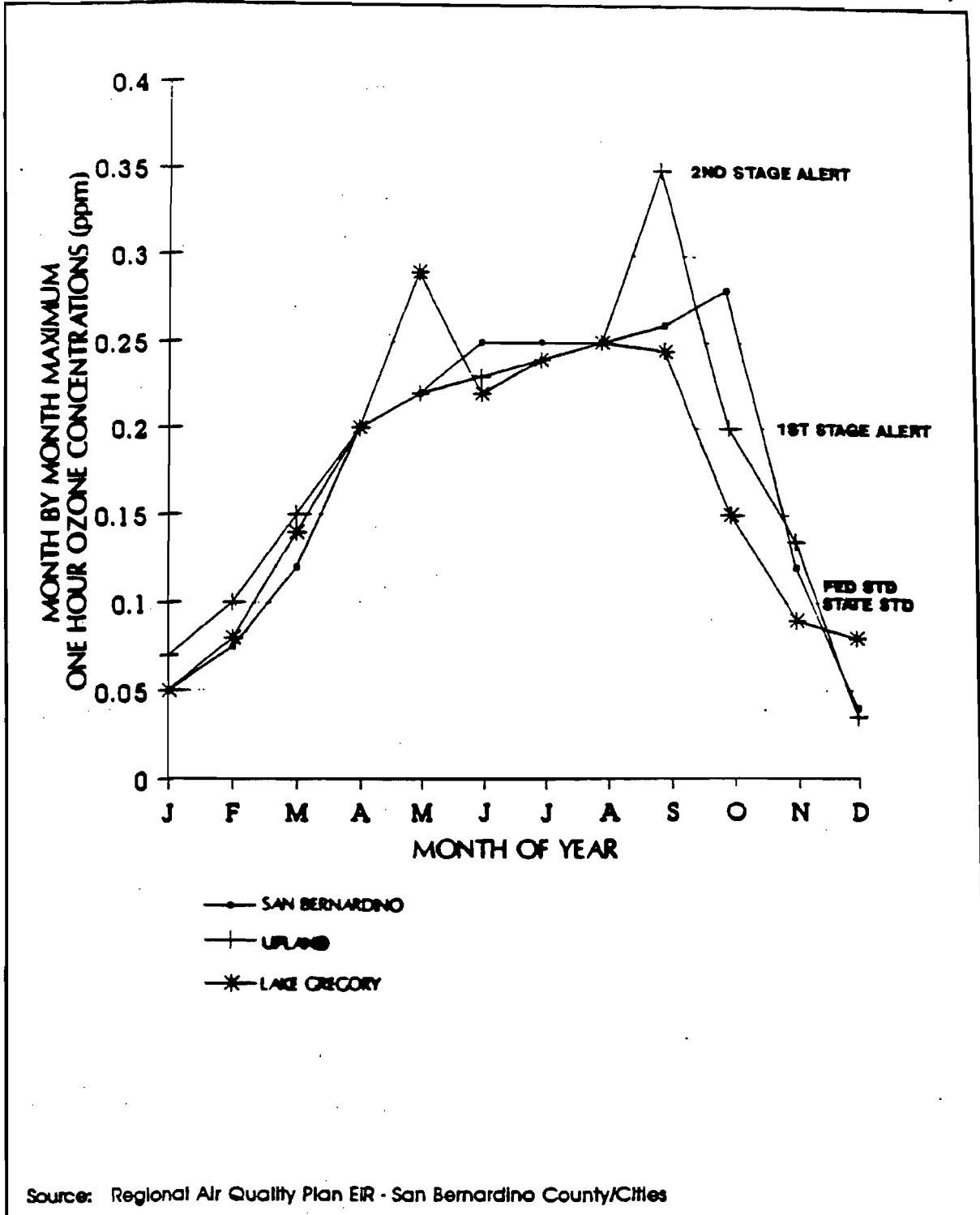


FIGURE 3

San Bernardino County Carbon Monoxide Levels

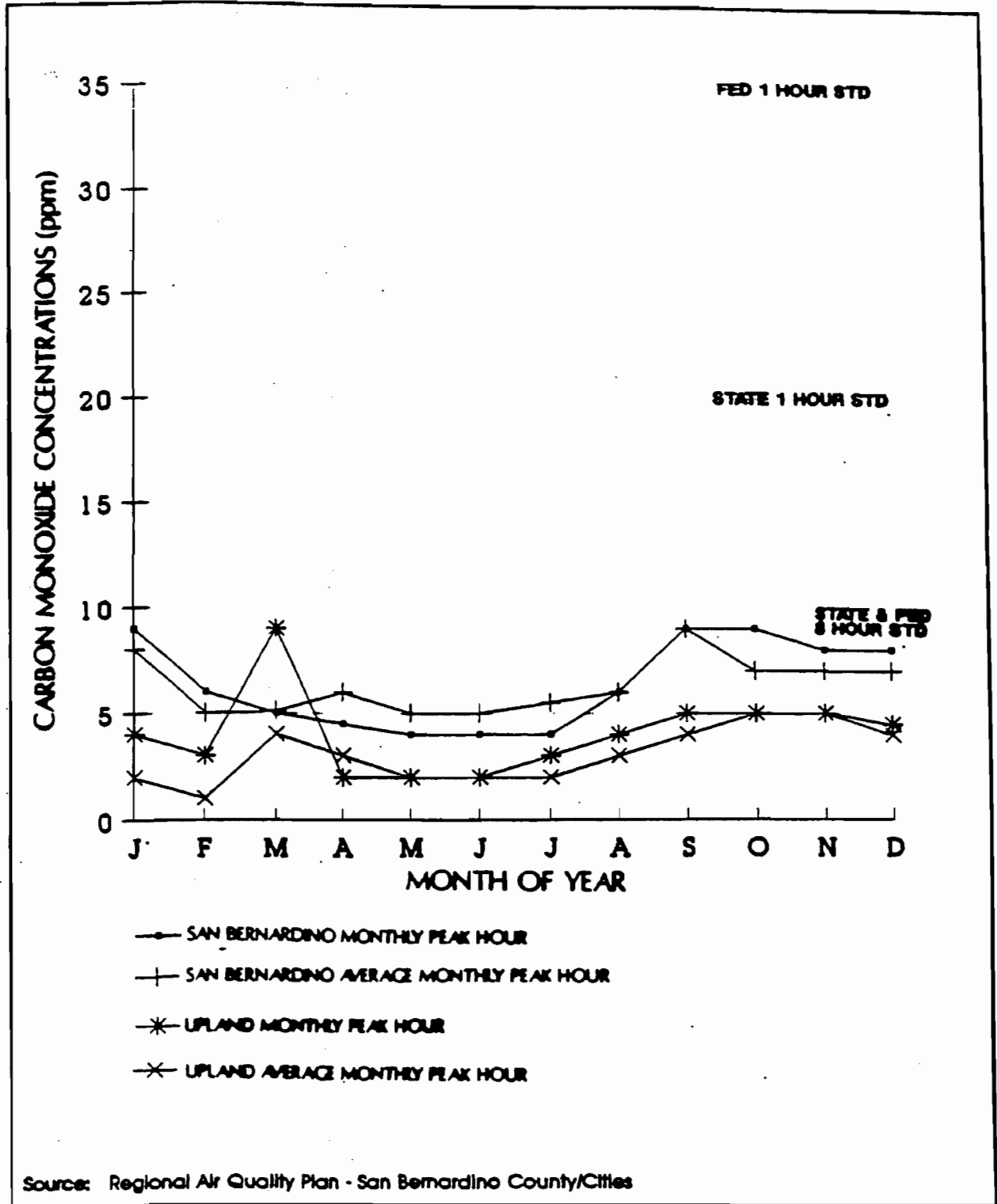


FIGURE 4

San Bernardino County Nitrogen Dioxide Levels

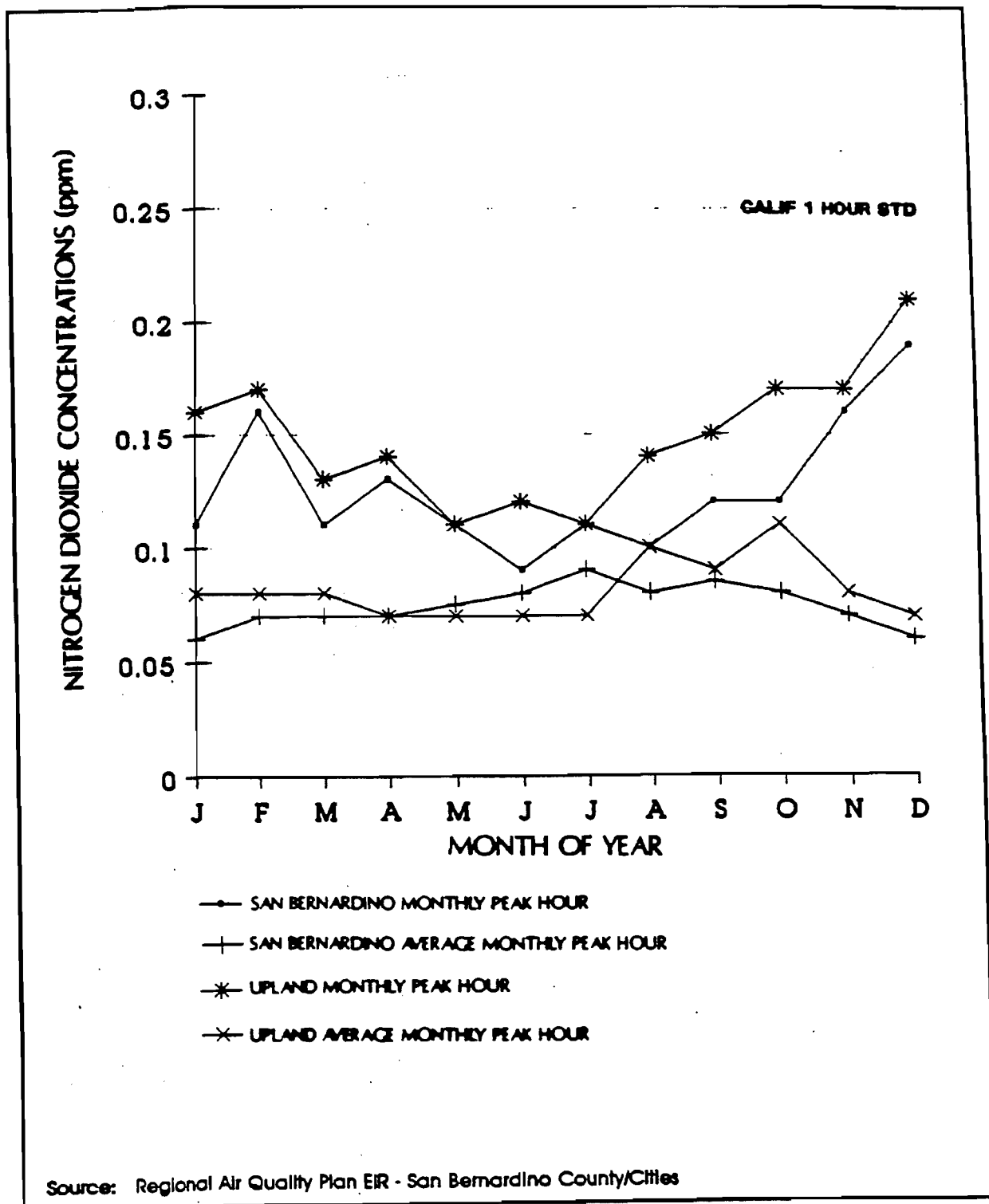
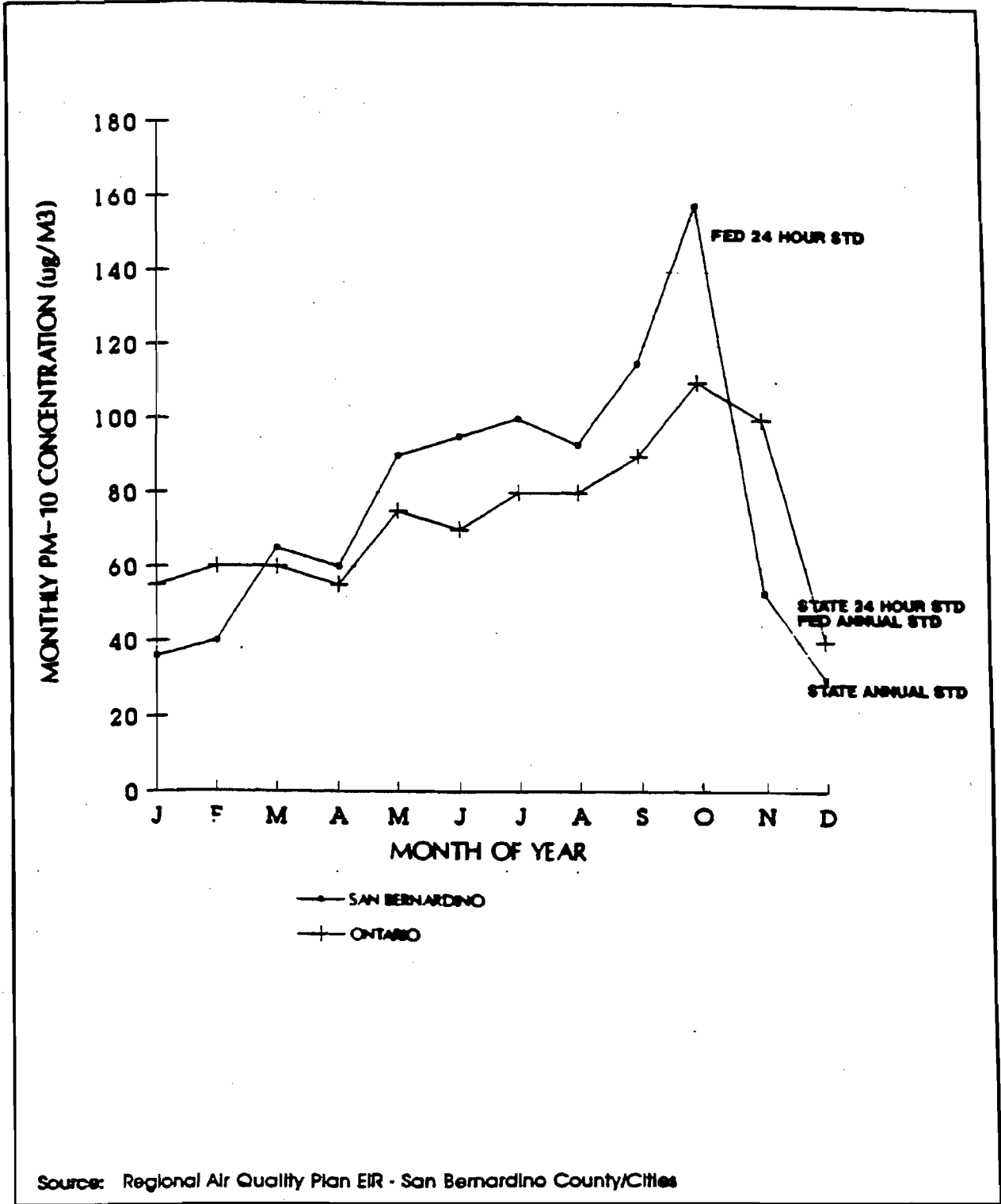


FIGURE 5

Particulate (PM-10) Levels



Source: Regional Air Quality Plan EIR - San Bernardino County/Cities

TABLE 1

Percent of Days Exceeding Federal Standards
and Maximum Concentrations

Pollutant	Standard	Upland	San Bernardino	Crestline
Ozone	1 Hour > 0.12 ppm	27%	32%	35%
	Max 1 Hour Conc. (ppm)	0.32	0.30	0.27
Carbon Monoxide	1 Hour > 35. ppm	0%	0%	ND
	8-Hour > 9. ppm	0%	0%	ND
Nitrogen Dioxide	Annual Avg. > 0.05 ppm	No	No	ND
	Annual Avg. (ppm)	0.045	0.041	ND
Respirable Particulates	24-Hour > 150 ug/m ³	7%	5%	0%
	Max. 24-Hour Conc. (ug/m ³)	254.*	274	87.
* = Data from Ontario Airport area, no measurement at Upland. ND = No Data, no measurements at this site.				

Source: Air Quality Management District 1989.

FIGURE 6

Airflow Patterns in the South Coast Air Basin
Influencing Pollutant Emission Migration

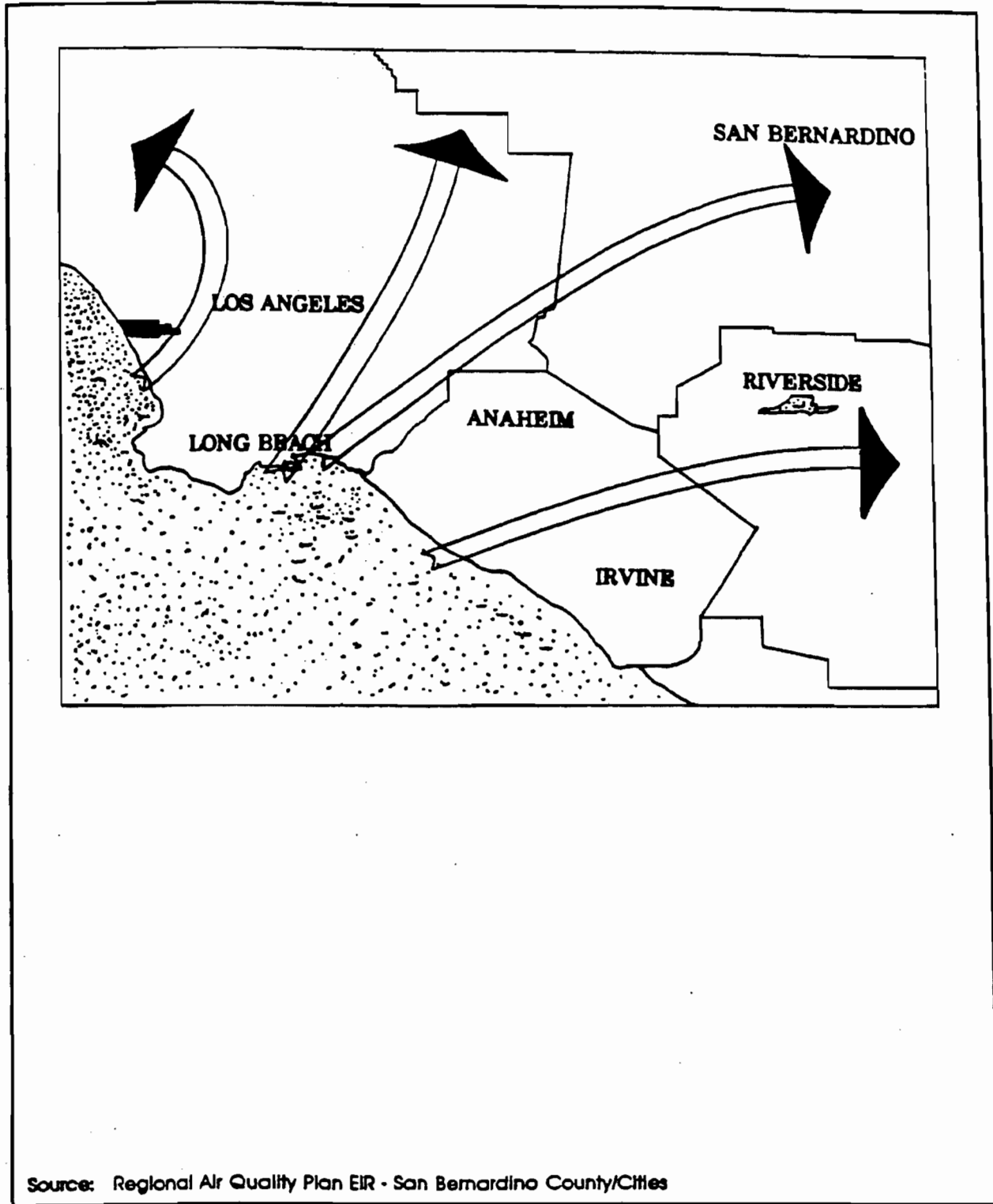


TABLE 2

County Share of Basinwide Pollutant Emission Burden (%)

Pollutant	1985	1990	2000	2010
ROG	8.7	9.6	10.3	10.6
NOx	8.2	9.2	10.6	11.0
CO	7.5	9.0	10.9	11.4
PM-10	8.6	8.7	8.9	9.0
ROG = Reactive Organic Gas NOx = Nitrogen Dioxide CO = Carbon Monoxide PM-10 = Suspended Particulates				

Source: Regional Air Quality Plan, San Bernardino County/Cities. Technical Background Report.

TABLE 3

Agencies' Responsibilities in Air Quality Planning

Agency	Level of Government	Enabling Legislation	Responsibilities
EPA	Federal	Clean Air Act ²	Establishes NAAQS. Approves SIP. Levies sanctions against nonattainment areas.
ARB	State	Federal Clean Air Act California Clean Air Act ³	Prepares and submits SIP to EPA. Reviews regional plans to ensure every reasonable TCM action is taken to achieve standards at earliest practicable date. ⁴ Emission standards for mobile sources.
SCAG	Local	Federal Clean Air Act California Clean Air Act	Submits annual progress report to EPA and ARB. Responsible for transportation and land use measures. ⁵
SCAQMD	Local		Adopt, implement, and enforce transportation control measures. ⁶
CITY/COUNTY	Local		Implement land use and transportation control measures.

Source: Regional Air Quality Plan, San Bernardino County/Cities.

² Amended in November, 1990.

³ AB 2595 Sher Act, 1988.

⁴ Health and Safety Code, Section 41503.5.

⁵ Health and Safety Code, Section 40717 (b)-(f).

⁶ Health and Safety Code, Section 40716-17.

Government Organization, Roles and Responsibilities

Introduction

Air pollution in the South Coast Air Basin follows no precise boundaries. Its physical location is constantly shifting with seasonal meteorological conditions. This characteristic makes regulating air pollution most appropriately influenced by local government at a regional level.

Technical Information

San Bernardino County is a source area for air pollutants primarily during the winter months when emissions of nitrogen oxide and carbon monoxide travel westward, helping to create unhealthful levels of pollutants in Los Angeles and Orange Counties. During summer months, on-shore winds transport pollutants from the western portion of the basin (notably Los Angeles and Orange Counties) into San Bernardino County. These pollutants combine with local emission sources to create some of the nation's worst air quality. However, San Bernardino County is responsible for less than 10% of the South Coast Air Basin's pollutant emissions (see Table 2, page VIII-11).

Air quality in the South Coast Air Basin as a whole is characterized by high levels of ozone (O₃), carbon monoxide (Co), nitrogen dioxide (No2) and particulate matter (PM₁₀). San Bernardino County is in attainment with federal standards for carbon monoxide and nitrogen dioxide [No2]. However, the primary source areas for ozone and particulate

emissions are Los Angeles and Orange Counties. This makes it very difficult to directly effect improvements in these pollutants, especially when combined with the wind flow influences discussed in the introduction.

Issues

Although San Bernardino County generates only 10% of the total emissions basin-wide, its residents are exposed to significantly greater health risks than other residents within the basin. San Bernardino County pays a high price for poor air quality. The ill effects of air pollution include: poor health, damage to property, landscaping, agriculture, and livestock; impaired visibility; all of which result in a reduction in the quality of life.

The following goals, policies and actions will aid the City of Chino in improving regional air quality by developing a coordinated approach with other agencies in San Bernardino County and the south coast air basin.

GOALS, POLICIES, AND ACTIONS

GOAL G8-1

Air Quality Improvement.

To achieve coordination of air quality improvement within the portion of the South Coast Air Basin in San Bernardino County and improved air quality through reductions in pollutants from Orange, Riverside and Los Angeles Counties.

POLICY P8-1.1

Establish a Coordinated Approach.

Coordinate with other jurisdictions in San Bernardino County to establish parallel air quality plans and implementation programs.

ACTION A8-1.1.1

Coordinated Review.

Work with the Planning Director's Committee of San Bernardino County to provide coordinated review and response to project proposals, etc., effecting air quality within the San Bernardino County portion of the South Coast Air Quality Management District.

ACTION A8-1.1.2

AQMP Regional Financing.

Work on regional financing of AQMP control measures by influencing San Bernardino Associated Governments, the South Coast Air Quality Management District, and other agencies to provide economic assistance for implementation of the measures.

ACTION A8-1.1.3

Local Input.

Participate in establishing an ongoing air quality implementation and development project referral process within the San Bernardino County portion of the South Coast Air Basin, adapting it as necessary to local circumstances, resources, and procedures.

POLICY P8-1.2

Integrate with Related Programs.

Cooperate in establishing a process to integrate air quality programs, implementation, monitoring, and reporting which will affect air quality improvements in San Bernardino County.

ACTION A8-1.2.1

Implement Congestion Management Plan.

Participate with San Bernardino Associated Governments (SANBAG) to create and implement the Congestion Management Plan (CMP).

ACTION A8-1.2.2

Establish Regional Transportation Management Agencies.

Participate with other agencies/organizations to establish regional and sub-regional Transportation Management Agencies (TMA's) which may include Chino Hills, Ontario, Montclair, and San Bernardino County (AQMP Control Measure No. 2.a.).

ACTION A8-1.2.3

OmniTrans/RTD - Transit Improvements.

Work with OmniTrans/RTD/OCTD to improve transit within Chino and San Bernardino County. (AQMP Control Measure No. 2.g.)

POLICY P8-1.3

Affect Source Jurisdictions.

Cooperate actively with Los Angeles, Orange, and Riverside counties to comprehensively improve air quality at the emission source.

ACTION A8-1.3.1

Communication Network.

Participate in a joint communications network for the purpose of improving regional air quality through interagency program development and implementation, such as vanpools between neighboring cities and sharing costs of the capital outlay for such activities.

ACTION A8-1.3.2

Lobby Other Entities to Implement AQMP.

Directly lobby local agencies and private entities to comply with the AQMP.

POLICY P8-1.4

Encourage Community Participation.

Involve environmental groups, the business community, special interests, and the general public in the formulation and implementation of programs which effectively reduce air borne pollutants.

ACTION A8-1.4.1

Public Participation Programs.

Prepare public participation programs which target City residents, businesses, and industries for the purpose of educating them about how they can reduce air pollution.

ACTION A8-1.4.2

Educate Local Businesses.

Work with the Chamber of Commerce to educate and incorporate AQMP programs and Chino Air Quality Element actions into local business activities.

ACTION A8-1.4.3

Obtaining Public Input.

Gain public input during implementation of the City's Air Quality Element and SCAQMD's Air Quality Management Plan.

ACTION A8-1.4.4

Homeowner's Association/Neighborhood Groups.

Work with Homeowner's Associations and neighborhood groups to encourage implementation of the AQMP and Chino Air Quality Element.

POLICY P8-1.5

Support Innovative Approaches.

Advocate and support innovative strategies to improve air quality.

ACTION A8-1.5.1

Tier III Implementation.

Support Tier III implementation of the AQMP by supporting new technology which is not available today but will improve air quality in the future.

ACTION A8-1.5.2

Encourage Business/Research.

Support new approaches to improving air quality through encouraging business/research companies to utilize financing mechanisms provided by federal, state, and local sources.

ACTION A8-1.5.3

Support Creative Solutions.

Support agencies/organizations who provide creative solutions to improve air quality, such as auto buy-back programs and consumer product emissions fees.



ACTION A8-1.5.4

Regional Cooperation.

Cooperate with local and regional agencies by preparing a memorandum of understanding for obtaining the minimum pollutant emissions while maintaining the City's economic viability.



Ground Transportation

Introduction

San Bernardino County's residents commute by the tens of thousands to employment sites throughout Los Angeles and Orange Counties. Likewise, a large group of Chino residents commute out of the City to their work sites. They make this workday commute from a housing-rich to a job-rich area. This commuting pattern impacts transportation systems, which leads to traffic congestion.

Ground transportation related sources produce the largest amount of pollutant emissions in the South Coast Air Basin. These emissions are generated from about eight (8) million on-road vehicles. The vehicles are characterized by passenger cars, light duty trucks, medium duty vehicles, heavy duty vehicles, and motorcycles. In 1989, they travelled approximately 240 million miles within the basin.

One of the most important steps local governments can do to reduce pollutant emissions from mobile sources is to utilize programs which attract businesses that provide employment opportunities for their residents. Jobs/housing balance will be discussed in more detail in the land use section of this document. However, recognition of the linkage between land use, transportation, and air quality is crucial in bringing about a solution to the basin's air quality problem. Recognition of this linkage means understanding that residents of Chino, as well as the region, must make lifestyle changes to reduce demand on existing transportation systems.

Technical Information

Transportation related sources are responsible for most emissions of Co (96%) and NOx (72%) and for a significant amount of ROG (52%) and SOx (54%). Vehicular emissions of reactive organic gases (ROG) and carbon monoxide (Co) are higher at low speeds or idling, while nitrogen oxide (NOx) emissions increase with higher speeds and acceleration. Therefore, actions which reduce vehicle miles travelled must be combined with stringent tailpipe standards, better inspection, and vehicle maintenance programs to address pollutant emission reductions both locally and regionally.

The effects of travel distance and congestion have a profound effect on the amount of air pollutant emissions generated from ground transportation sources. The net effect is that vehicles (trips) which are driven longer distances for longer hours, result in increased amounts of pollutants. However, combining vehicle trips rather than a series of single destination trips create less pollutants, because vehicles emit more pollutants when they are cold.

Ridesharing, business induced transportation incentives/disincentives, modifying work schedules, tele-communication, and establishing transportation management agencies are some ways of reducing vehicular miles travelled (VMT). These actions mean riding together instead of riding alone; getting paid not to drive; and talking on the phone instead of driving; each inherently require changes in our day-to-day lifestyles.

These actions emphasize reducing pollutant emissions from ground transportation sources through reducing vehicle use (i.e., vehicle miles travelled (VMT) and number of trips). Reducing vehicle use means choosing another transportation mode, commute time of day, or whether to travel altogether.

The City prepared an analysis which assessed the feasibility of creating a Transportation Management Association (TMA) within a 430 acre business park and/or an adjacent 370 acre specific plan area. This analysis clearly showed that a TMA could be successful at some point in the future if both project areas were included.

Issues

Statistics compiled in the California Department of Transportation Travel Forecast Summary indicated that over 75% of those who travel from home to work in the Los Angeles region chose to drive alone. About 11% travelled from home to work with one other person; less than 7% utilized public transit.

Residents of the air basin must reduce their dependency on the single occupant vehicle to obtain cleaner air. Changing this commuting pattern is a monumental task and the primary issue with regard to ground transportation emission sources. Local government must take a leading role in this task.

The City has plans to assess the feasibility of establishing a Transportation Terminal in the downtown area. If established, it would provide a central location for transit services,

commute activities, and shuttle services to commuter trains within the region.

The following goals, policies and actions will aid the City in obtaining a reduction in air pollutants from ground transportation sources and help to encourage the desired lifestyle changes.

GOALS, POLICIES, AND ACTIONS

GOAL G8-2

Ground Transportation.

To achieve a diverse and efficient ground transportation system which generates the minimum feasible pollutants.

POLICY P8-2.1

Eliminate Unnecessary Trips.

Use market incentives, regulations, and Transportation Demand Management in cooperation with other jurisdictions in the South Coast Air Basin to eliminate unnecessary vehicle trips which would otherwise be made.

ACTION A8-2.1.1

Neighborhood Services.

Examine the feasibility of adopting a zone ordinance amendment to permit essential services (postal, retail, convenience items, etc.) to be located in residential neighborhoods where these services are not within walking or bicycling distance.

ACTION A8-2.1.2

On-Site Services.

Examine the feasibility of providing services for civic center employees (i.e., cafeteria, banking, postal services, etc.) within walking distance.

ACTION A8-2.1.3

Trip Reduction Ordinance.

Adopt an ordinance requiring all employers within the City to reduce work trips by 12% by 1999, 20% by 2004 and 30% by 2010. This may be achieved through programs such as compressed work weeks, flex schedules, carpooling, and telecommunication, etc. (AQMP Control Measure No. 1.a. and 1.b.)

ACTION A8-2.1.4

Compliance with SCAQMD AVR.

Adopt an ordinance by 1994 requiring trip reduction plans to meet SCAQMD Average Vehicle Ridership (AVR) requirements (1.5) for facilities with tenants employing more than 100 employees and 25+ employees by 1995. (AQMP Control Measure No. 2.a.)

ACTION A8-2.1.5

Reduced Service During Stage 3 Smog Alerts.
Require City public facilities to operate at reduced staffing levels during Stage 3 smog alerts.

ACTION A8-2.1.6

Trip Reduction Program.

Implement a program which requires the City, as an employer, to reduce work trips by 12% by 1999, 20% by 2004 and 30% by 2010. This can be accomplished by requiring flex schedules, compressed work weeks, non-motorized transportation, carpooling, tele-communication, market incentives, etc. (AQMP Control Measure No. 1.a. and 1.b.)

POLICY P8-2.2

Reduce Vehicle Miles Travelled.

Use incentives, regulations and Transportation Demand Management in cooperation with other jurisdictions in the South Coast Air Basin to reduce the vehicle miles travelled for auto trips which still need to be made.

ACTION A8-2.2.1

Travel Demand Management.

Adopt an ordinance to require Travel Demand Management (TDM) programs for all new and existing developments. (AQMP Control Measure No. 2.b.)

POLICY P8-2.3

Improve Traffic Flow.

Improve traffic flow by implementing the state mandated Congestion Management Program (CMP), the AQMP, and other means to lessen roadway congestion.

ACTION A8-2.3.1

Congestion Management Plan (CMP).

Provide on-going participation in the CMP process within San Bernardino County.

ACTION A8-2.3.2

Adopt CMP Ordinance.
Adopt CMP ordinance by 1992 reflecting air quality goals, policies, and actions.

ACTION A8-2.3.3

Truck Routing/Deliveries.
Continue to require Truck Travel Demand Management Plans for commercial and industrial developments which include scheduling and routing of deliveries in conformance with this element. Companies with deliveries of a time-sensitive nature shall be required to submit plans which comply with the truck delivery restrictions where possible. (AQMP Control Measure No. 3.a.)

ACTION A8-2.3.4

Restrict Trucks from Major Arterials.
Adopt an ordinance restricting operating times for heavy duty vehicles on congested portions of major arterials during peak hours for deliveries which are not of a time sensitive nature: (AQMP Control Measure No. 3.a.)

ACTION A8-2.3.5

Traffic Signal Improvements.
Require interconnected signal control systems on all primary arterials including those which cross interjurisdictional boundaries. (AQMP Control Measure No. 4.)

ACTION A8-2.3.6

On-Street Parking During Peak Hours.
Eliminate peak hour on-street parking on arterials within the City. (AQMP Control Measure No. 2.b. and 4.)

ACTION A8-2.3.7

Surcharge for Truck Operations During Peak Periods.

Adopt an ordinance which establishes a surcharge and permit issuance procedures to permit the operation of commercial vehicles during periods of peak traffic congestion on congested portions of major arterials and establish a fine for those operating without a permit or not in compliance with their approved Truck Travel Demand Management Plans. (AQMP Control Measure No. 3.a.)

POLICY P8-2.4

Establish Fees.
Encourage market based incentives and disincentives to relieve peak hour/peak congestion within highly congested travel corridors in and adjacent to the City of Chino.

(Note: Future actions may be included under this policy if fees are determined to be needed for implementation of other Air Quality actions.)

POLICY P8-2.5

Expand Transit.
Cooperate in efforts to expand bus, rail, and other forms of transit in the portion of the South Coast Air Basin within San Bernardino County and the inter-county links to Los Angeles, Orange and Riverside counties.

ACTION A8-2.5.1

Sub-Regional Transportation System.

Lobby regional transportation agencies to expand regional transit systems between residential areas and employment centers in San Bernardino County.

ACTION A8-2.5.2

Auto Use Restrictions.

Require special event centers which have the ability to attract over 10,000 persons to operate park-n-ride facilities and enhance transit performance to venues within Chino. (AQMP Control Measure No. 2.e.)

ACTION A8-2.5.3

City Shuttle.

Develop a City shuttle between regional land uses, park-n-ride facilities, and neighborhoods.

POLICY P8-2.6

Promote Non-Motorized Transportation.

Provide bicycle and pedestrian pathways and facilities to encourage non-motorized trips.

ACTION A8-2.6.1

Bike Trails.

Continue to implement the Circulation Element goals and policies which provide bike and pedestrian trails between residential neighborhoods and employment and commercial areas. (AQMP Control Measure No. 1.b.)

ACTION A8-2.6.2

Merchant Transportation Incentives.

Examine the feasibility to adopt a non-work trip reduction ordinances which require large retail and business establishments to offer customer travel incentives and facilities for non-motorized transportation needs. (AQMP Control Measure No. 2.d.)

ACTION A8-2.6.3

Bicycle Parking and Showers.

Adopt an ordinance requiring commercial and industrial facilities to provide bicycle parking and shower facilities for riders. (AQMP Control Measure No. 1.b.)

POLICY P8-2.7

Manage Parking Supply.

Manage the parking supply for public and private development to discourage auto use, while ensuring that economic development goals are not impacted.

ACTION A8-2.7.1

Rideshare Incentives in Public Parking Lots.

Provide incentives for ridesharing and non-single occupancy vehicles for those vehicles who use public parking lots. (AQMP Control Measure No. 2.b.)

ACTION A8-2.7.2

Limit Parking Supply by Zone.

Adopt an ordinance establishing a cap on the number of parking spaces permitted per square foot for particular uses. (AQMP Control Measure No. 2.b.)

ACTION A8-2.7.3

Preferential Parking for Rideshares.
Adopt an ordinance which requires employers/developers to provide preferential parking for rideshares. (AQMP Control Measure No. 2.b.)

POLICY P8-2.8

Encourage Market Incentives/Disincentives.
Promote a regional approach to increasing parking costs in order to discourage low vehicle occupancy.

ACTION A8-2.8.1

Parking Cost Standards.
Work with other cities to establish standard parking costs to ensure that the City is not placed at an economic disadvantage with other communities. (AQMP Control Measure No. 2.b.)

POLICY P8-2.9

Support Legislation.
Lobby for state and federal legislation which would improve vehicle/transportation technology and establish differential pricing mechanisms to assess the true cost of emissions.

ACTION A8-2.9.1

Emission Fee.
Support State and Federal legislation which establishes emission fees on gasoline products.

ACTION A8-2.9.2

Emission Surcharge.
Adopt an ordinance increasing the bail for vehicles ticketed for air pollutant emissions violations.

ACTION A8-2.9.3

Support Tax Credit/Tax Benefit.
Support legislation which provides favorable tax credits or benefits for employers who purchase or lease vans for employee use, employers who sponsor work day use of clean fuel vehicles, and employees who use employer sponsored vanpools. (AQMP Control Measure No. 2.a.)

POLICY P8-2.10

Institute Clean Fuel Systems.
Invest in clean fuel systems on all non-electric fleet vehicles.

ACTION A8-2.10.1

Clean Fuel Electric Vehicles.
Purchase vehicles which use clean fuels (such as electricity) for use as part of the City fleet. Attempt to achieve 10% of City fleet vehicles to be electric (or electric clean fuel) by the year 2000, and 20% by the year 2010.

ACTION A8-2.10.2

MPG Purchase Limitation.
Require all non-emergency and maintenance vehicles to obtain at least 25 MPG (highway) as a criteria for new fleet vehicle acquisition.

Air Transportation

Introduction

There are two airport facilities which directly impact the air quality within Chino: Ontario International Airport located within the City of Ontario and Chino Airport located in the southeastern portion of Chino. The emissions generated as a result of Ontario International Airport will be controlled by the City of Ontario (in terms of ground access and vehicle trip reductions), by the airport operator, Los Angeles Department of Airports, the various airlines (in terms of fleet replacement and on-site operational changes), and SCAQMD (in terms of various role changes, monitoring, etc.).

Chino Airport, a 950-acre facility, is owned by the County of San Bernardino and located near the southeast corner of Merrill and Euclid Avenues. It is classified as a "Basic Transportation Airport" functioning as a home base for business jets, corporate jets, and recreational aircraft. It is also the designated reliever facility for John Wayne Airport in Orange County.

Chino Airport serves the general aviation needs of southwestern San Bernardino County and parts of the surrounding three counties because of its convenient location. Many of the basic transportation airports within this region are already either, or close to, capacity. The demand for airport services will force some users to search elsewhere for accommodations and services. This activity will make the potential expansion capabilities of Chino Airport significant.

Technical Information

The Southern California Association of Governments projected that 43% of Los Angeles County airports and 100% of Orange County airports would be at capacity by 1985. These projections have held true and spatial demand, regionally, for based aircraft is greater than the area available.

The volume of based aircraft at Chino Airport is forecasted to increase from 1,100 in 1990 to 1,900 in 2005. While pollutant emissions at Chino Airport are currently not a significant problem, air and ground transportation related emissions associated with anticipated expansion are expected to increase.

The Chino Airport Master Plan envisions additional space for terminal/administrative facilities in order to accommodate the increased air transportation activities expected. Likewise, it is anticipated that airport support uses, such as, restaurants and hotels, will develop within or adjacent to the immediate airport facility.

Issues

A large portion of the airport facility and adjacent property is undeveloped. The City has agreed to support the implementation of the Chino Airport Master Plan which was prepared by the County. Implementation of the Master Plan may have significant impacts to air quality unless future development is required to adhere to air quality guidelines.

The following goals, policies, and actions will provide the framework to assure that implementation of the Chino Airport Master Plan produces the minimum amount of pollutant emissions.

GOALS, POLICIES, AND ACTIONS

GOAL G8-3

General Aviation Emissions.

To encourage the minimum feasible emissions from Chino Airport.

POLICY P8-3.1

Promote Improved Technology.

Support the South Coast Air Quality Management District in promoting the best available technology to reduce emissions in aircraft fleet and ground service vehicles.

ACTION A8-3.1.1

Cleaner Fuels.

Encourage airport service vehicles to use alternate (cleaner) fuels, i.e., electrification.

POLICY P8-3.2

Coordinate Airport Development.

Coordinate airport development to minimize pollutant emission from ground and air transportation systems.

ACTION P8-3.2.1

Airport Transportation Demand Management.

Coordinate airport development to minimize pollutant emission from ground and air transportation systems (i.e., indirect sources) by utilizing Transportation Demand Management (TDM) measures.

Land Use

Introduction

An efficient land use pattern served by a diverse transportation system can minimize air pollutants by minimizing congestion. This means balancing growth. Balanced growth is obtained by equalizing jobs and housing, (i.e., jobs/housing balance).

The purpose of jobs/housing balance is to allow workers to live closer to their jobs, thereby reducing traffic congestion and air pollution problems. However, cities and subregions develop on the fortunes of their constituent industries and supply of affordable housing. To achieve a jobs/housing balance and reduce vehicle miles travelled, growth must be managed. Ensuring the timely provision of infrastructure to serve new development, implementing an economic development strategy, and providing adequate housing for the employment population are essential elements of managing growth and balancing the jobs and housing within the community.

Technical Information

The West San Bernardino Valley subregion is expected to grow by 46.2% in population between 1990 and 2010. This same region will capture 4.7% of the projected regional and 22.9% of the county population growth over the same period.

The City of Chino, which is part of this subregion, is projected to increase in population by 7.5%, from 15,665 to 21,379 dwelling units.

There are approximately 1,088 acres of undeveloped industrial and 738 acres of undeveloped residential property within the City. Based on the growth projected in the West Valley area, residential build out may be accomplished by the year 2010. Industrial development is expected to lag slightly behind.

Employment in San Bernardino County is characterized by 10 main industrial groupings. Retail trade establishments are the largest employers which capture 26.5% of the total employment. Service establishments are the second largest employers and capture 26.5% of total business employment. Overall most businesses are small firms with fewer than 50 employees.

Issues

The socioeconomic background information contained in the San Bernardino County Regional Air Quality Plan projects the City's jobs/housing ratio to be 1.76 jobs per household by the year 2010. It is estimated that the City's existing jobs/housing ratio is 1.42 jobs per household. The existing and projected ratios reflect a community which has an appropriate balance between jobs and housing. Such a balance will certainly contribute to a reduction in air pollutants generated locally if vehicle miles travelled can be reduced.

It will be most difficult to achieve this balance without an exhaustive planning effort. Several factors will inhibit the City's ability to achieve the projected jobs/housing balance and desired reduction in vehicle miles travelled. First, Measure "M", effective

in 1988, fixes the housing supply making affordable housing programs difficult to implement. Second, the City does not currently have an economic development strategy to attract business and industry which fit the existing labor pool. Third, the City does not have a Capital Improvement Plan (CIP) consistent with state requirements which works to balance jobs/housing, or consider the timely provision of infrastructure to housing and employment sectors.

The following goals, policies, and actions will aid the City in improving air quality by promoting jobs/housing balance for the purpose of reducing vehicle miles travelled.

GOALS, POLICIES, AND ACTIONS

GOAL G8-4

Efficient Land Use Pattern.

To achieve a pattern of land uses which can be efficiently served by a diversified transportation system and development projects which directly and indirectly generate the minimum feasible air pollutants.

POLICY P8-4.1

Manage Growth.

Continue to ensure that the fundamental City documents, including the General Plan, achieves a community which is efficiently balanced in terms of jobs/housing and which adequately prepares for management of growth.

ACTION A8-4.1.1

Capital Improvement Plan.

Prepare and annually update a Capital Improvement Plan (CIP) to include state mandated air quality requirements.

ACTION A8-4.1.2

Economic Development Strategy.

Complete the preparation of an economic development strategy which examines the available labor pool and targets/markets the City to those industries/ businesses who best fit the labor pool characteristics.

ACTION A8-4.1.3

Coordinate Regional Job/Housing Balance.

Participate in the preparation of a Memorandum of Understanding (MOU) between participating jurisdictions in the Regional Air Quality Element (RAQE) as to mutually acceptable approaches to improve and maintain the jobs/housing balance in the West Valley area. (AQMP Control Measure No. 17.)

POLICY P8-4.2

Jobs/Housing Balance.

Create and execute programs which control and manage the balance between jobs and housing.

ACTION A8-4.2.1

Project Impacts.

Adopt an ordinance to establish criteria to assess the impacts of development projects upon air quality in terms of such factors as jobs created, traffic generated (by type), and direct/indirect pollutant emissions for certain size development.

ACTION A8-4.2.2

Draw From City Labor Pool.

Assess the feasibility of requiring businesses to employ a portion of its labor force from within the City or close proximity to the City.

ACTION A8-4.2.3

Growth Management Plan Performance.

Amend the Land Use Element to attain jobs/housing balance performance goals including jobs/housing targets by year, at a sub-regional level consistent with the Growth Management Plan (GMP). Prepare bi-annual assessment of the City's status in attaining its jobs/housing balance goals. (AQMP Control Measure No. 17.)

ACTION A8-4.2.4

New Jobs/Backbone Infrastructure.

Include in the City's C.I.P. a provision to provide backbone infrastructure to areas within the City where new jobs could be created which best fit the City's labor pools characteristics.

ACTION A8-4.2.5

Mixed Use Development.

Examine the feasibility of preparing a zoning ordinance amendment requiring mixed use development within the parameters established by Measure "M" in certain commercial zones.

POLICY P8-4.3

Protect Sensitive Receptors.

Protect sensitive receptors (schools, parks, hospitals) by supporting a regional approach to regulating the location and design of land uses which are especially sensitive to air pollution.

ACTION A8-4.3.1

Locational Requirements for Sensitive Receptors.

Prepare a zoning ordinance amendment which formulates standards for regulating the location and protection of sensitive receptors (such as schools, parks, hospitals, churches, etc.) from air pollutant emissions.

Particulate Emissions

Introduction

Particulate matter, or suspended particulates are solid and liquid particles of dust, soot, aerosol and other matter which are small enough to remain suspended in the air for a long period of time. A portion of the total particulate matter is caused by natural sources such as wind-blown dust and pollen. Man made sources include auto combustion, agriculture, factories, construction activity and roads (especially unpaved roads).

The City is transitioning from a primarily agricultural to urbanized community. While some agricultural activities currently operate within the City, the community make-up is predominately urban. Urban activities are the primary sources of particulate matter within Chino.

Technical Information

The primary source of particulate matter within Chino is from construction activity. The projected growth in this region and the amount of undeveloped land make construction activity the number one generator.

The adjacent San Bernardino County Dairy Preserve and agricultural activities located within the southern portion of the City, also generate particulate matter. It is expected that dust particles from agricultural uses within the City will diminish over time. However, impacts from the San Bernardino County Dairy Preserve and California Institution for Men will continue.

In the urbanized portion of the City, dust is generated from curbs and gutters, unpaved road shoulders, and parking lots. Presently, street sweepers clean each street 26 times annually. This totals approximately 4,160 miles of roadway per year. Statistics collected during the development of the San Bernardino County Regional Air Quality Plan show Chino's street sweeping program to be one of the most ambitious.

Issues

As the City continues to develop, construction activity will continue to produce particulates which will impact air quality. The current street sweeping program is adequate to mitigate impacts from streets, roads, natural sources, parking lots and agricultural uses. The primary issue will be to control particulate matter during new construction and on unpaved roads and lots.

The following goals, policies, and actions will aid the City in reducing air born particulates from activity within the City, including construction activity.

GOALS, POLICIES, AND ACTIONS

GOAL G8-5

Reduce Particulate Emissions.

Reduce to a minimum particulate emissions from such uses as construction, operation of roads, and buildings.

POLICY P8-5.1

Control Dust.

Reduce particulate emissions from roads, parking lots, construction sites and agricultural lands.

ACTION A8-5.1.1

Street Sweeping.

Continue to sweep City streets approximately twice per month. (AQMP Control Measure No. 12.a.)

ACTION A8-5.1.2

Control Particulate Emissions from Unpaved Roads.

Adopt an ordinance amendment to control particulate emissions created from unpaved roads, drives, vehicle maneuvering areas, parking lots, and vacant lots in conformance with the criteria established by the Air Resources Board. (AQMP Control Measure No. 12.b.)

ACTION A8-5.1.3

Limit Dust.

Adopt an ordinance amendment to control dust from vacant lands and operations and erosions from storm water washing into streets. (AQMP Control Measure No. 12.a.)

ACTION A8-5.1.4

Storage of Particulate Matter.

Eliminate the outdoor storage of sand, gravel and other particulate matter which is left uncovered or not confined at City facilities. (AQMP Control Measure No. 12.a.)

POLICY P8-5.2

Reduce Emissions from Building Materials and Methods of Construction.

Reduce emissions from building materials and methods of construction which generate excessive pollutants.

ACTION A8-5.2.1

Control Emissions, Construction, and Demolition.

Adopt an ordinance requiring the control of particulate emissions from construction and demolition activities and on-site construction traffic flow by requiring such things as truck wheel washers and paving of access roads. (AQMP Control Measure No. 12.a.)

ACTION A8-5.2.2

Particulate Emissions from Truck Hauling.

Require the installation of liners on truck beds, truck loads to be covered, and maintain freeboard levels for trucks use in construction activities. Establish penalties for commercial vehicles which are not in compliance. (AQMP Control Measure No. 12.a.)

POLICY P8-5.3

Reduce Emissions from Building Interiors.

To reduce interior air pollutants which produce poor air quality within building interiors.

Note: No Actions approved at this time. Actions might be added at a later date.

Energy Conservation

Introduction

Energy use contributes significantly to pollutant emissions, as well as gases that effect global warming. In 1987, approximately 80% of all emissions were related to energy use.

As population growth continues, it is imperative to advocate the efficient use of energy. It is also important to reduce the use of energy and encourage alternative energy sources.

Technical Information

The South Coast Air Quality Management District's 1991 Air Quality Management Plan requires local government to reduce its energy demand by 8% by January 1, 1994, 15% by 2000, and 30% by 2010. A recent League of California Cities' survey revealed that nearly 40% of responding cities have no organized energy management programs. The City of Chino is no exception.

Conservation measures involving building operation improvements, such as lighting, building area and boiler efficiency improvements, can lead to a significant reduction in energy consumption. Other areas where energy conservation can be achieved are: heating, ventilation and air conditioning (HVAC) system modifications, electrical use from space heating and cooling, food preparation, and energy efficient lighting in a variety of commercial and industrial facilities and residential homes. Additionally, industrial facilities use electricity in the manufacturing process for

activities such as hydraulic pumping, air movement systems, electroplating, metal melting, drying and curing processes, and electric motor operation.

The use of cleaner types of energy is also an important aspect of reducing pollutant emissions. Electricity, ethanol, geothermal, LPG, methanol, natural gas, solar, and wind are considered clean fuels. The AQMP assumes that fuels which are cleaner and/or more efficient will be used, where appropriate, as an alternative to the high polluting fuels currently being used.

Issue

The primary issue with carrying out energy conservation actions is generating the initial capital for their creation and taking the necessary actions to implement them.

The following goals policies and actions will aid the City in conserving energy and reducing pollutant emissions which contribute to global warming.

GOALS, POLICIES, AND ACTIONS

GOAL G8-6

Reduce Energy Consumption.

To reduce emissions through reduced energy consumption.

POLICY P8-6.1

Energy Conservation.

Reduce energy consumption through energy conservation improvements and requirements.

ACTION A8-6.1.1

Energy Conservation Plan.

Develop a 5-year energy conservation plan which describes improvements to City buildings which will conserve energy or convert to cleaner fuels and include implementation of this plan in the City's annual budget.

ACTION A8-6.1.2

Energy Conservation Requirements.

Adopt an ordinance creating a program of local administrative practices to reduce local government energy demand 8% by January 1, 1994; 15% by the year 2000, and; 30% by the year 2010. (AQMP Control Measure No. 18.a.)

POLICY P8-6.2

Limit Water Heater Emissions.

To reduce emissions resulting from swimming pool water heaters and residential and commercial water heaters.

ACTION A8-6.2.1

Emission Reduction from Pool Heaters.

Adopt a regulation requiring an emission reduction from swimming pool water heaters. (AQMP Control Measure No. 18.a.)

ACTION A8-6.2.2

Emission Reduction From Water Heaters.

Adopt a regulation to require an emission reduction from residential and commercial water heaters. (AQMP Control Measure No. 18.a.)

POLICY P8-6.3

Recycle Wastes.

Promote local recycling of wastes and use of recycled materials.

ACTION A8-6.3.1

Waste Recycling.

Adopt a Source Reduction and Recycling Element to divert 25% of local solid waste requiring disposal by the year 1995 and 50% by the year 2000.

Implementation Strategy

Everyone wants cleaner air, a better place to live and work, and a healthy environment. The problem, however, as it relates to air quality, is that it will require a significant commitment by local government, business, and area residents to obtain cleaner air. The commitment comes in the form of modification to one's lifestyle. This type of change has the potential to be overwhelming.

The South Coast Air Quality Management District - Air Quality Management Plan, (and the control measures it contains) may appear overwhelming to area residents, business, and municipal government. The control measures noted in Appendix "A" of this document, in effect, ask local governments to use their land use regulatory powers to encourage the lifestyle change to obtain Federal air standards.

To successfully achieve the prescribed federal air quality standards, the City, local businesses, employees, and residents will all need to play a role in implementing these actions. The role of each party is separate and distinct but critical to our region being successful in this endeavor. The following are examples of the roles each of these parties may be asked to participate in.

City

Prepare an Air Quality Element; educate local businesses and residents about air quality issues; become a partner with local businesses and area residents to improve air quality within the air basin; require its

employees to rideshare; buy fuel efficient fleet vehicles; save energy in City buildings; lobby other jurisdictions to do their fair share in improving air quality in the basin, etc.

Local Business

Work with the City in a partnership role to implement the various actions within this element; educate employees about how they can affect air quality; try to hire local residents; create flexible work hours for employees; encourage employees to rideshare; where feasible, permit telecommuting; schedule truck deliveries in off-peak hours; assist in establishing and/or participate in a Transportation Management Association; and provide showers and lockers for employees who bike or walk to work, etc.

Local Residents

Educate themselves about how they can affect air quality; become ridesharers, walk or bike to local activities within the City; plan their non-work trips so they are efficient; become familiar with and use local transit; when considering a job change, look for employment close to home; support the City and local business efforts to improve air quality, etc.

Recognizing the commitment and resources needed to accomplish such a change, and the inevitable impacts facing the people who will make that first commitment. The following guidelines are included to assist City Departments in implementing the Air Quality Element actions.

Guidelines for the City's Implementation of the Air Quality Element actions:

1. In all applicable cases, actions shall be implemented by utilizing market incentives available to the City or business community to encourage compliance with specific activities. If a market incentive approach fails to yield the desired air quality benefit, a direct regulatory approach shall be pursued, as a last resort.
2. The City shall form a partnership with businesses and area residents to achieve the goal of cleaner air through cooperation, sharing of available resources, and creative solutions to action implementation.
3. The City shall function, to the maximum extent possible, as a liaison between the business community, South Coast Air Quality Management District, other air quality planning agencies, and agencies with funding sources in order to facilitate action implementation. This role may include examining funding sources, establishing incentives, providing information, and consulting area residents.

The City is committed to achieving the air quality improvements set forth in the South Coast Air Quality Management District's Air Quality Management Plan. However, the City realizes that achieving such a goal may have a burden on businesses and residents. The aforementioned implementation guidelines will assist the City in achieving district requirements while sharing the responsibility with area residents and local business/industry.

Implementation

- ▶ Government Organization, Roles and Responsibilities
- ▶ Ground Transportation
- ▶ Air Transportation
- ▶ Land Use
- ▶ Particulate Emissions
- ▶ Energy Conservation

AIR QUALITY ELEMENT IMPLEMENTATION

GOVERNMENT ORGANIZATION, ROLES AND RESPONSIBILITIES

ACTIONS	GOALS AND POLICIES				RESPONSIBLE AGENCY / DEPARTMENT *							TIMING		
	Goal G8-1		Air Quality Improvement		CD	PW	CS	MS	PD	FD	A		SBC	Other (specify)
	P8-1.1	P8-1.2	P8-1.3											
Coordinated Review. Action A8-1.1.1	X				X									On-going
AQMP Regional Financing. Action A8-1.1.2	X				X						X			On-going
Local Input. Action A8-1.1.3	X				X									1991
Implement Congestion Management Plan. Action A8-1.2.1		X				X								1992
Establish Regional Transportation Management Agencies. Action A8-1.2.2		X				X					X			On-going
Omnitrans/RTD - Transit Improvements. Action A8-1.2.3 (AQMP Crit Measure No. 2.g.)		X				X					X			On-going
Communication Network. Action A8-1.3.1			X								X			On-going
Lobby Other Entities to Implement AQMP. Action A8-1.3.2			X								X			On-going
<ul style="list-style-type: none"> * CD - Community Development Department PW - Public Works Department CS - Community Services Department MS - Management Services PD - Police Department FD - Chino Valley Fire District A - Administration SBC - San Bernardino County 														

AIR QUALITY ELEMENT IMPLEMENTATION

GOVERNMENT ORGANIZATION, ROLES AND RESPONSIBILITIES

ACTIONS	GOALS AND POLICIES				RESPONSIBLE AGENCY / DEPARTMENT *								TIMING	
	Goal G8-1		Air Quality Improvement		CD	PW	CS	MS	PD	FD	A	SBC		Other (specify)
	P8-1.4	P8-1.5												
Public Participation Programs. Action A8-1.4.1	X				X						X			On-going
Educate Local Businesses. Action A8-1.4.2	X				X						X			1992
Obtaining Public Input. Action A8-1.4.3	X				X									On-going
Homeowner's Association/Neighborhood Groups. Action A8-1.4.4	X				X						X			1992
Tier III Implementation. Action A8-1.5.1		X			X						X			On-going
Encourage Business/Research. Action A8-1.5.2		X			X						X			On-going
Support Creative Solutions. Action A8-1.5.3		X			X						X			On-going
Regional Cooperation. Action A8-1.5.4		X									X			On-going
* CD - Community Development Department PW - Public Works Department CS - Community Services Department MS - Management Services Department PD - Police Department FD - China Valley Fire District A - Administration SBC - San Bernardino County														

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AIR QUALITY ELEMENT IMPLEMENTATION

GROUND TRANSPORTATION

ACTIONS	GOALS AND POLICIES				RESPONSIBLE AGENCY / DEPARTMENT *								TIMING	
	Goal G8-2		Ground Transportation		CD	PW	CS	MS	PD	FD	A	SBC		Other (specify)
	P8-2.1	P8-2.2												
Neighborhood Services. Action A8-2.1.1	X				X									1993
On-Site Services. Action A8-2.1.2	X										X			1994 *
Trip Reduction Ordinance. Action A8-2.1.3 (AQMP Cntl Measure No. 1.a. & 1.b.)	X					X								1994 *
Compliance with SCAQMD AVR. Action A8-2.1.4 (AQMP Cntl Measure No. 2.a.)	X				X						X			1994/1995
Reduced Service During Stage 3 Smog Alerts. Action A8-2.1.5	X										X			1991 *
Trip Reduction Program. Action A8-2.1.6 (AQMP Cntl Measure No. 1.a. & 1.b.)	X										X			1994 *
Travel Demand Management Action A8-2.2.1 (AQMP Cntl Measure No. 2.b.)		X			X									1994 *
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AIR QUALITY ELEMENT IMPLEMENTATION

GROUND TRANSPORTATION

ACTIONS	GOALS AND POLICIES				RESPONSIBLE AGENCY / DEPARTMENT *								TIMING	
	Goal G8-2		Ground Transportation		CD	PW	CS	MS	PD	FD	A	SBC		Other (specify)
	P8-2.3	P8-2.4	P8-2.5											
Congestion Management Plan. Action A8-2.3.1	X					X								1992
Adopt CMP Ordinance. Action A8-2.3.2	X					X								1992
Truck Routing/Deliveries. Action A8-2.3.3 (AQMP Cnll Measure No. 3.a.)	X					X								1994
Restrict Trucks from Major Arterials. Action A8-2.3.4 (AQMP Cnll Measure No. 3.a.)	X					X								1994
Traffic Signal Improvements. Action A8-2.3.5 (AQMP Cnll Measure No. 4.)	X					X								1995
On-Street Parking During Peak Hours. Action A8-2.3.6 (AQMP Cnll Measure No. 2.b. & 4.)	X					X								1994
Surcharge for Truck Operations During Peak Periods. Action A8-2.3.7 (AQMP Cnll Measure No. 3.a.)	X					X					X			1994
(Note: Future actions may be included under this policy if fees are determined to be needed for implementation of other Air Quality actions.)		X												
Sub-Regional Transportation System. Action A8-2.5.1			X								X			1992
Auto Use Restrictions. Action A8-2.5.2 (AQMP Cnll Measure No. 2.e.)			X			X								1992
City Shuttle. Action A8-2.5.3			X								X			1994
<ul style="list-style-type: none"> • CD - Community Development Department • PW - Public Works Department • CS - Community Services Department • MS - Management Services Department • PD - Police Department • FD - Chino Valley Fire District • A - Administration • SBC - San Bernardino County 														

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11/19/91

Chapter VIII

Air Quality

AIR QUALITY ELEMENT IMPLEMENTATION

GROUND TRANSPORTATION

ACTIONS	GOALS AND POLICIES					RESPONSIBLE AGENCY / DEPARTMENT *							TIMING		
	Goal G8-2		Ground Transportation			CD	PW	CS	MS	PD	FD	A		SBC	Other (specify)
	P8-2.6	P8-2.7	P8-2.8	P8-2.9	P8-2.10										
Bike Trails. Action A8-2.6.1 (AQMP Cntl Measure No. 1.b.)	X					X		X							On-going
Merchant Transportation Incentives. Action A8-2.6.2 (AQMP Cntl Measure No. 2.d.)	X					X	X					X			1994
Bicycle Parking and Showers. Action A8-2.6.3 (AQMP Cntl Measure No. 1.b.)	X					X						X			1999
Rideshare Incentives in Public Parking Lots. Action A8-2.7.1 (AQMP Cntl Measure No. 2.b.)		X				X						X			1994
Limit Parking Supply by Zone. Action A8-2.7.2 (AQMP Cntl Measure No. 2.b.)		X				X	X								1994
Preferential Parking for Ridesharers. Action A8-2.7.3 (AQMP Cntl Measure No. 2.b.)		X				X	X								1992
Parking Cost Standards. Action A8-2.8.1 (AQMP Cntl Measure No. 2.b.)			X			X						X			1992
Emission Fee. Action A8-2.9.1				X		X						X			1994
Emission Surcharge. Action A8-2.9.2				X		X						X			1995
Support Tax Credit/Tax Benefit. Action A8-2.9.3				X								X			1995
Clean Fuel Electric Vehicles. Action A8-2.10.1					X		X					X			On-going 2000, 2010
MPG Purchase Limitation. Action A8-2.10.2					X	X			X			X			1992
* CD - Community Development Department MS - Management Services Department A - Administration PW - Public Works Department PD - Police Department SBC - San Bernardino County CS - Community Services Department FD - Chino Valley Fire District															

AIR QUALITY ELEMENT IMPLEMENTATION

AIR TRANSPORTATION

ACTIONS	GOALS AND POLICIES				RESPONSIBLE AGENCY / DEPARTMENT *							TIMING		
	Goal G8-3		General Aviation Emissions		CD	PW	CS	MS	PD	FD	A		SBC	Other (specify)
	P8-3.1	P8-3.2												
Cleaner Fuels. Action A8-3.1.1	X					X						X		1992
Airport Transportation Demand Management. Action A8-3.2.1		X			X	X						X		1992
<ul style="list-style-type: none"> • CD - Community Development Department • PW - Public Works Department • CS - Community Services Department • MS - Management Services Department • PD - Police Department • FD - Chino Valley Fire District • A - Administration • SBC - San Bernardino County 														

AIR QUALITY ELEMENT IMPLEMENTATION

LAND USE

ACTIONS	GOALS AND POLICIES				RESPONSIBLE AGENCY / DEPARTMENT *								TIMING	
	Goal G8-4		Efficient Land Use Pattern		CD	PW	CS	MS	PD	FD	A	SBC		Other (specify)
	P8-4.1	P8-4.2	P8-4.3											
Capital Improvement Plan. Action A8-4.1.1	X				X	X								1992
Economic Development Strategy. Action A8-4.1.2	X				X									1992
Coordinate Regional Jobs/Housing Balance. Action A8-4.1.3 (AQMP Cntl Measure No. 17.)	X				X									On-going/ 1992
Project Impacts. Action A8-4.2.1		X			X									1992
Draw From City Labor Pool. Action A8-4.2.2		X			X									1993
Growth Management Plan Performance. Action A8-4.2.3 (AQMP Cntl Measure No. 17.)		X			X		X			X				On-going/ 1994
New Jobs/Backbone Infrastructure. Action A8-4.2.4		X			X									1992
Mixed Use Development. Action A8-4.2.5 (AQMP Cntl Measure No. 1.b.)		X			X	X								1994
Localional Requirements for Sensllive Receptors. Action A8-4.3.1			X		X									1994
* CD - Community Development Department PW - Public Works Department CS - Community Services Department					MS - Management Services Department PD - Police Department FD - Chino Valley Fire District			A - Administration SBC - San Bernardino County						

AIR QUALITY ELEMENT IMPLEMENTATION

PARTICULATE EMISSIONS

ACTIONS	GOALS AND POLICIES				RESPONSIBLE AGENCY / DEPARTMENT *								TIMING	
	Goal G8-5 Reduce Particulate Emissions.				CD	PW	CS	MS	PD	FD	A	SBC		Other (specify)
	P8-5.1	P8-5.2	P8-5.3											
Street Sweeping. Action A8-5.1.1 (AQMP Cntl Measure No. 12.a.)	X					X								On-going
Control Particulate Emissions from Unpaved Roads. Action A8-5.1.2 (AQMP Cntl Measure No. 12.b.)	X					X								1994
Limit Dust. Action A8-5.1.3 (AQMP Cntl Measure No. 12.a.)	X				X	X								1994
Storage of Particulate Matter. Action A8-5.1.4 (AQMP Cntl Measure No. 12.a.)	X					X	X							1994
Control Emissions, Construction, and Demolition. Action A8-5.2.1 (AQMP Cntl Measure No. 12.a.)		X			X									1994
Particulate Emissions from Truck Hauling. Action A8-5.2.2 (AQMP Cntl Measure No. 12.a.)		X			X	X								1994
Note: No Actions approved at this time. Actions might be added at a later date.			X											
* CD - Community Development Department MS - Management Services Department A - Administration PW - Public Works Department PD - Police Department SBC - San Bernardino County CS - Community Services Department FD - Chino Valley Fire District														

AIR QUALITY ELEMENT IMPLEMENTATION

ENERGY CONSERVATION

ACTIONS	GOALS AND POLICIES				RESPONSIBLE AGENCY / DEPARTMENT *								TIMING	
	Goal G8-6		Energy Consumption		CD	PW	CS	MS	PD	FD	A	SBC		Other (specify)
	P8-6.1	P8-6.2	P8-6.3											
Energy Conservation Plan. Action A8-6.1.1	X						X							1994
Energy Conservation Requirements. Action A8-6.1.2 (AQMP Cntl Measure No. 18.a.)	X						X				X			1994
Emission Reduction from Pool Heaters. Action A8-6.2.1 (AQMP Cntl Measure No. 18.a.)		X			X									1999
Emission Reduction from Water Heaters. Action A8-6.2.2 (AQMP Cntl Measure No. 18.a.)		X			X									2006
Waste Recycling. Action A8-6.3.1			X								X			1993
* CD - Community Development Department MS - Management Services Department A - Administration PW - Public Works Department PD - Police Department SBC - San Bernardino County CS - Community Services Department FD - Chino Valley Fire District														

Glossary

Air Quality Management Plan (AQMP)

A comprehensive policy document that delineates goals, policies, pollution reduction strategies, and implementation responsibilities for improving air quality in the South Coast Air Basin.

Air Resources Board (ARB)

The State Agency which prepares and submits the State Implementation Plan (SIP) to the Environmental Protection Agency (EPA). The ARB is also the agency that reviews regional plans to ensure that Transportation Control Measures are taken to achieve air quality standards at the earliest practicable date. This Agency establishes emissions standards for mobile sources.

Average Vehicle Ridership (AVR)

The average amount of occupants for a vehicle over a period of time.

Basic Transportation Airport

An airport which primarily services aircraft for commercial and recreational use. Generally, commuter, local and itinerant aircraft visit such airports. Air carrier aircraft usually do not have access to Basic Transportation Airports.

California Clean Air Act (CCAA)

The State Legislation which requires all non-attainment air basins to develop new attainment plans to meet Federal and State air quality standards.

California Environmental Quality Act (CEQA)

State legislation which requires all governmental agencies at all levels to document and consider the environmental considerations of their actions.

CalTrans

State of California Department of Transportation (CalTrans) is the State Agency which oversees the State network of roadways and highways.

Carbon Monoxide (CO)

A colorless, odorless gas formed by the incomplete combustion of fuels. Carbon monoxide replaces oxygen in the blood and reduces its ability to transport oxygen to vital organs in the body.

Conformity Review

The process which ensures that local government actions and projects (i.e., planning, actions, permit activity, project approval, programming, or funding) do not prevent attainment of the National Ambient Air Quality Standards (NAAQS).

Congestion Management Plan (CMP)

A county-wide program which addresses congestion problems in a coordinated manner with other agencies in the county.

Control Measure

The nuts and bolts of the South Coast Air Quality Management Plan. Control measures are commitments to adopt rules and regulations to reduce pollutant emissions. There are 126 control measures in the Air Quality Management Plan, 17 of which are designated for local agency action.

District

A commonly-used abbreviation for the South Coast Air Quality Management District (SCAQMD).

Environmental Impact Report (EIR)

An informational document which provides public agencies and the public in general with detailed information about the effects which a proposed project is likely to have on the environment.

High Occupancy Vehicle (HOV) Lane

HOV lane on a highway or freeway which is restricted for use by vehicles carrying two or more passengers.

Memorandum of Understanding (MOU)

Mobile Sources

Emissions from on-road motor vehicles.

Oxides of Nitrogen (NOx)

Oxides of nitrogen are brownish gas that is formed in the atmosphere through a rapid reaction of the colorless gas nitric oxide (NO) with atmospheric oxygen. Oxides of nitrogen play an important role in visibility degradation within the basin. They are formed in the atmosphere from reactions involving NOx emissions from man-made combustion sources.

Oxides of Sulfur (SOx)

A colorless gas with a pungent irritating odor. It is created by the combustion of sulfur-containing fuel.

Ozone (O₃)

A secondary pollutant which is formed in the atmosphere through a reaction of reactive organic gases (ROG), nitrogen oxides (NOx), oxygen, and other hydrocarbon materials with sunlight.

Particulate Matter (PM)

Suspended particulates which included a complex mixture of man-made and natural substances including sulfates, nitrates, metals, elemental carbon, sea salt, soil organics and other materials.

Reactive Organic Gases (ROG)

Reactive organic gases are hydrocarbons, ROG emissions react with other pollutants in the presence of sunlight to form photochemical oxidants or ozone.

Regional Mobility Plan (RMP)

A comprehensive regional planning document for the Southern California Association of Governments (SCAG) region which provides specific means for recapturing and retaining the transportation mobility levels of 1984.

South Coast Air Quality Management District (SCAQMD)

The air pollution control district for the area which includes the County of Orange and the urbanized portions of Los Angeles, Riverside and San Bernardino Counties. (The agency's responsibilities as they pertain to conformity are detailed in Appendix C of this document.)

Southern California Association of Governments (SCAG)

The metropolitan planning organization for the six-county region which includes Imperial, Los Angeles, Orange, Riverside, San Bernardino and Ventura Counties. (The agency's responsibilities for conformity are detailed in Appendix C of this document.)

Transportation Control Measure (TCM)

Any demand management, systems management, facilities improvement, or technology-based measure (or mixture thereof) intended to influence choices of mode, time of day, or decisions whether to travel at all.

Transportation Demand Management (TDM)

Demand based techniques for reducing traffic congestion, such as ridesharing programs and flexible work schedules enabling employees to commute to and from work outside of peak hours.

Transportation Management Association (TMA)

An organization with its main purpose is to coordinate, among association members, Transportation Demand Management techniques to reduce traffic congestion.

Vehicle Miles Travelled (VMT)

The total miles traveled by all vehicles in a particular geographic area measured over a 24-hour period.

Bibliography

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San Bernardino County Regional Air Quality Plan, San Bernardino County/cities, March 1991. A regional plan prepared by San Bernardino County and certain cities within the county which includes goals, policies, and a menu of action programs that assist these agencies in complying with the Air Quality Management Plan in terms of bringing the Air district in compliance with Federal and State air quality standards.

San Bernardino County Regional Air Quality Plan, Technical Background Report, San Bernardino County/cities, March 1991. A report which describes the air quality condition in San Bernardino County.

San Bernardino County Regional Air Quality Plan, Socioeconomics Analysis of Selected Air Quality Measures, San Bernardino County/cities, March 1991. A socioeconomic analysis of the implementation of selected AQMP control measures.

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References

City of Chino

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- City of Rialto Rod Taylor
- City of San Bernardino Valerie Ross
- City of Upland Jeff Bloom
- City of Yucaipa John McMains

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Appendix

- A. SCAQMD - AQMP, Control Measure/Chino Air Quality Element Action Matrix
- B. Regional Air Quality Plan, San Bernardino County/Cities, Technical Background Report (under separate cover)
- C. Regional Air Quality Plan, San Bernardino County/Cities, Socioeconomics Analysis - Selected Air Quality Measures (under separate cover)

AIR QUALITY ELEMENT APPENDIX A

SCAQMD-AQMP Control Measures/Chino Air Quality Element Action Matrix

Chino General Plan

November 1991

Air Quality Management Plan (AQMP) Control Measure/
Chino Air Quality Element (CAQE) Action Matrix

AQMP CONTROL MEASURE	CAQE ACTION
1.a. Person Work Trip Reduction.	A8-2.1.3 Trip Reduction Ordinance. A8-2.1.6 Trip Reduction Program.
1.b. Non-Motorized Transportation.	A8-2.1.3 Trip Reduction Ordinance. A8-2.1.6 Trip Reduction Program. A8-2.6.1 Bike Trails. A8-2.6.3 Bicycle Parking and Showers.
2.a. Employer Ridesharing and Transit Incentives.	A8-1.2.2 Establish Regional Transportation Management Agencies. A8-2.1.4 Compliance with SCAQMD AVR. A8-2.9.3 Support Tax Credit/Tax Benefit.
2.b. Parking Management.	A8-2.2.1 Travel Demand Management. A8-2.3.6 On-Street Parking During Peak Hours. A8-2.7.1 Rideshare Incentives In Public Parking Lots. A8-2.7.2 Limit Parking Supply by Zone. A8-2.7.3 Preferential Parking for Ridesharers. A8-2.8.1 Parking Cost Standards.
2.d. Merchant Transportation Incentives.	A8-2.6.2 Merchant Transportation Incentives.
2.e. Auto Use Restrictions.	A8-2.5.2 Auto Use Restrictions.
2.f. HOV Facilities.	Not Applicable.
2.g. Transit Improvements.	A8-1.2.3 OmniTrans/RTD - Transit Improvements.
3.a. Truck Dispatching, Rescheduling and Rerouting.	A8-2.3.3 Truck Routing/Deliveries. A8-2.3.4 Restrict Trucks from Major Arterials. A8-2.3.7 Surcharge for Truck Operations During Peak Periods.
3.b. Diverting Port-Related Truck Traffic to Rail.	Not Applicable.
4. Traffic Flow Improvements.	A8-2.3.5 Traffic Signal Improvements. A8-2.3.6 On-Street Parking During Peak Hours.
5. Non-Recurrent Congestion.	Not Applicable.

APPENDIX "A"

Air Quality Management Plan (AQMP) Control Measure/
Chino Air Quality Element (CAQE) Action Matrix

AQMP CONTROL MEASURE	CAQE ACTION
6. Aircraft and Ground Service Vehicles.	Not Applicable.
7. Centralized Ground Power Systems.	Not Applicable.
8. Airport Ground Access.	Not Applicable.
9. Replacement of High Emitting Aircraft.	Not Applicable.
10. General Aviation Vapor Recovery.	Not Applicable.
11. Rail Consolidation to Reduce Grade Crossings.	Not Applicable.
12.a. Paved Roads.	A8-5.1.1 Street Sweeping. A8-5.1.3 Limit Dust. A8-5.1.4 Storage of Particulate Matter. A8-5.2.1 Control Emissions, Construction and Demolition. A8-5.2.2 Particulate Emissions from Truck Hauling.
12.b. Unpaved Roads and Parking Lots.	A8-5.1.2 Control Particulate Emissions from Unpaved Roads.
13. Freeway and Highway Capacity Enhancements.	Not Applicable.
14. Railroad Electrification.	Not Applicable.
16. High Speed Rail.	Not Applicable.
17. Growth Management.	A8-4.1.3 Coordinate Regional Job/Housing Balance. A8-4.2.3 Growth Management Plan Performance.
18.a. Local Government Energy Conservation.	A8-6.1.2 Energy Conservation Requirements. A8-6.2.1 Emission Reduction from Pool Heaters. A8-6.2.2 Emission Reduction from Water Heaters.

APPENDIX "A" (cont'd.)

REGIONAL AIR QUALITY PLAN
SAN BERNARDINO COUNTY/CITIES

BACKGROUND STATEMENT

The air quality in San Bernardino County results from a unique combination of factors; air flow patterns and emission sources, both local and those located through the region, results in some of the worst air quality in the nation. San Bernardino County regularly exceeds state and federal air quality standards for Ozone (O₃), Carbon Monoxide (CO), Nitrogen Dioxide (NO₂) and Particulate Matter (PM₁₀). Exceedances are acute during summer months when onshore wind patterns transport pollutants from the western portion of the South Coast Air Basin, notably Los Angeles and Orange Counties and combine with local sources. San Bernardino County records the most severe violations of air quality standards for Ozone and PM₁₀ in the summer months relative to the rest of the air basin.

REGULATORY FRAMEWORK

The Clean Air Act, promulgated in 1970 and amended twice thereafter (including the recent 1990 amendment), establishes the framework for modern air pollution control. The Act directs the Environmental Protection Agency (EPA) to establish ambient air standards for six pollutants: Ozone, Carbon Monoxide, Lead, Nitrogen Dioxide, Particulate Matter and Sulphur Dioxide. The standards (NAAQS) are divided into primary and secondary standards; the former are set to protect human health within an adequate margin of safety and the latter to protect environmental values such as plant and animal life.

According to the Act, states are required to submit a State Implementation Plans (SIP) for areas that exceed the NAAQS, or nonattainment areas. The SIP, which is reviewed and approved by the EPA, must demonstrate how the federal standards will be achieved. Failure to submit a plan or secure approval could lead to denial of federal funding and permits for such improvements as highway construction and sewage treatment plants. In cases where the SIP is submitted but fails to demonstrate achievement of the standards, the EPA is directed to prepare a Federal Implementation Plan.

In addition to the six pollutants regulated by federal legislation, the California Clean Air Act establishes standards for Hydrogen Sulphide, Sulphates and Vinyl Chloride. Responsibility for achieving these standards (which are more stringent than federal standards) is placed on the California Air Resources Board and local air pollution control districts. District plans for nonattainment areas must be designed to achieve a 5% annual reduction in emissions. The Air Quality Management Plan (AQMP) is, in turn, incorporated into the SIP.

With the aim of complying with all federal standards by 2007, the South Coast Air Quality Management District (SCAQMD) and Southern California Association of Governments (SCAG) jointly prepared the 1989 Air Quality Management Plan (AQMP). The Plan calls for implementation of rules and regulations by the Air Resources Board, the South Coast Air Quality Management District, the Environmental Protection Agency and Local Jurisdictions.

The AQMP calls upon local governments to achieve an 8% reduction regionwide in emissions from reactive organic gases and oxides of nitrogen. Specifically, local governments are asked to implement appropriate control measures contained in the AQMP to achieve this reduction. Several measures direct local government to adopt an Air Quality Element or its equivalent into its General Plan. If all of the applicable control measures are not implemented, the air quality standards cannot be achieved. In this event, the existing moratorium on location of stationary sources in the basin will be continue and federal funding and other permits may be denied until the standards are met.

In an effort to comply with federal and state regulations, and to improve air quality in the county and region, this Air Quality Element has been adopted.

REGIONAL AIR QUALITY PLAN
SAN BERNARDINO COUNTY/CITIES

Subtopic 2.6 **CLEANER FUELS**

Policy 2.6.1 **Support Legislation**

Promote state and federal legislation which would improve vehicle/transportation technology and which would establish differential pricing mechanisms to assess the true cost of emissions.

Programs:

2.6.1.1 Support legislation to stimulate the development of practical electric vehicles (15).

2.6.1.2 Support state legislation which would establish: - Emission Fees on gasoline products and Differential Registration Fees on motor vehicles according to the emission levels that they are designed to produce. - Include exploration of an option that imposes pollution fees on individual vehicles at time of mandated smog inspections, based on actual vehicle performance.

2.6.1.3 Support legislation which tightens the existing vehicle inspection program, both in terms of standards to be met and requirements for compliance.

Policy 2.6.2 **Institute Clean Fuel Systems**

Invest in clean fuel systems on new local government fleet vehicles.

Programs:

2.6.2.1 Institute clean fuel systems on new local government fleet vehicles (G-4).

TOPIC 3: AIR TRANSPORTATION

GOAL 3 Minimum feasible emissions from air carrier airports.

Policy 3.1 **Promote Improved Technology**

Promote requiring the best available technology to reduce emissions in aircraft fleet.

Programs:

3.1.1 Adopt/urge establishment of the best available technology and operational measures for aircraft and ground service vehicles (6).

3.1.2 Support phasing out of Stage II aircraft and the earliest possible transition to Stage III aircraft for operation within the Air Basin (9).

Policy 3.2 **Promote Centralized Ground Power**

Promote installation of centralized ground power systems at existing air carrier airports.

¹ Programs which further more than one air quality policy.

REGIONAL AIR QUALITY PLAN
SAN BERNARDINO COUNTY/CITIES

Policy 2.3.2 Expand Transit in the Air Basin

Promote expansion of all forms of transit in the urbanized portions of San Bernardino, Orange, Los Angeles and Riverside Counties.

Programs:

- 2.3.2.1 Influence the expansion of intraregional commuter and main line rail services, particularly those linking with destinations in San Bernardino County.
- 2.3.2.2 Support public transit providers in efforts to increase funding for transit improvements to supplement other means of travel (2.g).¹
- 2.3.2.3 Jointly support efforts to establish a regionwide bus pass.

Subtopic 2.4 NON-MOTORIZED MEANS OF TRANSPORTATION

Policy 2.4.1 Promote Non-Motorized Transportation

Provide bicycle and pedestrian pathways to encourage non-motorized trips.

Programs:

- 2.4.1.1 Develop standards and guidelines for support facilities to incorporate into development plans for increased bicycle and pedestrian routes to link appropriate activity centers to nearby residential development.

Subtopic 2.5 PARKING MANAGEMENT

Policy 2.5.1 Manage Parking Supply

Manage parking supply to discourage auto use, while ensuring that economic development goals will not be sacrificed.

Programs:

- 2.5.1.1 Establish short and long-term parking management strategies at governmental and private facilities in ways that discourage single occupancy vehicle usage and reward high vehicle occupancy rates without placing the County at a competitive disadvantage.¹

Policy 2.5.2 Encourage Market Incentives/Disincentives

Promote a regional approach to increasing parking costs in order to discourage low vehicle occupancy.

Programs:

- 2.5.2.1 Establish parking management strategies for governmental and private facilities in ways that discourage single occupancy vehicle usage and reward high vehicle occupancy rates without placing the County at an economic disadvantage in enticing jobs.¹

¹ Programs which further more than one air quality policy.

REGIONAL AIR QUALITY PLAN
SAN BERNARDINO COUNTY/CITIES

Programs:

2.2.1.1 Jointly, through the County, SANBAG, and SCAG, participate with adjacent counties in expanding HOV lanes on the freeway system within those counties.

Policy 2.2.3 Integrate Congestion Management Program

Coordinate overlapping components of the State mandated Congestion Management Program and the Regional Air Quality Plan.

Programs:

2.2.3.1 Participate with SANBAG in defining and implementing a Congestion Management Program for San Bernardino County to insure appropriate coordination with air quality planning.

Policy 2.2.4 Establish Congestion Fees

Promote market based incentives and disincentives to relieve peak hour/peak direction congestion within highly congested travel corridors.

Programs:

2.2.4.1 Cooperatively initiate a pilot program to explore, jointly with Los Angeles, Orange and Riverside counties, methods and workability of Congestion Fees for peak hour/peak direction use to be levied within highly congested travel corridors, particularly those which generate emissions transported to San Bernardino County.

Subtopic 2.3 EXPANDED TRANSIT SYSTEMS AND SERVICES

Policy 2.3.1 Expand Transit In the County

Cooperate in efforts to expand bus, rail and other forms of transit in the portion of the South Coast Air Basin within San Bernardino.

Programs:

2.3.1.1 Participate with public transit providers serving San Bernardino County in a cooperative program to increase transit services with existing equipment and expand services through transit facility improvements.

2.3.1.2 Coordinate with public transit providers to increase funding for transit improvements to supplement other means of travel (2.g).¹

2.3.1.3 Plan for intraregional commuter and main line rail service development including convenience facilities at rail stops.

2.3.1.4 Develop design standards that promote access to transit facilities.

¹ Programs which further more than one air quality policy.

REGIONAL AIR QUALITY PLAN
SAN BERNARDINO COUNTY/CITIES

Subtopic 2.1 **AUTO USE**

Policy 2.1.1 **Eliminate Vehicle Trips**

Use incentives, regulations and Transportation Demand Management in cooperation with other jurisdictions in the South Coast Air Basin to eliminate vehicle trips which would otherwise be made.

Programs:

- 2.1.1.1 Establish and implement a Transportation Demand Management Program.¹
- 2.1.1.2 Define and implement auto limitation procedures in selected areas and at selected times, provided that alternative transportation modes are available.¹
- 2.1.1.3 Establish incentives and regulations to eliminate work trips.¹

Policy 2.1.2 **Reduce Vehicle Miles Traveled**

Use incentives, regulations and Transportation Demand Management in cooperation with other jurisdictions in the South Coast Air Basin to reduce the vehicle miles traveled for auto trips which still need to be made.

Programs:

- 2.1.2.1 Establish and implement a Transportation Demand Management Program.¹
- 2.1.2.2 Establish and maintain telecommunications strategies to reduce the length of auto trips.
- 2.1.2.3 Define and implement auto limitation procedures in selected areas and at selected times, provided that alternative transportation modes are available.¹

Subtopic 2.2 **CONGESTION MANAGEMENT**

Policy 2.2.1 **Modify Work Schedules**

Promote and establish modified work schedules which reduce peak period auto travel.

Programs:

- 2.2.1.1 Establish incentives and regulations to spread work trips over a longer period to reduce peak period congestion.¹

Policy 2.2.2 **Establish HOV Lanes**

Participate in efforts to achieve increased designation, construction, and operation of HOV lanes on freeways in Los Angeles, Orange, Riverside and San Bernardino counties.

¹ Programs which further more than one air quality policy.

REGIONAL AIR QUALITY PLAN
SAN BERNARDINO COUNTY/CITIES

- 1.2.3 Establish and maintain an implementation/monitoring system devised as part of the Air Quality Plan preparation. Integrate with monitoring and reporting systems required for purposes which overlap with the Air Quality Plan.

Policy 1.3 Affect Source Jurisdictions

Cooperate actively with Los Angeles, Orange and Riverside counties to comprehensively improve air quality at the emission source.

Programs:

- 1.3.1 Jointly establish a communication network with key elected officials and staff involved in air quality planning in Los Angeles, Orange and Riverside counties as the basis for identifying and implementing parallel measures of mutual benefit.

Policy 1.4 Encourage Community Participation

Involve environmental groups, the business community, special interests and the general public in the formulation and implementation of programs which effectively reduce air borne pollutants.

Programs:

- 1.4.1 Design and conduct efforts to involve the public and affected/interested parties in the adoption of local air quality plans and implementation of air quality improvement programs.
- Conduct Public Forums
 - Establish Communication and Education Programs
 - Make written briefs available locally
 - Conduct Planning Commission/City Council public workshops
 - Utilize a variety of media forms to maximize citizen involvement

Policy 1.5 Support Innovative Approaches

Advocate and support innovative strategies to improve air quality.

Programs:

- 1.5.1 Support new approaches to improving air quality through:
- Supporting legislation;
 - Cooperating with regional bodies;
 - Establishing pilot programs; and
 - Funding and/or participating in private/public partnerships.

TOPIC 2: GROUND TRANSPORTATION

GOAL 2 A diverse and efficiently operated ground transportation system which generates the minimum feasible pollutants.

¹ Programs which further more than one air quality policy.

REGIONAL AIR QUALITY PLAN
SAN BERNARDINO COUNTY/CITIES

Principles

1. Air Quality and Economic Growth

Achieve air quality improvements in such a way that continued economic growth can be sustained.

2. Market Incentives and Regulations

Achieve necessary air quality related life style and economic changes through market incentives where feasible and through regulatory measures where necessary.

GOALS, POLICIES AND PROGRAMS

Because the air quality problem is larger than any one jurisdiction, this Air Quality Element includes goals, policies and programs which have been accepted by the fifteen cities in the San Bernardino County portion of the South Coast Air Basin. These consensus goals, policies and programs provide a common foundation for coordinated action.

TOPIC 1: GOVERNMENT ORGANIZATION, ROLES & RESPONSIBILITIES

GOAL 1 Effective coordination of air quality improvement within the portion of the South Coast Air Basin in San Bernardino County and improved air quality through reductions in pollutants from Orange and Los Angeles counties.

Policy 1.1 Establish Coordinated Approach

Coordinate with other jurisdictions in San Bernardino County to establish parallel air quality plans and implementation programs.

Programs:

1.1.1 Adopt local air quality plans based on the San Bernardino County/Cities Regional Air Quality Plan.

1.1.2 Establish an ongoing air quality implementation and project referral process within the San Bernardino portion of the South Coast Air Basin, adapting it as necessary to local circumstances, resources and procedures.

Policy 1.2 Integrate With Related Programs

Coordinate a process to integrate related functional programs' implementation, monitoring and reporting.

Programs:

1.2.1 Establish a coordination process for relating parallel actions undertaken as part of other regional or countywide plans.

1.2.2 Participate with SANBAG in defining and implementing a Congestion Management Program for San Bernardino County.

REGIONAL AIR QUALITY IMPLEMENTATION PLAN
SAN BERNARDINO COUNTY/CITIES

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TOPIC 2: GROUND TRANSPORTATION		
GOAL	POLICIES	PROGRAMS AND ACTION OPTIONS
SUBTOPIC 5: PARKING MANAGEMENT		
A diverse and efficiently operated ground transportation system which generates the minimum feasible pollutants.	<u>Manage Parking Supply</u> 1. Manage parking supply to discourage auto use, while ensuring that economic development goals will not be sacrificed.	1. Establish short and long term parking management strategies for governmental and private facilities that discourage single occupancy vehicle usage and reward high vehicle occupancy rates without placing the County at an economic disadvantage in enticing jobs by means such as: <ul style="list-style-type: none"> • Reducing or redirecting parking supply. • Creating Parking "Banks" of landscaping and other less intensive land uses which could be used for parking in the future or could be developed with a more intensive land use provided the tenant/owner effectively reduces the demand for parking (through Transportation Demand Management, Regulation XV programs, increased parking cost, etc.).
A diverse and efficiently operated ground transportation system which generates the minimum feasible pollutants.	<u>Encourage Market Incentives/Disincentives</u> 2. Promote a regional approach to increasing parking costs in order to discourage low vehicle occupancy.	1. Establish parking management strategies for governmental and private facilities that discourage single occupancy vehicle usage and reward high vehicle occupancy rates without placing the County at an economic disadvantage in enticing jobs by means such as: <ul style="list-style-type: none"> • Recapturing parking costs through: establish fees; single occupant surcharges; reduced employee subsidized parking; and increased parking enforcement.
SUBTOPIC 6: CLEANER FUELS		
A diverse and efficiently operated ground transportation system which generates the minimum feasible pollutants.	<u>Support Legislation</u> 1. Promote state and federal legislation which would improve vehicle/transportation technology and which would establish differential pricing mechanisms to assess the true cost of emissions.	1. Support legislation to stimulate the development of practical electric vehicles (15). 2. Support state legislation which would establish: 1) Emission Fees on gasoline products and Differential Registration fees on motor vehicles according to the emission levels that they are designed to produce. Include exploration of an option that imposes pollution fees on individual vehicles at the time of mandated smog inspection, based on actual vehicle performance. 3. Support legislation which tightens the existing vehicle inspection program, both in terms of standards to be met and requirements for compliance.
	<u>Institute Clean Fuel Systems</u> 2. Invest in clean fuel systems on new local government fleet vehicles.	1. Institute clean fuel systems on new local government fleet vehicles (G 4).

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¹ Programs which further more than one air quality policy

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**REGIONAL AIR QUALITY IMPLEMENTATION PLAN
SAN BERNARDINO COUNTY/CITIES**

9-15-04 8:54AM

TOPIC 2: GROUND TRANSPORTATION		
GOAL	POLICIES	PROGRAMS AND ACTION OPTIONS
SUBTOPIC 2: CONGESTION MANAGEMENT (Continued)		
A diverse and efficiently operated ground transportation system which generates the minimum feasible pollutants.	<u>Integrate Congestion Management Program</u> 3. Coordinate overlapping components of the State mandated Congestion Management Program and the Regional Air Quality Plan.	1. Participate with SANBAG in defining and implementing a Congestion Management Program for San Bernardino County to insure appropriate coordination with air quality planning.
	<u>Establish Congestion Fees</u> 4. Promote market based incentives and disincentives to relieve peak hour/peak direction congestion within highly congested travel corridors.	1. Cooperatively initiate a pilot program to explore, jointly with Los Angeles, Orange and Riverside counties, methods and workability of Congestion Fees for peak hour/peak direction use to be levied within highly congested travel corridors, particularly those which generate emissions transported to San Bernardino County.
SUBTOPIC 3: EXPANDED TRANSIT SYSTEMS AND SERVICES		
A diverse and efficiently operated ground transportation system which generates the minimum feasible pollutants.	<u>Expand Transit in the County</u> 1. Cooperate in efforts to expand bus, rail and other forms of transit in the portion of the South Coast Air Basin within San Bernardino.	1. Participate with public transit providers serving San Bernardino County in a cooperative program to increase transit services with existing equipment and expand services through transit facility improvements. 2. Coordinate with public transit providers to increase funding for transit improvements to supplement other means of travel (2.g). ¹ 3. Plan for intraregional commuter and main line rail service development including convenience facilities at rail stops through such means as: • Intensifying planned land uses in the vicinity of transit stops. • Consolidating parking facilities to support transit as well as adjacent uses. 4. Develop design standards that promote access to transit facilities.
	<u>Expand Transit in the Air Basin</u> 2. Promote expansion of all forms of transit in the urbanized portions of San Bernardino, Orange, Los Angeles and Riverside Counties.	1. Influence the expansion of intraregional commuter and main line rail services, particularly those linking with destinations in San Bernardino County. 2. Support public transit providers in efforts to increase funding for transit improvements to supplement other means of travel (2.g). ¹ 3. Jointly support efforts to establish a regionwide bus pass.
SUBTOPIC 4: NON-MOTORIZED MEANS OF TRANSPORTATION		
A diverse and efficiently operated ground transportation system which generates the minimum feasible pollutants.	<u>Promote Non-Motorized Transportation</u> 1. Provide for bicycle and pedestrian pathways to encourage non-motorized trips.	1. Develop standards and guidelines to incorporate into development plans for increased bicycle and pedestrian routes and support facilities to link appropriate activity centers to nearby residential development.

¹ Programs which further more than one air quality policy.

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REGIONAL AIR QUALITY IMPLEMENTATION PLAN
SAN BERNARDINO COUNTY/CITIES

TOPIC 2: GROUND TRANSPORTATION		
GOAL	POLICIES	PROGRAMS AND ACTION OPTIONS
SUBTOPIC 1: AUTO USE		
A diverse and efficiently operated ground transportation system which generates the minimum feasible pollutants.	Reduce vehicle miles traveled (Continued)	<p>2. Establish and maintain telecommunications strategies to reduce the length of auto trips through such actions as:¹</p> <ul style="list-style-type: none"> Implementing teleconferencing and telecommuting programs in public agencies (1b) Requiring teleconferencing and telecommuting for private employers with more than 25 employees at a single location. Apply to existing businesses at license renewal times; to new businesses at project approval or permit stage (1b). <p>3. Define and implement auto limitation procedures in selected areas and at selected times, provided that alternative transportation modes are available, by (2c):¹</p> <ul style="list-style-type: none"> Establishing regulations and procedures to limit direct auto access: <ul style="list-style-type: none"> To special event centers; and In auto-free zones during peak periods.
	SUBTOPIC 2: CONGESTION MANAGEMENT	
A diverse and efficiently operated ground transportation system which generates the minimum feasible pollutants.	<p><u>Modify Work Schedules</u></p> <p>1. Promote and establish modified work schedules which reduce peak period auto travel</p>	<p>1. Establish incentives and regulations to spread work trips over a longer period to reduce peak period congestion, including such actions as (1a):¹</p> <ul style="list-style-type: none"> Implementing staggered, flexible and compressed work schedules in public agencies. Requiring work schedule flexibility programs for employers with more than 25 employees at a single location. Apply to existing businesses at license renewal time; to new businesses at project approval or permit stage.
	<p><u>Establish HOV lanes</u></p> <p>2. Participate in efforts to achieve increased designation, construction, and operation of HOV lanes on freeways in Los Angeles, Orange, Riverside and San Bernardino Counties.</p>	<p>1. Jointly, through the County, SANBAG, and SCAG participate with adjacent counties in expanding HOV lanes on the freeway system within those counties by:</p> <ul style="list-style-type: none"> Initiating an HOV task force to work with CALTRANS in implementing HOV lanes within the urbanized and urbanizing portions of San Bernardino, Orange, Los Angeles and Riverside counties.

¹ Programs which further more than one air quality policy

**REGIONAL AIR QUALITY IMPLEMENTATION PLAN
SAN BERNARDINO COUNTY/CITIES**

9-15-04 8:54AM

TOPIC 2: GROUND TRANSPORTATION		
GOAL	POLICIES	PROGRAMS AND ACTION OPTIONS
SUBTOPIC 1: AUTO USE		
<p>A diverse and efficiently operated ground transportation system which generates the minimum feasible pollutants.</p>	<p><u>Eliminate Vehicle Trips</u></p> <p>1. Use incentives, regulations and Transportation Demand Management in cooperation with other jurisdictions in the South Coast Air Basin to eliminate vehicle trips which would otherwise be made.</p>	<p>1. Establish and implement a Transportation Demand Management Program through actions such as:</p> <ul style="list-style-type: none"> • Requiring TMA/TMO establishment for large employers and commercial/industrial complexes. Apply to new businesses at project approval or permit stage (2.a). • Implementing employee rideshare and transit incentives in public agencies (2.a). • Requiring employee rideshare and transit incentives for employers with more than 25 employees at a single location. Apply to existing businesses at license renewal time; to new businesses at project approval or permit stage (2.a). • Participating in cooperative efforts to establish legislation affording incentives for purchase of Vanpools (2.c). • Participating in the design and establishment of incentives which would eliminate vehicle trips. • Implementing teleconferencing and telecommuting programs in public agencies (1.b). • Requiring teleconferencing and telecommuting for private employers with more than 25 employees at a single location. Apply to existing businesses at license renewal time; to new businesses at project approval or permit stage (1.b). • Participating with SANBAG to develop a private/public telecommunication center in San Bernardino County. <p>2. Define and implement auto limitation procedures in selected areas and at selected times, provided that alternative transportation modes are available, by:</p> <ul style="list-style-type: none"> • Establishing regulations and procedures to limit direct auto access (2.e):¹ <ul style="list-style-type: none"> - To special event centers; and - In auto-free zones during peak periods. <p>3. Establish incentives and regulations to eliminate work trips including such actions as:</p> <ul style="list-style-type: none"> • Implementing staggered, flexible and compressed work schedules in public agencies (1.a)¹. • Requiring work schedule flexibility programs for employers with more than 25 employees at a single location. Apply to existing businesses at license renewal time; to new businesses at project approval or permit stage (1.a)¹.
	<p><u>Reduce vehicle miles traveled</u></p> <p>2. Use incentives, regulations and Transportation Demand Management in cooperation with other jurisdictions in the South Coast Air Basin to reduce the vehicle miles traveled for auto trips which still need to be made.</p>	<p>1. Establish and implement a Transportation Demand Management Program through actions such as:</p> <ul style="list-style-type: none"> • Requiring TMA/TMO establishment for large employers and commercial complexes. Apply to new businesses at project approval or permit stage (2.a). • Implementing employee rideshare and transit incentives in public agencies (2.a). • Requiring employee rideshare and transit incentives for employers with more than 25 employees at a single location. Apply to existing businesses at license renewal time; to new businesses at project approval or permit stage (2.a). • Participating in cooperative efforts to establish legislation providing incentives for purchase of Vanpools (2.c). • Participating in the design and establishment of incentives which would reduce vehicle miles traveled.

¹ Programs which further exceed than use air quality policy

-2853-

Item No. E.3

09/15/2004 09:07AM

18/25

REGIONAL AIR QUALITY IMPLEMENTATION PLAN
SAN BERNARDINO COUNTY/CITIES

9-15-04 8:54AM

TOPIC 1: GOVERNMENT ORGANIZATION, ROLES & RESPONSIBILITIES		
GOAL	POLICIES	PROGRAMS AND ACTION OPTIONS
<p>Effective coordination of air quality improvement within the portion of the South Coast Air Basin in San Bernardino County and improved air quality through reductions in pollutants from Orange and Los Angeles counties.</p>	<p><u>Support Innovative Approaches</u> 5. Advocate and support innovative strategies to improve air quality.</p>	<p>1. Support new approaches to improving air quality through:</p> <ul style="list-style-type: none"> • Supporting legislation; • Cooperating with regional bodies; • Establishing pilot programs; and • Funding and/or participating in private/public partnerships <p>Potential actions could include:</p> <ul style="list-style-type: none"> • Supporting legislation which would authorize imposition of consumer product Emission Fees, either at retail outlets or manufacturing points; • Instituting Time of Day, Seasonal and Place Control Measures; • Implementing an Auto Buy-Back Program; • Creating an Emissions Reduction Trust to administer emission offsets; • Investigating the feasibility of Highway Electrification and Automation; and • Supporting state enabling legislation to reassess the equitable distribution of property and sales tax revenues.

09/15/2004 09:07AM

**REGIONAL AIR QUALITY IMPLEMENTATION PLAN
SAN BERNARDINO COUNTY/CITIES**

9-15-04 8:54AM

GOALS, POLICIES, PROGRAMS AND ACTION OPTIONS

TOPIC 1: GOVERNMENT ORGANIZATION, ROLES & RESPONSIBILITIES		
GOAL	POLICIES	PROGRAMS AND ACTION OPTIONS
<p>Effective coordination of air quality improvement within the portion of the South Coast Air Basin in San Bernardino County and improved air quality through reductions in pollutants from Orange and Los Angeles counties.</p>	<p><u>Establish Coordinated Approach</u> 1. Coordinate with other jurisdictions in San Bernardino County to establish parallel air quality plans and implementation programs.</p>	<p>1. Adopt local air quality plans based on the San Bernardino County/Cities Regional Air Quality Plan. 2. Establish an ongoing air quality implementation and project referral process within the San Bernardino portion of the South Coast Air Basin, adapting it as necessary to local circumstances, resources and procedures.</p>
	<p><u>Integrate With Related Programs</u> 2. Coordinate a process to integrate related functional programs' implementation, monitoring and reporting.</p>	<p>1. Establish a coordination process for relating parallel and implementive actions undertaken as part of other regional or countywide plans. 2. Participate with SANBAG in defining and implementing a Congestion Management Program for San Bernardino County.¹ 3. Establish and maintain an implementation/monitoring system devised as part of the Air Quality Plan preparation. Integrate with monitoring and reporting systems required for purposes which overlap with the Air Quality Plan.</p>
	<p><u>Affect Source Jurisdictions</u> 3. Cooperate actively with Los Angeles, Orange and Riverside counties to comprehensively improve air quality at the emission source.</p>	<p>1. Jointly establish a communication network with key elected officials and staff involved in air quality planning in Los Angeles, Orange and Riverside counties as the basis for identifying and implementing parallel measures of mutual benefit.</p>
	<p><u>Encourage Community Participation</u> 4. Involve environmental groups, the business community, special interests and the general public in the formulation and implementation of programs which effectively reduce air borne pollutants.</p>	<p>1. Design and conduct efforts to involve the public and affected/interested parties in the adoption of local air quality plans and implementation of air quality improvement programs, including:</p> <ul style="list-style-type: none"> • Conduct Public Forums • Establish Communication and Education Programs • Make written briefs available locally • Conduct Planning Commission/City Council public workshops • Utilize a variety of media forms to maximize citizen involvement

¹ Programs which further occur than use air quality policy

-2855-

Item No. E.3

09/15/2004 09:07AM

11
16 / 25

REGIONAL AIR QUALITY IMPLEMENTATION PLAN
 SAN BERNARDINO COUNTY/CITIES

GOALS, POLICIES, PROGRAMS AND ACTION OPTIONS

Revised November 29, 1990

REGIONAL AIR QUALITY PLAN	
PURPOSE	PRINCIPLES
Achievement of state and federal air quality standards within established schedules in the South Coast Air Quality Management Plan and maintenance of air quality standards at prescribed levels once they are achieved.	<u>Air Quality and Economic Growth</u> 1. Achieve air quality improvements in such a way that continued economic growth can be sustained.
	<u>Market Incentives and Regulations</u> 2. Achieve necessary air quality related life style and economic changes through market incentives where feasible and through regulatory measures where necessary.

REGIONAL AIR QUALITY PLAN
SAN BERNARDINO COUNTY/CITIES

Policy 5.2 Reduce Emissions from Building Materials/Methods

Reduce emissions from building materials and methods which generate excessive pollutants.

Programs:

- 5.2.1 Adopt incentives, regulations and procedures to prohibit the use of building materials and methods which generate excessive pollutants (F-9).

TOPIC 6: ENERGY CONSERVATION

GOAL 6 Reduced emissions through reduced energy consumption.

Policy 6.1 Energy Conservation

Reduce energy consumption through conservation improvements and requirements.

Programs:

- 6.1.1 Implement plans and programs to phase in energy conservation improvements through the annual budget process (18.a).
- 6.1.2 Adopt incentives and regulations to enact energy conservation requirements for private development.

Policy 6.2 Limit Water Heater Emissions

Reduce water heating emissions resulting from swimming pool heaters and residential and commercial water heaters.

Programs:

- 6.2.1 Adopt incentives and regulations to reduce emissions from swimming pool heaters (d-4).
- 6.2.2 Adopt incentives and regulations to reduce emissions from residential and commercial water heating (d-5).

Policy 6.3 Recycle Wastes

Promote local recycling of wastes and use of recycled materials.

Programs:

- 6.3.1 Implement provisions of AB 939 and adopt incentives, regulations and procedures to specify local recycling requirements (18.b).

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¹ Programs which further more than one air quality policy.

REGIONAL AIR QUALITY PLAN
SAN BERNARDINO COUNTY/CITIES

- 4.2.4 Develop and adopt an agreement among the participating jurisdictions as to mutually acceptable approaches to improve and maintain jobs/housing balance.

Policy 4.3 Protect Sensitive Receptors

Support a regional approach to regulating the location and design of land uses which are especially sensitive to air pollution.

Programs:

- 4.3.1 Participate with the SCAQMD in jointly formulating appropriate standards for regulating the location and protection of sensitive receptors (schools, day care facilities, hospitals and the like) from excessive and hazardous emissions.

Policy 4.4 Integrate Planning Process

Integrate air quality planning with the land use and transportation process.

Programs:

- 4.4.1 Locate and design new development in a manner that will minimize direct and indirect emission of air contaminants.

TOPIC 5: PARTICULATE EMISSIONS

- GOAL 5** The minimum practicable particulate emissions from the construction and operation of roads and buildings.

Policy 5.1 Control Dust

Reduce particulate emissions from roads, parking lots, construction sites and agricultural lands.

Programs:

- 5.1.1 Adopt incentives, regulations and procedures to manage paved roads so they produce the minimum practicable level of particulates (12.a).
- 5.1.2 Adopt incentives, regulations and procedures to minimize particulate emissions during road, parking lot and building construction (f-4).
- 5.1.3 Adopt incentives, regulations and procedures to control particulate emissions from unpaved roads, drives, vehicle maneuvering areas and parking lots (12.b).
- 5.1.4 Adopt incentives, regulations and procedures to limit dust from agricultural lands and operations (where applicable) (E-3).

¹ Programs which further more than one air quality policy.

REGIONAL AIR QUALITY PLAN
SAN BERNARDINO COUNTY/CITIES

Programs:

- 3.2.1 Adopt/urge establishment of requirements for centralized ground power systems to be installed and used as soon as practicable at existing air carrier airports (7).

Policy 3.3 Promote Improved Ground Access

Promote conditioning of air carrier airports upon inclusion of plans for improved ground access.

Programs:

- 3.3.1 Adopt/urge establishment of an ordinance requiring air carrier airport operators to obtain permits based on approved plans for trip reduction, facility design and access improvements (8).

TOPIC 4: LAND USE

- Goal 4** A pattern of land uses which can be efficiently served by a diversified transportation system and land development projects which directly and indirectly generate the minimum feasible air pollutants (17).

Policy 4.1 Manage Growth

Manage growth by insuring the timely provision of infrastructure to serve new development.

Programs:

- 4.1.1 Incorporate phasing policies and requirements in general plans and development plans to achieve timely provision of infrastructure (particularly transportation facilities) to serve development.

Policy 4.2 Balance Growth

Improve the balance between jobs and housing in order to create a more efficient urban form.

Programs:

- 4.2.1 Improve jobs/housing balance through new development and redevelopment project reviews and actions.
- 4.2.2 Improve jobs/housing balance at a subregional level in relation to major activity centers as new development occurs.
- 4.2.3 Continue support for and consider expansion of the CLOUT demonstration project to incorporate: incentive oriented tax credits; loan programs; small business development programs; and complementary land use policies, all aimed at improving the jobs/housing balance in the western San Bernardino/eastern Los Angeles Counties area.

¹ Programs which further more than one air quality policy.

County of Riverside General Plan

Air Quality Element



Fugitive Dust - Dust particles that are introduced into the air through certain activities such as soil cultivation, off-road vehicles, or any vehicles operating on open fields or dirt roadways.

Lead

Lead is a gray-white metal that is soft, malleable, and resistant to corrosion. Sources of lead resulting in concentrations in the air include industrial sources and weathering of soils, followed by fugitive dust emissions. Health effects from exposure to lead include brain and kidney damage, learning disabilities, seizures and death. Fetuses, infants and children are more sensitive than others to the adverse effects of lead exposure. Exposure to low levels of lead can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands and a lower intelligence quotient.

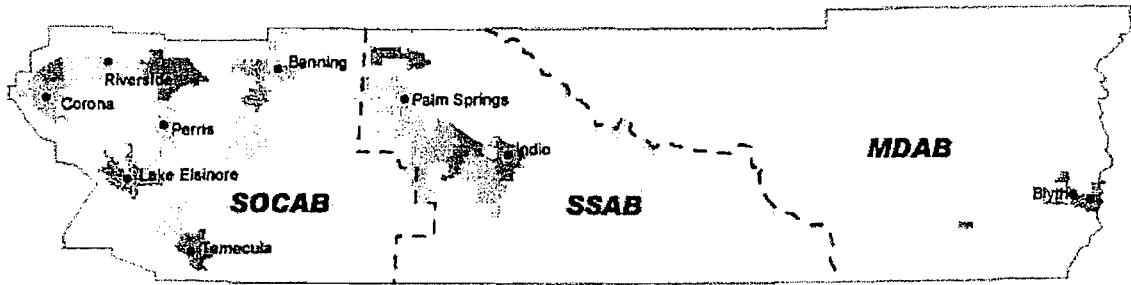
The SOCAB, SSAB and MDAB are all designated as attainment areas for both federal and state lead standards.


Particulate Matter

Particulate matter is the term used for a mixture of solid particles and liquid droplets found in the air. Coarse particles (larger than 2.5 but smaller than 10 micrometers, or PM_{10}) come from a variety of sources, including windblown dust and grinding operations. Fine particles (less than 2.5 micrometers, or $PM_{2.5}$) often come from fuel combustion, power plants and diesel buses and trucks. Fine particles can also be formed in the atmosphere through chemical reactions. PM_{10} and its health affects are discussed in greater detail later in the Particulate Matter section of this Element.

The SOCAB and SSAB are designated as non-attainment areas for both state and federal PM_{10} . The MDAB is designated as a non-attainment area for state PM_{10} standards, but as an attainment unclassified area for Federal standards (after meeting attainment standards, the MDAQMD discontinued monitoring efforts; consequently it cannot be given full attainment status).

The following table summarizes the attainment status for these six pollutants within each of the three air quality basins covering Riverside County.

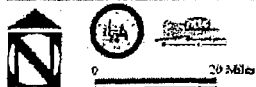


 Air Basin Boundary
 SOCAB - South Coast Air Basin
 SSAB - Salton Sea Air Basin
 MDAB - Mojave Desert Air Basin

Source Information: SCQIAD
 The oldest data shown on this map is 1990

The County of Riverside or the RCP consultants have no reason or intention to believe that this map contains any inaccuracies, defects or misinformation. The County of Riverside and the RCP consultants assume no warranties or legal responsibility, however, as to the absolute accuracy of any data or information contained within this map, regardless of the location, subject and size. Data and information represented on this map is subject to update and modification without prior notification. The geographic information system and other sources should be queried for the most current information. This map or any information represented on it shall not be reproduced or transmitted in any form or by any means electronic or mechanical, including photo copying and recording, except as expressly permitted in writing by the County of Riverside.

Figure AQ-1



RIVERSIDE COUNTY
 AIR QUALITY BASINS





Riverside County has made great strides in achieving state and federal air quality standards. The following provides a description of the six criteria air pollutants and their attainment status in each of the three Riverside County air basins.

Ozone

Ozone is a pungent, colorless gas typical of southern California smog. Elevated ozone concentrations result in reduced lung function, particularly during vigorous physical activity. Ozone levels peak during the summer and early fall months.

The SOCAB is designated as a non-attainment area for both federal and state ozone standards, meaning that air quality standards are being exceeded. The Environmental Protection Agency (EPA) has classified the entire Southern California Association of Governments region as an "extreme" non-attainment area, and has mandated that the South Coast Air Quality Basin achieve attainment by 2010. The SSAB and MDAB are both designated as non-attainment areas for federal and state ozone standards.

Carbon Monoxide

Carbon monoxide (CO) is formed by the incomplete combustion of fossil fuels, almost entirely from automobiles. It is a colorless, odorless gas that can cause dizziness, fatigue and impairments to central nervous system functions.

The SOCAB is designated as a non-attainment area for federal CO standards. However, the Riverside County area of SOCAB has not exceeded either federal or state CO standards in the past five years. The SSAB and MDAB have both been designated as attainment areas for federal and state Carbon Monoxide standards.

Nitrogen Oxides

Nitrogen dioxide (NO₂), a reddish brown gas, and nitric oxide (NO), a colorless odorless gas, are jointly referred to as nitrogen oxides or NO_x. NO_x is a primary component of smog and also contributes to other pollution problems such as high concentration of fine particulate matter, poor visibility, and acid deposition. NO₂ decreases lung function and may reduce resistance to infection.

The SOCAB has not exceeded either federal or state standards for nitrogen dioxides in the past five years. It is designated as a maintenance area (an area that was once classified as non-attainment but has recently shown achievement of air quality standards) under federal standards and as an attainment area under state standards. The SSAB and MDAB are designated as attainment areas for both federal and state NO₂ standards.

Sulfur Dioxide

Sulfur dioxide (SO₂) is a colorless irritating gas created mainly by industrial facilities. SO₂ irritates the respiratory tract, injures lung tissue when combined with fine particulate matter and reduces visibility and the level of sunlight.

The SOCAB, SSAB and MDAB are all designated as attainment areas for both federal and state sulfur dioxide standards.



County of Riverside General Plan

Air Quality Element

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Issues and Policies

AIR QUALITY

“
Air quality is viewed as such an important factor in the quality of life that its measurements are used as a major factor in evaluating the Plan's performance.”

– RCIP Vision

Six criteria air pollutants have been established for every air basin within the State of California. These are pollutants for which acceptable levels of exposure can be determined and for which an ambient air quality standard has been set. As shown in Table AQ-1, Ambient Air Quality Standards, federal and state standards have been developed for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide and PM₁₀. Federal primary standards for air pollutants have been established to protect the public health, while secondary standards protect the public welfare by preventing impairment of visibility and damage to vegetation and property.

Table AQ-1
Ambient Air Quality Standards

Pollutant	Averaging Time	State	Federal	
			Primary	Secondary
Ozone	1 Hour	0.09 ppm	0.12 ppm	Same as Primary Standard
	8 Hour	0.08 ppm	0.08 ppm	
Nitrogen Dioxide	Annual Average	0.053 ppm	0.053 ppm	Same as Primary Standard
	1 Hour	0.25 ppm	--	
Carbon Monoxide	8 Hour	9.0 ppm	9.0 ppm	--
	1 Hour	20.0 ppm	35.0 ppm	--
Suspended Particulate Matter (PM ₁₀ & PM _{2.5})	Annual Geometric Mean	30 µg/m ³	65 µg/m ³ (PM _{2.5})	Same as Primary Standard
	24 Hour	50 µg/m ³	150 µg/m ³ (PM ₁₀) 15 µg/m ³ (PM _{2.5})	
	Annual Arithmetic Mean	--	50 µg/m ³	
Sulfur Dioxide	Annual Average	--	0.03 ppm	Same as Primary Standard
	24 Hour	0.04 ppm	0.14 ppm	
	3 Hour	--	--	0.5 ppm
	1 Hour	0.25 ppm	--	--
Lead	30 Day Average	1.5 µg/m ³	--	--
	Calendar Quarter	--	1.5 µg/m ³	Same as Primary Standard

Notes: ppm = parts per million; µg/m³ = micrograms per cubic meter of air
Source: California Air Resources Board Fact Sheet 39, 1998.



County of Riverside General Plan

Air Quality Element



Indirect Source – A facility, building, structure, installation, property, road, or highway which attracts, or may attract, mobile sources of pollution such as cars and trucks.

To achieve the goals and objectives of the air quality plans at the local level, all cities and counties must adopt air quality elements or other elements/plans that fully address air quality as well as implement these plans to achieve compliance with state and federal standards. Local responsibilities for achieving compliance primarily focus on measures that control "Indirect Sources" such as facilities, buildings, structures, installations, real property, roads or highways that attract mobile sources of pollution.



Regulatory Restrictions

The combination of geographical features and high levels of pollutants produced in the region have resulted in the Environmental Protection Agency (EPA) designating the air basins in Riverside County as non-attainment areas (Table AQ-2). This means that due to the high level of pollutants in the region, the area is not expected to meet National Ambient Air Quality Standards in the near future.

The Federal Clean Air Act (1977 Amendments) requires that designated agencies in any region of the nation not meeting national clean air standards must prepare a plan demonstrating the steps that would bring the area into compliance with all national standards by December 31, 1987. In response, the Governor of California designated agencies to develop these plans.

For the South Coast Air Basin and the Salton Sea Air Basin, the agencies designated to develop regional air quality plans are the South Coast Air Quality Management District (SCAQMD) and the Southern California Association of Governments (SCAG). The two agencies first adopted an Air Quality Management Plan (AQMP) in 1979 and have revised it several times subsequently, as earlier attainment forecasts were shown to be overly optimistic. Equivalent regional air quality plans were created for the Mojave Desert Air Basin by the Mojave Desert Air Quality Management Basin (MDAQMD) in conjunction with SCAG.

In 1998, the California Legislature enacted the California Clean Air Act (CCAA). The CCAA requires regional emissions to be reduced by 5% per year, averaged over a 3-year period, until attainment can be demonstrated. Each region that did not meet a national or state air quality standard was required to prepare a plan which demonstrated how the 5% reductions were to be achieved. In response, the SCAQMD and MDAQMD revised their air quality plans to meet CCAA requirements.

The latest AQMP, approved in 1997, was designed to meet both federal and state air quality planning guidelines. Strategies for controlling air pollutant emissions in the AQMP are grouped into three "tiers," based on their anticipated timing for implementation. Tier I consists of the implementation of best available current technology and management practices that can be adopted within five years. Tier II is based on anticipated advancement in current technology and vigorous regulatory action, while Tier III controls consist of implementation measures which first require the development of new technologies.

The MDAQMD adopted its Air Quality Attainment Plan in 1995 to meet state ozone standards and the Attainment Demonstration Plan in 1996 to meet federal ozone standards. While the Mojave Desert Air Basin is classified by the state as a non-attainment area for PM_{10} (coarse particles larger than 2.5 but smaller than 10 micrometers), state law does not require an air quality plan to meet this standard, and as such, no plan has been adopted.



County of Riverside General Plan
Air Quality Element

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MOJAVE DESERT AIR BASIN

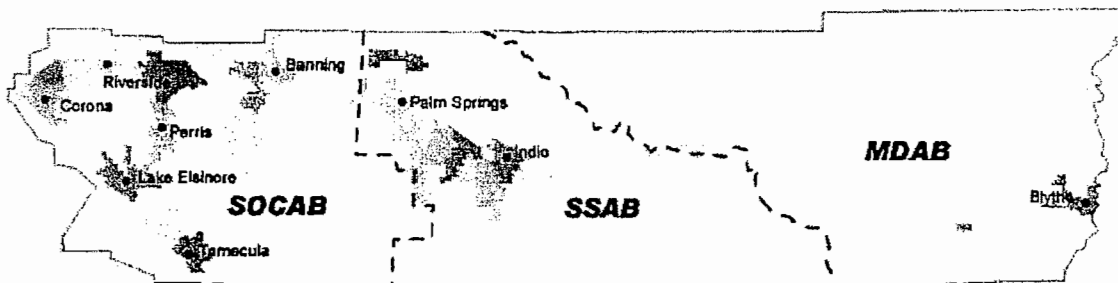
The Mojave Desert Air Basin (MDAB), comprised of 21,000 square miles, encompasses the eastern portion of Riverside County consisting of the Palo Verde Valley along with portions of Los Angeles, Kern and San Bernardino Counties. Air quality conditions in the Riverside County MDAB are partly under the jurisdiction of the SCAQMD and partly under the jurisdiction of the Mojave Desert Air Quality Management District (MDAQMD).

The MDAB consists of an assemblage of mountain ranges interspersed with long broad valleys that often contain dry lakes. Many of the lower mountains that dot the vast terrain rise from 1,000 to 4,000 feet above the valley floor. Prevailing winds in the MDAB are out of the west and southwest. These prevailing winds are due to the proximity of the MDAB to coastal and central regions and the presence of the Sierra Nevada mountains, which pose as a natural barrier to the north; air masses pushed onshore in southern California by differential heating are channeled through the MDAB. The MDAB is separated from the southern California coastal and central California valley regions by mountains whose passes form the main channels for these air masses.

During the summer months, the MDAB is generally influenced by a Pacific Subtropical High Cell that sits off the coast, inhibiting cloud formation and encouraging daytime solar heating. The MDAB is rarely influenced by cold air masses moving south from Canada and Alaska, with desert moisture arriving from infrequent warm, moist and unstable air masses from the south. The MDAB averages between three and seven inches of precipitation per year.




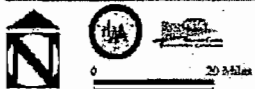
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Source Information: SCAQMD.
The oldest data shown on this map is 1990.

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 Air Basin Boundary
 SOCAB - South Coast Air Basin
 SSAB - Salton Sea Air Basin
 MDAB - Mojave Desert Air Basin



RIVERSIDE COUNTY
 AIR QUALITY BASINS

Figure AQ-1





County of Riverside General Plan

Air Quality Element

This phenomenon is frequently observed in the middle of late afternoon on hot summer days when the smog appears to clear up suddenly. Winter inversions frequently break by mid-morning, thereby preventing contaminant build-up.

The combination of low wind speeds and low level inversions produces the greatest concentration of pollutants. On high wind days other air pollutants including particulate matter such as dust and soil are swept and carried in the air. On days of no inversion or on days of winds averaging over 15 miles per hour, there will be no important smog effects, during either summer or winter.



Smog - A combination of smoke, ozone, hydrocarbons, nitrogen oxides, and other chemically reactive compounds which, under certain conditions of weather and sunlight, may result in a murky brown haze that causes adverse health effects. The primary source of smog in California is motor vehicles.

In the winter, the greatest pollution problems are carbon monoxide and oxides of nitrogen because of extremely low level inversions and air stagnation during the night and early morning hours. Smog levels are much lower during this season due to the lack of strong inversion during the daylight hours and the lack of intense sunlight which is needed to produce photochemical reactions.

In the summer, the longer daylight hours and the brighter sunshine combine to cause a reaction between hydrocarbons and oxides of nitrogen to form more smog. Carbon monoxide is not as great a problem in summer because inversions are not as low and intense in the surface boundary layer (within 100 feet of the ground) as in winter and because horizontal ventilation is better in summer.

The basin-wide average occurrence of inversion at the ground surface is 11 days per month; the averages vary from two days in June to 22 days in December and January. The potential for high concentration varies seasonally for many contaminants. During late spring, summer and early fall, light winds, low mixing heights and brilliant sunshine combine to produce conditions favorable for the maximum production of photochemical oxidants, mainly ozone. During the spring and summer, when fairly deep marine layers are frequently found in the Basin, sulfate concentrations are at their peak.

SALTON SEA AIR BASIN



Subtropical High Cell - An area of atmospheric high pressure located at approximately 30 degrees north and south latitude. Air tends to sink near high-pressure centers, which inhibits precipitation and cloud formation. This is why high-pressure systems tend to bring bright, sunny days with calm weather.

The middle part of Riverside County (between San Geronio Pass and Joshua Tree National Monument), belongs in the Salton Sea Air Basin (SSAB), along with Imperial County. Air quality conditions in this portion of the County, although in the SSAB, are also administered by the SCAQMD. The SCAQMD is responsible for the development of the regional Air Quality Management Plan and efforts to regulate pollutant emissions from a variety of sources.

The SSAB portion of Riverside County is separated from the SOCAB region by the San Jacinto Mountains and from the Mojave Desert Air Basin to the east by the Little San Bernardino Mountains. During the summer, the SSAB is generally influenced by a Pacific Subtropical High Cell that sits off the coast, inhibiting cloud formation and encouraging daytime solar heating. The SSAB is rarely influenced by cold air masses moving south from Canada and Alaska, as these systems are weak and diffuse by the time they reach the desert. Most desert moisture arrives from infrequent warm, moist and unstable air masses from the south. The SSAB averages between three and seven inches of precipitation per year.

County of Riverside General Plan

Air Quality Element



The Setting

Riverside County is located within three air basins, as can be seen on Figure AQ-1, Riverside County Air Quality Basins. They are the South Coast Air Basin (SOCAB), Salton Sea Air Basin (SSAB) and the Mojave Desert Air Basin (MDAB). Air quality within each basin is not only affected by various emissions sources (mobile, industry, etc.), but also by atmospheric conditions such as wind speed, wind direction, temperature and rainfall. The following provides a description of each air basin and its relevant climate and meteorological conditions affecting air pollution.

SOUTH COAST AIR BASIN

Western Riverside County (west of the San Geronio Pass) is located within the South Coast Air Basin (SOCAB), which includes all of Orange County and the non-desert portions of Los Angeles, Riverside and San Bernardino Counties. Air quality conditions in the SOCAB are under the jurisdiction of the South Coast Air Quality Management District (SCAQMD).

According to the Air Quality Management Plan (AQMP), the worst air quality problem in the nation occurs in the South Coast Air Basin. With very light average wind speeds, the basin atmosphere has a limited capability to disperse air contaminants horizontally. The dominant daily wind pattern is a daytime sea breeze (onshore breeze) and a nighttime land breeze (offshore breeze), broken only occasionally by winter storms and infrequent strong Santa Ana winds from the Great Basin, Mojave, and deserts to the north.



Santa Ana Winds - Santa Ana winds are generally defined as warm, dry winds that blow from the east or northeast (offshore) occurring predominantly between the months of December and February. The winds develop when a region of high pressure builds over the Great Basin (the high plateau east of the Sierra Mountains and west of the Rocky Mountains including most of Nevada and Utah) and move locally across the Mojave Desert and then over and through passes in the San Gabriel, San Bernardino and San Jacinto Mountains.

On virtually all spring and early summer days, most of the pollution produced during an individual day is moved out of the basin through mountain passes, or is lifted by the warm, vertical currents produced by the heating of mountain slopes. In those seasons, the basin can be "flushed" of pollutants by a transport of ocean air during the afternoon. From late summer through the winter months, the flushing is less pronounced because of lower wind speeds and the earlier appearance of offshore winds. With extremely stagnant wind flows, the drainage winds may begin near the mountains by late afternoon. Remaining pollutants are trapped and begin to accumulate during the night and the following morning. A low average morning wind speed in pollution source areas is an important indicator of air stagnation potential.

The vertical dispersion of air pollutants in the South Coast Air Basin is hampered by the presence of a temperature inversion in the layers of the atmosphere near the surface of the Earth. In a normal situation, as temperatures decrease with altitude, air continues to rise as it remains warmer than the surrounding air. With an inversion layer, air cannot continue to expand upwards, as it is trapped by the warmer air above.



Inversion layer - A layer of warm air that traps the cooler air and any pollutants it carries below.

However, as the day progresses and the sun warms the ground, the surface layer of air approaches a temperature equal to that of the inversion layer. When these temperatures become equal, the inversion layer begins to erode at its lower edge. If enough warming takes place, the inversion layer becomes weaker and weaker and finally "breaks." The surface air layers can then mix upward without limit.



County of Riverside General Plan

Air Quality Element



Ambient Air - Outside air, any portion of the atmosphere not contained by walls and a roof.

It is an intent of this Air Quality Element to provide background information on the physical and regulatory environment affecting air quality in the County. This element also identifies goals, policies and programs that are meant to balance the County's actions regarding land use, circulation and other issues with their potential effects on air quality. This element in conjunction with local and regional air quality planning efforts addresses ambient air quality standards set forth by the Federal Environmental Protection Agency and the California Air Resources Board (CARB).



Chapter 9: Air Quality Element

Introduction

WHY IS AIR QUALITY IMPORTANT?



Air quality attainment goals established by the South Coast Air Quality Management District have been more than met despite the substantial growth in the region in the last 20 years. Most of this is a result of significantly improved engine technology and the replacement of more polluting vehicles. However, local initiatives that expanded transit options, concentrated development more efficiently, and increased local employment opportunities have also contributed to air quality improvement.



– RCIP Vision

The quality of the air we breathe directly affects our health, environment, economy and our quality of life. Because the inside of our bodies are in constant contact with the outside world through the oxygen we inhale, air pollutants make their way to our lungs and into our blood stream. An overabundance of pollutants in the air can cause mild to severe health effects, including increased hospitalization and emergency room visits, respiratory illnesses, increased risk of developing cancer, decreased breathing capacity, lung inflammation, difficulty in exercising and even a reduction in life-span.

Just as we are affected by air pollution, so too are plants and animals. Animals must breathe the same air and are subject to the same types of negative health effects. Certain plants and trees may absorb air pollutants which can stunt their development or cause premature death. There are also numerous impacts to our economy including lost work days due to illness, a desire on the part of business to locate in areas with a healthy environment, and increased expenses from medical costs. Pollutants may also lower visibility and cause damage to property. Certain air pollutants are responsible for discoloring painted surfaces, eating away at stones used in buildings, dissolving the mortar that holds bricks together, and cracking tires and other items made from rubber.

WHAT CAN WE DO ABOUT AIR QUALITY?

Air quality is a regional issue, effecting and affected by every city and county. Although Riverside County generates the lowest emissions of any county in the South Coast Air Basin, air quality in the County is among the Basin's worst due to onshore winds transporting vast amounts of pollutants from Los Angeles and Orange Counties into the Inland Empire.

While the County and the region have made great strides in reducing air pollution, it is committed to meeting state and federal air quality guidelines. Policies and programs addressed in this element will focus on the two main sources of air pollutant emissions: mobile sources and stationary sources. Mobile sources include automobiles, motorcycles, trucks and airplanes. Motor vehicles constitute the largest generator of air pollutant emissions in Riverside County. Stationary sources produce significant amounts of pollutants and include electrical power-generating facilities, manufacturing, fabrication, miscellaneous industrial processes and combustion of natural gas.

9. Air Quality Element

AIR QUALITY ELEMENT

EXAMPLE #2

COUNTY OF RIVERSIDE

**REGIONAL AIR QUALITY IMPLEMENTATION PLAN
SAN BERNARDINO COUNTY/CITIES**

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TOPIC 5: PARTICULATE EMISSIONS		
GOAL	POLICIES	PROGRAMS AND ACTION OPTIONS
The minimum practicable particulate emissions from the construction and operation of roads and buildings.	<u>Control Dust</u> 1. Reduce particulate emissions from roads, parking lots, construction sites and agricultural lands.	1. Adopt incentives, regulations and procedures to manage paved roads so that they produce the minimum practicable level of particulates (12a). 2. Adopt incentives, regulations and procedures to minimize particulate emissions during road, parking lot and building construction (1-4). 3. Adopt incentives, regulations and procedures to control particulate emissions from unpaved roads, drives, vehicle maneuvering areas and parking lots (12b). 4. Adopt incentives, regulations and procedures to limit dust from agricultural lands and operations (where applicable) (E-3).
	<u>Reduce Emissions from Building Materials/Methods</u> 1. Reduce emissions from building materials and methods which generate excessive pollutants.	1. Adopt incentives, regulations and procedures to prohibit the use of building materials and methods which generate excessive pollutants (F-9).

TOPIC 6: ENERGY CONSERVATION		
GOAL	POLICIES	PROGRAMS AND ACTION OPTIONS
Reduced emissions through reduced energy consumption.	<u>Energy Conservation</u> 1. Reduce energy consumption through conservation improvements and requirements.	1. Implement plans and programs to phase in energy conservation improvements through the annual budget process (18a). 2. Adopt incentives and regulations to enact energy conservation requirements for private development.
	<u>Limit Water Heater Emissions</u> 2. Reduce water heating emissions resulting from swimming pool heaters and residential and commercial water heaters.	1. Adopt incentives and regulations to reduce emissions from swimming pool heaters (d 4). 2. Adopt incentives and regulations to reduce emissions from residential and commercial water heating (d 5).
	<u>Recycle Wastes</u> 3. Promote local recycling of wastes and use of recycled materials.	1. Implement provisions of AB 939 and adopt incentives, regulations and procedures to specify local recycling requirements (18b).

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REGIONAL AIR QUALITY IMPLEMENTATION PLAN
SAN BERNARDINO COUNTY/CITIES

TOPIC 4: LAND USE		
GOAL	POLICIES	PROGRAMS AND ACTION OPTIONS
	<p><u>Protect Sensitive Receptors</u></p> <p>3. Support a regional approach to regulating the location and design of land uses which are especially sensitive to air pollution.</p>	<p>1. Participate with the SCAQMD in jointly formulating appropriate standards for regulating the location and protection of sensitive receptors (schools, day care facilities, hospitals and the like) from excessive and hazardous emissions.</p>
	<p><u>Integrated Planning Process</u></p> <p>4. Integrate air quality planning with the land use and transportation planning processes.</p>	<p>1. Locate and design new development in a manner that will minimize direct and indirect emission of air contaminants through such means as:</p> <ul style="list-style-type: none"> • Promoting mixed use development to reduce the length and frequency of vehicle trips. • Providing for increased intensity of development along existing and proposed transit corridors. • Providing for the location of ancillary employee services (including, but not limited to child care, restaurants, banking facilities, convenience markets) at major employment centers for the purpose of reducing midday vehicle trips.

**REGIONAL AIR QUALITY IMPLEMENTATION PLAN
SAN BERNARDINO COUNTY/CITIES**

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TOPIC 4: LAND USE		
GOAL	POLICIES	PROGRAMS AND ACTION OPTIONS
<p>A pattern of land uses which can be efficiently served by a diversified transportation system and land development projects which directly and indirectly generate the minimum feasible air pollutants (17).</p>	<p><u>Manage Growth</u> 1. Manage growth by insuring the timely provision of infrastructure to serve new development.</p>	<p>1. Incorporate phasing policies and requirements in general plans and development plans to achieve timely provision of infrastructure (particularly transportation facilities) to serve development through:</p> <ul style="list-style-type: none"> • Tying growth to Level of Service (LOS) standards; and • Using Urban Limit Lines or phasing areas to manage growth.
	<p><u>Balance Growth</u> 2. Improve the balance between housing and jobs in order to create a more efficient urban form.</p>	<p>1. Improve jobs/housing relationships through new development and redevelopment project reviews and actions through:</p> <ul style="list-style-type: none"> • Project review procedures, ensuring that individual projects have a positive or neutral impact on housing/jobs balance; • Revising the General Plan Land Use designations; • Revising the Zoning Code; • Imposing exactions or linkage fees on projects which negatively impact housing/jobs balance; • "Fast-Tracking" projects which improve jobs/housing balance; • Project review procedures, ensuring that site design allows for alternative modes of transportation (bus stops, bus turnouts, bikeways, pedestrian routes, etc.); • Phasing growth to ensure that job expansion and housing production occur at a targeted pace; • Indexing residential development in housing-rich areas to commercial/industrial construction or availability; • Encouraging/allowing mixed use development; • Providing density/intensity bonuses to projects which improve housing/jobs balance; • Encouraging/allowing Planned Unit Development; • Giving incentives for employer provided housing; • Providing subsidies to attract new businesses; • Utilizing tax exempt bond financing to encourage job-creating businesses; and • Providing infrastructure improvements and/or land for industrial and commercial development. <p>2. Improve jobs/housing relationships at a subregional level in relation to major activity centers as new development occurs by:</p> <ul style="list-style-type: none"> • Allowing/encouraging intensified development around transit nodes and along transit corridors; and • Using an urban limit lines or phasing areas to manage growth; <p>3. Continue support for and consider expansion of the CLOUT demonstration project to incorporate: incentive oriented tax credits; loan programs; small business development programs; and complementary land use policies, all aimed at improving the housing/jobs balance in the western San Bernardino/eastern Los Angeles Counties area.</p> <p>4. Develop and adopt an agreement among the participating jurisdictions as to mutually acceptable approaches to improve and maintain housing/jobs balance.</p>

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REGIONAL AIR QUALITY IMPLEMENTATION PLAN
SAN BERNARDINO COUNTY/CITIES

TOPIC 3: AIR TRANSPORTATION		
GOAL	POLICIES	PROGRAMS AND ACTION OPTIONS
Minimum feasible emissions from air carrier airports.	<u>Promote Improved Technology</u> 1. Promote requiring the best available technology to reduce emissions in aircraft fleet.	1. Adopt/urge establishment of the best available technology and operational measures for aircraft and ground service vehicles (6). 2. Support phasing out of Stage II aircraft and the earliest possible transition to Stage III aircraft for operation within the Air Basin (9).
	<u>Promote Centralized Ground Power</u> 2. Promote installation of centralized ground power systems at existing air carrier airports.	1. Adopt/urge establishment of requirements for centralized ground power systems to be installed and used as soon as practicable at existing air carrier airports (7).
	<u>Promote Improved Ground Access</u> 3. Promote conditioning of air carrier airports upon inclusion of plans for improved ground access.	1. Adopt/urge establishment of an ordinance requiring air carrier airport operators to obtain permits based on approved plans for trip reduction, facility design and access improvements (8).

Health Effects of Ambient Air Pollutants

Ozone

Ozone is a strong irritant that can constrict the airways, forcing the respiratory system to work hard to deliver oxygen. Individuals exercising outdoors, children and people with pre-existing lung disease such as asthma and chronic pulmonary lung disease are considered to be the most susceptible to the health effects of ozone. Short term exposure (lasting for a few hours) to ozone at levels typically observed in Southern California can result in aggravated respiratory diseases such as emphysema, bronchitis and asthma, shortness of breath, increased susceptibility to infections, inflammation of the lung tissue, increased fatigue as well as chest pain, dry throat, headache and nausea.

Elevated ozone levels are associated with increased school absences. In recent years, a correlation between elevated ambient ozone levels and increases in daily hospital admission rates, as well as mortality, has also been reported. An increased risk for asthma has been found in children who participate in multiple sports and live in high ozone communities.

Ozone exposure under exercising conditions is known to increase the severity of the above mentioned observed responses. Animal studies suggest that exposures to a combination of pollutants which include ozone may be more toxic than exposure to ozone alone. Although lung volume and resistance changes observed after a single exposure diminish, with repeated exposures biochemical and cellular changes appear to persist, which can lead to subsequent lung structural changes.

Particulate Matter

A series of scientific studies has linked particulate matter, especially fine particles, with a variety of significant health problems. A consistent correlation between elevated ambient fine particulate matter (PM₁₀ and PM_{2.5}) levels and an increase in mortality rates, respiratory infections number and severity of asthma attacks, and the number of hospital admissions has been observed in different parts of the United States and various areas around the world. In recent years, some studies have reported an association between long-term exposure to air pollution dominated by fine particles and increased mortality, reduction in life-span, and an increased mortality from lung cancer.

Daily fluctuations in fine particulate matter concentration levels have also been related to hospital admissions for acute respiratory conditions in children, to school and kindergarten absences, to a decrease in respiratory lung volumes in normal children and to increased medication use in children and adults with asthma. Recent studies show lung function growth in children is reduced with long-term exposure to particulate

APPENDIX C

**HEALTH EFFECTS
OF
AMBIENT AIR POLLUTANTS**

Ambient Air Quality Standards

AIR POLLUTANT	STATE STANDARD	FEDERAL PRIMARY STANDARD	MOST RELEVANT EFFECTS
	CONCENTRATION/ AVERAGING TIME	CONCENTRATION/ AVERAGING TIME	
Ozone	0.09 ppm, 1-hr. avg. >	0.12 ppm, 1-hr avg.> 0.08 ppm, 8-hr avg.>	(a) Short-term exposures: (1) Pulmonary function decrements and breathing difficulty. (2) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (b) Long-term exposures: Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (c) Vegetation damage; (d) Property damage
Carbon Monoxide	9.0 ppm, 8-hr avg. > 20 ppm, 1-hr avg. >	9 ppm, 8-hr avg.> 35 ppm, 1-hr avg.>	(a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; (d) Possible increased risk to fetuses
Nitrogen Dioxide	0.25 ppm, 1-hr avg. >	0.053 ppm, ann. avg.>	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; (c) Contribution to atmospheric discoloration
Sulfur Dioxide	0.04 ppm, 24-hr avg.> 0.25 ppm, 1-hr. avg. >	0.03 ppm, ann. avg.> 0.14 ppm, 24-hr avg.>	(a) Broncho constriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma
Suspended Particulate Matter (PM ₁₀)	20 µg/m ³ , ann. geometric mean > 50 µg/m ³ , 24-hr average>	50 µg/m ³ , ann. arithmetic mean > 150µg/m ³ , 24-hr avg.>	(a) Excess deaths from short-term exposures and exacerbation of symptoms in sensitive patients with respiratory disease; (b) Declines in pulmonary function, especially in children; (c) Increased risk of premature death from heart or lung diseases in elderly
Suspended Particulate Matter (PM _{2.5})	12 µg/m ³ , ann. arithmetic mean	15 µg/m ³ , ann. arithmetic mean > 65 µg/m ³ , 24-hr avg.>	(a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; (f) Property damage
Sulfates	25 µg/m ³ , 24-hr avg. ≥		(a) Learning disabilities in children; (b) Impairment of blood formation and nerve conduction
Lead	1.5 µg/m ³ , 30-day avg. ≥	1.5 µg/m ³ , calendar quarter>	Visibility impairment on days when relative humidity is less than 70 percent
Visibility-Reducing Particles	In sufficient amount such that the extinction coefficient is greater than 0.23 inverse kilometers (to reduce the visual range to less than 10 miles) at relative humidity less than 70 percent, 8-hour average (10am - 6pm)		Odor (rotten egg smell) Headache
Hydrogen Sulfide (H ₂ S)	0.03 ppm, 1-hr. avg. ≥		

Source: South Coast Air Quality Management District

APPENDIX B

AMBIENT AIR QUALITY STANDARDS



County of Riverside General Plan

Air Quality Element

- AQ 17.6 Reduce emissions from building materials and methods that generate excessive pollutants, through incentives and/or regulations.
- AQ 17.7 Separate trucks from other vehicles in industrial areas of the County with the creation of truck-only access lanes to promote the free flow of traffic. (AI 43)
- AQ 17.8 Adopt regulations and programs necessary to meet state and federal guidelines for diesel emissions. (AI 121)
- AQ 17.9 Encourage the installation and use of electric service units at truck stops and distribution centers for heating and cooling truck cabs, and particularly for powering refrigeration trucks in lieu of idling of engines for power. (AI 120)
- AQ 17.10 Promote and encourage the use of natural gas and electric vehicles in distribution centers.
- AQ 17.11 Create and implement street-sweeping plans, as appropriate, in areas of the County disproportionately affected by particulate matter pollution.



Multi-jurisdictional Cooperation

Particulate matter concentrations are a regional issue. In addition to those created in Riverside County, particulates originating in surrounding cities and counties are transported into Riverside County by prevailing winds. Therefore, any meaningful attempt to decrease particulate concentrations in the County will involve cooperation with local and regional governments and a tightening of state and federal standards.

Policies:

- AQ 16.1 Cooperate with local, regional, state and federal jurisdictions to better control particulate matter.
- AQ 16.2 Encourage stricter state and federal legislation on bias belted tires, smoking vehicles, and vehicles that spill debris on streets and highways, to better control particulate matter. (A1 113)
- AQ 16.3 Collaborate with the SCAQMD and MDAQMD to require and/or encourage the adoption of regulations or incentives to limit the amount of time trucks may idle. (A1 120)
- AQ 16.4 Collaborate with the EPA, SCAQMD, MDAQMD, and warehouse owners and operators to create regulations and programs to reduce the amount of diesel fumes released due to warehousing operations. (A1 121)

Control Measures

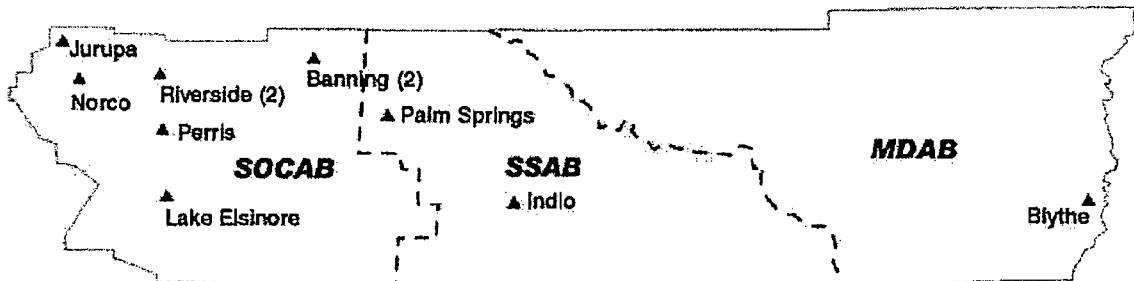
Riverside County can implement simple control measures to reduce the amount of particulates produced within its borders. Strict enforcement of these and current regulations can then lead to a substantial decrease in particulate concentrations in the County and neighboring areas.

Policies:

- AQ 17.1 Reduce particulate matter from agriculture, construction, demolition, debris hauling, street cleaning, utility maintenance, railroad rights-of-way, and off-road vehicles to the extent possible. (A1 123)
- AQ 17.2 Enforce regulations against illegal fires.
- AQ 17.3 Identify and create a control plan for areas within the County prone to wind erosion of soil.
- AQ 17.4 Adopt incentives, regulations and/or procedures to manage paved and unpaved roads and parking lots so they produce the minimum practicable level of particulates (A1 111)
- AQ 17.5 Adopt incentives and/or procedures to limit dust from agricultural lands and operations, where applicable. (A1 123)



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- ▲ Monitoring Sites
- Air Basin Boundary
- SOCAB - South Coast Air Basin
- SSAB - Salton Sea Air Basin
- MDAB - Mojave Desert Air Basin

Source Information: SCQ/IED.
The oldest data shown on this map is 1990.

The County of Riverside or the RCF consultants have no reason or indication to believe that this map contains any inaccuracies, defects or misinformation. The County of Riverside and the RCF consultants assume no warranties or legal responsibility, however, as to the absolute accuracy of any data or information contained within this map, regardless of the location, subject and size. Data and information represented on this map is subject to update and modification without prior notification. The geographic information systems and other sources should be queried for the most current information. This map or any information represented on it shall not be reproduced or transmitted in any form or by any means, electronic or mechanical, including photo copying and recording, except as expressly permitted in writing by the County of Riverside.

Figure AQ-2



RIVERSIDE COUNTY
AIR MONITORING NETWORK





County of Riverside General Plan

Air Quality Element

precipitates rather than dust, smoke or soot. Riverside County is also responsible for generating large amounts of particulate matter from sources such as agriculture, warehousing operations, and truck traffic.

While Riverside County is dedicated to implementing policies to control particulate matter produced within its own boundaries, it has no control over particulate imported from beyond its boundaries. The solution to the problem of imported particulate matter in western Riverside County is the adoption of adequate control measures by those responsible jurisdictions in Los Angeles and Orange Counties. By adhering to the control measures contained in the AQMP, these jurisdictions can have a positive impact on particulate matter pollution in the SOCAB portion of Riverside County.

The air quality concerns in the Salton Sea Air Basin (SSAB) portions of the County differ somewhat from those in western Riverside County. Unlike the SOCAB region, particulates in SSAB are primarily dust, smoke and soot. While in 1993 and 1994, PM₁₀ concentrations were under the federal standard, concentrations in 1995 were slightly above federal limits. The maximum annual average PM₁₀ concentration in 1995 was recorded at 4% above the federal standard; however, the measurement included one day with high winds without which the SSAB would have been under the federal standard. The far more stringent state standards were exceeded on 44% of the days in 1995.

The Mojave Desert Air Basin (MDAB), like the SOCAB and SSAB, is designated as a non-attainment area for PM₁₀. Particulates in the MDAB are primarily fugitive caused by high winds or vehicle travel on unpaved roads. Particulates in the area are generally not caused by exhaust stacks or primary emission points.

While sources and severity of particulate pollution differ in subareas of the County, it is the County's objective to control particulate matter throughout all of Riverside County. However, where necessary, the County shall tailor its control measures and implementation procedures to best address the unique situations found in each area. One example of such an area is the Mira Loma community, where particulate pollutant levels are among the worst in the nation. In such an area, strong measures must be taken immediately to protect the health and welfare of residents, especially children, the elderly and those with respiratory illnesses.

Monitoring

Air quality monitoring stations are locating throughout Riverside County (Figure AQ-2). However, at times it may be necessary to locate additional monitors in those areas of the County suspected of producing excessively high levels of particulates. This more localized data may then assist control and law enforcement efforts in reducing and minimizing particulate matter levels.

Policies:

AQ 15.1 Identify and monitor sources, enforce existing regulations, and promote stronger controls to reduce particulate matter.

County of Riverside General Plan

Air Quality Element



pedestrian overpasses, and bus turnouts. These projects improve mobility and air quality by encouraging efficient transportation use.

Policies:

- AQ 14.1 Emphasize the use of high occupancy vehicle lanes, light rail and bus routes, and pedestrian and bicycle facilities when using transportation facility development to improve mobility and air quality.
- AQ 14.2 When developing new capital facility improvement plans, also consider measures such as Transportation Demand Management, Transportation Systems Management, or job/housing balance strategies.
- AQ 14.3 Monitor traffic and congestion to determine when and where the County needs new transportation facilities to achieve increased mobility efficiency.
- AQ 14.4 Preserve transportation corridors with the potential of high demand or of regional significance for future expansion to meet project demand. (AI 53)

PARTICULATE MATTER

The Environmental Protection Agency (EPA) defines particulate matter (PM) as either airborne photochemical precipitates or windborne dust. Consisting of tiny solid or liquid particles of soot, dust, smoke, fumes, and aerosols, common sources of PM are manufacturing and power plants, agriculture, diesel trucks and other vehicles, construction sites, fire and windblown dust. Generally PM settles from atmospheric suspension as either particulate or acid rain and fog that has the potential to damage health, crops, and property. Particulate of 2.5 microns or smaller (2.5 microns is approximately equal to .000098 inches) may stay suspended in the air for longer periods of time and when inhaled can penetrate deep into the lungs. Among the health effects related to PM_{2.5} are premature death, decreased lung function and exacerbation of asthma and other respiratory tract illnesses.


Particulate sized between 2.5 and 10 microns (10 microns is approximately equal to .0004 inches), known as PM₁₀ also pose a great risk to human health. PM₁₀ can easily enter the air sacs in the lungs where they may be deposited, resulting in an increased risk of developing cancer, potentially changing lung function and structure, and possibly exacerbating preexisting respiratory and cardiovascular diseases. It can also irritate the eyes, damage sensitive tissues, sometimes carry disease, and may even cause premature death. PM_{2.5} and PM₁₀ are especially hazardous to the old, young and infirm.

Although it produces less than 10% of the South Coast Air Basin's particulate matter, western Riverside County, which is part of the SOCAB, exceeds federal standards more than any other urban area in the nation, and has the highest particulate concentration in the SOCAB. These high levels of particulate matter are largely imported from the urbanized portions of Los Angeles and Orange Counties. This imported particulate is generally composed of photochemical



- AQ 13.3 Encourage the construction of high-occupancy-vehicle (HOV) lanes whenever possible to relieve congestion, safety hazards and air pollution as described in the AQMP.

TRANSPORTATION FACILITY DEVELOPMENT

 Please see the General Plan Circulation Element, Planned Circulation Systems section for additional information and policies.

Regionally, transportation facility development means increasing capacity through the expansion of highway and transit systems to meet population and land use demand. Though major construction projects often require massive capital investment, mobility and capacity are increased. These projects include: major highways in high growth regions, construction of high occupancy vehicle (HOV) lanes where severe traffic problems occur, and the construction of rapid transit corridors and facilities. Unfortunately, this strategy responds slowly to changing demands on the transportation system and may burden the region with debt.

Estimates for the development of additional facilities and systems over the next twenty years call for billions of dollars in investment. While federal government spending will account for a large portion of the funding required, additional revenues will have to be raised through a variety of means, including the gas tax, sales tax, user fees, tolls and bonds.

The costs of regional transportation projects also include growth in population, housing and services, and their impact on the transportation system. This raises traffic volume to or above the system's designed capacity while decaying air quality. When major transit corridors become congested, for example, daily commuters take alternate routes to avoid traffic delays. Once a new route becomes operational, commuters abandon these alternative routes for the new or improved systems until they too become congested. However, trying to build out of this situation does not solve the problem because it fuels an unbridled cycle of more growth, traffic, transportation facility development and smog. Continued transportation facility development results in increased growth, higher taxes, and minimal net gains in mobility for each dollar spent. All of this only lessens the chances for good air quality.

Just as there is a need regionally, capital improvements are also required locally to keep traffic moving and reduce emissions. It is the intent of the County to continue such improvements. However, the County recognizes that large construction projects are not always the best option for meeting transportation demands and that other, less expensive alternatives, are sometimes available. These alternatives include demand management, transportation systems management, and strategies to improve the job/housing ratio. While the County cannot meet all of its mobility and air pollution challenges using these alternatives, they may supplement needed capital improvements to help meet the County's transportation demands.

The transportation facility development required must improve mobility by encouraging multiple-occupancy vehicle use and alternative travel modes for both short and long trips. Therefore, the County must emphasize construction projects such as single purpose, high occupancy vehicle lanes, park-n-ride lots, light rail and bus routes. It should also give priority to bicycle paths and trails,

County of Riverside General Plan

Air Quality Element



travel and idling time for cars, buses and trucks. Congestion increases transportation costs and vehicle emissions, and frays nerves. Moreover, a lack of fleets using alternative fuels adds to poor air quality.

Because transportation systems management provides an important weapon for relieving congestion, improving mobility, and enhancing air quality, the County should use it extensively in its fight for cleaner air.

Traffic Flow

It is a goal of the County to manage its transportation systems in a manner in which mobility and efficiency are enhanced. Improving the flow of traffic promotes mobility on our streets, resulting in decreased impacts on air quality.

Policies:

- AQ 12.1 Manage traffic flow through signal synchronization, while coordinating with and permitting the free flow of mass transit vehicles, when possible. (AI 117)
- AQ 12.2 Synchronize signals throughout the County with those of its cities, adjoining counties and the California Department of Transportation. (AI 117)
- AQ 12.3 Construct and improve traffic signals with channelization and Automated Traffic Surveillance and Control systems at appropriate intersections (AI 117)
- AQ 12.4 Eliminate traffic hazards and delays through highway maintenance, rapid emergency response, debris removal, and elimination of at-grade railroad crossings, when possible. (AI 119)
- AQ 12.5 Encourage business owners to schedule deliveries at off-peak traffic periods.



Channelization - Involves the separation or regulation of conflicting traffic movements into definite paths of travel by traffic islands or pavement markings, to facilitate the safe and orderly movement of vehicles and pedestrians.



High Occupancy Vehicles (HOV) Lanes -Carpools, vanpools, buses and motorcycles are the only vehicles allowed to use HOV lanes. Generally, HOV lanes require two-person carpools, though there are some roadways that require a minimum of three (with the exception of super-ultra-low-emission vehicles, which may use HOV lanes with only a single occupant).

Transportation System Management Improvements

Proper management and oversight of the County-owned fleet can provide a highly effective tool for reducing direct and indirect impacts on air quality. It is therefore a goal of the County to continually improve its own transportation system and cooperate with officials in all levels of government to enhance regional efforts to improve transportation systems management.

Policies:

- AQ 13.1 Manage the County of Riverside transportation fleet fueling standards to achieve an appropriate alternate fuel fleet mix. (AI 118)
- AQ 13.2 Cooperate with local, regional, state, and federal jurisdictions to better manage transportation facilities and fleets.



- AQ 10.2 Use incentives, regulations and Transportation Demand Management in cooperation with surrounding jurisdictions when possible to eliminate vehicle trips which would otherwise be made. (AI 47)
- AQ 10.3 Assist merchants in encouraging their customers to shift from single occupancy vehicles to transit, carpools, bicycles, or foot. (AI 48)
- AQ 10.4 Continue to enforce the County's Transportation Demand Management Ordinance and update as necessary.

Special Events

Temporary special events provide recreational and retail opportunities for residents. However, these events may also result in traffic congestion on roadways adjacent to the event. The following policies are designed to alleviate traffic congestion and the accompanying pollution caused by excess vehicle travel times.

Policies:

- AQ 11.1 Establish requirements for special event centers to provide off-site parking and park-n-ride facilities at remote locations. Remote parking should be as close to practicable to the event site and the operator should supply shuttle services. (AI 116)
- AQ 11.2 Promote the use of peripheral parking by increasing on-site parking rates and offering reduced rates to peripheral parking with tickets sold for non-ridesharing patrons. (AI 116)
- AQ 11.3 Encourage special event center operators to advertise and offer discounted transit passes with event tickets (AI 116)
- AQ 11.4 Encourage special event center operators to advertise and offer discount parking incentives to carpooling patrons, with two or more persons per vehicle, for on-site parking facilities. (AI 116)

TRANSPORTATION SYSTEMS MANAGEMENT

Transportation systems management improves traffic flow through modification in the operation of existing transit facilities and fleets. This increases mobility and thereby improves air quality. Commerce, industry and public welfare require adequate mobility. Poor transportation systems management, on the other hand, creates congested highways, perpetuates poorly maintained and polluting fleets, weakens the County's economy and diminishes its citizens' health and well-being.

The County's rapidly growing population combined with unsynchronized traffic signals, delays at grade-level rail crossings, non-uniform street widths, inadequate roadway maintenance and poor emergency response, has resulted in increased congestion. Increased congestion means stop-and-go traffic and longer



An at-grade railroad crossing is one where the street and the rail line form an intersection, and physically cross one-another.



vanpools, and to take the bus or light rail. Alternatively, workers may work longer hours and so eliminate a trip to the office once or twice a week. Two other TDM strategies that eliminate work trips are telecommuting and work-at-home programs. When individuals must drive, TDM calls for changes in their work schedules to avoid peak traffic periods. A similar TDM strategy encourages large trucks to operate at night. Because traffic at night is lighter, accidents are less likely, and when they do occur, they may not tie up the freeway for hours as they would during the day.

TDM strategies for reducing trips that are not work related are also important. Among these are merchant transportation incentives, such as discounts to customers who use public transit and free bus passes. Some measures reduce both work and non-work related trips. For example, by pricing parking spaces and providing convenient parking for people who rideshare, parking management encourages the use of carpools, vanpools and public transit. It also eliminates on-street parking which adds to congestion.

TDM alone, however, is not the answer. Transit improvements and facility development must accompany these changes. Efforts to encouraging a shift to transit will fail unless transit operators make convenient, safe and reliable transit service available. Similarly, a lack of work centers now blocks the development of telecommuting. The County can take steps to foster the development of such work centers. Changing transportation demand will also require facility development, such as park-n-ride lots, bus turnouts, off-site parking, and facilities for bicycles and pedestrians.

The County's Transportation Demand Management Ordinance for new developments, designed to meet the requirements of the Riverside County Congestion Management Program and the Air Quality Management Plan, promotes the development of TDM strategies early in the development review process. The ordinance sets goals for reducing vehicle trips generated by new developments, a minimum road level-of-service for all new development projects and a reduction in overall vehicle trips emanating from the County. This ordinance also establishes potential TDM measures to be used where appropriate including off-site telecommunications facilities, carpooling, alternative work schedules, transit ridership incentives, and an enhanced pedestrian and bikeway circulation system.

Trip Reduction

As the automobile is the major source of air pollution in the region, the County recognizes the importance of reducing the number of vehicle trips and miles traveled. Policies in this section are not intended to create additional regulation, but to create incentives to reduce vehicle trips, encourage alternative schedules and conform to policies created by regional governments.

Policies:

- AQ 10.1 Encourage trip reduction plans to promote alternative work schedules, ridesharing, telecommuting and work-at-home programs, employee education and preferential parking. (AI 47)



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Table AQ-4
Commute Distance by Home County

Home County	1992	1993	1994	1996	1998	1999
Los Angeles	15.8 miles	13.3 miles	15.3 miles	14.6 miles	15.3 miles	14.9 miles
Orange	14.9	14	15.8	15.7	14.2	16.1
Riverside	20.9	22.8	22.2	24.1	21	21.6
San Bernardino	20.4	20	21.3	25	22.4	21.3
Ventura	17.7	15.4	16.2	17.8	15.9	16.3
Imperial*	NA	NA	NA	11.8	12.1	14.5

* Imperial County was included for the first time in the 1996 study.
Source: 1999 SCAG State of the Commute Report

Table AQ-5
Commuting Time for Trip to Work by Home County

Home County	1992	1993	1994	1996	1998	1999
Los Angeles	37 minutes	33 minutes	30 minutes	33 minutes	31 minutes	34 minutes
Orange	32	29	30	30	31	33
Riverside	38	37	36	38	36	37
San Bernardino	35	36	36	38	37	35
Ventura	28	26	28	28	26	27
Imperial	NA	NA	NA	20	23	24

* Imperial County was included for the first time in the 1996 study.
Source: 1999 SCAG State of the Commute Report

Table AQ-6
Commuting Time for Return Trip Home by Home County

Home County	1992	1993	1994	1996	1998	1999
Los Angeles	42 minutes	36 minutes	34 minutes	36 minutes	38 minutes	41 minutes
Orange	35	34	38	37	34	41
Riverside	41	43	43	46	40	38
San Bernardino	42	39	42	47	39	41
Ventura	32	30	31	32	30	33
Imperial	NA	NA	NA	21	24	23

* Imperial County was included for the first time in the 1996 study.
Source: 1999 SCAG State of the Commute Report



Transportation Demand Management (TDM) - Low-cost ways to reduce demand by automobiles on transportation systems, such as programs to promote telecommuting, flextime and ridesharing.

Transportation Demand Management (TDM) can help unclog freeways and reduce commute times, thereby improving air quality. However, it means planning driving patterns to reduce the number of cars and trucks using the roads at any one time. This is the essence of TDM.

As stated in the Circulation Element, TDM strategies help reduce work-related trips by encouraging individuals who now drive alone to form carpools and

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Please see the General Plan Land Use Element Land Use Designation Policies section and Appendix J, Community Center Guidelines for additional information.

AQ 8.5 Develop community centers in conformance with policies contained in the Land Use Element. (AI 14)

AQ 8.6 Encourage employment centers in close proximity to residential uses. (AI 14)

AQ 8.7 Implement zoning code provisions which encourage community centers, telecommuting and home-based businesses. (AI 1)

AQ 8.8 Promote land use patterns which reduce the number and length of motor vehicle trips. (AI 26)

AQ 8.9 Promote land use patterns that promote alternative modes of travel. (AI 26)



Please see the General Plan Circulation Element Planned Circulation Systems section for further policies regarding alternative modes of travel.

Multi-jurisdictional Coordination

The County of Riverside recognizes the regional context of the policies it creates. Because air pollutants do not recognize political boundaries, often the policies of one community may adversely impact residents of another. This is particularly true with respect to pollutants emitted by motor vehicles, which underscores the importance of regional and subregional cooperation.

Policies:

AQ 9.1 Cooperate with local, regional, state and federal jurisdictions to reduce vehicle miles traveled and motor vehicle emissions through job creation. (AI 18)

AQ 9.2 Attain performance goals and/or VMT reductions which are consistent with SCAG's Growth Management Plan. (AI 26)

TRANSPORTATION DEMAND MANAGEMENT



Please see the General Plan Circulation Element Transportation Demand Management section for additional information.

Vehicles are an essential part of life in California. People use them to go to work, run errands and transport goods all across the state and nation. However, while they serve a valuable function, many streets and freeways are increasingly overburdened with traffic. Everyday, cars and trucks jam onto the freeway at the beginning and end of each workday. Inching along the average twenty-two mile commute for Riverside County residents, automobiles spew pollutants into the air, while long sunny days change these pollutants into other noxious compounds. Most cars carry a single occupant, adding to the congestion and smog. When traffic does move, accidents often involving large trucks bring traffic to a grinding halt.

The good news is that our commute times and distance traveled to and from work have been stable over the last decade. The bad news is that Riverside County residents drive the furthest distance and have some of the longest commute times in all of southern California (Tables AQ-4, AQ-5 and AQ-6).



Policies:

- AQ 7.1 Provide incentives to encourage new firms to locate within the County and existing firms to expand operations. (AI 18)
- AQ 7.2 Work with SCAQMD and MDAQMD to develop a means to encourage the location of new commercial and industrial development in those localities where jobs are most needed. (AI 18)
- AQ 7.3 Create a loan program to encourage small businesses to locate within the County. (AI 18)
- AQ 7.4 Offer incentives to businesses to control emissions and implement the AQMP. (AI 18)
- AQ 7.5 Reduce regulations on small businesses wherever possible and thereby encourage small business development and job creation. The County shall set performance standards as well as design standards, thus giving small business owners as many options as possible to comply with County regulations. (AI 18)
- AQ 7.6 Adopt policies freeing small businesses from unnecessary and duplicative paperwork. (AI 18)
- AQ 7.7 Assemble information collected from County agencies and departments concerning the business community to develop programs that better serve their needs. (AI 18)

Jobs-to-Housing Ratio

One of the challenges facing the County is to provide the appropriate quantity of residential and employment-generating uses within close proximity to each other in order to reduce the amount of vehicle miles traveled and minimize impacts on air quality. In addition to providing incentives for businesses to locate within Riverside County, it is important to consider the jobs-to-housing ratio when approving the construction of new developments, including the use of mixed-use land patterns and the placement of new public facilities.

Policies:

- AQ 8.1 Locate new public facilities in job-poor areas of the County. (AI 18)
- AQ 8.2 Emphasize job creation and reductions in vehicle miles traveled in job-poor areas to improve air quality over other less efficient methods. (AI 18)
- AQ 8.3 Time and locate public facilities and services so that they further enhance job creation opportunities. (AI 18)
- AQ 8.4 Support new mixed-use land use patterns and community centers which encourage community self-sufficiency and containment, and discourage automobile dependency. (AI 14)

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Table AQ-3
Home County by Work County

Home County						
Work County	Los Angeles	Orange	Riverside	San Bernardino	Ventura	Imperial
Los Angeles	90%	17%	8%	16%	18%	0%
Orange	6	79	10	7	0	0
Riverside	0	0	68	9	0	1
San Bernardino	2	2	8	68	0	0
Ventura	2	0	1	0	80	1
San Diego	0	1	4	0	1	1
Imperial	0	0	1	0	0	97

Source: 1999 SCAG State of the Commute Report

Education and Job Training

To stay competitive, the business community requires an educated and trained work force. While County residents are among the most talented and skilled in southern California, job training and education programs should be provided as an incentive for businesses to locate within the County. This will help ensure residents are trained and qualified to meet the specific needs of the business community.

Policies:

- AQ 6.1 Assist small businesses by developing education and job training programs, especially in job-poor areas. (AI 124)
- AQ 6.2 Collaborate with local colleges and universities to develop appropriate educational programs to assist residents in obtaining job skills to meet market demands.

Business Development

To the extent possible, the Air Quality Element will be an economic development program designed to enhance employment opportunities in Riverside County. Attempts to improve air quality should not prevent business development, especially within job-poor areas. In fact, business development should be identified as a critical factor in increasing air quality. Increasing employment opportunities within the County will allow residents to obtain jobs locally and decrease commute times. Decreased commute times mean less time spent in air polluting vehicles.



- AQ 5.3 Update, when necessary, the County's Policy Manual for Energy Conservation to reflect revisions to the County Energy Conservation Program.
- AQ 5.4 Encourage the incorporation of energy-efficient design elements, including appropriate site orientation and the use of shade and windbreak trees to reduce fuel consumption for heating and cooling.

JOBS AND HOUSING

Imagine commuting in the morning and driving only a few short miles to work. There would be no commutes over an hour, no crowded freeways that resemble parking lots and no fighting traffic. This is the life of people who live near work. And as more residents are able to live and work within the County, this will be the commuting pattern of most residents. This will save fuel, ease congestion, speed traffic, cut emissions and improve air quality. However, if nothing is done, the risks are great. SCAG predicts that by the year 2010 commutes between Riverside County and Los Angeles County may increase by 600% over 2000 levels.

Part of the solution to the region's air quality problems is a better jobs-to-housing ratio. The objective of the jobs to housing ratio concept is to reduce Vehicle Miles Traveled (VMT) by locating jobs and housing closer together. In the ideal situation, the appropriate number of housing units in various income categories are provided to house the County's workforce. While this does not ensure that residents will live and work within Riverside County, the likelihood of it occurring does increase.

As stated in the General Plan Housing Element, traffic patterns on the major east-west transportation routes indicate that Riverside County serves as a bedroom community that supplies approximately 18% of the labor pool for the Los Angeles-Orange County metropolitan area (Table AQ-3, Home County by Work County). Statistics for 1990 to 2000 show that Riverside County's jobs-household ratio is slowly improving, however, from 0.80 jobs per household in 1990 to 0.90 in 1997 and 0.94 in 2000. The unincorporated area shows a severe shortage of jobs, however, with only 0.48 jobs per household in the western County and 0.26 jobs per household in the eastern County in 1997. This is the reverse of the jobs to housing ratio experienced in Los Angeles and Orange Counties where there were approximately 1.46 and 1.52 jobs per household respectively in the year 2000.






A "household" consists of all the people occupying a dwelling unit, whether or not they are related.

Whenever possible, the County should offer incentives to businesses and individuals to control emissions and implement the AQMP. In job-poor areas, the County should stress job creation and reductions in vehicle miles traveled to improve air quality over other less efficient methods. Among the positive approaches available to the County to encourage job creation in job-poor areas are: education; job training and placement services; technical assistance to incoming businesses; reducing regulation and paperwork on businesses; fast-tracking and fee waivers; and low interest loans.

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- AQ 4.3 Encourage centrally heated facilities to utilize automated time clocks or occupant sensors to control heating.
-  AQ 4.4 Require residential building construction to comply with energy use guidelines detailed in Title 24 of the California Administrative Code.
- AQ 4.5 Require stationary pollution sources to minimize the release of toxic pollutants through:
- Design features;
 - Operating procedures;
 - Preventive maintenance;
 - Operator training; and
 - Emergency response planning
- AQ 4.6 Require stationary air pollution sources to comply with applicable air district rules and control measures.
- AQ 4.7 To the greatest extent possible, require every project to mitigate any of its anticipated emissions which exceed allowable emissions as established by the SCAQMD, MDAQMD, SOCAB, the Environmental Protection Agency and the California Air Resources Board.
-  AQ 4.8 Expand, as appropriate, measures contained in the County's Fugitive Dust Reduction Program for the Coachella Valley to the entire County.
-  AQ 4.9 Require compliance with SCAQMD Rules 403 and 403.1, and support appropriate future measures to reduce fugitive dust emanating from construction sites.
- AQ 4.10 Coordinate with the SCAQMD and MDAQMD to create a communications plan to alert those conducting grading operations in the County of first, second, and third stage smog alerts, and when wind speeds exceed 25 miles per hour. During these instances all grading operations should be suspended. (AI 111)

Energy Efficiency and Conservation

Recycling and conservation efforts established and encouraged by the County can reduce the amount of pollutants emitted within the County. Efforts to recycle wastes can reduce the amount of pollutants emitted from the production of new materials while preserving raw materials. Conservation measures minimize the impacts of not only the consumption of, but also the production of energy sources.

Policies

- AQ 5.1 Utilize source reduction, recycling and other appropriate measures to reduce the amount of solid waste disposed of in landfills.
- AQ 5.2 Adopt incentives and/or regulations to enact energy conservation requirements for private and public developments. (AI 62)



- AQ 2.3 Encourage the use of pollution control measures such as landscaping, vegetation and other materials, which trap particulate matter or control pollution. (AI 114)
- AQ 2.4 Consider creating a program to plant urban trees on an Area Plan basis that removes pollutants from the air, provides shade and decreases the negative impacts of heat on the air. (AI 114)

Mobile Pollution Sources

Mobile sources are subdivided into two categories: on-road (generally motorized vehicles like automobiles, motorcycles and trucks) and non-road sources (trains, boats, jet skis and all-terrain vehicles). The County's land use distribution, proximity to Orange and Los Angeles Counties, and subsequent auto-generated traffic have had a tremendously detrimental impact on air quality. Vehicle miles traveled (VMT) have doubled over the past 20 years, with mobile pollution sources constituting approximately 60% of air pollution in the region.

Policies:

- AQ 3.1 Allow the market place, as much as possible, to determine the most economical approach to relieve congestion and cut emissions.
- AQ 3.2 Seek new cooperative relationships between employers and employees to reduce vehicle miles traveled.
- AQ 3.3 Encourage large employers and commercial/industrial complexes to create Transportation Management Associations. (AI 115)
- AQ 3.4 Encourage employee rideshare and transit incentives for employers with more than 25 employees at a single location.



Transportation Management Associations - Non Profit organizations formed so that employers, developers, building owners, local government representatives, and others can work together and collectively establish policies, programs, and services to address local transportation problems.

Stationary Pollution Sources

Stationary pollution sources are generally divided into two subcategories for analysis: point sources (such as power plants and refinery boilers) and area sources (including small emission sources such as residential water heaters and architectural coatings). Agricultural and industrial land uses are generally the main stationary pollution sources in Riverside County, though most urbanized land areas and their associated activities also contribute to poor air quality in the region. While industrial sources are addressed here, agricultural source impacts, due to their primary emissions of PM₁₀, are addressed in the Particulate Matter section of this element.

Policies:

- AQ 4.1 Encourage the use of building materials/methods which reduce emissions.
- AQ 4.2 Encourage the use of efficient heating equipment and other appliances, such as water heaters, swimming pool heaters, cooking equipment, refrigerators, furnaces and boiler units.

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- AQ 1.4 Coordinate with the SCAQMD and MDAQMD to ensure that all elements of air quality plans regarding reduction of air pollutant emissions are being enforced. (AI 111)
- AQ 1.5 Establish and implement air quality, land use and circulation measures that improve not only the County's environment but the entire region's. (AI 111)
- AQ 1.6 Establish a level playing field by working with local jurisdictions to simultaneously adopt policies similar to those in this Air Quality Element
- AQ 1.7 Support legislation which promotes cleaner industry, clean fuel vehicles and more efficient burning engines and fuels. (AI 113)
- AQ 1.8 Support the introduction of federal, state or regional enabling legislation to permit the County to promote inventive air quality programs, which otherwise could not be implemented. (AI 113)
- AQ 1.9 Encourage, publicly recognize and reward innovative approaches that improve air quality. (AI 113)
- AQ 1.10 Work with regional and local agencies to evaluate the feasibility of implementing a system of charges (e.g., pollution charges, user fees, congestion pricing and toll roads) that requires individuals who undertake polluting activities to bear the economic cost of their actions where possible. (AI 111)
- AQ 1.11 Involve environmental groups, the business community, special interests, and the general public in the formulation and implementation of programs that effectively reduce airborne pollutants.

Sensitive Receptors



Children may suffer from asthma or other chronic diseases as a result of exposure to polluted air.

Sensitive receptors refer to those segments of the population most susceptible to poor air quality (i.e. children, elderly and the sick) and to certain at-risk sensitive land uses such as schools, hospitals, parks, or residential communities. The intent of the following policies is to reduce the negative impacts of poor air quality on the County's sensitive receptors.

Policies:

- AQ 2.1 The County land use planning efforts shall assure that sensitive receptors are separated and protected from polluting point sources to the greatest extent possible. (AI 114)
- AQ 2.2 Require site plan designs to protect people and land uses sensitive to air pollution through the use of barriers and/or distance from emissions sources when possible. (AI 114)

matter. Seniors, people with pre-existing respiratory and/or cardiovascular disease and children appear to be more susceptible to the effects of PM₁₀ and PM_{2.5}.

Carbon Monoxide (CO)

Carbon monoxide replaces oxygen in the body's red blood cells. Individuals with a deficient blood supply to the heart, patients with diseases involving heart and blood vessels, fetuses (unborn babies), and patients with chronic hypoxemia (oxygen deficiency) as seen in high altitudes are the most susceptible to the adverse effects of CO exposure. People with heart disease are also more susceptible to developing chest pains when exposed to low levels of carbon monoxide. Exposure to high levels of carbon monoxide can slow reflexes and cause drowsiness, and result in death in confined spaces at very high concentrations.

Reduction in birth weight and impaired neurobehavioral development has been observed in animals chronically exposed to CO resulting in carboxyhemoglobin levels similar to those observed in smokers. Recent studies have found increased risks for adverse birth outcomes with exposure to elevated CO levels. These include pre-term births and heart abnormalities. Additional research is needed to confirm these results.

Nitrogen Dioxide (NO₂)

Population-based studies suggest that an increase in acute respiratory illness, including infections and respiratory symptoms in children (not infants), is associated with long-term exposures to NO₂ at levels found in homes with gas stoves, which are higher than ambient levels found in Southern California. Increase in resistance to air flow and airway contraction is observed after short-term exposure to NO₂ in healthy individuals. Larger decreases in lung functions are observed in individuals with asthma and/or chronic obstructive pulmonary disease (e.g. chronic bronchitis, emphysema) than in healthy individuals, indicating a greater susceptibility of these sub-groups.

In animals, exposure to levels of NO₂ considerably higher than ambient concentrations results in increased susceptibility to infections, possibly due to the observed changes in cells involved in maintaining immune functions. The severity of lung tissue damage associated with high levels of ozone exposure increases when animals are exposed to a combination of ozone and NO₂.

Sulfur Dioxide (SO₂)

Exposure of a few minutes to low levels of SO₂ can result in airway constriction in some asthmatics. All asthmatics are sensitive to the effects of SO₂. In asthmatics, increase in resistance to air flow, as well as reduction in breathing capacity leading to severe breathing difficulties, are observed after acute exposure to SO₂. In contrast, healthy individuals do not exhibit similar acute responses even after exposure to higher concentrations of SO₂. Animal studies suggest that despite being a respiratory irritant, it does not cause substantial lung injury at ambient concentrations. However, very high

levels of exposure can cause lung edema (fluid accumulation), lung tissue damage, and sloughing off of cells lining the respiratory tract.

Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient SO₂ levels. In these studies, efforts to separate the effects of SO₂ from those of fine particles have not been successful. It is not clear whether the two pollutants act synergistically or one pollutant alone is the predominant factor.

Sulfates

Most of the health effects associated with fine particles and sulfur dioxide at ambient levels are also associated with sulfates. Thus, both mortality and morbidity effects have been observed with an increase in ambient sulfate concentrations. However, efforts to separate the effects of sulfates from the effects of other pollutants have generally not been successful. Clinical studies of asthmatics exposed to sulfuric acid suggest that adolescent asthmatics are possibly a subgroup susceptible to acid aerosol exposure. Animal studies suggest that acidic particles such as sulfuric acid aerosol and ammonium bisulfate are more toxic than non-acidic particles like ammonium sulfate. Whether the effects are attributable to acidity or to particles remains unresolved.

Lead

Fetuses, infants, and children are more sensitive than others to the adverse effects of lead exposure. Exposure to low levels of lead can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. In adults, increased lead levels are associated with increased blood pressure. Lead poisoning can cause anemia, lethargy, seizures and death. It appears that there are no direct effects of lead on the respiratory system. Lead can be stored in the bone from early-age environmental exposure, and elevated blood lead levels can occur due to breakdown of bone tissue during pregnancy, hyperthyroidism (increased secretion of hormones from the thyroid gland) and osteoporosis (breakdown of bony tissue). Fetuses and breast-fed babies can be exposed to higher levels of lead because of previous environmental lead exposure of their mothers.

APPENDIX D

COACHELLA VALLEY

MODEL DUST CONTROL ORDINANCE

Section 100 Purpose

The purpose of this ordinance is to establish minimum requirements for construction and demolition activities and other specified sources in order to reduce man-made fugitive dust and the corresponding PM10 emissions.

Section 200 Definitions

For the purpose of this ordinance, the following definitions are applicable:

- 1 AGRICULTURAL OPERATIONS are any operation directly related to the growing of crops, or raising of fowls or animals for the primary purpose of making a livelihood.
- 2 AQMD is the South Coast Air Quality Management District and the representatives thereof.
- 3 AVERAGE DAILY TRAFFIC (ADT) is the number of motor vehicles that traverse a given unpaved or paved surface during a specified 24-hour period. ADT levels are calculated as the average daily volume over a specified 48-hour period as determined by the City (County) in consultation with the AQMD.
- 4 BULK MATERIAL is all sand, gravel, soil, aggregate and other organic and inorganic particulate matter.
- 5 CHEMICAL DUST SUPPRESSANTS are non-toxic chemical soil binders that are not prohibited for use by the City (County), the California Regional Water Quality Control Board, the California Air Resources Board, the U.S. Environmental Protection Agency (U.S. EPA), or any other law, rule or regulation, used to reduce dust on disturbed surfaces.
- 6 COACHELLA VALLEY BEST AVAILABLE CONTROL MEASURES (CV BACM) are methods to prevent or mitigate the emission and/or airborne transport of fugitive dust, as identified in the Coachella Valley Fugitive Dust Control Handbook.
- 7 COACHELLA VALLEY FUGITIVE DUST CONTROL HANDBOOK is the most recently approved reference document by the AQMD that includes a description of fugitive dust control measures, guidance for preparation of Fugitive Dust Control Plans, notification forms, signage provisions, and test methods.
- 8 CONSTRUCTION ACTIVITIES are any on-site activities preparatory to or related to the building, alteration, rehabilitation, or improvement of property, including, but not limited to the following activities; grading, excavation, trenching, loading, vehicular travel, crushing, blasting, cutting, planning, shaping, breaking, equipment staging/storage areas, weed abatement activities or adding or removing bulk materials from storage piles.
- 9 DEMOLITION ACTIVITIES are the wrecking or taking out of any load-supporting structural member of a structure or building and related handling operations or the intentional burning of any structure or building.

- 10 DISTURBED SURFACE AREA is any portion of the earth's surface (or material placed thereupon) that has been physically moved, uncovered, destabilized, or otherwise modified from its undisturbed native condition (including vehicular disturbances) thereby increasing the potential for the emission of fugitive dust. This definition does not include land that has been restored to a native condition, such that the vegetative ground cover and soil characteristics are equal to surrounding native conditions.
- 11 EARTH-MOVING OPERATIONS are the use of any equipment for an activity where soil is being moved or uncovered.
- 12 FINISH GRADE is the final grade of the site that conforms to the approved grading plan.
- 13 FUGITIVE DUST is any solid particulate matter that becomes airborne, other than that emitted from an exhaust stack, directly or indirectly as a result of human activities. PM10 is a subset of fugitive dust and is defined as particulate matter with an aerodynamic diameter of 10 microns or less.
- 14 FUGITIVE DUST CONTROL PLAN is a document that describes fugitive dust sources at a site and the corresponding control measures and is prepared in accordance with the guidance contained in the Coachella Valley Fugitive Dust Control Handbook.
- 15 HIGH-WIND EPISODE is when wind speeds exceed 25 miles per hour as measured by:
 - A. the closest AQMD monitoring station, or
 - B. a certified meteorological monitoring station, or
 - C. an on-site wind monitor calibrated and operated on-site in accordance with the manufacturer's specifications with a data logger or strip chart.
- 16 OPERATOR is any person who owns, leases, operates, controls, or supervises any potential fugitive dust generating operation subject to the requirements of this ordinance. This definition includes any person who has been officially designated by a property owner as the person responsible for fugitive dust control at a site, as indicated in an approved Fugitive Dust Control Plan.
- 17 PAVED ROAD is an improved street, highway, alley, public way, or easement that is covered by roadway materials (e.g., cement, asphalt or asphaltic concrete).
- 18 PHYSICAL ACCESS RESTRICTION is any barrier, including but not limited to; curbs, fences, gates, posts with fencing, shrubs, trees, or other measures that are effective in preventing vehicular and Off-Highway Vehicle (OHV) use of a specified site.
- 19 SILT is any bulk material with a particle size less than 75 micrometers in diameter that passes through a Number 200 sieve as determined by American Society of Testing and Materials (ASTM) Test Method C 136 or any other test method approved by the U.S. EPA and AQMD.

- 20 SITE is the real property on which construction, demolition, or other activities subject to this ordinance may occur.
- 21 STABILIZED SURFACE is any portion of land that meets the minimum standards as established by the applicable test method contained in the Coachella Valley Fugitive Dust Control Handbook.
- 22 STORAGE PILE is any accumulation of bulk material with a height of three feet or more and a total surface area of 300 or more square feet.
- 23 UNPAVED PARKING LOT is an area utilized for parking vehicles and associated vehicle maneuvering that is not covered with roadway materials (e.g., cement, asphalt or asphaltic concrete).
- 24 UNPAVED ROAD is any service roads, internal access roads, heavy and light duty equipment paths and other roadways which are not covered by typical roadway materials (e.g., cement, asphalt, asphaltic concrete).
- 25 TEMPORARY UNPAVED PARKING LOTS are those used less than 24 days per year.

Section 300 Performance Standards and Test Methods

All performance standards and test methods referenced in this ordinance shall be based on the methodologies included in the Coachella Valley Dust Control Handbook.

Section 400 Control Requirements

410. Work Practices – All Fugitive Dust Sources

- 1 No operator shall conduct any potential dust-generating activity on a site unless the operator utilizes one or more Coachella Valley Best Available Control Measures, as identified in the Coachella Valley Fugitive Dust Control Handbook for each fugitive dust source such that the applicable performance standards are met.
- 2 Any operator involved in any potential dust-generating activity on a site with a disturbed surface area greater than one acre shall, at a minimum, operate a water application system as identified in the Coachella Valley Fugitive Dust Control Handbook, if watering is the selected control measure.

Performance Standards and Test Methods

- 3 No person subject to the requirements contained in Section 410.1 shall cause or allow visible fugitive dust emissions to exceed 20 percent opacity, or extend more than 100 feet either horizontally or vertically from the origin of a source, or cross any property line.

420. Construction and Demolition Activities

- 1 Any operator applying for a grading permit, or a building permit for an activity with a disturbed surface area of more than 5,000 square feet, shall not initiate any earth-moving operations unless a Fugitive Dust Control Plan has been

- prepared pursuant to the provisions of the Coachella Valley Fugitive Dust Control Handbook and approved by the City (County).
- 2 A complete copy of the approved Fugitive Dust Control Plan must be kept on site in a conspicuous place at all times and provided to the City (County) and AQMD upon request.
 - 3 Any operator involved in demolition activities shall comply with AQMD Rule 1403 (Asbestos Emissions from Demolition/Renovation Activities) requirements, and the requirements of Title 40, Part 61 of the code of Federal Regulations.
 - 4 Any operator involved in earth-moving operations shall implement at least one of the following short-term stabilization methods during non-working hours:
 - A. maintaining soils in a damp condition as determined by sight or touch; or
 - B. establishment of a stabilized surface through watering; or
 - C. application of a chemical dust suppressant in sufficient quantities and concentrations to maintain a stabilized surface.
 - 5 Within 10 days of ceasing activity, an operator shall implement at least one of the following long-term stabilization techniques for any disturbed surface area where construction activities are not scheduled to occur for at least 30 days:
 - A. revegetation that results in 75 percent ground coverage provided that an active watering system is in place at all times; or
 - B. establishment of a stabilized surface through watering with physical access restriction surrounding the area; or
 - C. use of chemical stabilizers to establish a stabilized surface with physical access restriction surrounding the area.
 - 6 Any operator shall remove all bulk material track-out from any site access point onto any paved road open to through traffic:
 - A. within one hour if such material extends for a cumulative distance of greater than 25 feet from any site access point; and
 - B. at the conclusion of each workday.
 - 7 Any operator of a project with a disturbed surface area of five or more acres or of any project that involves the import or export of at least 100 cubic yards of bulk material per day shall install and maintain at least one of the following control measures at the intersection of each site entrance and any paved road open to through traffic with all vehicles exiting the site routed over the selected device(s):
 - A. pad consisting of minimum one inch washed gravel maintained in a clean condition to a depth of at least six inches and extending at least 30 feet wide and at least 50 feet long; or
 - B. paved surface extending at least 100 feet and at least 20 feet wide; or
 - C. wheel shaker / wheel spreading device consisting of raised dividers (rails, pipe, or grates) at least three inches tall and at least six inches apart and 20 feet long; or

- D. a wheel washing system.
- 8 Any operator required to submit a Fugitive Dust Control Plan under Section 420.1 shall install and maintain project contact signage that meets the minimum standards of the Coachella Valley Fugitive Dust Control Handbook, including a 24-hour manned toll-free or local phone number, prior to initiating any type of earth-moving operations.
 - 9 Any operator of a project with a disturbed surface area of 50 or more acres shall have an Environmental Observer on the site or available on-site within 30 minutes of initial contact that:
 - A. is hired by the property owner or developer; and
 - B. has dust control as the sole or primary responsibility; and
 - C. has successfully completed the AQMD Coachella Valley Fugitive Dust Control Class and has been issued a Certificate of Completion for the class; and
 - D. is identified in the approved Fugitive Dust Control Plan as having the authority to immediately employ sufficient dust mitigation 24-hours per day, seven days a week and to ensure compliance with this ordinance, the approved Fugitive Dust Control Plan, and AQMD regulations.

Performance Standards and Test Methods

- 10 No operator required to submit a Fugitive Dust Control Plan under Section 420.1 shall cause or allow visible fugitive dust emissions to exceed 20 percent opacity, or extend more than 100 feet either horizontally or vertically from the origin of a source, or cross any property line.
- 11 Exceedance of the visible emissions prohibition in Section 420.10 occurring due to a high-wind episode shall constitute a violation of Section 420.10, unless the operator demonstrates to City (County) all the following conditions:
 - A. all Fugitive Dust Control Plan measures or applicable Coachella Valley Best Available Control Measures were implemented and maintained on site; and
 - B. the exceedance could not have been prevented by better application, implementation, operation, or maintenance of control measures; and
 - C. appropriate recordkeeping was complied and retained in accordance with the requirements in Section 420.12 through 420.15; and
 - D. documentation of the high-wind episode on the day(s) in question is provided by appropriate records.

Reporting / Recordkeeping

Before Construction

- 12 The operator of a project with ten acres or more of earth-moving operations shall:

- A. forward two copies of a Site-Specific, Stand Alone [8½ by 11 inch] Fugitive Dust Control Plan to the AQMD within ten days after approval by the City (County). [Note: A separate AQMD approval will not be issued]; and
- B. notify the City (County) and the AQMD at least 24-hours prior to initiating earth-moving operations.

During Construction

- 13 Any operator involved in earth-moving operations shall compile, and maintain for a period of not less than three years, daily self-inspection recordkeeping forms in accordance with the guidelines contained in the Coachella Valley Fugitive Dust Control Handbook.
- 14 Any operator involved in earth-moving operations that utilizes chemical dust suppressants for dust control on a site shall compile records indicating the type of product applied, vendor name, and the method, frequency, concentration, quantity and date(s) of application and shall retain such records for a period of not less than three years.

After Construction

- 15 Any operator subject to the provisions of Section 420.12 shall notify the City (County) and the AQMD within ten days of the establishment of the finish grade or at the conclusion of the finished grading inspection.

430. Disturbed Vacant Lands / Weed Abatement Activities

- 1 Owners of property with a disturbed surface area greater than 5,000 square feet shall within 30 days of receiving official notice by the City (County) prevent trespass through physical access restriction as permitted by the City (County).
- 2 In the event that implementation of Section 430.1 is not effective in establishing a stabilized surface within 45 days of restricting access, the owner shall implement at least one of the following long term stabilization techniques within an additional 15 days, unless the City (County) has determined that the land has been restabilized:
 - A. uniformly apply and maintain surface gravel or chemical dust suppressants such that a stabilized surface is formed; or
 - B. begin restoring disturbed surfaces such that the vegetative cover and soil characteristics are similar to adjacent or nearby undisturbed native conditions. Such restoration control measure(s) must be maintained and reapplied, if necessary, such that a stabilized surface is formed within 8 months of the initial application.
- 3 Any operator conducting weed abatement activities on a site that results in a disturbed surface area of 5,000 or more square feet shall:
 - A. apply sufficient water before and during weed abatement activities such that the applicable performance standards are met; and

- B. ensure that the affected area is a stabilized surface once weed abatement activities have ceased.

Performance Standards and Test Methods

- 4 No person subject to the provisions of Sections 430.1 through 430.3 shall cause or allow visible fugitive dust emissions to exceed 20 percent opacity, or extend more than 100 feet either horizontally or vertically from a source, or cross any property line, and shall either:
 - A. maintain a stabilized surface; or
 - B. maintain a threshold friction velocity for disturbed surface areas corrected for non-erodible elements of 100 centimeters per second or higher.

Reporting / Recordkeeping

- 5 Within 90 days of ordinance adoption, operators of property with disturbed surface area of 5,000 or more square feet shall notify the City (County) of the location of such lands and provide owner contact information.
- 6 Any person subject to the provisions of Sections 430.1 through 403.3 shall compile, and retain for a period of not less than three years, records indicating the name and contact person of all firms contracted with for dust mitigation, listing of dust control implements used on-site, and invoices from dust suppressant contractors/vendors.

440. Unpaved Roads

- 1 Owners of private unpaved roads with average daily traffic levels between 20 and 150 vehicles must take measures (signage or speed control devices) to reduce vehicular speeds to no more than 15 miles per hour.
- 2 Owners of a cumulative distance of six or less miles of private unpaved roads shall pave each segment having 150 or more average daily trips or, alternatively apply and maintain chemical dust suppressants in accordance with the manufacturer's specifications for a travel surface and the performance standards included in Section 440.4 in accordance with the following treatment schedule:
 - A. one-third of qualifying unpaved road segments within one year of ordinance adoption; and
 - B. remainder of qualifying unpaved road segments within three years of ordinance adoption. (Note: treatments in excess of annual requirements can apply to future years.)
- 3 Owners of a cumulative distance of more than six miles of private unpaved roads shall stabilize each segment having 150 or more average daily trips in accordance with the following treatment schedule:
 - A. at least two miles paved or four miles stabilized with chemical dust suppressants in accordance with the manufacturer's specifications for a

travel surface and the performance standards established in Section 440.4 within one year of the ordinance adoption; and

- B. at least two miles paved or four miles stabilized with chemical dust suppressants in accordance with the manufacturer's specifications for a travel surface and the performance standards included in Section 440.4 in accordance with the following treatment schedule annually thereafter until all qualifying unpaved roads have been stabilized. (Note: treatments in excess of annual requirements can apply to future years).

Performance Standards and Test Methods

- 4 Owners of any private unpaved road shall not allow visible fugitive dust emissions to exceed 20 percent opacity, or extend more than 100 feet either horizontally or vertically from the origin of a source, and shall either:
 - A. not allow silt loading to be equal to or greater than 0.33 ounces per square foot; or
 - B. not allow the silt content to exceed six percent.

Reporting / Recordkeeping

- 5 Within 90 days of ordinance adoption, owners of unpaved roads shall provide to the City (County) and the AQMD the location and ADT estimates for all unpaved roads.
- 6 Owners of unpaved roads that utilize chemical dust suppressants shall compile, and retain for a period of not less than three years, records indicating the type of product applied, vendor name, and the method, frequency, concentration, quantity and date(s) of application.

450. Unpaved Parking Lots

- 1 Owners of parking lots established subsequent to ordinance adoption are required to pave such areas, or alternatively apply and maintain chemical dust suppressants in accordance with the manufacturer's specifications for traffic areas and the performance standards included in Section 450.4.
- 2 Owners of existing private unpaved parking lots shall implement one of the following control strategies within 180 days of ordinance adoption:
 - A. pave; or
 - B. apply and maintain dust suppressants in accordance with the manufacturer's specifications for traffic areas and the performance standards included in Section 450.4;
 - C. apply and maintain washed gravel in accordance with the performance standards included in Section 450.4.
- 3 Owners of private temporary unpaved parking lots (those that are used 24 days or less per year) shall apply and maintain chemical dust suppressants in accordance with the manufacturer's specifications for traffic areas and the

performance standards included in Section 450.4 prior to any 24-hour period when more than 40 vehicles are expected to enter and park. The owner of any temporary unpaved parking lot greater than 5,000 square feet shall implement the disturbed vacant land requirements contained in Section 430 during non-parking periods.

Performance Standards and Test Methods

- 4 The operator of any private unpaved parking lot shall not allow visible fugitive dust emissions to exceed 20 percent opacity, or extend more than 100 feet either horizontally or vertically from the origin of a source, and shall either:
 - A. not allow silt loading to be equal to or greater than 0.33 ounces per square foot; or
 - B. not allow the silt content to exceed eight percent.

Reporting / Recordkeeping

- 5 Within 90 days of ordinance adoption, owners of unpaved parking lots shall provide to the City (County) and the AQMD the location and ADT estimates and the size (in square feet) of unpaved parking lots.
- 6 Owners of unpaved parking lots that utilize chemical dust suppressants or apply gravel shall compile, and retain for a period of not less than three years, records indicating the type of product applied, vendor name, and the method, frequency, concentration, quantity and date(s) of application.

460. Public or Private Paved Roads

- 1 Any owner of paved roads shall construct, or require to be constructed all new or widened paved roads in accordance with the following standards:
 - A. curbing in accordance with the American Association of State Highway and Transportation Officials guidelines or as an alternative, road shoulders paved or treated with chemical dust suppressants or washed gravel in accordance with the performance standards included in Section 440.4 with the following minimum widths:

Average Daily Trips	Minimum Shoulder Width
500 - 3,000	4 feet
3,000 or greater	8 feet

- B. paved medians or as an alternative, medians surrounded by curbing and treated with landscaping, chemical dust suppressants, or washed gravel applied and maintained in accordance with the performance standards included in Section 440.4.
- 2 Any owner of public or private paved roads shall remove or cause to be removed any erosion-caused deposits of greater than 2,500 square feet within

24-hours after receiving notice by the City (County) or the AQMD or prior to resumption of traffic where the paved area has been closed to vehicular traffic.

Section 500 Administrative Requirements

- 1 Any operator preparing a Fugitive Dust Control Plan shall complete the AQMD Coachella Valley Fugitive Dust Control Class and maintain a current valid Certificate of Completion.
- 2 At least one representative of each construction or demolition general contractor and subcontractor responsible for earth-movement operations shall complete the AQMD Coachella Valley Fugitive Dust Control Class and maintain a current valid Certificate of Completion.
- 3 All reporting / recordkeeping required by Section 420 shall be provided to the City (County) and AQMD representatives immediately upon request.
- 4 All reporting / recordkeeping required by Section 430 through Section 460 shall be provided to the City (County) and AQMD representatives within 24-hours of a written request.

Section 600 Exemptions

- 1 The provisions of this ordinance shall not apply to:
 - A. agricultural operations including on-field sources and unpaved roads used solely for agricultural operations.
 - B. any dust-generating activity where necessary fugitive dust preventive or mitigative actions are in conflict with either federal or State Endangered Species Act provisions as determined in writing by the appropriate federal or state agency.
 - C. any action required or authorized to implement emergency operations that are officially declared by the City (County) to ensure the public health and safety.
- 2 The provisions of Section 420.1 shall not apply to any construction or demolition activity meeting any of the following activity levels or requirements:
 - A. the activity is occurring entirely within an enclosed structure from which no visible airborne particulate matter escapes; or
 - B. activities that do not require issuance of a grading permit or those that require a building permit provided that the project results in 5,000 or less square feet of soil disturbance.
- 3 The provisions of Section 420.8 shall not apply to:
 - A. projects that takes two weeks or less to complete provided that a long-term stabilization technique(s) identified in Section 430 are implemented; and
 - B. line projects (i.e., pipelines, cable access lines, etc.).

Compliance

- 1 A person violating any section of this ordinance or with any portion of an approved Dust Control Plan is guilty of an infraction punishable by a fine of not more than one hundred dollars (\$100.00) for a first violation and a fine not exceeding four hundred dollars (\$400.00) for a second violation within one year. A third violation, or more, within one year shall each be prosecuted at a level consistent with a misdemeanor violation.
- 2 In addition to any other remedy provided by law, failure to correct any condition indicated in a notice of violation within one hour of issuance will allow the City (County) to initiate one or more of the following actions where appropriate:
 - A Criminal proceedings.
 - B Civil proceedings to obtain an injunction; or any other relief against the owner or operator to stop operations at the site.
 - C Refusal to issue future permits and/or release of securities held until owner or operator has adequately demonstrated compliance with the notice of violation.
 - D Correction of the condition by the City (County) through the use of any securities held under this ordinance.

APPENDIX E

**FUNDING RESOURCES AVAILABLE
TO LOCAL JURISDICTIONS
TO SUPPORT
THE IMPLEMENTATION OF SUGGESTED POLICIES/STRATEGIES**

FUNDING RESOURCES AVAILABLE TO LOCAL JURISDICTIONS TO SUPPORT THE IMPLEMENTATION OF SUGGESTED POLICIES/STRATEGIES

AB2766 Subvention Fund. Cities within the jurisdiction of the South Coast Air Quality Management District (AQMD) receive a portion of the fees charged to register motor vehicles. AQMD disburses this fund to the cities on a quarterly basis. The revenue must be used to fund projects and programs that *reduce emissions from mobile sources*. Additional revenue is available to match AB2766 subvention funding for certain types of expenditures from the Mobile Source Air Pollution Reduction Review Committee's (MSRC) AB2766 Local Government Match Program. A separate application is required for the MSRC matching fund.

Contact: South Coast AQMD
Transportation Programs
(909) 396-3271

Website: [www.aqmd.gov/Business/Transportation/
AB2766SubventionFunding](http://www.aqmd.gov/Business/Transportation/AB2766SubventionFunding)

AQMD Financial Assistance for Small Business. Small businesses that are planning to purchase air pollution control equipment may apply for a loan guarantee under the California Capital Access Program (CalCAP). The program guarantees the repayment of your loan and motivates banks and other lenders to offer loans to small businesses for pollution control equipment. Guarantees are available for loans from \$15,000 to \$250,000 and may be up to 90 percent of the loan amount. To be eligible for assistance, a business must be subject to AQMD rules and regulations and must meet the definition of small business set by the U.S. Small Business Administration (typically less than 500 employees and \$5 million annual gross revenue).

Contact: South Coast AQMD
Public Affairs
1-800-CUT-SMOG

Website: www.aqmd.gov/Business/Financial Assistance

AQMD Lower Emission School Bus Program. AQMD requires public schools and private operators with more than 15 or more school buses to purchase or lease cleaner buses to protect children from exposure to toxic diesel emissions. AQMD grants are available to public school districts for the *purchase of clean school buses* (e.g. compressed natural gas or low-emitting diesel), and for the retrofit of diesel buses with

particulate traps. To qualify for grants to purchase new buses, school districts agree to retire an equivalent number of the oldest, most polluting buses in the district's fleet. Funds are first distributed in proportion to the number of residents within each county. School Districts in LA county receive about 61 percent, Orange county - 18 percent, San Bernardino county - 11 percent, and Riverside receives - 10 percent. LA Unified School District is restricted to a maximum of 50 percent of the total funds distributed to LA County. Additional funding criteria apply.

Contact: South Coast AQMD
Technology Advancement Office
(909) 396-3331

Website: www.aqmd.gov/Education/CleanAirTechnologies/Implementation/SchoolBusProgram

Carl Moyer Memorial Air Quality Standards Attainment Program. The state legislature created this funding program to develop state air quality measures. The Carl Moyer program is designed to facilitate the introduction and use of low-emission, heavy-duty engines. Funds may be used to help purchase or repower new vehicles. New vehicles and equipment must achieve a 30 percent reduction of NO_x emissions compared to current emission standards. Alternative fuel engines, (e.g. compressed natural gas, liquefied natural gas, propane and electricity) will be given preference for funding. However, cleaner diesel engines may be considered in the off-road category if a CARB-certified alternative fuel engine is not available for a specific application. Vehicles and equipment must remain in operation for at least five years, and 75 percent of their use must be within the South Coast basin.

Contacts: South Coast AQMD
Technology Advancement Office
On-Road, Off-Road, Locomotive, Construction
(909) 396-3331

Website: www.aqmd.gov/Education/CleanAirTechnologies/Implementation/CarlMoyerProgram

Congestion Mitigation and Air Quality Improvement (CMAQ) Program. This program is implemented by the local transportation commissions or metropolitan planning organization. Funding is available for transit improvement projects and alternative fuels.

Website: www.fhwa.dot.gov/environment/cmaq.htm

Mobile Source Air Pollution Reduction Review Committee (MSRC) – Competitive Grants. The discretionary funds are to be used for clean air projects that results in direct and tangible reductions in air pollution from vehicles within the South Coast Air District. Project categories include clean fuel vehicles, alternative fuel infrastructure, transportation control measures; such as ridesharing telecommuting,

videoconferencing, parking management, traffic synchronization and research and development of new clean air technologies, as well as educational projects.

Contacts: South Coast AQMD
info@msrc-cleanair.org
Website: www.msrc-cleanair.org

MSRC – Local Government Match Program. This program provides matching funding against local funds for investments such as alternative fuel infrastructure and vehicles. Local governments such as cities and counties are eligible to apply for funding. Historically, project categories include clean fuel vehicles, alternative fuel infrastructure, and transportation.

Contacts: South Coast AQMD
info@msrc-cleanair.org
Website: www.msrc-cleanair.org

Rule 2202 Air Quality Investment Program (AQIP). AQMD requires employers with over 250 employees to reduce emissions from employee commute trips. One option available to employers under Rule 2202 is to invest in the AQMD's Air Quality Investment Program (AQIP) in lieu of implementing other rule requirements. AQIP revenue is placed in a restricted fund to be used to reduce emissions to mitigate the impacts of not participating in an employee commute reduction program. The objective of the program is to use the AQIP fund to reduce emissions to levels that are equivalent to levels that would have been achieved if the employer had implemented other strategies in the rule. The AQMD accepts emission reduction proposals and awards contracts on a bi-annual basis. Qualified AQIP proposals may include the purchase of clean on-road and off-road vehicles, and projects that enhance mobility (e.g. shuttle services).

Contacts: South Coast AQMD
Technology Advancement Office (909) 396-3331
Website: www.aqmd.gov/Education/CleanAirTechnologies/
Implementation/Rule2202AirQualityInvestmentProgram

Sempra Energy. Rebates, grants and loans are available until funding is depleted. *Flex Your Power's* website is a great resource for energy efficiency and conservation information. Incentives/rebates, technical assistance, retailers, product guides, case studies and more are found on this website.

Website: www.fypower.org

U.S. Department of Energy (U.S.DOE)-Clean Cities Program. The United States Department of Energy (DOE) established the Clean Cities Program as a locally based public/private alliance to expand the use of alternative fuels to gasoline and diesel fuel. By combining local decision-making with voluntary action by partners, the grassroots

approach of Clean Cities departs from traditional top-down federal programs. It creates an effective plan carried out at the local level for creating a sustainable nationwide alternative fuels market.

Contacts: US DOE
Roxanne.deppsy@ee.doe.gov
(206) 553-2155
California Energy Commission (CEC)
pward@energy.state.ca.us
(916) 654-4639

Website: www.eere.energy.gov/cleancities

**Good Neighbor Guidelines
for Siting New and/or Modified
Warehouse/Distribution Facilities**

(Final, September 12, 2005)



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The RAQTF is convened by WRCOG, and is comprised of representatives from South Coast Air Quality Management, County of Riverside, Office of District 2 Supervisor John F. Tavaglione, Eastern Municipal Water District, American Lung Association of the Inland Counties, Center for Community Action and Environmental Justice, March Joint Powers Authority, City of Riverside, City of Norco, Clean Energy, City of Moreno Valley, and the Waste Haulers Association. Their suggestions and input throughout the development of these guidelines are appreciated.

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Introduction

On January 16, 2003, the Riverside County Board of Supervisors (Board) directed Executive Office staff to initiate the establishment of a Regional Air Quality Task Force to study air quality issues in western Riverside County. This task force was envisioned to be an important tool for implementing air quality mitigation measures for the region.

The Regional Air Quality Task Force (RAQTF) continues to research the different areas of air quality mitigation that is needed for the subregion. Since many communities within the region either have a separate air quality element or address air quality issues in their land use section of their General Plan, the RAQTF undertook the need for a policy for local governments to voluntarily adopt when siting new warehouse/distribution centers. It should be noted that air quality agencies, such as, SCAQMD and CARB have broadly addressed this issue with in their Guidance Documents and Air Quality Handbook, but have not created stand alone documentation. The Guidelines that follow appear to be the first stand alone document that local governments can use when siting warehouses.

The RAQTF has developed these “Good Neighbor Guidelines for Siting New and/or Modified Warehouse/Distribution Facilities,” (referred to as “Good Neighbor Guidelines”) to promote and assist planning departments, developers, property owners, elected officials, community organizations, and the general public as a tool to potentially help address some of the complicated choices associated with permitting warehouse/distribution facilities and understanding the options available when addressing environmental issues. These Good Neighbor Guidelines are designed to help minimize the impacts of diesel particulate matter (PM) from on-road trucks associated with warehouses and distribution centers on existing communities and sensitive receptors located in the subregion.

Sensitive receptors are considered:

- ✚ Residential Communities;
- ✚ Schools;
- ✚ Parks;
- ✚ Playgrounds;
- ✚ Day care centers;
- ✚ Nursing homes;
- ✚ Hospitals;
- ✚ And other public places where residents are most likely to spend time.

Objective

The mission of the RAQTF is to develop air quality measures that can be considered and potentially adopted by local governing bodies to address adverse air quality issues in the inland region through their planning activities.

The RAQTF has developed the Good Neighbor Guidelines to help achieve the following objectives:

✚ **Provide local governments with specific strategies that can be considered and implemented to minimize potential diesel impacts from new warehouse and distribution centers;**

✚ **Educate existing warehouse and distribution centers about strategies that can be implemented to minimize potential diesel impacts from their operations.**

Some communities in western Riverside County, because of their proximity to freeways, arterial highways, rail lines, and warehouse/distribution facilities experience higher diesel emissions exposure associated with warehouse/distribution centers than others. In particular, warehouse/distribution center projects sited close to sensitive receptors (homes, schools, parks, day care centers, nursing homes, hospitals and other places public places) can result in adverse health impacts. The reverse is also true – siting sensitive receptors too close to an existing source of diesel emissions can also be a problem.

Audience

These Good Neighbor Guidelines focus on the relationship between land use, permitting, and air quality, and highlight strategies that can help minimize the impacts of diesel emissions associated with warehouse/distribution centers.

The California Resources Air Board (CARB) defines warehouses/distribution centers as facilities that serve as a distribution point for the transfer of goods. Such facilities include cold storage warehouses; goods transfer facilities, and inter-modal facilities such as ports. These operations involve trucks, trailers, shipping containers, and other equipment with diesel engines.

For the purpose of these Guidelines, warehouse/distribution center means a building or premises in which the primary purpose is to store goods, merchandise or equipment for eventual distribution and may include office and maintenance areas. A warehouse or distribution center includes 3 or more loading bays, or is expected to have more than 150 diesel truck trips per day. For the purpose of these Guidelines, a warehouse and distribution center is not intended to include “big box” discount or warehouse stores that sell retail goods, merchandise or equipment, or storage and mini-storage facilities that are offered for rent or lease to the general public.

While the primary users of these Guidelines will likely be agencies responsible for land use planning and air quality, they may also be useful for:

- ✚ Planners;
- ✚ Architects;
- ✚ Developers;
- ✚ Elected officials;
- ✚ School districts;
- ✚ Community advisory councils;
- ✚ Public/community organizations.

Purpose

The purpose of the Good Neighbor Guidelines is to provide local government and developers with a variety of strategies that can be used to reduce diesel emissions from heavy-duty trucks that are delivering goods to and from warehouse and distribution centers.

In 1998, the SCAQMD conducted its second Multiple Air Toxics Emissions Study (MATES II) ¹. Considered the nation's most comprehensive study of toxic air pollution to date, the study found that:

- Diesel exhaust is responsible for about 70 percent of the total cancer risk from air pollution;
- Emissions from mobile sources -- including cars and trucks as well as ships, trains and planes -- account for about 90 percent of the cancer risk. Emissions from businesses and industry are responsible for the remaining 10 percent; and
- The highest cancer risk occurs in south Los Angeles County -- including the port area-- and along major freeways.

The RAQTF is recommending that the Good Neighbor Guidelines be approved by WRCOG member jurisdictions and considered for all new warehouse/distribution centers that attract diesel trucks. Implementation of the recommended guidance for proposed facilities is technically more feasible than retroactive application to existing warehouse/distribution centers. However and as previously mentioned, there is an educational component of these Guidelines aimed at existing facilities. There are mechanisms in the planning process that will encourage developers to incorporate the recommended guidelines upfront in the design phase of a project.

The RAQTF recommends that jurisdictions consider these Guidelines when issuing permits such as conditional use permits, or zoning permits. In addition, the recommended Guidelines can be used to mitigate potentially significant adverse environmental impacts that are identified under the California Environmental Quality Act (CEQA). The recommended Guidelines are intended to be used for new warehouses and can be incorporated in the design phase of the proposed warehouse or distribution center. Many of the recommended guidelines can, however, be incorporated into existing facilities.

The recommended Guidelines format identifies the overall goal, benefits and the recommended strategies that can be implemented to achieve the goal. The Guidelines include a series of strategies that can be implemented in part or whole, or tailored to the specific needs of a project. The purpose of the guidelines is to provide a general framework for planners and developers regarding how they can achieve a specified goal.

It should be noted that CARB has adopted two airborne toxic control measures that will reduce diesel particulate materials (PM) emissions associated with warehouse/distribution centers. The first will limit nonessential (or unnecessary) idling of diesel-fueled commercial vehicles, including those entering from other states or countries. This measure prohibits idling of a vehicle for more than five minutes at any one location. The second measure requires that transport refrigeration units (TRUs) operating in California become cleaner over time. The measure establishes in-use performance standards for existing TRU engines that operate in California, including out-of-state TRUs. The requirements are phased-in beginning in 2008, and extend to 2019.²

CARB also operates a smoke inspection program for heavy-duty diesel trucks that focuses on reducing truck emissions in California communities. Areas with large numbers of distributions centers are a high priority.

While CARB has these measures in place, local agencies need to acknowledge that the enforcement of these measures is through the California Highway Patrol and do not provide a swift resolve to local air quality issues. Local agencies can adopt local control measures, like the ones being mentioned, that can be enforced by code enforcement and law enforcement officials and provide a more immediate affect to the regions air quality.

Recommended Local Guidelines

1. Goal: Minimize exposure to diesel emissions to neighbors that are situated in close proximity to the warehouse/distribution center.

Benefits:

1. Reduces exposure of diesel emissions to residences and other sensitive receptors.
2. Reduces potential future health, odor and noise related issues, particularly when in close proximity to residential neighborhoods.

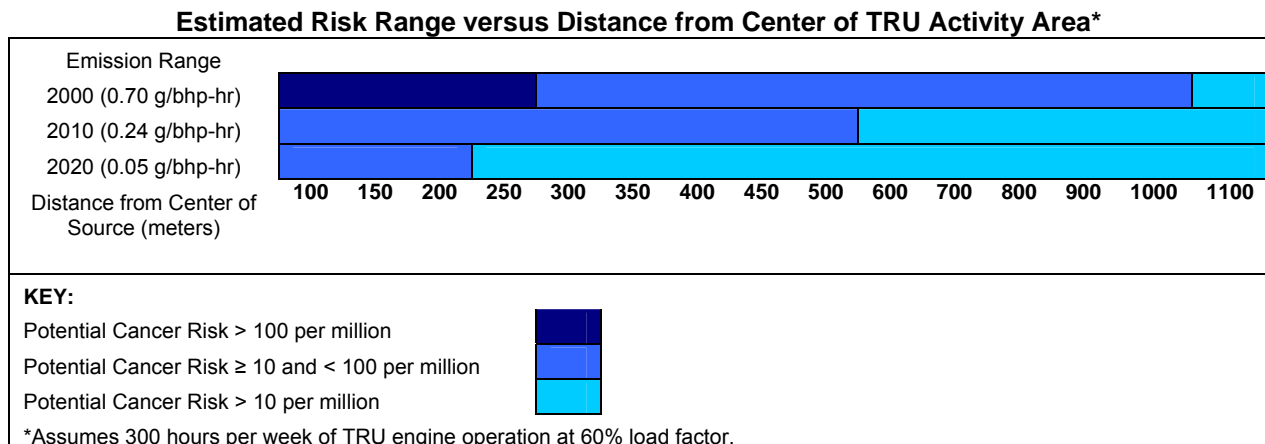
Recommended Strategies:

- Create buffer zone of at least 300 meters (roughly 1,000 feet, can be office space, employee parking, greenbelt) between warehouse/distribution center and sensitive receptors (housing, schools, daycare centers, playground, hospitals, youth centers, elderly care facilities, etc.);
- Site design shall allow for trucks to check-in within facility area to prevent queuing of trucks outside of facility;
- Take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land uses near entry and exit points³;
- Design warehouse/distribution center so that interior vehicular circulation shall be located away from residential uses or any other sensitive receptors.

Why do we suggest buffer zones?

The reduction of potential cancer risk levels at locations where TRUs operate is a direct result of the reduction of diesel PM emissions. Figure 1-1 compares the cancer risk range at various distances assuming 300 hours of TRU activity per week. For year 2000, the current fleet average emission rate of 0.7 g/bhp-hr was used. In 2020, the statewide fleet PM emission rate would be reduced 92 percent from the 2000 baseline year to 0.05 g/bhp-hr. Figure 1-1 below illustrates the significant reduction of the estimated near source risk as the diesel PM emission rate is reduced from the current fleet emission rate to the much lower emission rate in 2020.⁴

Figure 1-1



2. Goal: Eliminate diesel trucks from unnecessarily traversing through residential neighborhoods.

Benefits:

1. Reduces exposure of diesel emissions to residences and other sensitive receptors.
2. Reduces or eliminate trucks in residential neighborhoods.
3. Reduces truckers travel time if key destinations are clearly identified.

Recommended Guidelines:

- Require warehouse/distribution centers to clearly specify on the facility site plan primary entrance and exit points;
- Require warehouse/distribution centers to establish specific truck routes and post signage between the warehouse/distribution center and the freeway and/or primary access arterial that achieves the objective. The jurisdiction may not have an established truck route, but may take the opportunity to consider the development of one;
- Provide food options, fueling, truck repair and or convenience store on-site or within the warehouse/distribution center complex;
- Require warehouse/distribution centers to provide signage or flyers identifying where food, lodging, and entertainment can be found, when it is not available on site;

3. Goal: Eliminate trucks from using residential areas and repairing vehicles on the streets.

Benefits:

1. Reduces exposure of diesel emissions to residences and sensitive receptors.

Recommended Guidelines:

- Allow homeowners in the trucking business to acquire permits to park vehicles on property, residential areas or streets;
Note: Some jurisdictions already restrict parking of oversized vehicles on residential streets regardless of ownership.
- Establish overnight parking within the warehouse/distribution center;
- Allow warehouse/distribution facilities to establish an area within the facility for repairs.

4. Goal: Reduce and/or eliminate diesel idling within the warehouse/distribution center

Benefits:

1. Reduces exposure of diesel emissions to residences and other sensitive receptors.

Recommended Guidelines:

- Require the installation of electric hook-ups to eliminate idling of main and auxiliary engines during loading and unloading, and when trucks are not in use;
- Train warehouse managers and employees on efficient scheduling and load management to eliminate unnecessary queuing and idling of trucks within the facility;
- Require signage that informs truck drivers of the California Air Resources Board (CARB) regulations (which include anti-idling regulations);
- Post signs requesting that truck drivers turn-off engines when not in use;
- Restrict idling within the facility to less than ten (10) minutes.

5. Goal: Establish a diesel minimization plan for on- and off-road diesel mobile sources to be implemented with new projects.

Benefits:

1. Reduces exposure of diesel emissions to residences and sensitive receptors.
2. Establishes long-term goal for facility to eliminate diesel emissions at the facility.
3. Reduces on- and off-road diesel emissions that are associated with use of the facility.

Recommended Guidelines:

- Encourage warehouse/distribution center fleet owners to replace their existing diesel fleets with new model vehicles and/or cleaner technologies, such as electric or compressed natural gas;
- Require all warehouse/distribution centers to operate the cleanest vehicles available;
- Provide incentives for warehouses/distribution centers and corporations which partner with trucking companies that operate the cleanest vehicles available;
- Encourage the installation of clean fuel fueling stations at facilities.

6. Goal: Establish an education program to inform truck drivers of the health effects of diesel particulate and the importance of reducing their idling time.

Benefits:

1. Educates truck drivers of the health effects of diesel particulate to encourage drivers to implement diesel reduction measures.

Recommended Guidelines:

- Provide warehouse/distribution center owners/managers with informational flyers and pamphlets for truck drivers about the health effects of diesel particulates and the importance of being a good neighbor. The following information should include:
 - Health effects of diesel particulates;
 - Benefits of minimizing idling time;
 - ARB idling regulations;
 - Importance of not parking in residential areas.

7. Goal: Establish a public outreach program and conduct periodic community meetings to address issues from neighbors.

Benefits:

1. Informs the community regarding proactive strategies that the warehouse/distribution center has or is doing to reduce exposure to diesel particulate.
2. Allows the warehouse/distribution center to be more proactive.
3. Encourages partnerships to develop solutions for both parties.

Recommended Guidelines:

- Encourage facility owners/management to conduct periodic community meetings inviting neighbors, community groups, and other organizations;
- Encourage facility owners/management to have site visits with neighbors and members of the community to view measures that the facility has taken to reduce/and or eliminate diesel particulate emissions;
- Encourage facility owners/management to coordinate an outreach program that will educate the public and encourage discussion relating to the potential for cumulative impacts from a new warehouse/distribution center.
- Provide facility owners/management with the necessary resources and encourage the utilization of those resources such as, the California Air Resources Board (ARB) and the South Coast Air Quality Management District regarding information about the types and amounts of air pollution emitted in an area, regional air quality concentrations, and health risks estimates for specific sources;
- Require the posting of signs outside of the facility providing a phone number where neighbors can call if there is an air quality issue.

Recommended Regional Guidelines

The following guidelines can be implemented at the regional level for the siting of new and/or modified warehouses/distribution center (s):

- Develop, adopt and enforce truck routes both in and out of a jurisdiction, and in and out of facilities;
- Have truck routes clearly marked with trailblazer signs, so trucks will not enter residential areas;
- Promote the benefits of fleets rapidly adopting cleaner technologies;
- Provide incentives for local fleets to acquire cleaner technologies that can reduce idling;
- Adopt and implement the regional idling ordinance (being developed by this task force) to minimize idling at delivery locations warehouses, truck stops, etc;
- Provide local warehouses/distribution facilities incentives to reduce idling (i.e. reduce noise);
- Identify or develop secure locations outside of residential neighborhoods where truckers that live in the community can park their truck, such as a Park & Ride;
- Educate the local enforcement agencies (including law enforcement) on diesel emissions minimization strategies (specifications, how, etc.);
- Educate local governments of potential air quality impacts;
- Provide food options, fueling, truck repair and or convenience store on-site to minimize the need for trucks to traverse through residential neighborhoods.

GLOSSARY OF KEY TERMS

Buffer Zone: An area of land separating one parcel or land from another that acts to soften or mitigate the effects of one land use on the other.

California Environmental Quality Act (CEQA): A California law that sets forth a process for public agencies to make informed decisions on discretionary projects approvals. The process helps decision-makers determine whether any potential, significant, adverse environmental impacts are associated with a proposed project and to identify alternatives and mitigation measures that will eliminate or reduce such adverse impacts.

Distribution Center: See Warehouse

Idling: The operation of the engine of a vehicle while the vehicle is not in motion.

Land Use Agency: Local government agency that performs functions associated with the review, approval, and enforcement of general plans and plan elements, zoning, and land use permitting. For the purpose of these Guidelines, a land use agency is typically a local planning department.

Mobile Source: Sources of air pollution such as automobiles, motorcycles, trucks, off-road vehicles, boats, trains and airplanes.

Ordinance: A law adopted by a City Council or County Board of Supervisors. Ordinances usually amend, repeal or supplement the municipal code; provide zoning specifications; or appropriate money for specific purposes.

Risk: For cancer health effects, risk is expressed as an estimate of the increase chances of getting cancer due to facility emissions over a 70-year lifetime. This increase in risk expressed as chances in a million (e.g., 1,400 in a million).

Stationary Sources: Non-mobile sources such as manufacturing facilities, power plants, and refineries.

Warehouse(s): For the purpose of these Guidelines, warehouse/distribution center means a building or premises in which the primary purpose is to store goods, merchandise or equipment for eventual distribution and may include office and maintenance areas. A warehouse or distribution center includes 3 or more loading bays, or is expected to have more than 150 diesel truck trips per day. For the purpose of these Guidelines, a warehouse and distribution center is not intended to include "big box" discount or warehouse stores that sell retail goods, merchandise or equipment, or storage and mini-storage facilities that are offered for rent or lease to the general public

Zoning Ordinances: City councils and county boards of supervisors adopts zoning ordinances that set forth land use classifications, divides the county or city into land use zones as delineated on the official zoning, maps, and set enforceable standards for future development.

References

1. *Multiple Air Toxics Emissions Study (MATES II) (2000)*. South Coast Air Quality Management District.
2. *Air Quality and Land Use Handbook: A Community Health Perspective*. (April 2005) California Air Resources Board.
3. *Air Quality and Land Use Handbook: A Community Health Perspective*. (April 2005) California Air Resources Board.
4. *Air Quality and Land Use Handbook: A Community Health Perspective*. (April 2005) California Air Resources Board.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Final –Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds

October 2006

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APPENDIX A - UPDATED CEIDARS TABLE LIST WITH PM2.5
FRACTIONS

APPENDIX B – PM2.5 LOCALIZED SIGNIFICANCE THRESHOLD
LOOK-UP TABLES

Introduction

In the last few years, both California and the federal governments have established ambient air quality standards for fine particulate matter (PM) less than or equal to 2.5 microns in diameter (PM2.5). As a result, there is a need to establish a methodology for calculating PM2.5 and appropriate PM2.5 significance thresholds for the purpose of analyzing local and regional PM2.5 air quality impacts in California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) air quality analyses. This document provides a methodology for calculating PM2.5 and recommendations for localized and regional PM2.5 significance thresholds.

Background

PM larger than 2.5 microns and less than 10 microns, often referred to as the coarse PM fraction (or PM10), is mostly produced by mechanical processes. These include automobile tire wear, industrial processes such as cutting and grinding, and re-suspension of particles from the ground or road surfaces by wind and human activities such as construction or agriculture. In contrast, PM less than or equal to PM2.5 is mostly derived from combustion sources, such as automobiles, trucks, and other vehicle exhaust, as well as from stationary combustion sources. The particles are either directly emitted or are formed in the atmosphere from the combustion of gases, such as NO_x and SO_x combining with ammonia. PM2.5 components from material in the earth's crust, such as dust, are also present, with the amount varying in different locations. Staff's recommendation for calculating PM2.5 focuses only on directly emitted PM2.5.

In 1997, U.S. EPA established an annual and a 24-hour standard for the finest fraction of particulates, PM2.5, to complement the existing PM10 standards. However, U.S. EPA recently modified the 24-hr PM2.5 standard and revoked the annual PM10 standard. (Table 1). The annual component of the standard was established to provide protection against typical day-to-day exposures as well as longer-term exposures, while the daily component protects against more extreme short-term events.

TABLE 1
Federal Standards for Particulate Matter

Federal Standards	PM 10	PM 2.5
Annual	Revoked ^a	15 µg/m ³
24-Hour	150 µg/m ³	35 µg/m ³ ^b

In June 2002, the California Air Resources Board (CARB) adopted new, stricter standards for particulate matter that would affect both the coarse as well as fine particulate fraction (Table 2). CARB delayed action on the proposed 24-hour PM2.5 standard in light of the

^a U.S. EPA final rulemaking for CFR 40 Part 50.7 National Primary and Secondary Ambient Air Quality Standards at http://epa.gov/pm/pdfs/20060921_rule.pdf

^b U.S. EPA final rulemaking for CFR 40 Part 50.13 National Primary and Secondary Ambient Air Quality Standards at http://epa.gov/pm/pdfs/20060921_rule.pdf

findings related to statistical issues in several key short-term exposure health effects studies.

TABLE 2

California Standards for Particulate Matter

California Standards	PM 10	PM 2.5
Annual	20 $\mu\text{g}/\text{m}^3$	12 $\mu\text{g}/\text{m}^3$
24-Hour	50 $\mu\text{g}/\text{m}^3$	n/a

Methodology to Calculate PM 2.5

Because there are currently few or no PM2.5 emission factors for mechanical or combustion processes, staff is recommending an indirect approach to calculating PM2.5 emissions until such time as PM2.5 factors are developed. Since PM2.5 is a subset of PM10, the current methodology for calculating PM10 from fugitive dust sources (grading, demolition, unpaved roads, open storage piles, etc.) and combustion sources (stationary combustion sources, vehicle exhaust) will continue to be used to calculate PM10 and can also be used to calculate PM2.5. Total suspended PM (TSP) emissions typically contain specific fractions of PM10 and PM2.5 that can be measured. In general, PM from fugitive dust generating sources is primarily composed of PM10 with a relatively small fraction of the fugitive PM consisting of PM2.5. Alternatively, PM from combustion sources is primarily composed of PM2.5 with a small fraction consisting of PM10.

To calculate both PM10 and PM2.5, existing PM10 calculation methodologies for both fugitive dust PM10 and combustion PM10 can be used. To determine the PM2.5 fractions of the PM10 emission results, staff is recommending that the PM10 emissions be calculated using standard PM10 calculation methodologies. The PM10 emission results for each emission source or operation would then be multiplied by the applicable PM2.5 fraction, derived by emissions source, using PM profiles in the California Emission Inventory Data and Reporting System (CEIDARS) developed by the California Air Resources Board (CARB). The CEIDARS PM profiles are used to develop emission inventories for a variety of sources and operations in the Air Quality Management Plan (AQMP). The CEIDARS PM profiles have been streamlined to be used for most types of processes that would be encountered in a CEQA or NEPA document. In addition, AQMD staff has identified the PM2.5 fraction of PM10. The streamlined CEIDARS PM profiles can be found in Appendix A. The CEIDARS PM profiles may be updated as necessary to reflect updates prepared by CARB.

If the project being evaluated is not listed among the categories in Appendix A, then the closest related type of operation/process should be used. For example in analyzing construction activities, e.g., grading, earth moving, etc., if the specific activity is not located in the tables the CEQA practitioner can use the following default factors derived from the 2003 AQMP annual inventories (see Tables 3 and 4 below under the “Localized Significance Thresholds for PM2.5 Emissions” discussion). For mechanical dust generating sources, e.g., construction, the PM2.5 fraction of PM10 is 21 percent and for combustion sources the PM2.5 fraction of PM10 is 99 percent. For off-road combustions

sources, the PM2.5 fraction default would be 89 percent (Table 5). Other publicly available and peer reviewed sources of PM10 and PM2.5 emission factors can also be used if they more closely match the type of emission source than the sources identified in Appendix A. In addition, site-specific or project-specific information can be used.

Once the PM10 fractions from all emissions sources are calculated, these are summed and compared to the appropriate PM10 significance thresholds to determine whether or not a project is significant. Similarly, once the PM2.5 fractions from all emissions sources have been calculated, these are also summed (separate from the PM10 fractions) and compared to the appropriate PM2.5 significance threshold (see following discussion) to determine project significance.

The PM2.5 fraction of PM10 can be easily calculated as follows.

Step 1: Calculate PM10 emissions for each emissions source category.

Step 2: Look up the PM2.5 fraction of PM10 for the applicable source category by year that construction will occur or operation of the project will begin (Appendix A, column 6 of the appropriate table).

Step 3: Multiply the PM2.5 fraction by the PM10 emissions for each source category (PM2.5 emissions = PM10 emissions x [PM2.5 fraction])

Step 4: Sum the PM2.5 emissions from each emissions source.

Step 5: Compare PM2.5 emissions to the appropriate significance threshold.

Example:

A project is estimated to generate 8 pounds per day of PM10 from one piece of construction equipment. The PM2.5 emissions are as follows:

PM2.5 emissions = 8 pounds of PM10 per day x 0.89 = 7.12 pounds of PM2.5 per day.

In conjunction with establishing a methodology for calculating PM2.5, staff has developed the following recommended PM2.5 significance thresholds for both localized and regional significance for both construction and operation.

Localized Significance Thresholds for PM 2.5 Emissions

Localized significance thresholds (LSTs) were developed in response to the SCAQMD Governing Board's environmental justice (EJ) initiatives (EJ initiative I-4) in recognition of the fact that criteria pollutants, carbon monoxide (CO), oxides of nitrogen (NOx), and PM10 in particular, can have local impacts as well as regional impacts. The LST proposal went through extensive public outreach and was adopted by the Governing Board in October 2003. At the time the LST was adopted by the Governing Board, staff had not yet developed proposed LSTs for PM2.5.

Determining localized air quality impacts requires dispersion modeling. Because local lead agencies may not have the expertise or resources to perform dispersion modeling, SCAQMD created a series of look-up tables for CO, NO_x, and PM₁₀ in which staff back-calculated the mass emissions necessary to equal or exceed the construction or operation LST. The look-up tables were created for projects one to five acres in size and take into consideration location (source receptor area) and distance to the sensitive receptor. To use the look-up tables, the lead agency calculates daily emission as it normally would and then compares the results to the emissions in the applicable look-up table.

In general, the LSTs will apply primarily to construction because emissions from construction equipment occur at a fixed location compared to operation, which, for most land use projects, consists of emissions from vehicles traveling over the roadways, which, therefore, do not create impacts to a single location. To further assist lead agencies with calculating construction emissions, the SCAQMD conducted construction site surveys for each phase of construction to develop standard construction scenarios relative to construction equipment and hours of operation. Spreadsheets were developed to calculate emissions for the construction scenarios in an effort to create scenarios that would not exceed any applicable LSTs. When preparing a CEQA analysis, lead agencies could use the sample construction projects for their construction analyses, use the spreadsheets to tailor the analysis to their individual projects, or use a combination of the two.

The following subsections describe the proposed PM_{2.5} LSTs for both operation and construction.

Establishing LSTs

To determine the effects of PM_{2.5} on local (nearby) receptors, such as residents, hospitals, schools, etc., a PM_{2.5} localized significance threshold (LST) needs to be established. Since the Basin exceeds one or more of the state or federal ambient air quality standards for PM_{2.5}, the process used to determine significance for attainment pollutants, i.e., NO₂ and CO, developed for the LST program cannot be used^c. Under the LST program, since PM₁₀ is a nonattainment pollutant, the LST methodology uses a different process for determining whether localized PM₁₀ air quality impacts are significant. To determine localized PM₁₀ air quality impacts during operation, the LST methodology uses as a significance threshold the allowable change in concentration threshold for PM₁₀ listed in Rule 1303, Table A-2, which is 2.5 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). The allowable change in concentration threshold is a modeled concentration that cannot be exceeded at the sensitive receptor, and determines whether or not a permit applicant will receive a permit from the SCAQMD. For the LST program staff used a dispersion model (ISCST3) to convert the 2.5 $\mu\text{g}/\text{m}^3$ concentration into mass daily PM₁₀ emissions numbers based on the size of the project, location of the project, and distance to the sensitive receptor. The

^c Under the LST program, to determine significance for attainment pollutants, the emissions contribution from the project expressed as a concentration is added to the highest local ambient concentration from the last three years where data are available. If the sum is equal to or greater than any applicable state or federal ambient air quality standard, the project is considered to have significant localized air quality impacts for that pollutant. More information on the LST program can be found at the following URL: <http://www.aqmd.gov/ceqa/handbook/LST/LST.html>.

results were then incorporated into an LST look-up table. If the mass emissions from a project exceed the applicable LST look-up tables' mass emission numbers (which are based on the $2.5 \mu\text{g}/\text{m}^3$ concentration), then localized PM10 air quality impacts are considered to be significant.

Operational Localized Significance Thresholds

To establish operational PM2.5 localized significance thresholds, staff first reviewed the PM inventories in Appendix III of the 2003 AQMP. In particular, staff evaluated the composition of PM10 and PM2.5 from combustion processes in the 2003 AQMP to establish a general ratio of PM2.5 to PM10. Combustion processes were evaluated because, for most land use projects, mobile source combustion emissions comprise the majority of emissions. Table 3 shows the total PM10 and PM2.5 inventories for total fuel combustion process for the years 2005 through 2010. As can be seen in Table 3, over the five-year timeframe considered, the fraction of combustion PM10 that consists of PM2.5 is consistently 99 percent. Since combustion PM10 and PM2.5 fractions are essentially equivalent, staff is recommending that the operational localized significance threshold for PM2.5 be the same as the current operational localized significance threshold for PM10, i.e., $2.5 \mu\text{g}/\text{m}^3$.

TABLE 3

Total Stationary Source Fuel Combustion Inventory (Tons/Day)

Year	PM 10	PM 2.5	Percent of PM 10 which is PM 2.5
2005	8.13	8.01	99
2006	8.21	8.10	99
2007	8.30	8.18	99
2008	8.38	8.26	99
2010	8.54	8.42	99

Source: Appendix III, 2003 AQMP, Annual Average Emission Inventory

Construction Localized Significance Thresholds

Similarly, to develop a PM2.5 construction significance threshold for localized impacts, staff considered the PM2.5 contribution from fugitive sources and the PM2.5 contribution from combustion sources (construction equipment). As discussed in more detail in the following paragraphs, combustion emissions from the construction equipment contribute a larger portion of the total PM2.5 emissions from construction operations than fugitive sources.

Staff then reviewed the 2003 AQMP, Appendix III fugitive PM inventory for construction and demolition to obtain the PM10 and PM2.5 compositions. Table 4 shows the total PM10 and PM2.5 inventories for construction activities for the years 2005 through 2010. As can be seen in Table 4, over the five-year timeframe, the fraction of PM10 that consists of PM2.5 is consistently 21 percent. Multiplying the fugitive PM2.5 percent fraction of

PM10 by the existing construction PM10 LST, 10.4 $\mu\text{g}/\text{m}^3$, produces a result of approximately 2.2 $\mu\text{g}/\text{m}^3$.

TABLE 4
Total Fugitive PM Inventory (Tons/Day)

Year	PM 10	PM 2.5	Percent of PM 10 which is PM 2.5
2005	42.7	8.91	21
2006	43.66	9.11	21
2007	44.6	9.3	21
2008	45.54	9.5	21
2010	47.44	9.9	21

Source: Appendix III, 2003 AQMP, Annual Average Emission Inventory

Off-road construction equipment, however, also contributes combustion PM as well as fugitive PM. To determine the contribution of PM2.5 from construction equipment combustion emissions, staff performed dispersion modeling using the ISCST3 dispersion model for one-, two-, and five-acre construction scenarios. The construction scenarios were developed from construction site surveys conducted in connection with staff's original LST proposal. Combustion sources were modeled as adjacent five-meter volume sources and fugitive sources were modeled as adjacent one-meter area sources. Worst-case meteorological data from the West Los Angeles source receptor area were used and receptors were placed at 25, 50, 100, 200, and 500 meter distances from the construction site. Using CARB speciation data, it was assumed that 21 percent of fugitive dust PM10 is comprised of PM2.5 and 89 percent of off-road equipment combustion PM10 emissions are comprised of PM2.5 (based 2003 AQMP inventories, see Table 5).

TABLE 5
Combustion PM Inventory from Off-Road Equipment (Tons/Day)

Year	PM 10	PM 2.5	Percent of PM 10 which is PM 2.5
2005	11.95	10.64	89
2006	11.61	10.33	89
2007	11.2	9.97	89
2008	10.93	9.71	89
2010	10.26	9.09	89

Source: Appendix III, 2003 AQMP, Annual Average Emission Inventory

The modeling results showed that combustion PM2.5 from off-road equipment comprise approximately 75 to 100 percent of the total PM2.5 emissions from construction activities. Further, the PM2.5 contribution from fugitive sources is dependant on the construction phase. For example, the modeling showed that the demolition and site preparation phases have the highest fugitive PM2.5 contribution to the overall results, whereas, the building and asphalt paving phases contribute the most combustion PM2.5 to the overall results.

The modeling results indicate that the contribution of off-road combustion PM2.5 emissions can be three to four times higher than the contribution of PM2.5 from fugitive sources. Based on this result, staff recommends that the PM2.5 fugitive dust component be adjusted upward by approximately four times to account for the PM2.5 emissions from the construction equipment. As a result, staff is recommending a PM2.5 construction LST of $10.4 \mu\text{g}/\text{m}^3$, the same as the construction LST for PM10. Finally, an exceedance of either the PM10 construction LST or the PM2.5 construction LST is a significant adverse localized air quality impact.

Regional Emission Threshold of Significance for PM 2.5

Emissions that exceed the regional significance thresholds are mass daily emissions that may have significant adverse regional effects and are the air quality significance thresholds with which most CEQA practitioners are familiar.

Table 6
Regional Air Quality Significance Thresholds

<i>Mass Daily Thresholds^a</i>		
Pollutant	Construction^b	Operation^c
NOx	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM10	150 lbs/day	150 lbs/day
SOx	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day

The following subsection describes the proposed PM2.5 regional significance thresholds for both operation and construction.

Establishing Regional Significance Thresholds

PM emissions also affect air quality on a regional basis. When fugitive dust enters the atmosphere, the larger particles of dust typically fall quickly to the ground, but smaller particles less than 10 microns in diameter may remain suspended for longer periods, giving the particles time to travel across a regional area and affecting receptors at some distance from the original emissions source. Fine PM2.5 particles have even longer atmospheric residency times. Staff is recommending a PM2.5 regional significance threshold based on a recent EPA proposal, as explained in the following paragraphs.

On September 8, 2005, EPA published in the Federal Register "Proposed Rule to Implement the Fine Particle National Ambient Air Quality Standards," which proposed a significant emission rate for PM2.5 of 10 tons per year. Staff is proposing to use EPA's

significant emission rate for PM2.5 to develop the daily mass emission regional significance threshold for PM2.5. Converting the annual rate, 10 tons, into a daily rate produces a daily rate of approximately 55 pounds per day. A similar approach was used to derive the operational regional significance thresholds for NO2 and VOC. NO2 and VOC operational regional significance thresholds were derived by using the NOx/VOC emission rate that defined a major source in the South Coast Air Basin, 10 tons per year. Converting the annual emissions rate into a daily rate resulted in a regional operational significance threshold of 55 pounds per day for each pollutant. Similar to the regional significance threshold for PM10 of 150 pounds per day, the proposed PM2.5 regional significance threshold of 55 pounds per day would apply to both construction and operation.

Conclusion

In this document staff identified a methodology to indirectly calculate PM2.5 emissions for a CEQA or NEPA air quality analysis, to be used until such time as PM2.5 emission factors are available, which will allow the CEQA practitioner to calculate PM2.5 emissions directly. In addition, PM2.5 construction and operation LSTs have been identified to address localized impacts. The PM2.5 LSTs will be used to develop look-up tables for projects five acres in size or smaller, similar to those prepared for PM10, nitrogen dioxide (NO2), and carbon monoxide (CO). As with the other pollutants, the PM2.5 look-up tables can be used as a screening procedure to determine whether or not small projects (less than or equal to five acres) will generate significant adverse localized air quality impacts. Screening procedures are by design conservative, that is, the predicted impacts tend to overestimate the actual impacts. If the predicted impacts are acceptable using the LST look-up tables, then a more detailed evaluation is not necessary. However, if the predicted impacts are significant, then the project proponent may wish to perform a more detailed emission and/or modeling analysis before concluding that the impacts are significant. Project proponents are not required to use this LST procedure; and may complete site specific modeling instead. Site-specific modeling is required for projects larger than five acres.



The Noise Guidebook

The Noise Guidebook

**A Reference Document for
Implementing the Department of
Housing and Urban Development's
Noise Policy**

**Prepared By The Environmental
Planning Division,
Office of Environment and Energy**

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Preface

Introduction

This *Noise Guidebook* has been prepared to serve as the basic reference document for all HUD field staff who are responsible for implementing the Department's noise policy. It brings together in one place all the various reports, informational papers and other items that have been put out by the Department over the past several years. It also contains several new items designed to make your job easier.

This *Guidebook* is designed to serve not only the experienced HUD staff member but also the new employee or the old employee who is new to the noise field. Because of this, the *Guidebook* contains some fairly basic background material as well as quizzes and other material specifically geared for the "learner."

Chapter 1

Basic Overview of the Environmental Noise Problem

Introduction

Background

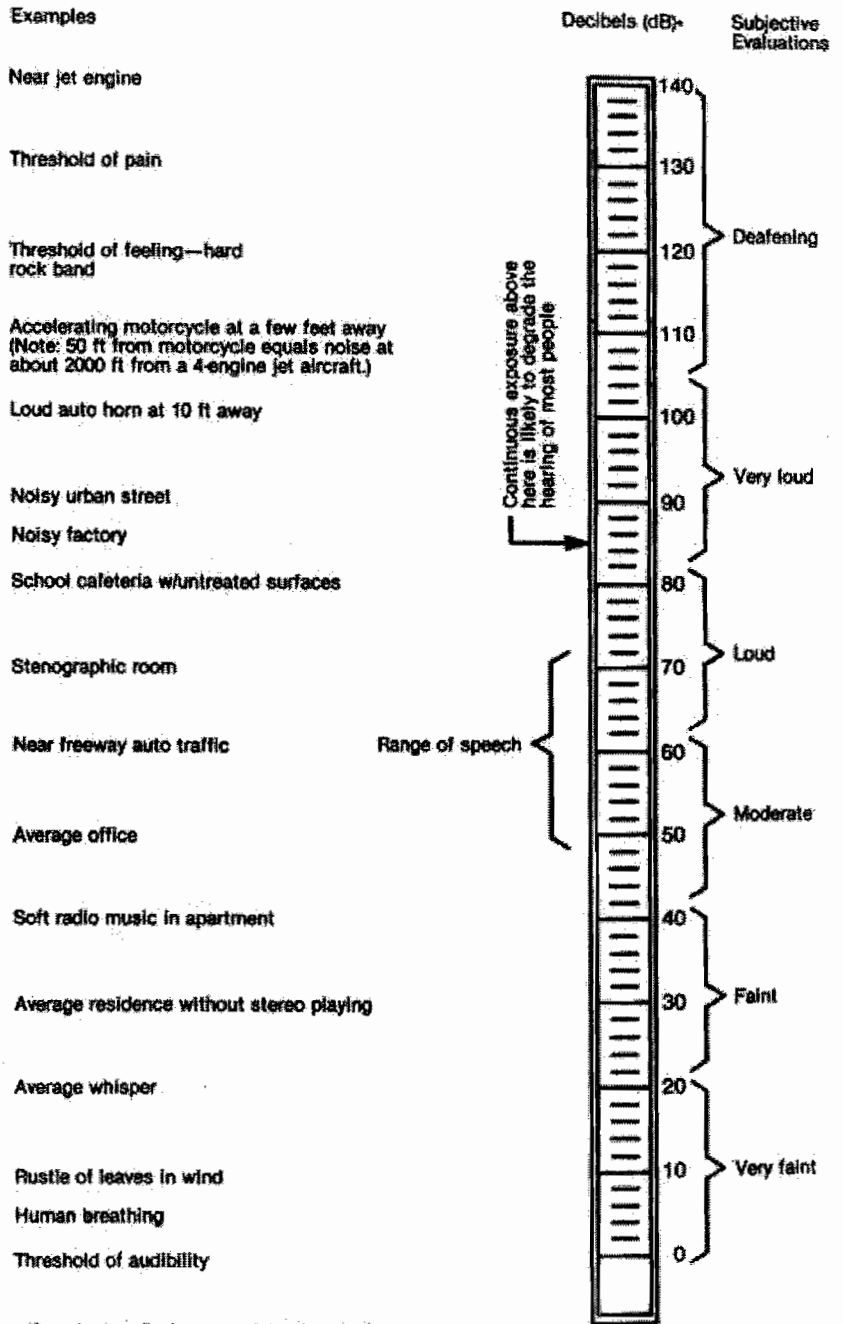
Definition and Scope of the Noise Problem

The air around us is constantly filled with sounds, yet most of us would probably not say we are surrounded by noise. What then is the difference between ordinary sound and what we call noise? The traditional definition of noise is that it is "unwanted sound." Sound becomes unwanted when it either interferes with our normal activities such as sleeping, conversation or recreation, when it causes actual physical harm such as hearing loss or has adverse effects on mental health. As we have become a more urbanized country and as technology has advanced, the level of sound in our environment has reached the point when it sometimes does cause interference and does cause physical and psychological harm, and thus we have developed a noise problem. (See Figure 1 for a listing of common sounds.)

The dimensions of the noise problem have grown larger and larger over the past few decades. In its 1979 Annual Report, The Council on Environmental Quality stated that "nearly half the US population is regularly exposed to levels of noise that interfere with ...normal activities" and about "1 in 10 ...are exposed to noises of duration and intensity sufficient to cause a permanent reduction in their ability to hear."

Figure 1
Common Sounds
Basic Theory: Common Sounds in Decibels (dB)

Some common, easily recognized sounds are listed below in order of increasing sound intensity levels in decibels. The sound levels shown for occupied rooms are typical general activity levels only and do not represent criteria for design.



*dB are "average" values as measured on the A-scale of a sound-level meter
(From *Concepts in Architectural Acoustics*: M. David Egan, McGraw Hill, 1972.)

The Dynamics of the Noise Problem

There are basically two types of noise problems. There is the specific, job related, occupational noise problem created by extremely loud machinery. Then there is the community noise problem where the combined effect of many individual noise sources creates an overall noise level that is unacceptable. In the following pages we will be addressing the community noise problem only.

The main contributors to a community noise problem are transportation sources such as highways, railroads and airports. These sources are the most pervasive and continuing of the noise sources within the community. Of course, at any given site, there may be other noise sources which add to the problem, sources such as jackhammers at a construction site. But in general, and for the purposes of this section, the main concern is with the transportation sources.

The dynamics of a noise problem are based on the relationship between the noise source, the person or place exposed to the noise (hereafter called the receiver) and the path the noise will travel from source to receiver.

The source generates a given amount of noise which travels along the path and arrives at the receiver. The amount of noise will be reduced to some extent as a result of how long that path is or whether there are any barriers along the path. The severity of the impact on the receiver is a function of what type of activity is taking place, whether it is indoors or outdoors, and what type of building it is in if the activity is indoors. Figure 3 contains some basic compatibility guidelines.

The impact of the noise can be altered or mitigated by changing the characteristics of any of the three elements: source, path or receiver. Later on we will look at the various mitigation measures that are possible. Our concern however will be primarily with the receiver and the path. Control of the sources themselves is the specific responsibility of agencies such as the Environmental Protection Agency (EPA) or the Federal Aviation Administration (FAA).

Figure 2
Dynamics of a Noise Problem

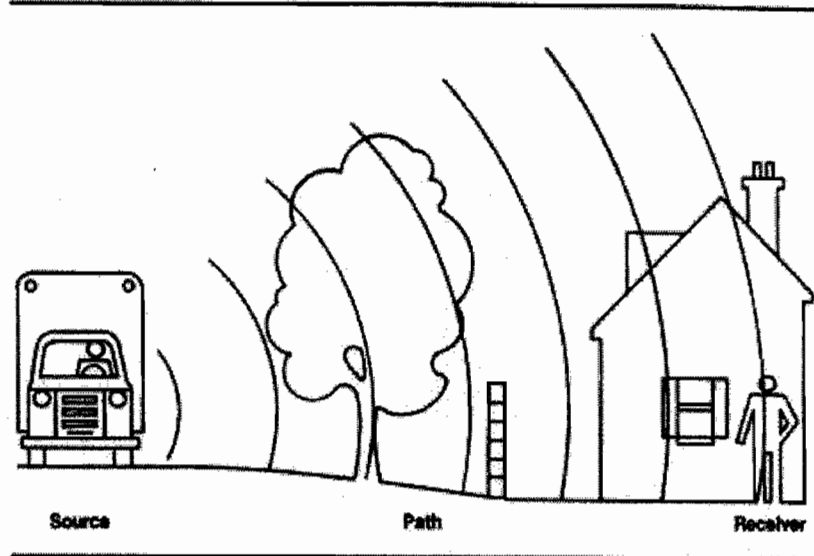


Figure 3
Land Use Compatibility Guidelines

LAND USE CATEGORY	LAND USE INTERPRETATION FOR NEF VALUE*			
	20	30	40	50
Residential — Single Family, Duplex, Mobile Homes		Normally Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Residential — Multiple Family, Dormitories, etc.		Clearly Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Transient Lodging		Clearly Unacceptable	Clearly Unacceptable	Clearly Unacceptable
School Classrooms, Libraries, Churches		Clearly Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Hospitals, Nursing Homes		Clearly Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Auditoriums, Concert Halls, Music Shells	Clearly Unacceptable	Clearly Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Sports Arena, Outdoor Spectator Sports		Clearly Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Playgrounds, Neighborhood Parks		Clearly Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Golf Courses, Riding Stables, Water Rac., Cemeteries		Clearly Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Office Buildings, Personal, Business and Professional		Clearly Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Commercial — Retail, Movie Theaters, Restaurants		Clearly Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Commercial — Wholesale, Some Retail, Ind., Mfg., Util.		Clearly Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Manufacturing, Communication (Noise Sensitive)	Clearly Unacceptable	Clearly Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Livestock Farming, Animal Breeding		Clearly Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Agriculture (except Livestock), Mining, Fishing		Clearly Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Public Right-of-Way		Clearly Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Extensive Natural Recreation Areas		Clearly Unacceptable	Clearly Unacceptable	Clearly Unacceptable

*Ldn = NEF Value + 35

85 75 85
Ldn VALUES

- Clearly Acceptable
- Normally Unacceptable
- Normally Acceptable
- Clearly Unacceptable

The ideal solution to a potential problem is to reduce the noise being produced by the source. The best solution available to HUD, or the community, however, is to make sure that noise sensitive uses are located where they will not be exposed to high noise levels. The next best approach to mitigating noise impact is to attempt to reduce the amount of noise that reaches the receiver. This can be accomplished through the use of barriers such as walls or earthen berms, or combinations of both, along the noise path. If the use of barriers is not possible then the only alternative available is to provide noise reduction measures in any structures associated with the activity so that at least the interior spaces are not exposed to high noise levels. This approach is considered the least desirable because most of the land uses we are concerned about, such as residential, do have outdoor areas and activities associated with them which would remain exposed to high noise levels.

A Note on Descriptors

A key factor in the growth of our ability to evaluate and reduce noise impacts has been the development of better tools to measure and describe the noise levels generated by various sources. The development of better tools (called noise descriptors or metrics) has been particularly important for dealing with community noise problems. Many of the older descriptor systems could only be used for one or two sources such as cars and railroads, but not airplanes. Since the community noise problem very often includes noise from all these sources the lack of an adequate descriptor made it difficult to do an adequate evaluation.

The most advanced descriptor currently in general use is the day night average sound level system, abbreviated as DNL and symbolized mathematically as L_{dn} . The day night average sound level is the 24 hour average sound level, expressed in decibels, obtained after the addition of a 10 decibel penalty for sound levels which occur at night between 10 PM and 7 AM. This nighttime penalty is based on the fact that many studies have shown that people are much more disturbed by noise at night than at any other time. This is not unusual in that background noise is often much less at night and also people tend to be doing very noise sensitive things at night, such as trying to sleep.

Another feature of the DNL system that is very important is that it can be used to describe noise from all sources. Thus, using the DNL system, we can describe the total noise exposure at a site, something many other descriptor systems couldn't do.

The DNL system has been adopted by the EPA, the Department of Defense (DOD) and HUD, and more recently by the FAA, specifically for describing environmental impacts for airport actions. We expect that very soon it will be in almost universal use in the U.S.

Issues

The main issues involved in any noise analysis can be summarized briefly.

- How much noise is a site exposed to
- What types of activities are being affected and how severely
- Is it reasonable to redesign the site to relocate noise sensitive activities
- And, if not, how much protection can be provided through various attenuation measures.

Your approach to these issues will be affected in many ways by the location of the project in question. Projects in suburban or rural areas can be approached differently because the available mitigation options are greater and often the noise exposure itself is not so severe. In urban situations, however, the noise exposure is often more severe but at the same time the options for mitigation or resiting are more limited. In the urban setting innovative design and the use of advanced attenuation measures becomes critical. Fortunately our experience has shown that good design and construction can relieve or substantially reduce major noise problems.

Legal Provisions

General Legislation and Background

The Federal legislation which addresses noise issues is somewhat different from other environmental legislation. The Clean Air Act, for example, required the Environmental Protection Agency to set up actual mandatory standards for air quality which were supposed to be met by all jurisdictions. EPA even has the authority to take punitive steps against cities which are not making "reasonable further progress" towards achieving these air quality goals. There is no similar legislation that covers noise. The approach has been to tackle the noise problem at the source by controlling the amount of noise that can be emitted by the individual airplane engine or the individual jackhammer. Agencies like HUD or the Farmers Home Administration have developed regulations which are related to the overall community noise level, but they only affect their own programs and are not binding on local communities. The Veterans Administration program only relates to aircraft noise and also only affects its own programs.

The major pieces of Federal legislation related to noise include: **The Noise Control Act of 1972** directed EPA to promote an environment for all Americans free from noise that jeopardizes their health and welfare. It also included a requirement for EPA to set a criterion for noise level adequate to protect health and welfare with an adequate margin of safety but without regard to cost or feasibility.

Quiet Communities Act of 1978 amended The Noise Control Act of 1972 to encourage noise control programs at the State and community level.

Federal Aid Highway Act of 1970 established the requirement that noise control be a part of the planning and design of all federally aided highways.

Aviation Safety and Noise Abatement Act of 1979 requires FAA to develop a single system for measuring noise at airports and under certain conditions to prepare and publish noise maps.

HUD Regulations

While the Department of Housing and Urban Development has no specific responsibility to try to reduce the noise problem at the source the way the Environmental Protection Agency and the Federal Aviation Administration do, it does have the responsibility to be aware of the noise problem and its impact on the housing environment. The most basic mandate which drives the Department's involvement with the noise issue is the Housing Act of 1949 (Public Law 81-171) which sets forth the national goal of "a decent home and suitable living environment for every American family." This goal was affirmed by the Housing and Urban Development Act of 1968 (Public Law 90-448). The Department was tasked by the Housing and Urban Development Act of 1965 (Public Law 89-117) "to determine feasible methods of reducing the economic loss and hardships suffered by homeowners as a result of the depreciation in the value of their properties following the construction of airports in the vicinity of their homes." The Noise Control Act of 1972, in addition to its specific tasking to EPA, tasked all Federal agencies to administer their programs in ways which reduce noise pollution. Finally, the Department is tasked by Federal Management Circular 75-2: *Compatible Land Uses at Federal Airfields* to make sure that its actions do not promote incompatible land uses around Federal airfields.

All of these legislative and regulatory mandates combine to create a serious requirement for the Department of Housing and Urban Development to be aware of the problem of noise and to take positive steps to protect residential and other sensitive land uses from high noise levels.

The Department of Housing and Urban Development first issued formal requirements related specifically to noise in 1971 (HUD Circular 1390.2). These requirements contained standards for exterior noise levels along with policies for approving HUD supported or assisted housing projects in high noise areas.

In general the requirements established three zones: an acceptable zone where all projects could be approved, a normally unacceptable zone where mitigation measures would be required and where each project would have to be individually evaluated for approval or denial, and an unacceptable zone in which projects would not, as a rule, be approved.

In 1979, the Department issued revised regulations (24 CFR Part 51B) which kept the same basic standards but adopted new descriptor systems which were considerably advanced over those in use under the old requirements.

HUD's regulations also require that recipients of Community Development Block Grants (CDBG) and Urban Development Action Grants (UDAG) take into consideration the noise criteria and standards in the environmental review process and consider ameliorative actions when noise sensitive land developments are proposed in noise exposed areas. If CDBG or UDAG activities are planned in a noisy area, and HUD assistance is contemplated later for housing and/or other noise sensitive activities, the HUD standards must be met for those activities.

Project Analysis

General

While most of the analysis for noise focuses on noise sources located around the project site, there are some characteristics of the project itself that you should know about. These characteristics will help you to determine what is called the noise assessment location (NAL) for site analysis. (The NAL is a representative point (or points) on the site where significant noise exposure is expected. All distances, etc. are measured from the NAL). This information will also be helpful later in evaluating the potential for mitigating or reducing the impact of noise. All of this data should be available from preliminary plans and specifications. If not, a quick phone call to the developer/sponsor should get you all the information you need.

Data Required

- Location of outdoor noise sensitive uses relative to the noise source.
- Location of buildings containing noise sensitive activities.
- Location of other buildings, particularly ones which might serve to shield sensitive buildings or areas from the noise source.
- Design and construction features of buildings, particularly features such as use of central air conditioning which could provide noise reduction benefits by permitting windows to be kept closed.

Analysis of Site and Environs

General

The primary focus of this impact analysis is on noise sources and the primary item to be determined is the noise level created by those sources. In many instances, particularly with airports, data on the noise levels generated by the source will have already been prepared by another agency such as the airport operator, the local or State highway/transportation department or other similar agency. (Figure 4 shows typical airport noise contours.) In those cases no site or environs analysis is necessary and one can proceed directly to impact analysis. For those instances where there are no current data already prepared, the Department of Housing and Urban Development has developed a handbook called the *Noise Assessment Guidelines* which contains a detailed desk top methodology for use by individuals to determine noise impacts (see Chapter 5). Included in the handbook is a complete listing of the data about the site and its environs that are necessary to conduct an analysis. We don't want to repeat all the detailed requirements here, but the following are some of the types of information you would have to collect if you were to do your own analysis. You might note that most of the information is related to the noise sources themselves.

For the purpose of analysis, the *Noise Assessment Guidelines* require that you consider all military/civilian airports within 15 miles of the project, all significant roads within 1000 feet and basically all railroads within 3000 feet.

Types of Data Required

- Number and type of vehicles
- Operational data:
 - speed
 - daytime/nighttime split
- Conditions where the vehicles are operated, i.e., freely flowing traffic versus stop and go, level versus hilly, welded railroad track versus bolted railroad track.

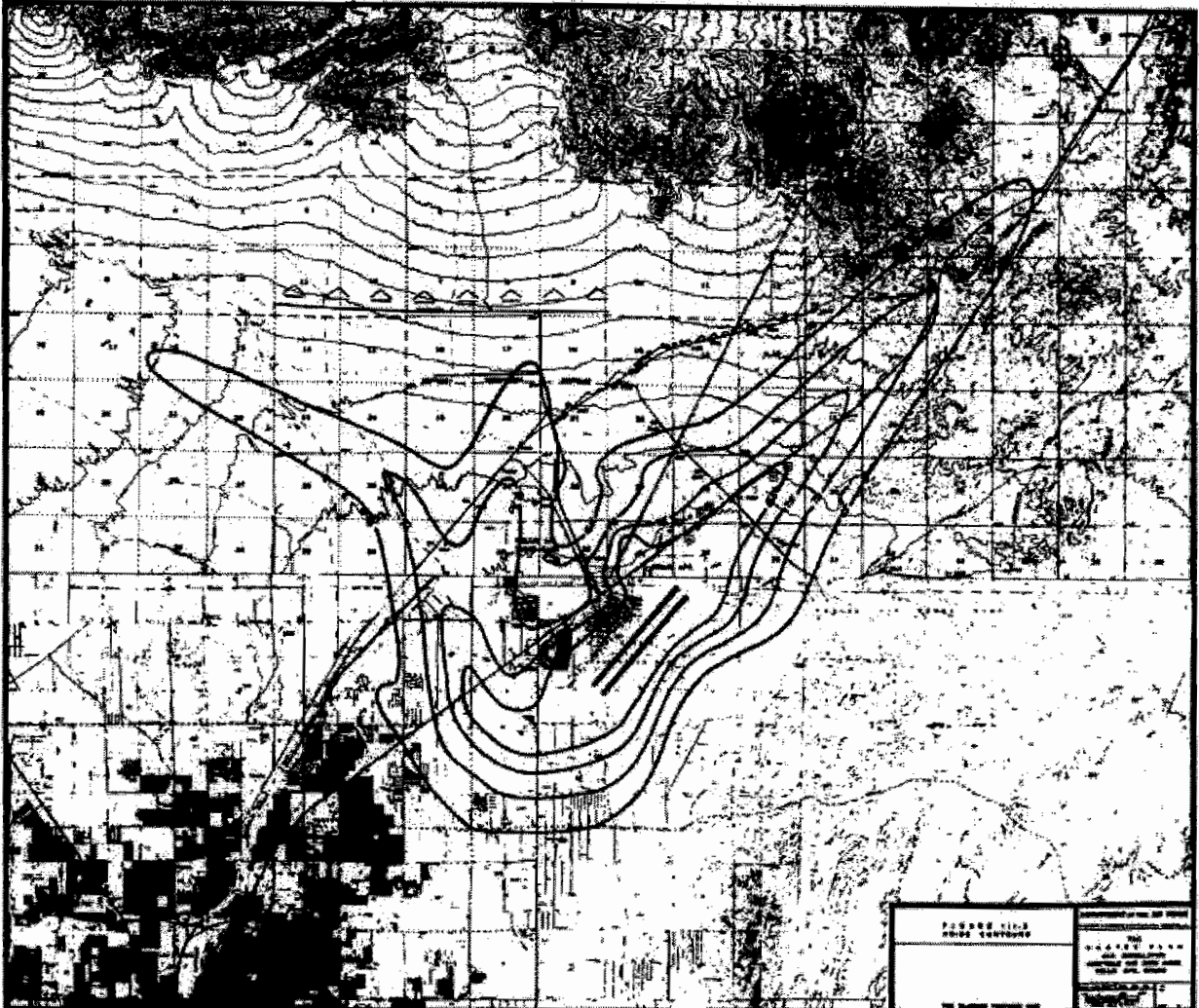
The *Noise Assessment Guidelines* contain guidance on sources for this data. Most of them are obtained from the "operator" of the transportation source. The *Guidelines* also contains model figures which can be used when actual data is unavailable. For example, if the actual number of vehicles traveling at night is not available then the *Guidelines* state that a figure of 15% should be used. Thus it is possible to make reasonably accurate noise level determinations even if some information is not available.

Determination of Impact

General

The specific procedures for determining the noise exposure levels for a site are clearly spelled out in the *Noise Assessment Guidelines*. The process is a fairly simple one in which the noise level from each source affecting the site is calculated and then combined to derive the overall exposure. If some kind of barrier exists or is proposed, the noise levels can be adjusted to reflect the mitigation provided by the barrier. The overall noise level is then compared to HUD's standards and the appropriate action, as spelled out in the regulations, is taken.

Figure 4
Noise Contours



Evaluation of Impact

HUD Regulations set forth the following exterior noise standards for new housing construction assisted or supported by the Department:

65 L_{dn} or less - Acceptable

Exceeding 65 L_{dn} but not exceeding 75 L_{dn} - Normally Unacceptable - appropriate sound attenuation measures must be provided: 5 decibels attenuation above the attenuation provided by standard construction required in 65 L_{dn} to 70 L_{dn} zone; 10 decibels additional attenuation in 70 L_{dn} to 75 L_{dn} zone.

Exceeding 75 L_{dn} - Unacceptable

HUD's regulations do not contain standards for interior noise levels. Rather a goal of 45 decibels is set forth and the attenuation requirements are geared towards achieving that goal. It is assumed that with standard construction any building will provide sufficient attenuation so that if the exterior level is 65 L_{dn} or less, the interior level will be 45 L_{dn} or less.

Once you have determined the overall noise exposure for the site you compare it to the above standards. If the overall site exposure is 65 L_{dn} or less the project is acceptable. If the exposure is between 65 L_{dn} and 75 L_{dn} you should consider alternative locations or providing adequate attenuation with the first preference, as we've noted, being for the construction of some kind of barrier to prevent noise from reaching the site. If providing adequate attenuation is impossible or impractical then the project should be considered unacceptable.

Suggested Mitigation

General Considerations

As discussed briefly earlier, there are three basic approaches for mitigating the high noise exposures. The first and best is to relocate noise sensitive uses out of the high noise area. The second is to prevent noise from reaching the noise sensitive user through some sort of barrier. And the third, and least desirable approach, is to provide attenuation for at least the interiors of any buildings located in the high noise areas.

Specific Considerations

Relocating Noise Sensitive Uses

By far the most desirable mitigation approach is to relocate noise sensitive uses out of the high noise area although. If the site is large enough it may be possible to locate non-noise sensitive uses between the source and the sensitive use, for example a parking lot might be located between a road and a park (see Figure 5). The workcharts in the *Noise Assessment Guidelines* can be used in reverse to tell you exactly how far away from the noise source you need to be.

When sites are small, very dense or when the source affects the entire site it is very difficult to mitigate by changing the site plan. Then the next option must be considered: erecting some type of barrier between the source and the receiver.

Barriers

Barriers are most effective for at or below ground level sources. They have no effect on noise from aircraft overflights and are limited in practical application with elevated sources such as elevated trains. The key to the effectiveness of a barrier is whether or not it breaks the line of sight between the source and the receiver. If a barrier does not completely break the line of sight either because it is not high enough, or not long enough then its effectiveness is greatly reduced.

Barriers can be actual walls, earthen mounds (called berms) or even other buildings. The use of other non-noise sensitive buildings as barriers is a particularly good approach in that it need not add to the cost of the project and may not create the aesthetic problem a large wall might create (see Figure 6).

Figure 5
The Audible
Landscape

In cluster development, open space can be placed near the highway to reduce noise impacts on residences

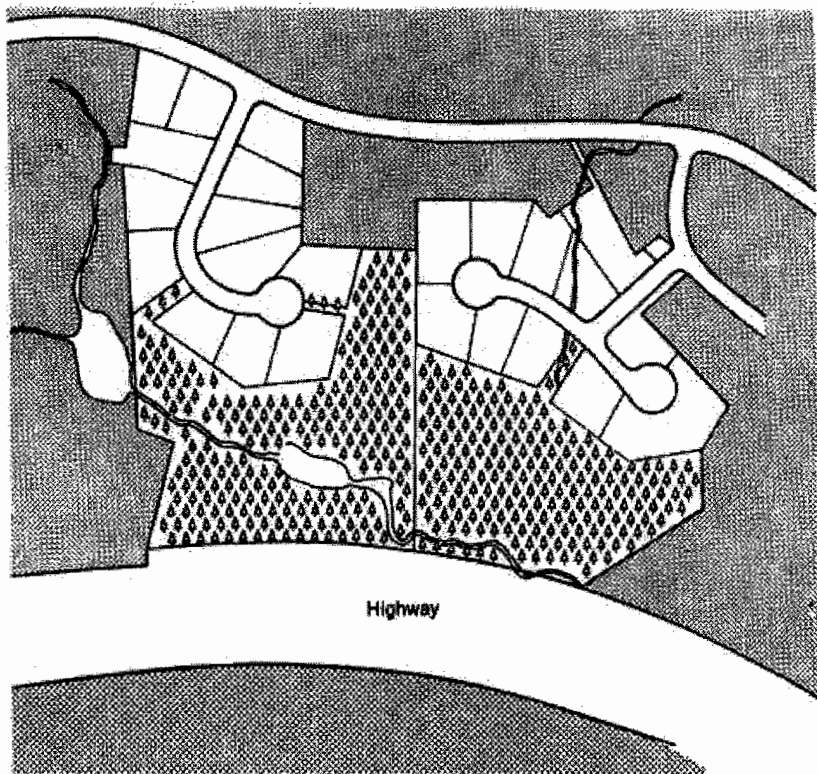


Figure 6
The Audible Landscape

Placement of noise compatible land uses near highway in Planned Unit Development

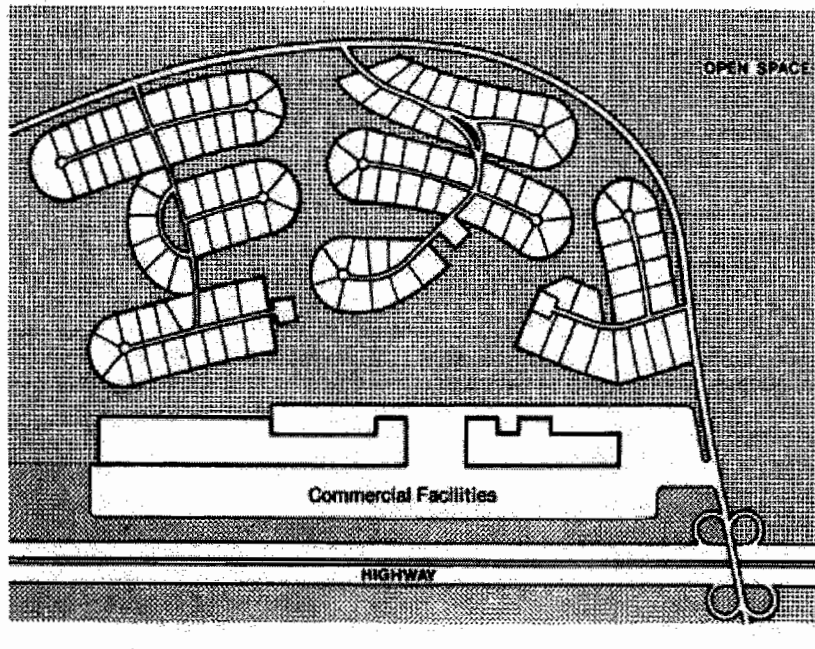
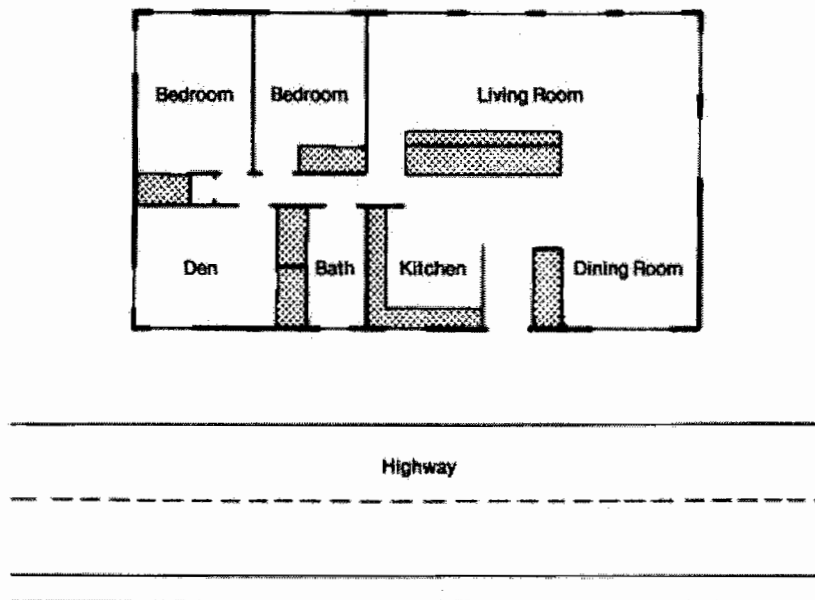


Figure 7
The Audible Landscape

Use of acoustical architectural design to reduce noise impacts on more noise sensitive living spaces



As pointed out earlier, the effectiveness of a barrier is determined in large part by its height and length. Some studies have shown that the effectiveness of a barrier can be reduced by as much as 50% if it isn't long enough. Again, the *Noise Assessment Guidelines* contain procedures for determining the effectiveness of barriers.

Incorporating Noise Attenuation Measures into the Building

If neither relocation or barriers is a reasonable noise attenuation option, the last resort is to incorporate noise attenuation measures into the buildings themselves. This is not considered the best solution because it leaves the outdoor areas, some of which may be for quiet recreation, exposed to high noise levels. But if development must take place and barriers are impossible, then the noise attenuation measures should be employed in building design and construction.

Without going into great technical detail, noise attenuation construction measures generally fall into four categories.

- (1) Reducing the total area of windows or other acoustically weaker building elements
- (2) Sealing off "leaks" around windows, doors, vents.
- (3) Improving the actual sound attenuating properties of small building elements such as windows, doors, etc.
- (4) Improving the actual sound attenuating properties of major building elements such as roof and wall construction.

In addition, noise attenuation in buildings can be provided by designing interior spaces so that "dead" spaces such as closets or corridors act as buffer zones (see Figure 7). And finally noise attenuation can be provided by reducing the need for open windows by providing air conditioning.

Many of the steps that would be taken to provide noise attenuation also help conserve energy. Good weatherstripping around windows and doors is one example. Another might be reducing window areas in walls if the noise source is to the north or west. Because many of these measures serve two purposes, they should not necessarily be considered a burdensome requirement but rather just good design and construction.

Information Resources

Publications

HUD Regulation 24 CFR Part 51 Subpart B - Noise Abatement and Control.

Noise Assessment Guidelines, HUD 1983, basic technical procedural resource.

Aircraft Noise Impact, HUD 1972, a bit dated but good overview of problem.

The Audible Landscape, DOT (FHWA) 1974, an excellent discussion of mitigation measures including land use planning and building design and construction.

Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare With an Adequate Margin of Safety, EPA, 1974. The "levels document" that explains basis for EPA standards.

Noise Barrier Design Handbook, Federal Highway Administration 1976. Good discussion of barriers, technical but readable.

Handbook of Noise Control, 2nd edition, 1979, McGraw Hill. A basic technical handbook covering all aspects of noise for those who wish to go into the subject further.

Experts

HUD environmental officers have been trained in the use of the *Noise Assessment Guidelines* and can help you work with them. Many architects are trained in acoustics and can help in development of noise attenuation strategies.

Quiz

Questions

1. Why is noise considered "unwanted sound"?
2. What is a community noise problem?
3. What are the three main contributors to a community noise problem?
4. What are the three components of a noise problem?
5. What are two key characteristics of the day-night average sound level descriptor system?
6. What are HUD's noise standards?
7. How do HUD's standards apply to CDBG recipients?
8. What are the three general mitigation measures available to HUD and the community and in what order of preference?
9. When are barriers effective and when are they not effective?
10. Describe how the *Noise Assessment Guidelines* can be used to determine appropriate mitigation measures.

Quiz

Answers

1. because it interferes with normal activities or causes physical or psychological damage
2. a community noise problem is where the combined effect of many individual sources creates an overall noise level that is unacceptable
3. highways, railroads and aircraft
4. the source, the path, the receiver
5. It is an average sound level and it can be used for all sources
6. 65 L_{dn} or below: acceptable
7. CDBG recipients must take into consideration the standards in their planning and environmental review. If they expect to use HUD assistance later for housing or other noise sensitive activities the standards must be met for those activities.
8. 1st relocate noise sensitive uses
9. barriers are effective for at or below ground level sources. Are not effective for aircraft overflights or most elevated sources
10. can be used to determine separation distance required for relocation and the height and length of barriers required

Chapter 2

The Noise Regulation

Introduction

The basic foundation for and structure of the HUD noise program is set out in the noise regulation, 24 CFR 51B. The regulation establishes the actual standards, assigns implementation responsibilities, describes review and approval procedures, and identifies special situations which may warrant waivers of procedures or standards.

Therefore, the key to your understanding and implementation of the HUD noise program is a clear understanding of the regulation.

There is no way to escape the task of sitting down and simply reading the regulations, over and over until you thoroughly understand them. We have however done two things that will help you apply the regulations. First, for quick reference, we have prepared a list of the key sections in the regulation and second we have prepared an annotated copy of the regulation.

The list of key sections was prepared to help you find the specific section you need for a specific question or issue. While the regulation itself is not really long, an index is always useful. We caution you, however, against using the index to avoid learning the regulations. The list was prepared for your convenience in applying the regulation once you have come to understand it.

We prepared the annotated regulation because, try as we might, it was impossible to anticipate all the questions, implementation problems and special situations that might arise and to address them in the regulation. So, now that we have had a few years' experience with the regulation, we have gathered together the important questions, notes, second thoughts etc. and prepared this annotated regulation. We hope it will give you further insight into what the regulation means when it is applied in the field.

Key Sections in Noise Regulation

Section	Subject
51.101(a)(2)	Application of Policy to Block Grants
51.101(a)(3)	Policy for New Construction
51.101(a)(4)	Policy for Existing Construction
51.101(a)(5)	Policy for Modernization and Rehabilitation
51.101(a)(8)	The Exterior Noise Goal
51.101(a)(9)	The Interior Noise Goal
51.102(a)	Authority to Approve Projects
51.103(a)	Identification of DNL as <i>The Noise Descriptor</i> to be Used
51.103(b)	How to Measure Loud Impulsive Noises
51.103(c)	The Noise Standards
51.104(a)	Attenuation Requirements Discussed
51.104(b)(1)	Special Approval and Environmental Review Requirements for the Normally Unacceptable Zone
51.104(b)(2)	Special Approval and Environmental Review Requirements for the Unacceptable zone
51.105(a)	Flexibility for Non-acoustic Benefits Provisions
51.106(a)	How to Tell If Existing Data on Noise Are Acceptable
51.106(a)(4)	Specific Review and Approval Procedures For Airport Noise Contours
51.106(d)	When Noise Measurements May be Used Instead of Calculated Levels
51.106(f)	When to Give Credit for Proposed Barriers

Part 51—Environmental Criteria
and Standards

Subpart A—General Provisions

Sec.

§51.1 Purpose.

§51.2 Authority.

§51.3 Responsibilities.

§51.4 Program coverage.

§51.5 Coordination with environ-
mental clearance requirements.

§51.6 [Reserved]

Subpart B—Noise Abatement and
Control

§51.100 Purpose and authority.

§51.101 General policy.

§51.102 Responsibilities.

§51.103 Criteria and standards.

§51.104 Special requirements.

§51.105 Exceptions.

§51.106 Implementation.

Appendix to Subpart B

Authority: Sec. 7(d), Department of
HUD Act (42 U.S.C. 3535(d)).

Subpart B—Noise Abatement and
Control

§51.100 Purpose and authority.

(a) *Purpose.* The Department of
Housing and Urban Development
finds that noise is a major source of
environmental pollution which
represents a threat to the serenity
and quality of life in population
centers and that noise exposure may
be a cause of adverse physiological
and psychological effects as well as
economic losses.

It is the purpose of this Subpart
to:

- (1) Call attention to the threat of
noise pollution;
- (2) Encourage the control of noise
at its source in cooperation with
other Federal departments and
agencies;
- (3) Encourage land use patterns
for housing and other noise sensitive
urban needs that will provide a
suitable separation between them
and major noise sources;
- (4) Generally prohibit HUD support
for new construction of noise
sensitive uses on sites having
unacceptable noise exposure;
- (5) Provide policy on the use of
structural and other noise
attenuation measures where needed;
and

This regulation replaces
HUD Circular 1390.2,
Noise Abatement and
Control, 1971, which is
now cancelled, along
with all instructions and
clarifying memoranda
pertaining to the
circular.

(6) Provide policy to guide
implementation of various HUD
programs.

(b) *Authority.* Specific authorities
for noise abatement and control are
contained in:

(1) The Noise Control Act of 1972
(Pub. L. 92-574) which directs Federal
agencies to administer their programs
in ways which reduce noise pollution.

(2) The Quiet Communities Act of
1978 (Pub. L. 95-609) which amended
Pub. L. 92-574.

(3) The General Services
Administration, Federal Management
Circular 75-2: *Compatible Land Uses
at Federal Airfields* prescribes the
Executive Branch's general policy
with respect to achieving compatible
land uses on either public or privately
owned property at or in the vicinity of
Federal airfields.

(4) Section 1113 of the Housing
and Urban Development Act of 1965
(Pub. L. 89-117) directs the Secretary
" * * * to determine feasible methods
of reducing the economic loss and
hardships suffered by homeowners as
a result of the depreciation in the
value of their properties following the
construction of airports in the vicinity
of their homes, including a study of
feasible methods of insulating such
homes from the noise of aircraft."

§51.101 General policy.

(a) It is HUD's general policy to
provide minimum national standards
applicable to HUD programs to
protect citizens against excessive
noise in their communities and places
of residence.

(1) *Comprehensive planning assist-
ance.* HUD requires that grantees
give adequate consideration to noise
exposures and sources of noise as an
integral part of the urban environment
in HUD assisted comprehensive plan-
ning, as follows:

(i) Particular emphasis shall be
placed on the importance of
compatible land use planning in
relation to airports, highways and
other sources of high noise.

(ii) Applicants shall take into
consideration HUD environmental
standards impacting the use of land
as required in 24 CFR Part 600.

(iii) Environmental studies,
including noise assessments, are
allowable costs.

(2) *Community Development Block
Grants.* Recipients of community
development block grants under the
Housing and Community
Development Act of 1974 (Pub. L.
93-383), as amended by the Housing
and Community Development Act of
1977 (Pub. L. 95-128), must take into

consideration the noise criteria and standards in the environmental review process and consider ameliorative actions when noise sensitive land development is proposed in noise exposed areas. Grant recipients shall address deviations from the standards in their environmental reviews as required in 24 CFR Part 58.

Where CDBG activities are planned in a noisy area, and HUD assistance is contemplated later for housing and/or other noise sensitive activities, the CDBG grantee risks denial of the HUD assistance unless the HUD standards are met. Environmental studies, including noise assessments, are allowable costs.

(3) *HUD support for new construction.* HUD assistance for the construction of new noise sensitive uses is prohibited generally for projects with Unacceptable noise exposures and is discouraged for projects with Normally Unacceptable noise exposure. (Standards of acceptability are contained in §51.103(c).) This policy applies to all HUD programs providing assistance, subsidy or insurance for housing, college housing, mobile home parks, nursing homes, hospitals, and all programs providing assistance or insurance for land development, new communities, redevelopment or any other provision of facilities and services which are directed to make land available for housing or noise sensitive development. The policy does not apply to research demonstration projects which do not result in new construction or reconstruction, flood insurance, interstate land sales registration, or any action or emergency assistance under disaster assistance programs which are provided to save lives, protect property, protect public health and safety, remove debris and wreckage, or assistance provided that has the effect of restoring facilities substantially as they existed prior to the disaster.

(4) *HUD support for existing construction.* Noise exposure by itself will not result in the denial of HUD support for the resale and purchase of otherwise acceptable existing buildings. However, environmental noise is a marketability factor which HUD will consider in determining the amount of insurance or other assistance that may be given.

The old definition of major or substantial rehabilitation and modernization as being any project where cost is 75% or more of replacement cost no longer applies. Now the criteria contained in individual program guidance applies.

(5) *HUD support of modernization and rehabilitation.* For modernization projects located in all noise exposed areas, HUD shall encourage noise attenuation features in alterations. For major or substantial rehabilitation projects in the Normally Unacceptable and Unacceptable noise zones, HUD actively shall seek to have project sponsors incorporate noise attenuation features, given the extent of the rehabilitation being undertaken and the level of exterior noise exposure. In Unacceptable noise zones, HUD shall strongly encourage conversion of noise-exposed sites to land uses compatible with the high noise levels.

(6) *Research, guidance and publications.* HUD shall maintain a continuing program designed to provide new knowledge of noise abatement and control to public and private bodies, to develop improved methods for anticipating noise encroachment, to develop noise abatement measures through land use and building construction practices, and to foster better understanding of the consequences of noise. It shall be HUD's policy to issue guidance documents periodically to assist HUD personnel in assigning an acceptability category to projects in accordance with noise exposure standards, in evaluating noise attenuation measures, and in advising local agencies about noise abatement strategies. The guidance documents shall be updated periodically in accordance with advances in the state-of-the-art.

(7) *Construction equipment, building equipment and appliances.* HUD shall encourage the use of quieter construction equipment and methods in population centers, the use of quieter equipment and appliances in buildings, and the use of appropriate noise abatement techniques in the design of residential structures with potential noise problems.

Existing construction means units which are either more than 1 year old or for which this is the second or subsequent purchaser.

(8) *Exterior noise goals.* It is a HUD goal that exterior noise levels do not exceed a day-night average sound level of 55 decibels. This level is recommended by the Environmental Protection Agency as a goal for outdoors in residential areas. The levels recommended by EPA are not standards and do not take into account cost or feasibility. For the purposes of this regulation and to meet other program objectives, sites with a day-night average sound level of 65 and below are acceptable and are allowable (see Standards in §51.103(c)).

(9) *Interior noise goals.* It is a HUD goal that the interior auditory environment shall not exceed a day-night average sound level of 45 decibels. Attenuation measures to meet these interior goals shall be employed where feasible. Emphasis shall be given to noise sensitive interior spaces such as bedrooms. Minimum attenuation requirements are prescribed in §51.104(a).

(10) *Acoustical privacy in multifamily buildings.* HUD shall require the use of building design and acoustical treatment to afford acoustical privacy in multifamily buildings pursuant to requirements of the Minimum Property Standards.

§51.102 Responsibilities.

(a) *Authority to approve projects.* (1) Decisions on proposed projects with acceptable noise exposures shall be delegated to the program personnel within field offices, including projects where increased noise levels are considered acceptable because of non-acoustic benefits under §51.105(a). Field office program personnel may also approve projects in normally unacceptable noise exposed areas where adequate sound attenuation is provided and where the project does not require an Environmental Impact Statement under §51.104(b).

(2) Other approvals in normally unacceptable noise exposed areas require the concurrence of the Regional Administrator.

(3) Requests for approvals of projects or portions of projects with unacceptable noise exposures shall be referred through the Regional Office to the Assistant Secretary for Community Planning and Development for approval pursuant to §51.104(b).

The Noise Control Act of 1972 required EPA to "publish information on the levels of environmental noise...which...are requisite to protect the public health and welfare with an adequate margin of safety." EPA has interpreted this to mean that the levels should not reflect technical feasibility or economic costs. "Health and welfare" is defined as being "complete physical, mental and social well-being and not merely the absence of disease and infirmity."

(4) In cases where the Regional Administrator determines that an important precedent or issue is involved, such cases shall be referred with recommendations to the Assistant Secretary for Community Planning and Development.

(b) *Surveillance of noise problem areas.* Appropriate field staff shall maintain surveillance of potential noise problem areas and advise local officials, developers, and planning groups of the unacceptability of sites because of noise exposure at the earliest possible time in the decision process. Every attempt shall be made to insure that applicants' site choices are consistent with the policy and standards contained herein.

(c) *Notice to applicants.* At the earliest possible stage, HUD program administrators shall:

(1) Determine the suitability of the acoustical environment of proposed projects;

(2) Notify applicants of any adverse or questionable situations; and

(3) Assure that prospective applicants are apprised of the standards contained herein so that future site choices will be consistent with these standards.

(d) *Technical assistance.* Technical assistance in the measurement, estimation, interpretation, or prediction of noise exposure is available from the Office of Community Planning and Development and the Office of Policy Development and Research. Field office questions shall be forwarded through the Regional Office to the Assistant Secretary for Community Planning and Development or his designee.

(e) *Interdepartmental coordination.* Regional Administrators shall foster appropriate coordination between field offices and other departments and agencies, particularly the Environmental Protection Agency, the Department of Transportation, Department of Defense representatives, and the Veterans Administration. HUD staff shall utilize the acceptability standards in commenting on the prospective impacts of transportation facilities and other noise generators in the Environmental Impact Statement review process.

§51.103 Criteria and standards.

These standards apply to all programs as indicated in §61.101.

(a) *Measure of external noise environments.* The magnitude of the external noise environment at a site is determined by the value of the day-night average sound level produced as the result of the accumulation of noise from all sources contributing to the external noise environment at the site. Day-night average sound level, abbreviated as DNL and symbolized as L_{dn} , is the 24-hour average sound level, in decibels, obtained after addition of 10 decibels to sound levels in the night from 10 p.m. to 7 a.m. Mathematical expressions for average sound level and day-night average sound level are stated in the Appendix.

(b) *Loud impulsive sounds.* On an interim basis, when loud impulsive sounds, such as explosions or sonic booms, are experienced at a site, the day-night average sound level produced by the loud impulsive sounds alone shall have 8 decibels added to it in assessing the acceptability of the site (see Appendix). Alternatively, the C-weighted day-night average sound level (L_{Cdn}) may be used without the 8 decibel addition, as indicated in Section 51.106(a)(3).

Methods for assessing the contribution of loud impulsive sounds to day-night average sound level at a site and mathematical expressions for determining whether a sound is classed as "loud impulsive" are provided in the Appendix.

(c) *Exterior standards.* The degree of acceptability of the noise environment at a site is determined by the sound levels external to buildings or other facilities containing noise sensitive uses. The standards shall usually apply at a location 2 meters (6.5 feet) from the building housing noise sensitive activities in the direction of the predominant noise source. Where the building location is undetermined, the standards shall apply 2 meters (6.5 feet) from the building setback line nearest to the predominant noise source. The standards shall also apply at other locations where it is determined that quiet outdoor space is required in an area ancillary to the principal use on the site.

The noise environment inside a building is considered acceptable if (a) the noise environment external to the building complies with these standards, and (b) the building is constructed in a manner common to the area or, if of uncommon construction, has at least the equivalent noise attenuation characteristics.

This is because the reverberation effect of sound waves hitting the wall will increase the noise levels at the site. You won't pick this up unless you back off from the wall to measure.

Site Acceptability Standards

	Day-night average sound level (in decibels)	Special approvals and requirements
Acceptable _____	Not exceeding 65 dB(1) _____	None
Normally Unacceptable _____	Above 65 dB but not exceeding 75 dB _____	Special Approvals (2) Environmental Review (3) Attenuation (4)
Unacceptable _____	Above 75 dB _____	Special Approvals (2) Environmental Review (3) Attenuation (5)

Notes.—(1) Acceptable threshold may be shifted to 70 dB in special circumstances pursuant to Section 51.105(a)

(2) See Section 51.104(b) for requirements.

(3) See Section 51.104(b) for requirements.

(4) 5 dB additional attenuation required for sites above 65 dB but not exceeding 70 dB and 10 dB additional attenuation required for sites above 70 dB but not exceeding 75 dB. (See Section 51.104(a).)

(5) Attenuation measures to be submitted to the Assistant Secretary for CPD for approval on a case-by-case basis.

§51.104 Special requirements.

(a) *Noise attenuation.* Noise attenuation measures are those required in addition to attenuation provided by buildings as commonly constructed in the area, and requiring open windows for ventilation. Measures that reduce external noise at a site shall be used wherever practicable in preference to the incorporation of additional noise attenuation in buildings. Building designs and construction techniques that provide more noise attenuation than typical construction may be employed also to meet the noise attenuation requirements.

(1) *Normally Unacceptable noise zone.* Approvals in this zone require a minimum of 5 decibels additional sound attenuation for buildings having noise-sensitive uses if the day-night average sound level is greater than 65 decibels but does not exceed 70 decibels, or a minimum of 10 decibels of additional sound attenuation if the day-night average sound level is greater than 70 decibels but does not exceed 75 decibels.

(2) *Unacceptable noise zone.* Noise attenuation measures require the approval of the Assistant Secretary for Community Planning and Development (See §51.104(b)(2).)

(b) *Special Approvals and Environmental Review Requirements.* Environmental clearances shall be conducted pursuant to the requirements of HUD's Departmental Policies, Responsibilities and Procedures for Protection and Enhancement of Environmental Quality (38 FR 19182 as amended) or other environmental regulations which may be issued by the Department. The Special Clearance and Environmental Impact Statement (EIS) threshold requirements are hereby modified for all projects proposed in the Normally Unacceptable and Unacceptable noise exposure zones as follows:

(1) *Normally Unacceptable noise zone.* (i) All projects located in the Normally Unacceptable Noise Zone require a Special Environmental Clearance except an EIS is required for a proposed project located in a largely undeveloped area, or where the HUD action is likely to encourage the establishment of incompatible land use in this noise zone.

Berms and barriers are our first choice because they provide protection for yards, playgrounds, etc. Since outdoor activity is often very important to residents we want to protect the outdoor areas as much as possible.

By definition a barrier must be separate from the building or area it is providing attenuation for. After all barriers are preferred because they improve exterior as well as interior levels. Non-noise sensitive buildings can, however, be used as barriers for noise sensitive buildings or exterior areas.

Assumption is that standard construction provides an average of 20 L_{dn} attenuation. At 65 L_{dn} or below this amount of attenuation would be sufficient to meet interior level of 45 L_{dn}. Additional requirements are designed to meet this goal even when exterior noise levels are higher.

Substitute Environmental Assessment (with ECO concurrence) wherever you see Special Clearance.

(ii) When an EIS is required, the concurrence of the Regional Administrator is also required before a project can be approved. For the purposes of this paragraph, an area will be considered as largely undeveloped unless the area within a 2-mile radius of the project boundary is more than 50 percent developed for urban uses and infrastructure (particularly water and sewers) is available and has capacity to serve the project.

(iii) All other projects in the Normally Unacceptable zone require a Special Environmental Clearance, except where an EIS is required for other reasons pursuant to HUD environmental policies.

(2) *Unacceptable noise zone.* An EIS is required prior to the approval of projects with unacceptable noise exposure. Projects in or partially in an Unacceptable Noise Zone shall be submitted through the Regional Administrator to the Assistant Secretary for Community Planning and Development for approval. The Assistant Secretary may waive the EIS requirement in cases where noise is the only environmental issue and no outdoor sensitive activity will take place on the site. In such cases, a Special Environmental Clearance is required.

§51.105 Exceptions.

(a) *Flexibility for non-acoustic benefits.* Where it is determined that program objectives cannot be achieved on sites meeting the acceptability standard of 65 decibels, the Acceptable Zone may be shifted to L_{dn} 70 on a case-by-case basis if all the following conditions are satisfied:

(1) The project does not require an Environmental Impact Statement under provisions of section 104(b)(1) and noise is the only environmental issue.

(2) The project has received a Special Environmental Clearance and has received the concurrence of the Environmental Clearance Officer.

(3) The project meets other program goals to provide housing in proximity to employment, public facilities and transportation.

(4) The project is in conformance with local goals and maintains the character of the neighborhood.

(5) The project sponsor has set forth reasons, acceptable to HUD, as to why the noise attenuation measures that would normally be required for new construction in the L_{dn} 65 to L_{dn} 70 zone cannot be met.

When the area in question is in a small community outside an SMSA and the application of the 2 mile radius rule would be unreasonable, an area can be considered largely developed if it is contiguous to existing development and infrastructure is available and has capacity to serve the project. The Assistant Secretary will review them on a case-by-case basis. In all other cases the 2 mile radius/50% rule still applies.

Caution—every effort should be made to get official contours—particularly for military installations and large air carrier airports rather than trying to use the *Noise Assessment Guidelines*.

What this really means is that the 5db attenuation requirement for the 65-70 L_{dn} zone is waived. Primarily intended for urban areas where alternative sites are not available. Note that *all* conditions must be met.

These requirements are very important. Be careful with design hour values.

(6) Other sites which are not exposed to noise above L_{dn} 65 and which meet program objectives are generally not available.

The above factors shall be documented and made part of the project file.

§51.106 Implementation.

(a) *Use of available data.* HUD field staff shall make maximum use of noise data prepared by others when such data are determined to be current and adequately projected into the future and are in terms of the following:

(1) *Sites in the vicinity of airports.* The noise environment around airports is described sometimes in terms of Noise Exposure Forecasts, abbreviated as NEF or, in the State of California, as Community Noise Equivalent Level, abbreviated as CNEL. The noise environment for sites in the vicinity of airports for which day-night average sound level data are not available may be evaluated from NEF or CNEL analyses using the following conversions to DNL:

$$DNL = NEF + 35$$

$$DNL = CNEL$$

(2) *Sites in the vicinity of highways.* Highway projects receiving Federal aid are subject to noise analyses under the procedures of the Federal Highway Administration.

Where such analyses are available they may be used to assess sites subject to the requirements of this standard. The Federal Highway Administration employs two alternate sound level descriptors: (a) The A-weighted sound level not exceeded more than 10 percent of the time for the highway design hour traffic flow, symbolized as L_{10} ; or (b) the equivalent sound level for the design hour, symbolized as L_{eq} . The day-night average sound level may be estimated from the design hour L_{10} or L_{eq} values by the following relationships, provided heavy trucks do not exceed 10 percent of the total traffic flow in vehicles per 24 hours and the traffic flow between 10 p.m. and 7 a.m. does not exceed 15 percent of the average daily traffic flow in vehicles per 24 hours:

$$DNL = L_{10} \text{ (design hour)} - 3 \text{ decibels}$$

$$DNL = L_{eq} \text{ (design hour)} \text{ decibels}$$

Where the auto/truck mix and time of day relationships as stated in this Section do not exist, the HUD Noise Assessment Guidelines or other noise analysis shall be used.

(3) *Sites in the vicinity of installations producing loud impulsive sounds.* Certain Department of Defense Installations produce loud impulsive sounds from artillery firing and bombing practice ranges. Noise analyses for these facilities sometimes encompass sites that may be subject to the requirements of this standard. Where such analyses are available they may be used on an interim basis to establish the acceptability of sites under this standard.

The Department of Defense uses day-night average sound level based on C-weighted sound level, symbolized L_{Cdn} , for the analysis of loud impulsive sounds. Where such analyses are provided, the 8 decibel addition specified in 51.103(b), is not required, and the same numerical values of day-night average sound level used on an interim basis to determine site suitability for non-impulsive sounds apply to the L_{Cdn} .

(4) *Use of areawide acoustical data.* HUD encourages the preparation and use of areawide acoustical information, such as noise contours for airports. Where such new or revised contours become available for airports (civil or military) and military installations they shall first be referred to the Regional Office (Environmental Clearance Officer) for review, evaluation and decision on appropriateness for use by HUD. The Regional Office shall submit revised contours to the Assistant Secretary of Community Planning and Development for review, evaluation and decision whenever the area affected is changed by 20 percent or more, or whenever it is determined that the new contours will have a significant effect on HUD programs, or whenever the contours are not provided in a methodology acceptable under §51.106(a)(1) or in other cases where the Regional Office determines that Headquarters review is warranted. For other areawide acoustical data, review is required only where existing areawide data are being utilized and where such data have been changed to reflect changes in the measurement methodology or underlying noise source assumptions.

Contours for future noise levels based on new construction, mission changes etc. which become available as part of the Environmental Impact Statement process shall not be used until the NEPA process is complete and a decision on the proposed action is made.

When new or revised contours are approved, make sure all interested people in local area are informed that HUD will be using different contours. Make a special effort to inform the most active developers in area or developers who have worked with HUD before.

This is also required for noise studies for developers by consultants, whether to provide original data, or to contest existing data or a HUD analysis. It is particularly important to make sure the same traffic, vehicle or operational data were used for each study, when one study is being contested.

Requests for determination on usage of new or revised areawide data shall include the following:

(i) Maps showing old, if applicable, and new noise contours, along with brief description of data source and methodology.

(ii) Impact on existing and prospective urbanized areas and on development activity.

(iii) Impact on HUD-assisted projects currently in processing.

(iv) Impact on future HUD program activity. Where a field office has determined that immediate approval of new areawide data is necessary and warranted in limited geographic areas, the request for approval should state the circumstances warranting such approval. Actions on proposed projects shall not be undertaken while new areawide noise data are being considered for HUD use except where the proposed location is affected in the same manner under both the old and new noise data.

(b) *Site assessments.* Compliance with the standards contained in §51.103(c) shall, where necessary, be determined using noise assessment guidelines, handbooks, technical documents and procedures issued by the Department.

(c) *Variations in site noise levels.* In many instances the noise environment will vary across a site, with portions of the site being in an Acceptable noise environment and other portions in a Normally Unacceptable noise environment. The standards in §51.103(c) shall apply to the portions of a building or buildings used for residential purposes and for ancillary noise sensitive open spaces.

(d) *Noise measurements.* Where noise assessments result in a finding that the site is borderline or questionable, or is controversial, noise measurements may be performed. Where it is determined that noise measurements are required, such measurements will be conducted in accordance with methods and measurement criteria established by the Department. Locations for noise measurements will depend on the location of noise sensitive uses that are nearest to the predominant noise source (see §51.103(c)).

(e) *Projections of noise exposure.* In addition to assessing existing exposure, future conditions should be projected. To the extent possible, noise exposure shall be projected to be representative of conditions that are expected to exist at a time at least 10 years beyond the date of the project or action under review.

(f) *Reduction of site noise by use of berms and/or barriers.* If it is determined by adequate analysis that a berm and/or barrier will reduce noise at a housing site, and if the barrier is existing or there are assurances that it will be in place prior to occupancy, the environmental noise analysis for the site may reflect the benefits afforded by the berm and/or barrier.

In the environmental review process under §51.104(b), the location height and design of the berm and/or barrier shall be evaluated to determine its effectiveness, and impact on design and aesthetic quality, circulation and other environmental factors.

Appendix to Subpart B—definition of acoustical quantities

1. *Sound Level.* The quantity in decibels measured with an instrument satisfying requirements of American National Standard Specification for Type 1 Sound Level Meters S1.4-1971. Fast time-averaging and A-frequency weighting are to be used, unless others are specified. The sound level meter with the A-weighting is progressively less sensitive to sounds of frequency below 1,000 hertz (cycles per second), somewhat as is the ear. With fast time averaging the sound level meter responds particularly to recent sounds almost as quickly as does the ear in judging the loudness of a sound.

(2) *Average Sound Level.* Average sound level, in decibels, is the level of the mean-square A-weighted sound pressure during the stated time period, with reference to the square of the standard reference sound pressure of 20 micropascals.

$$L_{\text{eq}} = 10 \log_{10} \left[\frac{1}{86400} \left(\int_{0000}^{0700} 10 [L_A(t) + 10] 10 dt + \int_{0700}^{2200} 10 L_A(t) 10 dt + \int_{2200}^{2400} 10 [L_A(t) + 10] 10 dt \right) \right]$$

This provision should be used with caution. Very clear and strong assurances that berms or barriers will be constructed should be obtained in writing before approval.

Again also note that by definition a barrier must be physically separate from the building or area it is providing attenuation for.

The *Noise Assessment Guidelines* contain procedures for evaluating barrier effectiveness.

When projections for airports are based on new construction or similar actions the likelihood that such major action will actually take place should be carefully evaluated. This is particularly important if local funding is required. Check to see if initial actions such as land purchases, bonds etc. been taken. If projections are just based on expanded traffic levels make sure they are reasonable for the area. Projections for smaller communities are often overly optimistic.

Time *t* is in seconds, so the limits shown in hours and minutes are actually interpreted in seconds. $L_A(t)$ is the time varying value of A-weighted sound level, the quantity in decibels measured by an instrument satisfying requirements of American National Standard Specification for Type 1 Sound Level Meters S1.4-1971.

3. **Loud Impulsive Sounds.** When loud impulsive sounds such as sonic booms or explosions are anticipated contributors to the noise environment at a site, the contribution to day-night average sound level produced by the loud impulsive sounds shall have 8 decibels added to it in assessing the acceptability of a site.

A loud impulsive sound is defined for the purpose of this regulation as one for which:

(i) The sound is definable as a discrete event wherein the sound level increases to a maximum and then decreases in a total time interval of approximately one second or less to the ambient background level that exists without the sound; and

(ii) The maximum sound level (obtained with slow averaging time and A-weighting of a Type 1 sound level meter whose characteristics comply with ANSI S1.4-1971) exceeds the sound level prior to the onset of the event by at least 6 decibels; and

(iii) The maximum sound level obtained with fast averaging time of a sound level meter exceeds the maximum value obtained with slow averaging time by at least 4 decibels.

Issued at Washington, D.C., on July 5, 1979.

Patricia Roberts Harris,
Secretary of Housing and Urban Development.

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Quiz on the Noise Regulations

Questions

1. What is the HUD policy on support for existing construction in high noise areas?
2. What is the definition of "major or substantial rehabilitation"?
3. What is HUD's interior noise goal?
4. What project approval authority does the Field Office have?
5. Who approves projects in the Unacceptable Zone?
6. What noise descriptor is used to express noise levels in the regulation?

7. How are loud impulsive sounds to be evaluated?

8. At what point on a building's exterior are sound levels to be determined?

9. What is the basic assumption behind the attenuation levels required?

10. What type of attenuation measures are preferred?

11. When should building attenuation measures be considered?

12. When are EIS's required?

13. When is an area considered "largely undeveloped"?

14. What is "Flexibility for Non-Acoustic Benefits"?

15. Six conditions are listed for waiving the attenuation requirement under the Flexibility for Non-Acoustic Benefits provision, how many must be met for the waiver to be granted?

16. Who has the authority to grant the attenuation requirements waiver under the "flexibility" provision?

17. What noise descriptors other than DNL are acceptable for aircraft noise contours?

18. Who normally approves areawide noise data such as airport noise contours?

19. If a site is partially in the Unacceptable Zone and partially in the Normally Unacceptable Zone, which review and approval procedures apply?

20. When should noise measurements be used in lieu of areawide data or *Noise Assessment Guidelines* calculations?

Quiz on the Noise Regulations

Answers

14. A provision in the regulations which allows the attenuation requirements for the 65-70 L_{dn} zone to be waived. (Section 51.105(a) and marginal note)
15. All six conditions must be met. (Section 51.105(a))
16. The field office. (Section 51.102(a))
17. NEF and CNEL. (Section 51.106(a)(1))
18. The Regional Office. (Section 51.106(a)(4))
19. The review and approval procedures for projects in the Unacceptable Zone apply. (Section 51.104(b)(2))
20. Only when the noise assessment indicates that the site is on the borderline between Acceptable and Unacceptable, or when the site is controversial. (Section 51.106(d))

1. Noise exposure can not, by itself, be the basis for denying support for resale and purchase of existing buildings. (Section 51.101(a)(4))
2. "Major or substantial rehabilitation" is defined in individual program guidance. There is no single definition. (51.101(a)(5) marginal note)
3. 45 L_{dn} (Section 51.101(a)(9))
4. projects in Acceptable Zone; also projects in Normally Unacceptable Zone provided that
- adequate sound attenuation is provided
- no EIS is required (Section 51.102(a)(1))
5. The Assistant Secretary for Community Planning and Development. (Section 51.102(A)(3) and 51.104(b))
6. The day night average sound level system (DNL). (Section 51.103(a))
7. Two ways:
 - If plain DNL levels have been calculated or measured, add a 8 decibel penalty.
 - Alternatively, the C weighted day night average sound level system (L_{CN}) can be used as is. (Section 51.103(b))
8. Two meters (6.5 feet) away from the building exterior, moving towards the predominant noise source. (Section 51.103(c))
9. That current construction practices provide about 20 db attenuation. Thus in a 65 L_{dn} or lower area the interior goal of 45 L_{dn} would be met with standard construction. The additional attenuation required is the increment over that provided by standard construction necessary to achieve the interior goal of 45 L_{dn} . (Section 51.104(a) marginal note)
10. Measures which reduce exterior noise levels. (51.104(a))
11. Only after it has been determined that berms and barriers or site redesign are not practical alternatives. (Section 51.104(a))
12. When the project is located in the Unacceptable Zone or the project is located in a largely undeveloped area and the project is in the Normally Unacceptable Zone. (Section 51.104(b))
13. When the area within a 2 mile radius of the project is less than 50% developed for urban uses and intrasstructure is not in place and available to serve the project. (Section 51.104(b)(1)(iii))

Chapter 3

Major Policy and Implementation Questions Related to the Noise Regulation

As regulations are applied in the field, it is inevitable that questions will arise. It is, after all, very difficult to anticipate every situation when preparing a regulation. Sometimes the questions relate to specific and unique situations of limited interest to anyone but the office involved. Other questions, however, raise issues of more general concern. In this section we have brought together the most important and most relevant questions that have arisen since the noise regulation went into effect in August of 1979. We have used a question and answer format for your convenience.

The following are the topics included:

1. Noise projections for civil airports
2. Definition of infill for small towns
3. Areawide EIS waivers
4. Requirements for modernization and rehabilitation projects
5. Use of berms and barriers as attenuation measures
6. New and revised airport noise contours

Questions and Answers

1. How valid and useful are civil airport noise projections that show significant reductions in the amount of land exposed to high noise levels? Should we be suspicious?

Contours that show significant reductions in the area exposed to high noise levels may seem questionable, but, according to the Environmental Protection Agency, they may be quite accurate. The EPA does expect to see some significant reductions in the number of people exposed to high levels of aircraft noise over the next 15 years. In their report *Aviation Noise: The Next Twenty Years*, EPA stated that they expected to see the number of people exposed to levels of 65 Ldn or greater to drop from a 1975 figure of 5,550,000 to about 2,650,000 in the year 2000. Much of this reduction would occur during the period 1980-1985 with more modest decreases thereafter. The reductions are expected to result from the Federal Aviation Administration's current noise certification requirements, even with up to 100% increases in aircraft operations. (Current certification requirements are for all new aircraft to achieve stage three noise levels and all older aircraft to achieve stage two levels by 1985. Progress has been good in meeting these requirements.)

In general then, you should not be surprised to see significant reductions in contour size if the following conditions are met:

- the decrease in size is no more than 50%;
- the increase in operations is no more than 100%; and
- FAR stage 3 aircraft, such as the B757 and B767, are included in the fleet mix, but not to the total exclusion of all other aircraft. Assuming that the contours are otherwise technically correct, significantly smaller contours should be acceptable.

2. Many small towns aren't big enough for a project to meet the definition of infill contained in section 51.104 (b)(1)(II). However, a project located in the heart of town can hardly be considered to be in a largely undeveloped area. Must an EIS be prepared?

Not necessarily. If the jurisdiction in which the project is located is not part of a standard metropolitan area, a project may be considered infill if it is within or contiguous to the already developed area and infrastructure (particularly water and sewer) is available and has the capacity to serve the project. It must also be clear that the project will not encourage the establishment of other incompatible land uses in the normally unacceptable noise zone.

If you believe a project meets these criteria, submit documentation to the Office of Environment and Energy for their review and determination.

3. What can we do to reduce the procedural burden when, for a variety of reasons, the Department expects to be considering a number of projects in an unacceptable noise zone? Most of the projects would probably qualify for an EIS waiver, but how can we avoid filing repetitive, individual requests?

While the number of cases where the Department would be seriously considering a number of projects exposed to unacceptable noise levels in the same jurisdiction is likely to be limited, there is an alternative to individual processing in those situations. The alternative is to issue an areawide waiver for the entire affected jurisdiction. Such a waiver can be useful when the unacceptable noise zone heavily impacts a substantially developed community with limited site alternatives. (In most cases we would expect that the noise source would be aircraft, but in very small towns it is possible that a heavily used rail line could create a large unacceptable noise zone.)

An areawide EIS waiver would, of course, have to have a more detailed environmental assessment than an individual project request, and there are other special processing steps.

But if you have a situation where you think the Department has a good reason to expect to process a number of projects within the unacceptable noise zone, there is an alternative to individual EIS waivers. Contact the Office of Environment and Energy for details on how to request the areawide waiver.

4. What exactly are the processing requirements and general policies for modernization and rehabilitation projects? Does section 51.104 apply to them as well as to new construction? The noise regulation is a bit confusing on this.

Yes, the noise regulation is a bit confusing on this question. We have seen several instances where field offices have mistakenly applied the provisions of Section 51.104 to modernization and rehabilitation projects. We believe that this happens because section 51.104 is not as clearly titled as it might have been. It would be better if it read "special requirements for new construction" rather than simply "special requirements".

The only parts of the regulation that apply to modernization and rehabilitation projects are sections 51.101 (a)(5) and the definitions of normally unacceptable and unacceptable noise zones contained in the table in section 51.103. None of the other processing or policy provisions of the table or of sections 51.102 and 51.104 apply. Therefore:

- modernization and rehabilitation projects are to be processed by the field offices regardless of the noise zone.

- EIS's are not required for modernization and rehabilitation projects unless mandated by other applicable environmental regulations.

You must however continue to encourage attenuation features in modernization and rehabilitation projects, in accordance with the general policy stated in section 51.101(a)(5).

5. We know that berms and barriers are the preferred type of noise attenuation because of the protection they provide for outdoor living areas, but we need some further guidance on when they are really the best choice.

While barriers can be an effective noise attenuation technique, they must, indeed, be used with caution and common sense because they can create more problems than they solve. Very high noise barriers can create significant aesthetic and financial problems relative to the noise benefit to be achieved. Barriers can block light, hinder natural ventilation, create an unpleasant sense of being walled in, and can be very unattractive. In addition, barriers do require continuing maintenance and can be very costly to build.

It is important to remember that the noise regulation says that "measures that reduce external noise at a site shall be used wherever practicable." Is it practicable to propose a 20 foot high barrier only 15 feet from the rear of a two-story building? Granted it would certainly protect the building from noise, but what about the blocked light, the reduced ventilation, the visual impact, and the cost? The purpose of a barrier is primarily to reduce the noise levels in those outdoor areas that people use. The secondary purpose is to reduce the need for structural attenuation. Therefore, the barrier should only be as high as is necessary to protect those areas. Structural attenuation should be required for the parts of the building not protected by the barrier. And if there aren't any outdoor areas where low noise levels are important, barriers shouldn't be required unless they would be more cost effective than building attenuation measures.

6. What should we be doing once we have processed new or revised aircraft noise contours and they have been approved for use?

The most important thing you can do once new or revised aircraft noise contours have been approved for use is to tell the people who are most likely to be affected by the change. If you have a newsletter that you regularly publish, that is one way to get the word out. At the very least you should specifically notify the affected jurisdictions and the builders/developers who are known to be active in the vicinity of the noise impacted areas. Make sure you notify builders and developers who have large scale projects that you have been processing in sections. Go back and check your files to find them. Even though you should have done an overall environmental review of the project at the time the first section was submitted, the approval of individual sections is dependent on the noise levels at the time that section is submitted.

Chapter 4 Noise Attenuation

Introduction

HUD's noise policy (24 CFR 51B) clearly requires that noise attenuation measures be provided when proposed projects are to be located in high noise areas. The requirements set out in Section 51.104(a) are designed to insure that interior levels do not exceed the $45 L_{dn}$ level established as a goal in Section 51.101(a)(9). Thus, in effect, if the exterior noise level is $65 L_{dn}$ to $70 L_{dn}$, 25 db of noise attenuation must be provided; if the exterior noise level is between 70 and $75 L_{dn}$, then 30 db of attenuation is required. Likewise, for projects proposed for areas where noise levels exceed $75 L_{dn}$, sufficient attenuation must be provided to bring interior levels down to $45 L_{dn}$ or below.

There are three basic ways to provide the noise attenuation required:

1. the use of barriers or berms
2. site design
3. acoustical construction

Of these, only the first two provide any improvement in the exterior environment. Because HUD considers a quiet exterior environment to be important, we prefer the use of those measures that reduce exterior levels as well as interior levels. The use of acoustical construction by itself is, therefore, the least preferred alternative since it only affects the interior levels. While we recognize that in many cases barriers or site design cannot provide all the attenuation necessary, you should combine them with acoustical construction whenever possible.

Your responsibility as a HUD staff member is to:

- make sure the project sponsor or developer is aware of the attenuation requirements for the project.
- make the sponsor aware of the options available and
- review attenuation proposals to make sure they are adequate.

While it is not your responsibility to provide detailed design assistance to the sponsor or developer, you should know enough about the attenuation options to give him or her a basic understanding of what must be done. In many cases, you may be able to reassure the sponsor or developer that the necessary attenuation can be achieved through the use of common construction techniques or materials. Or you may be able to point out how a simple site design change can achieve the desired result without additional cost.

The following sections are designed to provide you with the information you will need to fulfill your responsibilities. Each attenuation approach is discussed both in terms of basic concepts and in terms of what to look for in reviewing attenuation proposals. The discussion does assume that you have a working knowledge of the *Noise Assessment Guidelines*. If you have not worked with the *Guidelines* before or not recently you may want to go back and review them, particularly the section on calculating the effects of barriers.

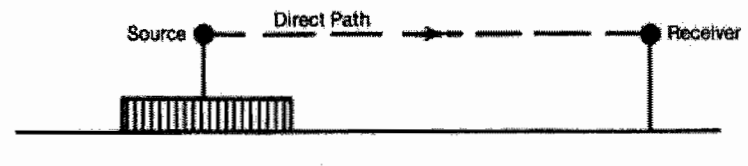
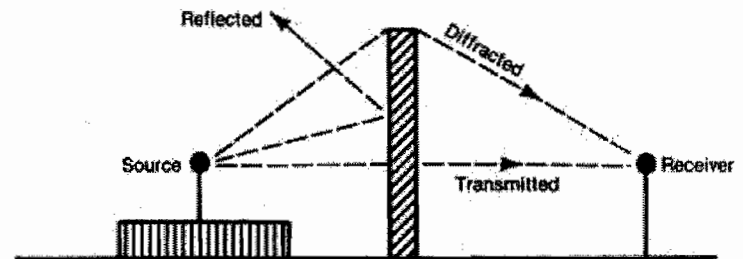
Barrier Noise Reduction Concepts

(The following, with some editing and with some additional graphics, is taken from the Federal Highway Administration's *Noise Barrier Design Handbook*.¹)

When no obstacles are present between [a source] and adjoining areas, sound travels by a **direct path** from the "sources" ... to [the] "receivers" ..., as shown in Figure 1. Introduction of a barrier between the source and receiver redistributes the sound energy into several [indirect] paths: a **diffracted path**, over the top of the barrier; a **transmitted path**, through the barrier; and a **reflected path**, directed away from the receiver. These paths are also illustrated in Figure 1.

¹Noise Barrier Design Handbook US Department of Transportation, Federal Highway Administration, February 1976. (FHWA-RD-76-58).

Figure 1
Alteration of Noise
Paths by a Barrier



Barrier Diffraction and Attenuation

Consider an infinitely long, infinitely massive noise barrier placed between a highway and the receiver. Figure 2 illustrates a cross-section through such a configuration. [In] this example, the only way that sound can reach the receiver is by bending over the top of the barrier; as shown in the figure. The bending of sound waves in this manner over an obstacle is known as diffraction. The area in which diffraction occurs behind the barrier is known as the "shadow zone." The straight path from the source over the top of the barrier forms the boundary of this zone.

All receivers located in the shadow zone will experience some sound attenuation; the amount of attenuation is directly related to the magnitude of the diffraction angle ϕ . As ϕ increases, the barrier attenuation increases. The angle ϕ will increase if the barrier height increases, or if the source or receiver are placed closer to the barrier. Clearly then the barrier attenuation is a function of the geometrical relationship between the source, receiver, and barrier. One way of relating these parameters to the barrier attenuation is to define the path-length difference as shown in Figure 3. This parameter is the difference in distance that the sound must travel in diffracting over the top of the barrier rather than passing directly through it.

In the preceding discussion it was assumed that the barrier was "infinite"; i.e., long enough to shield the receiver from all sound sources up and down the highway. For short barriers, the attenuation can be seriously limited by the sound from sections of highway beyond the barrier's ends, which are unshielded from the receiver, as shown in Figure 4. Similarly, when there are large gaps in the barrier (to permit access, for example), sound from the unshielded section of highway adjacent to the gap can greatly compromise barrier attenuation, especially for those receivers close to the opening.

Figure 2
Barrier Diffraction

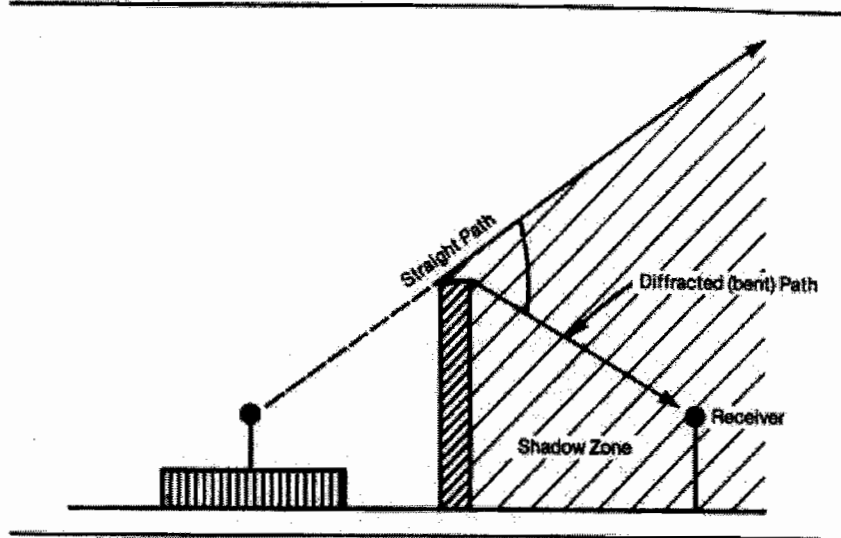


Figure 3
Path Length
Difference $\delta = A + B - d$

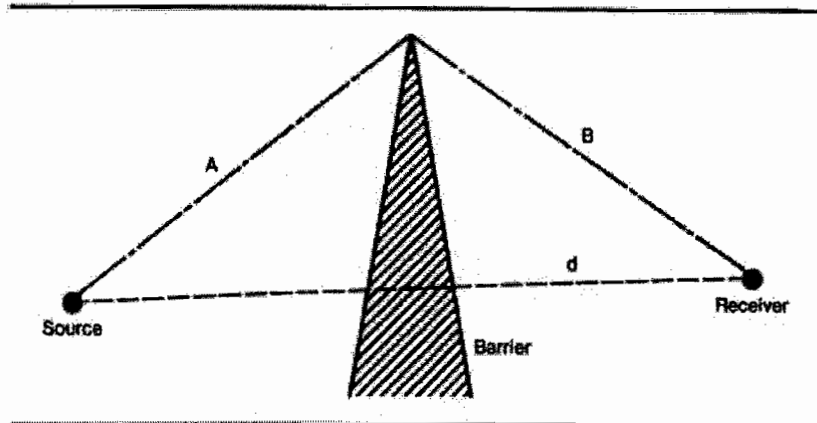
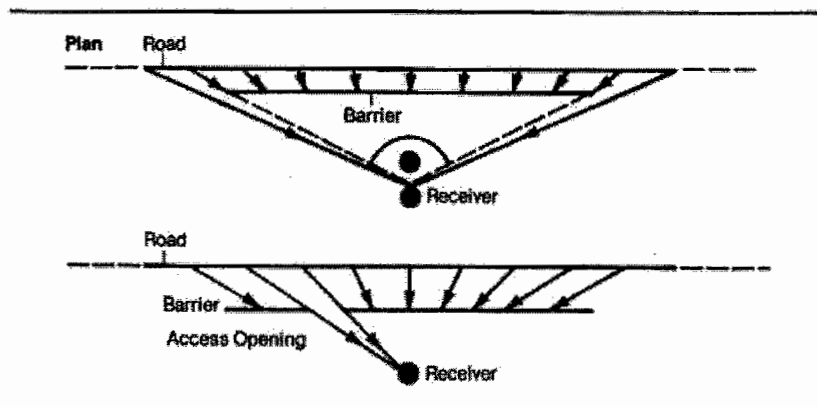


Figure 4
Short-circuit of Barrier Around Ends
and Through Openings



Barrier Transmission

In addition to the sound that travels over the top of the barrier to reach the receiver, sound can travel through the barrier itself. The amount of sound "transmission" through the barrier depends upon factors relating to the barrier material (such as its weight and stiffness), the angle of incidence of the sound, and the frequency spectrum of the sound. One way of rating a material's ability to transmit noise is by the use of a quantity known as the transmission loss, TL. The TL is related to the ratio of the incident noise energy to the transmitted noise energy. Transmission loss values are normally expressed in decibels and represent the amount noise levels will be reduced when the sound waves pass through the material. The higher the TL value the less noise transmitted through the material. Typically, the TL value improves with increasing surface weight of the material.

The noise reduction provided by a barrier can be severely compromised if the TL value of the material permits too much noise to pass through the barrier. This is due to the fact that when attenuation is a function of two or more factors, the noise level at the measurement point is actually the combination of the reduced noise levels resulting from each attenuation factor. For example, with a typical barrier the noise levels are reduced by (1) sound waves being diffracted over the barrier and (2) sound waves passing through the barrier. The noise level at the receiver point is the combination of the attenuated levels resulting from each attenuation step. If the starting noise level is 85 db and the noise level is reduced 10 db when the sound waves pass through the barrier then the attenuated level reaching the receiver is 55 db. If the attenuation provided by the sound waves being diffracted over the barrier is also 10 db then the attenuated level reaching the receiver along that path is 55 db as well. Using the table in the *Noise Assessment Guidelines* to combine the two individual attenuated levels, one finds that the combined attenuated level is actually 58 db. Thus even though the attenuation value of each attenuation step was 10 db, the actual reduction for the receiver is only 7 db. It is, however, a function of the way noise levels combine that if the difference between levels is greater than 10 db it does not affect the levels. As a general rule, therefore, if the TL value

is at least 10 dB above the attenuation value resulting from diffraction over the top of the barrier, the barrier noise reduction will not be significantly affected by transmission through the barrier (decreased by less than 0.5 dB). For many common materials used in barrier construction, such as concrete and masonry blocks, TL values are usually more than adequate. For less massive materials such as steel, aluminum and wood, TL values may not be adequate, particularly for those cases where large attenuations are required. (See Table 1 for a list of typical TL values.)

Even if a barrier material is massive enough to prevent significant sound transmission, the barrier noise reduction can be severely compromised if there are holes or openings in the barrier. For large openings, sound energy incident on the barrier will be directly transmitted through the opening to the receiver. When the opening is small an additional phenomenon occurs: upon striking the barrier wall the sound pressure will increase, resulting in an amplification of the transmitted sound to the receiver. Thus, the presence of openings or holes may seriously degrade the noise reduction provided by otherwise effective barriers.

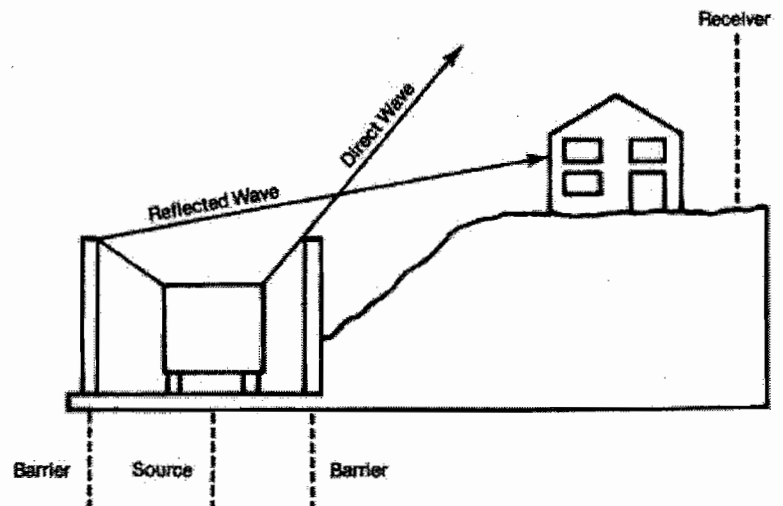
Barrier Reflections

As shown in Figure 1, sound energy can be reflected by a barrier wall. For the configuration shown in that figure, the reflected energy does not affect the receiver, but may affect receivers located to the left of the highway. However the increase in noise level for these receivers would be less than 3 dB, because this single reflection can at most double the sound energy. (Remember how you combine noise levels? The most you add is 3 db when levels are the same.)

The situation is entirely different, however, when a double barrier situation is involved (refer to Figure 5). In addition to the energy that reaches the receiver by diffraction over the top of the barrier, if the barrier walls are reflective, additional sound energy can reach the receiver by a reflection from the left wall as illustrated in the figure. The same principles apply when there is a vertical retaining wall opposite a noise barrier; similarly, in a deep vertical cut the opposite walls will create multiple reflections.

If the barrier walls are not perfectly reflecting but absorb some of the sound energy, the contribution of each reflection is decreased by an amount that depends upon the absorptive characteristics of the barrier. For very hard, reflective surfaces, the absorption characteristics are very poor. Although a serious degradation in barrier performance may result for the double barrier situation, use of materials with good absorption values will usually recover all of the lost noise reduction.

Figure 5.
Reflections from an
Opposing Barrier



It should be mentioned that the use of barrier walls with sloped sides (forming angles of greater than 10–15 degrees from the vertical) will also generally eliminate multiple reflections. Use of earth berms is particularly appropriate to accomplish this. Sloped barrier walls will require more material to achieve a desired height than a vertical wall, while berms will require greater right-of-way than a thin wall.

Ground Effects

Consider again the direct path of sound from the source to receiver as illustrated in Figure 1 in the absence of any obstacles. For sources and receivers located close to the ground, in addition to this direct path sound energy may reach the receiver by reflecting off the ground. When the terrain is relatively hard and flat, such a reflection will add to the noise from the direct path to increase the level at the receiver. However, when the ground is soft, there may be a phase reversal upon reflection such that the noise from the ground reflection path will destructively interfere with the noise from the direct path resulting in a significant reduction in noise levels at the receiver.

This reduction in level, known as ground-effect attenuation, is in excess of the 3 dB per doubling of distance propagation loss for a line source of noise and occurs only above soft absorptive ground (such as normal earth and most ground with vegetation). Over hard ground (such as concrete, stone and very hard-packed earth) these effects do not occur. These effects are most apparent for receivers on the ground floor, and decrease rapidly as receiver height above ground increases.

While ground absorption effects are not completely understood, it is generally believed that these effects account for the 4.5 dB per doubling of distance propagation loss observed over soft ground, as compared to the 3 dB propagation loss observed over hard ground. The implication with regard to barrier design is that placement of a barrier over soft ground between source and receiver will re-direct the sound over the top of the barrier, thus destroying the ground reflection and the additional 1.5 dB per doubling of distance attenuation. Thus, the barrier must be designed to provide more reduction than would otherwise be necessary, to compensate for the lost ground effects over absorptive ground.

Summary

(From: *Design Guide*, National Bureau of Standards¹)

In summary, the following can be said about noise barriers.

- If a barrier does not block the line-of-sight between the source and receiver, the barrier will provide little or no attenuation.
- If a barrier is constructed of a material with a surface weight density greater than 4 lb/ft² and there are no openings through the barrier, transmitted sound will usually be negligible.
- If there are openings totaling over 10 percent or more of the barrier area, barrier attenuation will be negligible.
- Diffracted sound is usually the most important aspect in estimating barrier attenuation.
- Reflected sound can be important for receivers on the source side of a barrier, but it normally is not a factor for receivers on the side opposite from the source. Hence reflected sound is usually not important to your building and site.
- Transmission of sound around the ends of the barrier can be critical if the barrier included angle is less than 170°.
- Barrier attenuations greater than an A-weighted sound level difference of 10 dB are difficult to obtain.
- For two or more barriers "in series," consider only the "dominant" barrier.
- Assume no attenuation for a receiver located beyond the end of a barrier.

Reviewing Barrier Proposals

An effective barrier is one which reduces the noise level behind the barrier to 65 L_{dn} or lower. If a barrier can reduce the exterior noise level to 65 L_{dn}, then standard construction techniques should be sufficient to insure an interior level of 45 L_{dn} or below. Therefore, if you determine that a proposed barrier is adequate to reduce the exterior noise level to 65 L_{dn} then no additional attenuation measures should be necessary.

¹*Design Guide for Reducing Transportation Noise in and Around Buildings*, US Department of Commerce, National Bureau of Standards, April 1978. (Building Science Series 84)

There are four things to check when determining the adequacy of a proposed barrier:

1. Is it high enough?
2. Is it long enough?
3. Is it made of the right materials?
4. Is it properly constructed?

Is It High Enough?

In order for a barrier to be effective it must be at least high enough to break the line of sight between the source and the receiver. In the *Noise Assessment Guidelines* you will find the procedure for determining how much attenuation is provided by a barrier of a given height.

In general, barriers and berms are most effective for one and two story buildings because a relatively low barrier can often provide the attenuation needed. The height that might be required to provide attenuation for much taller buildings is often not feasible for either cost or aesthetic reasons. However, even if a barrier can not be made high enough to attenuate the upper floors of a multistory building, it may still be able to provide some protection for outdoor recreational areas. Before discarding the barrier idea check for this possibility.

If you find that the barrier as proposed is too short to be effective but the sponsor or developer tells you that he or she can not make the barrier any higher, there are some alternatives you can suggest. There are ways to get more attenuation out of each foot of overall height.

As a general rule, barriers work better the closer they are to the source. Figure 6 shows a barrier that does not block the line of sight at all when it is located next to the receiver, yet is quite tall enough when located next to the source. Thus, if the sponsor or developer can not make the barrier any taller, perhaps he or she can move it closer to the source.

Another way to get more attenuation without increasing overall barrier height is to bend the top of the barrier towards the source. Figure 7 shows a case where a barrier built perfectly straight provides 8 dB of attenuation. A barrier with the same overall height but with a 45 degree bend towards the source provides 9.5 dB of attenuation. Thus if the project sponsor or developer wants to keep the overall height of the barrier down, he or she can still increase the attenuation provided simply by bending the top.

Figure 6
Effect of Moving the Barrier
Closer to the Source

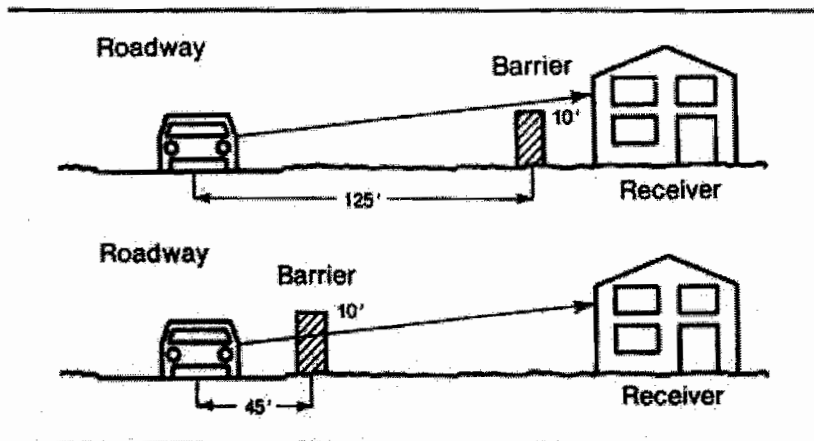
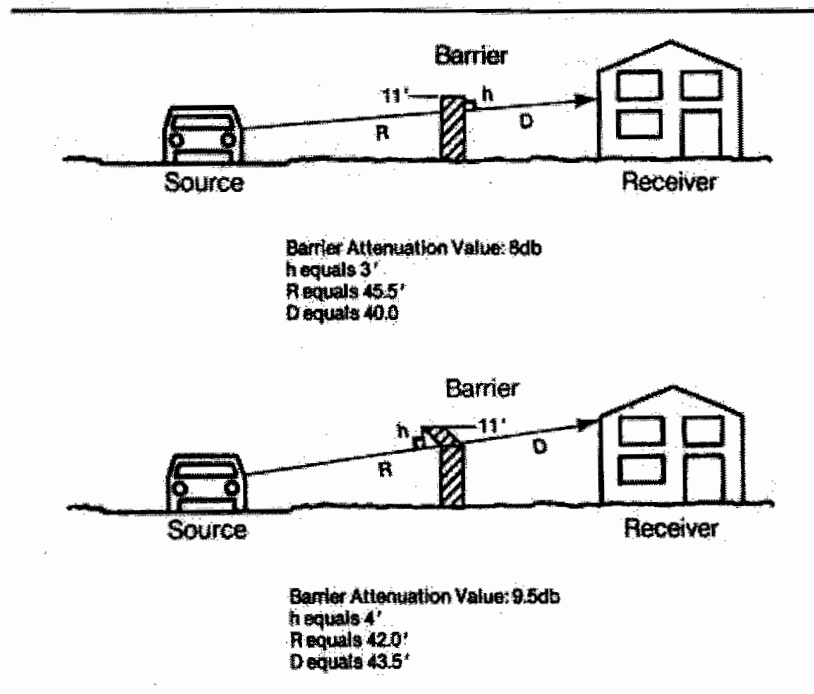


Figure 7
Effect of Bending the Top of the
Barrier Towards the Source



Thus, if your review of a proposed barrier shows it to be too short, but it can not be made any higher, suggest that the barrier be moved closer to the source or that it be bent at the top, or both.

Is It Long Enough?

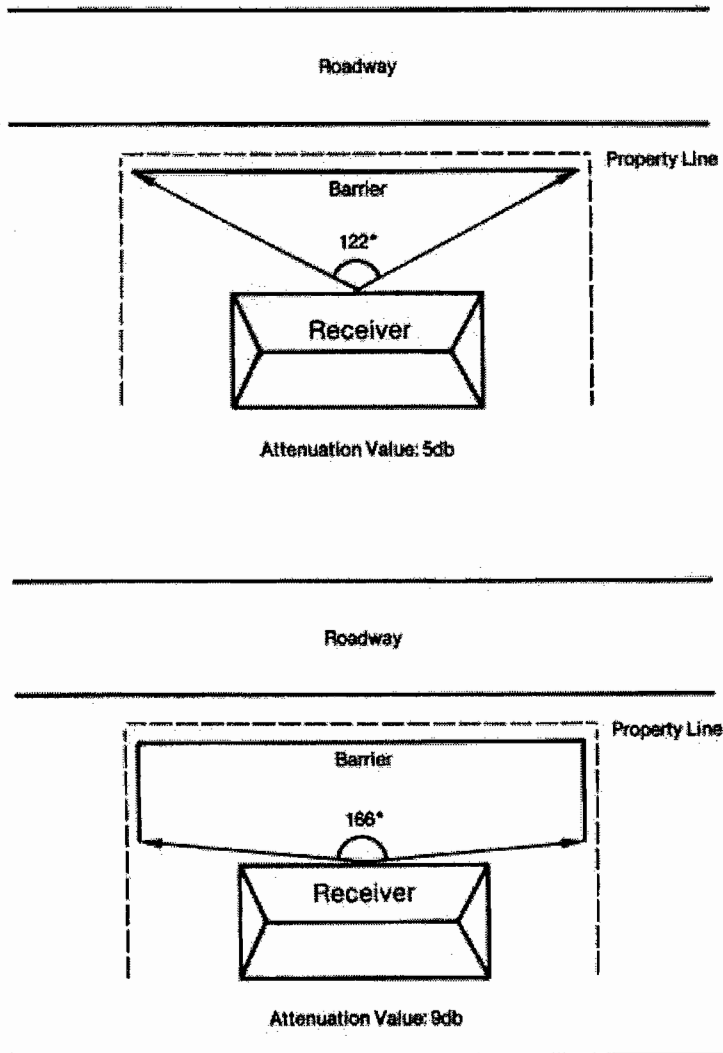
Once you have established how much attenuation the barrier provides due to its height, you must determine if the length of the barrier compromises that attenuation level. Again, the *Noise Assessment Guidelines* contain a procedure for calculating the effect of barrier length.

If you find that the barrier is too short but that there are limitations on how long it can be made, there are, as there were with barrier heights, some recommendations you can make on how to improve the effectiveness of the barrier.

Again, if you bend the edges of the barrier, this time towards the receiver not the source, you will increase the effectiveness of the barrier. Figure 8 shows how much a barrier's effectiveness can be improved by bending the edges.

You can also improve the effectiveness of the barrier by moving it closer to the receiver. Figure 9 shows how much a barrier's effectiveness can be increased by moving it closer to the receiver. Now obviously, this creates a conflict with what we said earlier about moving the barrier closer to the source. Clearly each case will require a different compromise. If height is not a limiting factor but length is, you might recommend to the project sponsor or developer that the barrier be moved closer to receiver and the height increased as necessary. If the reverse is true, you would want to recommend the opposite. If both height and length are limited, then the sponsor or developer must find that optimum point where the effectiveness of both the barrier height and the barrier length is as high as possible.

Figure 8
Effect of Bending the Edges of Barrier
Towards Receiver
 (Both Barriers have Potential Value of 10db)



Is It Made of The Right Materials?

Even if a barrier is high enough and long enough, its effectiveness can be severely reduced if it is made up of lightweight materials that easily transmit sound waves. In the preceding section on barrier concepts we talked about how if the transmission loss value for the barrier material was not at least 10 db higher than the attenuation value of the barrier based on length and height there would be a significant reduction in the effectiveness of the barrier.

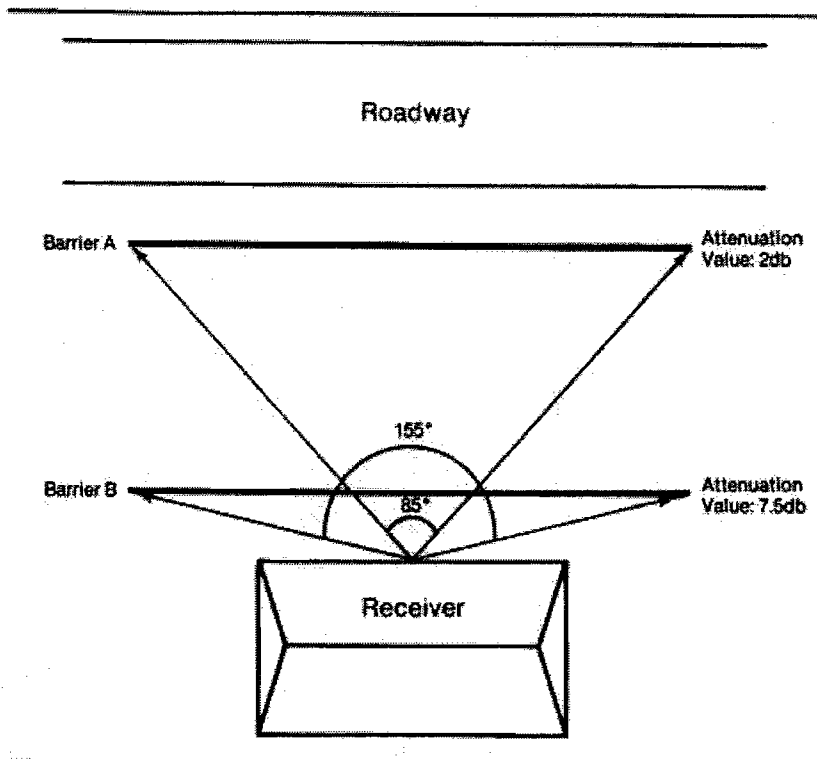
Therefore, once you have calculated the basic attenuation potential of the barrier, you must check to make sure the proper material is being used to build the barrier. Table 1 lists the transmission loss values for materials commonly used in barrier construction. Once you have found the transmission loss value for the material being used, go to Table 2. Read down the column with the transmission loss for the material at its top and across the line that has the attenuation potential for the barrier listed. Where the two intersect you will find the actual attenuation capability of the barrier.

If you find that the choice of material has severely reduced the effectiveness of the barrier, you should recommend that the sponsor or developer select another material.

Is It Properly Constructed?

Holes or openings can substantially reduce the effectiveness of a barrier. A barrier that has openings totaling 50% or more of its total area will provide no attenuation. A barrier that has openings totaling 10% of its total area has a maximum attenuation value of approximately 4db. That is 4db no matter how high, how long or how thick the barrier. So you can see that it is very important that the barrier is made of solid materials and that it is tightly constructed. In general the intended openings in a barrier should equal no more than 1% of total area and the construction specifications should require that all joints are tightly sealed.

Figure 9
Effect of Moving Barrier
Closer to Receiver



A Final Note

One thing should have become clear to you as you have been reading this section, and that is that in order for you to adequately review a project sponsor or developer's proposed barrier you must be given fairly specific information about the exact dimensions of the proposed barrier, the type and thickness of the barrier material, and the exact design of the barrier including construction specifications. Without this information you will be unable to do any more than a cursory evaluation, an evaluation that could be far from accurate. Make sure you make it clear to the developer or sponsor what you need to have.

Table 1
Transmission Loss Value for Common
Barrier Materials

Material	Thickness, (Inches)	Transmission Loss, dBA (1)
Woods		
Fir	1/2	17
	1	20
	2	24
Pine	1/2	16
	1	19
	2	23
Redwood	1/2	16
	1	19
	2	23
Cedar	1/2	15
	1	18
	2	22
Plywood	1/2	20
	1	23
Particle Board	1/2	20
Metals		
Aluminum	1/16	23
	1/8	25
	1/4	27
Steel	24 ga	18
	20 ga	22
	16 ga	15
Lead	1/16	28
Concrete, Masonry, etc.		
Light Concrete	4	36
	6	39
Dense Concrete	4	40
Concrete Block	4	32
	6	36
Cinder Block (Hollow Core)	6	28
Brick	4	33
Granite	4	40
Composites		
Aluminum Faced Plywood	3/4	21-23
Aluminum Faced Particle Board	3/4	21-23
Plastic		
Lamina on Plywood	3/4	21-23
Plastic Lamina on Particle Board	3/4	21-23
Miscellaneous		
Glass (Safety Glass)	1/8	22
	1/4	26
Plexiglass (Shatterproof)		22-25
Masonite	1/2	20
Fiberglass/Resin	1/8	20
Stucco on Metal Lath	1	32
Polyester with Aggregate Surface	3	20-30

¹A-weighted TL based on generalized truck spectrum. Source: *Noise Barrier Design Handbook*, FHWA

Table 2
Noise Reduction of a Barrier as a
Function of Its Transmission Loss

Designed Attenuation, dB (from height) and length)	Transmission Loss, dB of Materials				
	10	15	20	25	30
5	3.8	4.6	4.9	5.0	5.0
6	4.5	5.5	5.8	6.0	6.0
7	5.2	6.4	6.8	6.9	7.0
8	5.9	7.2	7.7	7.9	8.0
9	6.5	8.0	8.7	8.9	9.0
10	7.0	8.8	9.6	9.9	10.0
11	7.5	9.5	10.5	10.8	11.0
12	7.9	10.2	11.4	11.8	11.9
13	8.2	10.9	12.2	12.7	12.9
14	8.5	11.5	13.0	13.7	13.9
15	8.8	12.0	13.8	14.6	14.9
16	9.0	12.5	14.5	15.5	15.8
17	9.2	12.9	15.2	16.7	16.8
18	9.4	13.2	15.9	17.2	17.7
19	9.5	13.5	16.5	18.0	18.7
20	9.6	13.8	17.0	18.8	19.6

Source: *Noise Barrier Design Handbook*, FHWA

Acoustical Site Planning Concepts

(This section, with some editing, is from *The Audible Landscape*, FHWA.¹)

The arrangement of buildings on a site can be used to minimize noise impacts. If incompatible land uses already exist, or if a noise sensitive activity is planned, acoustical site planning often provides a successful technique for noise impact reduction.

Many site planning techniques can be employed to shield a residential development from noise. These can include:

1. increasing the distance between the noise source and the receiver;
2. placing noise compatible land uses such as parking lots, maintenance facilities, and utility areas between the source and the

receivers. Playgrounds and parks are not necessarily noise compatible activities.

3. locating barrier-type buildings parallel to the noise source or the highway; and
4. orienting the residences away from the noise.

The implementation of many of the above site planning techniques can be combined through the use of cluster and planned unit development techniques.

Distance

Noise can be effectively reduced by increasing the distance between a residential building and a highway. Distance itself reduces sound: doubling the distance from a noise source can reduce its intensity by as much as 3 dBA. In the case of highrise buildings, distance may be the only

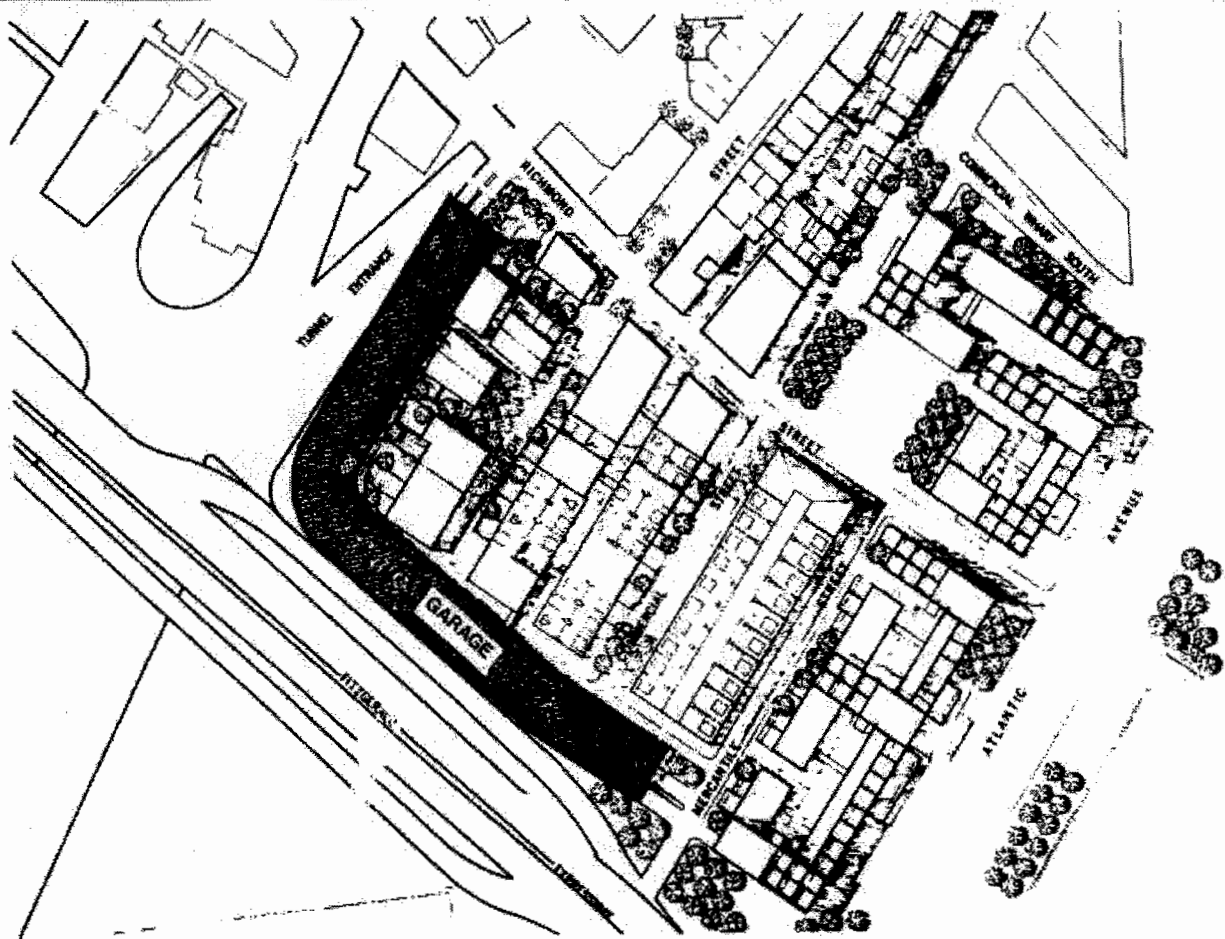
means, besides acoustical design and construction, of reducing noise impacts. This is because it is nearly impossible to provide physical shielding for the higher stories from adjacent noise.

Noise Compatible Land Uses as Buffers

Noise protection can be achieved by locating noise-compatible land uses between the highway and residential units. Whenever possible, compatible uses should be nearest the noise source. Figure 10 shows a proposed parking garage along two sides of a development in Boston. Both the

¹*The Audible Landscape: A Manual for Highway Noise and Land Use*, US Department of Transportation, The Federal Highway Administration, November 1974. (GPO Stock Number: 5000-00079.)

Figure 10
Use of a Parking Garage to
Shield a Residential Area



Fitzgerald Expressway and the entrance to the Callahan Tunnel which are shown on the site plan are major and noisy traffic routes. In addition to protecting the residential development from the noise and dirt of highway traffic, the parking garage provides needed facilities for the residents.

Buildings as Noise Shields

Additional noise protection can be achieved by arranging the site plan to use buildings as noise barriers. A long building, or a row of buildings parallel to a highway can shield other more distance structures or open areas from noise.

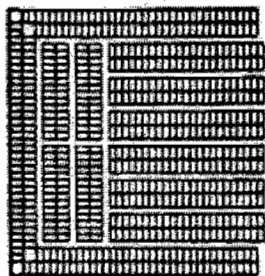
If the building being used as a barrier is sensitive to highway noise, the building itself must first be soundproofed. This technique was used in a housing project in England where a 3,900 foot long, 18 foot wide and 45-70 foot high wall (depending on the terrain) serves as both residence and a sound shield. The wall/building will contain 387 apartments in which the kitchens and bathrooms are placed towards the noise, and the bedrooms and living rooms face away from the highway. The wall facing the highway will be soundproofed and windows, when they exist, are sealed. Substantial noise reductions are expected.

Orientation

The orientation of buildings or activities on a site affects the impact of noise, and the building or activity area may be oriented in such a way as to reduce this impact.

Noise impacts can be severe for rooms facing the roadway since they are closest to the noise source. The noise impact may also be great for rooms perpendicular to the roadway

Figure 11
Conventional Grid Subdivision



because (a) the noise pattern can be more annoying in perpendicular rooms and (b) windows on perpendicular walls do not reduce noise as effectively as those on parallel walls because of the angle of the sound. Road noise can be more annoying in perpendicular rooms because it is more extreme when it suddenly comes in and out of earshot as the traffic passes around the side of the building, rather than rising and falling in a continuous sound, as it would if the room were parallel to passing vehicles.

Whether the noise impact is greater on the perpendicular or the parallel wall will depend on the specific individual conditions. Once the most severely impacted wall or walls are determined, noise impacts may be minimized by reducing or eliminating windows from these walls.

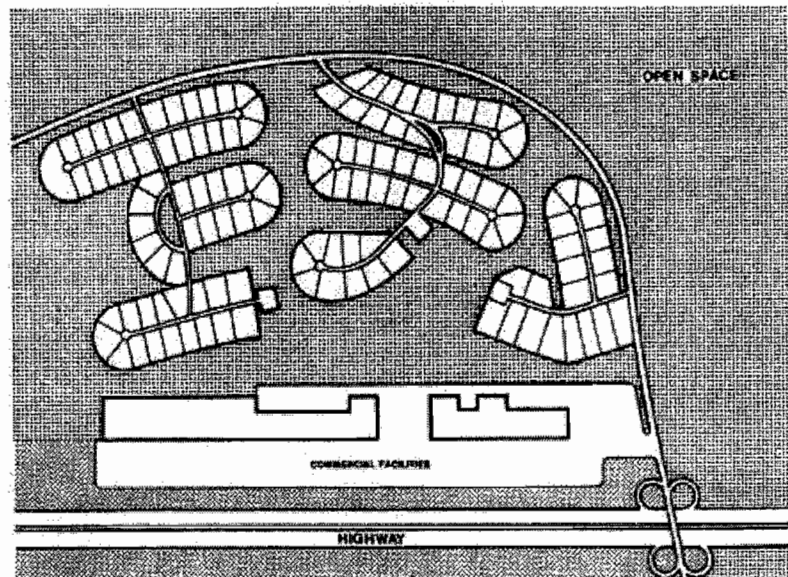
Buildings can also be oriented on a site in such a way as to exploit the site's natural features. With reference to noise, natural topography can be exploited and buildings placed in low noise pockets if they exist. If no natural noise pockets exist, it is possible to create them by excavating pockets for buildings and piling up earth mounds between them and the noise. Such a structure would obstruct the sound paths and reduce the noise impacts on the residences.

Cluster and Planned Unit Development

A cluster subdivision is one in which the densities prescribed by the zoning ordinance are adhered to but instead of applying to each individual parcel, they are aggregated over the entire site, and the land is developed as a single entity. A planned unit development, or P.U.D., is similar but changes in land use are included, such as apartments and commercial facilities in what would otherwise be a single-family district.

From Figure 11 it can be seen how the conventional grid subdivision affords no noise protection from the adjacent highway. The first row of houses bears the full impact of the noise. In contrast, the cluster and P.U.D. techniques enable open space and commercial uses respectively to serve as noise buffers. Examples of this are shown in Figures 12 and 13. A word of caution is necessary: in a cluster development, the required open space can be located near the highway to minimize noise to the residences. However, many recreation uses are noise sensitive, and when one takes advantage of the flexibility of cluster development to minimize noise, care must be taken not to use all of the available open space in

Figure 12
Placement of Noise Compatible Uses Near a Highway in a PUD



buffer strips, thus depriving the development of a significant open space area. Where high noise levels exist, a combination of buffer strips and other techniques (such as berms and acoustical sound proofing) can be employed.

The flexibility of the cluster and planned unit development techniques allows many of the above site planning techniques to be realized and effective noise reduction achieved.

Reviewing Site Plans

There are two main things to check when reviewing site plan changes to determine if the revised site plan provides adequate attenuation for the noise sensitive uses:

1. Is the separation between the source and the receiver great enough?
2. If noise-compatible buildings are being used as barriers for other buildings, are they adequate barriers, i.e., are they long enough and are they high enough? (And, if the buildings

being used as barriers contain noise sensitive activities, have the buildings been properly soundproofed.)

In order to determine whether the proposed site plan changes will provide adequate separation between the source and the receiver, you simply go back to the *Noise Assessment Guidelines* procedures. You can use the *Guidelines* both to determine if the proposed separation distance is sufficient or to determine the necessary separation distance. You should at this point check to make sure that the uses being located in the "buffer zone" between the source and the receiver are indeed noise compatible uses. If parks or playgrounds are located in the buffer zone, make sure they are not the only ones associated with the project.

To determine whether the noise compatible buildings being proposed as barriers are adequate, you simply use the procedures outlined in the preceding section. Determine whether the building is high enough to properly break the line of sight

between the receiver and the source. Then determine if the building is long enough. It is not necessary to check to make sure it is made of the proper materials or that it is properly constructed since the building will be inherently thick enough not to have any problems. Again, however, if the building being proposed as a barrier contains noise sensitive uses you must first verify that it is properly soundproofed. (See the next section for guidance on acoustical construction.) If the building is not properly soundproofed then it can not be used as a barrier for other buildings.

As you review the site plan check to see that the building locations will not aggravate noise problems. Figure 14 shows how building arrangement can make the noise problem worse.

Figure 13
Open Space Placed Near a Highway in a Cluster Development

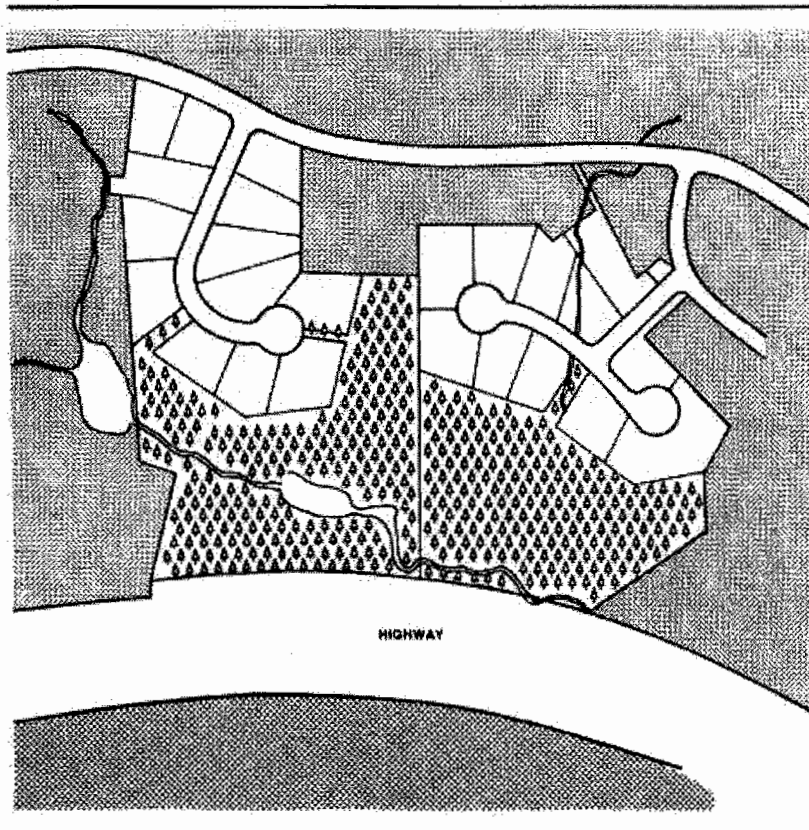
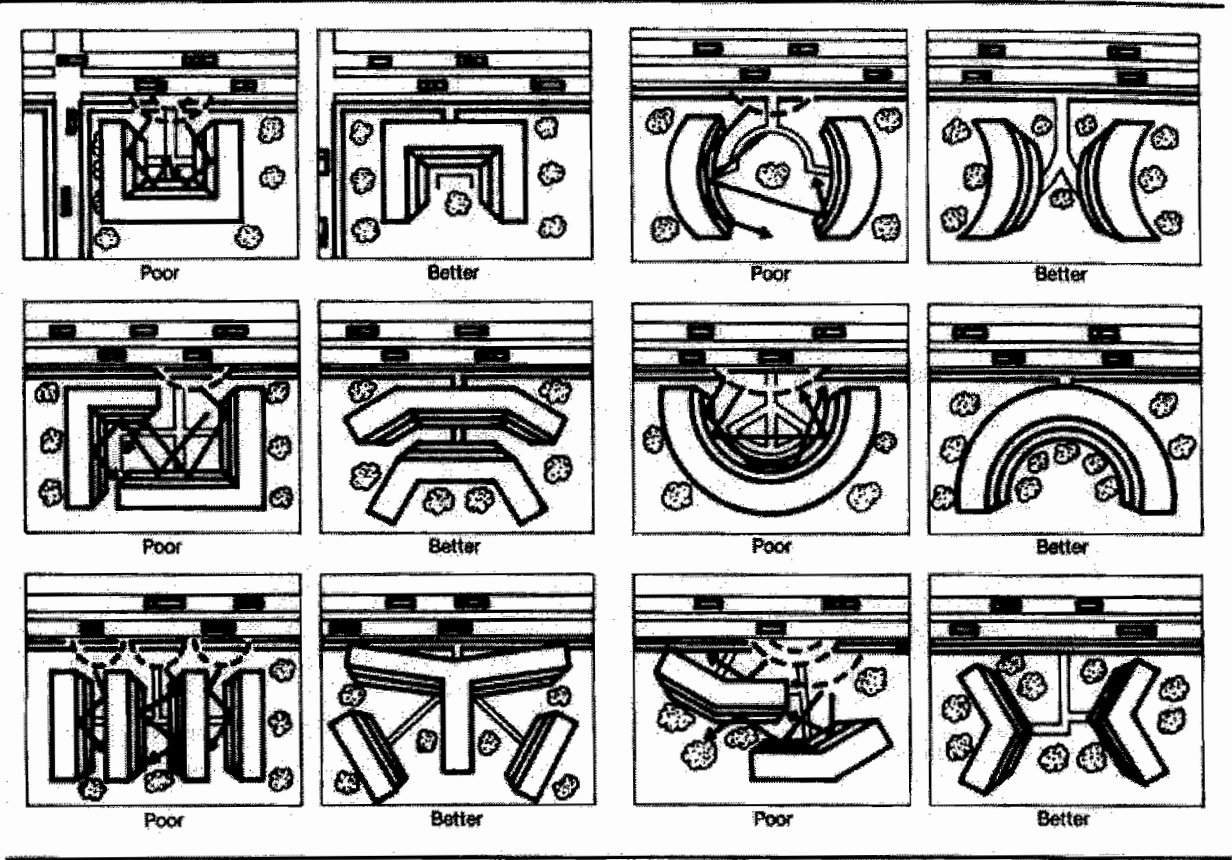


Figure 14
Orientation of Buildings on Sites



Acoustical Construction Concepts

(This section, with some editing is taken from the *Audible Landscape*, FHWA.)

Noise can be intercepted as it passes through the walls, floors, windows, ceilings, and doors of a building. Examples of noise reducing materials and construction techniques are described in the pages that follow.

To compare the insulation performance of alternative constructions, the Sound Transmission Class (STC) is used as a measure of a material's ability to reduce sound. Sound Transmission Class is equal to the number of decibels a sound is reduced as it passes through a material. Thus, a high STC rating indicates a good insulating material. It takes into account the influence of different frequencies on sound transmission, but essentially the STC is the difference between the sound levels on the side of the partition where the noise originates and the side where it is received. For example, if the external noise level is 85 dB and the desired internal level is 45 dB, a partition of 40 STC is required. The Sound Transmission Class rating is the official rating endorsed by the American Society of Testing and Measurement. It can be used as a guide in determining what type of construction is needed to reduce noise.

The use of the STC rating system for transportation noise is a subject of some debate. The STC rating was originally intended primarily for use with interior partitions and relates to the "subjective impressions of the sound insulation provided against the sounds of speech, radio, television, music, and similar sources of noise in offices and dwellings."² However, since it remains the only widely used noise reduction rating system for materials the STC system is very often used even with transportation noise. When STC ratings are used for transportation noise you should be aware that the STC ratings may be a few dB too high. For example, the STC rating for a standard frame 2 x 4 wall with exterior siding, and sheathing and interior sheetrock may be 37 dB.³

If rated specifically for transportation noise the dB reduction rating might drop to 34 dB.⁴ All this really means, however, is that you should use the STC ratings with a bit of caution and remain aware of the possible 2-3 dB overstating that you may get with the STC rating system. Throughout this text we will be talking in terms of STC ratings for materials and assemblies.

¹The Audible Landscape: A Manual for Highway Noise and Land Use, US Department of Transportation, the Federal Highway Administration, November 1974, (GPO Stock #5000-00079).

²Acoustical and Thermal Performance of Exterior Residential Walls, Doors, and Windows, US Department of Commerce, National Bureau of Standards, November 1975. (NBS Building Science Series 77) page 21.

³Ibid., p. 29

⁴Design Guide for Reducing Transportation Noise In and Around Buildings, p. 137.

Walls

Walls provide building occupants with the most protection from exterior noise. Different wall materials and designs vary greatly in their sound insulating properties. Figure 15 provides a visual summary of some ways in which the acoustical properties can be improved:

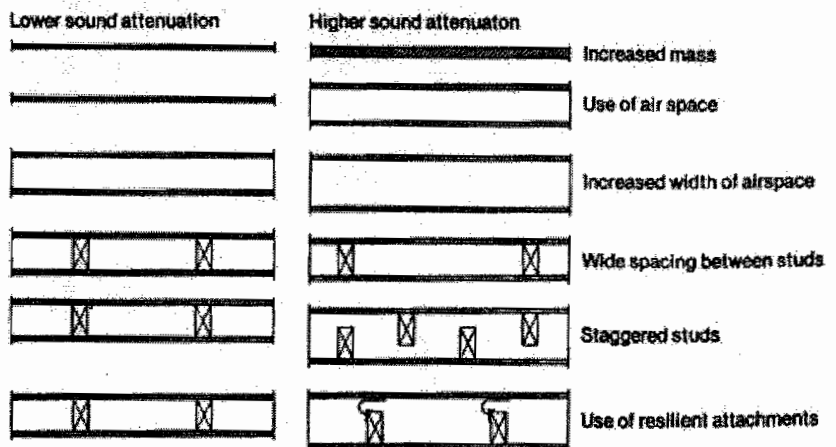
Increase the mass and stiffness of the wall. In general, the denser the wall material, the more it will reduce noise. Thus, concrete walls are better insulators than wood walls of equal thickness. Increasing the thickness of a wall is another way to increase mass and improve sound insulation. Doubling the thickness of a partition can result in as much as a 6 dB reduction in sound.¹ However, the costs of construction tend to limit the feasibility of large increases in wall mass.

The relative stiffness of the wall material can influence its sound attenuation value. Care must be taken to avoid wall constructions that can vibrate at audible frequencies and transmit exterior sounds.

¹R. K. Cooke and P. Chrzanowski, "Transmission of Noise Through Walls and Floors," Cyril Harris, ed., Handbook of Noise Control, McGraw-Hill Book Company, Inc. (New York, 1957).

Figure 15
The Audible Landscape

Factors which influence sound attenuation of walls



Use cavity partitions. A cavity wall is composed of two or more layers separated by an airspace. The airspace makes the cavity wall a more effective sound insulator than a single wall of equal weight, leading to cost savings.

Increase the width of the airspace. A three inch airspace provides significant noise reduction, but increasing the spacing to six inches can reduce noise levels by an additional 5 dBA. Extremely wide airspaces are difficult to design.

Increase the spacing between studs. In a single stud wall, 24 inch stud spacing gives a 2-5 dB increase in STC over the common 16 inch spacing.²

Use staggered studs. Sound transmission can be reduced by attaching each stud to only one panel and alternating between the two panels.

²Leslie T. Doelle, *Environmental Acoustics* (New York, McGraw-Hill Book Company, 1972), pp. 232-233.

Use resilient materials to hold the studs and panels together. Nails severely reduce the wall's ability to reduce noise. Resilient layers such as fiber board and glass fiber board, resilient clips, and semi-resilient attachments are relatively inexpensive, simple to insert, and can raise the STC rating by 2-5 dB.¹

Use dissimilar layers. If the layers are made of different materials and/or thickness, the sound reduction qualities of the wall are improved.²

Add acoustical blankets. Also known as isolation blankets, these can increase sound attenuation when placed in the airspace. Made from sound absorbing materials such as mineral or rock wool, fiberglass, hair felt or wood fibers, these can attenuate noise as much as 10 dB.³ They are mainly effective in relatively lightweight construction.

Seal cracks and edges. If the sound insulation of a high performance wall is ever to be realized, the wall must be well sealed at the perimeter. Small holes and cracks can be devastating to the insulation value of a wall. A one-inch square hole or a 1/16 inch crack 16 inches long will reduce a 50 STC wall to 40.⁴

Figure 16 shows a sample of wall types ranging from the lowest to the highest sound insulation values.

Remember that the effectiveness of best wall construction will be substantially reduced if you permit vents, mail slots or similar openings in the walls. If vents are permitted the ducts must be specially designed and insulated to make sure noise does not reach the inside. The best approach is simply to eliminate all such openings on impacted walls.

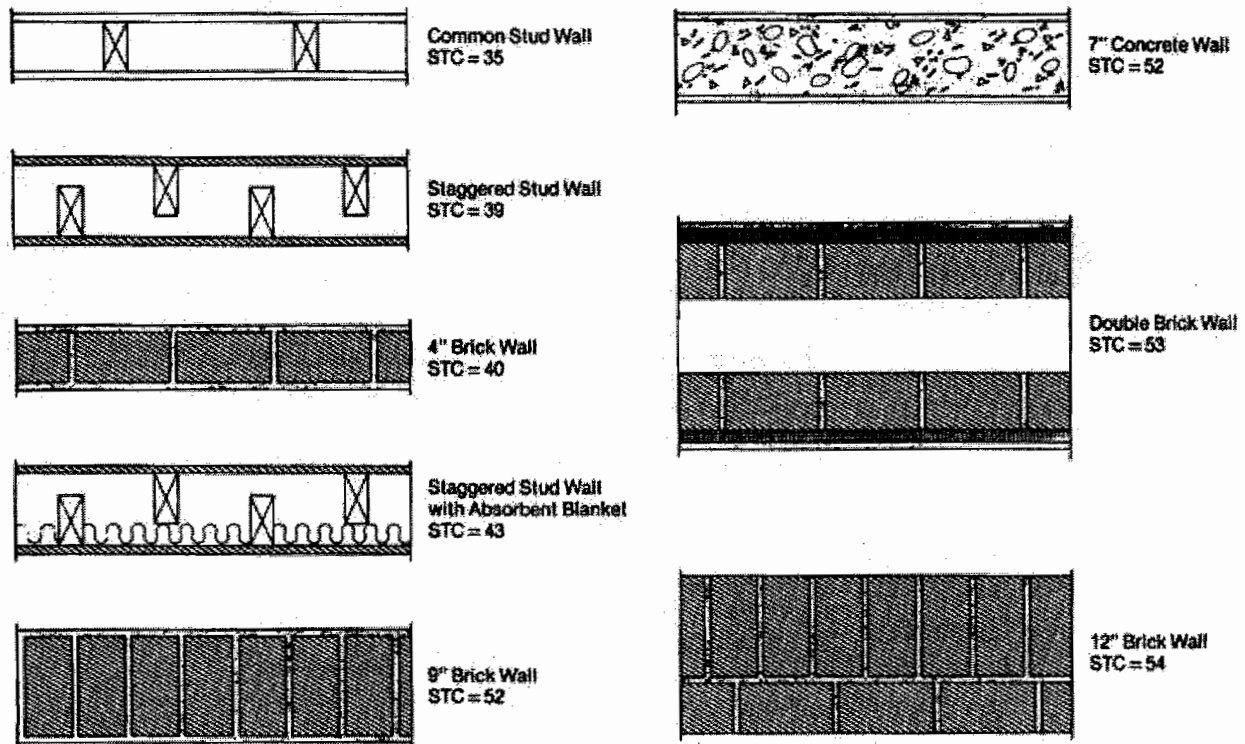
¹ibid, p. 172

²ibid, p. 162

³Doelle, p. 20

⁴United States Gypsum, *Sound Control Construction, Principles and Performance* (Chicago, 1972), p. 66

Figure 16
Walls



Windows

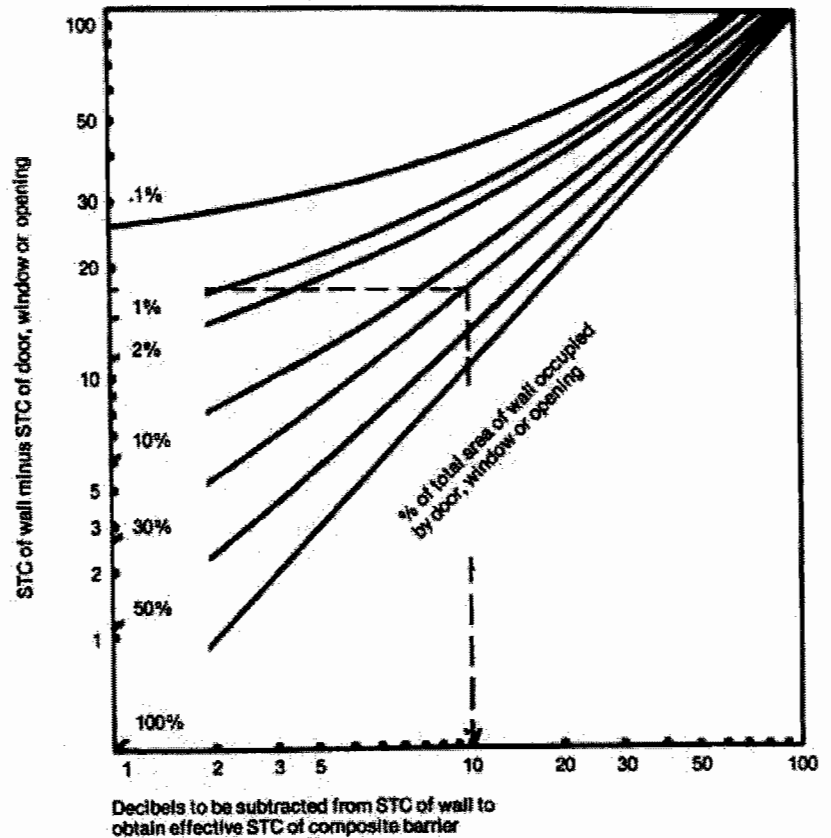
Sound enters a building through its acoustically weakest points, and windows are one of the weakest parts of a wall. An open or weak window will severely negate the effect of a very strong wall. Whenever windows are going to be a part of the building design, they should be given acoustical consideration. Figure 17 illustrates the effects of windows on the sound transmission of walls. For example, if a wall with an STC rating of 45 contains a window with an STC rating of 26 covering 30% of its area, the overall STC of the composite partition will be 35, a reduction of 10 dB.

The following is a discussion of techniques that can be used to reduce noise in a building by means of its windows. These techniques range from a blocking of the principal paths of noise entry to a blocking of the most indirect paths.

Close windows. The first step in reducing unwanted sound is to close and seal the windows. The greatest amount of sound insulation can be achieved if windows are permanently sealed. However, operable acoustical windows have been developed which are fairly effective in reducing sound.¹ Whether or not the sealing is permanent, keeping windows closed necessitates the installation of mechanical ventilation systems. If you are dealing with single family houses and some of the windows are facing away from all noise sources, a whole house fan may be better and cheaper than air conditioning. In multifamily housing or where all windows are exposed to the noise sources you will have to go with the air conditioning. If windows must be operable, special seals are available which allow windows to be opened.²

Reduce window size. The smaller the windows, the greater the transmission loss of the total partition of which the window is a part. Reducing the window size is a technique that is used because (a) it precludes the cost of expensive acoustical windows, and (b) it saves money by cutting down the use of glass. The problems with this technique are (a) it is not very effective in reducing noise; e.g., reducing the proportion of window to wall size from 50% to 20% reduces noise by only 3 decibels; and (b) many building codes require a minimum window to wall size ratio.

Figure 17
STC



Increase glass thickness. If ordinary windows are insufficient in reducing noise impacts in spite of sealing techniques, then thicker glass can be installed. In addition, this glass can be laminated with a tough transparent plastic which is both noise and shatter resistant. Glass reduces noise by the mass principle; that is, the thicker the glass, the more noise resistant it will be. A 1/2-inch thick glass has a maximum STC rating of 35 dB compared to a 25 dB rating for ordinary 3/16 inch glass.

¹U.S. Department of Housing and Urban Development, A Study of Techniques to Increase the Sound Insulation of Building Elements, Report No. WR 73-5, Washington, D.C., June 1973.

²Los Angeles Department of Airports, Guide to the Soundproofing of Existing Homes Against Exterior Noise, Report No. WRC 70-2, March 1970, pp. 9-11, 22-30. In this report, the function and performance of a number of operable seals are described.

Instructions on use of graph

1. Subtract the STC value of the door, window or opening from the STC value of the wall.
2. Enter the vertical axis of the graph at the point that matches the value from step 1.
3. Read across to the curve that represents the percentage of the total area of the wall that is taken up by the door, window, or opening.
4. Read down to the horizontal axis.
5. Subtract the value on the horizontal axis from the original STC value of the wall. The result is the composite STC value of the wall and the door, window or opening.

However, glass thicknesses are only practical up to a certain point, when STC increases become too insignificant to justify the cost. For example, a 1/2 inch thick glass can have an STC of 35; increasing the thickness to 3/4 inch only raises the STC to 37. However, a double glass acoustical window consisting of two 3/16 inch thick panes separated by an airspace will have an STC of 51 and can cost less than either solid window.

In addition to thickness, proper sealing is crucial to the success of the window. To prevent sound leaks, single windows can be mounted in resilient material such as rubber, cork, or felt.

Install Double-Glazed Windows. Double-glazed windows are paired panes separated by an airspace or hung in a special frame. Generally, the performance of the double-glazed window may be increased with:

- increased airspace width
- increased glass thickness
- proper use of sealings
- slightly dissimilar thicknesses of the panes
- slightly non-parallel panes

In general the airspace between the panes should not be less than 2-4 inches if an STC above 40 is desired. If this is not possible, a heavy single-glazed window can be used. The use of slightly non-parallel panes is a technique employed when extremely high sound insulation is required, such as in control rooms of television studios.

The thickness of double-glazed panes may vary from 1/8 to 1/4 inch or more per pane. Although thickness is important, the factors which most determine the noise resistance of the window is the use of sealant and the width of the airspace.

As in the case of all windows, proper sealing is extremely important. To achieve an STC above 43, double-glazed windows should be sealed permanently. If the windows must be openable, there are available special frames and sealers for openable windows which allow a maximum STC of 43.¹

Permanently sealed double-glazed windows often require an air pressure control system to maintain a constant air pressure and minimal moisture in the airspace. Without this system, the panes may deflect, and, in extremely severe cases, pop out of the frames.

To further insure isolation of noise between double-glazed panes, the panes could be of different thicknesses, different weights, and slightly non-parallel to each other. This prevents acoustical coupling and resonance of sound waves.

Doors

Acoustically, doors are even weaker than windows, and more difficult to treat. Any door will reduce the insulation value of the surrounding wall. The common, hollow core wood door has an STC rating of 17 dB. Taking up about 20% of the wall, this door will reduce a 48 STC wall to 24 STC. To strengthen a door against noise, the hollow core door can be replaced by a heavier solid core wood door that is well sealed¹ and is relatively inexpensive. A solid core wood door with vinyl seal around the edges and carpeting on the floor will reduce the same 48 STC wall to only 33 dB.² An increased sound insulation value can be achieved if gasketed stops or drop bar threshold closers are installed at the bottom edge of the door. (See Figure 18)

The alternative solution to doors is to eliminate them whenever possible from the severely impacted walls and place them in more shielded walls.

In any case no mail slots or similar openings should be allowed in exterior doors.

Roofs

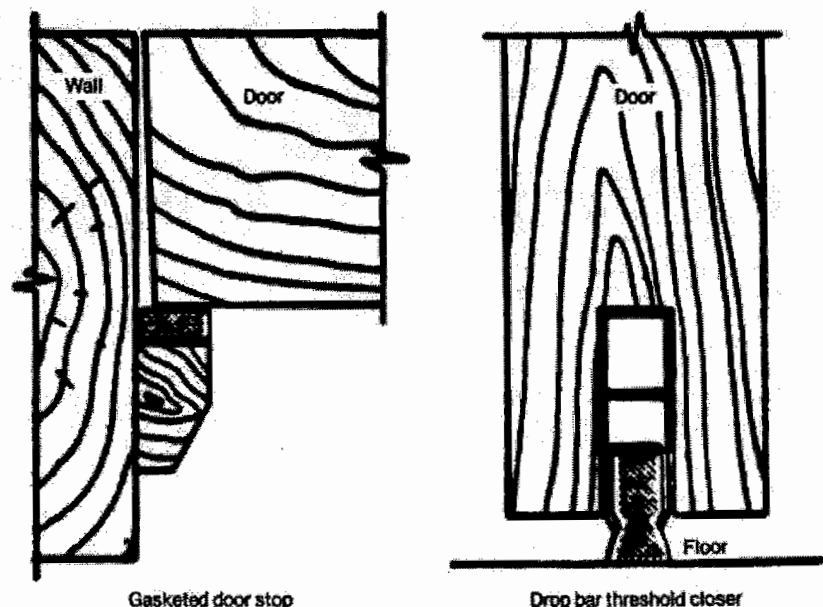
Acoustical treatment of roofs is not usually necessary unless the noise is extremely severe or the noise source is passing over the building. The ordinary plaster ceiling should provide adequate sound insulation except in extremely severe cases. An acoustically weak roof which is likely to require treatment is the beamed ceiling.³ Beamed ceilings may be modified by the addition of a layer of fiberglass or some other noise resistant material. Suspended ceilings are the most effective noise reducers but they are also the most expensive.

¹D.E. Bishop and P.W. Hirtle, "Notes on the Sound Transmission Loss of Residential-Type Windows and Doors," Journal of the Acoustical Society of America, 43:4 (1968).

²U.S. Gypsum, Sound Control... p. 100.

³Ibid p. 15.

Figure 18



¹Ibid.

Floors

In the case of highway noise, floors would only require acoustical treatment if the highway were passing under the building. In this case, flooring would have to provide protection against structural vibrations as well as airborne sound.

Two ways to insulate a floor from noise are to install a solid concrete slab at least 6 inches thick or install a floating floor. In general, the floating floor gives the greatest amount of sound and vibration insulation; however, it is extremely expensive. Basically, a floating floor consists of a wood or concrete slab placed over the structural slab, but separated by a resilient material. The resilient material isolates the surface slab from the structural slab and the surrounding walls.

What to Look for When Reviewing Plans

The number of possible combinations of the building materials that go into walls, ceilings, windows and doors, is, no doubt, considerably short of infinite. It is however still a very large number, large enough that it would be impossible to compile a list of all the possible combinations. Therefore, do not expect to find in this section, or anywhere else for that matter, a neat table showing the STC ratings for all the types of construction you may encounter. In fact, it is not really your responsibility to determine the precise STC ratings for the walls, ceilings, windows and doors in the projects you review. Your job is simply to review the attenuation levels claimed by the sponsor/developer and determine whether or not they are reasonable.

To enable you to perform the above described task, we have prepared a list of the most common types of construction for which we have STC ratings. By comparing the type of construction proposed to one of these "model" types you should be able to tell whether the claimed STC rating is reasonable. For example, the sponsor/developer submits a description of his building stating that a 2 x 6 stud wall with standard sheathing, insulation, wood siding, and 1/2" gypsum board achieves a STC rating of 48. You look at Table 3 and find that the closest "model" wall is a 2 x 4 stud wall with wood siding, sheathing, insulation, and 1/2" gypsum board. This wall has a STC rating of 39. An 9 dB difference is quite significant considering that the walls are really quite similar. You would probably want to go back to the developer/sponsor and ask for some supporting data that proves that the 2 x 6 wall he proposes will indeed provide 48 dB of noise attenuation.

In order to make it easier to review the attenuation levels provided by the proposed construction, we suggest that you ask the developer/sponsor to complete a form such as shown in Figure 19. Such a form will give you all the information you need in a properly organized format that will facilitate your review. You could fill in the first part and simply have the developer/sponsor fill out the second part and return it with the developer certification or other project documents.

As you will recall from the previous section, most walls provide pretty good attenuation by themselves. It is the presence of windows and doors and openings such as vents that reduces the attenuation capability of the wall. Thus, after you have determined whether the basic wall itself has a reasonable STC, you must review the impact of the windows and doors. You do this by using Figure 17. First you determine the difference between the STC ratings for the wall and the windows. You enter the vertical axis of Figure 17 with that number. You read across until you intersect the line that represents the percentage of the wall taken up by the windows. Then you read down to the horizontal axis where you will find the value to be subtracted from the basic STC value of the wall. The resulting number is the combined STC value for the wall. If the wall also contains a door, repeat the same procedure, only start out with the modified STC rating for the wall. If the wall has doors only, then obviously you start with the basic wall STC rating. Finally you compare the number you have derived with that listed by the developer/sponsor. If they are fairly close, you need not pursue it further. If there is a substantial difference, you should ask for an explanation or documentation from the developer.

Once again, we caution you about borderline cases. If the attenuation required is 30 dB and the STC rating for the proposed construction is exactly 30 dB, you may want to ask the developer to provide even more attenuation. Remember that we discussed how the STC rating may overstate the actual attenuation provided by as much as 3 dB. If an additional 3 dB can be achieved at minimum cost, we would strongly urge that you seek it from the developer/sponsor.

Finally check to make sure the developer has provided some form of mechanical ventilation. If it's a single family house and a whole house fan is the means of ventilation being provided make sure that there are operable windows on walls which do not face the noise source(s) nor are perpendicular to the source(s). Otherwise the residents will have to open windows on the exposed wall, thus cancelling out much of the attenuation achieved.

Table 3
STC Ratings for Typical
Building Components¹

Building Component	Description	STC Rating
Frame Wall	a. 5/8" x 10" Redwood Siding b. 1/2" Insulation Board Sheathing c. 2 x 4 studs 16" o.c. d. Fiberglass Building Insulation e. 1/2" Gypsum Board attached directly to studs	39 dB
Stucco/Frame Wall	a. 7/8" Stucco b. No. 15 felt Building Paper and 1" Wire Mesh c. 2 x 4 Studs 16" o.c. d. Fiberglass Building Insulation e. 1/2" Gypsum Board attached directly to studs	46
Brick Veneer Wall	a. Face Brick b. 1/2" Airspace with metal ties c. 3/4" Insulation Board Sheathing d. 2 x 4 Studs 16" o.c. e. Fiberglass Building Insulation f. 1/2" Gypsum Board attached directly to studs	56
Masonry Wall	a. 1" Stucco b. 8" thick Hollow Concrete Block c. 1/2" Gypsum Board attached to furring strips	49 (estimated)
Windows	Wood double hung, closed but unlocked, single glazing	23
	Aluminum sliding, latched, single glazing	24
	Wood double hung, closed but unlocked, glazed with 7/16" insulating glass	22
	Aluminum single hung, closed, glazed with 7/16" insulating glass	25
	Wood, double hung, sealed, glazed with 7/16" insulating glass with single glazed storm sash-2 1/8" separation	35
	Aluminum sliding, closed, single glazed with single glazed storm sash, 1/8" separation	22
Exterior Doors	Wood, flush solid core, with brass weather stripping	27
	Wood, flush solid core, plastic weather stripping, aluminum storm door	34
	Wood, French door, brass weather stripping	26
	Steel, flush, with urethane foam core, with magnetic weather stripping	28
Roof	Shingle Roof with attic, 1/2" gypsum wall board ceiling framed independently of roof	43 (estimated)

¹Except as noted, all STC ratings are from: *Acoustical and Thermal Performance of Exterior Residential Walls, Doors and Windows*, National Bureau of Standards.

**Figure 19
Description of Noise Attenuation Measures
(Acoustical Construction)**

Part I

Project Name _____

Location _____

Sponsor/Developer _____

Noise Level (From NAG) _____ Attenuation Required _____

Primary Noise Source(s) _____

Part II

1. For Walls (a) facing and parallel to the noise source(s) (or closest to parallel):

a. Description of wall construction* _____

b. STC rating for wall (rated for no windows or doors): _____

c. Description of Windows: _____

d. STC rating for window type _____

e. Description of doors _____

f. STC rating for doors _____

g. Percentage of wall (per wall, per dwelling unit) composed of
windows _____ and doors _____

h. Combined STC rating for wall component _____

2. For walls perpendicular to noise source(s):

a. Description of wall construction* _____

b. STC rating for wall (rated for no windows or doors) _____

c. Description of windows _____

d. STC rating for windows _____

e. Description of doors _____

f. STC rating for doors _____

g. Percentage of wall (per wall, per dwelling unit) composed of windows _____ and doors _____

h. Combined STC rating for wall component _____

3. Roofing component (if overhead attenuation is required due to aircraft noise):

a. Description of roof construction _____

b. STC rating (rated as if no skylights or other openings) _____

c. Description of skylights or overhead windows _____

d. STC rating for skylights or overhead windows _____

e. Percentage of roof composed of skylights or windows (per dwelling unit) _____

f. Percentage of roof composed of large uncapped openings such as chimneys _____

g. Combined STC rating for roof component _____

4. Description of type of mechanical ventilation provided _____

Prepared by _____

Date: _____

*If walls contain vents or similar openings, attach a description of duct arrangement and insulation and a statement of how much the wall STC is reduced by the presence of the vent.

Figure 19
Description of Noise Attenuation Measures
(Acoustical Construction)

Part I

Project Name PARADISE HOMES
Location ANYTOWN
Sponsor/Developer JOHN DOE + ASSOC. INC.
Noise Level (From NAG) 73 Attenuation Required 30dB
Primary Noise Source(s) HIGHWAY

Part II

1. For Walls (s) facing and parallel to the noise source(s) (or closest to parallel):
- a. Description of wall construction* 3/4" FIR PLYWOOD SIDING,
2x4 STUDS 16" O.C. 3 1/2" FIBERGLASS INSULATION
 - b. STC rating for wall (rated for no windows or doors): 37
 - c. Description of Windows: WOOD DOUBLE HUNG,
INSULATING GLASS
 - d. STC rating for window type 22
 - e. Description of doors WOOD, FLUSH, SOLID CORE
 - f. STC rating for doors 30
 - g. Percentage of wall (per wall, per dwelling unit) composed of windows 10% and doors 5%
 - h. Combined STC rating for wall component 30dB
2. For walls perpendicular to noise source(s):
- a. Description of wall construction* SAME AS ABOVE
 - b. STC rating for wall (rated for no windows or doors) 37
 - c. Description of windows SAME AS ABOVE
 - d. STC rating for windows 22
 - e. Description of doors NO DOORS

SAMPLE

- f. STC rating for doors _____
- g. Percentage of wall (per wall, per dwelling unit) composed of windows 10% and doors 0
- h. Combined STC rating for wall component 30
- 3. Roofing component (if overhead attenuation is required due to aircraft noise):
 - a. Description of roof construction N/A
 - b. STC rating (rated as if no skylights or other openings) _____
 - c. Description of skylights or overhead windows _____
 - d. STC rating for skylights or overhead windows _____
 - e. Percentage of roof composed of skylights or windows (per dwelling unit) _____
 - f. Percentage of roof composed of large uncapped openings such as chimneys _____
 - g. Combined STC rating for roof component _____
- 4. Description of type of mechanical ventilation provided CENTRAL AIR
Conditioning

SAMPLE

Prepared by _____
Date: _____

*If walls contain vents or similar openings, attach a description of duct arrangement and insulation and a statement of how much the wall STC is reduced by the presence of the vent.

Quiz on Noise Attenuation

Questions

1. What are the three basic ways to provide noise attenuation?
2. What are the responsibilities of HUD personnel regarding noise attenuation?
3. When a barrier is introduced between a source and a receiver the sound energy is redistributed along 3 indirect paths. What are these three paths?
4. What is "Path Length Difference" and how does it affect the attenuation level provided by a barrier?
5. What are "Transmission Loss Values?"
6. How does the transmission loss value of barrier material affect the attenuation capability of the barrier?
7. As a general rule, what transmission loss values should you look for?
8. If you have more than one barrier between the source and the receiver is the amount of attenuation increased substantially?
9. What are the four things to check when reviewing a proposed barrier?
10. List 3 ways to make a barrier more effective without increasing its overall height.
11. List 3 ways to make a barrier more effective without increasing its overall length.
12. What is the maximum percentage of the total area of a barrier that can be made up of openings without a significant loss in barrier effectiveness?
13. List 3 site planning techniques that are used to shield residential developments.
14. When are parks and playgrounds not noise compatible uses that can be employed as buffers?
15. What are the two main things to look for when reviewing site plan changes?
16. What are some of the building orientations which can aggravate noise problems?
17. What is the Sound Transmission Class (STC) rating?
18. Which is better a high STC or a low STC rating?
19. What kinds of conditions were STC ratings originally developed for?
20. What should you do when using STC ratings in a transportation noise situation?
21. List 5 ways to improve the attenuation capability of a wall.
22. Windows are one of the acoustically weakest components in a wall. List 3 ways to reduce the negative effects of windows.
23. What is the best way to reduce the effect of doors?

Quiz on Noise Attenuation

Answers

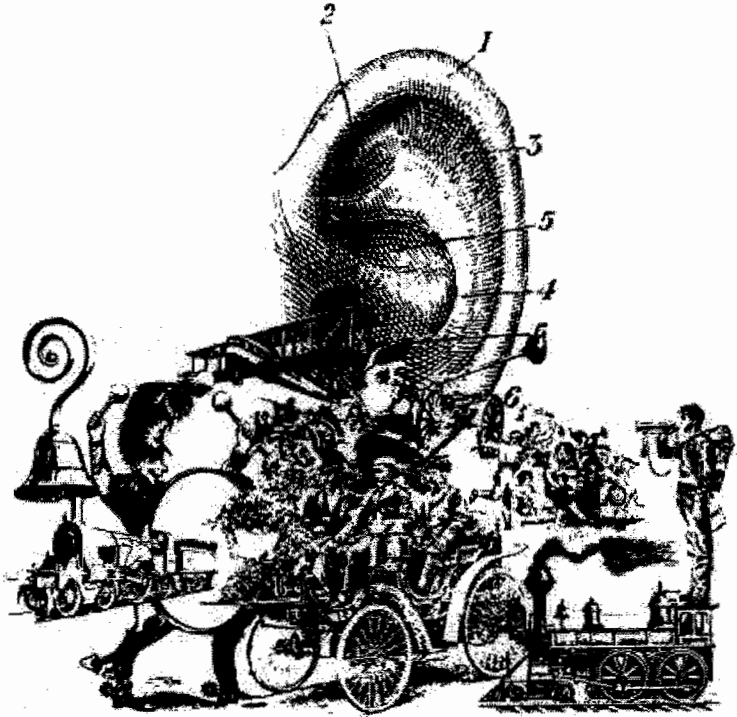
1. a. barriers or berms
b. site design
c. acoustical construction
2. a. to make sure the project sponsor/developer is aware of the attenuation requirements
b. provide sponsor/developer with an overview of available options
c. review attenuation proposals to make sure they are adequate
3. a. A diffracted path over the top of the barrier
b. A transmitted path through the barrier
c. A reflected path away from the receiver
4. "Path Length Difference" is the difference in distance that sound must travel diffracting over the barrier rather than passing directly through it. Since sound energy decreases over distance, the greater the path length distance the greater the attenuation.
5. "Transmission Loss Values" represent the amount noise levels will be reduced when the sound waves pass through a barrier.
6. Since the attenuation provided by a barrier is a function of both the sound energy that goes over the top and the energy that goes through the barrier, if the transmission loss value is low then the effectiveness of the barrier will be greatly reduced.
7. If the transmission loss value of the barrier material is at least 10dB greater than the attenuation level provided by diffraction (i.e. barrier height) there shouldn't be any problem.
8. No. The combined effect of multiple barriers does not normally provide significantly greater attenuation than a single barrier. For design purposes, the general procedure is to assume the attenuation of the most effective barrier.
9. a. Is it high enough?
b. Is it long enough?
c. Is it made of the right material?
d. Is it properly constructed?
10. a. move the barrier closer to the source
b. bend the top of the barrier towards the source
c. do both
11. a. move it closer to the receiver
b. bend the ends toward the receiver
c. do both
12. 1 percent
13. Any 3 of the below:
a. increasing the distance between the source and the receiver
b. placing noise compatible land uses between the source and the receiver
c. locating barrier type buildings parallel to the source
d. orienting residences away from the noise
14. when they are the only ones associated with the project
15. a. is the separation between the source and receiver great enough
b. If a noise compatible building is being used as a barrier is it tall and long enough?
16. Building orientations which trap noise and cause it to reverberate off building walls. This would include shapes where a court is open to the source or where a series of buildings are arranged perpendicular to the source.
17. The STC rating is equal to the number of decibels a sound is reduced as it passes through a material.
18. A high STC rating is better.
19. The STC ratings were originally intended primarily for use with interior partitions and for noise such as speech, radios, television.
20. Recognize that the STC rating may overstate the effectiveness of the materials by 2-3db.
21. Any of the 9 below:
a. increase the mass and stiffness of the wall
b. use cavity partitions
c. Increase the width of the airspace
d. Increase the spacing between studs
e. use staggered studs
f. use resilient materials to hold the studs and finish materials together
g. use of dissimilar layers (leaves)
h. add acoustical blankets
i. seal cracks and edges
22. Any of the 4 below:
a. close the windows and provide mechanical ventilation
b. reduce window size
c. increase glass thickness
d. install double glazed windows
23. Eliminate them from severely impacted walls

Chapter 5
Noise Assessment
Guidelines



U.S. Department of Housing and Urban Development
Office of Policy Development and Research

Noise Assessment
Guidelines

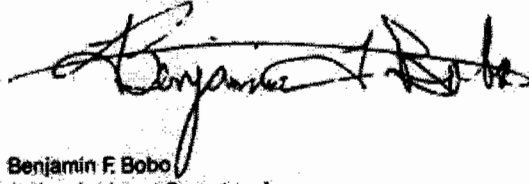


Noise Assessment Guidelines

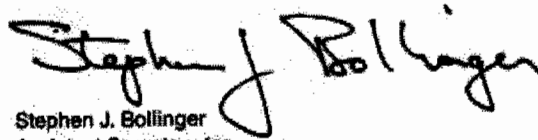
Foreword

In choosing among alternative sites for housing, potential noise problems are prominent among the issues that must be examined. These Noise Assessment Guidelines were developed to provide HUD field staff, interested builders, developers, and local officials with an easy-to-use method of evaluating noise problems with a minimum of time and effort.

We believe that this set of tools will simplify the process of balancing the goal of environmental protection with those of efficiency and reduced housing costs. We hope you will find them useful, and invite your comments.



Benjamin F. Bobo
Acting Assistant Secretary for
Policy Development and Research



Stephen J. Bollinger
Assistant Secretary for
Community Planning and
Development

Preface

The Department of Housing and Urban Development, in its efforts to provide decent housing and a suitable living environment, is concerned with noise as a major source of environmental pollution and has issued Subpart B on Noise Abatement and Control to Part 51 of Title 24 of the Code of Federal Regulations.

The policy established by Subpart B embodies HUD objectives to make the assessment of the suitability of the noise environment at a site: (1) easy to perform; (2) uniformly applicable to different noise sources; and (3) as consistent as possible with the assessment policies of other Federal departments and agencies. In furtherance of these objectives, the Office of Policy Development and Research has sponsored research to provide site analysis techniques. These *Noise Assessment Guidelines* do not constitute established policy of the Department but do provide a methodology whose use is encouraged by HUD as being consistent with its objectives. The *Guidelines* provide a means for assessing separately the noise produced by airport, highway, and railroad operations, as well as the means for aggregating their combined effect on the overall noise environment at a site.

This booklet has been prepared by Bolt Beranek and Newman Inc., under Contract No. H-2243R for the U.S. Department of Housing and Urban Development. It is a revision of an earlier edition published in August 1971. With the exception of changes made by the Department, the contractor is solely responsible for the accuracy and completeness of the data and information contained herein.

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Introduction

These guidelines are presented as part of a continuing effort by the Department of Housing and Urban Development to provide decent housing and a suitable living environment for all Americans.

The procedures described here have been developed so that people without technical training will be able to assess the exposure of a housing site to present and future noise conditions. In this context, the site may hold only one small building, in which case the noise assessment is straightforward. Larger sites may hold larger buildings, or many buildings, and the noise level may be different at different parts of the site (or building). Assessments of the noise exposure should be made at representative locations around the site where significant noise is expected. These are designated as "Noise Assessment Locations," abbreviated NAL in the following text.

The only materials required are a map of the area, a ruler (straight edge), a protractor and a pencil. Worksheets and working figures are provided separately.

All of the information you need can be easily obtained - usually by telephone. For convenience, this information is listed at the beginning of each section under headings that indicate the most likely source. While you are obtaining this information, be sure to ask about any approved plans for future changes that may affect noise levels at the site - for example: land-use changes, changes in airport runway traffic, widening of roads, and so forth. In all evaluations, you

should assess the condition that will have the most severe or most lasting effect on the use of the site.

Wherever possible, you should try to assess noise environments expected at least ten years in the future.

The degree of acceptability of the noise environment at a site is determined by the outdoor day-night average sound level (DNL) in decibels (dB). The assessment of site acceptability is presented first as an evaluation of the site's exposure to three major sources of noise - aircraft, roadways, and railways. These are then combined to assess the total noise at a site. Worksheets are provided at the back of these Guidelines to use in summarizing your evaluations.

The noise environment at a site will come under one of three categories:

Acceptable (DNL not exceeding 65 decibels) The noise exposure may be of some concern but common building constructions will make the indoor environment acceptable and the outdoor environment will be reasonably pleasant for recreation and play.

Normally Unacceptable (DNL above 65 but not exceeding 75 decibels) The noise exposure is significantly more severe; barriers may be necessary between the site and prominent noise sources to make the outdoor environment acceptable; special building constructions may be necessary to ensure that people indoors are sufficiently protected from outdoor noise.

Unacceptable (DNL above 75 decibels) The noise exposure at the site is so severe that the construction cost to make the indoor

noise environment acceptable may be prohibitive and the outdoor environment would still be unacceptable.

When measuring the distance from the site to any noise source, measure from the source to the nearest points on the site where buildings having noise-sensitive uses are located. These points define the Noise Assessment Locations for the site. The relevant measurement location for buildings is a point 2 meters (6.5 feet) from the facade.

If at any point during the assessment the site's exposure to noise is found to be Unacceptable or Normally Unacceptable, every effort should be made to improve the condition, e.g., the location of the proposed dwellings can be changed or some shielding can be provided to block the noise from that source.

Where quiet outdoor space is desired at a site, distances should be measured from the important noise sources to the outdoor area in question and the combined noise exposure should be assessed.

Frequently, the locations of dwellings have not yet been specified at the time the noise assessment of a site is made. In these instances, distances used in the noise assessment should be measured as 2 meters less than the distance from the building setback line to the major sources of noise.

Combining Sound Levels in Decibels

The noise environment at a site is determined by combining the contributions of different noise sources. In these Guidelines, Workcharts are provided to estimate the contribution of aircraft, automobile, truck, and train noise to the total day-night average sound level (DNL) at a site. The DNL contributions from each source are expressed in decibels and entered on Worksheet A. The combined DNL from all the sources is the DNL for the site and is the value used to determine the acceptability of the noise environment.

Sound levels in decibels are *not* combined by simple addition! The following table shows how to combine sound levels:

Table

Difference in Sound Level	Add to Larger Level
0	3.0
1	2.5
2	2.1
3	1.8
4	1.5
5	1.2
6	1.0
7	0.8
8	0.6
9	0.5
10	0.4
12	0.3
14	0.2
16	0.1
greater than 16	0

Use the table by first finding the numerical difference in sound level between two levels being combined. Entering the table with this value, find the value to be added to the larger of the two levels, add this value to the larger level to determine the total. Where more than two levels are to be combined, use the same procedure to combine any two levels; then use this subtotal and combine it with any other level, and so on. Fractional numerical values may be interpolated from the table; however, the final result should be rounded to the nearest whole number.

Example 1: In performing a site evaluation, the separate DNL values for airports, road traffic, and railroads have been listed on Worksheet A as 56, 63, and 61 decibels. In order to complete the final evaluation of the site, these separate DNL values must be combined. The difference between 63 and 56 is 7; from the table you find that 0.8 should be added to 63, for a subtotal of 63.8. The difference between 63.8 and 61 is 2.8; from the table you interpolate that approximately 1.9 should be added to 63.8 for a total of 65.7 or 66 dB when rounded to whole numbers. This example shows how noise from different sources may be Acceptable, individually, at a site, but when combined, the total noise environment may exceed the Acceptable DNL limit of 65 decibels.

Aircraft

Necessary Information

To evaluate a site's exposure to aircraft noise, you will need to consider all airports (civil and military) within 15 miles of the site. The information required for this evaluation is listed below under headings that indicate the most likely source. Before beginning the evaluation, you should record the following information on Worksheet B:

From the FAA Area Office or the Military Agency in charge of the airport:

- Are current DNL or NEF (Noise Exposure Forecast) contours available? Noise contours are available for almost all military airports. These contours have been developed and published as part of the Air Installation Compatible Use Zone (AICUZ) program of the Department of Defense. The contours are published normally as part of an AICUZ report. Noise contours are also available for many civil airports. When available, they are superimposed on a map with an appropriately marked scale (see Figure 1, page 4).
- Any available information about approved plans for runway changes (extensions or new runways).

From the FAA Control Tower or Airport Operations (if DNL or NEF contours are not available):

- The number of nighttime jet operations (10 p.m. - 7 a.m.)
- The number of daytime jet operations (7 a.m. - 10 p.m.)
- The flight paths of the major runways.
- Any available information about expected changes in airport traffic, e.g., will the number of operations increase or decrease in the next 10 or 15 years.

In making your evaluation, use the data for the heaviest air traffic condition, whether present or future.

Evaluation of Site Exposure to Aircraft Noise

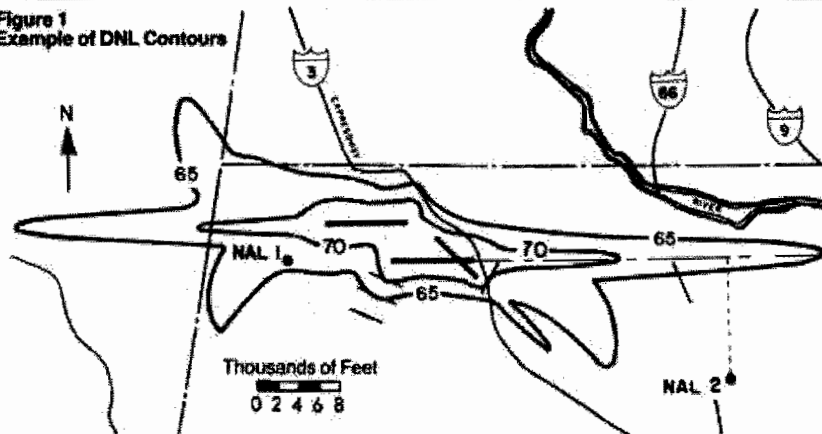
If current DNL (or NEF) contours are available (as in Figure 1 page 4), locate the site on the map by referring to the marked distance scale. If there are no other noise sources in the area, you do not need to do anything else. If there are other noise sources affecting the site, you will need to find the precise DNL value so you can combine it with the other sources. Obtain the DNL at the appropriate NAL on the site by interpolation between the

contours on either side of the NAL. If NEF contours are used, estimate DNL by adding 35 decibels to the NEF values. Note that contours are usually provided in 5 decibel increments. (See Example 2 on page 4.) When supersonic aircraft operations are present, DNL contours are *required* for the assessment.

If DNL or NEF contours are *not* available, the DNL at a site may be estimated in several different ways:

- An FAA Handbook (Reference 1) can be used to estimate DNL contours for sites in general aviation airport vicinities. General aviation airports exclude commercial jet transports but may include business jets.
- A handbook available from EPA (Reference 2 at the back of this Guide) can be used to calculate DNL at individual points.
- A procedure for constructing approximate DNL contours for sites near commercial jet

Figure 1
Example of DNL Contours



Example 2: The illustration in Figure 1 at the top of page 4 shows the NAL's on a map that has DNL contours. We find that NAL number 1 lies between the 65 and 70 dB contours and that NAL number 2 lies outside the 65 dB contour.

We find the DNL at NAL number 1 by interpolation from the distances between the NAL and the 65 and 70 dB contours.

By scaling off the map, we find that the distance from the NAL, measured perpendicularly to the contours, is 800 feet to the 65 dB contour and 2400 feet to the 70 dB contour. The distance between the 65 and 70 dB contours is $2400 + 800 = 3200$ feet. We find the DNL at the NAL number 1 to be 65 decibels plus $800/3200 \times 5$ decibels = 66.3 decibels.

Example 3: The illustration in Figure 2 at the bottom of page 5 shows an airport for which DNL or NEF contours are not available. The airport has 10 nighttime and 125 daytime jet operations.

To construct the approximate contours, we determine the effective number of operations as follows:

$$10 \text{ (nighttime)} \times 10 = 100$$

Add to this the actual number of daytime operations:

$$100 + 125 \text{ (daytime)} = 225$$

To determine the distances A and B in relation to the runway (see Figure 3, page 5), enter the effective number of operations on the horizontal scales of the charts in Figure 3;

airports without supersonic aircraft is as follows:

Determine the "effective" number of jet operations at the airport by first multiplying the number of nighttime jet operations by 10.

Then add the number of daytime jet operations to obtain an effective total (see Example 3, page 4).

On a map of the area showing the principal runways, mark the location of the site and, using the diagram and charts of Figure 3 on page 5, construct approximate DNL contours of 65, 70, and 75 dB for the major runways and flight paths most likely to affect the site. (see Figure 2, page 5.)

Although a site may be Acceptable for exposure to aircraft noise; exposure to other sources of noise, when combined with the aircraft noise, may make the site Unacceptable. Therefore, if necessary, values of aircraft noise exposure less than 65 dB can be estimated from Table 2. Scale the shortest

distance D^2 from the NAL to the flight path, as in Figure 2. Scale the distance D^1 from the 65 dB contour to the flight path. Divide D^2 by D^1 and enter this value into the following table to find the approximate DNL at the NAL.

D^2/D^1	DNL dB
1.00	65
1.12	64
1.26	63
1.41	62
1.58	61
1.78	60
2.00	59
2.24	58
2.51	57
2.82	56
3.16	55

Figure 3
Charts for Estimating
DNL for Aircraft Operations

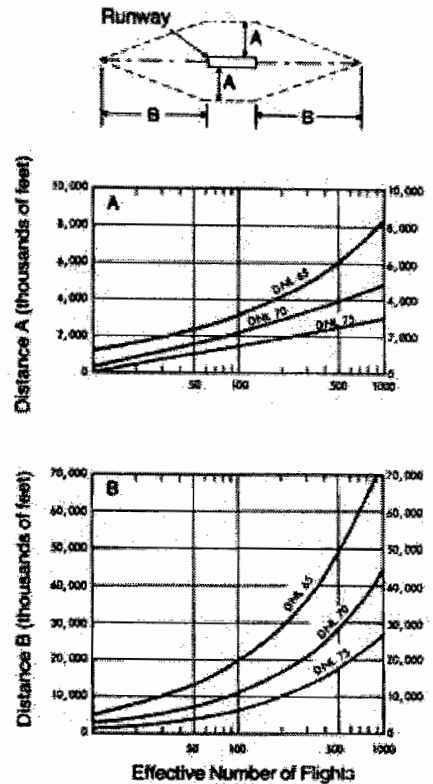
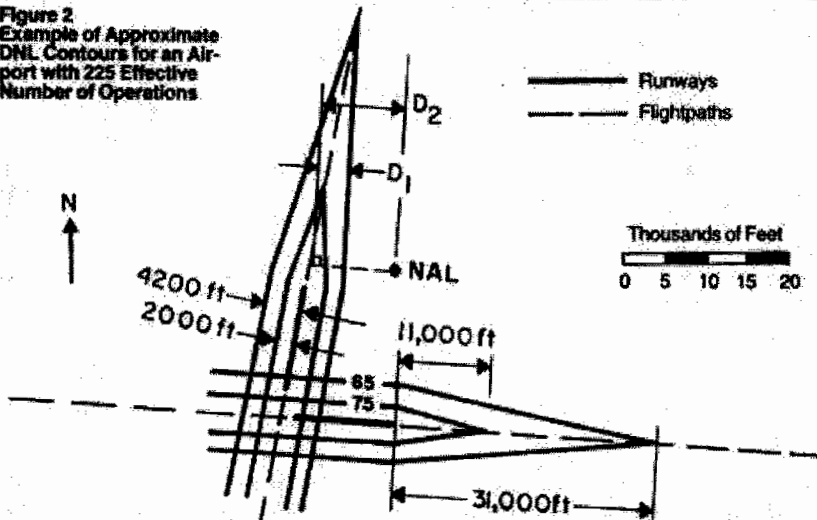


Figure 2
Example of Approximate
DNL Contours for an Air-
port with 225 Effective
Number of Operations



read up to the DNL curves; read across the chart to the left to obtain distances A and B from the vertical scales on the charts.

We find from Figure 3, for example, that for 225 effective operations, distance A is 4200 feet for the 65 dB contour and 2000 feet for the 75 dB contour. Distance B is 31,000 feet for the 65 dB contour and 11,000 feet for the 75 dB contour.

Example 4a: The NAL shown in Figure 2 is outside the 65 dB contour. The distance D^2 from the NAL to the flight path is 9700 feet. The distance D^1 from the 65 dB contour to the flight path, measured perpendicularly from the contour, is 3700 feet. The ratio D^2/D^1 is $9700/3700 = 2.62$. From Table 2 we find the DNL from the airport to be 56.6 dB. We do not know whether the site is Acceptable or not, however, since we must also assess the contribution of roadway and train noise to the total DNL at the site.

Example 4b: We observe that the perpendicular distance (D^2) from NAL number 2 (Figure 1) to the flight path is more than 3 times the distance (D^1) from the 65 dB contour to the flight path. From Table 2 we find that the contribution of the airport to the DNL at NAL number 2 is less than 55 decibels. We need not consider the airport further in accessing the noise environment at this site.

Roadways

Necessary Information

To evaluate a site's exposure to roadway noise, you will need to consider all roads that might contribute to the site's noise environment; roads farther away than 1000 feet normally may be ignored.

Before beginning the evaluation, determine if roadway noise predictions already exist for roads near the site. Also try to obtain all available information about approved plans for roadway changes (e.g., widening existing roads or building new roads) and about expected changes in road traffic (e.g., will the traffic on this road increase or decrease in the next 10 to 15 years).

If noise predictions have been made, they should be available from the City (County) Highway or Transportation Department. If not, record the following information on page 1 of Worksheet C:

- The distances from the NAL's for the site to the near edge of the nearest lane and the far edge of the farthest lane for each road.
- Distance to stop signs.
- Road gradient, if 2 percent or greater.
- Average speed.
- The total number of automobiles for both directions during an average 24-hour day. Traffic engineers refer to this as ADT, Average Daily Traffic (or sometimes AADT, meaning Annual Average Daily Traffic).
- The number of trucks during an average 24-hour day in each direction.

If possible, separate trucks into "heavy trucks" - those weighing more than 26,000 pounds with three or more axles - and "medium trucks" - those between 10,000 and 26,000 pounds. (Each medium truck is counted as equal to 10 automobiles.) Trucks under 10,000 pounds are counted as automobiles. Count buses capable of carrying more than 15 seated passengers as "heavy" trucks - others, as "medium" trucks. If it is

not possible to separate the trucks into those that are heavy and those that are not, treat all trucks as though they are "heavy."

Note: If the road has a gradient of 2 percent or more, record the numbers for uphill and downhill traffic separately since these figures will be needed later; otherwise, simply record the total number of trucks. Most often you will have to assume that the uphill and downhill traffic are equally split.

- The fraction of ADT that occurs during nighttime (10 p.m. to 7 a.m.). If this is unknown, assume 0.15 for both trucks and autos.

Evaluation of Site Exposure to Roadway Noise

Traffic surveys show that the amount of roadway noise depends on the percentage of trucks in the total traffic volume. To account for this effect, you must evaluate automobile and truck traffic separately and then combine the results.

The noise environment at each site due to traffic noise is determined by utilizing a series of Workcharts to define the contribution of automobiles and trucks from one or more roads at that site. Each noise source yields a separate DNL value.

Workchart 1 provides a graph for assessing a site with respect to the noise from automobiles, light and medium trucks; Workchart 2 provides a similar graph for assessment of heavy truck noise. These values are combined for each road affecting the noise environment at the site to obtain the total contribution of roadway noise. Remember, the noise from aircraft and railways must also be considered before determining the suitability of this site's noise environment.

Effective Distance

Before proceeding with these separate eval-

uations, however, determine the "effective distance" to each road from the dwelling or outdoor residential activity (the NAL's for the site) by averaging the distances to the nearest edge of the nearest lane and to the farthest edge of the farthest lane of traffic. (See Example 5, page 6, and Figure 4, page 7.) **Note:** For roads with the same number of lanes in both directions, the effective distance is the distance to the center of the roadway (or median strip, if present).

Automobile Traffic

Workchart 1 was derived with the following assumptions:

- There is line-of-sight exposure from the site to the road; i.e., there is no barrier which effectively shields the site from the noise of the road.
- There is no stop sign within 500 feet of the site; traffic lights do not count because there is usually traffic moving on one street or the other.
- The average automobile traffic speed is 55 mph.
- The nighttime portion of ADT is 0.15.

If each road meets these four conditions, proceed to Workchart 1 for the evaluation. Enter the horizontal axis with the effective distance from the roadway to the NAL; draw a vertical line upward from this point. Enter the vertical axis with the effective automobile ADT; draw a horizontal line across from this point. (The "effective" automobile ADT is the sum of automobiles, light trucks, and 10 times the number of medium trucks in a 24-hour day.) Read the DNL value from Workchart 1 where the vertical and horizontal lines intersect. Record this value in column 16, Worksheet C.

But:

If any of the four conditions is different, make

Example 5: The site shown in Figure 4 is exposed to noise from three major roads: Road No. 1 has four lanes, each 12 feet wide, and a 30-foot wide median strip which accommodates a railroad track. Road No. 2 has four lanes, each 12 feet wide. Road No. 3 has six lanes, each 15 feet wide, and a median strip 30 feet wide.

The distance from NAL No. 1 to the near edge of Road No. 1 is 300 feet. The distance

to the far edge of Road No. 1 is 300 feet, plus the number of lanes times the lane width, plus the width of the median strip. Thus, the distance to the farthest edge of the road is:

$$300 + (4 \times 12) = 378 \text{ ft}$$

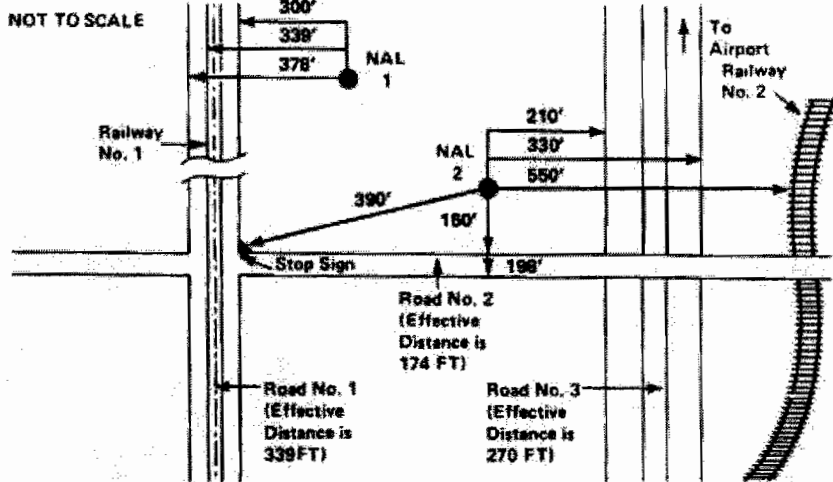
The effective distance is

$$\frac{378 + 300}{2} = 339 \text{ ft}$$

This is the value to be entered on line 1c of Worksheet C. The effective distances from the appropriate NAL's to Road No. 2 and Road No. 3 are found by the same method.

The distances shown in Figure 4 will be used for all roadway examples in this booklet.

Figure 4
Plan View of Site showing How Distance Should Be Measured from the Noise Assessment Location (NAL) of the Dwelling Nearest to the Source

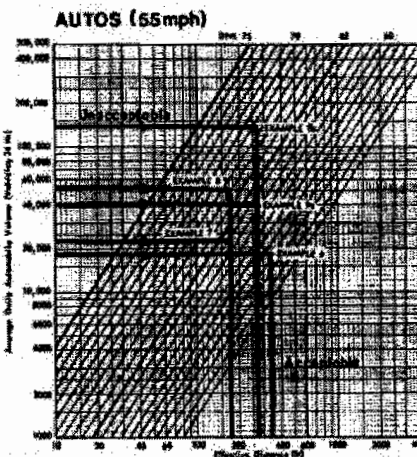


the necessary adjustments (on page 2, Worksheet C) listed below and then use Workchart 1 for the final evaluation.

First, a few general words about adjustments as they are applied in these Guidelines. Each Workchart has been derived for a baseline condition which is often found in practical cases. Where conditions differ from the baseline, they are accounted for by a series of one or more adjustment factors.

The adjustment factors are used as multipliers times the average number of vehicles operating during a 24-hour day. If more than one adjustment is required, it is not necessary that each be multiplied times the basic traffic flow separately; all adjustment factors are multiplied together, and then multiplied times the original traffic flow data. This will become clearer as you examine the Worksheets at the back of these Guidelines and

Figure 5
Use of Workchart 1 To Evaluate Automobile Traffic Noise



Example 6: Road No. 1 meets the four conditions that allow for an immediate evaluation. In obtaining the information necessary for this evaluation, it was found that the automobile ADT is 18,000 vehicles (Line 5c of Worksheet C). On Workchart 1 we locate on the vertical scale the point representing 18,000 and on the horizontal scale the point representing 339 feet (see Figure 5). (Note that we must estimate the location of this point.) Using a straight-edge we draw lines to connect these two values and find that the NAL exposure to automobile noise from this road is a DNL of 58 dB, as read from the scale at the top of the graph.

Example 7: Road No. 2 has a stop sign at 390 feet from NAL No. 2. The automobile ADT is reported as being 32,500 vehicles (line 5c of Worksheet C). From Table 3 we interpolate between 300 and 400 feet to find the adjustment factor for stop-and-go traffic to be 0.69. The adjusted traffic ADT is

$$0.69 \times 32,500 = 22,425 \text{ vehicles per day}$$

and with an effective distance of 174 feet from NAL No. 2, we find from Workchart 1 that the approximate value of DNL is 64 dB.

work through the examples. After you have become familiar with the Guidelines, you will be able to work examples directly from the worksheets without referring back to the text. To simplify your work, all the adjustment factors are summarized at the back of these Guidelines.

Adjustments for Automobile Traffic

Stop-and-Go Traffic:

If there is a stop sign (not a traffic signal) within 600 feet of the NAL so that the flow of traffic is completely interrupted on the road under consideration, find the stop-and-go adjustment factor for automobiles from Table 3. Enter this value in column 9 on Worksheet C.

Table 3

Distance from NAL to Stop Sign in Feet	Automobile Stop-and-Go Adjustment Factor
0	0.10
100	0.25
200	0.40
300	0.55
400	0.70
500	0.85
600	1.00

Average Traffic Speed:

If the average automobile speed is other than 55 mph, enter the appropriate adjustment from Table 4 in column 10 of Worksheet C.

Table 4

Average Traffic Speed	Auto Speed Adjustment Factor
20 (mph)	0.13
25	0.21
30	0.30
35	0.40
40	0.53
45	0.67
50	0.83
55	1.00
60	1.19
65	1.40
70	1.62

Example 8: Suppose that the stop sign on Road No. 2 were replaced by a traffic signal for which no stop-and-go adjustment is made and that the ADT increases to 75,000 vehicles. In addition, assume that the average speed is 45 mph instead of 55 mph. You adjust the new automobile ADT of 75,000 vehicles by the Auto Speed Adjustment Factor from Table 4

$$0.67 \times 75,000 = 50,250 \text{ vehicles}$$

and at an effective distance of 174 feet find from Workchart 1 that the approximate value of DNL is 67 dB.

Nighttime Adjustment.

DNL values are affected by the proportion of traffic volume that occurs during "daytime" (7 a.m. to 10 p.m.) and "nighttime" (10 p.m. to 7 a.m.). The graph on Workchart 1 assumes that 15 percent of the total ADT occurs during nighttime. If a different proportion of the traffic occurs at night, find the appropriate nighttime adjustment factor from Table 5. Record your answer in column 11 of Worksheet C.

Table 5

Nighttime Fraction of ADT	Nighttime Adjustment Factor
0	0.43
0.01	0.46
0.02	0.50
0.05	0.62
0.10	0.81
0.15	1.00
0.20	1.19
0.25	1.38
0.30	1.57
0.35	1.77
0.40	1.96
0.45	2.15
0.50	2.34

Once you have selected all the appropriate adjustment factors and entered them on page 2 of Worksheet C, multiply all the factors together, then multiply by the automobile ADT (column 12) for 24 hours, found on page 1 of Worksheet C. The resulting adjusted ADT should be entered in column 13. This is the ADT value to be used, in conjunction with the effective distance from the NAL to the road, to find the DNL value from Workchart 1. Enter this DNL value in column 14 of Worksheet C. Remember this is the DNL from automobile (as well as light and medium truck) noise; you must still find the DNL contribution from heavy truck noise in order to obtain the total DNL produced by the roadway you are assessing.

Example 9a: Road No. 3 is a limited access highway with no stop signs and the average speed is 55 mph. Current traffic data indicate an automobile ADT of 40,000 vehicles of which 15 percent occurs during nighttime hours (10 p.m. to 7 a.m.). With an effective distance of 270 feet to NAL No. 2, Workchart 1 is used to show that the DNL for existing automobile traffic is between 63 and 64 dB. Round off to 64 dB.

Attenuation of Noise by Barriers:

This adjustment reduces the noise produced by automobiles and trucks on the same road. Instructions for this adjustment appear after the noise assessment for truck traffic below.

Truck Traffic

Whenever possible, separate the average daily volume of trucks into heavy trucks (more than 26,000 pounds vehicle weight and three or more axles); medium trucks (less than 26,000 pounds but greater than 10,000 pounds), light trucks (counted as if they are automobiles). You should already have accounted for medium and light trucks in your automobile evaluation. Do not forget that buses that can carry more than 15 seated passengers are counted as heavy trucks. Heavy trucks (including buses) must be analyzed separately because they have quite different noise characteristics. If it is not possible to separate the trucks into those that are heavy and those that are not, treat all trucks as though they are "heavy."

Workchart 2, which is used to evaluate the site's exposure to heavy truck noise, was derived with the following assumptions:

- There is line-of-sight exposure from the site to the road; i.e., there is no barrier which effectively shields the site from the road noise.
- The road gradient is less than 2 percent.
- There is no stop sign (traffic signals are permissible) within 600 feet of the site.
- The average truck traffic speed is 55 mph.
- The nighttime fraction of ADT is 0.15.

If the road meets these five conditions, proceed to Workchart 2 for an immediate evaluation of the site's exposure to heavy truck noise from that road.

But:

If any of the conditions is different, make the

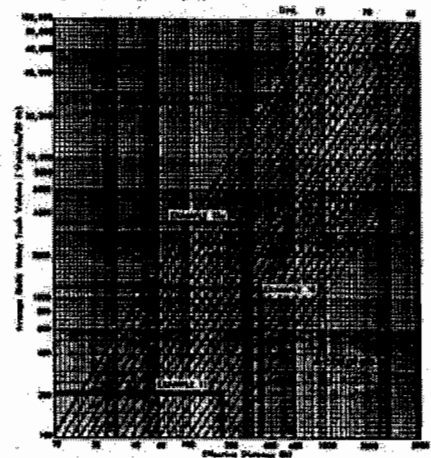
Example 9b: However, traffic projections estimate that in 10 years the ADT will increase to 100,000 vehicles at an average speed of 55 mph and nighttime usage will increase to 25 percent. For future traffic, you must adjust the future ADT of 100,000 for the effect of increased nighttime use. From Table 5, you find an adjustment factor of 1.38. The adjusted ADT is

$$1.38 \times 100,000 = 138,000$$

and at an effective distance of 270 feet you find from Workchart 1 that the DNL will increase to 69 dB; therefore, provision for extra noise control measures should be explored. We will examine in Example 13 the effect of terrain as a shielding barrier that provides sound attenuation.

necessary adjustment(s) listed below and then use Workchart 2 for the evaluation.

Figure 6.
Use of Workchart 2 to Evaluate Heavy Truck Noise
Heavy Trucks (55 mph)



Adjustments for Heavy Trucks

Road Gradient:

If there is a gradient of 2 percent or more, find the appropriate adjustment factor, for heavy trucks going uphill only, as shown in Table 6. List this factor in column 17 of Worksheet C.

Table 6

Percent of Gradient	Adjustment Factor
2	1.4
3	1.7
4	2.0
5	2.3
6 or more	2.5

Example 10: Road No. 1 on Figure 4 meets the four conditions that allow for an immediate evaluation. The ADT for heavy truck flow is 1200 vehicles. Workchart 2 shows that the exposure to truck noise from this road at an effective distance of 339 feet is a DNL of 63 dB at NAL No. 1.

Average Traffic Speed:

Make this adjustment if the average speed differs from 55 mph. If the average truck speed differs with direction, treat the uphill and downhill traffic separately. Select the appropriate adjustment factors from Table 7 below, entering them in column 18 of Worksheet C.

Table 7

Average Traffic Speed MPH	Heavy Truck Speed Adjustment Factor
50 or less	0.81
55	1.00
60	1.17
65	1.38

Once you have found the speed adjustment factor, you can combine the uphill and downhill traffic. For uphill traffic, multiply the gradient factor times the speed adjustment factor times uphill traffic volume (truck ADT column 19) (assuming one-half the total 24-hour average number of trucks unless specific information to the contrary exists), entering the product in column 20. Multiply the speed adjustment factor for downhill traffic times the downhill traffic volume (truck ADT/2 column 19). Add the values for uphill and downhill traffic, entering this sum in column 21. You may now complete the assessment of heavy truck noise without regard to uphill and downhill traffic separation.

Stop-and-Go Traffic:

If there is a stop sign (remember, not a traffic signal) within 600 feet of an NAL for the site on the road being assessed, find the adjustment factor determined according to Table 8. Enter it in Column 22 of Worksheet C.

Example 11: Road No. 2 has a stop sign at 390 feet from NAL No. 2. There is also a road gradient of 4 percent. No heavy trucks are allowed on this road, but a schedule shows an average of 12 large buses pass along the road per hour between 7 a.m. and 10 p.m., although no buses are scheduled during the remaining nighttime period. The buses are equally divided in each direction along the road. (Remember large buses, those that carry over 15 seated passengers, count as heavy trucks.) We find the ADT for the "heavy trucks" (the buses in this case) by multiplying the average number of vehicles per hour by the number of hours between 7 a.m. and 10 p.m. That is, $12 \times 15 = 180$, or 90 vehicles in each direction. We find from Table 6 that the gradient adjust-

Table 8

Heavy Truck Traffic Volume per Day	Heavy Truck Stop-and-Go Adjustment Factor
Less than 1200	1.8
1201 to 2400	2.0
2401 to 4800	2.3
4801 to 9600	2.8
9601 to 19,200	3.8
More than 19,200	4.5

Nighttime Adjustment

After all the above adjustments are made, do not forget to adjust for nighttime operations if they are not 15 percent of the total ADT, using the factors obtained from Table 5 just as for automobiles. Enter this value in column 23 of Worksheet C.

At this point, multiply the adjustment factors for nighttime and stop-and-go traffic times the heavy truck traffic volume in column 21 to find the adjusted heavy truck ADT, entering the product in column 24. Use this value and the effective distance from the NAL to the road to find the truck DNL from Workchart 2, entering your answer in column 25 of Worksheet C. If no shielding barriers are to be considered, combine the DNL from heavy trucks with the DNL from automobiles (column 14). The result is the DNL from the road being assessed and should be entered on Worksheet C.

But:

If a shielding barrier is to be considered for the site, make the analysis described below separately for automobiles and then for heavy trucks before combining the DNL values. This step is necessary since barriers are far more effective for automobiles than for heavy trucks. Once you have found the amount of attenuation provided by the barrier for automobiles, enter it in column 15. Find the value of barrier attenuation for heavy

ment factor for uphill traffic is 2.0. We find the truck volume adjusted for gradient is

$$\begin{aligned} \text{uphill:} & 90 \times 2.0 = 180 \\ \text{downhill:} & = 90 \\ \text{total (column 21)} & = 270 \text{ vehicles} \end{aligned}$$

From Table 8, we find the adjustment factor for stop-and-go traffic to be 1.8.

We also remember that we have no buses in the nighttime period and find the factor in Table 5 on page 8 for zero nighttime operations to be 0.43.

Our final adjusted ADT is (column 24)

$$1.8 \times 0.43 \times 270 = 209 \text{ Vehicles}$$

From Workchart 2, with an effective distance of 174 feet, we find a DNL of 59 dB.

trucks and enter it in column 25. Subtract these attenuation values from the DNL values obtained previously (columns 14 and 24), entering the reduced DNL values in columns 16 and 27. Combine the automobile and heavy truck DNL values, reduced by the attenuation provided by the barrier, to find the final DNL produced by the roadway at the site.

Remember to combine the contributions to DNL of all roads that affect the noise environment at each NAL for the site to obtain the total DNL from all roadways. Enter this DNL on both Worksheet C and the summary Worksheet A.

Attenuation of Noise by Barriers

Noise barriers are useful for shielding sensitive locations from ground level noise sources. For example, a barrier may be the best way to deal with housing sites at which the noise exposure is not acceptable because of nearby roadway traffic.

A barrier may be formed by the road profile; by a solid wall or embankment, by a continuous row of noise-compatible buildings, or by the terrain itself. To be an effective shield, however, the barrier must block all residential levels from line of sight to the road; it must not have any gaps that would allow noise to leak through.

Some Preliminary Matters:

In evaluating noise barrier performance, you will be working with different kinds of "distances" between the sound source, the observer, and the barrier.

Actual Distance – the existing distance that would be measured using a tape measure with no corrections or adjustments. This may mean one of two things, depending on the application; either the:

- *slant distance* – the actual distance,

Example 12a: Road No. 3 is a depressed highway and the profile shields all residential levels of the housing from line of sight to the traffic. The average truck speed is 50 mph. The ADT for heavy trucks is 4400 vehicles. We adjust for average speed (from Table 7)

$$4400 \times 0.81 = 3564$$

and find from Workchart 2 that, with an effective distance of 270 feet, the DNL from truck noise would be 69 dB if no barrier existed. We proceed to analyze the barrier attenuation.

measured along the line of sight between two points; or the

- *map distance* – the actual distance, measured on a horizontal plane, between the two points, as on a map or on the project plan.

For an observer high in an apartment tower, the slant distance to the road may be much longer than the map distance.

Barrier effectiveness is expressed in terms of noise attenuation in decibels (dB), determined with the aid of Workchart 6. This numerical value is subtracted from the previously calculated DNL in order to find the resultant DNL at the Noise Assessment Location.

Note: A noise barrier can be considered as a means of protecting a site from noise even if it cannot wrap around the site to shield from view practically all of the source of noise at every sensitive location on the site. It must be recognized, however, that such a barrier is much less effective than an ideal barrier. (See Workchart 7 and Step 6 below.)

Barriers of reasonable height cannot be expected to protect housing more than a few stories above ground level. Barriers will generally protect the ground and the first two or three floors, but not the higher floors. If there are to be frequently occupied balconies on the upper levels, one solution is to move the building farther from the noise source and face the sensitive areas away from the noise.

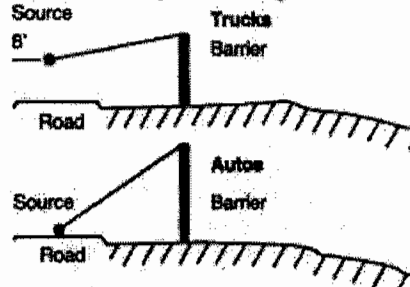
Steps to Evaluate a Barrier

1. For the observer's position, use the mid-height of the highest residential level. For the source position, use the following heights (see Figure 7):

- autos, medium trucks, railway cars – the road or railway surface height
- heavy trucks – 8 feet above the road surface

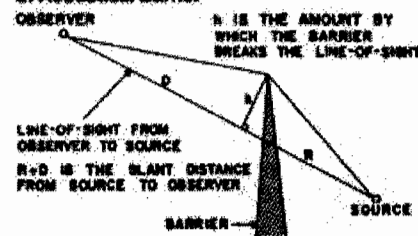
- diesel locomotives or trains using horns or whistles at grade crossings – 15 feet above the rails.

Figure 7.
Source Heights to Be Used in Roadway Barrier Designs



Get accurate values for the following quantities: *h*, the shortest distance from the barrier top to the line of sight from source to observer; *R* and *D*, the slant distances along the line of sight from the barrier to the source and observer, respectively (see Figure 8).

Figure 8.
Generalized Geometry of Acoustical Barrier



Specifically, *R* and *D* are the two segments into which *h* breaks the line of sight. Note that *h* is *not* the height of the barrier above the ground but the distance from the barrier top to the line of sight.

2. Enter at the top of Workchart 6 with the value of *h* on the left-hand scale; move right to intersect the curve corresponding to *R* (or *D*, whichever is *smaller*).

3. Move down to intersect the curve corresponding to the value of *D/R* (or *R/D*, whichever is *smaller*).

4. Move right to intersect the vertical scale in order to find the barrier shielding value *A* in decibels.

5. Interruption of the line of sight with a barrier between the noise source and an observer reduces the amount of sound attenuation provided by the ground. Find the amount of this loss *B* from the table on Workchart 6 by entering the table with the value of *D/R*. Find the barrier attenuation value *S* corresponding to an ideal barrier that completely hides the noise source from view by subtracting *B* from the value of *A* obtained in Step 4.

6. If the barrier exists along only a part of the road so that unshielded sections of the road would be visible from the site, the barrier is less effective than an ideal barrier. On a plan view of the site, locate the two ends of the barrier and draw lines from these points to the Noise Assessment Location. Use a protractor to measure the angle formed at the NAL by the two lines. Enter the horizontal scale of Workchart 7 with the values of this angle; read up to the curve having the value of *S* determined from Step 5 (interpolating if necessary); read left across to the vertical scale labeled "actual barrier performance" to find the value of *FS* to use for the actual barrier in question.

7. Subtract the barrier attenuation value *S* (or *FS* if adjusted for finite barrier length according to Workchart 7) from the value of DNL previously determined to reevaluate the site with the noise barrier in place.

Example 12b: (Refer to Figure 9.) Six stories are planned for the housing where the site has an elevation of 130 feet. The effective elevation for the highest story is found by multiplying the number of stories by 10 feet, adding the site elevation, and subtracting 5 feet.

$$(6 \times 10) + 130 - 5 = 185 \text{ feet}$$

The barrier, which in this case is formed by the road profile, has no "height" other than the elevation of the natural terrain above the noise sources traveling on the roadway. The important dimensions are indicated in Figure 9.

Some people with a technical background will be able to fit the geometric diagram to the site situation readily, working from the project drawings and a scratch sheet.

But if you are *not* confident of your geometry, Workchart 5 gets you the values of *R*, *D*, and *h* from the map distances and elevations of the site. We illustrate that procedure in this example.

First, enter the elevations of the source (*S*), the observer (*O*), and the top of the barrier (*H*), as well as the map distances from the barrier to the source (*R'*) and observer (*D'*), at the top right of Workchart 5. Then, follow the steps on that Workchart to derive the values of *h*, *R*, and *D* that are needed in using Workchart 6.

Entering Workchart 6 at the upper left with the value of *h* (5.5 feet), we move horizontally

Figure 9.
Detail of Site Showing Measurements
Necessary for a Barrier Adjustment

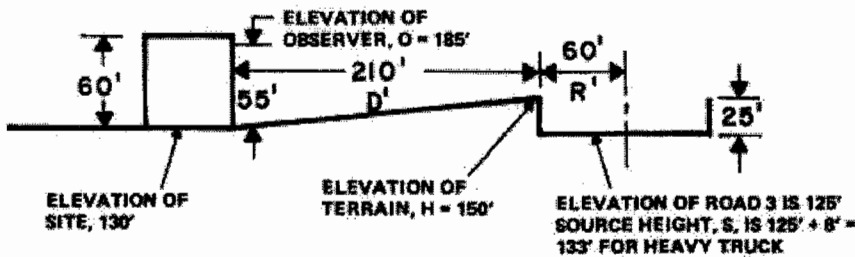


Figure 10.
Use of Workchart 5 to Determine Barrier
Dimensions in Example 12b

Workchart 5
Noise Barrier

To find R, D and h from Site Elevations and Distances

Fill out the following workchart (all quantities are in feet)

Enter the values for:
 E = 150 R = 60
 S = 133 D = 210
 O = 185

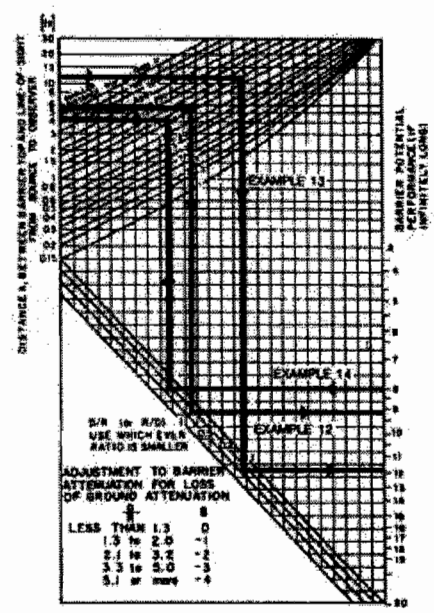
- Elevation of barrier top minus elevation of source: $[150] - [133] = [17]$
- Elevation of observer minus elevation of source: $[185] - [133] = [52]$
- Map distance between source and observer (D): $[210]$
- Map distance between barrier and source (R): $[60]$
- Line 2 divided by line 3: $[52] \div [210] = [0.248]$
- Square the quantity on line 5 (i.e., multiply it by itself): $[0.248] \times [0.248] = [0.062]$
- 40% of line 6: $[0.062] \times 0.4 = [0.025]$
- One times line 7: $[17] - [0.025] = [16.975]$
- Line 5 times line 4 (if R is negative R line 2 is negative): $[0.248] \times [60] = [14.9]$
- Line 1 minus line 8: $[17] - [14.9] = [2.1]$
- Line 10 times line 9: $[2.1] \times [16.975] = [35.6]$
- Line 8 times line 10: $[16.975] \times [35.6] = [603]$
- Line 4 divided by line 11: $[60] \div [603] = [0.1]$
- Line 12 plus line 12: $[0.1] + [0.1] = [0.2]$
- Line 3 minus line 14: $[210] - [60] = [150]$
- Line 15 divided by line 13: $[150] \div [0.2] = [750]$
- Line 16 minus line 17: $[750] - [603] = [147]$

Notes: The values on line 2 may be negative. If such case do not fill the values on lines 5, 6, and 12; line 1 may also be negative. Remember, plus, or minus signs are important. Add or subtracting negative numbers is the adding of (+) + (-) = (-)

Point off R and D to nearest integer. A to one decimal place.

Figure 11.
Use of Workchart 6 to Evaluate Barrier
In Examples 12b, 13 and 14

Noise Barrier Workchart 6



to the right until we meet the value of R or D, whichever is smaller: in this example, R = 62 feet. From that point we drop vertically downward until we meet the value of R/D or D/R, whichever is smaller: in this case, R/D = 0.29. From that point, move horizontally to the right to find the value for A = 9 dB. Entering the table for determining loss of ground attenuation effect due to the barrier with a value for D/R of 3.5, the reduction in attenuation (B) is found to be 3 dB. Subtracting 3 dB from 9 dB provides a net attenuation of 6 dB. With 6 dB of attenuation, the original DNL of 69 dB (Example 12a) is reduced to 63 dB.

Example 13: An alternative approach, which is somewhat more direct, is illustrated here for the noise of automobiles on Road No. 3. A preliminary step is to make an accurately scaled sketch of the general geometry introduced on page 8. It must include the positions of the source (this time at the road surface), the observer, and the top of the barrier, and will show the distances h, R, and D. Such a sketch is shown superimposed on the profile of the road and its neighborhood in Figure 12.

If we carefully scale the dimensions directly from this sketch, we find the following values for h, R, and D:

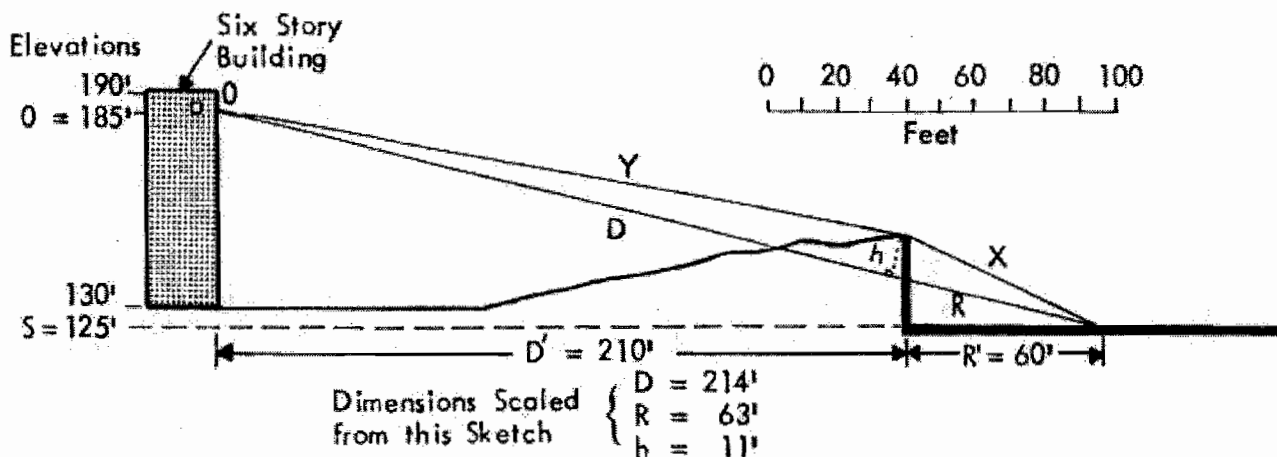
$$R = 63 \text{ feet} \quad R/D = 0.3$$

$$D = 214 \text{ feet}$$

$$h = 11 \text{ feet}$$

The barrier attenuation is found, by entering Workchart 6 with these values, to be A = 12 dB. It is larger than that found for trucks because the noise source is lower and is, therefore, better shielded by the barrier. The loss from ground attenuation is again B = 3 dB for a net attenuation of 12 - 3 = 9 dB. In Example 9b, we found that the DNL

Figure 12.
Sketch Showing Dimensions for Example 13



for the projected traffic volume of 100,000 vehicles per day was 69 dB if no consideration was given the shielding provided by the terrain. Subtracting the 9 dB attenuation from 69, we find the partial DNL for automobiles is 60 dB.

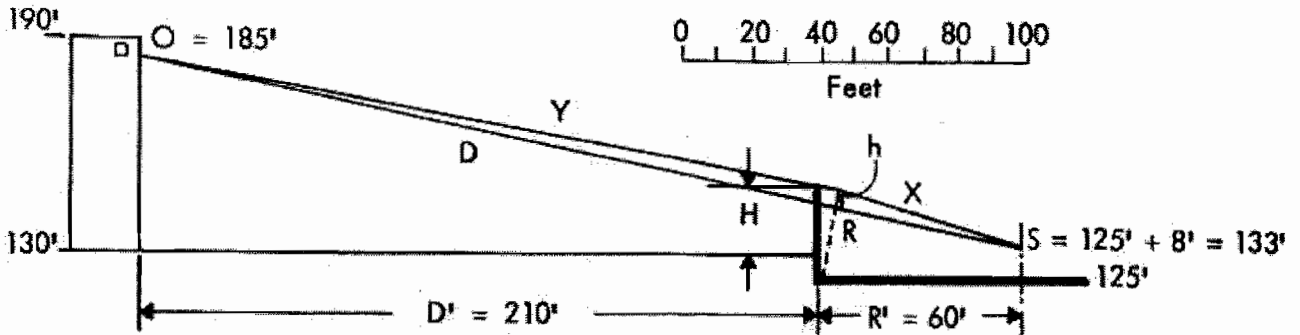
In order to find the combined truck and automobile noise for Road No. 3, we combine the 63 dB of truck noise with the 60 dB of automobile noise using Table 1. We find that 1.8 should be added to 63 dB, for a combined DNL of 64.8 dB, or 65 dB when rounded to the nearest whole number.

Example 14: Where no natural barrier exists, Workchart 6 can be used in reverse to estimate the height of a barrier needed to obtain a required attenuation. In example 9b we found that, without any attenuation from terrain or a barrier, the automobile traffic produced a DNL of 69 dB, and in Example 12a the heavy truck traffic produced a DNL of 69 dB. When combined, the total DNL is 72 dB. Suppose the terrain were not rising between NAL and Road No. 3, as shown in Figure 12, but instead was level between the NAL and the edge of the road, as shown in Figure 13. We want to find out how high a wall, infinite in length, would be required at the edge of the road to reduce the combined truck and automobile noise to less than 65 dB. We have found in the previous examples that a barrier

of a given height will provide more attenuation for automobiles than it will for trucks. As a first step in our analysis, we will find the height of a wall that will reduce the truck noise to just below 65 dB, say 64 dB, and then find out whether the additional attenuation it provides for automobile noise will be sufficient to reduce the combined truck and automobile noise to less than 65 dB. We begin by finding the height of wall that will provide 5 dB attenuation for truck noise.

We estimate that the ratio of R/D is about the same as R'/D' , the ratio of horizontal distance in Figure 13, which is equal to 0.29. Before entering Workchart 6, we find from the loss of ground attenuation table that for $D/R = 3.4$ we will lose 3 dB attenuation from an ideal barrier. In order to have a net attenua-

Figure 13.
Sketch Showing Dimensions for Example 14



tion of 5 dB, we must have an ideal barrier that provides $5 + 3 = 8$ dB attenuation.

Entering Workchart 6 on the right side scale A at 8 decibels, we move across to the diagonal lines, finding 0.29 by interpolating between the lines marked at 0.2 and 0.5. Moving directly up to a point midway between the R lines of 50 and 70, we find our estimated R of approximately 60. Moving across to the left we find that the line of sight between the observer and the truck source height must be broken by a value of h equal to 4.5 feet.

We can determine the height of the wall H in several ways. By drawing $h = 4.5$ feet to scale on Figure 13, we can scale the total wall height H to be approximately 20 feet. Those who feel comfortable with geometry can

calculate H by using the similar triangle relationships in Figure 13 to determine that H is 19.1 feet.

Now we must find how much a wall 19 feet high will attenuate automobile noise, remembering that the source height for automobiles is at the road surface elevation of 125 feet. By scaling the drawing, or by geometry, we determine that the line of sight between the observer position and the automobile source is broken by a value of h that is approximately 13 feet. Entering Workchart 6 at 13 feet we find, for $R = 60$ feet and $R/D = 0.29$, that the potential barrier attenuation is 12dB. We must reduce this by 3 dB for loss of ground attenuation to find the actual shielding of automobile noise to be 9

dB. The original 69 dB of automobile noise is reduced to $69 - 9 = 60$ dB.

Finally, we combine the heavy truck noise, attenuated by the wall to $69 - 5 = 64$ dB, with the automobile noise reduced to 60 dB, to find a combined DNL of 65.5 dB, or 66 dB when rounded upward. Remember, however, that this is for an infinite wall. Further adjustments would have to be made once the actual length was known.

Railways

Necessary Information

To evaluate a site's exposure to railway noise, you will need to consider all rapid transit lines and railroads within 3000 feet of the site (except totally covered subways). The information required for this evaluation is listed below under headings that indicate the most likely source.

Before beginning the evaluation, you should record the following information on Worksheet D:

From the area map and/or the (County) Engineer:

- The distance from the appropriate NAL on the site to the center of the railway track carrying most of the traffic.

From the Supervisor of Customer Relations for the railway:

- The number of diesel trains and the number of electrified trains in both directions during an average 24-hour day.
- The fraction of trains that operate during nighttime (10 p.m. - 7 a.m.) If this is unknown, assume 0.15.
- The average number of diesel locomotives per train. If this is unknown, assume 2.
- The average number of railway cars per diesel train and per electrified train. If this is unknown, assume 50 for diesel trains and 8 for electrified trains.
- The average train speed. If this is unknown, assume 30 mph.
- Is the track made from welded or bolted rails?

From the Engineering Department of the railway:

- Is the site near a grade crossing that requires prolonged use of the train's horn or whistle? If so, where are the whistle posts located? (Whistle posts are signposts which

tell the engineer to start blowing the horn or whistle. Every grade crossing has whistle posts and they are listed on the railroad's "track charts." If traffic on the track is one-way, there will be only one whistle post. The grade crossing itself is the other "whistle post."

Electrified rapid transit and commuter trains that do not use diesel engines should be treated the same as railway cars.

Note: Buildings closer than 100 feet to a railroad track are often subject to excessive vibration transmitted through the ground. Construction at such sites is discouraged.

Evaluation of Site Exposure to Railway Noise

Railway noise is produced by the combination of diesel engine noise and railway car noise. These Guidelines provide for the separate evaluation of diesel locomotives and railroad cars, and then the combination of the two, in order to obtain the DNL from trains. When rapid transit or electrified trains that do not use diesel engines are the only trains passing near a site go directly to the second part of the evaluation since these trains are treated in the same manner as railway cars.

Diesel Locomotives

Workchart 3 was derived with the following assumptions:

- A clear line of sight exists between the railway track and the Noise Assessment Location.
- There are two diesel locomotives per train.
- The average train speed is 30 mph.
- Nighttime operations are 0.15 of the 24-hour total.
- The site is not near a grade crossing re-

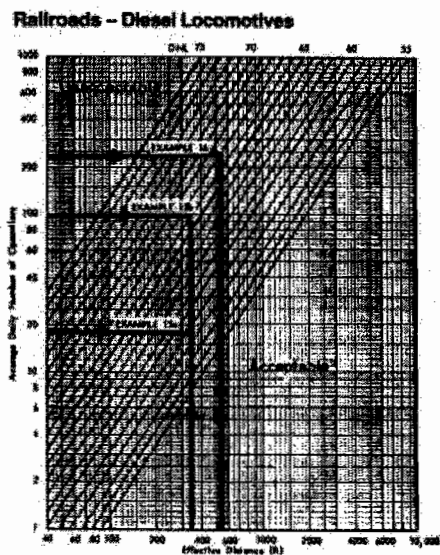
quiring prolonged use of the train's horn or whistle.

If the situation meets these conditions, proceed to Workchart 3 for an immediate evaluation of diesel locomotive noise.

But:

If any of the conditions is different, make the necessary adjustments listed below and then use Workchart 3 for the evaluation.

Figure 14.
Use of Workchart 3 to Evaluate Diesel Locomotive Noise



Adjustments for Diesel Locomotives

Number of Locomotives:

If the average number of diesel locomotives per train is not 2, divide the average number by 2. Enter this value in column 9 of Worksheet D.

Example 15a: The distance from NAL number 1 to Railway Number 1 is 339 feet. Two percent of the 35 daily operations occur at night; there is clear line of sight between the tracks and the NAL, and no horns or whistles are used. No information is available on train size or speed, therefore we will assume 2 engines per train and a speed of 30 mph.

Since the percentage of nighttime operations is different from 15 percent, we must adjust the actual number of daily operations, multiplying by 0.50 according to Table 5.

$$0.50 \times 35 = 17.5 = 18$$

Entering Workchart 3 with 18 daily operations and a distance of 339 feet, we find that

the contribution of diesel engine noise is a DNL of 59 dB (see Figure 14).

In order to find the total contribution of the trains to the total DNL, we must also find the noise level produced by the train's cars. Entering Workchart 4 (see Figure 15) with 18 daily operations and a distance of 339 feet, we find the DNL is below 50 on the chart, or more than 10 decibels lower than the noise level produced by the engines. Based on the chart for decibel addition, the combination of the noise from the engines and the cars adds less than 0.5 decibels to the DNL value for the engines alone, 59 dB.

Example 15b: Suppose that a forecast of train operations for Railway 1 indicates that there will still be 35 trains per day, but now 50 percent of the operations will occur at night, the average train will have 4 engines and 75 cars, and the average speed will be 50 mph.

We first find the contribution to DNL made by diesel locomotives by using the following adjustment factors:

- number of engines adjustment: 2
- speed adjustment: 0.60
- day/night adjustment: 2.34

We multiply these adjustments together with the number of trains:

$$2 \times 0.60 \times 2.34 \times 35 = 98$$

Entering Workchart 3 (see Figure 14) with 98 daily operations and a distance of 339

Average Train Speed:

If the average train speed is different from 30 mph, find the appropriate adjustment factor from Table 9 and list in column 10 of Worksheet D.

Table 9

Average Speed (mph)	Speed Adjustment Factor
10	3.00
20	1.50
30	1.00
40	0.75
50	0.60
60	0.50
70	0.43

Horns or Whistles:

If the NAL is perpendicular to any point on the track between the whistle posts for the grade crossing, enter the number 10 in column 11, Worksheet D.

Nighttime Adjustment:

Remember to adjust for nighttime operations, if different from 0.15 of the total, by selecting the appropriate adjustment factor from Table 5 on page 8. Enter in column 12, Worksheet D.

Multiply the adjustment factors together, times the number of diesel trains per day (you have listed this number previously on line 2a, page 1, of Worksheet D, and should enter this number again in column 13) to obtain the adjusted number of trains per day. Enter the adjusted number of diesel trains per day in column 14. Use this value, in conjunction with the distance from the NAL to the track (line 1, page 1, of Worksheet D), to find from Workchart 3 the DNL produced by diesel locomotives. List in column 15 of Worksheet D.

Railway Cars and Rapid Transit Systems

Workchart 4 was derived with the following assumptions:

- A clear line of sight exists between the railway and the NAL.
- There are 50 cars per train.
- The average train speed is 30 mph.
- Nighttime operations are 0.15 of the 24-hour total.
- Rails are welded together.

If the situation meets these conditions, proceed to Workchart 4 for an immediate evaluation of railway car noise. Again, if any of the conditions is different, make the necessary adjustments listed below and then use Workchart 4 for the evaluation.

Adjustments for Railway Cars and Rapid Transit Trains

Number of Cars:

Divide the average number of cars by 50 and enter this number in column 18 of Workchart D.

Average Speed:

Make this adjustment, if the average speed is not 30 mph, by selecting the appropriate value from Table 10, entering it in column 19 of Worksheet D.

Table 10

Average Speed (mph)	Speed Adjustment Factor
10	0.11
20	0.44
30	1.00
40	1.78
50	2.78
60	4.00
70	5.44
80	7.11
90	9.00
100	11.11

Bolted Rails:

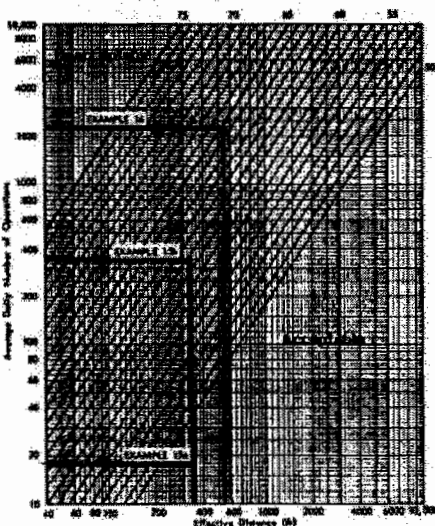
Enter the number 4 in column 20 of Worksheet D.

Nighttime Adjustment:

Enter the appropriate adjustment factor from Table 5 in column 21 of Worksheet D.

Figure 15. Use of Workchart 4 to Evaluate Railway Car Noise

Railroads - Cars and Rapid Transit



feet, we find that the site has an engine noise contribution to DNL of 66 dB.

We next obtain the adjustment factors for the noise produced by the cars:

- number of cars adjustment: 1.50
- speed adjustment: 2.78
- day/night adjustment: 2.34

Multiplying the adjustment factors times the average daily number of trains:

$$1.5 \times 2.78 \times 2.34 \times 35 = 342$$

Entering Workchart 4 (see Figure 15) with 342 operations and a distance of 339 feet, we find the contribution of the cars to the DNL is 60 dB. Using Table 1 for combining levels, we find that the 6 dB difference between engine noise at 66 and car noise at 60 gives a combined DNL of 67 dB for these trains.

Example 16: The distance from NAL number 2 to Railroad Number 2 is 550 feet; there are 100 operations per day, of which 30 percent occur at night. A clear line of sight exists between the site and the railroad, and no horns or whistles are used nearby. An average train on this track uses 4 engines, has 100 cars, the average speed is 40 miles per hour, and the track has bolted, not welded, rails.

We first find the adjustment factors for the diesel engines:

- number of engines adjustment: 2
- speed adjustment: 0.75
- day/night adjustment: 1.57

Multiplying the adjustments together, times the number of trains:

$$2 \times 0.75 \times 1.57 \times 100 = 236$$

Entering Workchart 3 (see Figure 14) with 236 operations at a distance of 550 feet, we find the DNL contribution from engine noise to be 67 dB.

Next we find the adjustment factors for the railroad cars:

- number of cars adjustment: 2
- speed adjustment: 1.78
- bolted track adjustment: 4
- day/night adjustment: 1.57

Multiplying the adjustments together, times the number of trains:

$$2 \times 1.78 \times 4 \times 1.57 \times 100 = 2236$$

Entering Workchart 4 (see Figure 15) with

(Continued next page)

Figure 16. Sketch Showing Dimensions for Example 16

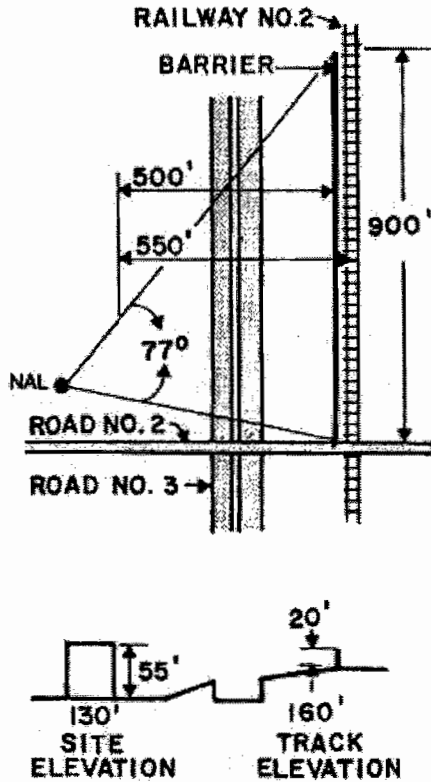


Figure 17. Use of Workchart 6 in Example 16

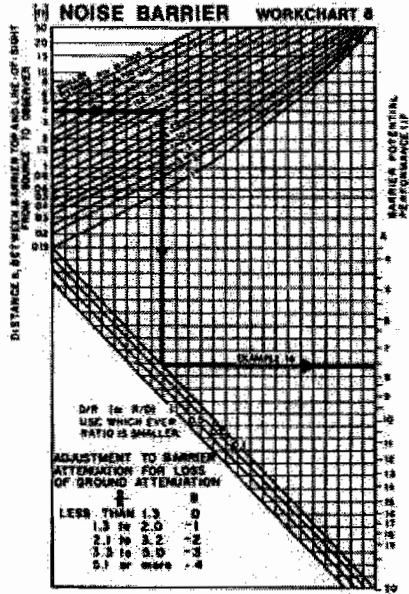
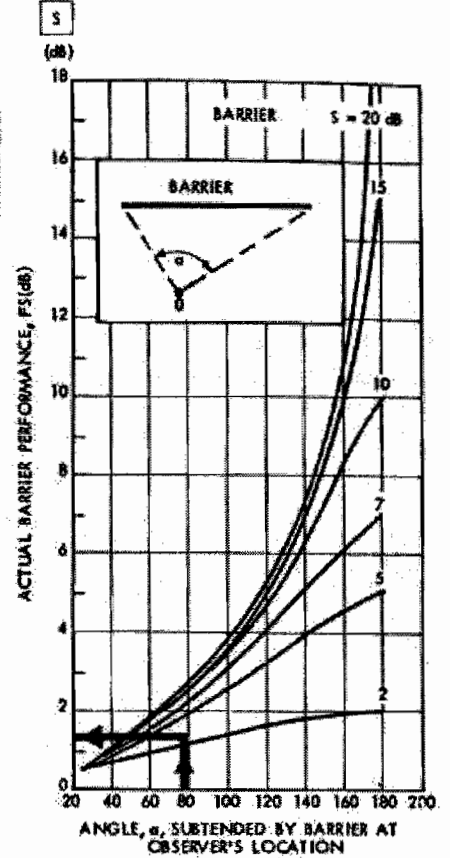


Figure 18. Use of Workchart 7 in Example 16



2236 operations at a distance of 550 feet, we find the DNL contribution from the railroad cars to be 65 dB. Combining the engine sound levels with the car sound levels we find the total DNL from the trains to be 69 dB.

It would be possible to erect a 20-foot noise barrier, running parallel to the track at a distance of 50 feet; it could start at Road Number 2 and run 900 feet north toward the airport, as shown in Figure 16. Both the railroad track and the ground level at the barrier location are at an elevation of 160 feet. Thus, we have the following values with which to calculate the potential reduction in engine noise (using Workchart 5). (Because the distances involved are so unequal, this situation does

not lend itself to direct scaling of the distances.)

$H = 180$ feet (20' above the ground)

$S = 175$ feet (15' above the track, see page 19)

$O = 285$ feet (from Example 11 in the section on roadway noise)

$R' = 50$ feet

$D' = 500$ feet

We find from Worksheet 5 that the values of R and D are no different (within the accuracy of the calculation) from R' and D' , a situation that will always occur when the differences in elevation are so much smaller than the distances from the site to the noise source. The value of h is 4 feet; $R/D = 0.1$

We can now use these numbers to enter Workchart 6 to find the *potential* barrier performance (that is, the barrier adjustment factor that would apply in the case of an infinitely long barrier). Entering Workchart 6 at $h = 4$ feet, with $R/D = 0.1$, we find the basic attenuation of the barrier to be 7.5 dB. However, with $D/R = 10$, we find from the table of loss-of-ground-effect attenuation that we must subtract 4 dB from the 7.5, or a net effect of 3.5 dB. However, the situation is even worse, since the barrier is finite in length.

To find the actual attenuation for this *finite* barrier, we must first find the angle subtended by the barrier to the NAL. Referring to Figure 16, we draw lines from the NAL each end of the barrier. With

References

1. D.E. Bishop, A.P. Hays, "Handbook for Developing Noise Exposure Contours for General Aviation Airports," FAA-AS-75-1, December 1975 (NTIS No. AD-A023429).
2. D.E. Bishop, et al., "Calculation of Day-Night Levels Resulting From Civil Aircraft Operations," BBN Report 3157 for Environmental Protection Agency, March 1976 (NTIS No. PB 266 165).
3. B.A. Kugler, D.E. Commins, W.J. Galloway, "Highway Noise - A Design Guide for Prediction and Control," NCHRP Report 174, Transportation Research Board, National Research Council, 1976.
4. T.J. Schultz, W.J. Galloway, "Noise Assessment Guidelines - Technical Background," Office of Policy Development and Research, U.S. Department of Housing and Urban Development, 1980.
5. M.A. Simpson, "Noise Barrier Design Handbook," FHWA-RD-76-58, Federal Highway Administration, February 1976 (NTIS No. PB 266 378).

a protractor we measure the angle between the two lines to be 77 degrees. Locate the curve on Workchart 7 corresponding to the potential barrier attenuation of 3.5 dB; it lies midway between the two lowest curves (see Figure 18). The point on this curve corresponding to a subtended angle of 77 degrees indicates that the actual barrier performance would be only 1.5 dB. With only 1.5 dB of attenuation, the barrier is clearly not cost-effective. In order to achieve a usable attenuation from the barrier, it would have to be extended beyond the other side of Road Number 2 to obtain a larger subtended angle. This extension, however, would still not be cost-effective unless the height of the barrier were increased substantially.

Summary of Adjustment Factors

Combination of Sound Levels

Table 1

Difference in Sound Level	Add to Larger Level
0	3.0
1	2.5
2	2.1
3	1.8
4	1.5
5	1.2
6	1.0
7	0.8
8	0.6
9	0.5
10	0.4
12	0.3
14	0.2
16	0.1
greater than 16	0.

Aircraft

Table 2 DNL Outside 65 dB Contour

D1 = distance from 65 dB contour to flight path
D2 = distance from site to flight path

D2/D1	DNL dB
1.0	65
1.12	64
1.26	63
1.41	62
1.58	61
1.78	60
2.00	59
2.24	58
2.51	57
2.82	56
3.16	55

Automobile Traffic

Table 3 Stop-and-go

Distance from Site to Stop Sign feet	Automobile Stop-and-go Adjustment Factor
0	0.10
100	0.25
200	0.40
300	0.55
400	0.70
500	0.85
600	1.00

Table 4 Average Traffic Speed

Average Traffic Speed	Adjustment Factor
20 (mph)	0.13
25	0.21
30	0.30
35	0.40
40	0.53
45	0.67
50	0.83
55	1.00
60	1.18
65	1.40
70	1.62

Table 5 Nighttime (applies to all sources)

Nighttime Fraction of ADT	Nighttime Adjustment Factor
0	0.43
0.01	0.46
0.02	0.50
0.05	0.62
0.10	0.81
0.15	1.00
0.20	1.18
0.25	1.38
0.30	1.57
0.35	1.78
0.40	1.96
0.45	2.15
0.50	2.34

Medium Trucks

(less than 26,000 pounds, greater than 10,000 pounds)

Multiply adjusted automobile traffic by 10.

Heavy Trucks

Table 6 Road Gradient

Percent of Adjustment Gradient Factor	
2	1.4
3	1.7
4	2.0
5	2.2
6 or more	2.5

Table 7 Average Speed

Average Traffic Speed (mph)	Truck Speed Adjustment Factor
50 or less	0.81
55	1.00
60	1.17
65	1.38

Table 8 Stop-and-go

Heavy Truck Traffic Volume per Day	Heavy Truck Stop-and-Go Adjustment Factor
Less than 1200	1.8
1201 to 2400	2.0
2401 to 4800	2.3
4801 to 9600	2.8
9601 to 19,200	3.8
More than 19,200	4.5

Railroads - Diesel Engines

Number of Engines per Train

The number of engines divided by 2.

Table 9 Average Train Speed

Average Speed (mph)	Speed Adjustment Factor
10	3.00
20	1.50
30	1.00
40	0.75
50	0.60
60	0.50
70	0.43

Whistles or horns

Multiply number of trains by 10.

Railroads - Cars and Rapid Transit

Numbers of cars.

Number of cars per train divided by 50.

Table 10 Average Train Speed

Average Speed (mph)	Speed Adjustment Factor
10	0.11
20	0.44
30	1.00
40	1.78
50	2.78
60	4.00
70	5.44
80	7.11
90	9.00
100	11.11

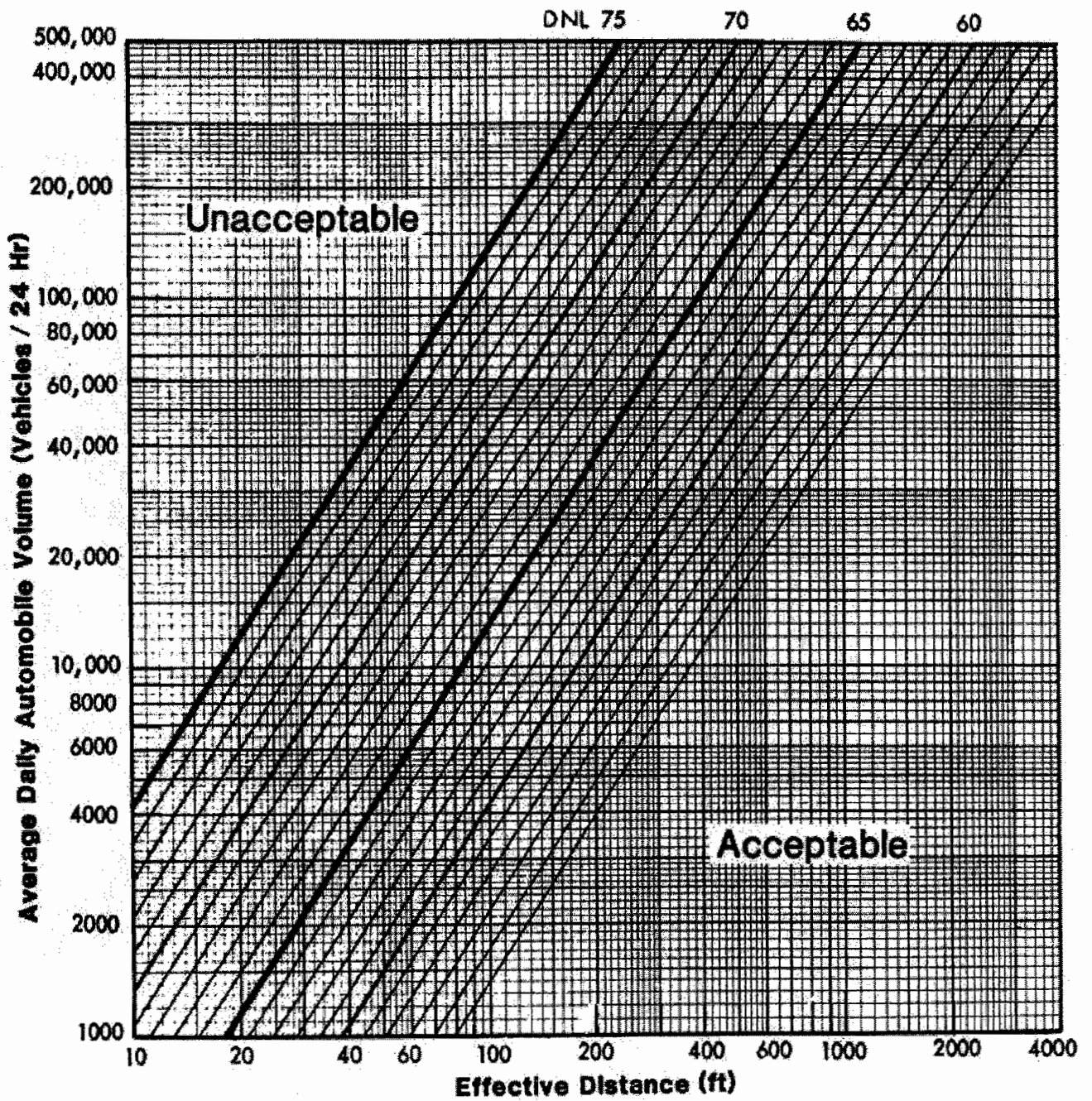
Bolted Rails

Multiply number of trains by 4.

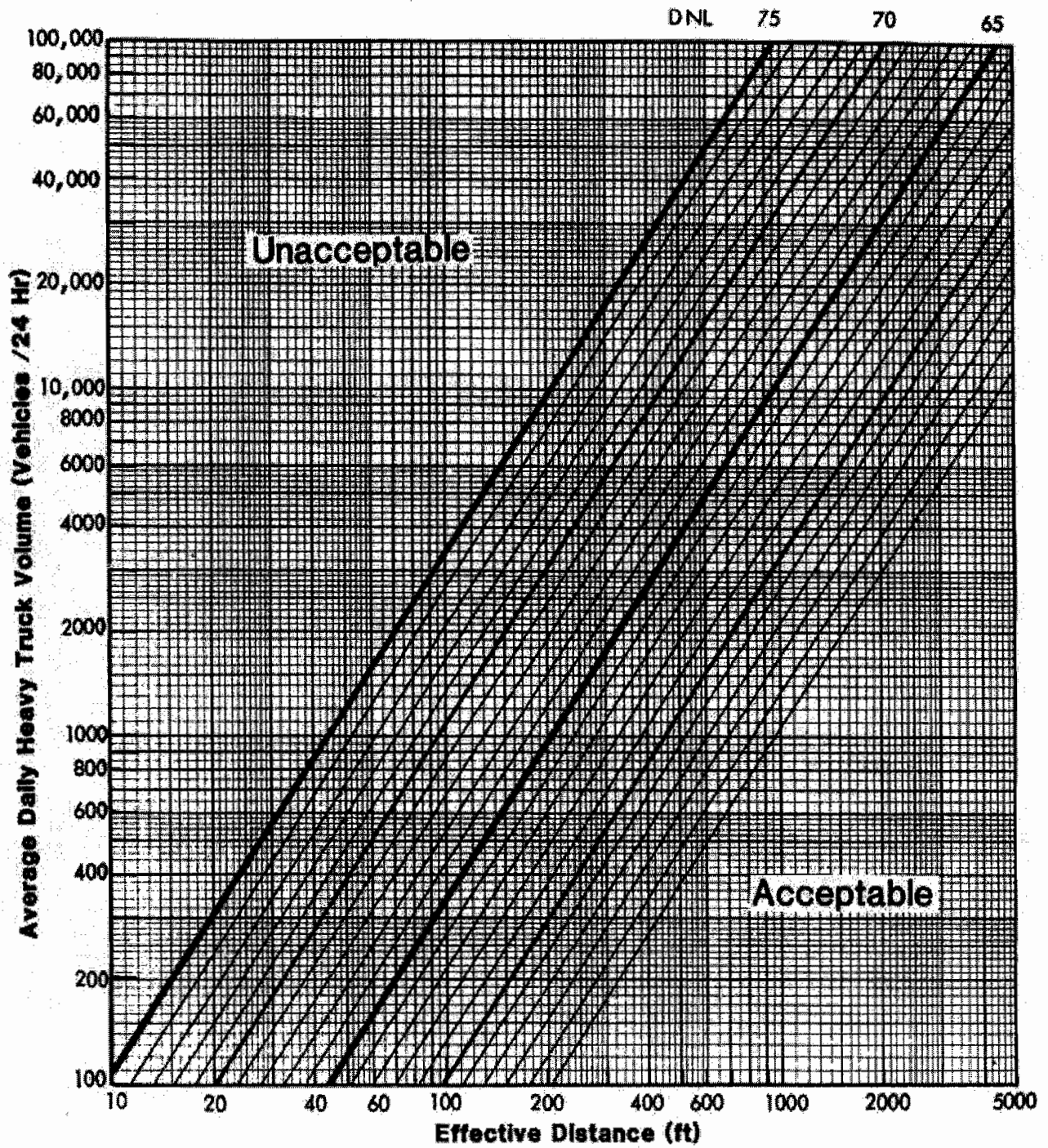
Whistles or Horns

Multiply number of trains by 100.

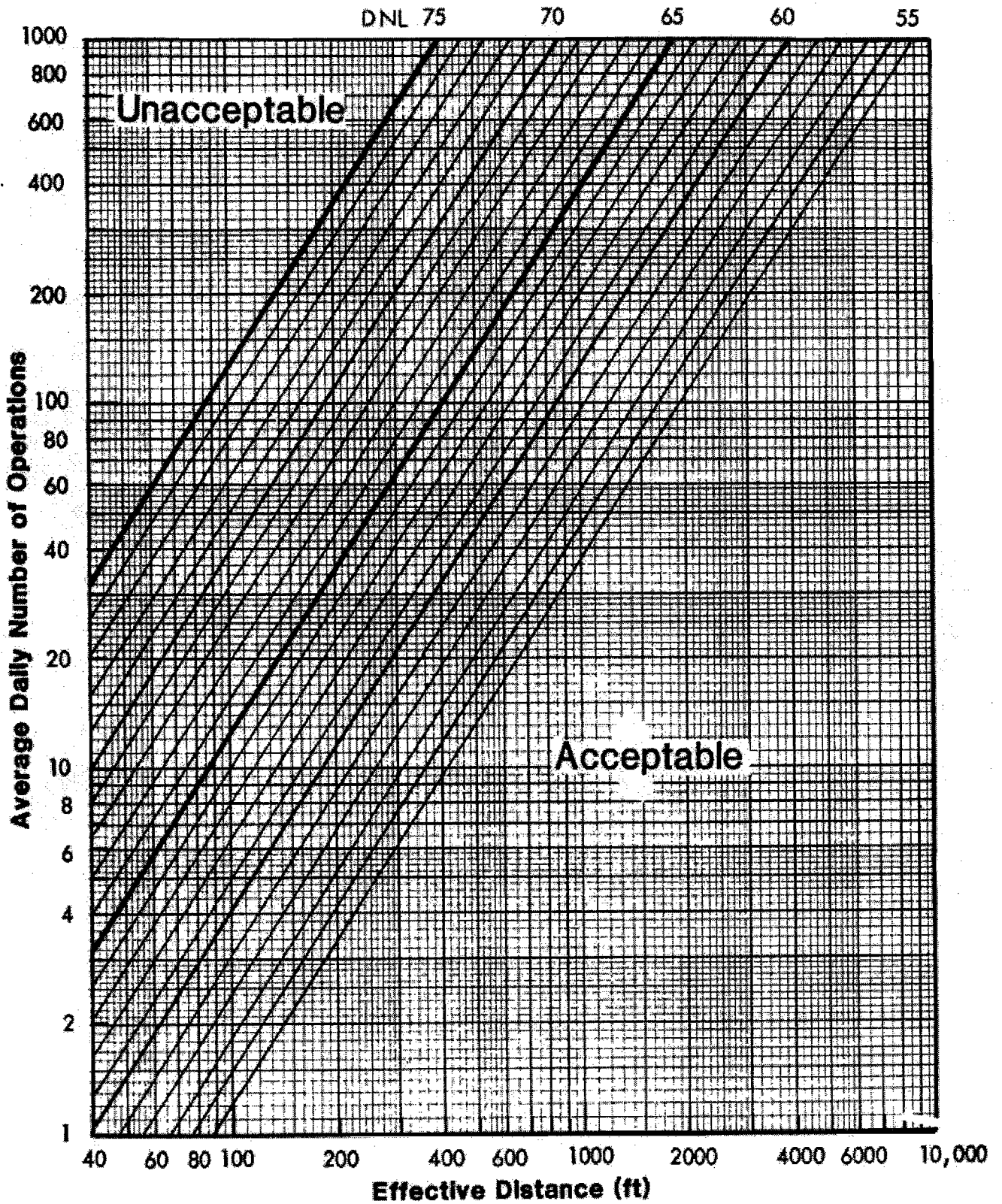
**Workchart 1
Autos (55 mph)**



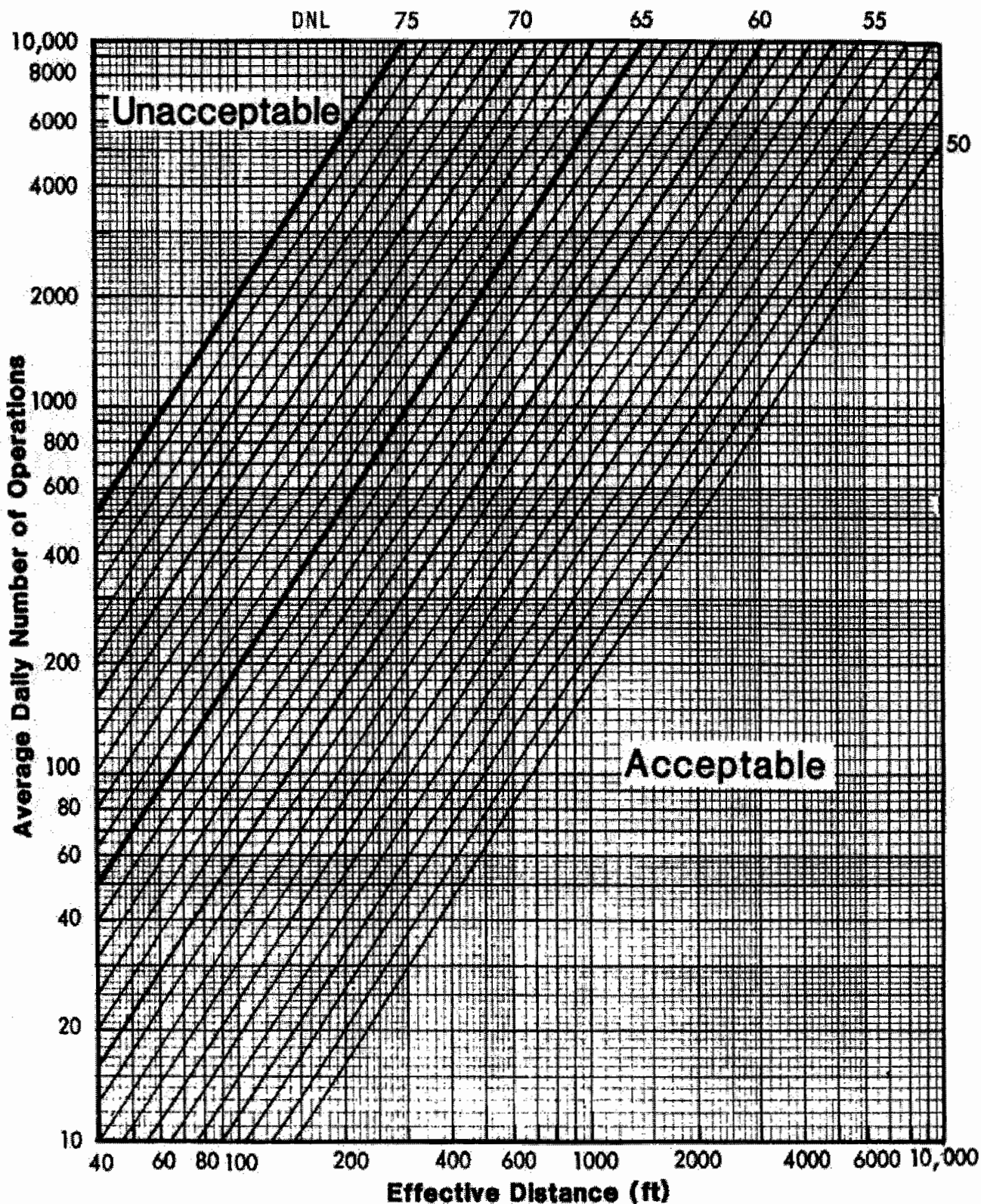
**Workchart 2
Heavy Trucks (55 mph)**



**Workchart 3
Railroads - Diesel Locomotives**



Workchart 4
Railroads - Cars and Rapid Transit



Workchart 5 Noise Barrier

To find R, D and h from Site Elevations and Distances

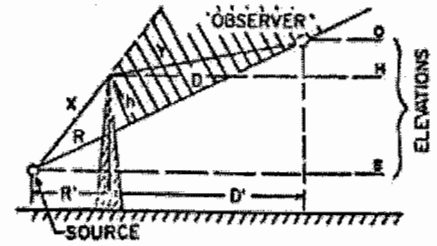
Fill out the following worksheet (all quantities are in feet):

Enter the values for:

H = _____ R' = _____

S = _____ D' = _____

O = _____



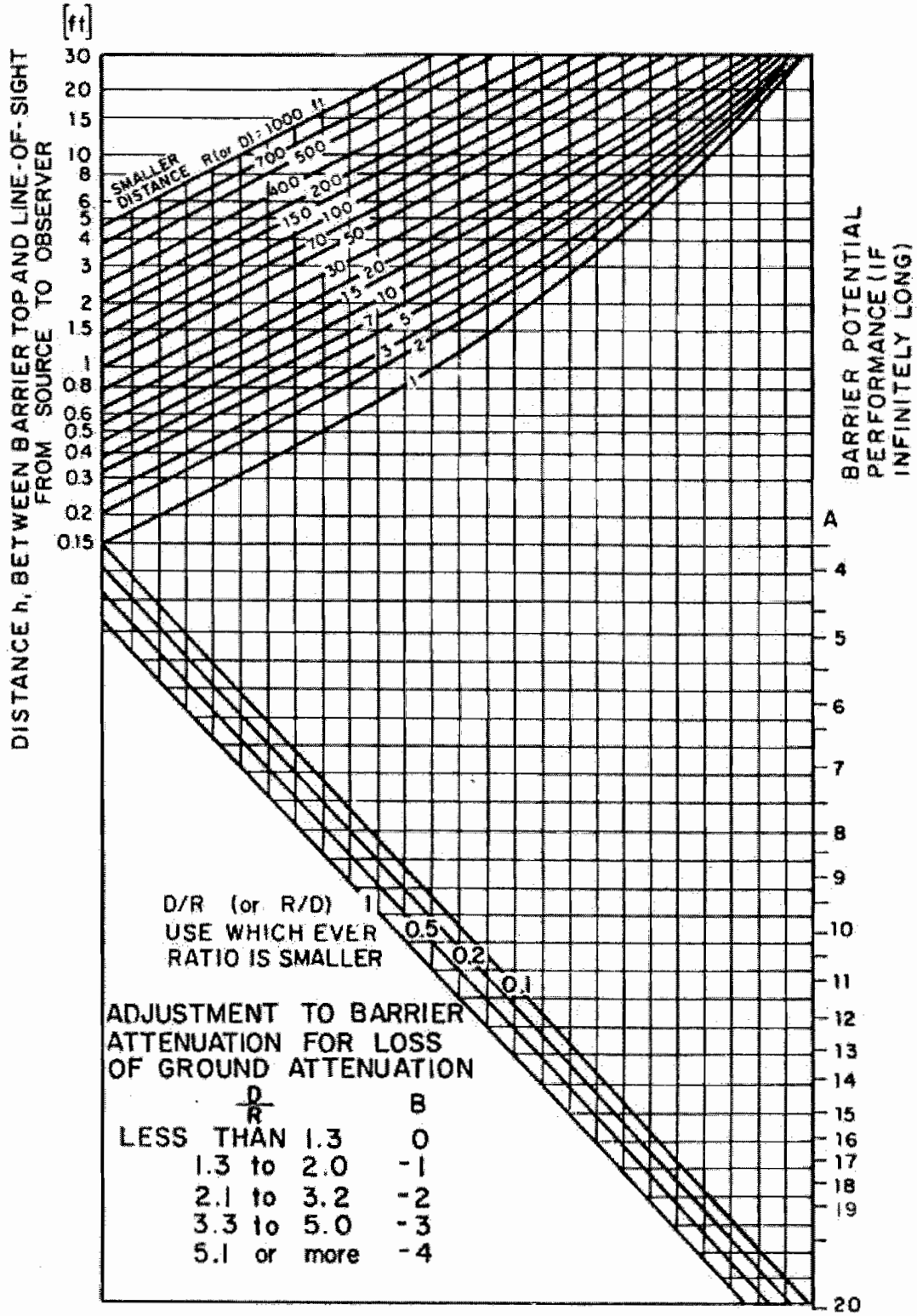
- | | |
|---------------------------------------------------------------------------------|------------------------------|
| 1. Elevation of barrier top minus elevation of source | [H] - [S] = [1] |
| 2. Elevation of observer minus elevation of source | [O] - [S] = [2] |
| 3. Map distance between source and observer (R' + D') | [3] |
| 4. Map distance between barrier and source (R') | [4] |
| 5. Line 2 divided by line 3 | [2] ÷ [3] = [5] |
| 6. Square the quantity on line 5 (i.e., multiply it by itself); always positive | [5] × [5] = [6] |
| 7. 40% of line 6 | [0.4] × [6] = [7] |
| 8. One minus line 7 | [1.0] - [7] = [8] |
| 9. Line 5 times line 4 (will be negative if line 2 is negative) | [5] × [4] = [9] |
| 10. Line 1 minus line 9 | [1] - [9] = [10] |
| 11. Line 10 times line 8 | [10] × [8] = [11] = h |
| 12. Line 5 times line 10 | [5] × [10] = [12] |
| 13. Line 4 divided by line 8 | [4] ÷ [8] = [13] |
| 14. Line 13 plus line 12 | [13] + [12] = [14] = R |
| 15. Line 3 minus line 4 | [3] - [4] = [15] |
| 16. Line 15 divided by line 8 | [15] ÷ [8] = [16] |
| 17. Line 16 minus line 12 | [16] - [12] = [17] = D |

[Note: the value on line 2 may be negative, in which case so will the values on lines 5, 9, and 12; line 1 may also be negative. Remember, then, in

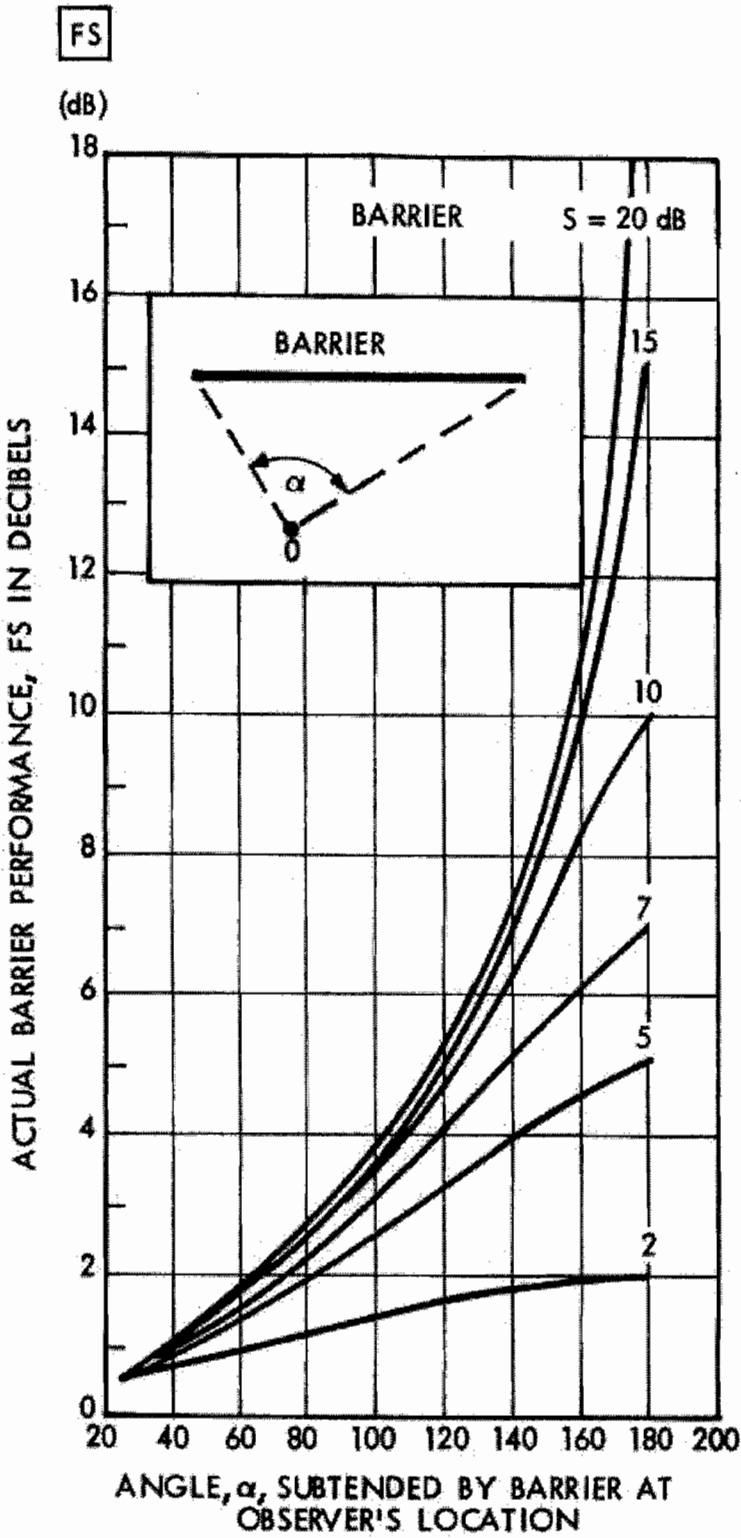
lines 10, 14, and 17, that adding a negative number is the same as subtracting: $x + (-y) = x - y$. And subtracting a negative number is like adding: $x - (-y) = x + y$.

Round off R and D to nearest integer, h to one decimal place.

**Workchart 6
Noise Barrier**



Workchart 7



Correction to be applied to barrier potential in order to find the actual performance of the barrier of the same construction but of finite length.

**Worksheet A
Site Evaluation**

Noise Assessment Guidelines

Site Location _____

Program _____

Project Name _____

Locality _____

File Number _____

Sponsor's Name _____

Phone _____

Street Address _____

City, State _____

	Acceptability Category	DNL	Predicted for Operations in Year
1. Roadway Noise	_____	_____	_____
2. Aircraft Noise	_____	_____	_____
3. Railway Noise	_____	_____	_____
Value of DNL for all noise sources: (see page 3 for combination procedure)		_____	

Final Site Evaluation (circle one)

Acceptable

Normally Unacceptable

Unacceptable

Signature _____

Date _____

Clip this worksheet to the top of a package
containing Worksheets B-E and Workcharts 1-7
that are used in the site evaluations

**Worksheet B
Aircraft Noise**

Noise Assessment Guidelines

List all airports within 15 miles of the site:

1. _____
2. _____
3. _____

Necessary Information:	Airport 1	Airport 2	Airport 3
1. Are DNL, NEF or CNR contours available? (yes/no)	_____	_____	_____
2. Any supersonic aircraft operations? (yes/no)	_____	_____	_____
3. Estimating approximate contours from Figure 3:			
a. number of nighttime jet operations	_____	_____	_____
b. number of daytime jet operations	_____	_____	_____
c. effective number of operations (10 times a + b)	_____	_____	_____
d. distance A for 65 dB	_____	_____	_____
70dB	_____	_____	_____
75 dB	_____	_____	_____
e. distance B for 65 dB	_____	_____	_____
70 dB	_____	_____	_____
75 dB	_____	_____	_____
4. Estimating DNL from Table 2:			
a. distance from 65 dB contour to flight path, D ¹	_____	_____	_____
b. distance from NAL to flight path, D ²	_____	_____	_____
c. D ² divided by D ¹	_____	_____	_____
d. DNL	_____	_____	_____
5. Operations projected for what year?	_____	_____	_____
6. Total DNL from all airports	_____	_____	_____

Signed _____

Date _____

List all major roads within 1000 feet of the site:

1. _____
2. _____
3. _____
4. _____

Necessary Information	Road 1	Road 2	Road 3	Road 4
1. Distance in feet from the NAL to the edge of the road				
a. nearest lane	_____	_____	_____	_____
b. farthest lane	_____	_____	_____	_____
c. average (effective distance)	_____	_____	_____	_____
2. Distance to stop sign	_____	_____	_____	_____
3. Road gradient in percent	_____	_____	_____	_____
4. Average speed in mph				
a. Automobiles	_____	_____	_____	_____
b. heavy trucks - uphill	_____	_____	_____	_____
c. heavy trucks - downhill	_____	_____	_____	_____
5. 24 hour average number of automobiles and medium trucks in both directions (ADT)				
a. automobiles	_____	_____	_____	_____
b. medium trucks	_____	_____	_____	_____
c. effective ADT (a + (10xb))	_____	_____	_____	_____
6. 24 hour average number of heavy trucks				
a. uphill	_____	_____	_____	_____
b. downhill	_____	_____	_____	_____
c. total	_____	_____	_____	_____
7. Fraction of nighttime traffic (10 p.m. to 7 a.m.)	_____	_____	_____	_____
8. Traffic projected for what year?	_____	_____	_____	_____

Adjustments for Automobile Traffic

	9 Stop and-go Table 3	10 Average Speed Table 4	11 Night- Time Table 5	12 Auto ADT (line 5c)	13 Adjusted Auto ADT	14 DNL (Workchart 1)	15 Barrier Attenuation	16 Partial DNL
Road No. 1	X	X	X		=			=
Road No. 2	X	X	X		=			=
Road No. 3	X	X	X		=			=
Road No. 4	X	X	X		=			=

Adjustments for Heavy Truck Traffic

	17 Gradient Table 6	18 Average Speed Table 7	19 Truck ADT 2	20	21	22 Stop and-go Table 8	23 Night- Time Table 5	24 Adjusted Truck ADT	25 DNL (Work- chart 2)	26 Barrier Attn.	27 Partial DNL
Uphill	X	X									
Road No. 1					Add	X	X				
Downhill		X									
Uphill	X	X									
Road No. 2					Add	X	X				
Downhill		X									
Uphill	X	X									
Road No. 3					Add	X	X				
Downhill		X									
Uphill	X	X									
Road No. 4					Add	X	X				
Downhill		X									

Combined Automobile & Heavy Truck DNL

Road No. 1	Road No. 2	Road No. 3	Road No. 4	Total DNL for All Roads
------------	------------	------------	------------	-------------------------

Signature _____ Date _____

List All Railways within 3000 feet of the site:

- 1. _____
- 2. _____
- 3. _____

Necessary Information:

Railway No. 1 Railway No. 2 Railway No. 3

- 1. Distance in feet from the NAL to the railway track: _____
- 2. Number of trains in 24 hours:
 - a. diesel _____
 - b. electrified _____
- 3. Fraction of operations occurring at night (10 p.m. – 7 a.m.): _____
- 4. Number of diesel locomotives per train: _____
- 5. Number of rail cars per train:
 - a. diesel trains _____
 - b. electrified trains _____
- 6. Average train speed: _____
- 7. Is track welded or bolted? _____
- 8. Are whistles or horns required for grade crossings? _____

Adjustments for Diesel Locomotives

	9 No. of Locomotives 2	10 Average Speed Table 9	11 Horns (enter 10)	12 Night- time Table 5	13 No. of Trains (line 2a)	14 Adj. No. of Oprs.	15 DNL Workchart 3	16 Barrier Attn.	17 Partial DNL
Railway No. 1	X	X	X	X	X	=	-	=	
Railway No. 2	X	X	X	X	X	=	-	=	
Railway No. 3	X	X	X	X	X	=	-	=	

Adjustments for Railway Cars or Rapid Transit Trains

	18 Number of cars 50	19 Average Speed Table 10	20 Bolted Rails (enter 4)	21 Night- time Table 5	22 No. of Trains (Line 2a or 2b)	23 Adj. No. of Oprs.	24 DNL Work- chart 4	25 Barrier Attn.	26 Partial DNL
Railway No. 1	X	X	X	X	X	=	-	=	
Railway No. 2	X	X	X	X	X	=	-	=	
Railway No. 3	X	X	X	X	X	=	-	=	

Combined Locomotive and Railway Car DNL

Railway No. 1 _____ Railway No. 2 _____ Railway No. 3 _____ Total DNL for all Railways _____

Signature _____

Date _____

Chapter 6

A Workbook for the Noise Assessment Guidelines

Introduction

The following problems were prepared to give you the opportunity to practice the calculations and procedures described in the *Noise Assessment Guidelines*. Because it is so rarely used, we have not included any problems dealing with the aircraft noise procedure.

We have not reproduced the charts or tables from the *Guidelines* so you will need to have it at hand to do the problems.

Noise Assessment Guidelines Workbook

Problems

Problems 1 Through 7: Combining Sound Levels in Decibels

Calculate the Combined Sound Level for the Following Sets of Individual Levels:

1. 67 LDN
61 LDN

_____ Combined
Level

2. 63 LDN
63 LDN

_____ Combined
Level

3. 51 LDN
68 LDN

_____ Combined
Level

4. 62 LDN
65 LDN

_____ Combined
Level

5. 67 LDN
72 LDN

_____ Combined
Level

6. 59 LDN
63 LDN
71 LDN

_____ Combined
Level

7. 73 LDN
72 LDN
61 LDN
67 LDN

_____ Combined
Level

Problems 8 and 9: Calculating Effective Distance

Calculate the Effective Distances for the Following Roads:

8. Distance in Feet from NAL to:
Near Edge of Nearest Lane 22 Feet
Far Edge of Farthest Lane 76 Feet
Effective Distance _____

9. Distance in Feet from NAL to:
Near Edge of Nearest Lane 60 Feet
Far Edge of Farthest Lane 84 Feet
Effective Distance _____

Problems 10 Through 15: Adjustment Factors

List the Adjustment Factors Necessary for Each of the Following Situations and the Numerical Value for Each Adjustment Factor.

10. A Roadway Where the Road Gradient is 1%, the Average Speed for Both Autos and Trucks is 30 MPH and the Fraction of Nighttime Traffic is 10%.

Adjustment Factors Needed: _____

Value of Adjustment Factors: _____

11. A Roadway Where There is a Stop Sign 400 Feet from the NAL. The Gradient is 1%, the Average Speed for Autos is 45 MPH (There Are No Trucks) and the Fraction of Nighttime Traffic is 15%.

Adjustment Factors Needed: _____

Value of Adjustment Factors: _____

12. A Roadway Where the Road Gradient is 2%, the Average Speed for Autos is 50 MPH and for Trucks (Both Uphill and Downhill) is 50 MPH and the Fraction of Nighttime Traffic is 10%.

Adjustment Factors Needed: _____

Value of Adjustment Factors: _____

13. A Railroad Where the Fraction of Operations Occurring at Night is 30%, the Average Train Speed is 40 MPH, the Track is Bolted and There Are No Whistle Or Horns Required for Grade Crossings.

Adjustment Factors Needed: _____

Value of Adjustment Factors: _____

14. A Railroad Where the Fraction of Operations Occurring at Night is 5%, the Average Train Speed is 10 MPH, the Tracks Are Welded and There Are No Whistles Or Horns Required for Grade Crossing.

Adjustment Factors Needed: _____

Value of Adjustment Factors: _____

15. A Railroad Where the Fraction of Operations Occurring at Night is 20%, the Average Train Speed is 30 MPH, the Track is Bolted and No Whistles or Horns Are Required for Grade Crossings.

Adjustment Factors Needed: _____

Value of Adjustment Factors: _____

Problems 16 Through 21: Some Basic Problems

Calculate the Combined Noise Levels for Each of the Following Situations:

16. A Roadway Where the distance in Feet from the NAL to the Near Edge of the Nearest Lane is 310 Feet, the Distance to the Far Edge of the Farthest Lane is 358 Feet. There is A Stop Sign 400 Feet from the NAL. The Gradient is 1%. The Average Number of Automobiles is 17,000, the 24 Hour Average Number of Medium Trucks is 1,500, the 24 Hour Average Number of Heavy Trucks is 400 Total. The Fraction of Nighttime Traffic is 20%.

The Combined Noise Level for This Roadway is _____

17. A Site Exposed to Noise from Two Roads. For Roadway Number 1 the Distance in Feet from the NAL to the Near Edge of the Nearest Lane is 125 Feet, the Distance to the Far Edge of the Farthest Lane is 233 Feet. There is A Stop Sign 250 Feet from the NAL. The Gradient is 3%. The Average Speed for Both Autos and Trucks is 30 MPH.

The 24 Hour Average Number of Autos is 22,000, the 24 Hour Average Number of Medium Trucks is 2,000. The 24 Hour Average Number of Heavy Trucks is 950 Total. The Fraction of Nighttime Traffic is 10%.

For Roadway Number 2, the Distance to the Near Edge of the Nearest Lane is 45 Feet, the Distance to the Far Edge of the Farthest Lane is 93 Feet. There is A Stop Sign 100 Feet from the NAL and the Gradient is 1%. The Average Speed for Both Autos and Heavy Trucks is 30 MPH. The 24 Hour Average Number of Automobiles is 14,000, for Medium Trucks 700, and for Heavy Trucks 600 Total. The Fraction of Nighttime Traffic is 20%.

The Combined Noise Level for This Site is _____

18. A Site Exposed to Noise from Two Railroads. For Railroad 1, the Distance in Feet from the NAL to the Railway Track is 150 Feet. There Are 35 Diesel Trains Every 24 Hours, No Electrified Trains. The Fraction of Operations Occurring at Night is 25%. There Are 3 Diesel Locomotives Per Train and 70 Cars Per Train. The Average Speed is 30 MPH and the Track is Bolted. No Whistles Or Horns Are Used.

For Railroad 2, the Distance in Feet from the NAL to the Railway Track is 310 Feet. There Are 20 Diesel and 2 Electrified Trains Each 24 Hours. The Fraction of Operations Occurring at Night is 15%. There Are 2 Locomotives Per Diesel Train and 45 Cars for Each Diesel Train and 15 Cars Per Electrified Train. The Average Train Speed is 40 MPH and the Track is Bolted. No Horns Or Whistles Are Used.

The Combined Noise Level for This Site is _____

19. A Site Exposed to Noise from Two Railroads. For Railroad 1, the Distance in Feet from the NAL to the Railway Track is 75 Feet. There Are 34 Diesel Trains Every 24 Hours, No Electrified Trains. Twenty Percent of the Operations Occur at Night. There Are 5 Locomotives Per Train and 75 Cars Per Train. The Average Train Speed is 35 MPH and the Track is Bolted. No Horns Or Whistles.

For Railway 2, the Distance in Feet from the NAL to the Railway Track is 120 Feet. There Are 12 Diesel Trains in 24 Hours. No Electrified Trains. Twenty-Five Percent of the Operations Occur at Night. There Are 4 Locomotives Per Train and 40 Cars Per Train. The Average Train Speed is 20 MPH and the Track is Bolted. No Horns Or Whistles Are Used.

The Combined Noise Level for This Site is _____

20. A Site Exposed to Noise from Three Roads. For Road 1, the Distance in Feet from the NAL to the Near Edge of the Nearest Lane is 100 Feet, to the Far Edge of the Farthest Lane, 208 Feet. There is No Stop Sign and the Gradient is 1%. The Average Speed for Autos is 55 MPH. (There Are No Trucks Allowed On This Road.) The 24 Hour Average Number of Autos is 40,000. The Fraction of Nighttime Traffic is 15%.

For Road 2, the Distance from the NAL to the Near Edge of the Nearest Lane is 45 Feet, to the Far Edge of the Farthest Lane 75 Feet. There is A Stop Sign 175 Feet from the NAL and the Road Gradient is 4%. The average Speed for Both Autos and Trucks is 40 MPH. The 24 Hour Average Number of Autos is 15,000, for Medium Trucks 900 and for Heavy Trucks 320 Total. The Fraction of Nighttime Traffic is 20%.

For Road 3, the Distance from the NAL to the Near Edge of the Nearest Lane is 52 Feet, to the Far Edge of the Farthest Lane 92 Feet. There is A Stop Sign 400 Feet from the NAL and the Gradient is 1%. The Average Speed for Both Autos and Trucks is 25 MPH. The 24 Hour Average Number of Autos is 5,000, for Medium Trucks 1,050 and for Heavy Trucks 175 Total. The Fraction of Nighttime Traffic is 20%.

The Combined Noise Level for This Site is _____

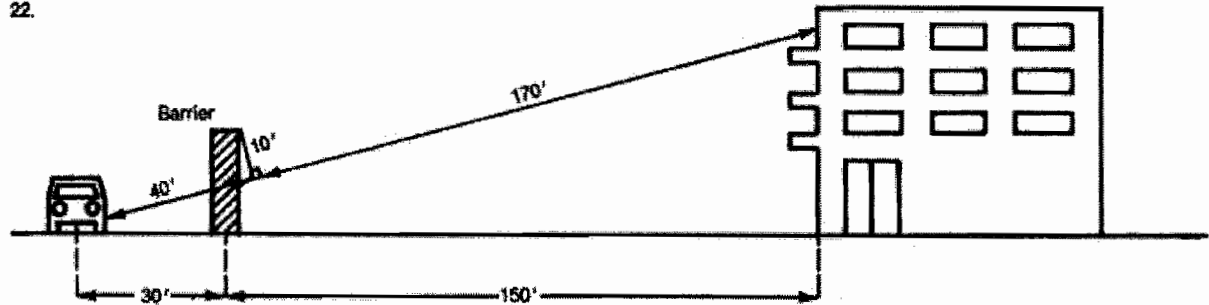
21. A Site Exposed to Noise from A Railroad. The Distance from the NAL to the Railroad is 110 Feet. There Are 30 Diesel Trains Every 24 Hours, No Electrified Trains. Twenty Percent of the Operations Occur at Night. There Are 3 Locomotives Per Train and 50 Cars Per Train. The Average Train Speed is 30 MPH, the Track Is Bolted and There Is A Grade Crossing Where Horns and Whistles Are Used 100 Feet from the NAL.

The Combined Noise Level at This Site is _____

Problems 22 Through 24: Barriers - Identifying the Values for H, R, R', D and D'

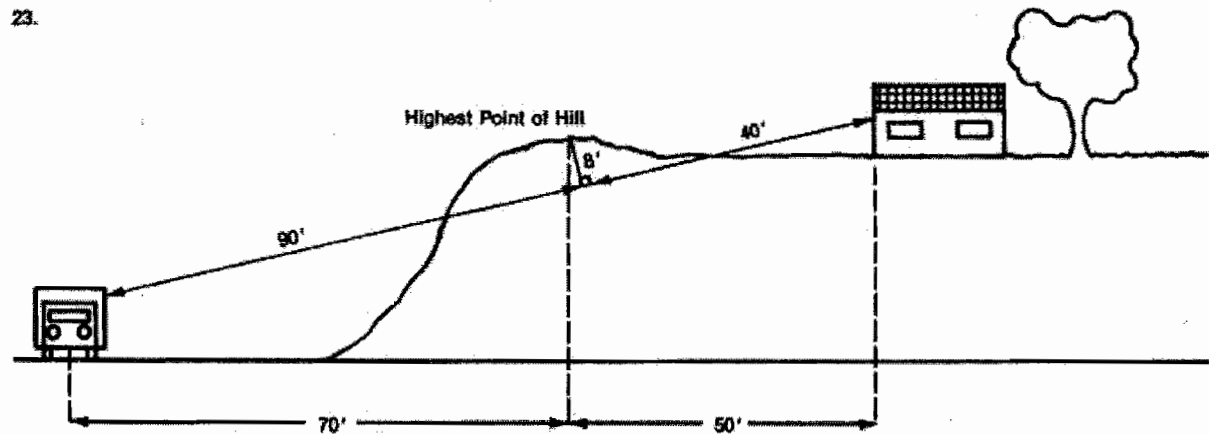
Identify the Values for H, R, R', D and D' for Each of the Following Barriers:

22.



H = _____ R = _____ R' = _____ D = _____ and D' = _____

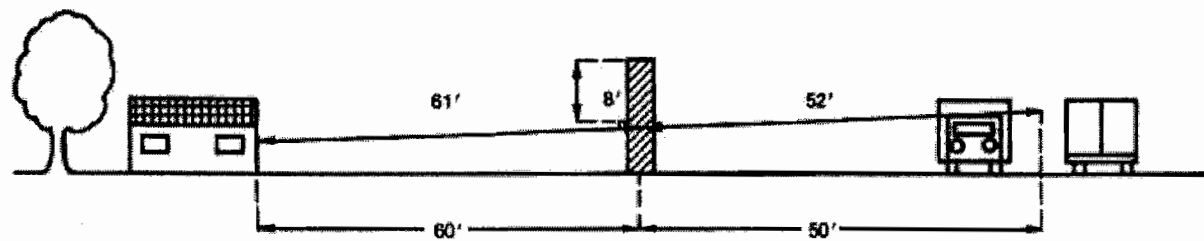
23.



H = _____ R = _____ R' = _____ D = _____ and D' = _____

Barrier	40'	10'	170'	90'	70'
Highest Point of Hill	30'	150'		8'	50'
				40'	

24.



H = _____ R = _____ R' = _____ D = _____ and D' = _____

Problems 25 Through 27: Barrier Calculations Using Workcharts 6 and 7.

Using Workcharts 6 and 7 Only, Calculate the Noise Attenuation Provided by the Barriers Illustrated in Problems 22 Through 24. Additional Data on the Angles Subtended by the Ends of the Barriers and the NAL for Each Location is Provided.

25. Calculate the Noise Attenuation Provided by the Barrier Described in Problem 22. The Angle Subtended by the Ends of the Barrier and the NAL is 150 Degrees.

The Noise Attenuation Provided is _____ Decibels.

26. Calculate the Noise Attenuation Provided by the Barrier Described in Problem 23. The Angle Subtended by the Ends of the Barrier and the NAL is 90 Degrees.

The Noise Attenuation Provided is _____ Decibels.

27. Calculate the Noise Attenuation Provided by the Barrier Described in Problem 24. The Angle Subtended by the Ends of the Barrier and the NAL is 130 Degrees.

The Noise Attenuation Provided is _____ Decibels.

Problems 28 Through 30: Barrier Calculations Using Workcharts 5, 6 and 7

Calculate the Attenuation Provided By the Barriers in the Following Situations. Use Workcharts 5, 6 and 7.

28. A Two Story Building is Exposed to Noise Levels of 68 LDN from Automobiles. The Barrier is 15 Feet High and is Located 40 Feet from the Source and 20 Feet from the Building. The Source, Barrier, and Building are All on Level Ground. The Angle Subtended by the Ends of the Barrier and the Noise Assessment Location is 110 Degrees.

The Noise Attenuation Provided by This Barrier is _____ Decibels.

Is This Sufficient? _____

29. A Three Story Building is Exposed to a Noise Level of 72 LDN from Diesel Locomotives and 60 LDN from Railroad Cars. The Barrier is 12 Feet High and is Located 40 Feet from the Source and 85 Feet from the Building. The Barrier and the Building are on the Same Level, but the Track is Depressed 25 Feet. The Angle Subtended by the Ends of the Barrier and the NAL is 120 Degrees.

The Noise Attenuation Provided by This Barrier is _____ Decibels.

Is This Sufficient? _____

30. A Three Story Building is Exposed to Noise Levels of 67 LDN from Automobiles and 71 LDN from Trucks. The Barrier is 16 Feet High and is Located 36 Feet from the Source and 56 Feet from the Building. The Source, the Barrier and the Building are All at the Same Level. The Angle Subtended by the Barrier Ends and the NAL is 130 Degrees.

The Noise Attenuation Provided by This Barrier is _____ Decibels.

Is This Sufficient? _____

Noise Assessment Guidelines Workbook

Answers

Problem

- 68 LDN ($67-61=6$, Add 1dB (From Table) to 67 = 68 LDN)
- 66 LDN ($63-63=0$, Add 3dB (From Table) to 63 = 66 LDN)
- 69 LDN ($69-51=0$, Add 0dB to 69 = 69 LDN)
- 67 LDN ($65-62=3$, Add 1.8dB to 65, Round Off to Nearest Whole Number, $66.8=67$ LDN)
- 73 LDN ($72-65=5$, Add 1.2 = $73.2=73$ LDN)
- 72 LDN ($63-59=4$, Add 1.5 = 64.5, $71-64.5=6.5$
Interpolate From Table: 6 = 1.0, 7 = .8
 $6.5=.9$ $71+.9=71.9=72$ LDN)

- 76 LDN ($67-61=6$, Add 1.0 = 68, $72-68=4$, Add 1.5 = 73.5,
 $73.5-73=.5$, Interpolate From Table,
Add 2.75 = $76.25=76$ LDN)

- 49 Feet ($76+22=98-2=49$)
- 72 Feet ($84+60=144-2=72$)

- Adjustment Factors Needed: Speed and Night-Time Percentage

Value of Factors: Speed = Autos .30
Trucks .81
Nighttime
Percentage .81

Note—You Must Have Different Speed Adjustments for Autos and Trucks.

- Adjustment Factors Needed: Speed and Stop and Go Traffic

Value of Factors: Speed .87
Stop and Go .70

- Adjustment Factors Needed: Gradient, Speed and Nighttime Percentage

Value of Factors: Gradient 1.4
Speed = Autos .30
Trucks .81
Nighttime
Percentage .81

- Adjustment Factors Needed: Nighttime Percentage, Speed, Bolted Track

Value of Factors: Nighttime
Percentage 1.57
Speed = Engines .75
Cars 1.78
Bolted Track 4

Note—You Must Have Different Speed Adjustments for Engines and Cars.

- Adjustment Factors Needed: Nighttime Percentage and Speed

Value of Factors: Nighttime
Percentage .82
Speed = Engines 3.0
Cars .11

- Adjustment Factors Needed: Nighttime Percentage and Bolted Track

Value of Factors: Nighttime
Percentage 1.19
Bolted Track 4

16. Combined Noise Level = 62 LDN (If Your Answer Is Plus or Minus 1dB Its OK - Between Rounding Off and the Large Scale on the Nomographs, That's Close Enough)

Worksheet C
Roadway Noise
Page 1
State Assessment Substation

List all major roads within 1000' of the site:

1. _____
2. _____
3. _____
4. _____

Necessary Information

	Road 1	Road 2	Road 3	Road 4
1. Distance in feet from the NAC to the edge of the road				
A. assumed value	310			
B. measured value	358			
C. average (effective) distance	334			
2. Distance to stop sign	400			
3. Road gradient in percent	1%			
4. Average speed in mph				
a. Automobile	40			
b. heavy trucks - light	40			
c. heavy trucks - diesel	40			
5. 24 hour average number of automobile and medium trucks in both directions (ADT)				
a. automobile	17000			
b. medium trucks	1500			
c. all other ADT (a + b)	32000			
6. 24 hour average number of heavy trucks				
a. light	200			
b. diesel	200			
c. total	400			
7. Fraction of night-time traffic (10:00 p.m. to 7 a.m.)	20%			
8. Traffic projected for what year?				

Worksheet C
Roadway Noise
Page 2
State Assessment Substation

Adjustments for Automobile Traffic

	10	11	12	13	14	15	16	
	ADT	ADT	ADT	ADT	ADT	ADT	ADT	
Road No. 1	70	53	1.19	32000	14128	57	0	57
Road No. 2								
Road No. 3								
Road No. 4								

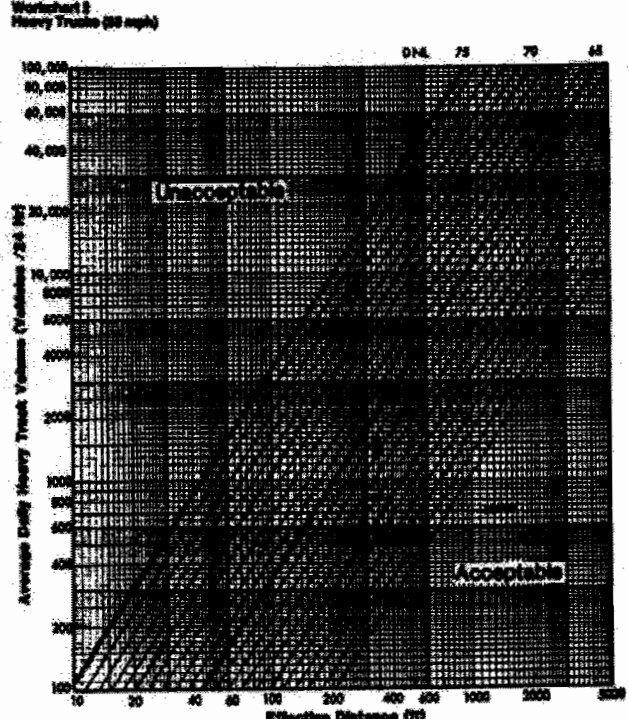
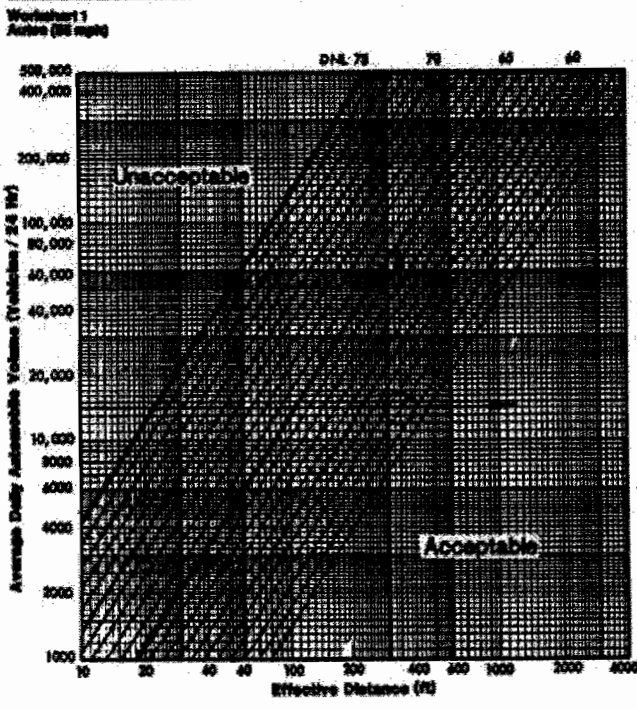
Adjustments for Heavy Truck Traffic

	17	18	19	20	21	22	23	24	25	26	27
	ADT	ADT	ADT	ADT	ADT	ADT	ADT	ADT	ADT	ADT	ADT
Light											
Road No. 1											
Corrected											
Light											
Road No. 2											
Corrected											
Light											
Road No. 3											
Corrected											
Light											
Road No. 4											
Corrected											

Combined Automobile & Heavy Truck ADT

Road No. 1: 62 Road No. 2: Road No. 3: Road No. 4: Total ADT for All Roads: 62

Signature: _____ Date: _____



17. Combined Noise Level = 74 LDN (+ OR - 1 dB)

Worksheet C
Roadway Noise
Page 1
Noise Assessment Worksheet

List all major roads within 1000 ft of the site.

1. _____
2. _____
3. _____
4. _____

Necessary Information:

	Road 1	Road 2	Road 3	Road 4
1. Distance to road from the NAL to the edge of the road	125	45		
2. Roadway type	233	93		
3. Average reflective distance	179	69		
4. Distance to stop sign	250	100		
5. Road gradient to percent	3%	1%		
6. Average speed in mph				
a. Automobiles	30	30		
b. Heavy trucks - urban	30	30		
c. Heavy Trucks - Rural	30	30		
7. 24 hour average number of automobiles and medium trucks in both directions (ADT)				
a. Automobiles	22000	14000		
b. Medium Trucks	2000	700		
c. Effective ADT (a + 10b)	42000	21000		
8. 24 hour average number of heavy trucks				
a. urban	475	300		
b. Rural	475	300		
c. HRT	950	600		
9. Percentage of nighttime traffic (100% = 0 to 100%)	10%	30%		
10. Traffic projected for what year?				

Worksheet C
Roadway Noise
Page 2
Noise Assessment Worksheet

Adjustments for Automobile Traffic

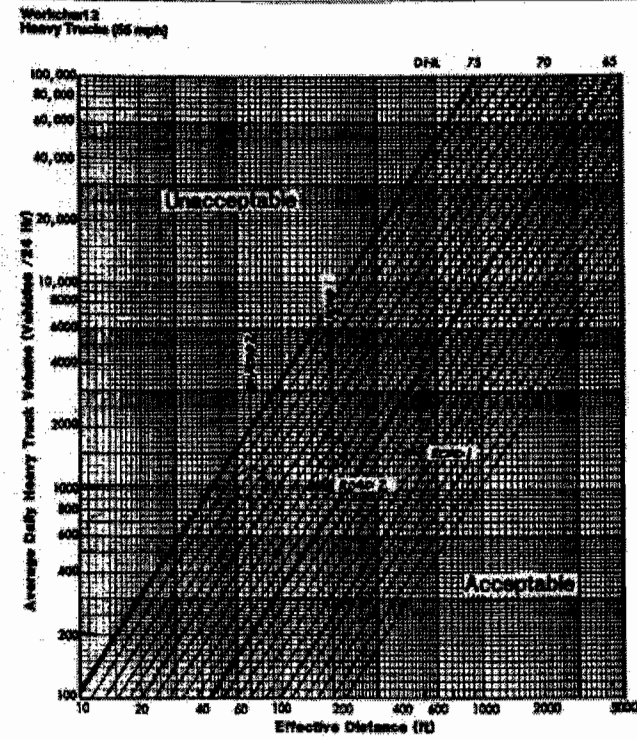
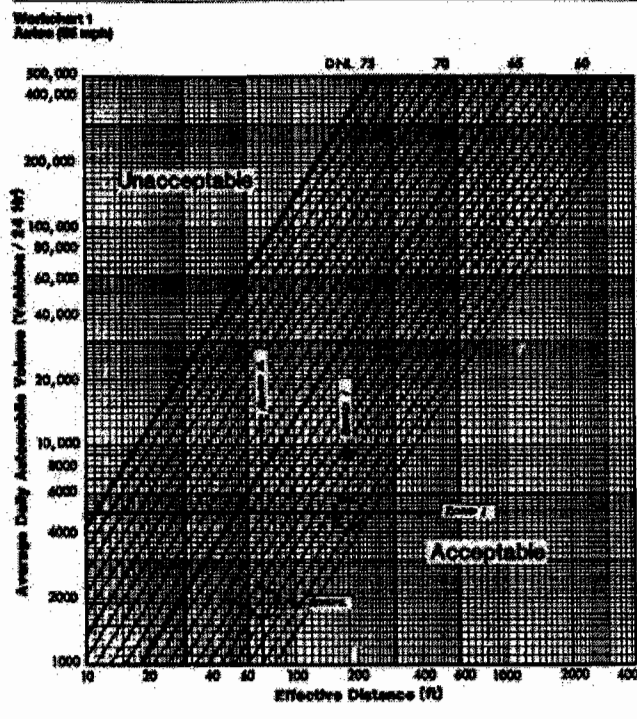
	8	9	10	11	12	13	14	15	16
	Day	Evening	Night	ADT	ADT	ADT	ADT	ADT	ADT
	Table 1	Table 4	Table 5	(Day H)	(Even H)	(Night H)	(Table 1)	(Table 1)	(Table 1)
Road No. 1	48	30	81	42000	4999	57	0	57	
Road No. 2	25	30	119	21000	1874	59	0	59	
Road No. 3									
Road No. 4									

Adjustments for Heavy Truck Traffic

	17	18	19	20	21	22	23	24	25	26	27
	Distance	Speed	ADT	ADT	ADT	ADT	ADT	ADT	ADT	ADT	ADT
	Table 7	Table 7	Table 7	Table 7	Table 7	Table 7	Table 7	Table 7	Table 7	Table 7	Table 7
Light	67	31	425	650							
Road No. 1					1029	1.8	81	1515	68	0	68
Downhill											
Light											
Road No. 2											
Downhill											
Light											
Road No. 3											
Downhill											
Light											
Road No. 4											
Downhill											

Combined Automobile & Heavy Truck ADT

Road No. 1: 68 Road No. 2: 72 Road No. 3: Road No. 4: Total ADT at 40' from: 74



18. Combined Noise Level = 71 LDN

Note—in Order to Complete Column 18 for Railway #2 You Must Find the Average Number of Cars Per Train. Multiply the Number of Diesel Trains Times the Number of Cars Per Train (20 x 45 = 900), Multiply the Number of Electrified Trains Times the Number of Cars Per Train (2 x 15 = 30). Add the Two Totals Together and Divide By the Total Number of Trains (900 + 30 = 930 - 22 = 42).

Worksheet D Railway Noise		Page 2		Noise Assessment Subtitle					
Adjustments for Diesel Locomotives									
10	11	12	13	14	15	16	17	18	19
No. of Locomotives	Average Speed (mph)	Hours (per hr)	High-Speed Factor	No. of Trains (per hr)	Avg. No. of Cars	Eq. Weighting	Sound Att.	Partial DNL	
Railway No. 1	1.6	1.0	-	1.30	35	72	70	0	72
Railway No. 2	1	.75	-	1.0	20	15	58	0	58
Railway No. 3									
Adjustments for Railway Cars or Light Transit Trains									
20	21	22	23	24	25	26	27	28	29
Number of Cars	Average Speed (mph)	Hours (per hr)	High-Speed Factor	No. of Trains (per hr)	Avg. No. of Cars	Eq. Weighting	Sound Att.	Partial DNL	
Railway No. 1	1.4	1.0	4	1.35	35	270	64	0	64
Railway No. 2	.34	1.78	4	1.32	22	182	57	0	57
Railway No. 3									
Combined Locomotives and Railway Car DNL									
Railway No. 1	71	Railway No. 2	61	Railway No. 3	71	Total DNL for all Railways			

Signature _____ Date _____

19. Combined Noise Level = 76 LDN

Worksheet D Railway Noise		Page 2		Noise Assessment Subtitle					
Adjustments for Diesel Locomotives									
10	11	12	13	14	15	16	17	18	19
No. of Locomotives	Average Speed (mph)	Hours (per hr)	High-Speed Factor	No. of Trains (per hr)	Avg. No. of Cars	Eq. Weighting	Sound Att.	Partial DNL	
Railway No. 1	2.5	.82	-	1.19	34	89	75	0	75
Railway No. 2	2	1.50	-	1.32	12	50	70	0	70
Railway No. 3									
Adjustments for Railway Cars or Light Transit Trains									
20	21	22	23	24	25	26	27	28	29
Number of Cars	Average Speed (mph)	Hours (per hr)	High-Speed Factor	No. of Trains (per hr)	Avg. No. of Cars	Eq. Weighting	Sound Att.	Partial DNL	
Railway No. 1	1.5	1.29	-	1.19	34	84	63	0	63
Railway No. 2	.80	.44	4	1.32	12	23	55	0	55
Railway No. 3									
Combined Locomotives and Railway Car DNL									
Railway No. 1	75	Railway No. 2	70	Railway No. 3		Total DNL for all Railways			

Signature _____ Date _____

20. Combined Noise Level = 75 LDN

Worksheet C
Roadway Noise
Page 1
Noise Assessment Substation

List of major roads within 1000 ft of the site:

1. _____
2. _____
3. _____
4. _____

Necessary Information

	Road 1	Road 2	Road 3	Road 4
1. Distance in feet from the R/W to the edge of the road				
a. nearest side	100	45	52	
b. farthest side	308	75	92	
c. average (effective) distance	154	60	72	
2. Distance to stop sign	-	175	400	
3. Road gradient in percent	1%	4.9%	1%	
4. Average speed in mph				
a. Automobiles	65	40	25	
b. heavy trucks - light	55	40	25	
c. heavy trucks - diesel	55	40	25	
5. 24 hour average number of automobiles and medium trucks in both directions (ADT)				
a. automobiles	4000	1500	500	
b. medium trucks	-	400	100	
c. effective ADT (a + b)	4000	1900	600	
6. 24 hour average number of heavy trucks				
a. light	-	160	27	
b. diesel	-	160	27	
c. total	-	320	54	
7. Fraction of nighttime traffic (10:00 p.m. to 7: a.m.)	15%	20%	20%	
8. Traffic projected for what year?	-	-	-	

Worksheet C
Roadway Noise
Page 2
Noise Assessment Substation

Adjustments for Automobile Traffic

	8	9	10	11	12	13	14	15	16
	Day ADT	Avg Speed	ADT	ADT	ADT	ADT	ADT	ADT	ADT
	Table 6	Table 7	Table 8	Table 9	Table 10	Table 11	Table 12	Table 13	Table 14
Road No. 1	4000	65	4000	4000	4000	4000	4000	4000	4000
Road No. 2	1900	55	1900	1900	1900	1900	1900	1900	1900
Road No. 3	600	55	600	600	600	600	600	600	600
Road No. 4									

Adjustments for Heavy Truck Traffic

	17	18	19	20	21	22	23	24	25
	ADT	ADT	ADT	ADT	ADT	ADT	ADT	ADT	ADT
	Table 15	Table 16	Table 17	Table 18	Table 19	Table 20	Table 21	Table 22	Table 23
Light									
Road No. 1	320	320	320	320	320	320	320	320	320
Corrected									
Light									
Road No. 2	320	320	320	320	320	320	320	320	320
Corrected									
Light									
Road No. 3	320	320	320	320	320	320	320	320	320
Corrected									
Light									
Road No. 4									
Corrected									

Combined Automobile & Heavy Truck SNL

Road No. 1	Road No. 2	Road No. 3	Road No. 4	Total SNL for All Roads
67	73	68		75

Signature _____ Date _____

21. Combined Noise Level = 81 LDN

To Solve This Problem You Must Add Some More Lines to the Workchart for Engines Because the Workchart as Set up Does Not Go High Enough. There Are A Variety of Ways to Do This But One of the Easiest Is to Take A Piece of Blank Paper (A 3 x 5 Card Does Very Well) Place the Edge of the Paper Along Either the Top Or Bottom Edge of the Workchart and Mark Where the LDN Lines Fall Along the Edge of the Blank Paper. Then Once You Have Drawn Your Distance and Operations Lines on the Work Chart, You Take Your Paper with the Line Markings and Lay It along the Line for Adjusted Operations with the Mark Farthest to the Right Lined up with the 75 LDN Line. Now Just Count over until You Reach the Intersection of the Operations and Distance Lines.

Worksheet 2
Railroad Noise

Page 2

Noise Assessment Worksheet

Adjustments for Diesel Locomotives

	9	10	11	12	13	14	15	16	17
	No. of Locomotives	Weight Rating Table 9	Power Rating Table 9	Length Table 9	No. of Cars Table 9	Adj. No. of Cars	DNL Worksheet 1	Surfer Adj.	Point DNL
Railway No. 1	15	1.0	10	1.18	30	535	81	0	81
Railway No. 2									
Railway No. 3									

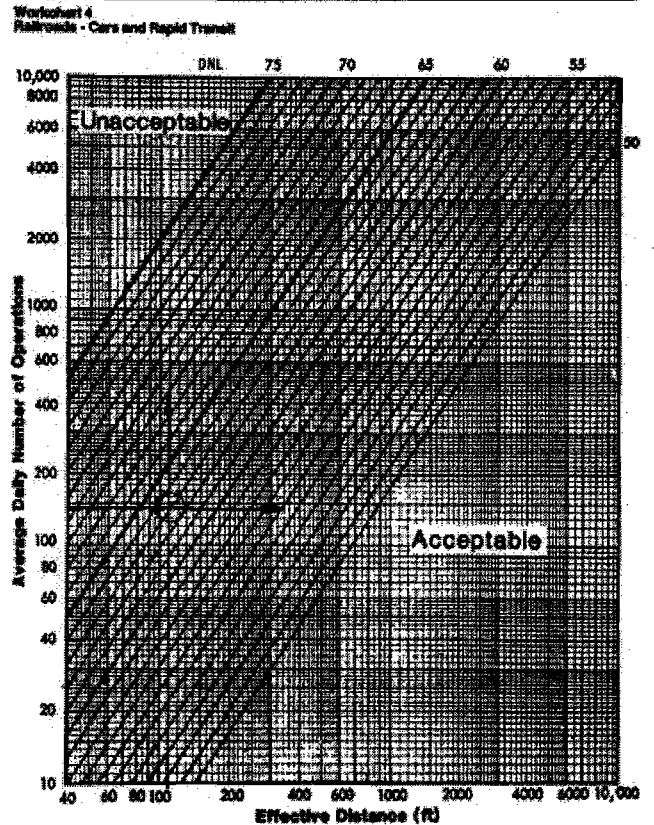
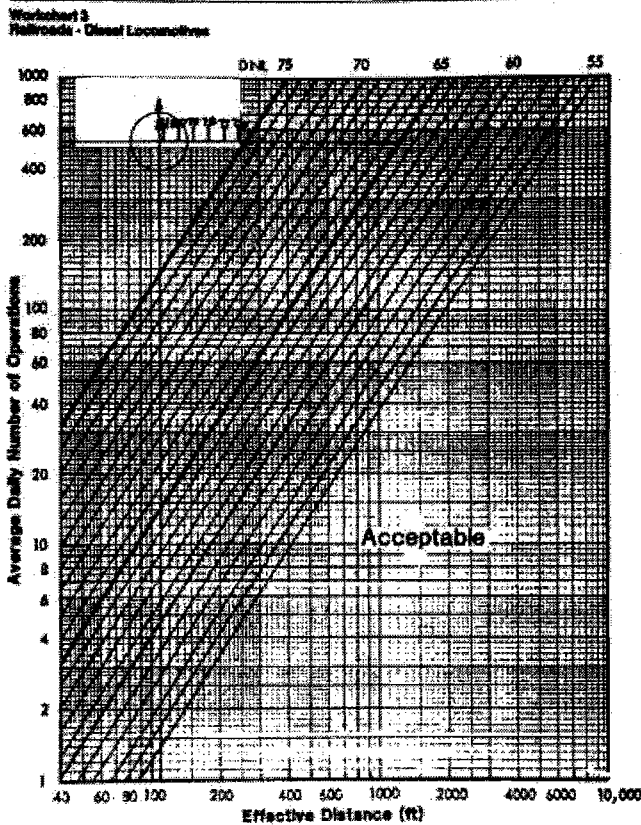
Adjustments for Railway Cars or Rapid Transit Trains

	18	19	20	21	22	23	24	25	26
	Number of Cars	Weight Rating Table 18	Power Rating Table 18	Length Table 18	No. of Cars Table 18	Adj. No. of Cars	DNL Worksheet 2	Surfer Adj.	Point DNL
Railway No. 1	10	1.0	4	1.18	30	143	63	0	63
Railway No. 2									
Railway No. 3									

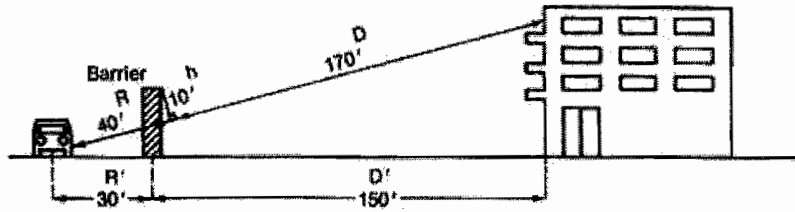
Combined Locomotives and Railway Car DNL

Railway No. 1: 81 Railway No. 2: _____ Railway No. 3: _____ Total DNL Level of Railway: 81

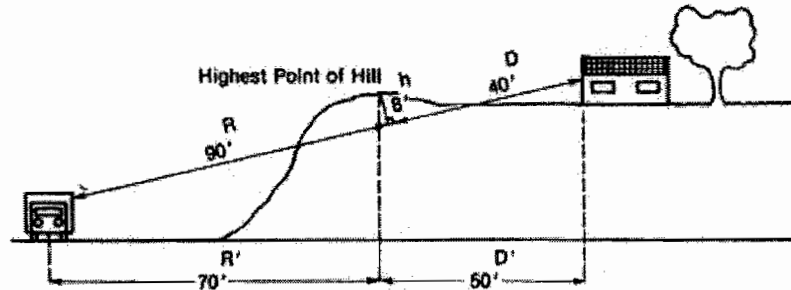
Signature: _____ Date: _____



22. $H = 10$ Feet, $R = 40$ Feet, $R' = 30$ Feet, $D = 170$ Feet, $D' = 150$ Feet

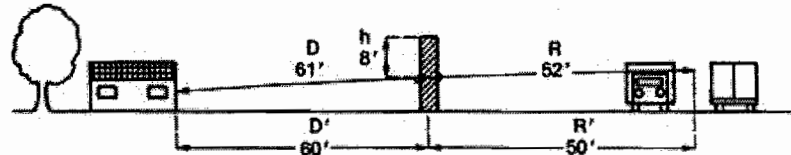


23. $H = 8$ Feet, $R = 90$ Feet, $R' = 70$ Feet, $D = 40$ Feet, $D' = 50$ Feet



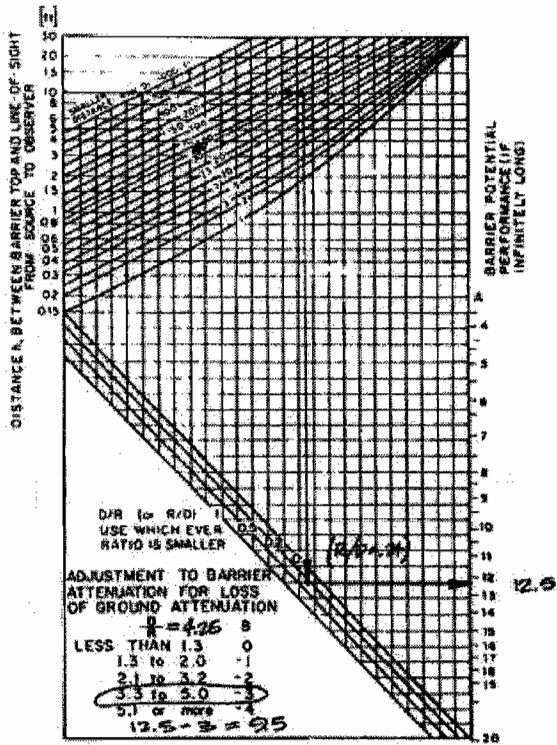
Note—The Line of Sight Line Starts Above the Road Level Because of the Trucks.

24. $H = 8$ Feet, $R = 52$ Feet, $R' = 50$ Feet, $D = 61$ Feet, $D' = 60$ Feet

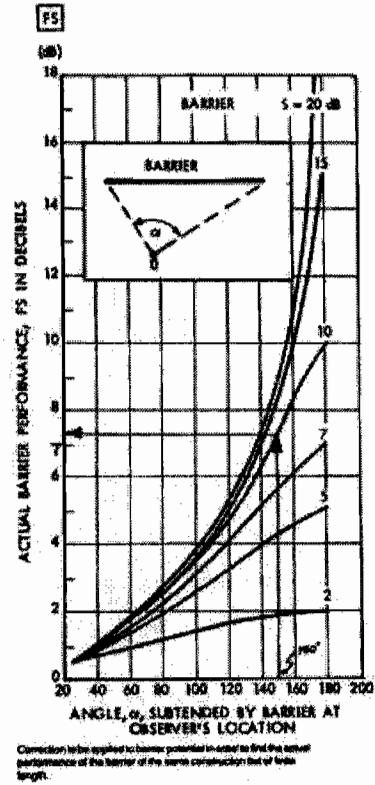


25. The Noise Attenuation Provided Is 7 Decibels

Worksheet 6
Noise Barrier



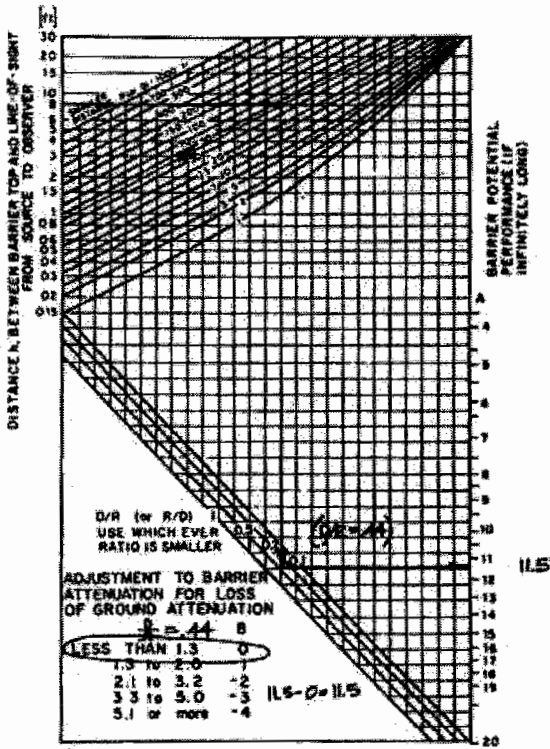
Worksheet 7



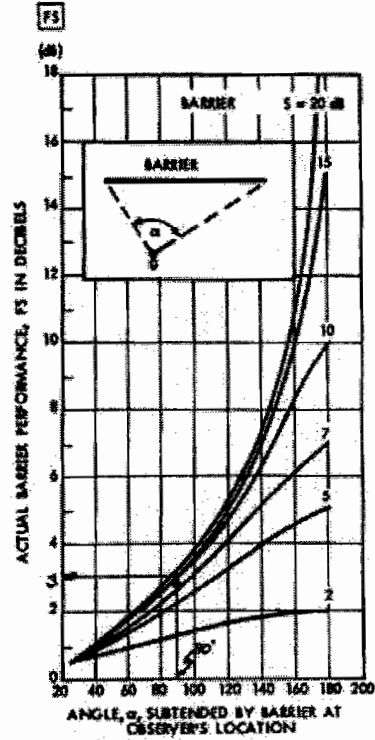
26. The Noise Attenuation Provided Is 3 Decibels

Note—When the Curves Are So Close Together Don't Worry About Extrapolating. In This Case You Couldn't Anyway, the 15 dB and 10 dB Curves Have Merged.

Worksheet 6
Noise Barrier



Worksheet 7

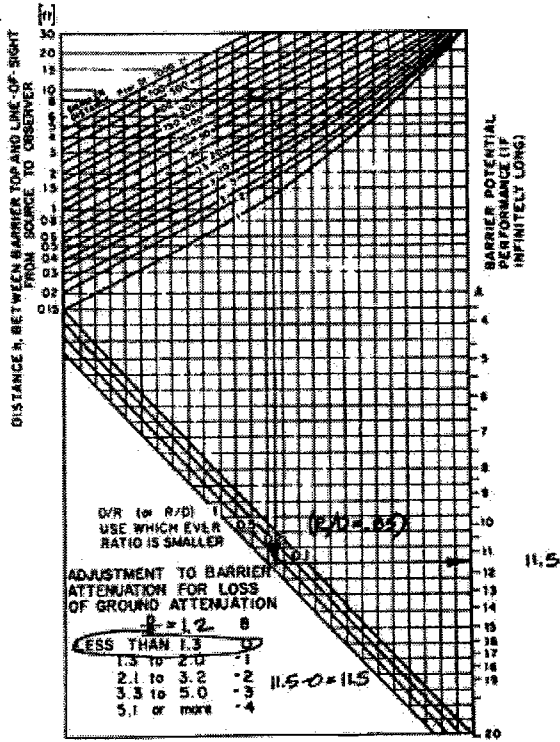


Corrections to be applied to barrier potential in order to find the actual performance of the barrier of the same construction but of finite length.

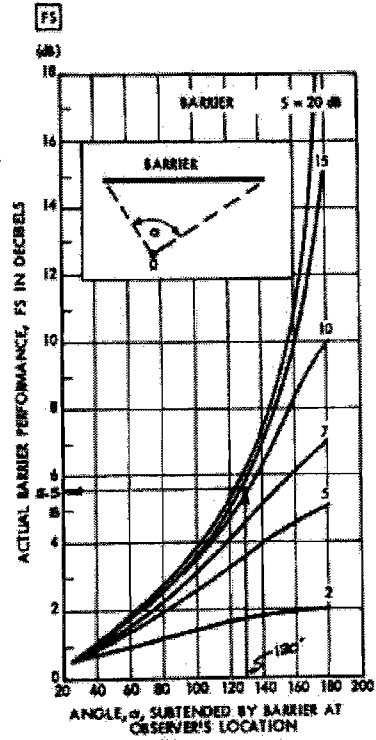
27. The Noise Attenuation Provided is 8 Decibels (5.5 Rounded Up)

Note—Again You Have Problems With Extrapolating—Don't Worry About Being Too Precise.

Worksheet 6
Noise Barrier



Worksheet 7



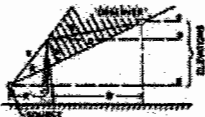
Correction to be applied to barrier potential in order to find the actual performance of the barrier of the same construction but of finite length.

28. The Noise Attenuation Provided by This Barrier Is 4 dB. This Is Sufficient

Note—Don't Forget That the Height of the observer is 5' Less Than the Total Height of the Building and the Height of the Building Is 10 Feet Times the Number of Stories. And Did You Remember to Make the Adjustment for Ground Attenuation Loss.

Worksheet 6 Noise Barrier
To find A, B and C from Site Conditions and Distances

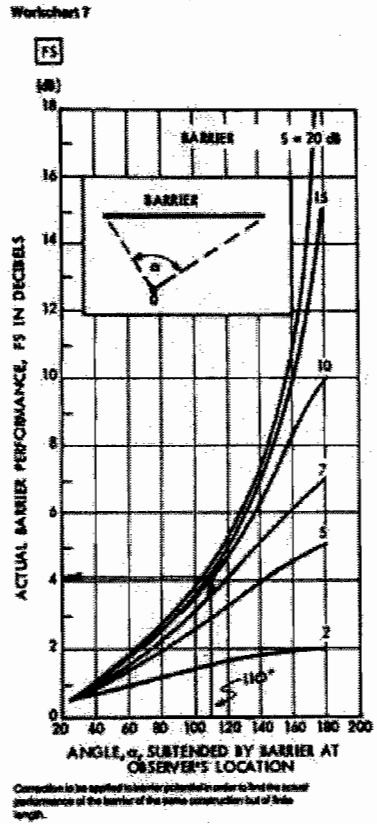
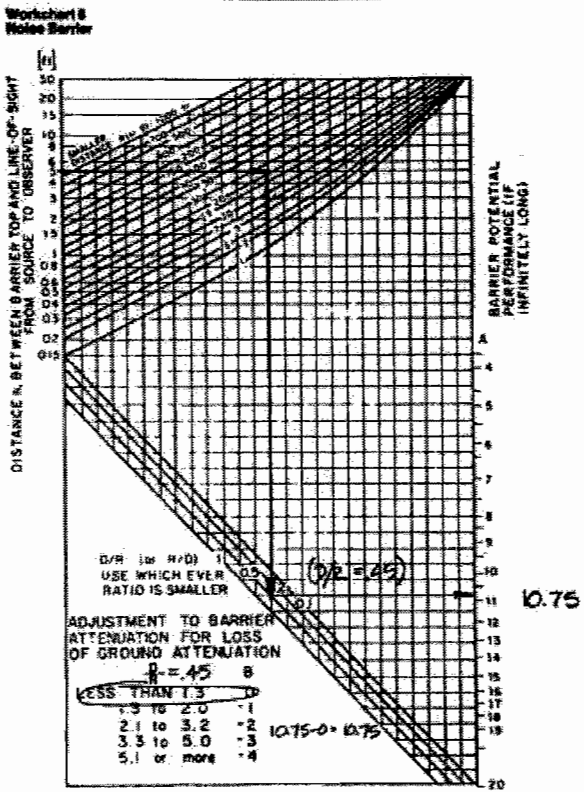
Order the values for:
 H = 15 W = 40
 D = 0 D' = 20
 S = 15



Fill out the following worksheet (all quantities are in feet)

- Elevation of barrier top minus elevation of source: $[^H 15] - [^P 0] = [^H 15]$
- Elevation of observer minus elevation of source: $[^H 15] - [^P 0] = [^H 15]$
- Map distance between source and observer (S + D): $[^H 60]$
- Map distance between barrier and source (W): $[^H 40]$
- Line 2 divided by line 3: $[^H 15] \div [^H 60] = [^H .25]$
- Square the quantity on line 5 (i.e., multiply it by itself): $[^H .25] \times [^H .25] = [^H .0625]$
- 40% of line 6: $[^H .0625] \times [^H .4] = [^H .025]$
- One minus line 7: $[^H 1] - [^H .025] = [^H .975]$
- Line 5 times line 4 (will be negative if line 2 is negative): $[^H .25] \times [^H 40] = [^H 10]$
- Line 1 minus line 8: $[^H 15] - [^H 10] = [^H 5]$
- Line 10 times line 8: $[^H 5] \times [^H .975] = [^H 4.9] \approx 5$
- Line 9 times line 10: $[^H .25] \times [^H 5] = [^H 1.25]$
- Line 4 divided by line 11: $[^H 40] \div [^H 4.9] = [^H 8.16] \approx 8$
- Line 10 plus line 12: $[^H 4.9] + [^H 1.25] = [^H 6.15] \approx 6$
- Line 3 minus line 4: $[^H 60] - [^H 40] = [^H 20]$
- Line 15 divided by line 13: $[^H 20] \div [^H 6.15] = [^H 3.25] \approx 3$
- Line 16 minus line 14: $[^H 20.5] - [^H 1.25] = [^H 19.25] \approx 19$

Place the value on line 3 away from the barrier in feet (use 0 if the value on line 3 is negative). Place the value on line 11 in feet (use 0 if the value on line 11 is negative). Place the value on line 17 in feet (use 0 if the value on line 17 is negative). Place the value on line 19 in feet (use 0 if the value on line 19 is negative). Place the value on line 20 in feet (use 0 if the value on line 20 is negative).



29. The Noise Attenuation Provided by This Barrier is Approximately 5 dB for Both the Engines and the Railroad Cars.

This Is Not Sufficient.

Note—You Were Supposed to Calculate Attenuation for Diesel Engines and Cars Separately Because the Source Heights Are Different. The Value of S for the Engines Should Have Been -10 and the Value of S for the Railroad Cars Should Have Been -25.

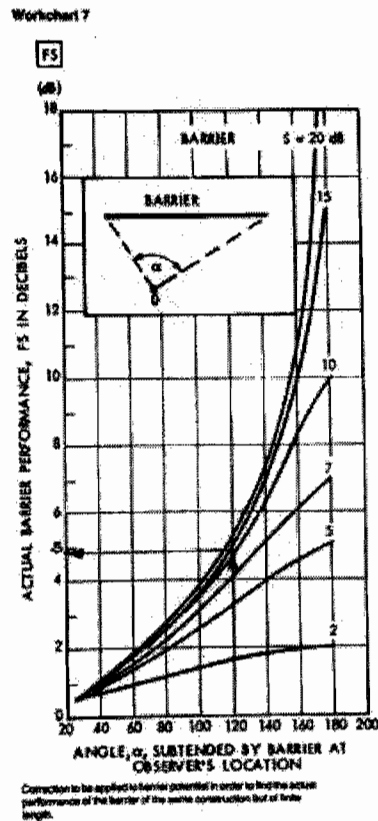
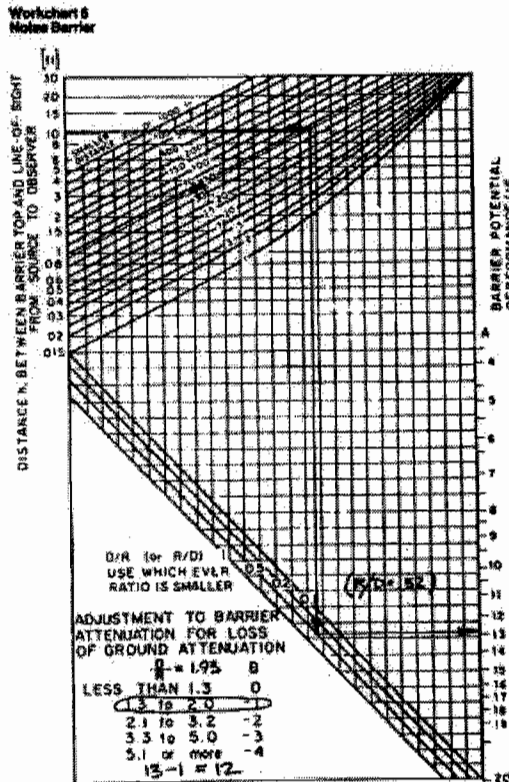
Worksheet 5
Noise Barrier

Enter the values for:
 H = 12 R = 40
 S = -10 D = 85
 D = 25

Fill out the following worksheet (all quantities are in feet):

- Elevation of barrier top minus elevation of source: $[^* 12] - [^* -10] = [^* 22]$
- Elevation of observer minus elevation of source: $[^* 25] - [^* -10] = [^* 35]$
- Map distance between source and observer (R + D): $[^* 125]$
- Map distance between barrier and source (R): $[^* 40]$
- Line 2 divided by line 3: $[^* 35] \div [^* 125] = [^* .28]$
- Squares the quantity on line 5 (i.e., multiply it by itself): $[^* .28] \times [^* .28] = [^* .08]$
- 40% of line 6: $[^* .08] \times [^* .40] = [^* .03]$
- One minus line 7: $[^* .03] - [^* .03] = [^* .97]$
- Line 5 times line 4 (will be negative if line 2 is negative): $[^* .28] \times [^* 40] = [^* 11.2]$
- Line 1 minus line 8: $[^* 22] - [^* 11.2] = [^* 10.8]$
- Line 10 times line 9: $[^* 10.8] \times [^* .97] = [^* 10.5] =$
- Line 3 times line 10: $[^* 125] \times [^* 10.5] = [^* 1312.5]$
- Line 4 divided by line 11: $[^* 40] \div [^* 1312.5] = [^* .03]$
- Line 13 plus line 12: $[^* .03] + [^* .03] = [^* .06] =$
- Line 3 minus line 4: $[^* 125] - [^* 40] = [^* 85]$
- Line 13 divided by line 14: $[^* .06] \div [^* 85] = [^* .0007]$
- Line 15 minus line 12: $[^* 1312.5] - [^* 1312.5] = [^* 0]$

Notes:
 1. Values in brackets may be negative or zero.
 2. Values in brackets may be negative or zero.
 3. Values in brackets may be negative or zero.
 4. Values in brackets may be negative or zero.
 5. Values in brackets may be negative or zero.
 6. Values in brackets may be negative or zero.
 7. Values in brackets may be negative or zero.
 8. Values in brackets may be negative or zero.
 9. Values in brackets may be negative or zero.
 10. Values in brackets may be negative or zero.
 11. Values in brackets may be negative or zero.
 12. Values in brackets may be negative or zero.
 13. Values in brackets may be negative or zero.
 14. Values in brackets may be negative or zero.
 15. Values in brackets may be negative or zero.
 16. Values in brackets may be negative or zero.
 17. Values in brackets may be negative or zero.

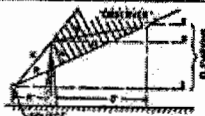


Worksheet 6
Noise Barrier

To find A, D and H from the elevations and distances

Enter the values for:

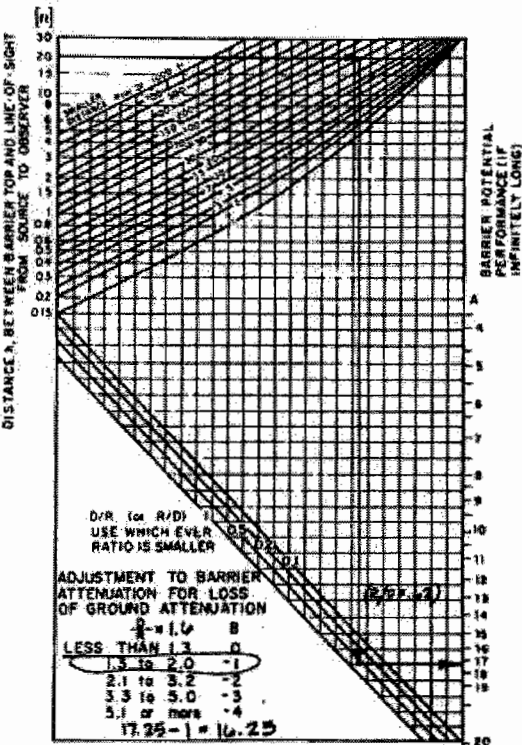
h = 12 r = 40
 s = -25 d = 85
 q = 25



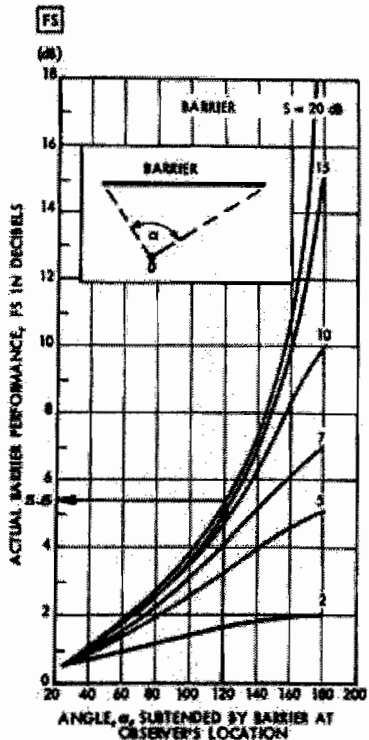
1. Elevation of barrier top minus elevation of source $[^{\circ} 12] - [^{\circ} -25] = [^{\circ} 37]$
2. Elevation of observer minus elevation of source $[^{\circ} 25] - [^{\circ} -25] = [^{\circ} 50]$
3. Map distance between source and observer (R = D) $[^{\circ} 125]$
4. Map distance between barrier and source (R) $[^{\circ} 40]$
5. Line 2 divided by the 3 $[^{\circ} 50] \div [^{\circ} 125] = [^{\circ} .4]$
6. Square the quantity on line 5 (i.e., multiply it by itself); always positive $[^{\circ} .4] \times [^{\circ} .4] = [^{\circ} .16]$
7. 60% of line 6 $[^{\circ} .16] \times [^{\circ} .6] = [^{\circ} .06]$
8. One minus line 7 $[^{\circ} 1] - [^{\circ} .06] = [^{\circ} .94]$
9. Line 5 times line 8 (will be negative if line 2 is negative) $[^{\circ} .4] \times [^{\circ} .94] = [^{\circ} .376]$
10. Line 1 minus line 9 $[^{\circ} 37] - [^{\circ} .376] = [^{\circ} 36.6]$
11. Line 10 times line 3 $[^{\circ} 36.6] \times [^{\circ} 125] = [^{\circ} 4575]$
12. Line 7 times line 10 $[^{\circ} .06] \times [^{\circ} 36.6] = [^{\circ} 2.196]$
13. Line 4 divided by line 8 $[^{\circ} 40] \div [^{\circ} .94] = [^{\circ} 42.6]$
14. Line 13 plus line 12 $[^{\circ} 42.6] + [^{\circ} 2.196] = [^{\circ} 44.796]$
15. Line 2 minus line 4 $[^{\circ} 25] - [^{\circ} 40] = [^{\circ} -15]$
16. Line 15 divided by line 8 $[^{\circ} -15] \div [^{\circ} .94] = [^{\circ} -15.957]$
17. Line 16 times line 12 $[^{\circ} -15.957] \times [^{\circ} 4575] = [^{\circ} -73044]$

Notes: The value on line 2 may be negative. In such case use the value of line 2, and line 9 may also be negative. Remember, then, in line 9 that you are subtracting a negative number. For adding it to a positive number. Round off A and D to nearest integer. Insert decimal point.

Worksheet 8
Noise Barrier



Worksheet 7



Correction to be applied to barrier potential in order to obtain actual performance of the barrier of the same construction but of finite length.

30. The Noise Attenuation Provided by This Barrier is 3 dB for Trucks and 5 dB for Autos. The Combined Level Resulting is 69 LDN.

This is Not Sufficient

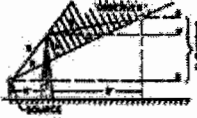
Note—You Must Calculate the Barrier Effect Separately for Autos and Trucks Because the Source Height is Different. Then Recombine levels.

Worksheet 5
Noise Barrier

To find A, D and to know the Elevations and Distances

Enter the values for:

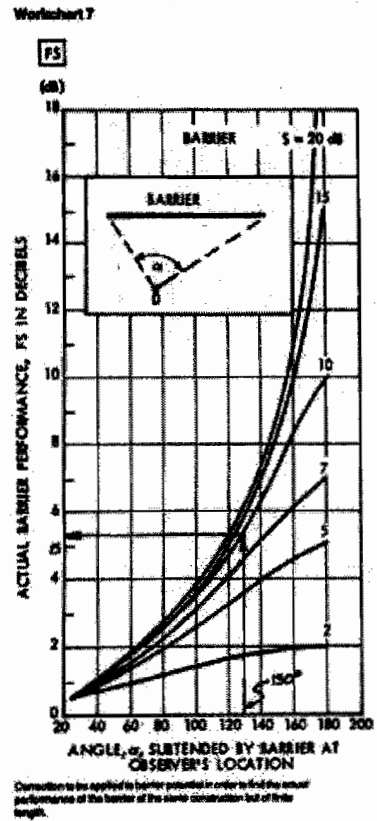
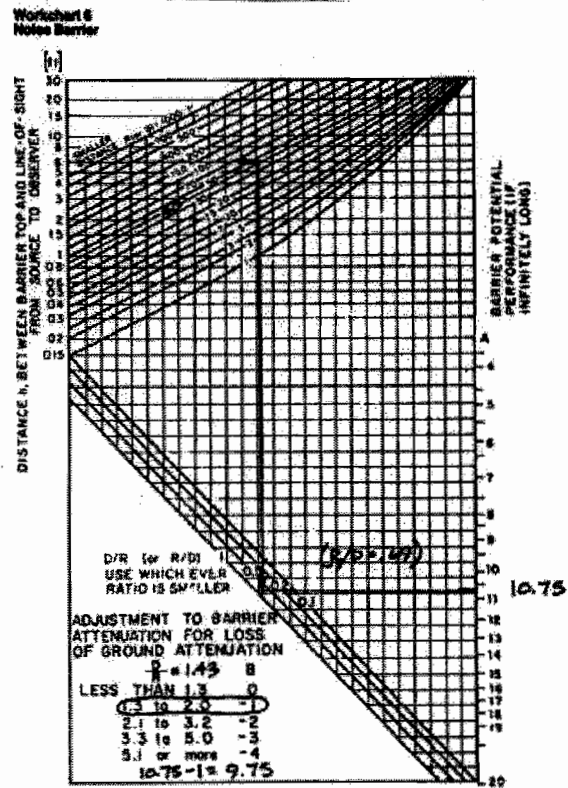
$H = 16$ $R = 36$
 $S = 0$ $D = 56$
 $a = 25$



Fill out the following worksheet (all quantities are in feet):

1. Elevation of barrier top minus elevation of source: $(H - S) = [16] - [0] = [16]$
2. Elevation of observer minus elevation of source: $(S - D) = [0] - [0] = [0]$
3. Map distance between source and observer $(R - D)$: $[92]$
4. Map distance between barrier and source (R) : $[36]$
5. Line 2 divided by line 3: $[0] / [92] = [.00]$
6. Square the quantity on line 5 (A, multiply by itself, always positive): $[.00] \times [.00] = [.00]$
7. 40% of line 6: $[.00] \times [.40] = [.00]$
8. One minus line 7: $[1] - [.00] = [.99]$
9. Line 5 times line 4 (add the negative of line 7 to negative of line 2): $[.00] \times [36] = [0]$
10. Line 1 minus line 9: $[16] - [0] = [16]$
11. Line 10 times line 8: $[16] \times [.99] = [15.8]$
12. Line 2 times line 10: $[0] \times [15.8] = [0]$
13. Line 4 divided by line 8: $[36] / [.99] = [36.4]$
14. Line 12 plus line 13: $[0] + [36.4] = [36.4]$
15. Line 3 minus line 4: $[92] - [36] = [56]$
16. Line 15 divided by line 8: $[56] / [.99] = [56.6]$
17. Line 16 minus line 12: $[56.6] - [0] = [56.6]$

Notes: (1) Enter the values on line 2 only for negative, in which case use the negative of line 5, 6, and 12. Do not use plus for negative, otherwise, line 14. (2) Round off A and D to nearest integer, in case needed plus.



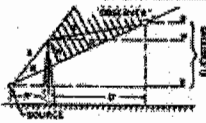
Worksheet 6
Noise Barrier

To find A, B, and C from Site Elevation and Distance

Fill out the following worksheet (All quantities are in feet)

Enter the values for:

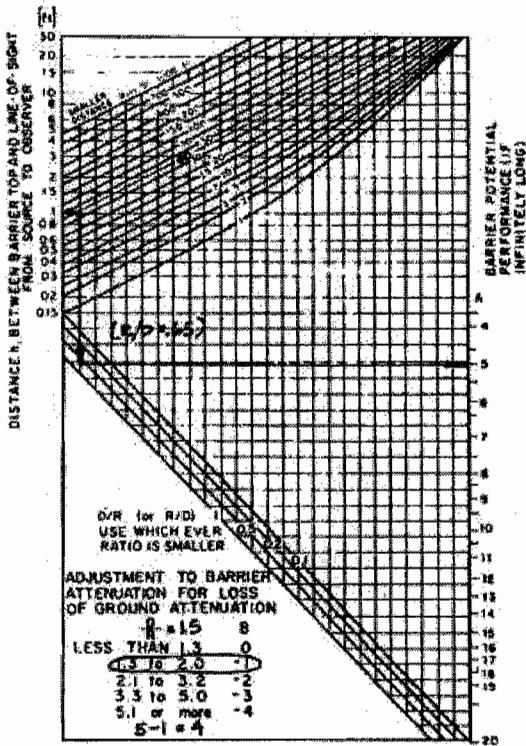
H = 16 h = 36
 B = 8 D = 56
 D = 25



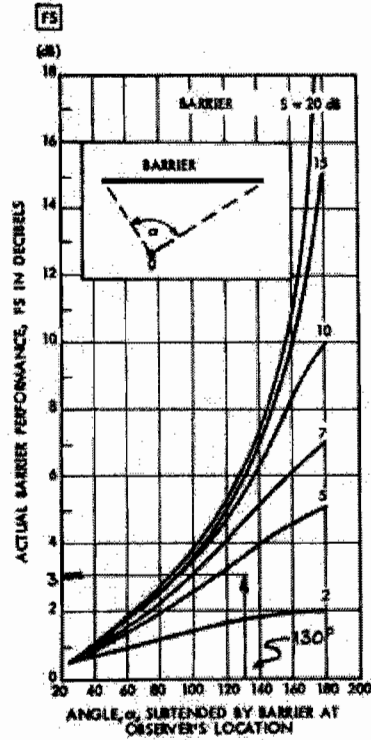
1. Elevation of barrier top minus elevation of source: $[H - h] = [16 - 36] = [-20]$
2. Elevation of observer minus elevation of source: $[D - B] = [25 - 8] = [17]$
3. Map distance between source and observer ($D' = D$): $[25]$
4. Map distance between barrier and source (D'): $[36]$
5. Line 2 divided by line 3: $[17] \div [25] = [0.68]$
6. Square the quantity on line 5 (i.e., multiply it by itself): $[0.68] \times [0.68] = [0.46]$
7. 40% of line 6: $[0.46] \times [0.4] = [0.18]$
8. One minus line 7: $[1] - [0.18] = [0.82]$
9. Line 2 times line 8 (will be negative if line 2 is negative): $[17] \times [0.82] = [14]$
10. Line 1 times line 9: $[-20] \times [14] = [-280]$
11. Line 10 times line 8: $[-280] \times [0.82] = [-230]$
12. Line 2 times line 10: $[17] \times [-280] = [-4760]$
13. Line 4 divided by line 11: $[36] \div [-4760] = [-0.0076]$
14. Line 13 plus line 12: $[-0.0076] + [-4760] = [-4760.0076]$
15. Line 3 minus line 4: $[25] - [36] = [-11]$
16. Line 15 divided by line 14: $[-11] \div [-4760.0076] = [0.0023]$
17. Line 16 minus line 13: $[0.0023] - [-0.0076] = [0.0053]$

Enter the value on line 17 only if negative. If it is positive, add the value on lines 5, 6, and 7; if it is negative, subtract the value on lines 5, 6, and 7 from the value on line 17. Round off to nearest integer. If it is one or more, drop the decimal point.

Worksheet 8
Noise Barrier



Worksheet 7



Chapter 7

The Use of Noise Measurements

Noise Calculations Are Best For HUD Use

There are two ways to determine noise levels for a site under review: the noise can be calculated or it can be measured. While one's first reaction might well be that it would obviously be better to go out and actually measure the noise levels at the site, calculated noise levels are really much better for implementing HUD's noise policy.

Calculated noise levels are developed using mathematical models that contain a variety of assumptions about the process of noise propagation as well as data on sound levels generated by typical sources (i.e. aircraft engines, automobile tires etc.). The model can be a complex computer model or it can be a simple desktop model such as the procedures in the *Noise Assessment Guidelines*. The models can also employ a variety of noise descriptors. (See chapter 1 for a discussion of noise descriptors.) Most noise studies done for the Federal Highway Administration, for example, use either the L_{10} or the L_{eq} noise descriptor. Many aircraft noise studies use the NEF or CNEL descriptor. All of these descriptors are compatible with the L_{dn} noise descriptor system that is preferred by HUD and the HUD noise regulation contains instructions for converting all of them into L_{dn} (sections 51.106(a)(1) and (2))

Whether produced by a sophisticated computer model or by the desktop *Noise Assessment Guidelines*, calculated noise levels are more useful for HUD needs than measured levels for two significant reasons: The first is that with noise measurements you have no good way to take into account future changes in the future noise environment. The houses we help build today are going to be around for a long time and it is very important that we determine, to the extent we can, the noise environment that will exist throughout the life of the buildings.

While there are clearly limitations on how far into the future we can reasonably project traffic levels for roads, railroads and airports, we can at least look 5 to 10 years ahead. The HUD noise regulation (24 CFR 51B) requires that "to the extent possible, noise exposure shall be projected to be representative of conditions that are expected to exist at a time at least 10 years beyond the date of the project or action under review." It is very easy to make these projections if you use the *Noise Assessment Guidelines* or a computer model to determine noise levels.

The second reason why we prefer that you calculate noise levels is that through the calculation process you can use monthly or yearly data to determine traffic levels. Thus you come up with a more typical picture of conditions. With noise measurements there is always the possibility that the day or even days chosen for measurements will not be typical and that the measurements may over or understate the problem. While the conscientious measurer will try to account for any unusual conditions, it isn't always possible. So long as cost considerations limit the number of days that measurements can be taken there will always be the problem of unrepresentative data. With calculations this isn't a problem. The computer model that generates contours for airports, for example, uses an entire years data to develop the average day. Certainly the results are more likely to be representative than the results that would be derived from just a few days measurements.

When Noise Measurements Are Useful

While it is the preferred procedure to calculate noise levels, there are a few situations where the noise models might not be accurate and it might be better to rely on measurements. One instance would be when there is insufficient or inadequate traffic data. Another case might be where you have a unique physical situation that is not accounted for in whatever mathematical model is available.

Obtaining good traffic data can be difficult. You may only be able to get gross data that simply lists total vehicles without making any distinctions between trucks and automobiles. Or you may not be able to get any reliable data on the percentage of traffic between 10 pm and 7 am. While the *Noise Assessment Guidelines* do contain some assumptions that you can use when you don't have all the data you need, there may be instances when you just don't think those assumptions would accurately portray the problem.

By the same token, there are certain physical situations that mathematical models such as the *Noise Assessment Guidelines* couldn't anticipate and therefore do not reflect in their formulas. For example, the *Guidelines* say that you don't have to calculate the noise levels for underground transit lines. Well what if the line is underground but there are large air vents that reach from the belowground tunnels to the surface? A great deal of noise can reach the surface through these vents but the *Noise Assessment Guidelines* don't have any way to take it into account. You couldn't treat it as if the subway line were aboveground because it isn't really and at least some of the noise is blocked. This would be a case where a noise measurement would probably be the best way to determine the noise levels. By the same token, the guidelines do not really take into account the sometimes significant amounts of reflected noise that can occur at urban sites surrounded by tall buildings, i.e. the canyon effect.

When Not to Use Measurements

One thing noise measurements should not be used for is to confirm or refute calculated noise levels, especially computer generated aircraft contours. Our experience with both the *Noise Assessment Guidelines* and with computer noise models is that both are quite accurate if done properly. If you are convinced that the calculations were done correctly, and if you believe that the data used were good, you should strongly discourage anyone who wants to take measurements because they think that measurements are inherently more accurate than calculations. Comparing measured noise levels to calculated levels is like comparing apples and oranges. The

calculated noise levels should include projected traffic levels, the measured ones will not. The calculated levels will be based on daily traffic counts derived by averaging months of data, the measured levels will, at best, reflect just a few days. (This is particularly true for aircraft noise contours. The day-to-day operations of an airport can vary significantly depending upon weather conditions and any one or two days worth of measurements are very likely to show different levels from those generated by a computer model employing a year of data to derive an average day.)

If you have determined that noise measurements are appropriate, you must make sure that they are done properly, otherwise the data will be useless. There are four elements to proper measurements: 1) where the measurements are taken; 2) when they are taken; 3) the type of equipment used; and 4) the actual measurement procedure.

Where measurements should be taken: The locations for noise measurements should be selected using the same criteria you would use to select a Noise Assessment Location for a *Noise Assessment Guidelines* calculation. The *Noise Assessment Guidelines* recommend that "assessments of the noise exposure should be made at representative locations around the site where significant noise is expected." Further, the *Guidelines* state that when selecting these locations you should consider those buildings containing noise sensitive uses which are closest to the predominant noise sources. Where quiet outdoor space is desired at a site, you should also select points in the outdoor area in question. Specifically, the "relevant measurement location for buildings is a point 2 meters (6.5 feet) from the facade." If there are no buildings yet the measurement point should be 2 meters from the closest point setback requirements would allow a building facade.

When measurements should be taken: Because measurements are only going to be taken for a few days at best, special care should be taken to make sure that the days selected are representative of average traffic levels. For highways, avoid both Monday and Friday, particularly before or after a holiday. In fact holiday periods, such as the Christmas/New Years season, should be avoided entirely. Highway traffic, or rather more importantly, truck traffic is likely to be down during

these periods and noise levels may be significantly lower than normal. On the other hand, holiday periods are often peak travel periods for airlines and measurements taken around airports then would show unusually high noise levels.

Whoever is taking the measurements should also check to make sure that there aren't any special circumstances that might affect traffic levels. For example road construction or repair work might divert additional traffic onto the road being measured, or divert traffic away. In both cases the noise levels measured would not be representative.

And finally, noise measurements should not be taken during extreme weather conditions both because of the possible effects on traffic levels but also because the weather conditions can exaggerate the actual noise levels.

Ideally, noise measurements should be taken over several days, spread over at least a few months. But given that time and money will normally preclude this, at least make sure the one or two days you can get are as close to typical as possible.

What equipment to use: There are many sound level meters on the market which are suitable for taking noise measurements for transportation sources. They need only to meet the requirements of American National Standard Specification for Type 1 Sound Level Meters: S1.4-1971. Type 1 sound level meters are "precision" meters and provide the most accurate measurements. They are also, of course, the most expensive. Fast time-averaging and A frequency weighting are to be used. The sound level meter with the A-weighting is progressively less sensitive to sound with frequencies below 1,000 hertz, somewhat as is the ear. With fast time averaging the sound level meter responds particularly to recent sounds almost as quickly as does the ear in judging the loudness of a sound. Fast time averaging has a time constant of about 1/8 second.

While a sound level measuring system that averages decibel readouts on a short term basis such as for every minute or every hour is acceptable, it would be far better if a system that actually provides a 24 hour integrated L_{dn} readout were used. Such a system eliminates the need for calculating the L_{dn} value, an area where many inexperienced consultants go astray. These systems are more expensive however, and the

consultant who doesn't do much noise work is unlikely to have one.

Measurement procedures: Detailed procedures for making sound level measurements are spelled out in the American National Standards Institute's Standard Methods ANSI S1.2-1962(R1976) *American National Standard Method for the Physical Measurement of Sound* and ANSI S1.13-1971(R1976) *American National Standard Methods for the Measurement of Sound Pressure Levels*.

Some of the basic procedures that should be followed are:

1. Measurements should normally be made over a continuous 24 hour period. If this is not possible, measurements may be made over a period of days but still must cover the entire 24 hour period. The selection of the days becomes even more critical so that they are as similar as possible. Sampling is not acceptable.
2. The sound level meter must be calibrated before each use.
3. The sound level meter should be provided with a wind screen.
4. Care should be taken to insure that there are no temporary obstructions, such as parked trucks, between the meter and the source.

The Noise Study

The noise study prepared to describe the measurement results should contain at least the following:

1. A map showing where the measurements were taken
2. A vicinity map showing the site and the major noise sources
3. A chart indicating the date, the time, and weather conditions when measurements were taken at each measurement location
4. The type of microphone used
5. Any variations from ANSI procedures
6. The results of the measurements in L_{dn} for each measurement location
7. Any unusual conditions that existed during the measurement period—i.e. construction activity, major traffic tieup, etc.
8. If an integrating sound level meter was not used, the calculations used to derive the L_{dn} value.



Noise Notebook

Chapter 4
Supplement

Sound Transmission Class Guidance

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Sound Transmission Class Guidance

Introduction

The Noise Guidebook, pages 33-37, provides an elementary discussion of STC, provides some STC ratings for common building materials and limited exterior and interior wall construction configurations, and describes a method to determine composite STC value of a wall containing a window or door. This update provides for an understanding of STC and provides an expanded material and construction classification for both internal and external building materials and typical construction patterns.

The intent of this chapter is not to endorse anyone building manufacturer or product over another but to keep HUD Environmental staff and other interested persons advised on the STC values of current building materials and practices which can be applied to HUD supported housing activities. Additional subsections on specific types of building materials, construction techniques and STC values will be periodically added.

As stated in the Noise Guidebook, "STC is used as a measure of a material's ability to reduce sound," and effectively mitigate any adverse noise levels that could impede a person's use of a residential or commercial structure. The higher the STC value, the greater the sound attenuation and presumably the quieter the structure's interior. In addition to STC, another interior building measuring technique to evaluate sound impact or absorption between floors is the Impact Isolation Class (IIC). Both techniques will be fully discussed after a brief explanation of the following basic principals related to sound.

What Is Sound

Sound is indicated in two ways: frequency and intensity. Frequency, the high or low pitch of sound, is expressed as the number of vibrations or cycles per second. One vibration or cycle per second is a hertz (Hz). For example on a piano the middle C note has a frequency of 262 Hz and the total range of a piano has a frequency of 27 Hz to 4186 Hz, well within the 16 to 20,000 Hz range of the human ear. The sound created by the piano is heard by the human ear by air pressure created by vibration. The greater the pressure, the greater the loudness or intensity of the sound heard by the human ear. Loudness is expressed in decibels (dB). The decibel is one-tenth of a "Bel," a unit named for Alexander Graham Bell. Since the ear is more sensitive to sound in the middle range of frequencies, loudness (intensity) is determined at a frequency of 1,000 Hz. On the decibel scale, 0 dB indicates a level of sound at 1,000 Hz, a sound just

barely audible to person with normal unimpaired hearing.

The A-weighted scale of a sound meter is designed to adjust the sensitivity of a sound meter to sounds of different frequencies that closely approximate how the human ear might respond to moderate sound levels in the 1,000 to 4,000 Hz range. The A-weighted sound level is used extensively for measuring community and transportation noises.

The Sound Transmission Class (STC), measured in decibels, is used to measure building material's ability to absorb sound. The STC can be used to measure sound absorption for both external building walls and internal walls in single and multifamily structures. The STC is measured by positioning a representative sample of the building material midway in an acoustical chamber, dividing the chamber in half or into two rooms. One section of the chamber contains the sound source and the other section the sound receiving equipment. The test procedure calls for a steady sound in the source room and measuring the sound level in both the source and receiving rooms. Differences in sound levels in the rooms determines the transmission loss characteristics of the material tested. For example, if a generated sound level of 80 dB is measured in the source room and 30 dB is measured in the adjacent receiving room, the tested material has a sound reduction intensity (STC) of 50dB.

The Impact Isolation Class (IIC), measured in decibels, is the classification system used to determine sound *impact* from floor to ceiling in a structure. The IIC is not to be used to measure airborne sound penetration or absorption in walls. The IIC numerical rating efficiency increases with improved impact isolation performance of the floor and its component sub flooring and materials. The rating scale values are generally equivalent to the airborne sound transmission loss. The impact of steps or vibrations on a floor and the reverberation of that noise in the room below is dependent upon the type, density and thickness of the floor and ceiling material, its absorption material, and quality of construction. A separate section on common floor materials and construction patterns to illustrate both the STC and IIC ratings is included.

Sound Reduction In Structures

Four general techniques for controlling noise in single-family and multifamily structures are:

1. Elimination of the cause or source of the noise,
2. Employ materials which absorb sound rather than reflect noise,

3. Use sound barriers in building layout to prevent sound from being transmitted from one adjoining area into another, and
4. Use design considerations to mask or absorb the noise.

A description of each technique and its applicability follows.

1. ELIMINATION:

The elimination of a noise source may be impractical or impossible to achieve, whether emanating from within or outside the structure. Examples include the operation of mechanical equipment within the dwelling unit, excessive corridor noise, air conditioning/heating system, elevators, exhaust fans, and outdoor transportation sounds such as automotive traffic, aircraft overflights, and commercial or industrial activities. Some noise reduction could be achieved through sound reduction or absorption techniques, but total elimination of these sounds may be impossible.

2. ABSORPTION:

Sound absorption control is the reduction of sound emanating from a source within a room. The extent of control depends upon the efficiency of the room's surfaces in absorbing rather than reflecting sound waves. A surface, which could theoretically absorb 100% of the sound would have a sound absorption coefficient of 1.0. A surface absorbing 35% of the sound would have a coefficient of 0.35. The effectiveness of wall construction as a means of sound absorption is tested in a similar manner as that of STC. If a generated sound level of 80 dB is observed in one room and 30 dB is measured in an adjacent room, the reduction in sound absorption for the intervening wall is 50 dB. In choosing the type of construction material for interior walls to absorb sound transmission, porosity and density of the material should be considered. Resistance to sound transmission increases with unit weight and decreases with porosity. For example, unpainted, open textured concrete block exhibits improved resistance to sound passage after sealing the surface with plaster or paint. The sealing of the pores result in a reduction in the sound absorption of the block. In multifamily structures using concrete block partitions to separate public areas such as stairwells and corridors from adjacent living areas, sound transmission reduction is achieved through plastering or painting the surface of the residential unit or living area on the opposite side of the partition. The sound is absorbed by the concrete masonry's unpainted side and its transmission is prevented into the residential unit or living area by the plaster or paint on the other side.

However, all of the design elements that are employed to control sound can be nullified through poor or improper construction practices. Sound

leakage will occur through any opening in a wall. An improperly fitted door or window is a prime source of sound leakage, as well as openings around ducts, pipes and electrical outlets which are improperly fitted or sealed.

3. SOUND BARRIERS:

Prudent building layout can be effective in controlling noise in single-family and multifamily housing. Sound waves can be prevented from being transmitted from one adjoining area to another. Closets, stairways and corridors can be used as buffers against airborne sound transmission between apartments or bedrooms. Concrete blocks or solid partitions can be employed to separate boiler rooms, air conditioning units, work areas or noisy public areas such as stairwells, corridors or lobbies from adjacent living areas. Partitions designed to absorb sound on one side and to retain sound absorption on the other can effectively block or reduce sound transmission into living areas intended for quiet use. The barrier should have a high sound absorption coefficient on one side and an equally high sound retention coefficient on the reverse side to effective. For example, unpainted porous concrete block would have a high sound absorption coefficient and a high noise retention coefficient on the reverse side if the porous surface in the living unit was effectively sealed by plaster or paint. Similarly, noise originators such as cloths washing machines, central heaters, and other noisy major appliances can be placed in a basement or utility rooms that are physically isolated from other living areas by walls or floors to absorb or block the emitted sounds.

4. DESIGN:

Design factors is the last major element to consider in controlling noise in single-family and multifamily structures. Design considerations offer the most infinite prospects for controlling noise due to the numerous types of building designs. For example, adjacent apartments can be arranged to have quiet areas (bedrooms or living rooms) abut and have noisy areas (kitchens and bathrooms) next to similar noisy areas. Apartment door openings into the same hallway can be staggered to reduce sound penetration into the unit directly across the hall. Since sound travels in a straight line, some of the sound from one doorway would be absorbed or diffused into the wall building material of the unit directly across the hall.

Windows should be placed as far away as possible from common walls. The closer the windows are to each other, the more sound will pass from one apartment to another. Medicine cabinets in opposite bathroom partitions should be offset. Cabinets placed back-to-back will transmit almost as much noise as an opening. Heating/cooling ducts are like speaking tubes, carrying noise from one room to another. Techniques should be employed to trap or splinter

sound or have turns in the ducts to reduce noise transference.

Noise producing equipment should be kept as far as possible from living areas and especially the bedrooms. Flexible connectors should be used to couple mechanical equipment to pipes and ducts. Pipes and ducts should not be firmly connected to parts of a building that could serve as sounding boards but be supported by resilient connections to solid supports. Where pipes and ducts pass through walls and floors, they should be isolated by gaskets. The acoustical integrity of a building or a building section with an otherwise adequate STC rating can be significantly reduced by a small hole or crack in the exterior wall or any other path that allows sound to bypass the exterior or interior walls and flow into other areas of the structure.

Weather and Sound

Air will attenuate noise at high frequencies usually from 1,000 Hz upwards. Sound absorption by air changes with wind speed, temperature and humidity. For example, wind blowing at slower speeds near the ground surface than at higher elevations will produce a bending of the sound upwards, resulting in less noise at ground level. Temperature gradients have a similar effect because the velocity of sound increases with the higher temperatures. If the temperature is higher near the ground than in the upper layers (usually the case during the day), the sound waves higher above the ground will travel slower and the sound will be bent upwards resulting in quieter conditions at ground level. The reverse is true at night, the temperature is lower near the ground, sound will bend towards the ground, increasing noise at the ground level. Wind and temperature- gradient effects can also account for the occasional freak reception of sounds over long distances, especially train whistles. The sound has been bent upwards by a temperature or wind gradient and after traveling some way at high level is bent down again by a reverse gradient.

Weather conditions can produce substantial variations of as much as +- 10 dB. For example, fog causes an increase in the absorption in the air. A moderately dense fog, visibility 150 feet, gives extra attenuation of 1 to 3 dB per 300 feet, depending on frequency. Similarly, snow forms an absorbent layer on the ground, which affects ground reflection, thereby reducing the sound level.

Weather can also be a significant source of noise in a structure. Common irritants are wind and rain. Wind whistling around a building, into ventilation grilles, screens or past other external architectural or artistic features can result in disturbing noise. Similarly, the

impact of rain on lightweight roofing, gutters or skylights can produce high internal noise levels.

STC Ratings for Wall, Floor and Window Materials and Assemblies

Appendix A illustrates sound transmission class ratings for wall, floor, window and door assemblies. The data used in this section is compiled from laboratory reports and various technical and trade literature publications received by this Office. Each item has an assigned STC rating, an accompanying sketch and a brief description of its composition or assembly. In addition, where possible, an Impact Isolation Class (IIC) rating has been assigned to floors to determine sound impact from floor to ceiling. Appendix A is a guide designed to aid HUD Housing and Environmental personal in determining STC values for most common housing construction practices and materials used in residential construction. The STC information can be used to supplement acoustical measurements by providing approximate interior noise levels for existing or proposed dwellings located in high noise areas by deducting the STC value from the exterior noise level. The data could also be used to advise HUD clients in determining and achieving compliance with the noise criteria stated in 24 CFR Part 51 B through the use of common construction materials and techniques to achieve noise attenuation for new construction and rehabilitation.

The appendix is divided into the following subsections:

1. WALLS
 - Exterior
 - Interior
2. FLOORS
 - Wood
 - Concrete
3. WINDOWS
4. DOORS
 - Exterior
 - Interior


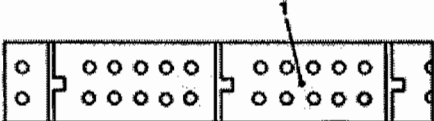
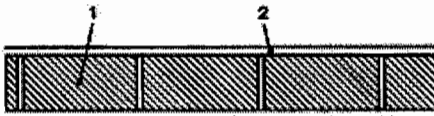
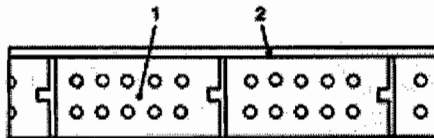
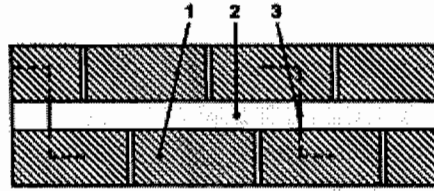
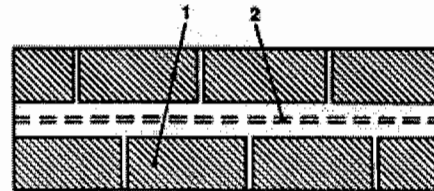
A bibliography of the reports, manufacturer's catalogs, technical papers, testing laboratories and other publications used in compiling this data is listed in the Appendix B.

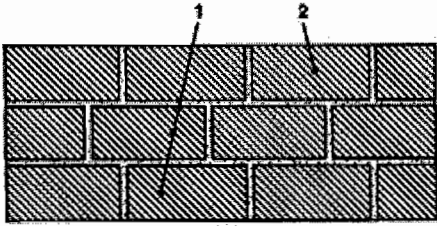
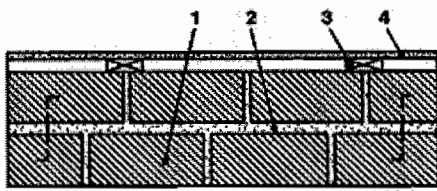
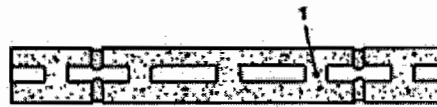
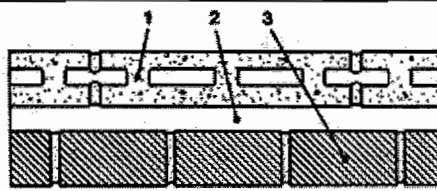
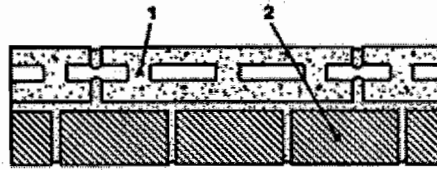
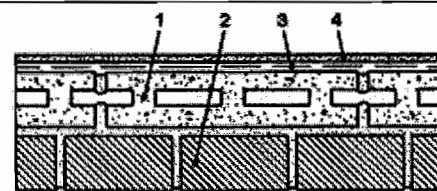
Appendix A STC Ratings

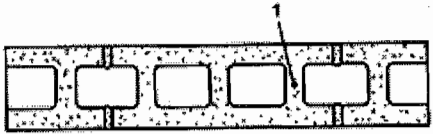
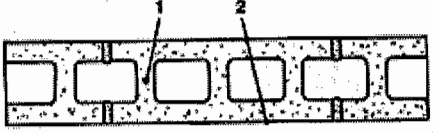
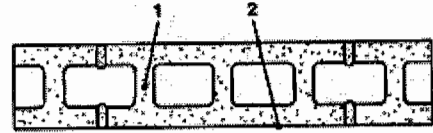
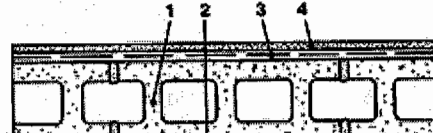
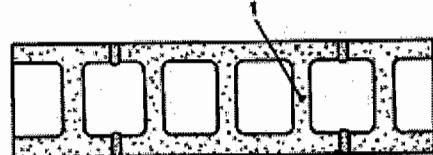
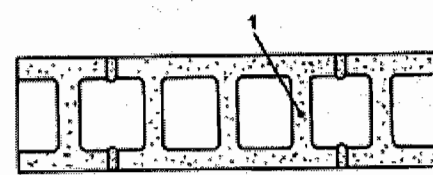
Appendix A

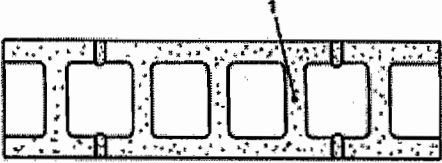
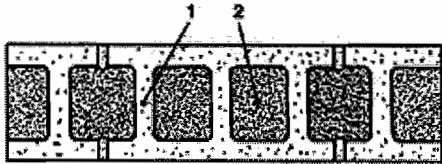
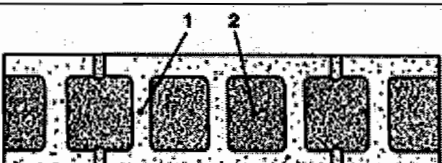
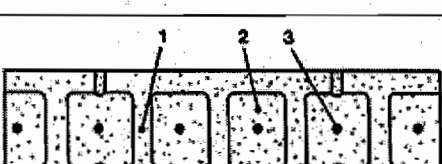
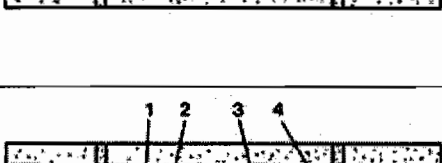

Walls: Exterior

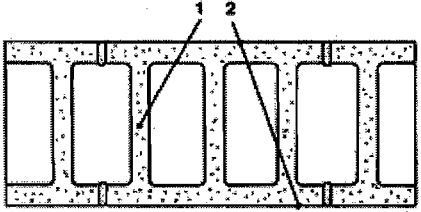
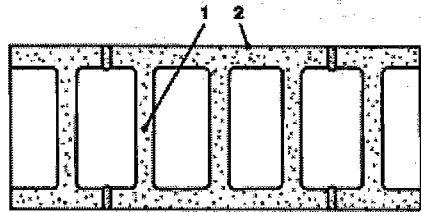


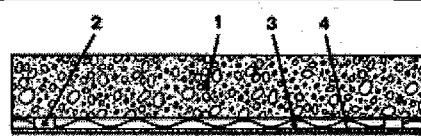
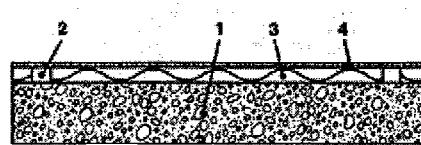
STC Ratings

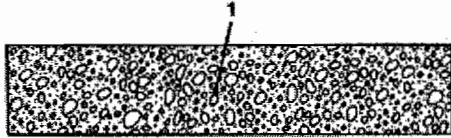
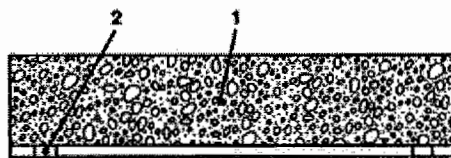
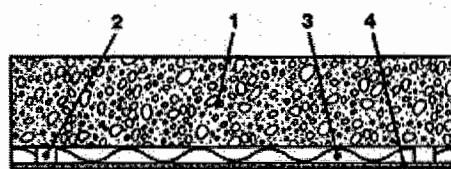
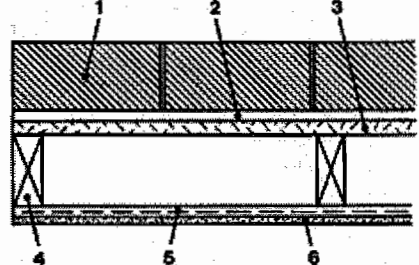
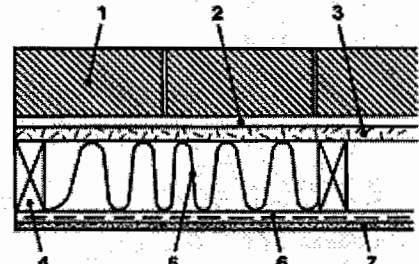
Sketch	Brief Description	STC
	1. 4" face brick, mortared together.	45
	1. Hollow core brick, mortared together.	51
	1. Common brick, mortared together. 2. 1/2" gypsum/sand plaster.	50
	1. Hollow core brick, mortared together. 2. 1/2" gypsum/sand plaster.	53
	1. Face brick, mortared together. 2. 2" air space. 3. Metal ties.	50
	1. Brick, mortared together. 2. 2 1/4" cavity filled with concrete grout and #6 bars vertically 48"o.c. and #5 bars horizontally 30"o.c.	59

Sketch	Brief Description	STC
	<ol style="list-style-type: none"> 1. Common brick, mortared together. 2. Face brick, mortared together. 	59
	<ol style="list-style-type: none"> 1. Common brick, mortared together. 2. 3/4" mortar-filled cavity with metal Z ties 24"o.c. in both directions. 3. 1x3" furring strips 16"o.c. and nailed vertically into mortar joints 12"o.c. 4. 1/2" gypsum board nailed 8"o.c. along edges and 12"o.c. in field. 	53
	<ol style="list-style-type: none"> 1. 4x8x16" 3-cell lightweight concrete masonry units (17 lbs./block). 	40
	<ol style="list-style-type: none"> 1. 4x8x18" 3-cell lightweight concrete masonry units (19 lbs./block). 2. 2" air cavity. 3. Common brick, mortared together. 	54
	<ol style="list-style-type: none"> 1. 4x8x18" 3-cell lightweight concrete masonry units (19 lbs./block). 2. Common brick, mortared together. (brick headers after every second course of block to tie the withes together). 	51
	<ol style="list-style-type: none"> 1. 4x8x18" 3-cell lightweight concrete masonry units (19 lbs./block). 2. Common brick, mortared together. 3. Resilient channels. 4. 1/2" gypsum board screwed to channels. 	56

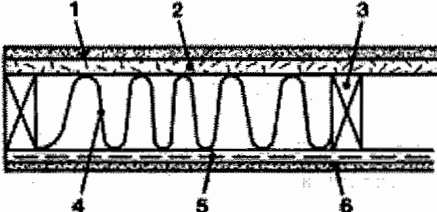
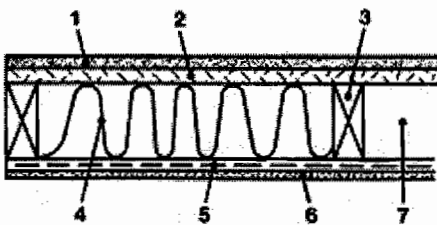
Sketch	Brief Description	STC
	<ol style="list-style-type: none"> 1. 6x8x16" 3-cell lightweight concrete masonry units (21 lbs./block). 	44
	<ol style="list-style-type: none"> 1. 6x8x16" 3-cell lightweight concrete masonry units (21 lbs./block). 2. Paint both sides with primer-sealer coat and finish coat of latex. 	46
	<ol style="list-style-type: none"> 1. 6x8x18" 3-cell dense concrete masonry units (36 lbs./block). 2. Paint both sides with primer-sealer coat and finish coat of latex. 	48
	<ol style="list-style-type: none"> 1. 6x8x16" 3-cell lightweight concrete masonry units (21 lbs./block). 2. Paint, primer-sealer coat and finish coat of latex. 3. Resilient channels, 24" o.c. 4. 1/2" gypsum board screwed to channels. 	53
	<ol style="list-style-type: none"> 1. 8x8x16" 3-cell lightweight concrete masonry units (28 lbs./block). 	45
	<ol style="list-style-type: none"> 1. 8x8x18" 3-cell lightweight concrete masonry units (34 lbs./block). 	49

Sketch	Brief Description	STC
	1. 8x8x18" 3-cell lightweight concrete masonry units (38 lbs./block).	49
	1. 8x8x18" 3-cell lightweight concrete masonry units (34 lbs./block). 2. Expanded mineral loose-fill insulation.	51
	1. 8x8x18" 3-cell lightweight concrete masonry units (38 lbs./block). 2. Expanded mineral loose-fill insulation.	51
	1. 8x8x18" 3-cell lightweight concrete masonry units (33 lbs./block). 2. Grout in cells. 3. #5 bar in each cell.	48
	1. 8x8x18" 3-cell lightweight concrete masonry units (33 lbs./block). 2. Grout in cells. 3. #5 bar each cell. 4. Paint two coats flat latex each side.	55
	1. 12x8x16" 3-cell lightweight concrete masonry units (43 lbs./block).	39





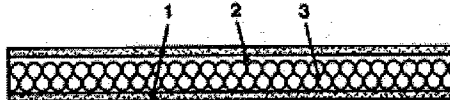
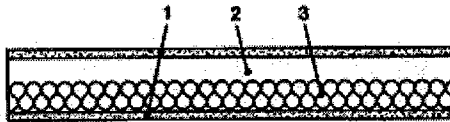
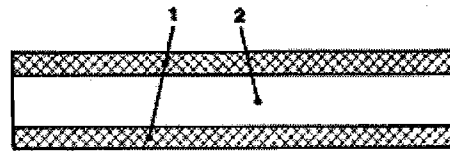
Sketch	Brief Description	STC
	<ol style="list-style-type: none"> 1. 12x8x16. 3-cell lightweight concrete masonry units (43 lbs./block). 2. Paint both sides with 3 coats of latex block filler. 	50
	<ol style="list-style-type: none"> 1. 12x8x16" 3-cell lightweight concrete masonry units (43 lbs./block). 2. Paint one side only with 3 coats latex block filler. 	51
	<ol style="list-style-type: none"> 1. 6" cast concrete wall (71 psf). 	57
	<ol style="list-style-type: none"> 1. 6" cast concrete wall. 2. "Z" furring channels. 3. 1/2" gypsum board. 	59
	<ol style="list-style-type: none"> 1. 6" cast concrete wall. 2. "Z" furring channels. 3. 1", 8-pcf rockwool. 4. 1/2" gypsum board. 	62
	<ol style="list-style-type: none"> 1. 6" cast concrete wall. 2. 2x2" wood furring. 3. 1 1/2" 4-pcf rockwool. 4. 1/2" gypsum board. 	63

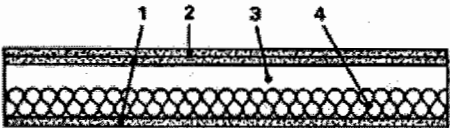
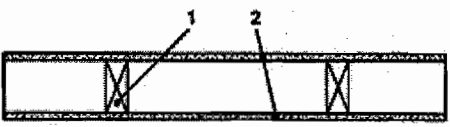
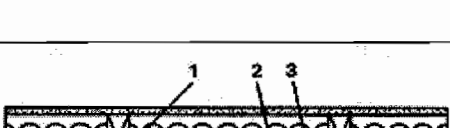
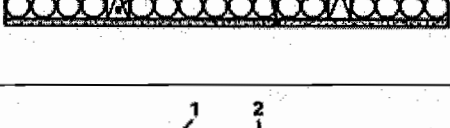

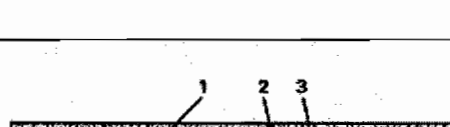
Sketch	Brief Description	STC
	1. 8" cast concrete wall (96.6 psf).	58
	1. 8" cast concrete wall. 2. 2x2" wood furring. 3. 1/2" gypsum board.	59
	1. 8" cast concrete wall. 2. 2x2" wood furring. 3. 1 1/2", 4 psf rockwall. 4. 1/2" gypsum board.	63
	1. Face brick. 2. 1/2" air space, with metal ties. 3. 3/4" insulation board sheathing. 4. 2x4" studs 16"o.c. 5. Resilient channel. 6. 1/2" gypsum board.	54
	1. Face brick. 2. 1/2" air space, with metal ties. 3. 3/4" insulation board sheathing. 4. 2x4" studs 16"o.c. 5. Fiberglas building insulation (3 1/2"). 6. Resilient channel. 7. 1/2" gypsum board.	56

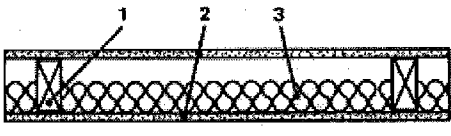
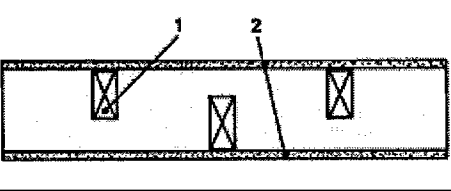
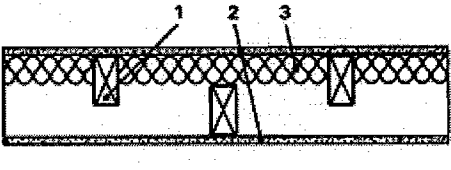
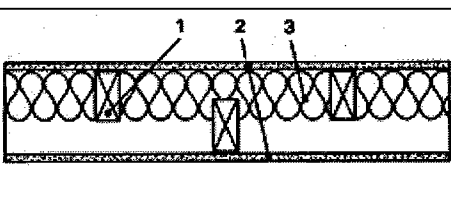
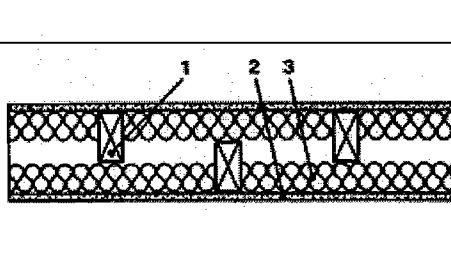
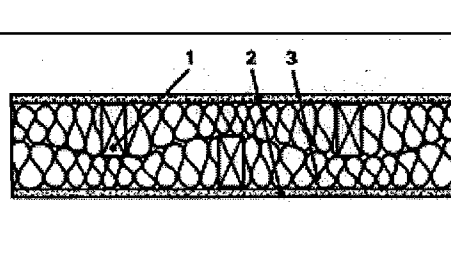
Sketch	Brief Description	STC
	<ol style="list-style-type: none"> 1. Face brick (9x14' wall). 2. 1/2" air space, with metal ties. 3. 3/4" insulation board sheathing. 4. 2x4" studs 16" o.c. 5. Fiberglass building insulation (3 1/2"). 6. Resilient channel. 7. 1/2" gypsum board. 8. Wall penetrated by 6x5' picture window 1" glazed insulating glass. 	39
	<ol style="list-style-type: none"> 1. 7/8" stucco. 2. No.15 felt building paper and 1" wire mesh. 3. 2x4" studs 16" o.c. 4. Resilient channel. 5. 1/2" gypsum board screwed to channel. 	49
	<ol style="list-style-type: none"> 1. 7/8" stucco. 2. No.15 felt building paper and 1" wire mesh. 3. 2x4" studs 16" o.c. 4. Fiberglass building insulation (3 1/2"). 5. Resilient channel. 6. 1/2" gypsum board screwed to channel. 	57
	<ol style="list-style-type: none"> 1. 5/8 x 10" redwood siding. 2. 1/2" insulation board sheathing. 3. 2x4" wood studs 16" o.c. 4. Resilient channel. 5. 1/2" gypsum board screwed to channel. 	43

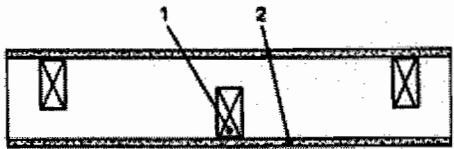
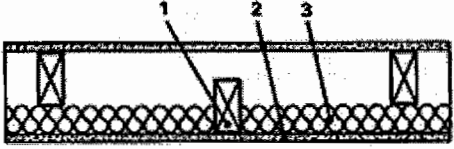
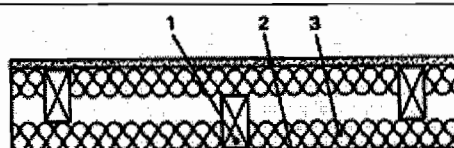
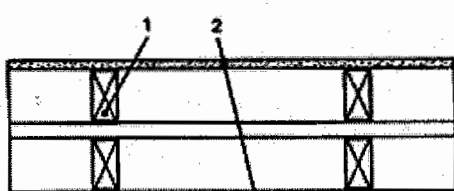
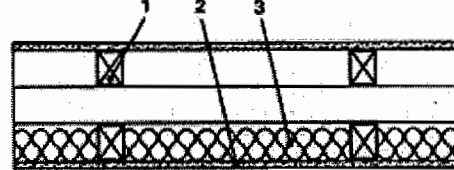
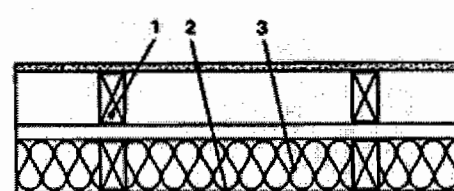
Sketch	Brief Description	STC
	<ol style="list-style-type: none"> 1. 5/8x10" redwood siding. 2. 1/2" insulation board sheathing. 3. 2x4" wood studs 16"o.c. 4. Fiberglass building insulation (3 1/2"). 5. Resilient channel. 6. 1/2" gypsum board screwed to channel. 	47
	<ol style="list-style-type: none"> 1. 5/8x10" redwood siding (9x14' wall). 2. 1/2" insulation board sheathing. 3. 2x4" wood studs 16.o.c. 4. Fiberglass building insulation (3 1/2"). 5. Resilient channel. 6. 1/2" gypsum board screwed to channel. 7. <ul style="list-style-type: none"> a. Wall penetrated by a 6x5' picture window, 1" glazed insulating glass. b. Wall penetrated by a 6x5' 16 panel window, glazed single strength. 	(a.38) (b.35)

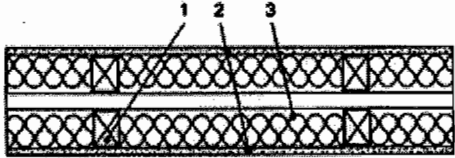
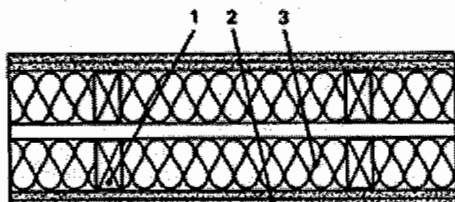
WALLS: Interior: Wooden Studs

Sketch	Brief Description	STC
	<ol style="list-style-type: none"> 1. 1/2" gypsum board. 2. 3/16" plywood laminated with contact cement. 	28
	<ol style="list-style-type: none"> 1. 1/2" gypsum board. 2. 1/2" wood-fiber board laminated with gypsum joint compound. 	30
	<ol style="list-style-type: none"> 1. 2x4" studs, 16"o.c. 2. 5/8" gypsum board screwed to studs. 	28
	<ol style="list-style-type: none"> 1. 1/2" gypsum board, no studs. 2. 2 1/2" air space. 	30
	<ol style="list-style-type: none"> 1. 1/2" gypsum board, no studs. 2. 2 1/2" air space. 3. 2" thick sound attenuation blanket. 	44
	<ol style="list-style-type: none"> 1. 1/2" gypsum board, no studs. 2. 3 5/8" air space. 3. 2" thick sound attenuation blanket. 	45
	<ol style="list-style-type: none"> 1. 1 3/8" thick wood-fiber board nailed to 2x4" plates top and bottom and painted both sides. 2. 3 1/2" air cavity. 	44


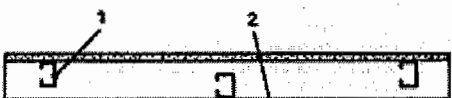



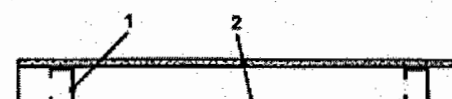
Sketch	Brief Description	STC
	<ol style="list-style-type: none"> 1. 1/2" gypsum board, no studs. 2. 1/2" gypsum board laminated to base layer with gypsum joint compound. 3. 3 5/8" air cavity. 4. 2" thick sound attenuation blanket. 	48
	<ol style="list-style-type: none"> 1. 2x4" studs, 16"o.c. 2. 3/8" gypsum board nailed to studs. 	35
	<ol style="list-style-type: none"> 1. 2x4" studs, 16"o.c. 2. 3/8" gypsum board nailed to studs. 3. 3" thick sound attenuation blanket. 	41
	<ol style="list-style-type: none"> 1. 2x4" studs, 16"o.c. 2. 1/2" gypsum board screwed to studs. 	34
	<ol style="list-style-type: none"> 1. 2x4" studs, 16"o.c. 2. 1/2" gypsum board screwed to studs. 3. 2" thick sound attenuation blanket. 	37
	<ol style="list-style-type: none"> 1. 2x4" studs, 24"o.c. 2. 1/2" gypsum board screwed to studs. 	36

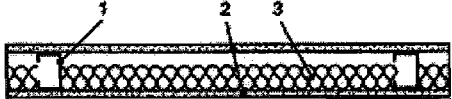

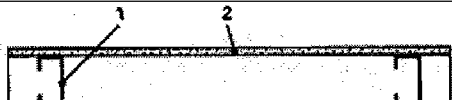


Sketch	Brief Description	STC
	<ol style="list-style-type: none"> 1. 2x4" studs, 24" o.c. 2. 1/2" gypsum board screwed to studs. 3. 2" thick sound attenuation blanket. 	40
	<ol style="list-style-type: none"> 1. 2x4" studs spaced 16" o.c. and staggered 8" o.c. on 2x6" plates. 2. 1/2" gypsum board screwed 12" o.c. 	39
	<ol style="list-style-type: none"> 1. 2x4" studs spaced 16" o.c. and staggered 8" o.c. on 2x6" plates. 2. 1/2" gypsum board screwed 12" o.c. 3. 2 1/4" thick sound attenuation blanket. 	48
	<ol style="list-style-type: none"> 1. 2x4" studs spaced 16" o.c. and staggered 8" o.c. on 2x6" plates. 2. 1/2" gypsum board screwed 12" o.c. 3. 3 1/2" thick sound attenuation blanket. 	49
	<ol style="list-style-type: none"> 1. 2x4" studs spaced 16" o.c. and staggered 8" o.c. on 2x6" plates. 2. 1/2" gypsum board screwed 12" o.c. 3. 2 1/4" thick sound attenuation blankets in both stud cavities. 	49
	<ol style="list-style-type: none"> 1. 2x4" studs spaced 16" o.c. and staggered 8" o.c. on 2x6" plates. 2. 1/2" gypsum board screwed 12" o.c. 3. 3 1/2" thick sound attenuation blankets in both stud cavities. 	51

Sketch	Brief Description	STC
	<ol style="list-style-type: none"> 1. 2x4" studs spaced 24"o.c. and staggered 12"o.c. on 2x6" plates. 2. 1/2" type X gypsum board screwed 12"o.c. 	42
	<ol style="list-style-type: none"> 1. 2x4" studs spaced 24"o.c. and staggered 12"o.c. on 2x6" plates. 2. 1/2" gypsum board screwed to studs. 3. 2" thick sound attenuation blanket. 	46
	<ol style="list-style-type: none"> 1. 2x4" studs spaced 24"o.c. and staggered 12"o.c. on 2x6" plates. 2. 1/2" type X gypsum board screwed 12"o.c. 3. 2" thick sound attenuation blankets in both stud cavities. 	48
	<ol style="list-style-type: none"> 1. Double row of 2x4" studs 16"o.c. on separate plates spaced 1" apart. 2. 1/2" type X gypsum board screwed 12"o.c. 	47
	<ol style="list-style-type: none"> 1. Double row of 2x3" studs 16"o.c. on 2x3" plates spaced 2 1/2" apart. 2. 1/2" gypsum board screwed 16"o.c. 3. 2 1/4" thick sound attenuation blanket. 	55
	<ol style="list-style-type: none"> 1. Double row of 2x4" studs 16"o.c. on separate plates spaced 1" apart. 2. 1/2" type X gypsum board screwed 12"o.c. 3. 3 1/2" thick sound attenuation blanket. 	56

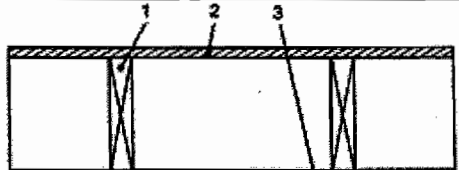
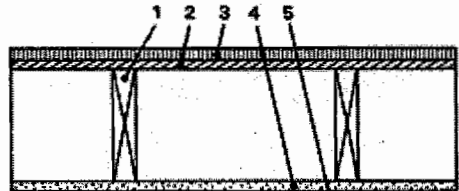
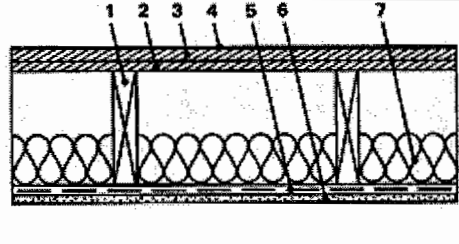
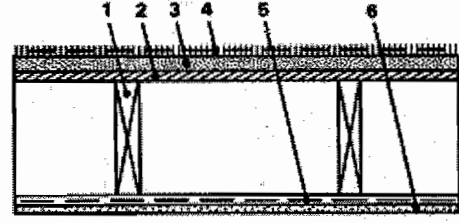
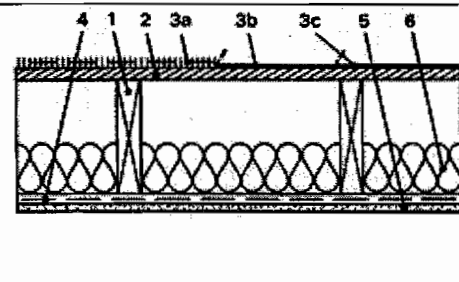
Sketch	Brief Description	STC
	<ol style="list-style-type: none"> 1. Double row of 2x4" studs 16"o.c. on separate plates spaced 1" apart. 2. 1/2" gypsum board screwed 12"o.c. 3. 2 1/4" thick sound attenuation blankets in both stud cavities. 	56
	<ol style="list-style-type: none"> 1. Double row of 2x4" studs 16.o.c. on separate plates spaced 1" apart. 2. Double row of 5/8" type X gypsum board screwed 16.o.c. 3. 3 1/2" thick sound attenuation blankets in both stud cavities. 	63

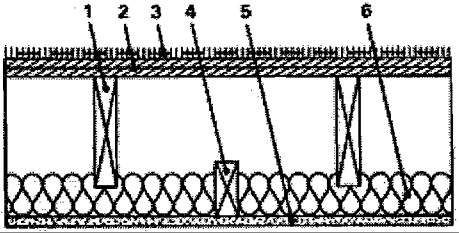
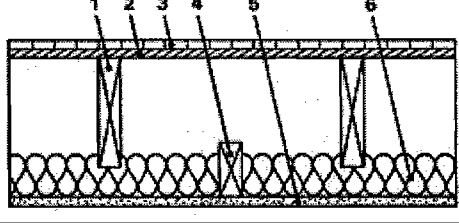
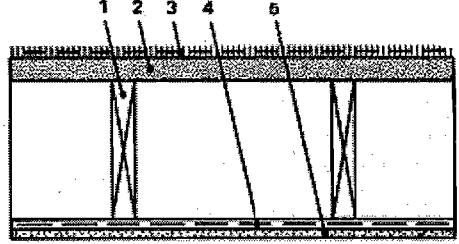
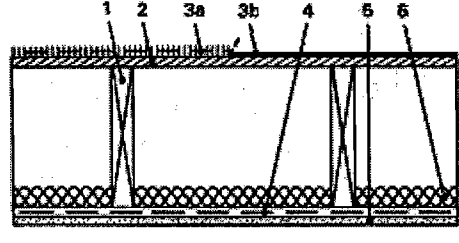
WALLS: Interior: Metal Studs

Sketch	Brief Description	STC
	<ol style="list-style-type: none"> 1. 1 5/8" metal studs, 24"o.c. 2. 1/2. vinyl-faced gypsum board screwed to studs. 	27
	<ol style="list-style-type: none"> 1. 1 5/8" metal studs spaced 24"o.c. and staggered 12"o.c. on 2 1/2" metal tracks. 2. 1/2" gypsum board screwed to studs. 	34
	<ol style="list-style-type: none"> 1. 1 5/8" metal studs, 24"o.c. 2. 5/8" gypsum board screwed 12"o.c. at edges and 24"o.c. in field. 	37
	<ol style="list-style-type: none"> 1. 1 5/8" metal studs spaced 24"o.c. and staggered 12"o.c. on 2 1/2" metal channels. 2. 5/8" gypsum board screwed to studs. 	38
	<ol style="list-style-type: none"> 1. 2 1/2" metal studs, 24"o.c. 2. 1/2" vinyl-faced gypsum board screwed to studs. 	27
	<ol style="list-style-type: none"> 1. 2 1/2" metal studs, 24"o.c. 2. 5/8" gypsum board screwed to studs. 	37

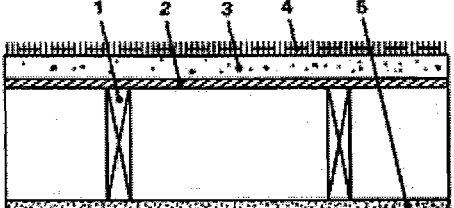
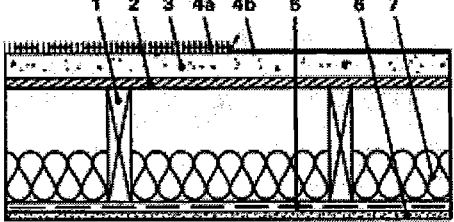
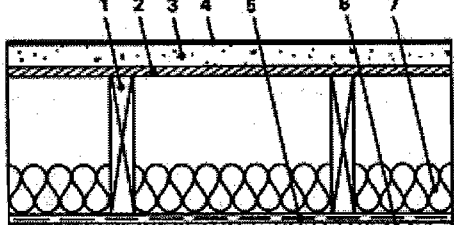
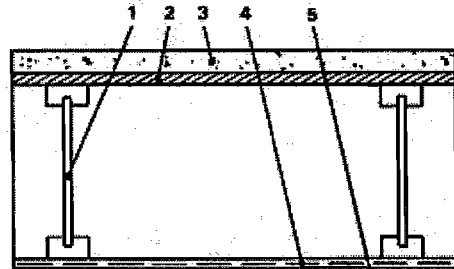
Sketch	Brief Description	STC
	<ol style="list-style-type: none"> 1. 2 1/2" metal studs, 24"o.c. 2. 5/8" gypsum board screwed 12"o.c. at edges and 24"o.c. in field. 3. 1 1/2" thick sound attenuation blanket. 	42
	<ol style="list-style-type: none"> 1. 2 1/2" metal studs, 24"o.c. 2. 1/2" gypsum board screwed to studs. 3. 2" thick sound attenuation blanket. 	44
	<ol style="list-style-type: none"> 1. 3 5/8" metal studs, 24"o.c. 2. 1/2. gypsum board screwed to studs. 	27
	<ol style="list-style-type: none"> 1. 3 5/8" metal studs, 24"o.c. 2. 1/2" gypsum board screwed to studs. 	36
	<ol style="list-style-type: none"> 1. 3 5/8" metal studs, 24"o.c. 2. 1/2" gypsum board screwed to studs. 3. 2" thick sound attenuation blanket. 	44

Floors: Wood

Sketch	Brief Description	STC (IIC)
	<ol style="list-style-type: none"> 1. 2x8" wooden joists, 16"o.c. 2. 7/8" tongue and groove nailed to joists. 3. 3/8" gypsum nailed to joists. 	NA (32)
	<ol style="list-style-type: none"> 1. 2x8" wooden joists, 16"o.c. 2. 1/2" plywood nailed. 3. 25/32" hardwood flooring. 4. 1/2" gypsum nailed to joists. 5. Ceiling tire. 	NA (37)
	<ol style="list-style-type: none"> 1. 2x8" wooden joists, 16"o.c. 2. 5/8" tongue and groove plywood nailed with 8d nails 6"o.c. 3. 3/8" plywood stapled 3"o.c. at edges and 6"o.c. in field. 4. .075" sheet vinyl. 5. Resilient channels, 24"o.c. 6. 5/8" gypsum board screwed 12"o.c. 7. 3" thick sound attenuation blanket. 	46 (44)
	<ol style="list-style-type: none"> 1. 2x8" wooden joists, 16"o.c. 2. 5/8" plywood nailed with 8d nails. 3. 1/2" nominal wood-fiber board glued to plywood. 4. 44 oz. carpet on 50 oz. pad. 5. Resilient channels, 24"o.c. 6. 5/8" gypsum board screwed 12"o.c. 	48 (65)
	<ol style="list-style-type: none"> 1. 2x8" wooden joists, 16"o.c. 2. 19/32" tongue and groove plywood nailed with 8d nails 6"o.c. at edges and 10"o.c. in field. 3. <ol style="list-style-type: none"> a. 44 oz. carpet on 40 oz. hair pad. b. .075" sheet vinyl. c. 1/16" sheet vinyl. 4. Resilient channels, 24"o.c. 5. 5/8" gypsum board screwed 12"o.c. 6. 3" thick sound attenuation blanket. 	48 (a. 69) (b. 45) (c.43)

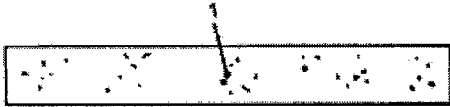
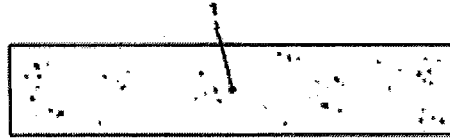
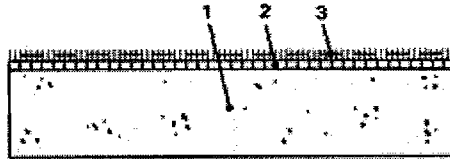
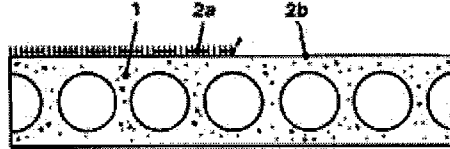
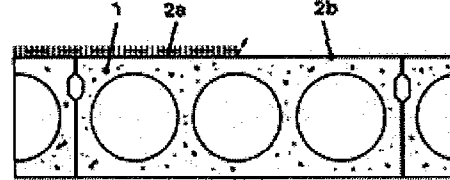
Sketch	Brief Description	STC (IIC)
	<ol style="list-style-type: none"> 1. 2x8" wooden joists, 16"o.c. 2. 1 1/8" tongue and groove plywood nailed 6"o.c. at edges and 16"o.c. in field. 3. 44 oz. wool carpet on 40 oz. hair pad. 4. 2x4" ceiling joists, 16"o.c. and staggered between floor joists. 5. 5/8" gypsum board nailed to 2x4" joists. 6. 3" thick sound attenuation blanket. 	53 (80)
	<ol style="list-style-type: none"> 1. 2x8" wooden joists, 16"o.c. 2. 1/2" plywood nailed with 8d nails 6"o.c. at edges and 16"o.c. in field. 3. 25/32" wood strip flooring nailed to sub floor. 4. 2x4" wooden ceiling joists, 16"o.c. and staggered between floor joists. 5. 5/8" gypsum board nailed to 2x4" joists. 6. 3" thick sound attenuation blanket. 	54 (45)
	<ol style="list-style-type: none"> 1. 2x10" wooden joists, 16"o.c. 2. 1 11/32" tongue and groove wood-fiber board. 3. 44 oz. wool carpet on 40 oz. hair pad. 4. Resilient channels, 24"o.c. 5. 5/8" gypsum screwed 12"o.c. 	49 (68)
	<ol style="list-style-type: none"> 1. 2x10" wooden joists, 16"o.c. 2. 19/32" tongue and groove plywood. 3. <ol style="list-style-type: none"> a. Carpet and pad. b. Vinyl tile. 4. Resilient channels, 24"o.c. 5. 5/8" gypsum screwed 12"o.c. 6. 1" thick sound attenuation blanket. 	51 (a. 74) (b. 51)

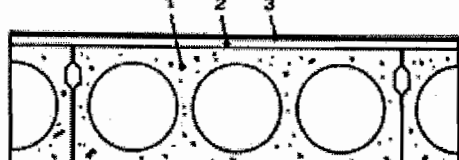


Sketch	Brief Description	STC (IIC)
	<ol style="list-style-type: none"> 1. 2x10" wooden joists, 16"o.c. 2. 1 11/32" tongue and groove wood-fiber board. 3. 40 oz. wool carpet on 80 oz. sponge rubber pad. 4. Resilient channels, 24"o.c. 5. 1/2" gypsum board screwed 12"o.c. 6. 3" thick sound attenuation blanket. 	50 (72)
	<ol style="list-style-type: none"> 1. 2x10" wooden joists, 16"o.c. 2. 5/8" plywood sub floor glued to joists, nailed with 8d nails 12"o.c. 3. 1/4" particleboard glued to plywood. 4. 1/2" parquet wood flooring glued to particleboard. 5. 1/2" type-X gypsum board screwed 12"o.c. 6. 3" thick sound attenuation blanket. 	43 (NA)
	<ol style="list-style-type: none"> 1. 2x10" wooden joists, 16"o.c. 2. 5/8" tongue and groove plywood nailed with 8d nails 6"o.c. along edges and 10"o.c. in field. 3. Two layers of 5/8" gypsum board attached with screws 12"o.c. to underside of sub floor. 4. <ol style="list-style-type: none"> a. 44 oz. carpet on 40 oz. hair pad. b. 1/16" vinyl asbestos tile. 5. Resilient channels, 24"o.c. 6. 5/8" gypsum board screwed 12"o.c. 7. 3 1/2" thick sound attenuation blanket. 	56 (a. 74) (b. 50)
	<ol style="list-style-type: none"> 1. 2x10" wooden joists, 16"o.c. 2. 5/8" tongue and groove plywood nailed with 8d nails 6"o.c. along edges and 10"o.c. in field. 3. <ol style="list-style-type: none"> a. 44 oz. carpet on 40 oz. hair pad. b. 1/16" vinyl asbestos tile. 4. 5/8" gypsum board nailed 7"o.c. 5. Two layers of 5/8" gypsum board suspended by wire hangers 5" long in a 2x4' heavy-duty T grid ceiling system. 6. 3 1/2" thick sound attenuation blanket. 	49 (a. 68) (b. 47)

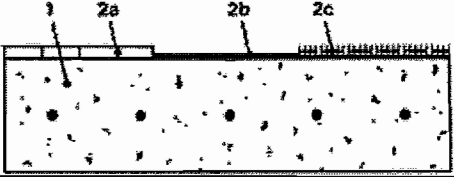
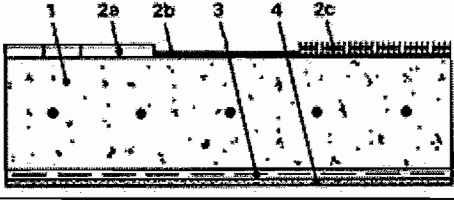
Sketch	Brief Description	STC (IIC)
	<ol style="list-style-type: none"> 1. 2x8" wooden joists, 16"o.c. 2. 5/8" tongue and groove plywood nailed to joists with 8d nails 6"o.c. at edges and 10"o.c. in field. 3. 1 5/8" lightweight concrete over 4 mil. polyethylene film. 4. 44 oz. carpet on 40 oz. hair pad. 5. 5/8" gypsum board nailed to joists. 	47 (66)
	<ol style="list-style-type: none"> 1. 2x8" wooden joists, 16"o.c. 2. 5/8" tongue and groove plywood nailed to joists with 8d nails 6"o.c. at edges and 10"o.c. in field. 3. 1 5/8" thick lightweight concrete over 4 mil. polyethylene film. 4. <ol style="list-style-type: none"> a. 44 oz. carpet on 40 oz. hair pad. b. .075" sheet vinyl. 5. Resilient channels, 24"o.c. 6. 5/8" gypsum board screwed 12"o.c. 7. 3" thick sound attenuation blanket. 	53 (a. 74) (b. 47)
	<ol style="list-style-type: none"> 1. 2x10" wooden joists. 16"o.c. 2. 5/8" plywood nailed to joists. 3. 3 1/2" thick lightweight concrete, 13 psf. 4. Cushioned vinyl. 5. Resilient channels, 24"o.c. 6. 5/8" gypsum board screwed to channels. 7. 3 1/2" thick sound attenuation blanket. 	NA (51)
	<ol style="list-style-type: none"> 1. Plywood web I-beams 12" deep and 24"o.c. 2. 3/4" plywood sub floor nailed with 6d nails 6"o.c. at edges and 10"o.c. in field. 3. 1 1/2" thick lightweight concrete, 15 psf. 4. Resilient channels, 24"o.c. 5. 5/8" gypsum board screwed 12"o.c. 	57 (NA)

Sketch	Brief Description	STC (IIC)
	<ol style="list-style-type: none"> 1. Plywood web I-beams 12" deep and 24" o.c. 2. 3/4" plywood sub floor nailed with 6d nails 6" o.c. at edges and 10" o.c. in field. 3. 1 1/2" thick lightweight concrete, 15 psf. 4. <ol style="list-style-type: none"> a. 44 oz. carpet on 40 oz. hair pad. b. .07" vinyl tile. 5. Resilient channels, 24" o.c. 6. 5/8" gypsum board screwed 12" o.c. 7. 3" thick sound attenuation blanket. 	58 (a. 77) (b. 50)
	<ol style="list-style-type: none"> 1. 2x10" wooden joists, 16" o.c. 2. 5/8" plywood glued to joists, nailed with 8d nails 12" o.c. 3. 1/4" particleboard glued to plywood. 4. 1/2" fiberboard glued to particleboard. 5. <ol style="list-style-type: none"> a. 76 oz. carpet on 50 oz. hair pad. b. 1/2" parquet wood flooring. 6. Resilient channels, 24" o.c. 7. 1/2" type-X gypsum board screwed 12" o.c. 8. 3" thick sound attenuation blanket. 	51 (NA)
	<ol style="list-style-type: none"> 1. 2x10" wooden joists, 16" o.c. 2. 5/8" plywood sub floor nailed with 8d nails 6" o.c. along edges, 10" o.c. in field. 3. 1 1/2" thick lightweight concrete over 15 lb. asphalt felt. 4. <ol style="list-style-type: none"> a. 20 oz. carpet on 40 oz. hair pad. b. 1/16" thick vinyl-asbestos tile. 5. Resilient channels, 24" o.c. 6. 1/2" type-X gypsum board screwed 12" o.c. 	56 (NA)
	<ol style="list-style-type: none"> 1. 2x10" wooden joists, 16" o.c. 2. 5/8" plywood sub floor nailed with 8d nails 6" o.c. along edges, 10" o.c. in field. 3. 1 1/2" thick lightweight concrete over 15 lb. asphalt felt. 4. <ol style="list-style-type: none"> a. 20 oz. carpet on 40 oz. hair pad. b. 1/16" thick vinyl-asbestos tile. 5. Resilient channels, 24" o.c. 6. 5/8" type-X gypsum board screwed 12" o.c. 7. 3 1/2" thick sound attenuation blanket. 	61 (NA)

FLOORS: Concrete

Sketch	Brief Description	STC (IIC)
	<p>1. 4" thick concrete slab, 54 psf.</p>	<p>44 (25)</p>
	<p>1. 6" thick concrete slab, 75 psf.</p>	<p>55 (34)</p>
	<p>1. 6" thick concrete slab. 2. 1/2" wood-fiber board glued to concrete. 3. 44 oz. carpet on 40 oz. hair pad.</p>	<p>NA (81)</p>
	<p>1. 6" thick hollow-core concrete panel, 45 psf. 2. a. Carpet and pad. b. No floor covering.</p>	<p>48 (a. 69) (b. 23)</p>
	<p>1. 8" thick hollow-core concrete panel, 57 psf. 2. a. 66 oz. carpet on 50 oz. hair pad. b. No floor covering.</p>	<p>50 (a. 74) (b. 28)</p>

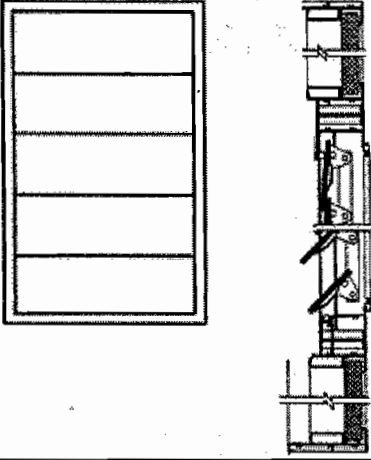
Sketch	Brief Description	STC (IIC)
	<ol style="list-style-type: none"> 1. 8" thick hollow-core concrete panels, 57 psf. 2. 1/4" inorganic felt-supported underlayment board, .6 psf. 3. 3/32" vinyl-asbestos tile. 	50 (51)
	<ol style="list-style-type: none"> 1. 3" thick reinforced concrete slab, 35 psf, ceiling bare. 2. <ol style="list-style-type: none"> a. Vinyl asbestos, 0.08" thick. b. Wood parquet 1/2" thick. c. Soft vinyl tile with foam plastic backing. d. Carpet over soft padding, at least 1/4" thick. 	45 (a. 42) (b. 45) (c. 49) (d. 70)
	<ol style="list-style-type: none"> 1. 3" thick reinforced concrete slab, 35 psf. 2. <ol style="list-style-type: none"> a. Wood parquet 1/2" thick. b. Soft vinyl tile with foam plastic backing. c. Carpet over soft padding, at least 1/4" thick. 3. Resilient furring channels on 1/2" fiberglass blanket. 4. 1/2" gypsum board. 	56 (a. 51) (b. 55) (c. 70)

Sketch	Brief Description	STC (IIC)
	<ol style="list-style-type: none"> 1. 5" thick reinforced concrete slab, 55 psf. ceiling bare. 2. <ol style="list-style-type: none"> a. Wood parquet 1/2" thick. b. Soft vinyl tile with foam plastic backing. c. Carpet over soft padding, at least 1/4" thick. 	51 (a. 46) (b. 50) (c. 70)
	<ol style="list-style-type: none"> 1. 5" thick reinforced concrete slab, 55 psf. 2. <ol style="list-style-type: none"> a. Wood parquet 1/2" thick. b. Soft vinyl tile with foam plastic backing c. Carpet over soft padding, at least 1/4" thick. 3. Resilient furring channels on 1/2" fiberglass blankets. 4. 1/2" gypsum board. 	56 (a. 51) (b. 55) (c. 75)

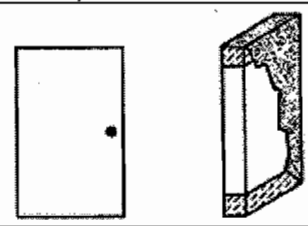
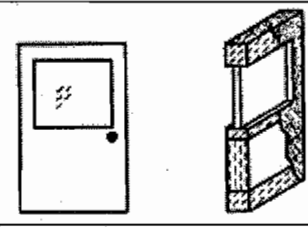
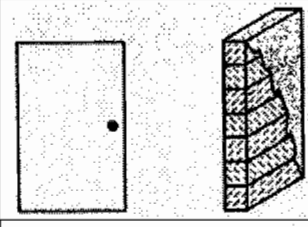
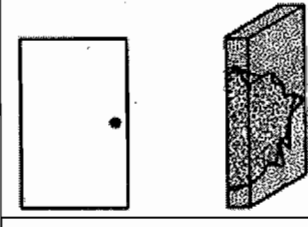
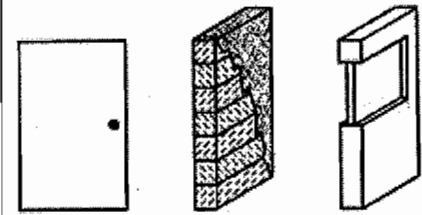
WINDOWS

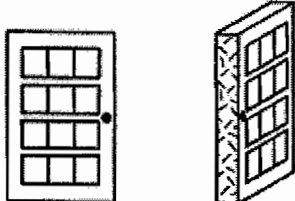
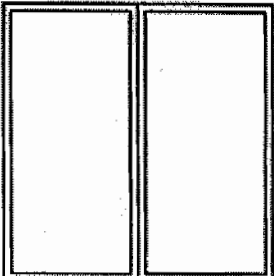
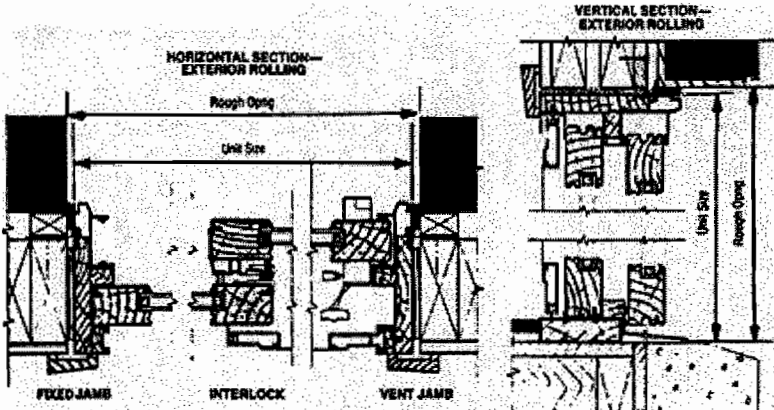
Sketch	Brief Description	STC
Front / Cross Section		
	30x48" aluminum clad casement, two 1/8" panels of glass, 13/16" apart in a wood frame.	29
	30x48" aluminum clad casement, one 3/32" panel and one 1/8" panel, 13/16" apart in a wood frame.	31
	32x24x24" aluminum double-hung windows (32" wide with 24" high upper sash and a 24" high lower sash), each sash has one 3/32" panel and one 1/8" panel, 13/16" apart in a wood frame.	29
	6x5' picture window glazed double strength, single panel.	29
	6x5' picture window plus storm sash, glazed double strength single panel, 3 3/4" separation between panels.	38

Sketch Front / Cross Section	Brief Description	STC
	3x5' double hung window, 7/16" glazed insulating glass, single panel.	26
	3x5' double hung window, 7/16" glazed insulating glass, single panel plus storm sash, glazed single strength, single sealed separation between panels: upper 1 1/2", lower 2 13/16".	35
	3x4' awning window, glazed double strength, cranked shut.	24

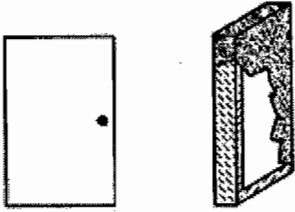
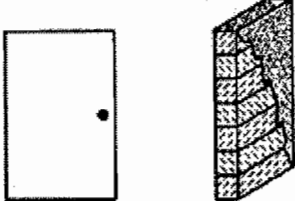
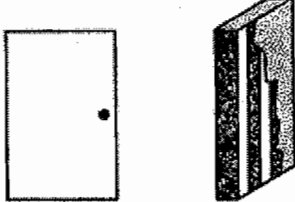
Sketch Front / Cross Section	Brief Description	STC
	<p>3x4' jalousie window, glazed $\frac{1}{4}$" glass, 4 $\frac{1}{2}$" wide louvers with $\frac{1}{2}$" in overlap, cranked tight shut.</p>	20

DOORS: Exterior

Sketch Front / Cross Section	Brief Description	STC
	3x7' hollow-core wood door, 1 3/4" thick.	20
	3x7' hollow-core door, 1 3/4" thick, 30% of area glazed with 1/8" glass.	19
	3x7' solid-core wood door, 1 3/4" thick.	27
	3x7' steel-faced door, 1 3/4" thick, rigid polyurethane core.	26
	3x7' solid-core wood door, 1 3/4" thick plus an aluminum storm door, glazed single strength.	34

Sketch Front / Cross Section	Brief Description	STC
	3x7' wood French door, 12 lights glazed single strength, mounted in frame, brass weather strip.	26
	6x6' sliding glass doors, 3/4" insulating glass (2 pieces 1/8" tempered glass), one door opens, other is permanent in place.	28
		
<p>*All exterior doors are sealed with a weathering strip around the frame. Interior doors do not have a weather strip and are not flush to the floor to permit the installation of a carpet.</p>		

DOORS: Interior

Sketch Front / Cross Section	Brief Description	STC
	3x7' solid-core wood door, 1 3/4" thick, weight 1.5 lb/ft ² .	17
	3x7' solid-core wood door, 1 3/4" thick, weight 4.0 lb/ft ² .	20
	3x7' hollow-core steel door, 1 3/4" thick, weight 5.0 lb/ft ² .	17

Appendix B References

Appendix B General References

Books:

Acoustical and Thermal Performance of Exterior Residential Walls. Doors and Windows; NBS Building Science Series 77, U.S. Department of Commerce/National Bureau of Standards, 1975.

Acoustics Noise and Buildings; Parkin, Humphreys and Cowell; Faber and Faber; London; 1979.

Airborne Sound Transmission Loss, Characteristics of Wood Frame Construction; Fred F. Rudder, Jr.; USDA, Forest Service; General Technical Report FPL-43.

Handbook of Architectural Acoustics and Noise Control; Michael Retting; Tab Book; Blue Ridge Summit, Pa.; 1979.

Quieting: A Practical Guide to Noise Controls; U.S. Department of Commerce/National Bureau of Standards; NBS Handbook 119; 1976.

Institutions and Organizations:

Amerada Architectural Glass.

DeSco Windows.

Georgia-Pacific.

Industrial Acoustics Company.

National Concrete Masonry Association.

Office of Noise Control; California Department of Health Services.

Overly Manufacturing Company.

Paella Products.

Portland Cement Association.

U.S. Gypsum Company.

Testing Laboratories:

Cedar Knolls Acoustical Laboratories.

Geiger and Hamme.

Kaiser Gypsum.

Kodaras Acoustical.

National Institute of Standards and Technology.

National Research Council of Canada.

Riberbank Acoustical Laboratories.

ERRATA SHEET

The Noise Guidebook
Railway Noise Guidance and Calculation Corrections

February 2009

The following should replace the paragraph entitled "Horns and Whistles" on page 63 (also marked 15) in the Noise Assessment Guidelines, Chapter 5, of *The Noise Guidebook* (September 1991).

If the Noise Assessment Location (NAL) is perpendicular to any point on along a railroad track between the whistle posts for a road crossing, a factor to account for the noise of warning horns or whistles must be included in the calculation. There are 2 factors to be used based on the type of locomotive. If the locomotive is diesel-powered, enter the number 10 in column 11 of Worksheet D. If the locomotive is electric-powered, enter the number 100 in column 18 of Worksheet D. If the NAL is not between the whistle posts for a road crossing, enter the number 1 in each column.

Note: Whichever horn factor is appropriate, it must only be applied once. If a factor is applied for diesel locomotives in the first section of the worksheet, it must not be applied to the railcar noise calculation in the second part. In that instance, enter the number 10 in column 11 and the number 1 in column 18.

A revised Worksheet D also accompanies this correction. It is easily distinguished from the original. The new Worksheet D has an additional column in the second section of page 2 for a total of 27 columns. The original version, with 26 columns, is hereby void.

**Railway Noise
Data Sheet**

Noise Assessment Guidelines

List All Railways within 3000 feet of the site:

Notes

1. _____
2. _____
3. _____

Necessary Information

Railway No. 1

Railway No. 2

Railway No. 3

- | | | | | |
|-----------------------------------------------------------------------|-------|-------|-------|-------------------------------------------------|
| 1. Effective distance: | _____ | _____ | _____ | Measured in feet from
NAL to center of track |
| 2. Number of Trains in 24 hours: | | | | |
| a. diesel | _____ | _____ | _____ | |
| b. electrified | _____ | _____ | _____ | |
| 3. Fraction of operations occurring at night: | _____ | _____ | _____ | 10 p.m. - 7a.m. |
| 4. Number of diesel locomotives per train: | _____ | _____ | _____ | |
| 5. Number of rail cars per train: | | | | |
| a. diesel trains | _____ | _____ | _____ | |
| b. electrified trains | _____ | _____ | _____ | Include locomotive for
electrified trains |
| 6. Average train speed: | _____ | _____ | _____ | |
| 7. Is track welded or bolted? | _____ | _____ | _____ | |
| 8. Is the site opposite a section of tracks
between whistle stops? | _____ | _____ | _____ | |

**Railway Noise
Computations and Findings**

Noise Assessment Guidelines

Adjustments for Diesel Locomotives

	9 No. of Locomotives 2	10 Average Speed (Table 9)	11 Horns (Enter 10)	12 Night- time (Table 5)	13 No. of Trains (Line 2a)	14 Adj. No of Opns.	15 DNL (Workchart 3)	16 Barrier Attn.	17 Partial DNL
Railway No. 1	_____ x _____	_____ x _____	_____ x _____	_____ x _____	_____ x _____	= _____	_____ - _____	= _____	
Railway No. 2	_____ x _____	_____ x _____	_____ x _____	_____ x _____	_____ x _____	= _____	_____ - _____	= _____	
Railway No. 3	_____ x _____	_____ x _____	_____ x _____	_____ x _____	_____ x _____	= _____	_____ - _____	= _____	

Adjustments for Railway Cars or Rapid Transit Trains and Electric Locomotives

	18 Horns on Electric Trains only (Enter 100)	19 Number of cars 50	20 Average Speed (Table 10)	21 Bolted Rails (Enter 4) Welded (Enter 1)	22 Night- time (Table 5)	23 No. of Trains (Lines 2a and 2b)	24 Adj. No. of Opns.	25 DNL (Workchart 4)	26 Barrier Attn.	27 Partial DNL
Railway No. 1	_____ x _____	_____ x _____	_____ x _____	_____ x _____	_____ x _____	_____ x _____	= _____	_____ - _____	= _____	
Railway No. 2	_____ x _____	_____ x _____	_____ x _____	_____ x _____	_____ x _____	_____ x _____	= _____	_____ - _____	= _____	
Railway No. 3	_____ x _____	_____ x _____	_____ x _____	_____ x _____	_____ x _____	_____ x _____	= _____	_____ - _____	= _____	

Combined Locomotive and Railway Car DNL (See combining noise levels table for procedures)

Partial DNL Railway No. 1	_____	Partial DNL Railway No. 2	_____	Partial DNL Railway No. 3	_____	Partial DNL Total DNL for all Railways	_____
------------------------------	-------	------------------------------	-------	------------------------------	-------	-------------------------------------------	-------

Signed _____ Date _____

Noise and Its Effects

By Dr. Alice H. Suter, Conference Consultant, Administrative Conference of the United States,
November 1991

This report was prepared for the consideration of the Administrative Conference of the United States. The views expressed are those of the author and do not necessarily reflect those of the members of the Conference or its committees except where formal recommendations of the Conference are cited.

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I. Introduction

This report presents an overview of noise and its effects on people. Special emphasis is placed on developments over the past decade, both in terms of noise conditions and noise effects research. By doing so, this report should illustrate some of the reasons for concern about noise problems, which persist after the closing of EPA's Office of Noise Abatement and Control (ONAC).

Noise has a significant impact on the quality of life, and in that sense, it is a health problem in accordance with the World Health Organization's (WHO) definition of health. WHO's definition of health includes total physical and mental well-being, as well as the absence of disease. Along these lines, a 1971 WHO working group stated: "Noise must be recognized as a major threat to human well-being." (Suess, 1973)

The effects of noise are seldom catastrophic, and are often only transitory, but adverse effects can be cumulative with prolonged or repeated exposure. Although it often causes discomfort and sometimes pain, noise does not cause ears to bleed and noise-induced hearing loss usually takes years to

develop. Noise-induced hearing loss can indeed impair the quality of life, through a reduction in the ability to hear important sounds and to communicate with family and friends. Some of the other effects of noise, such as sleep disruption, the masking of speech and television, and the inability to enjoy one's property or leisure time also impair the quality of life. In addition, noise can interfere with the teaching and learning process, disrupt the performance of certain tasks, and increase the incidence of antisocial behavior. There is also some evidence that it can adversely affect general health and well-being in the same manner as chronic stress. These effects will be discussed in more detail in the paragraphs below.

II. ONAC'S Activities in Noise Effects Research and Criteria

In response to the mandates of Section 5 of the Noise Control Act of 1972, ONAC published Public Health and welfare Criteria for Noise (EPA, 1973a) and Information on Levels of Environmental Noise Requisite to Protect Public Health and welfare with an Adequate Margin of Safety (EPA, 1974a), popularly known as the "Levels Document" for obvious reasons). Also in 1973, ONAC sponsored an international conference in Yugoslavia on the effects of noise, from which voluminous proceedings there published (EPA, 1973b). All of these documents were widely distributed and, although somewhat dated, are still read and referenced today. Because a considerable amount of research in this area has been conducted over the past 2 decades, these documents would benefit from revision.

In these documents ONAC established dose-response relationships for noise and its effects, and identified safe levels of noise to prevent hearing loss and activity interference. The agency also established the day-night average noise level as a universal descriptor to be used in assessing the impact of community noise.

Section 14 of the Act directs ONAC to conduct or finance research on noise effects, including investigations of the psychological and physiological effects of noise on humans and the effects of noise on animals. Approximately 35 technical reports resulted from these efforts, as well as contractor reports and numerous articles in scientific journals.

Some of the more noteworthy examples of EPA's research program there:

- Projects involving the cardiovascular effects of noise at the University of Miami, Johns Hopkins University and the Massachusetts Institute of Technology (Peterson, et al., 1978, 1981, 1983; Hattis and Richardson, 1980; Turkkan et al, 1983).
- A longitudinal study of noise exposure and hearing threshold levels in children conducted by the Fels Institute (Roche et al., 1977).
- An interagency agreement with the U.S. Air Force to study the effects of noise on hearing (e.g., Guignard, 1973; Johnson, 1973; Schori and McGatha, 1978; Suter, 1978).
- A study identifying the sound levels of speech communication in various environments (Pearsons, et al., 1977).
- Two studies at Northeastern University comparing methods for predicting the loudness and acceptability of noise (Scharf et al., 1977; Scharf and Hellman, 1979).

Although much useful information was derived from these programs, some of them were irreparably damaged by the abrupt termination of funding from ONAC that occurred in 1981 and 1982. For one example, the Johns Hopkins study of cardiovascular effects of noise on primates was terminated after testing on only one subject had been completed. For another, the longitudinal data from the Fels Institute is now of little value after a hiatus of more than a decade.

III. Physical Properties and Measurement of Sound

A. Physical Properties

Noise is often defined as unwanted sound. To gain a satisfactory understanding of the effects of noise, it would be useful to look briefly at the physical properties of sound.

Sound is the result of pressure changes in a medium (usually air), caused by vibration or turbulence. The amplitude of these pressure changes is stated in terms of sound level, and the rapidity with which these changes occur is the sound's frequency. Sound level is measured in decibels (abbreviated dB), and sound frequency is stated in terms of cycles per second, or nowadays, Hertz (abbreviated Hz). Sound level in decibels is a logarithmic rather than a linear measure of the change in pressure with respect to a reference pressure level. A small increase in decibels can represent a large increase in sound energy. Technically, an increase of 3 dB represents a doubling of sound energy, and an increase of 10 dB represents a tenfold increase. The ear, however, perceives a 10-dB increase as doubling of loudness.

Another important aspect is the duration of the sound, and the way it is distributed in time. Continuous sounds have little or no variation in time, varying sounds have differing maximum levels over a period of time, intermittent sounds are interspersed with quiet periods, and impulsive sounds are characterized by relatively high sound levels and very short durations.

The effects of noise are determined mainly by the duration and level of the noise, but they are also influenced by the frequency. Long-lasting, high-level sounds are the most damaging to hearing and generally the most annoying. High-frequency sounds tend to be more hazardous to hearing and more annoying than low-frequency sounds. The way sounds are distributed in time is also important, in that intermittent sounds appear to be somewhat less damaging to hearing than continuous sounds because of the ear's ability to regenerate during the intervening quiet periods. However, intermittent and impulsive sounds tend to be more annoying because of their unpredictability.

B. Instrumentation

The instrument for measuring noise is the basic sound level meter or a number of its derivatives, including noise dose meters (usually called dosimeters), integrating sound level meters, graphic level recorders, and community noise analyzers. Improvements in all of these instruments have taken place during the last decade. This is especially true of the computerized dosimeters and integrating meters, which can measure, compute, store, and display comprehensive data on the noise field (Earshen, 1986). These instruments are now able to measure over very wide dynamic ranges and to measure impulsive sounds with a high degree of accuracy.

C. Measurement and Descriptors

Most sound level meters and dosimeters use built-in frequency filters or "weighting networks" in the measurement process. By far the most frequently used filter is the A weighting network, which discriminates against low-frequency and very high-frequency sounds. A weighting approximates the equal-loudness response of the ear at moderate sound levels, and correlates well with both hearing damage and annoyance from noise. A weighting will be assumed throughout this report unless otherwise specified.

Composite measures of noise, such as the equivalent continuous sound level (L_{eq}) and the day-night average sound level (DNL) incorporate A weighting, (The mathematical notation for DNL is L_{dn} .) these levels constitute sound energy averages over given periods of time, the DNL incorporates a 10-dB nighttime penalty from 10:00 pm to 7:00 am, meaning that events occurring during

that time are counted as 10 dB higher than they really are. A variant of the DNL that is used in California (and Europe) is the community noise equivalent level (CNEL), which incorporates a 5-dB penalty for evening noise events, as well as the 10-dB nighttime penalty (California Code of Regulations, 1990).

For more than a decade, both the DNL and the simple Leq have been used extensively for assessing the impact of aircraft/airport noise. Recently, however, communities have expressed dissatisfaction with these metrics when used to regulate noise (Wesler, 1990). Metrics that employ averaging fail to describe the disturbance arising from single events, especially low-flying aircraft, unexpected or newly occurring flights, or flights occurring in areas where solitude is at a premium. The sound exposure level (SEL), an event's sound level normalized to one second, is gaining popularity as a supplement to the DNL and the Leq for characterizing single events.

IV. Noise in America

A. Population Trends

The U.S. population has increased an average of 25 million with each census since 1950. According to the World Almanac (1991), the population in 1980 was 226 million and approximately 250 million in 1990. This reflects an increase of nearly 11 percent over the decade, or slightly more than 1 percent per year. Presently, 77 percent of the U.S. population lives in the nation's 283 designated metropolitan areas, and the rate of growth in these areas is twice that of nonmetropolitan areas (Bryant, 1991).

Not surprisingly, EPA research indicates that noise levels in communities is directly related to the population density (EPA, 1974b).¹ Because the noise in urban areas generally exceeds that of suburban and rural areas, it is not unreasonable to assume that noise in the U.S. is increasing at least in proportion to the increase in urbanization and more rapidly than the growth of the general population. In addition, noise sources appear to be multiplying at a faster pace than the population.

B. Noise Sources

Figure 1, from EPA's simplified version of the Levels Document, Protective Noise Levels, shows the range of sound levels for some common noise sources (EPA, 1978). Most leading noise sources will fall into the following categories: road traffic, aircraft, railroads, construction, industry, noise in buildings, and consumer products.

1. Road traffic noise

In its Levels Document (1974), EPA estimated that road traffic noise was the leading source of community noise. EPA's contractors found that to be true in 1981 (EPA, 1981), and there is little reason to believe otherwise today.

Truck transportation, as a convenient and economical means of moving raw materials and consumer goods from place to place, is growing at a faster pace than the general population. For example, a total² of 33.6 million trucks were registered in the U.S. in 1980. That number grew to 45.5 million in 1989, an increase of about 35 percent (American Trucking Assoc., 1991).

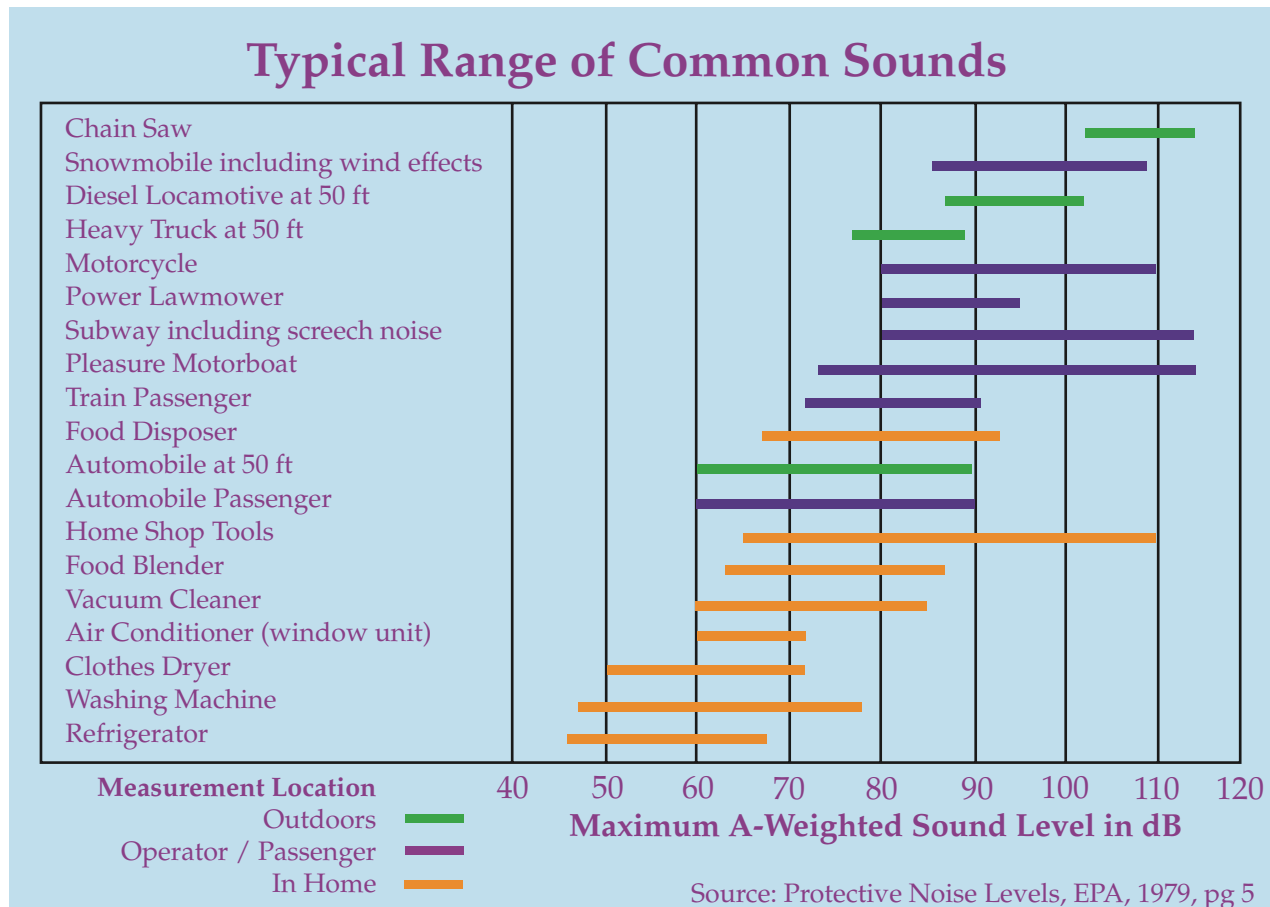
¹ The day-night average sound level appears to be proportional to the log of population density in people per square mile (EPA, 1974b).

² The total number of trucks registered includes personal-use as well as commercial trucks of all weight classes.

Noise from the motors and exhaust systems of large trucks provides the major portion of highway noise impact, and provides a potential noise hazard to the driver as well.³ In addition, noise from the interaction of tires with the roadway is generated by trucks, buses, and private autos.

In the city, the main sources of traffic noise are the motors and exhaust systems of autos, smaller trucks, buses, and motorcycles. This type of noise can be augmented by narrow streets and tall buildings, which produce a “canyon” in which traffic noise reverberates.

Typical Range of Common Sounds



2. Aircraft noise

Air traffic also appears to be increasing more rapidly than the U.S. population. In 1980, U.S. scheduled airlines flew approximately 255.2 billion passenger miles and 5.7 billion cargo (ton) miles. By 1990, these figures were 457.9 billion and 10.6 billion, respectively (Air Transport Assoc., 1991a). This represents an increase of 79 percent in passenger mileage, and 86 percent in air height mileage. Air cargo traffic has grown particularly rapidly in the last five years, and will probably continue that trend over the next decade.

By 1989, the quieter “Stage III” airplanes comprised nearly 40 percent of the domestic fleet (Air Transport Assoc, 1991b). By the year 2004, all of the noisier Stage II aircraft must be phased out

³ According to Reinhart (1991) the most common complaint about truck noise is related to problems caused by tampering with the mufflers of trucks using compression brakes. About 5 percent of the heavy trucks surveyed by Reinhart and his colleagues had no functioning muffler, despite the existence of antitampering laws.

(Airport Noise and Capacity Act, 1990). This requirement should promote a quieter environment around airports, but the growth of air transportation and the pressing need for airport expansion threatens to offset the benefits of the quieter aircraft.

Nowadays, the problem of low-flying military aircraft has added a new dimension to community annoyance, as the nation seeks to improve its “nap-of-the-earth” warfare capabilities. In addition, the issue of aircraft operations over national parks, wilderness areas, and other areas previously unaffected by aircraft noise has claimed national attention over recent years (Fidell, 1990; Cantoni, 1991; Weiner, 1990; Mouat, 1990).

3. Noise from railroads

The noise from locomotive engines, horns and whistles, and switching and shunting operations in rail yards can impact neighboring communities and railroad workers. For example, rail car retarders can produce a high-frequency, high-level screech that can reach peak levels of 120 dB at a distance of 100 feet (EPA, 1974), which translates to levels as high as 138 or 140 dB at the railroad worker’s ear.

Unlike truck and air transportation, however, rail transportation does not appear to be increasing. According to the Association of American Railroads, the railroad industry loaded 22.1 million freight cars in 1988, down slightly from 22.6 million in 1980 (AAR, 1991).

4. Construction noise

The noise from construction of highways, city streets, and buildings is a major contributor to the urban scene. Construction noise sources include pneumatic hammers, air compressors, bull dozers, loaders, dump trucks (and their back-up signals), and pavement breakers. The construction industry has done very well over recent years with a value-added GNP of \$97.9 billion in 1977, increasing to \$247.7 billion in 1989 (Dept. of Commerce, 1991), an increase of about 153 percent. The number of workers employed in construction grew from 4.3 million in 1980 to about 5.2 million in 1990, an increase of nearly 21 percent (BLS, 1991a).

5. Noise in industry

Although industrial noise is one of the less prevalent community noise problems, neighbors of noisy manufacturing plants can be disturbed by sources such as fans, motors, and compressors mounted on the outside of buildings. Interior noise can also be transmitted to the community through open windows and doors, and even through building walls. These interior noise sources have significant impacts on industrial workers, among whom noise-induced hearing loss is unfortunately common.

The size of the U.S. manufacturing industry has not grown significantly over the last decade. Although the industrial GNP increased from \$673.9 billion in 1980 to \$969.6 billion in 1990 (in terms of constant dollars) (BLS, 1991b), the workforce has declined from slightly more than 20 million to about 19 million during that period (BLS, 1991c). Consequently, industrially-generated community noise is probably no greater than it was in 1980.

From the worker’s perspective the industrial noise problem is still very serious. The Occupational Safety and Health Administration has cut back on the enforcement of occupational noise standards and has allowed the substitution of hearing protection devices in lieu of engineering controls in many cases (OSHA, 1986). However, it is difficult to know whether noise levels in industry are increasing or decreasing because no comprehensive survey has been performed since the 1976 survey performed by Bolt Beranek and Newman Inc. (BBN, 1976).

6. Noise in buildings

Apartment dwellers are often annoyed by noise in their homes, especially when the building is not well designed and constructed. In this case, internal building noise from plumbing, boilers, generators, air conditioners, and fans, can be audible and annoying. Improperly insulated walls and ceilings can reveal the sound of amplified music, voices, footfalls, and noisy activities from neighboring units. External noise from emergency vehicles, traffic, refuse collection, and other city noises can be a problem for urban residents, especially when windows are open or insufficiently glazed.

Wetherill (1987) reports that although the lack of soundproofing is the most frequent environmental complaint of apartment dwellers, the knowledge to solve these problems is not being applied. In fact, the quality of construction is steadily declining, and the noise problems are getting worse (Wetherill, 1991).

7. Noise from consumer products

Certain household equipment, such as vacuum cleaners and some kitchen appliances, have been and continue to be noisemakers, although their contribution to the daily noise dose is usually not very large. Added to this list would be yard maintenance equipment, such as lawn mowers and snow blowers, which can, at least, cause disharmony with one's neighbors, and power shop tools, which can be hazardous to hearing if used for sufficient periods of time.

One example of a fairly new product is the gasoline-powered leaf blower, with average A-weighted sound levels at the operator's position of 103.6 dB, and maximum levels of 110-112 dB (Clark, 1991). In an extensive review of nonoccupational noise exposures, Davis et al. (1985) report that the manufacturers of household devices have been reluctant to release sound level information. Consequently, it could be difficult to assess the magnitude of the problem and the extent to which noise levels are increasing or decreasing.

Residents of suburban and rural areas are sometimes disturbed by recreational noise sources, such as off-road vehicles, high-powered motor boats, and snowmobiles. Some of these sources, such as snowmobiles, are not as noisy as they were more than a decade ago, due to attention to the problem by the manufacturers and their trade associations. Others are no less noisy, and possibly more so because noise seems to be generic to the sport. Example would be motorcycle and car racing, and events like "tractor pulls."

In fact, the allure of noisy recreational activities seems to be considerably greater now than it was a decade or so ago. The technology of sound reproduction has advanced to the point where loudspeakers can faithfully reproduce music and other sounds at levels well above 120 dB. Sporting events use giant digital "applause meters" to measure and display enthusiasm for the more popular team. The extreme in car stereo technology is now the "boom car", with sound levels exceeding 140 dB.⁴ Activities like aerobic exercising and ice skating, as well as disco dancing, are accompanied by amplified music played at high sound levels. After summarizing the results of 16 studies of discotheques and rock concerts Clark (1991) reported the geometric mean of the measured sound levels as 103.4 dB. The trend in noise levels for these kinds of activities is definitely upward.

⁴ The International Auto Sound Challenge Association sponsors contests and gives the most points to contestants whom speakers produce the highest sound pressure levels, up to 140 dB. However, levels above that merit no more than 140 points.

One of the most serious sources of recreational noise is sport shooting, where peak sound pressure levels at the ear can range from about 144 dB up to more than 170 dB⁵ (Odess, 1972). In his analysis of this literature, Clark (1991) cites estimates of the number of people responding positively to questions about hunting or target shooting. These estimates range from 14 percent of the general population in Scandinavia and the U.K. (Axelsson et al., 1981; Davis et al., 1985) to nearly 50 percent in the Canadian workforce (Chung et al., 1981), which Clark found to be consistent with estimates from U.S. industry. In a population of rural schoolchildren, 45 out of 47 boys and 2 out of 21 girls reported having used guns (Kramer and Wood, 1982).

A subcategory of consumer product noise that deserves mention is noisy toys. A few toys, such as firecrackers, snappers, and cap pistols have been part of the adventurous child's experience for generations. The general assumption is that these toys do not pose a hazard when used occasionally and located at a sufficient distance from the ear⁶. Nowadays, there is a large variety of noisy toys, thanks to the availability of improved technology. Many of them mimic adult noisemakers, such as amplified toy guitars, child-sized vacuum cleaners, and miniature power saws. Some of these toys generate quite high levels of sound. For example, a baby's squeeze toy (Fay, 1991) and the battery operated siren of a toy police car have both been measured at 110 dB⁷.

In a recent report on noisy toys, Leroux and Laroche (1991) cite studies showing A-weighted noise levels for a toy motor at 107 dB and a child's rattle at 99-100 dB (LNE, 1973). Current Canadian legislation limits the sound output of toys to "one hundred decibels measured at the distance that the product ordinarily would be from the ear of the child using it..." (Act, 1969), but Leroux and Laroche propose that this limit be lowered to an A-weighted level of 75 dB.

C. Numbers of People Exposed to Noise

The fact that people are variously exposed to noise is not surprising. Considering that decibels are measured on a logarithmic scale, however, the magnitude of these variations can be enormous. For example, the average noise level outside an urban apartment can be 1,000 times more intense than in a rural residential neighborhood. Fortunately, this difference will be perceived more like an eight-fold rather than a thousand-fold increase. Figure 2, from EPA's document *Protective Noise Levels*, shows examples of outdoor day-night average sound levels measured at various locations (EPA, 1978).

In 1974, EPA estimated that nearly 100 million Americans lived in areas where the daily average noise levels exceeded its identified safe DNL of 55 dB (EPA, 1974a). Figure 3, from EPA's *Levels*

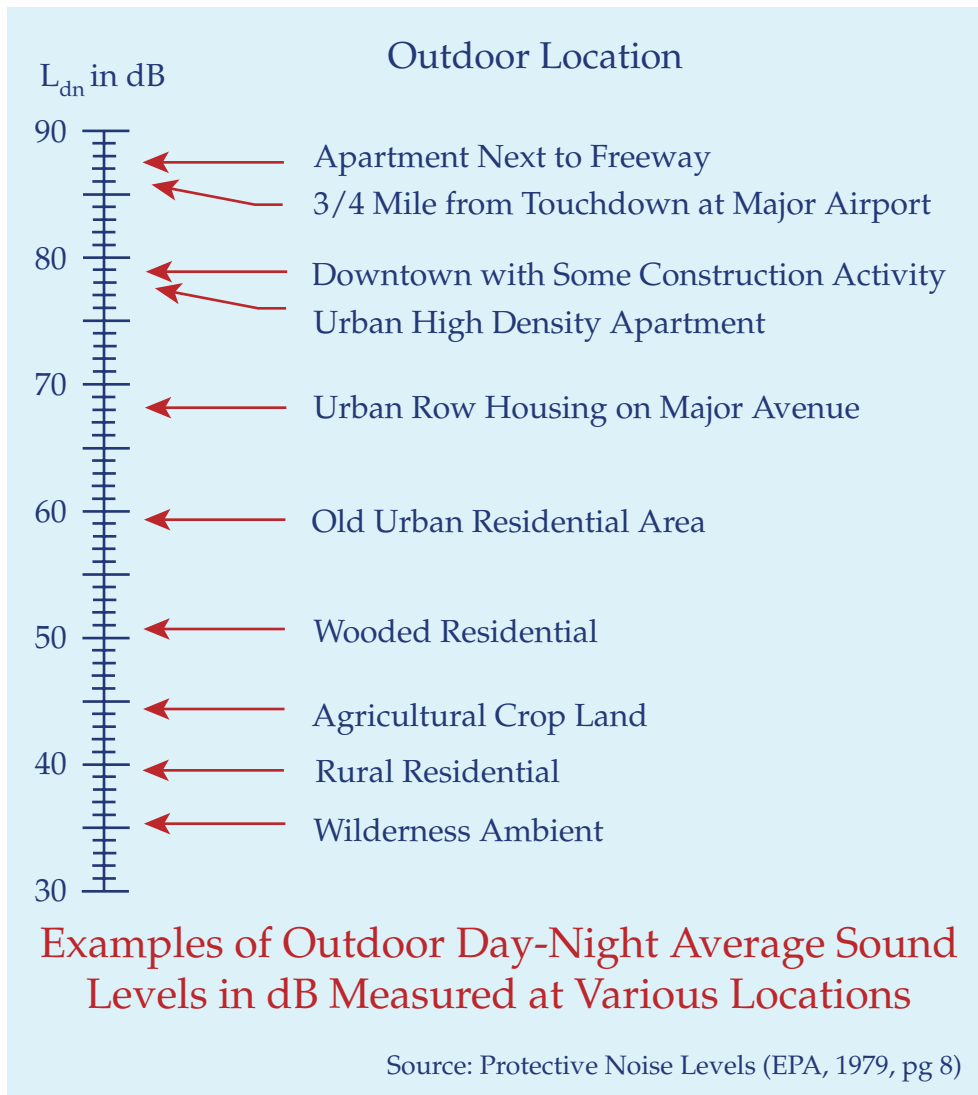
⁵ A-weighted level. of these weapons would measure somewhat lower, with levels for .22 caliber rifles at about 132-139 dB and shotguns at 150-165 dB. (See Clark, 1991)

⁶ Certain European studies, however, have reported as many as 1 percent to 3.7 percent of teenage children suffer hearing losses caused by impulsive noise from toys (Gjaevenes, 1967; Moe, 1966). Noise from cap guns, for example, can exceed peak sound pressure levels of 140 dB (Gjaevenes, 1966; Hodge and McCommons, 1966; Marshall and Brandt, 1973; all as cited by Leroux and Laroche, 1991).

⁷ New York audiologist Thomas Fay has measured the noise levels of a variety of children's toys. In doing so he places the sound level meter's microphone quite close to the noise source (from 2 inches to 1/2 inch away), based on his observations of the children at play. (Personal communication, April 1991).

Document, shows the residential noise environment of the U.S. population as a function of the exterior DNL, with separate curves for the freeway and aircraft increments.

Examples of Outdoor Day-Night Average Sound Levels in dB Measured at Various Locations



A few years later EPA contracted with the consulting firm Bolt Beranek and Newman (BBN) to develop more detailed estimates. The resulting report, *Noise in America*, includes a breakdown according to noise exposure source (EPA, 1981). Table I gives the estimated number of Americans exposed to traffic; aircraft, construction, rail, and industrial noise for various DNLs from 55 dB to 80 dB. The authors note that there will be some overlap among populations exposed to different sources, so the numbers across categories are not additive. The far right column represents the total estimated number of people exposed to the combined sources. Although the authors do not give an estimate for the number of people exposed above L_{dn} 55 dB, another authority puts it at 138 million at that time (Eldred, 1990).

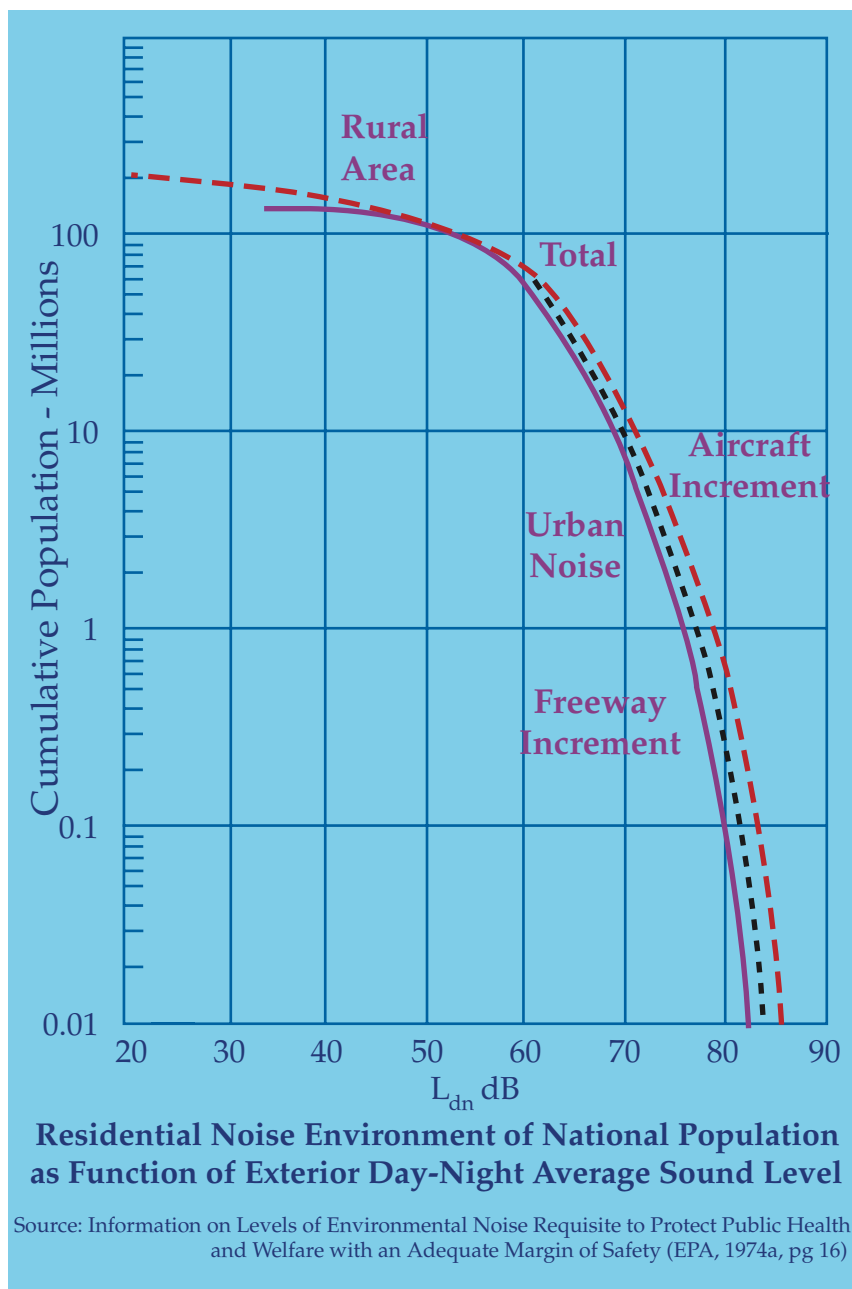
These estimates do not represent the results of a national survey. Instead, the authors used data and models available to EPA and BBN at the time. Because of this, some categories of noise exposure are likely to be more accurate than others. They did, however, represent the best available esti-

mates at the time, and because no efforts have been made to update them, they are the best estimates available today.

D. Summary: Noise in America

It is safe to assume that noise in communities is increasing. Noise levels are directly related to population density, and the urban population is increasing at twice the pace of the nonurban population. In addition, the last decade has seen rapid growth in air transportation, trucking, and the construction industries, indicating that noise levels from these sources has most likely increased. The fact that some of these sources have been and continue to be quieted (especially new generations of trucks and aircraft) should mitigate this increase, but the extent of this mitigation will remain unknown until some sort of national survey is performed. Noise from construction continues to be a problem, and it appears that noise inside buildings as well as noise from recreational activities and consumer products is on the rise. Estimates of the number of people exposed to noise at various levels are now somewhat outdated.

Residential Noise Environment of the National Population As a Function of Exterior Day-Night Average Sound Level



**Table 1: Summary of U.S. Population Exposed to Various Day-Night
Average Sound Levels (or higher)
From Noise Sources in the Community.
(1) From Noise in America (EPA, 1981, pp. 10 and 15)**

Estimated Number (in Millions) of People in Each Noise Category

DNL (dB)	Traffic	Aircraft	Construction	Rail	Industrial	Total
>80	0.1	0.1	—	—	—	0.2
>75	1.1	0.3	0.1	—	—	1.5
>70	5.7	1.3	0.6	0.8	—	8.1
>65	19.3	4.7	2.1	2.5	0.3	27.8
>60	46.6	11.5	7.7	3.5	1.9	63.6
>55	96.8	24.5	27.5	6.0	6.9	92.4*

(1) DNL values are yearly averages, outdoors

(2) Note that there is some overlap among populations exposed to different noise sources. For example, some of the 96.8 million people exposed to Ldn 55 dB and above from traffic noise are also exposed to aircraft noise.

(3) Construction estimates include both residential and nonresidential exposure.

*Distribution of total exposed to all sources starts at Ldn 58 dB since the analysis involves combining distributions exposed to 55 dB and above.

V. Effects of Noise

A. Noise-Induced Hearing Loss

Hearing loss is one of the most obvious and easily quantified effects of excessive exposure to noise. Its progression, however, is insidious, in that it usually develops slowly over a long period of time, and the impairment can reach the handicapping stage before an individual is aware of what has happened. While the losses are temporary at first, they become permanent after continued exposure, and there is no medical treatment to counteract the effect. When combined with presbycusis, hearing loss naturally occurring with the aging process, the result is a premature impairment that grows inexorably with age.

According to the U.S. Public Health Service (PHS, 1991), some 10 million of the estimated 21 million Americans with hearing impairments owe their losses to noise exposure (as cited in Carney, 1991). The study goes on to say that it is unclear whether the incidence of hearing impairment has risen in recent years because the necessary studies have not been conducted.

1. Extent of noise-induced hearing loss from environmental sources

Although the major cause of noise-induced hearing loss is occupational, substantial damage can be caused by nonoccupational sources. In addition to the frequently-blamed sources of loud music and shooting, noise-induced hearing loss has been noted in the children of farm families, presumably from the frequent use of tractors (e.g., Broste et al., 1979); general aviation pilots because of the high noise levels emitted by piston aircraft (Anon., 1982); and users of earlier generations of cordless telephones because of the placement of the ring mechanism in the earpiece (Orchik et al., 1985 and 1987).

The prevailing notion among parents is that the hearing threshold levels of children are worse than they used to be because of exposure to loud music. Actually, a recent national survey of 38,000 school children found better hearing threshold levels than 30 years ago, but blames the discrepancies on the sampling methods used in the earlier study and the conversion from an older to a newer zero reference level (Lundeen, 1991). There is, however, evidence that the hearing of some young people is being affected by noisy leisure time activities (Axelsson et al., 1987).

Loud music in particular appears to be the cause of hearing impairment and tinnitus in rock musicians. Such luminaries as Pete Townshend and Ted Nugent⁸ have acquired substantial hearing losses and are now campaigning for hearing conservation (Murphy, 1989). Some studies point to a hearing hazard for attendees as well (see in Clark, 1991; Clark and Bohne, 1986; Danenberg et al., 1987).

As mentioned above, probably the greatest nonoccupational hazard to hearing comes from sport shooting. Clark (1991) cites studies of industrial workers by Chung et al. (1981), Johnson and Riffle (1982), and Prosser et al. (1988), showing significantly greater hearing losses among sport-shooters than among their nonshooting counterparts. These losses are almost always characterized by worse hearing in the left ear than the right.

The contribution from nonoccupational sources is called “sociocusis” (a contraction of “sociocusis”). Evidence from primitive societies suggests that the absence of sociocusis explains the large differences in hearing threshold level between these populations and those of the “civilized” nations (Rosen, 1962). Sociocusis, occupational hearing loss, and presbycusis contribute in various

2. The handicap of noise-induced hearing loss

Vowel sounds tend to be low in frequency and high in sound energy, while the consonants are much higher in frequency and have considerably less amplitude. It also happens that consonants provide the primary intelligibility to speech. Because noise damages the ear’s ability to perceive high-frequency sounds much earlier and more severely than the low-frequency sounds, individuals with noise-induced hearing loss are at a particular disadvantage in understanding speech.

Individuals with early noise-induced hearing loss often think that other people no longer speak dearly. They soon begin to notice that they have difficulty understanding speech when there is noise in the background, and in groups of people, and that it is hard to identify which person is talking. As the hearing loss progresses, these individuals avoid social occasions and situations where they must listen at a distance, like church and theater. The eventual result can be loneliness and isolation.

3. The study of noise-induced hearing loss

Noise damages the delicate sensory cells of the inner ear, the cochlea. This process can be studied in the laboratory by inducing temporary shifts in hearing threshold level in humans. Over recent years the preferred method of investigation is to produce temporary and permanent threshold shifts in animals, and to study the resulting physiological and anatomical changes in the cochlea, as well as shifts in hearing threshold level. The laboratory allows for strict control of noise level and

⁸ According to Nugent, who has worn an earplug in his right ear since 1967: “My left ear is there just to balance my face, because it doesn’t work at all.” (Murphy 1989) proportion to an individual’s total hearing impairment. While the contribution of each source may be less than significant, the combination of all three can be enough to produce a handicapping condition. As longevity in the U.S. population increases, the toll of noise-induced hearing loss will become increasingly evident (Corney, 1991).

duration, but the durations are usually relatively short because of the time and expense involved. Also there is some controversy over the extent to which the results can be generalized to humans.

Much of the recent laboratory effort in noise research has focused on the structural and functional basis of noise-induced hearing loss, which has been greatly aided by the electron microscope. Investigators have identified the sensory cell's stereocilia and the rootlets which anchor them as the auditory system's most vulnerable components with respect to noise exposure (Liberman, 1990).

Field studies of noise-exposed workers avoid the problems of species generalization, and the exposure durations can be over many decades. They are usually cross-sectional studies, however, meaning that the current hearing threshold levels are related to noise exposures that have been experienced over many years. Although the current noise measurements may be valid, their validity over prior years usually has to be assumed without benefit of precise data.

4. Risk of hearing impairment from continuous noise

The methods and results of the major field studies of continuous noise exposure conducted in the late 1960s and early 1970s remain unchallenged. Examples are the studies of Burns and Robinson (1970), Baughn (1973), Passchier-Vermeer (1968), and the U.S. National Institute for Occupational Safety and Health (NIOSH, 1973). Data from these studies have been used by various organizations to estimate the risk of hearing impairment over a working lifetime of exposure to noise. These types of studies have also been used by the EPA to estimate the hazard of nonoccupational noise (Guignard, 1973; Johnson, 1973; EPA, 1973a). The data cited above of Burns and Robinson, Baughn, and Passchier-Vermeer went into EPA's identification of a yearly average exposure level of 70 dB as the safe level, which could be experienced over a lifetime (EPA, 1974a)⁹.

A new international standard (ISO, 1989), which is based mainly on the data of Passchier-Vermeer and Burns and Robinson, contains formulas for assessing the risk of noise-induced hearing impairment and handicap: using either a highly screened (for non-occupational hearing loss) or an un-screened population as a control group. The data and analyses found in these major studies have not been seriously challenged, and remain in use today.

5. Varying and intermittent noise

There has been some debate over the best rule for combining noise level and duration to assess the damaging effects of noise, especially varying and intermittent noise. This relationship is often called the doubling rate, or nowadays, the exchange rate. The EPA, as well as most other federal agencies (and most European countries, the United Kingdom, some Canadian provinces) use the equal-energy rule, which incorporates a 3-dB exchange rate. OSHA uses the 5-dB exchange rate, and the U.S. Air Force, uses 4 dB. None of these rules makes any provisions for the temporal order of sounds, although the 5-dB exchange rate supposedly represents a simplification of criteria that take a certain number of intermittencies into account.¹⁰

Investigations of the relationship between noise level and duration have been conducted over recent years using laboratory animals. The results have confirmed the validity of the equal energy (3-dB) rule for single exposures to continuous noise (Bohne and Pearse, 1982; Ward and Turner, 1982),

⁹ The 70-dB 24-hour average sound level can be interpreted as a 75-dB 8-hour average sound level plus an average sound level during the other 16 hours of less than 60 dB (see EPA's Levels Document, p.29, footnote d).

¹⁰ The 5-dB rule does not necessarily provide for intermittencies because it allows uninterrupted exposures to continuous noise at high levels. See Suter 1983.

or when the exposures are broken up into 8-hour, or even 1-hour “workdays”, 5 days per week, so long as the sound energy is equivalent (Ward, 1983). There is, however, some benefit to intermittent quiet periods (Ward and Turner, 1982), during which the ear can recover from small, temporary hearing losses. For this reason EPA has adjusted its identified safe level upward by 5 dB¹¹ since most environmental noise exposures are intermittent in nature. EPA’s use of the equal-energy rule and the 5-dB adjustment have not been seriously challenged.

6. Impulse noise

The effects of impulse noise have been studied extensively over recent years, but there is less agreement on this topic than there is for continuous and intermittent noise. Although there was consensus favoring the 3-dB rule at a 1981 international meeting in England (von Gierke et al., 1981), actual dose-response relationships are still elusive. The effects of impulse noise do not always follow the 3-dB rule, in that temporal pattern, waveform, and rise time can affect the growth of hearing loss, despite constancy of sound energy (Henderson and Hamernik, 1986).

Frequency also has some bearing on the damage caused by impulse noise, in that low-frequency impulses produce significantly less damage than sounds in the mid-to-high-frequency range (Price, 1983). The ear appears to be most susceptible to impulses with peaks around 4,000 Hz (Price, 1989). Also, there may be a critical level, above which the ear is considerably more at risk because of a change in the response mechanism. On the basis of his research, Price (1981) has suggested a critical level of 145 dB, with a standard deviation of 8 dB.

7. Susceptibility

Evidence from field studies indicates that men incur more hearing loss than women from comparable noise exposures (Burns and Robinson, 1970; Berger et al., 1978; Royster et al., 1980), and that Caucasians appear to be more susceptible than Blacks to noise-induced hearing loss (Royster et al., 1980). Other factors, such as age, preexposure hearing threshold level, general health, and use of alcohol, have not yet proved to be reliable predictors of susceptibility (Ward, 1986), although

8. Interactions with other agents

Noise can interact with drugs and industrial agents to produce additive or even synergistic effects on hearing. As expected, the higher the levels of noise and the greater the dose of the other agent, the greater will be the resulting hearing loss. The ototoxic properties of certain drugs, most notably the aminoglycoside antibiotics (the “mycin” drugs), are heightened by exposure to noise. Numerous studies of kanamycin plus noise exposure have revealed additive and some synergistic results (Humes, 1984). High doses of salicylates (aspirin) accompanied by noise exposure can produce temporary hearing losses (McFadden and Plattsmier, 1983), but permanent losses do not seem to occur. Cisplatin, used in cancer chemotherapy, is known to be toxic to the auditory system, and has been shown to interact significantly with noise exposure (Boettcher et al., 1989).

A variety of industrial agents, which can be potent neurotoxins, have been shown to be capable of producing hearing loss (Fechter, 1989). These agents include heavy metals, such as lead and mercury, organic solvents, such as toluene, xylene, and carbon disulfide, and an asphyxiant, carbon monoxide.

¹¹ The identified safe level of 70 dB reflects the incorporation of the 5-dB adjustment there is some indication that the use of tobacco may increase susceptibility to noise-induced hearing loss (Barone, et al., 1987; Stark, et al., 1988)

9. Hearing protectors

As its first (and only) labeling regulation, EPA promulgated a regulation for labeling the attenuation of hearing protection devices (EPA, 1979). The standard required manufacturers to subject their hearing protectors to specific laboratory tests, and to publish a “Noise Reduction Rating” (NRA) on the product’s package. The NRA was subsequently adopted by OSHA in its hearing conservation amendment, which required employers to use it in assessing the adequacy of hearing protectors for given noise environments (OSHA, 1981 and 1983). Recent research shows that the NRA greatly overestimates the noise reduction to be achieved by these devices in actual field use.¹² These kinds of findings have led to the formation of a new ANSI working group to investigate alternatives to the current NRA (Berger et al. 1990), and the recommendation that EPA revise its existing labeling regulation (Berger, 1991; Stewart, 1991).

10. Summary: Noise-induced hearing loss

Noise-induced hearing loss is probably the most well-defined of the effects of noise. Predictions of hearing loss from various levels of continuous and varying noise have been extensively researched and are no longer controversial. Some discussion still remains on the extent to which intermittencies ameliorate the adverse effects on hearing and the exact nature of dose-response relationships from impulse noise. It appears that some members of the population are somewhat more susceptible to noise-induced hearing loss than others, and there is a growing body of evidence that certain drugs and chemicals can enhance the auditory hazard from noise.

Although the incidence of noise-induced hearing loss from industrial populations is more extensively documented, there is growing evidence of hearing loss from leisure time activities, especially from sport shooting, but also from loud music, noisy toys, and other manifestations of our “civilized” society. Because of the increase in exposure to recreational noise, the hazard from these sources needs to be more thoroughly evaluated. Finally, the recent evidence that hearing protective devices do not perform in actual use the way laboratory tests would imply, lends support to the need for reevaluating current methods of assessing hearing protector attenuation.

B. Interference With Communication

Noise can mask important sounds and disrupt communication between individuals in a variety of settings. This process can cause anything from a slight irritation to a serious safety hazard involving an accident or even a fatality because of the failure to hear the warning sounds of imminent danger. Such warning sounds can include the approach of a rapidly moving motor vehicle, or the sound of malfunctioning machinery. For example, Aviation Safety (Anon., 1982), states that hundreds of accident reports have many “say again” exchanges between pilots and controllers, although neither side reports anything wrong with the radios.

Noise can disrupt face-to-face and telephone conversation, and the enjoyment of radio and television in the home. It can also disrupt effective communication between teachers and pupils in schools, and can cause fatigue and vocal strain in those who need to communicate in spite of the noise. Interference with communication has proved to be one of the most important components of noise-related annoyance (EPA, 1974a).

In its Levels Document, EPA determined that a yearly average day-night sound level of 45 dB would permit adequate speech communication in the home, and a DNL of 55 dB would permit

¹² In a summary of 10 studies, Berger (1983) shows that most hearing protectors in the field provide only one-third to one-half the attenuation that they do in the laboratory.

normal communication outdoors at a distance of about 3 meters.¹³ These levels also apply to hospitals and educational facilities. Higher average noise levels would be satisfactory for certain nonresidential spaces, such as commercial and industrial facilities, and inside transportation, depending on the degree to which speech communication is critical. Research over the last 20 years has expanded and refined EPA's criteria development in this area, but has not generated any major changes.

1. Prediction of speech interference

Methods of predicting the amount of speech that can be communicated in various noise backgrounds have been available for decades. Probably the most popular and respected method is the articulation index (AI) (French and Steinberg, 1947), which requires the measurement or estimation of the spectrum level of both speech and noise in 20 contiguous bands. Over the past 2 decades investigators have suggested adjustments to the AI for 1/3-octave bands, reverberation time, various vocal efforts, etc., and more recently for various degrees of hearing impairment (Humes, et al., 1986 and 1987).

The speech interference level (SIL) (Beranek, 1954) provides a quick method for estimating the distance at which communication can occur for different levels of vocal effort. The current method involves measuring octave-band sound pressure levels at 500, 1,000, 2,000, and 4,000 Hz and referring to a chart to determine the potential communication distance. The basic chart has been expanded to include such parameters as a broader range of voice levels and provisions for room reverberation (Webster, 1983). Additions to both the AI and the SIL have been proposed by Lazarus (1990), who offers modifications and extensions to account for strain on the part of both talker and listener, and the wearing of hearing protectors.

Another popular method to predict speech communication in a variety of conditions, the speech transmission index (STI), has been developed by a Netherlands research group (Houtgast, 1980; Houtgast and Steeneken, 1983). The STI takes into account room volume and reverberation time, in addition to speech and noise levels, and distance between talker and listener. A more recent outgrowth, the rapid speech transmission index (RASTI), represents a simplified version of the STI intended for field use, and is available in an instrument conforming to an international standard (IEC, 1987).

Finally the sound level meter's A-weighting network can be successfully used to predict speech interference levels. It is easy to use, available on virtually all sound level meters, and effective when the noise spectra are not complex.

2. Criteria for speech and warning signals

In addition to the classic work of Beranek and his colleagues (Beranek et al., 1971), Beranek has recently refined the traditional curves to account for the annoyance due to low-frequency "rumble" (Beranek, 1989). New criteria for determining acceptable background levels of noise in rooms are also offered by Lazarus (1986a, 1986b, 1987, and 1990). Lazarus includes in his criteria a variety of parameters such as: type of room, type of communication, communication distance, vocal effort, quality of speech intelligibility, AI, communication strain, listener's hearing sensitivity, and the use of hearing protectors.

Guidelines for audible warning signals have been developed by Patterson (1982). These guidelines, which were originally created for civil aircraft, were later adapted to helicopters and even station-

¹³ These levels represent EPA's identification of safe levels of environmental noise to protect the public health and welfare against all adverse effects of noise with the exception of hearing loss.

ary workplaces like hospitals (Patterson, 1985; Rood et al., 1985). Another set of guidelines for acoustic warning signals has been developed by Lazarus and Hoge (1986), and are based on the compatibility of signal type with various desired or undesired situations.

Although criteria have not yet been developed for speech recognition involving nonnative listeners, experiments by Florentine (1985) and Nabelek (1983) indicate that these individuals need more favorable listening conditions (less background noise and reverberation) than their native-language counterparts. These findings have implications for air traffic control systems.

3. The effect of hearing protectors on speech and warning signal perception

Hearing protectors attenuate both noise and the desired signal by equal amounts in a given frequency band, reducing both to levels where the ear is less likely to distort. This process often improves speech recognition when the level of background noise exceeds 80 to 90 dB. However, because hearing protectors usually provide considerably more attenuation in the high frequencies than in the low frequencies, listeners who have high-frequency hearing losses are at a disadvantage. Many speech sounds and some warning signals will be attenuated beyond the range of audibility. This is especially true of individuals whose losses exceed an average of 30 dB at the audiometric frequencies 2000, 3000, and 4000 Hz (Lindeman, 1976). A potential solution for this problem lies in some newly developed hearing protectors with flat attenuation across the frequency spectrum (Allen and Berger, 1990; Killion et al., 1988). One type of these protectors has already become popular with orchestral musicians (Killion et al., 1988) and even some rock musicians (Cohen, 1990).

Individuals tend to speak more softly when they wear hearing protectors, and consequently, speech communication is degraded when both talker and listener wear these devices (Hoermann et al., 1984). Hearing protectors also interfere with the localization of sounds in space, and this is especially true of the ability to localize sounds in the vertical plane while wearing ear muffs (Noble, 1981). Both ear plugs and ear muffs cause these types of problems, but it appears that they are more pronounced with ear muffs (Howell and Martin, 1975; Abel et al., 1982). These findings can have serious implications for safety in some circumstances.

4. Scholastic performance

Noise can disrupt communication in the classroom to the extent that the instructional method used in schools close to airports is sometimes nicknamed “jet pause” teaching. Cohen and Weinstein (1981) have reviewed several studies, which, after controlling for socioeconomic factors, indicate that the academic performance of children in quiet schools is better than that of children in noisy schools.

For example, elementary school children on the side of a school facing train tracks. performed more poorly on a reading achievement test than children in classrooms on the quiet side of the school (Bronzaft and McCarthy, 1975).¹⁴ Cohen and Weinstein also discuss research showing that skills, such as auditory discrimination and reading achievement can be adversely affected when children live in noisy circumstances, even though their schools may be no noisier than average. These latter studies indicate that interference with communication in the classroom is not the only

¹⁴ Bronzaft reported that in 1978 the city of New York reduced the noise of the elevated train and installed acoustical insulation in the affected classrooms, providing a total reduction in the A-weighted noise level of 6 to 8 dB (Bronzaft, 1981). By 1981, there was essentially no difference in reading achievement between students on the two sides of the school for the classroom studied.

process at work here. Possible additional explanations include adverse effects on children's information processing strategies and their feelings of personal control¹⁵ (Cohen and Weinstein, 1981).

5. Summary: Interference with communication

Interference with speech communication and other sounds is one of the most salient components of noise-induced annoyance. The resulting disruption can constitute anything from an annoyance to a serious safety hazard, depending on the circumstance.

Research over the past 2 decades has expanded and refined methods for predicting communication interference, but has not produced any major changes. Numerous adjustments have been suggested for the AI, the SIL has been modified and refined, and a new predictive method, the STI has been added. Criteria for determining acceptable background levels in rooms have also been expanded and refined, and progress has been made on the development of effective acoustic warning signals.

It is now clear that hearing protection devices can interfere with the perception of speech and warning signals, especially when the listener is hearing impaired, both talker and listener wear the devices, and when wearers attempt to locate a signal's source.

Noise can interfere with the educational process, and the result has been dubbed "jet-pause teaching" around some of the nation's noisier airports, but railroad and traffic noise can also produce scholastic decrements.

C. Effects of Noise on Sleep

Noise is one of the most common forms of sleep disturbance, and sleep disturbance is a critical component of noise-related annoyance. A study used by EPA in preparing the Levels Document showed that sleep interference was the most frequently cited activity disrupted by surface vehicle noise (BBN, 1971). Aircraft noise can also cause sleep disruption, especially in recent years with the escalation of nighttime operations by the air cargo industry. When sleep disruption becomes chronic, its adverse effects on health and well-being are well-known.

1. Assessing sleep disturbance

Noise can cause the sleeper to awaken repeatedly and to report poor sleep quality the next day, but noise can also produce reactions of which the individual is unaware. These reactions include changes from heavier to lighter stages of sleep, reductions in "rapid eye movement" (REM) sleep, increases in body movements during the night, changes in cardiovascular responses, and mood changes and performance decrements the next day. The accuracy and efficiency with which these effects are measured has been greatly assisted by the use of contemporary computers. The most popular measurement tool nowadays is electro-encephalography, but other methods, such as electrocardiography, electromyography, and electrooculography are also used, as well as clinical observation, self-assessment surveys, and accelerometry to measure the motion of the bed frame.

As a result of many years of research on the effects of noise on sleep, it is clear that intermittent and impulsive noise is more disturbing than continuous noise of equivalent energy, and that meaningful sounds are more likely to produce sleep disruption than sounds with neutral content. Also, older people are more likely to have their sleep disturbed by noise than younger people. In fact, children appear to be about 10 dB less sensitive to noise-induced sleep disruption than adults (Eberhardt, 1990). Sleep disturbance from noise tends to be greater in the early hours of the morn-

¹⁵ See also the discussion of noise, performance, and behavior in sections D.4, and D.5. below.

ing, when individuals spend more time in lighter sleep stages, and this is particularly true of the elderly.

2. Criteria for sleep interference

In the Levels Document EPA identified an indoor DNL of 45 dB, which translates to a nighttime average sound level of 35 dB, as necessary to protect against sleep interference. However, consensus on the levels of noise that can be tolerated without sleep disruption is incomplete at this time. In an attempt to develop a quantitative model for predicting noise-induced sleep interference, Pearsons et al., (1989) reviewed and analyzed 21 studies. However, the authors there unable to derive dose-response relationships from these studies because of large discrepancies between studies conducted in the laboratory and those conducted in the field.

In a recent review of the noise and sleep research, Griefahn (1990) recommends that the nighttime average sound level be kept below 45 dB in the sleeper's quarters. She cites research by Eberhardt (1987 and 1990; Eberhardt et al., 1987;) and Vallet et al., (1976 and 1990) showing self-reported adverse effects from continual road traffic when the average sound level is 40 dB and physiological responses at an average level of 37 dB. For intermittent road traffic noise, maximum recommended levels for single events (as opposed to average levels) range from 45 to 68 dB, depending on the investigation (Griefahn, 1990). Vallet et al. (1990), recommend maximum outside levels of 65 dB, which, of course, relies on some attenuation by the residence. Griefahn also points out that higher maximum levels can be tolerated if the ambient noise level is not very low, and that the difference between single events and the ambient level should not exceed 8 to 10 dB.

3. After-effects and habituation

Numerous recent investigations have revealed after-effects due to noisy nights. Ohrstrom (1983) found mood changes on the day following nights when the average sound level was as low as 35 dB. Adverse effects on performance, such as increased reaction time, have also been measured (Jurriens et al., 1983), and it appears that older peoples' next day performance is more adversely affected by noise than that of younger people (Griefahn and Gros, 1983).

Although people often believe they get used to nighttime noise, physiological tests point to the contrary. Studies have shown that while the subjective response improves with time, cardiovascular responses remain unchanged (Muzet, 1983). Vallet et al. (1990) conclude that habituation is not complete, even after 5 years of exposure to noise.

4. Summary: Effects of noise on sleep

Noise-induced sleep interference is one of the critical components of community annoyance. It can produce short-term adverse effects, such as mood changes and decrements in task performance the next day, with the possibility of more serious effects on health and well-being if it continues over long periods.

EPA's identified indoor DNL of 45 dB has not been seriously challenged over the past decade, but consensus in this area is lacking. One problem is that different experimenters tend to use a variety of descriptors (DNL, Leq, and maximum single-event levels) and a variety of methods for evaluating the effects (EEG, EKG, self-report, etc.). Perhaps one reason for the lack of clear-cut criteria is that this a complex area to research, requiring considerable time and expense. Another is, of course, a need for more field studies in this area.

D. Effects on Performance and Behavior

EPA did not use the literature on the effects of noise on performance and behavior in the identification of its levels of noise to protect against activity interference. One reason may have been that much of the information at that time related to the occupational setting rather than the general environment. Another may have been the complexity of the topic and the difficulty involved in identifying a single noise level that could apply to a great variety of tasks and conditions. Although these difficulties still pertain, much research has been generated in this area over recent years.¹⁶

Noise can cause adverse effects on task performance and behavior at work, and in nonoccupational and social settings. These effects are the subject of some controversy, however, since they do not always occur as predicted. Sometimes noise actually improves performance, and sometimes there are no measurable differences between performance in noisy and quiet conditions. The presence and degree of effects depends on a variety of intervening variables.

1. Sensory and motor effects

Experiments on the effects of noise on vision have produced conflicting results, with the suggestion of some effects on visual discrimination (Cohen, 1977). There is evidence, however, that high levels of noise can produce shifts in visual field (Parker, et al., 1976, 1978). High levels of noise can affect vestibular function, especially when the presentation to the two ears is asymmetrical, (or the level of attenuation is greater in one ear) (Harris, 1968). Impulsive or other sudden loud sounds can produce a startle response that does not completely habituate with repeated, predictable exposures (May and Rice, 1971).

2. Noise variables

Sound level is one of the most important parameters when predicting performance effects. The level of noise necessary to produce adverse effects is greatly dependent upon the type of task. Simple tasks remain unaffected at noise levels as high as 115 dB or above, while more complex tasks are disrupted at much lower levels. Until fairly recently, the level of beginning effects was thought to be around 95 dB for most conditions, but a summary of recent research (Jones, 1990) points to effects at much lower levels. Effects on serial reaction tasks have been noted for continuous noise with C-weighted noise levels of 90 dB (Jones, 1983) and for intermittent noise with C-weighted levels of around 80 dB (Lahtela et al., 1986).

Frequency and temporal characteristics also play a part. High-frequency sound is more disruptive than low-frequency sound, and intermittent noise can affect performance more adversely than continuous noise of equivalent energy. Aperiodic intermittencies are more likely to produce adverse effects than regular ones, and impulse noise may be even more disruptive. Again the effects are variable, depending upon task complexity and other factors.

Much of the important research in the effects of noise on performance conducted over the last decade has focused on the effects of irrelevant speech.¹⁷ The adverse effects of irrelevant speech appear to be fairly independent of sound level, at least in the 55-95 dB range, and therefore, are not mitigated simply by attenuating them by 10 dB or so (Jones, 1990). It also appears that irrelevant speech affects processes involving memory (e.g., reasoning, mental arithmetic, and problem solving)

¹⁶ For a comprehensive review of the effects of noise on job performance, see Suter, 1989.

¹⁷ The initial work was performed by Salame and Baddeley (1982, 1983, and 1987), and has been summarized by Jones (1990) at a recent conference in Stockholm.

rather than attention. With respect to reading tasks, however, meaningful speech is more disruptive than meaningless speech (Jones, 1990). These findings have significance for many modern work and school environments, where information processing and exchange is so important, especially those of the “open plan” variety.

3. Task variables

Task complexity has been identified in numerous experiments as a crucial determinant of the effects of noise on performance. Noise exposure usually leaves simple routine tasks unaffected, and can even improve performance of monotonous tasks, presumably by elevating one’s level of arousal (Broadbent, 1971). Some tasks, such as tracking and jobs requiring intellectual function, can be momentarily disrupted without decrements in overall performance (Broadbent, 1979). But if the noise level is sufficiently high or if the task becomes more complex, noise will have an adverse effect. When two or more tasks must be performed simultaneously in a noisy environment, performance on the primary task usually remains unaffected, while performance on the subsidiary task deteriorates (Hockey and Hamilton, 1970; Davies and Jones, 1975; Finkleman and Glass, 1970).

4. After-effects

It seems that noise can have even greater effects after than during exposure. The most common after-effect appearing in the experimental literature is a reduced tolerance for frustration, manifested in a series of experiments as a reduction in willingness to persist in trying to solve insoluble puzzles (Glass and Singer, 1972; Percival and Loeb, 1980). This research also indicates that predictability of the noise signal greatly reduces its adverse after-effects (Glass and Singer, 1972). One study found that the type of noise also influenced the after-effect. Aircraft noise modified to produce sudden onsets and offsets resulted in a lower tolerance for frustration after the exposure than white noise that had been similarly modified (Percival and Loeb, 1980).

5. Effects of noise on social behavior

There is an extensive literature concerning the effect of noise on social behavior, and just a few examples of this research will be discussed here. Singer et al. (1990) point out that noise has been used as a noxious stimulus in a variety of investigations because it produces the same biological and psychological effects as other stressors. In fact, they observe that the effects of noise combined with perceived control have been frequently demonstrated, and these investigations have also been extended to many other situations where the presence of control reliably moderates the effects of stress.¹⁸

In a frequently-cited laboratory study, Matthews and Cannon (1975) found that fewer subjects were willing to help someone who had “accidentally” dropped materials when background noise levels were 85 dB than when they were 65 dB. In a subsequent field study, the same results were demonstrated in a background of lawn mower noise, and this time the addition of a cast on the “victim’s” arm enhanced helping behavior under quiet conditions, but failed to do so during the noise episodes (Matthews and Cannon, 1975). In another such experiment, Sauser et al. (1978) found that subjects recommended lower salaries for fictitious employees when exposed to A-weighted levels of office noise at 70 to 80 dB than in quiet. Broadbent (1979 and 1983) cites additional evidence suggesting that subjects will give each other increased amounts of shock and noise when they themselves are exposed to noise, and also cites evidence that noise increases anxiety levels (Broadbent, 1983).

¹⁸ Singer et al. (1990) cite the research of Langer and Rodin on the effects of patient control in a nursing home situation.

As mentioned above, the presence of control, or even perceived control, is one of the most important predictors of adverse behavioral effects. Subjects who perceive that they have control over the noise show significantly greater tolerance for frustration than subjects without control, even if the control is never exercised (Glass and Singer, 1972). In a recent experiment, Singer and his colleagues found that subjects who were told that they had control of an A-weighted, 103-dB noise stimulus showed significantly greater persistence on a difficult task than subjects who had no control or subjects that had control for only part of the experiment (Singer et al., 1990). This finding occurred despite the fact that the subjects with only partial control reported feelings of control no different from those with full control. To the extent that these findings can be generalized to populations living in noisy areas, this kind of research may have significant sociological implications.

6. Summary: Effects on performance and behavior

Noise can adversely affect task performance in a variety of circumstances. In the past, research in this area has focused mainly on the occupational setting, where noise levels must be sufficiently high and the task sufficiently complex for performance decrements to occur. Recent research implicates more moderate noise levels, especially when speech is the disruptive noise stimulus. Some research indicates that noise can also produce disruptive after-effects, commonly manifested as a reduced tolerance for frustration, and it appears that the presence and timing of control over the noise are critical to the prediction of after-effects. Even moderate noise levels can increase anxiety, decrease the incidence of helping behavior, and increase the risk of hostile behavior in experimental subjects. These effects may, to some extent, help explain the “dehumanization” of today’s urban environment.

E. Extra-Auditory Health Effects

Noise has been implicated in the development or exacerbation of a variety of health problems, ranging from hypertension to psychosis. Some of these findings are based on carefully controlled laboratory or field research, but many others are the products of studies that have been severely criticized by the research community. In either case, obtaining valid data can be very difficult because of the myriad of intervening variables that must be controlled, such as age, selection bias, preexisting health conditions, diet, smoking habits, alcohol consumption, socioeconomic status, exposure to other agents, and environmental and social stressors. Additional difficulties lie in the interpretation of the findings, especially those involving acute effects. For example, if noise raises blood pressure on a temporary basis, will prolonged exposure produce permanent changes? In cases where these effects are permanent but slight, what are the long-term implications? These types of questions and problems have caused this particular area of noise research and criteria development to be very controversial.

1. Theoretical basis

Noise is considered a nonspecific biological stressor, eliciting a response that prepares the body for action, sometimes referred to as the “fight or flight” response. The physiological mechanism thought to be responsible for this reaction is the stimulation by noise (via the auditory system) of the brain’s reticular activating system (Cohen, 1977). Neural impulses spread from the reticular system to the higher cortex and throughout the central nervous system. Noise can, therefore, influence perceptual, motor, and cognitive behavior, and also trigger glandular, cardiovascular, and gastrointestinal changes by means of the autonomic nervous system. Evidence of these effects, however, is not easy to come by. Despite decades of research and probably hundreds of studies, relatively little can be said with much confidence.

2. Effects on blood pressure

Probably the most attention has been directed toward cardiovascular effects, especially potential elevations in blood pressure. Many studies of the stressful effects of noise have been conducted on rodents and other laboratory animals. The advantage of these studies is that they offer a greater degree of control and it is possible to have longer exposures than with human subjects. The disadvantages are that there is difficulty generalizing to humans, especially with the smaller animals, the expense involved when larger animals are used, and the prevailing public sentiment against animal experimentation.

EPA sponsored one of the most notable animal studies of noise exposure, in which Peterson and his colleagues performed five sets of experiments on the cardiovascular effects of noise on monkeys (Peterson et al., 1978, 1981, and 1983). The stimulus consisted of A-weighted levels of workplace noise at 85 to 90 dB, and the exposures there as long as 9 months. The results showed significant elevations of both systolic and diastolic blood pressure the fact that these changes persisted long after exposure cessation argues for a chronic effect, at least in this case. Unfortunately, an attempt to replicate this experiment with another primate model was discontinued for lack of funding after only two subjects had been exposed (Turkkan, et al., 1983). Relatively few animal experiments have been conducted in this area over recent years.

With respect to laboratory investigations involving human subjects, Rehm (1983) cites six studies showing increases in blood pressure, but questions whether these effects would be permanent. In an attempt to identify more susceptible populations, Michalak et al. (1990) investigated the effects of low-flying aircraft on elderly subjects. Using recorded aircraft sounds, they found significant increases in both systolic and diastolic blood pressure after exposure to the two types of noise, with significantly greater response to the rapid-onset flyover noise. Whether or not these increases would become permanent with protracted exposure is not known.

Field studies of noise and blood pressure among workers or community residents are becoming increasingly popular, but the results are not always consistent. Rehm (1983) has reviewed 14 field studies, mostly of occupational noise exposure, and reports that the majority showed significant increases in either systolic or diastolic blood pressure, or both. Van Dijk et al. (1983), however, reports that six other studies of exposure to occupational noise found no significant differences between exposed and nonexposed groups.

Knipschild and Oudshoorn (1977) avoided some of the pitfalls characteristic of epidemiological studies by examining a population near the Amsterdam airport before and after an increase in exposure to aircraft noise, and comparing it to a nonexposed population nearby. The dependent variable was the purchase of certain prescription drugs: tranquilizers, sleeping pills, antacids, and cardiovascular drugs. The investigators found that the use of these drugs in the nonnoise area was essentially stable, whereas the use of most types of these drugs in the area newly impacted by noise increased steadily over the years investigated. This increase was especially noticeable for antihypertensive drugs.

In a more recent review, van Dijk (1990) analyzed 12 cross-sectional studies, with half of them showing a positive relation between noise exposure and blood pressure, and the others no significant effects. Van Dijk criticizes these kinds of investigations for the following kinds of weaknesses: inadequate description of noise and blood pressure measurements; absence or inadequate control of intervening variables; use of hearing loss as a determinant of exposure magnitude; use of hearing protectors; and questionable interpretation of the results. Part of the problem may be that the investigators often come from only one discipline, when, in fact, a multi-disciplinary team is needed.

Thompson and Fidell (1990) recommend the use of prospective or case-control models, rather than the more convenient cross-sectioned study, and they stress the importance of adequate sample size. They maintain that because any changes in blood pressure resulting from community noise are likely to be small, careful controls, large sample sizes, and at least 5 years of exposure to noise would be needed to identify significant effects.

3. Effects on blood chemistry

Blood chemistry is also of interest in studies of wire exposure and the cardiovascular system. In the review cited above, Rehm (1983) reports on a series of experiments, both laboratory and field, which show increased levels of the catecholamines epinephrine and norepinephrine. Among them are the series of experiments by Ising and his colleagues (1981a, 1981b, 1981c), showing a connection between noise exposure and magnesium metabolism in humans and animals. According to Rehm, this finding suggests a possible mechanism for cardiovascular effects in that a chronic magnesium imbalance can lead to increased intracellular levels of calcium (in the heart, for instance), which, in turn, can cause vasoconstriction and increases the sensitization for catecholamines.

A large epidemiological study, the Caerphilly and Speedwell Heart Disease Study in England, holds some promise for investigating the effects of road traffic noise (Babisch and Gallacher, 1990). This study of heart disease and a variety of environmental factors uses both the cross-sectional and prospective approaches, and should continue for more than 10 years. The investigators have performed detailed noise exposure measurements. Sample sizes of more than 2000 men have been drawn from both the Caerphilly and Speedwell communities, and controls for age, socio-economic factors, family history, body weight, smoking habits, alcohol, and physical activity have been instituted. Initial results (from the cross-sectional study) indicate significant noise related elevations of serum cholesterol and glucose levels, and plasma viscosity, with an absence of significance for blood pressure or any of the other cardiovascular risk factors. The authors point out that all of the effects there slight, but even small increases, should they prove to be real, would be relevant to the public health.

4. Interactions

Several investigators have suggested that aversion to noise may be more highly correlated with health problems than the noise itself. For example, a study by Rehm (1983) found a significant correlation between noise annoyance and cardiovascular disorders. Her data also suggest that those with existing health problems are more annoyed by environmental factors, such as noise. Similarly, Rovekamp (1983) found that subjects who described themselves as sensitive to noise showed significantly greater noise-induced increases in peripheral vasoconstriction than their "normal" counterparts. Finally, a recent study of road traffic and aircraft noise failed to show a significant increase in blood pressure resulting from noise, but did show a correlation between the presence of noise and subjective health complaints (Pulles et al., 1990). Differences in effects between noise and non-noise groups there dependent upon the subjects' perceived control over the noise, but independent of noise level.

5. Other adverse effects

Adverse health effects from noise exposure other than cardiovascular effects are even more difficult to isolate. Several studies have investigated the effects of noise on fetal development, with inconclusive results. Some have shown an indication of reduced birth weight or an increase in premature births, but the effects are usually slight, and (except in one case, McDonald et al., 1988), not statistically significant (Rehm and Jansen, 1978; Knipschild et al., 1981).

The effects of noise on documented mental health disorders are likewise inconclusive. Rehm (1990) cites a series of studies showing increased numbers of psychoneurotic and psychosomatic complaints due to noise exposure, but whether or not these complaints lead to chronic dysfunction or illness is not obvious.

6. Summary: Extra-auditory effects

As a biological stressor, noise can influence the entire physiological system. Most effects appear to be transitory, but with continued exposure some effects have been shown to be chronic in laboratory animals. Probably the strongest evidence lies in the cardiovascular effects. However, many studies show adverse effects, while many others show no significant differences between experimental and control populations.

Undoubtedly because of the lack of consistent evidence in this area, EPA could not use data on extra-auditory health effects in its identification of safe levels of environmental noise. Instead, this subject was relegated to a brief discussion in an appendix in the Levels Document. Although considerable attention was devoted to this topic at the international conference in Yugoslavia, and some coverage was given in the 1973 Criteria Document, the evidence was far from sufficient and much too complex to enable the formulation of dose-response relationships. Later, EPA did fund some promising research in this area (Hattis and Richardson, 1980; Peterson et al., 1978, 1981, 1983; Turkkan, 1983), some of which has clearly demonstrated adverse cardiovascular effects at noise levels typical of occupational settings.

In the interim, there has been considerable European research activity in this area, but nearly 20 years later, criteria are still lacking. What is available, however, should give public policymakers as well as noise producers some reason for concern, especially in situations where those impacted by the noise have no control over or perceive they have no control over their exposures.

F. Annoyance

Annoyance is the measured outcome of a community's response to survey questions on various environmental and other factors, such as noise exposure. Although annoyance in individuals is sometimes measured in the laboratory, field evaluations of community annoyance are most useful for predicting the consequences of planned actions involving highways, airports, road traffic, railroads, or other noise sources. Factors directly affecting annoyance from noise include interference with communication and sleep disturbance, which have been discussed in earlier sections. Other less direct effects are disruption of one's peace of mind, the enjoyment of one's property, and the enjoyment of solitude. The consequences of noise-induced annoyance are privately felt dissatisfaction, publicly expressed complaints to authorities, and potential adverse health effects, as suggested above.

"Annoyance" has been the term used to describe the community's collective feelings about noise ever since the early noise surveys in the 1950s and 1960s, although some have suggested that this term tends to minimize the impact. While "aversion" or "distress" might be more appropriate descriptors, their use would make comparisons to previous research difficult. It should be clear, however, that annoyance can connote more than a slight irritation; it can mean a significant degradation in the quality of life. This represents a degradation of health in accordance with the WHO's definition of health, meaning total physical and mental well-being, as well as the absence of disease.

1. Predicting annoyance for public policy purposes

To facilitate the development of criteria and public policy, Schultz (1978) summarized and analyzed a large number of studies of community annoyance from aircraft, road traffic, and railroad noise. As

part of this effort, Schultz made several simplifying assumptions, among them that the percentage of the population determined to be “highly annoyed” would be the only parameter plotted as a function of day-night average sound level. The resulting curve portrays annoyance as independent of noise source, and it has been dubbed the Schultz curve.

Recently, Fidell et al. (1991) reanalyzed the original data used by Schultz, adding new data from its community noise surveys. The resulting function shows slightly greater annoyance in the range between DNLS of 51 dB and 72 dB, and slightly less annoyance above about a DNL of 76 dB than the original curve. In general, the two curves are fairly close, indicating that the new studies have not drastically altered the prediction of community annoyance, at least when reactions to various noise sources are plotted together. When annoyance from various noise sources is analyzed separately, however, the new data are quite revealing, as will be discussed below.

Although it has been used internationally in the formation of noise policy, the Schultz curve has been the subject of much debate (Kryter, 1982a, 1982b; Griffiths, 1983). For example, Griffiths (1983) criticizes Schultz for treating attitudinal data categorically (highly annoyed or otherwise) rather than scaling it, for failing to analyze the distribution of annoyance, for assuming a fixed threshold for noise-related annoyance, and for choosing such an extreme criterion as highly annoyed. Perhaps because of these reasons, as well as a number of others, researchers and policymakers are beginning to examine alternatives to the Schultz curve for predicting community annoyance from noise.

2. Metrics

The metrics most commonly used to describe the relationship between noise and community annoyance are the equivalent continuous sound level, and the day-night average sound level (DNL), composite ratings based on the A-weighted sound level. The DNL is used almost exclusively for airport planning in the U.S., but this practice has recently been called into question. For example, the importance of communication and relaxation in the evening hours has been recognized (in California and occasionally in Europe) by the use of the community noise equivalent level (CNEL), a metric that includes a 5-dB penalty for noises occurring between 7:00 and 10:00 pm as well as the 10-dB nighttime penalty (California Code of Regulations, 1990). In a study of the communities surrounding two French airports, residents expressed the greatest annoyance during the hours between 7:00 and 11:00 pm (Francois, 1977).

Some authorities are considering the use of the sound exposure level (SEL) for evaluating the effects of single events, such as aircraft flyovers (EPA/FAA, 1990). The importance of other parameters are also being considered, such as rise time (or onset time) as an indicator of the annoyance from low-flying military aircraft (Harris, 1989). Officials from the U.S. Forest Service report that their agency has begun to use an aircraft detectability criterion to site recreational facilities (Harrison et al., 1990).

3. Criteria

Community annoyance resulting from noise-induced activity interference was one of the most important considerations in EPA's identification of an outdoor DNL of 55 dB as the “safe” level of environmental noise (EPA, 1974a). Some years later, a Federal Inter-Agency Committee on Urban

Noise (FICUN) developed guidelines for considering noise in land-use planning and control (DOT, 1980).¹⁹

In its noise zone classification table, “minimal” exposures to noise there defined as DNLS below 55 dB, and between DNLS of 55 and 65 dB, the exposures there labeled “moderate.” However, all of these exposures there considered “acceptable” according to land-use planning standards specified by the Department of Housing and Urban Development (HUD). No research was cited to support these conclusions. In a footnote, FICUN stated the following:

HUD, DOT and EPA recognize Ldn = 55 dB as a goal for outdoors in residential areas in protecting the public health and welfare with an adequate margin of safety (Reference: EPA “Levels” Document.) However, it is not a regulatory goal. It is a level defined by a negotiated scientific consensus without concern for economic and technological feasibility or the needs and desires of any particular community.

The Department of Transportation’s Federal Aviation Administration (FAA) has adopted a DNL of 65 as the point above which residential land-use becomes “normally unacceptable.” Below this level, the FAA does not require airport authorities to draw noise contours or discuss the impact of airport noise on the surrounding communities for purposes of compatibility planning or to receive grants under the Part 150 program.²⁰ Thus, public policy decisions, at least on the federal level, have not considered the annoyance of individuals living in the DNL 55-65 dB range.

Recent research confirms the findings of earlier investigations relied upon by the EPA, that annoyance is often generated at day-night average sound levels well below 65 dB (Fidell et al., 1985; Fidell et al., 1991; Hall et al., 1981). Figures 4 and 5 from Fidell et al. (1991) portray the responses from surveys of two mid-sized airports in California: Burbank Airport and the Orange County Airport. The percentage of respondents highly annoyed is depicted as a function of DNL, and compared to the Schultz curve. Both studies show significantly greater numbers of people highly annoyed than would have been predicted by the Schultz curve. For example, at 60 dB, as many as 70 percent of the Burbank population described themselves as highly annoyed and some 40 percent near the Orange County Airport.

Presumably because of this kind of evidence, another interagency task force has convened to discuss the extent to which day-night average sound levels below 65 dB should be taken into account in assessing the impact of aircraft/airport noise, and to examine the possible need for a single-event metric to supplement the DNL (EPA/FAA, 1990).²¹

¹⁹ FICUN was an ad-hoc interagency panel composed of representatives from EPA, FAA, HUD, the Department of Defense, and the Veterans Administration. In 1990 another such group, the Federal Interagency Committee on Noise (FICON) has been activated (focussing mainly on aircraft noise), but a report has not been published to date.

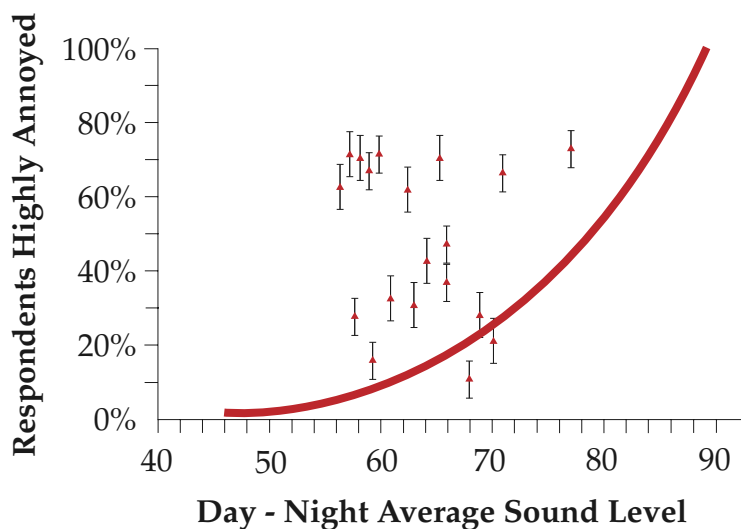
²⁰ Part 150 studies are conducted at airports where the noise generated by airport construction or expansion is potentially incompatible with the surrounding community. These studies must follow the procedure set out by Federal Aviation Regulations (FAR) Part 150.

²¹ The U.S. EPA and FAA put together an intragency agreement to examine the extent to which single event analyses and information beyond the Ldn = 65 contour provide useful additions to current methods of evaluating potential airport noise impacts. Under this agreement, a contractor would identify eight existing airports and perform a quantitative analysis using existing data. No new annoyance data would be developed.

4. Sources

The sources of noise producing community annoyance are primarily aircraft, road traffic, and railroad noise, although noise from industry, construction, and within buildings can also be problematical. The leading offenders are usually aircraft and road traffic noise, although the hierarchy depends upon many factors, such as urbanization, numbers of noise events, and proximity to the sources. Recent research indicates that, despite equivalent noise levels, some sources of community noise are more annoying than others, providing further indication that the Schultz curve cannot be valid for all circumstances.

Treating annoyance from all sources with one predictive curve provokes the hoards of oversimplification. De Jong (1990a) reports that an analysis of Dutch studies carried out over the previous 15 years showed that aircraft and highway noise produced considerably more annoyance than equivalent levels of train, tramway, and urban road noise (Miedema, 1988). The divergence was particularly pronounced at high noise levels. The fact that aircraft generate more annoyance than surface transportation is portrayed dramatically in the analysis described above by Fidell et al. (1991), where annoyance related to mid-sized airports appears substantially greater than that predicted by the Schultz curve, while annoyance from urban sources, such as trains, trams, and street traffic, is considerably less than that predicted by the Schultz curve.²² Figures 6 and 7, also from Fidell et al. (1991), depict data from British and Swedish railroad studies, showing somewhat less annoyance from these sources in relation to the Schultz curve.



Relationship of data from Burbank Airport Study to 1978 synthesis (Schultz) curve, showing percentage of respondents highly annoyed as a function of day-night average sound level. (After Fidell et al. 1991)

²² See also Fidell et al. (1985), Hall et al. (1981), and de Jong (1990).

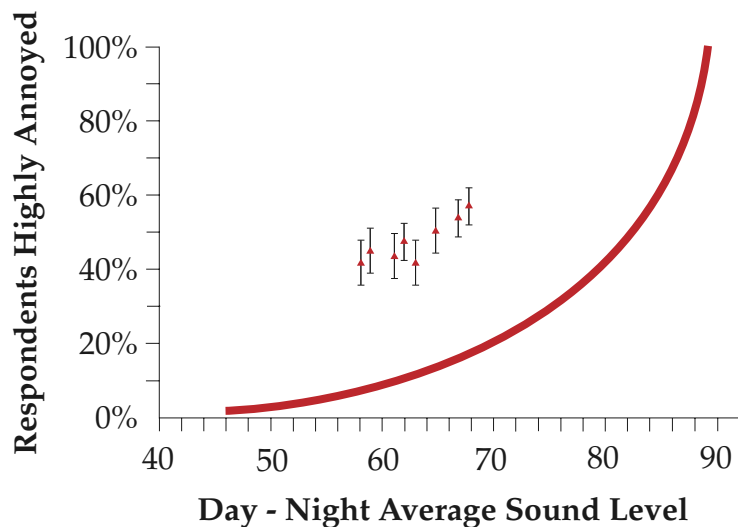


Figure 5
Relationship of data from Orange Country Airport Study to 1978 synthesis (Schultz) curve, showing percentage of respondents highly annoyed as a function of day-night average sound level. (After Fidell et al., 1991).

The explanation for these source-related differences is not necessarily that aircraft noise is inherently more annoying than surface transportation noise. It may be related to differences in people's criteria for responding to various noise sources (de Jong, 1990b; Green and Fidell, 1991). Or it may be caused by differences in sensitivity which are actually biologically based.²³ Green and Fidell (1991) point out that this evidence does not discredit the predictive validity of the DNL, but suggest that communities adopt a more sensitive criterion when evaluating the impact of aircraft noise.²⁴

Impulse noise also appears to be more annoying than continuous noise of equivalent energy, and various penalties have been proposed ranging from 0 dB at relatively high ambient noise levels of about 67 dB, to 10 dB at ambient levels as low as 35 dB (Rice, 1983). Vos and Smoorenburg (1983) have recommended a formula for computing the impulse noise penalty, taking into account the type of noise source, the signal level, and the ambient noise level.

As de Jong points out (1990b), most people are exposed to some combination of noise sources, posing a very complex predictive problem. Several models for predicting noise annoyance from complex sources have been proposed, but most fail to solve the difficult theoretical problems involved (de Jong cites Berglund et al., 1981, and Miedema, 1985). Among the groups working on these models are the Institute for Sound and Vibration Research in England, and the Netherlands' Organization for Applied Scientific Research, TNO.

²³ De Jong (1990b) cites the work of Di Nisi et al. (1987) and Ising, et al. (1981b) to support this theory.

²⁴ Green and Fidell found a difference of 5.2 dB between the noise levels at which the same percentage of people are highly annoyed by aircraft noise versus noise from surface transportation.

5. Nonacoustics variables

Although it is dear that community annoyance is positively correlated with noise exposure level, other variables also appear to be important, such as ambient noise level, time of day and year, location, and socioeconomic status. None of these other variables, however, is as powerful as the attitude of the residents surveyed. This is a good example of the fact that the human being is not a black box, where the effect is a simple consequence of the input. In a recent analysis of 280 social surveys, Fields (1990) examined 17 hypotheses as they relate to community annoyance from noise. Besides noise exposure level, the only variables Fields identified as strongly correlated with noise annoyance there the attitudinal hypotheses: (1) fear that the noise source might be a danger to the neighborhood, (2) belief that the noise is preventable, (3) awareness that non-noise problems are associated with the noise source, (4) stated sensitivity to noise, and (5) belief that the economic activity represented by the source is not important for the community.

6. Habituation

The evidence is fairly dear that so long as the stimulus remains the same, noise annoyance does not subside over time (e.g., Fields, 1990). Griffiths (1983) cites studies showing no habituation for highway noise 4 months to 2 years after the opening of new routes. De long (1990) found that annoyance in a previously surveyed community increased by 10 percent with no change in noise levels. He suggests that this increase could represent a shift of internal criteria due to increased publicity and other factors, or perhaps an increase in physiological sensitization.

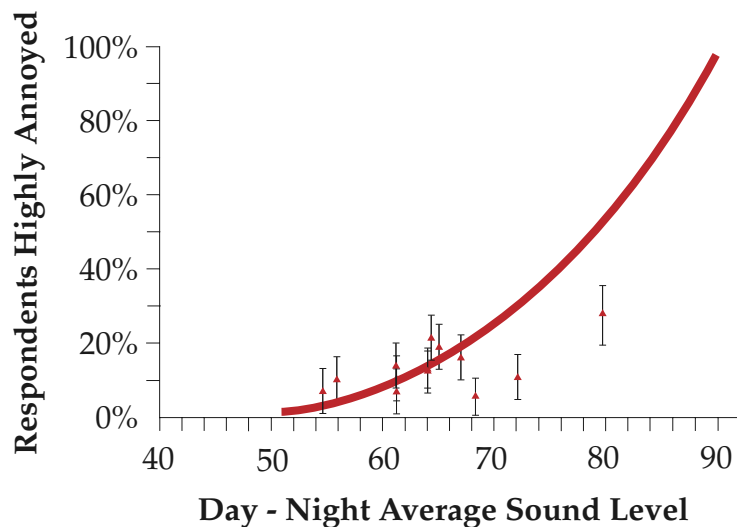


Figure 7 - Relationship of data from Swedish Railroad Study to 1978 synthesis (Schulz) curve, showing percentage of respondents highly annoyed as a function of day-night average sound level. After Fidell et al, 1991).

There has been very little study of the effects of noise-related annoyance on general health, although this would appear to be a fertile field. The study mentioned in section E.4, above by Rehm (1983) suggests a relationship between annoyance and cardiovascular disorders. Likewise, another study indicates a connection between noise and subjective health complaints (Pulles, et al., 1990). De Jong (1990a) refers to the recent use in Germany of the concept of “substantial annoyance” as a

predictor of possible health damage.²⁵ He recommends the development of an integrated theory of noise effects “to uncover the relationships among medical, physiological, behavioral, and ecological effects of environmental noise.” (de Jong, 1990a, p.520)

8. Summary: Annoyance

Annoyance can be viewed as the expression of negative feelings resulting from interference with activities, as well as disruption of one’s peace of mind and the enjoyment of one’s environment. Although this reaction can run the gamut of mild irritation to extreme distress, only responses categorized as “highly annoyed” (and greater) have been used to measure the impact of noise on communities. The most respected and widely used criterion to assess community annoyance in the U.S. has been the Schultz curve, although this criterion has been the subject of heated debate. Several recent studies indicate that the Schultz curve underestimates annoyance due to aircraft noise and overestimates annoyance from the noise of urban traffic and trains, leading to the conclusion that annoyance from these categories should be assessed separately. In addition, there has been growing interest in supplementing the traditional DNL with a descriptor for single events.

EPA’s Levels Document identified the outdoor level to protect against activity interference as a day-night average sound level of 55 dB. This identification was not to be construed as a standard or regulation,²⁶ but as information to aid states, localities, and the general public. Later, an interagency task force identified average levels between 55 and 65 dB as “acceptable” for purposes of land-use planning. The DNL 65-dB criterion, which has been applied particularly to airport noise assessments, is now being reconsidered by another interagency task force.

There is evidence that impulse noise is more annoying than continuous noise of equivalent energy, and various correction factors have been proposed to account for the difference. In addition, most people are exposed to a combination of noise sources, and models for predicting the resulting annoyance are in the formative stages.

The most important variables other than noise exposure level relate to people’s attitudes about the noise, such as fear of possible danger, stated sensitivity, and the belief that the noise is preventable. Finally, it appears that noise-related annoyance does not subside over time.

VI. Conclusions

Noise has a significant impact on the quality of American life. There is no evidence that the impact has diminished in the years since ONAC was abolished. Rather, it appears that the impact is at least as great, and most probably greater, than it was 10 years ago, due to population growth, especially in urban areas, and the proliferation of certain noise sources.

A considerable amount of noise effects research has been conducted over the last decade, much of it taking place in the European nations where governmental concern about noise is greater than it is in the U.S. at this time. These studies have expanded the knowledge base and filled certain gaps. Many of them suggest important interrelationships between the various noise effects that remain largely unexplored. For example, perceived control over noise appears to decrease its adverse effects on the subsequent performance of certain tasks. The concept of control also has a bearing on annoyance from noise, as do several other nonacoustic factors. Annoyance appears to be related to

²⁵ De Jong cites Jansen (1986).

²⁶ See Foreword, Levels Document (EPA, 1974a).

extra-auditory health effects, and chronic sleep interference, which is a component of annoyance, can have adverse effects on health and well-being.

All of these effects are, to a varying degree, stress related. Nowadays there is increasing evidence in the medical literature on the relationship between stress and illness, one which is often exacerbated by lack of control.

Cumulatively, this evidence suggests the potential for a unifying hypothesis that may well explain some of the health effects that have been observed in connection to noise exposure, but have usually been dismissed because of the absence or insufficiency of direct cause and effect relationships. Such a hypothesis, however, can only be validated by a new interdisciplinary approach, one which takes a broader and somewhat different perspective than is currently employed. This approach could very well provide the key to understanding a great deal more about the general impact of noise on society, and the extra-auditory effects in particular.

EFFECT OF 90 DECIBEL NOISE OF 4000 HERTZ ON BLOOD PRESSURE IN YOUNG ADULTS

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Background: Almost every individual dislikes excessive and unnecessary noise. Noise exerts various adverse psychological and physiological effects, on human body including a rise in blood pressure. **Methods:** 117 volunteer medical students, aged 18-23 years were exposed to 90 decibel noise of 4000 hertz for 10 minutes, produced by audiometer in a sound-proof room. Blood pressure was recorded every three minutes. **Results:** Blood pressure increased during exposure to noise. Average rise in systolic blood pressure was 2.462 ± 0.532 mm Hg and average rise in diastolic blood pressure was 3.064 ± 1.047 mm Hg. Blood pressure came to resting value within two minutes after stopping exposure to noise in more than 50% of the subjects. **Conclusion:** Systolic and diastolic blood pressure increases due to noise exposure.

Key Words: Noise, Blood pressure, Health

INTRODUCTION

Some authors have defined noise as any audible acoustic energy that adversely affects the physiological or psychological well being of the people.¹ The term noise is commonly used to describe sounds that are disagreeable or unpleasant produced by acoustic waves of random intensities and frequencies.²

Noise has become a very important "stress factor" in the environment of man.³ Noise has many effects on exposed population.⁴ The blood pressure can increase during exposure to noise and a number of pituitary hormones are affected by noise.⁵ The adverse behavioral effects of noise include annoyance, interference with performance and efficiency, interference with communication and fatigue.⁶ High noise levels are associated with higher accident rates.^{6,7} There is positive association of noise with increased risk of threatened or spontaneous abortion, pregnancy induced hypertension, abnormal labour and low birth weight.⁸ A number of temporary physiological changes occur in human body as a direct result of noise exposure. These are a rise in intra-cranial pressure, an increase in heart rate and an increase in sweating.³ Auditory effects of noise exposure include:(a) Auditory fatigue: It appears in the 90 dB region and is greatest at 4000 Hz; it may be associated with side effects such as whistling and buzzing in the ears (b) Deafness: The hearing loss may be temporary or permanent. Most temporary loss occurs in frequency range between 4000 to 6000 Hz.³

Against this background, some noise experts have investigated the acute effects of short-term loud noise on blood pressure and other cardiovascular parameters. Most of the studies have shown a rise in systolic and/or diastolic blood pressure⁹⁻²⁰ while some of the research scientists observed negative (decreased or non-significantly increased) association between blood pressure and noise.^{13,15,21,22}

Green et al¹³ observed a significant increase in systolic and diastolic blood pressure in younger age group (25-44 years) subjects exposed to more than 85 dB noise as compared to decrease in systolic blood pressure and no effect on diastolic blood pressure in subjects aged 45-65 years.

As little or no work has been done on effects of noise on blood pressure in Pakistan, moreover the effect observed by other scientists is controversial, therefore we designed this study to observe the effect of exposure to short-term noise on systolic blood pressure, diastolic blood pressure, mean arterial pressure and pulse pressure.

MATERIAL AND METHODS

117 volunteer normotensive medical students (61 male and 56 female), aged 18-23 years were exposed to 90 dB sound of 4000 Hz for 10 minutes, produced by audiometer in sound-proof audiometry room of ENT department, Khyber Teaching Hospital, Peshawar under supervision of an expert audiologist. Procedure was explained to them and consent was taken. Inclusion criteria were: Resting heart rate between 60-100, resting systolic and diastolic blood pressure between 100-125 and 60-90mm Hg, respectively and normal auditory acuity as tested by audiometer. Ten subjects were anxious/phobic about the procedure of the test and were excluded from the study. In 16 subjects blood pressure increased during control experiment i.e. when they were exposed to experimental conditions for 10 minutes, without exposure to noise; these subjects were also excluded from study.

Blood pressure and heart rate was measured at regular three-minute intervals before, during and after the production of noise. Results were analyzed by SPSS package by using student t-test and Chi-square test. The subjects selected for the study were themselves control group by exposing them to experimental conditions, without production of noise.

RESULTS

Statistical analysis of the data showed that the systolic blood pressure, diastolic blood pressure, pulse pressure, and mean arterial pressure increased in 57.26%, 70.94%, 34.19% and 73.50% of the total subjects, respectively; while the pulse pressure decreased in 44.44% of the total subjects showing more effect on diastolic blood pressure as compared to systolic blood pressure. The number of subjects in whom the blood pressure increased, decreased or was not affected is shown in table 1.

Table-1: Number of Subjects in whom blood pressure was affected by noise

Parameters	Increase	Decrease	No Effect
Systolic Blood Pressure	67 (57.26%)	24 (20.51%)	26 (22.22%)
Diastolic Blood Pressure	83 (70.94%)	14 (11.96%)	20 (17.09%)
Pulse pressure	40 (34.19%)	52 (44.44%)	25 (21.37%)
Mean Arterial Pressure	81 (69.23%)	24 (20.51%)	12 (10.26%)

Quantitative analysis of rise in blood pressure showed that average rise in systolic blood pressure was 2.460 ± 0.711 mm Hg (Maximum rise: 23 mm Hg, $P < 0.05$); Average rise in Diastolic Blood Pressure was 3.064 ± 1.047 mm Hg (Maximum rise: 27 mmHg, $P < 0.05$); Average fall in pulse pressure was 0.429 ± 0.054 mm Hg ($P > 0.05$) and average rise in Mean Arterial pressure was 2.157 ± 0.699 mmHg (Maximum rise: 21, $P < 0.05$) (Table 2).

When the blood pressure was analyzed only in those subjects in whom the blood pressure increased, it was seen that the average rise in systolic blood pressure and diastolic blood pressure was 5.61 ± 1.334 mmHg and 6.71 ± 1.765 mm Hg respectively.

Moreover, once the blood pressure was increased, it came back to normal resting value within 11 minutes, except in only 3 subjects (blood pressure was not recorded after 11 minutes); in more than 50% of the subjects it took not more than two minutes. Average blood pressure at different time intervals during exposure to noise and after exposure to noise is shown in Table-3.

DISCUSSION

Noise pollution is a serious problem but recognition of the problem is not universal. It is increasingly being recognized as a physical factor in the environment that is injurious to many aspects of health.

Table-2: Quantitative Analysis of rise in Blood Pressure

Subjects	SBP (mm Hg)	DBP (mm Hg)	PP (mm Hg)	MAP (mm Hg)
Max. Rise (M)	19	27	13	21
Max. Rise (F)	23	20	18	19
Max. Fall (M)	15	23	17	18
Max. Fall (F)	15	2	22	2
Average Rise (M)	2.285 ± 0.601	2.765 ± 0.989	-0.34 ± 0.012	2.568 ± 0.702
Average Rise (F)	2.640 ± 0.711	3.739 ± 1.234	-0.562 ± 0.056	1.827 ± 0.639
Average Rise (Both Sexes)	2.462 ± 0.532	3.064 ± 1.047	-0.429 ± 0.054	2.157 ± 0.699

M=Male, F=Female, Max=Maximum

Table -3: Time taken by the blood pressure to come to basal level.

	No. of subjects	2 Min.	5 Min.	8 Min.	11 Min.	> 11 Min.
SBP	57	35(61.4%)	15(26.31%)	4(7.02%)	1(0.57%)	2(3.51%)
DBP	83	52(62.65%)	23(27.71%)	6(7.23%)	1(1.2%)	1(1.20%)
PP	40	20(50%)	10(25%)	7(17.5%)	1(2.5%)	2(5%)

	- 52	35(67.31%)	10(19.23%)	4(7.69%)	2(3.85%)	1(1.77%)
MAP	86	56(65.12%)	24(27.9%)	3(2.49%)	1(1.16%)	2(1.92%)

Many research scientists in the world have observed a significant rise in blood pressure in response to noise.^{5,9-20} Some of the scientists observed a rise only in systolic blood pressure^{12, 19}, while many others found a significant increase in both systolic and diastolic blood pressure in response to noise.^{5,9-11,13-18,20}

Reggocova¹⁴ studied the effect in children and proved that their blood pressure increases in response to even more than 60dB noise. Green et al¹³ observed positive and significant association in younger age group and negative association in older age group. While on the other hand Babish et al¹⁶ could not see any association of noise and blood pressure, but the same author in another study¹⁷ observed decreased in diastolic blood pressure in response to noise exposure. Eliuse et al²² observed insignificant increase in blood pressure.

Our result showed a significant rise in both systolic and diastolic blood pressure on exposure to noise for 10 minutes. The blood pressure came back to the resting value within 11 minutes in more than 95 % of the subjects in whom it increased.

The actual mechanism for increase in blood pressure is not yet completely understood but a few facts are known: there is increased 8 hour overnight urinary cortisol in children living in noisy environment,¹⁹ peripheral vascular resistance increases and baroreceptor sensitivity is not suppressed during noise exposure²⁰ and there is increased urinary excretion of epinephrine, nor-epinephrine and dopamine is subjects exposed to high levels of noise.²¹

Therefore because of limitations in exposure characteristics, adjustment for important confounders and the occurrence of publication bias further studies are suggested in this regard.²²

Finally, in order to prevent or at least minimize the health hazards due to noise exposure, it is recommended that maximum allowable duration of exposure to noise should be reviewed and strictly followed; legislation for control of noise should be constituted and strict policy be adapted to enforce the concerned laws.

Efforts should be made to control the noise at the source, to control the transmission of noise and to protect the exposed persons; there should be permanent arrangements for regular measurements of noise levels at different locations in cities and factories and health education regarding noise control should be given due importance.

CONCLUSION

Noise is increasingly being recognized as a physical factor in the environment that is injurious to health. One of the ill effects of noise on human body is rise in blood pressure. In our study short-term exposure to noise for 10 minutes produced a significant rise in blood pressure. Both systolic and diastolic blood pressure increased but the rise in diastolic blood pressure was more than the rise in systolic blood pressure.

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CEQA & Climate Change

Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act

January 2008

Disclaimer

The California Air Pollution Control Officers Association (CAPCOA) has prepared this white paper consideration of evaluating and addressing greenhouse gas emissions under the California Environmental Quality Act (CEQA) to provide a common platform of information and tools to support local governments.

This paper is intended as a resource, not a guidance document. It is not intended, and should not be interpreted, to dictate the manner in which an air district or lead agency chooses to address greenhouse gas emissions in the context of its review of projects under CEQA.

This paper has been prepared at a time when California law has been recently amended by the Global Warming Solutions Act of 2006 (AB 32), and the full programmatic implications of this new law are not yet fully understood. There is also pending litigation in various state and federal courts pertaining to the issue of greenhouse gas emissions. Further, there is active federal legislation on the subject of climate change, and international agreements are being negotiated. Many legal and policy questions remain unsettled, including the requirements of CEQA in the context of greenhouse gas emissions. This paper is provided as a resource for local policy and decision makers to enable them to make the best decisions they can in the face of incomplete information during a period of change.

Finally, this white paper reviews requirements and discusses policy options, but it is not intended to provide legal advice and should not be construed as such. Questions of legal interpretation, particularly in the context of CEQA and other laws, or requests for advice should be directed to the agency's legal counsel.

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List of Acronyms and Abbreviations

<u>Acronym/ Abbreviation</u>	<u>Meaning</u>
AB 32	Assembly Bill 32 Global Warming Solutions Act of 2006
AG	Attorney General
ARB	Air Resources Board
ASTM	American Society of Testing and Material
BAAQMD	Bay Area Air Quality Management District
BAU	Business as Usual
BEES	Building for Environmental and Economic Sustainability
Calfire	California Fire
Caltrans	California Department of Transportation
CAP	Criteria Air Pollutants
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resource Board
CAT	Climate Action Team
CCAP	Center for Clean Air Policy
CCAR	California Climate Action Registry
CDFA	California Department of Food and Agriculture
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CF	Connectivity Factor
CH ₄	Methane
CIWMB	California Integrated Waste Management Board
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
CNG	Compressed Natural Gas
CPUC	California Public Utilities Commission
CUFR	California Urban Forestry
DGS	Department of General Services
DOE	U.S. Department of Energy
DOF	Department of Finance
DPF	Diesel Particulate Filter
DWR	Department of Water Resources
E85	85% Ethanol
EEA	Massachusetts Executive Office of Energy and Environmental Affairs
EERE	Energy Efficiency and Renewable Energy
EIR	Environmental Impact Report
EOE	Encyclopedia of Earth
EPA	U.S. Environmental Protection Agency
ETC	Edmonton Trolley Coalition
EV	Electric Vehicles
FAR	Floor Area Ratio

GHG	Greenhouse Gas
GGEP	Greenhouse Gas Emissions Policy
GGRP	Greenhouse Gas Reduction Plan
GP	General Plan
GWP	Global Warming Potential
IGCC	Integrated Gasification Combined Cycle
IOU	Investor Owned Utility
IPCC	International Panel on Climate Change
IT	Information Technology
ITE	Institute of Transportation Engineers
J&S	Jones & Stokes
km	Kilometer
LandGem	Landfill Gas Emissions Model
LEED	Leadership in Energy and Environmental Design
LNG	Liquefied Natural Gas
MBUAPCD	Monterey Bay Unified Air Pollution Control District
MEPA	Massachusetts Environmental Policy Act
MND	Mitigated Negative Declaration
MMT CO ₂ e	Million Metric Tons Carbon Dioxide Equivalent
MW	Megawatts
N ₂ O	Nitrous Oxide
NACAA	National Association Clean Air Agencies
ND	Negative Declaration
NEV	Neighborhood Electric Vehicle
NIST	National Institute of Standards and Technology
NO _x	Oxides of Nitrogen
NREL	National Renewable Energy Laboratory
NSCAPCD	Northern Sonoma County Air Pollution Control District
NSR	New Source Review
OPR	State Office of Planning and Research
PFC	Perfluorocarbon
PG&E	Pacific Gas & Electric
POU	Publicly Owned Utility
PM	Particulate Mater
RoadMod	Road Construction Emissions Model
ROG	Reactive Organic Gas
RPS	Renewable Portfolio Standards
RTP	Regional Transportation Plan
S-3-05	Executive Order S-3-05
SB	Senate Bill
SBCAPCD	Santa Barbara County Air Pollution Control District
SCAQMD	South Coast Air Quality Management District
SCM	Sustainable Communities Model
SIP	State Implementation Plan
SJVAPCD	San Joaquin Valley Unified Air Pollution Control District
SLOCAPCD	San Luis Obispo County Air Pollution Control District

SMAQMD	Sacramento Metropolitan Air Quality Management District
SMUD	Sacramento Municipal Utilities District
SO _x	Sulfur Oxides
SP	Service Population
SRI	Solar Reflectance Index
SWP	State Water Project
TAC	Toxic Air Contaminants
TBD	To Be Determined
TDM	Transportation Demand Management
TMA	Transportation Management Association
THC	Total Hydrocarbon
UC	University of California
ULEV	Ultra Low Emission Vehicle
UNFCCC	United Nations Framework Convention on Climate Change
URBEMIS	Urban Emissions Model
USGBC	U.S. Green Building Council
VMT	Vehicle Miles Traveled
VTPI	Victoria Transit Policy
YSAQMD	Yolo-Solano Air Quality Management District

Introduction

The California Environmental Quality Act (CEQA) requires that public agencies refrain from approving projects with significant adverse environmental impacts if there are feasible alternatives or mitigation measures that can substantially reduce or avoid those impacts. There is growing concern about greenhouse gas emissions¹ (GHG) and recognition of their significant adverse impacts on the world's climate and on our environment. In its most recent reports, the International Panel on Climate Change (IPCC) has called the evidence for this "unequivocal." In California, the passage of the Global Warming Solutions Act of 2006 (AB 32) recognizes the serious threat to the "economic well-being, public health, natural resources, and the environment of California" resulting from global warming. In light of our current understanding of these impacts, public agencies approving projects subject to the CEQA are facing increasing pressure to identify and address potential significant impacts due to GHG emissions. Entities acting as lead agencies in the CEQA process are looking for guidance on how to adequately address the potential climate change impacts in meeting their CEQA obligations.



Air districts have traditionally provided guidance to local lead agencies on evaluating and addressing air pollution impacts from projects subject to CEQA. Recognizing the need for a common platform of information and tools to support decision makers as they establish policies and programs for GHG and CEQA, the California Air Pollution Control Officers Association has prepared a white paper reviewing policy choices, analytical tools, and mitigation strategies.

This paper is intended to serve as a resource for public agencies as they establish agency procedures for reviewing GHG emissions from projects under CEQA. It considers the application of thresholds and offers three alternative programmatic approaches toward

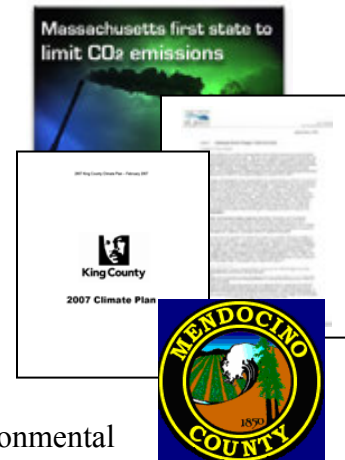
¹ Throughout this paper GHG, CO₂, CO₂e, are used interchangeably and refer generally to greenhouse gases but do not necessarily include all greenhouse gases unless otherwise specified.

determining whether GHG emissions are significant. The paper also evaluates tools and methodologies for estimating impacts, and summarizes mitigation measures. It has been prepared with the understanding that the programs, regulations, policies, and procedures established by the California Air Resources Board (CARB) and other agencies to reduce GHG emissions may ultimately result in a different approach under CEQA than the strategies considered here. The paper is intended to provide a common platform for public agencies to ensure that GHG emissions are appropriately considered and addressed under CEQA while those programs are being developed.

Examples of Other Approaches

Many states, counties, and cities have developed policies and regulations concerning greenhouse gas emissions that seek to require or promote reductions in GHG emissions through standards for vehicle emissions, fuels, electricity production/renewables, building efficiency, and other means. A few have developed guidance and are currently considering formally requiring or recommending the analysis of greenhouse gas emissions for development projects during their associated environmental processes. Key work in this area includes:

- Massachusetts Office of Energy and Environmental Affairs Greenhouse Gas Emissions Policy;
- King County, Washington, Executive Order on the Evaluation of Climate Change Impacts through the State Environmental Policy Act;
- Sacramento AQMD interim policy on addressing climate change in CEQA documents; and
- Mendocino AQMD updated guidelines for use during preparation of air quality impacts in Environmental Impact Reports (EIRs) or mitigated negative declarations.



The following paper evaluates options for lead agencies to ensure that GHG emissions are appropriately addressed as part of analyses under CEQA. It considers the use of significance thresholds, tools and methodologies for analyzing GHG emissions, and measures and strategies to avoid, reduce, or mitigate impacts.

Greenhouse Gas Significance Criteria

This white paper discusses three basic options air districts and lead agencies can pursue when contemplating the issues of CEQA thresholds for greenhouse gas emissions. This paper explores each path and discusses the benefits and disbenefits of each. The three basic paths are:

- No significance threshold for GHG emissions;

- GHG emissions threshold set at zero; or
- GHG threshold set at a non-zero level.

Each has inherent advantages and disadvantages. Air districts and lead agencies may believe the state or national government should take the lead in identifying significance thresholds to address this global impact. Alternatively, the agency may believe it is premature or speculative to determine a clear level at which a threshold should be set. On the other hand, air districts or lead agencies may believe that every GHG emission should be scrutinized and mitigated or offset due to the cumulative nature of this impact. Setting the threshold at zero will place all discretionary projects under the CEQA microscope. Finally, an air district or lead agency may believe that some projects will not benefit from a full environmental impact report (EIR), and may believe a threshold at some level above zero is needed.

This paper explores the basis and implications of setting no threshold, setting a threshold at zero and two primary approaches for those who may choose to consider a non-zero threshold. The first approach is grounded in statute (AB 32) and executive order (EO S-3-05) and explores four possible options under this scenario. The options under this approach are variations of ways to achieve the 2020 goals of AB 32 from new development, which is estimated to be about a 30 percent reduction from business as usual.

The second approach explores a tiered threshold option. Within this option, seven variations are discussed. The concepts explored here offer both quantitative and qualitative approaches to setting a threshold as well as different metrics by which tier cut-points can be set. Variations range from setting the first tier cut-point at zero to second-tier cut-points set at defined emission levels or based on the size of a project. It should be noted that some applications of the tiered threshold approach may require inclusion in a General Plan or adoption of enabling regulations or ordinances to render them fully effective and enforceable.

Greenhouse Gas Analytical Methodologies

The white paper evaluates various analytical methods and modeling tools that can be applied to estimate the greenhouse gas emissions from different project types subject to CEQA. In addition, the suitability of the methods and tools to characterize accurately a project's emissions is discussed and the paper provides recommendations for the most appropriate methodologies and tools currently available.

The suggested methodologies are applied to residential, commercial, specific plan and general plan scenarios where GHG emissions are estimated for each example. This chapter also discusses estimating emissions from solid waste facilities, a wastewater treatment plant, construction, and air district rules and plans.

Another methodology, a service population metric, that would measure a project’s overall GHG efficiency to determine if a project is more efficient than the existing statewide average for per capita GHG emissions is explored. This methodology may be more directly correlated to a project’s ability to help achieve objectives outlined in AB 32, although it relies on establishment of an efficiency-based significance threshold. The subcommittee believes this methodology may eventually be appropriate to evaluate the long-term GHG emissions from a project in the context of meeting AB 32 goals. However, this methodology will need further work and is not considered viable for the interim guidance presented in this white paper.

Greenhouse Gas Mitigation Measures

Common practice in environmental protection is first to avoid, then to minimize, and finally to compensate for impacts. When an impact cannot be mitigated on-site, off-site mitigation can be effectively implemented in several resource areas, either in the form of offsetting the same impact or preserving the resource elsewhere in the region.

This white paper describes and evaluates currently available mitigation measures based on their economic, technological and logistical feasibility, and emission reduction effectiveness. The potential for secondary impacts to air quality are also identified for each measure. A summary of current rules and regulations affecting greenhouse gas emissions and climate change is also provided.



Reductions from transportation related measures (e.g., bicycle, pedestrian, transit, and parking) are explored as a single comprehensive approach to land use. Design measures that focus on enhancing alternative transportation are discussed. Mitigation measures are identified for transportation, land use/building design, mixed-use development, energy efficiency, education/social awareness and construction.

Purpose

CEQA requires the avoidance or mitigation of significant adverse environmental impacts where there are feasible alternatives available. The contribution of GHG to climate change has been documented in the scientific community. The California Global Warming Solutions Act of 2006 (AB 32) mandates significant reductions in greenhouse gases (GHG); passage of that law has highlighted the need to consider the impacts of GHG emissions from projects that fall under the jurisdiction of the California Environmental Quality Act (CEQA). Because we have only recently come to fully recognize the potential for significant environmental impacts from GHG, most public agencies have not yet established policies and procedures to consider them under CEQA. As a result, there is great need for information and other resources to assist public agencies as they develop their programs.

Air districts have historically provided guidance to local governments on the evaluation of air pollutants under CEQA. As local concern about climate change and GHG has increased, local governments have requested guidance on incorporating analysis of these impacts into local CEQA review. The California Air Pollution Control Officers Association (CAPCOA), in coordination with the CARB, the Governor's Office of Planning and Research (OPR) and two environmental consulting firms, has harnessed the collective expertise to evaluate approaches to analyzing GHG in CEQA. The purpose of this white paper is to provide a common platform of information and tools to address climate change in CEQA analyses, including the evaluation and mitigation of GHG emissions from proposed projects and identifying significance threshold options.



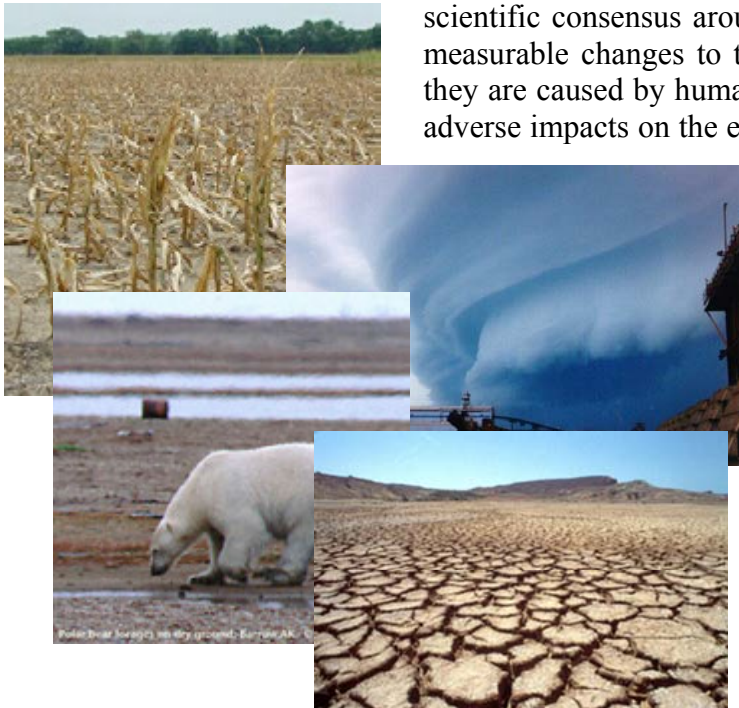
CEQA requires public agencies to ensure that potentially significant adverse environmental effects of discretionary projects are fully characterized, and avoided or mitigated where there are feasible alternatives to do so. Lead agencies have struggled with how best to identify and characterize the magnitude of the adverse effects that individual projects have on the global-scale phenomenon of climate change, even more so since Governor Schwarzenegger signed Executive Order S-3-05 and the state Legislature enacted The Global Warming Solutions Act of 2006 (AB 32). There is now a resounding call to establish procedures to analyze and mitigate greenhouse gas (GHG) emissions. The lack of established thresholds does not relieve lead agencies of their responsibility to analyze and mitigate significant impacts, so many of these agencies are seeking guidance from state and local air quality agencies. This white paper addresses issues inherent in establishing CEQA thresholds, evaluates tools, catalogues mitigation measures and provides air districts and lead agencies with options for incorporating climate change into their programs.

Background

National and International Efforts

International and Federal legislation have been enacted to deal with climate change issues. The Montreal Protocol was originally signed in 1987 and substantially amended in 1990 and 1992. In 1988, the United Nations and the World Meteorological Organization established the IPCC to assess the scientific, technical and socioeconomic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts, and options for adaptation and mitigation. The

most recent reports of the IPCC have emphasized the scientific consensus around the evidence that real and measurable changes to the climate are occurring, that they are caused by human activity, and that significant adverse impacts on the environment, the economy, and human health and welfare are unavoidable.



In October 1993, President Clinton announced his Climate Change Action Plan, which had a goal to return greenhouse gas emissions to 1990 levels by the year 2000. This was to be accomplished through 50 initiatives that relied on innovative voluntary partnerships between the private sector and

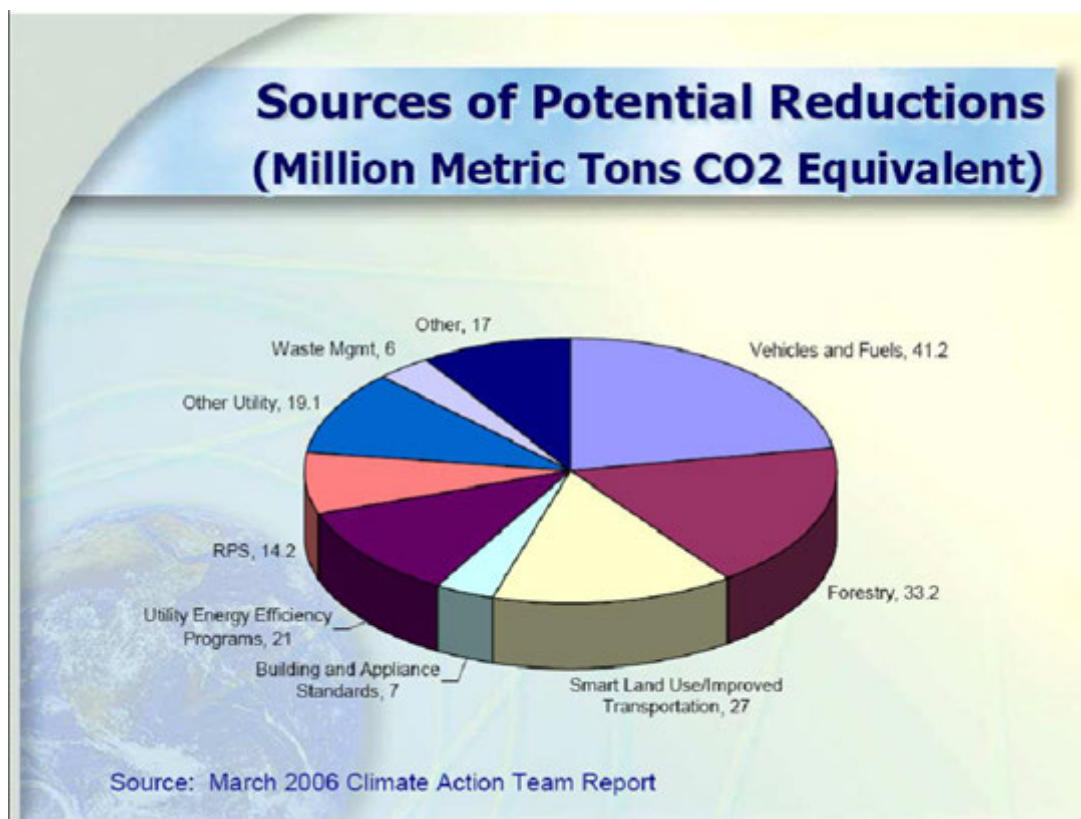
government aimed at producing cost-effective reductions in greenhouse gas emissions. On March 21, 1994, the United States joined a number of countries around the world in signing the United Nations Framework Convention on Climate Change (UNFCCC). Under the Convention, governments agreed to gather and share information on greenhouse gas emissions, national policies, and best practices; launch national strategies for addressing greenhouse gas emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change.

These efforts have been largely policy oriented. In addition to the national and international efforts described above, many local jurisdictions have adopted climate change policies and programs. However, thus far little has been done to assess the significance of the affects new development projects may have on climate change.

Executive Order S-3-05

On June 1, 2005, Governor Schwarzenegger issued Executive Order S-3-05 (S-3-05). It included the following GHG emission reduction targets: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; by 2050, reduce GHG emissions to 80 percent below 1990 levels. To meet the targets, the Governor directed the Secretary of the California Environmental Protection Agency to coordinate with the Secretary of the Business, Transportation and Housing Agency, Secretary of the Department of Food and Agriculture, Secretary of the Resources Agency, Chairperson of the CARB, Chairperson of the Energy Commission and President of the Public Utilities Commission on development of a Climate Action Plan.

The Secretary of CalEPA leads a Climate Action Team (CAT) made up of representatives from the agencies listed above to implement global warming emission reduction programs identified in the Climate Action Plan and report on the progress made toward meeting the statewide greenhouse gas targets that were established in the Executive Order.



SOURCE: ARB 2007

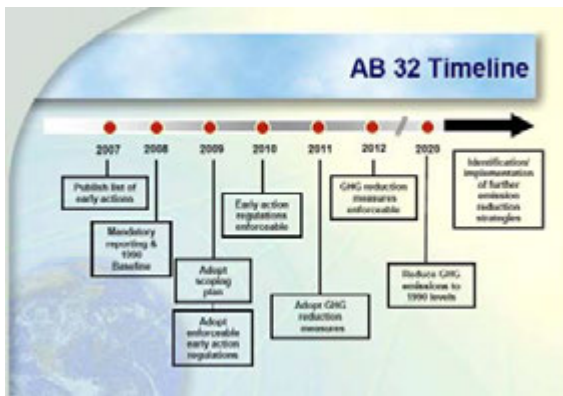
In accord with the requirements of the Executive Order, the first report to the Governor and the Legislature was released in March 2006 and will be issued bi-annually thereafter. The CAT Report to the Governor contains recommendations and strategies to help ensure the targets in Executive Order S-3-05 are met.

California Global Warming Solutions Act of 2006 (AB 32)

In 2006, the California State Legislature adopted the California Global Warming Solutions Act of 2006. AB 32 establishes a cap on statewide greenhouse gas emissions and sets forth the regulatory framework to achieve the corresponding reduction in statewide emissions levels. AB 32 charges the California Air Resources Board (CARB), the state agency charged with regulating statewide air quality, with implementation of the act. Under AB 32, greenhouse gases are defined as: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

The regulatory steps laid out in AB 32 require CARB to: adopt early action measures to reduce GHGs; to establish a statewide greenhouse gas emissions cap for 2020 based on 1990 emissions; to adopt mandatory reporting rules for significant source of greenhouse gases; and to adopt a scoping plan indicating how emission reductions will be achieved via regulations, market mechanisms and other actions; and to adopt the regulations needed to achieve the maximum technologically feasible and cost-effective reductions in greenhouse gases.

AB 32 requires that by January 1, 2008, the State Board shall determine what the statewide greenhouse gas emissions inventory was in 1990, and approve a statewide greenhouse gas emissions limit that is equivalent to that level, to be achieved by 2020. While the level of 1990 GHG emissions has not yet been approved, CARB's most recent emission inventory indicates that California had annual emissions of 436 million metric tons of carbon dioxide equivalent (MMT CO₂e) in 1990 and 497 MMT CO₂e in 2004.



SOURCE: ARB 2007

The regulatory timeline laid out in AB 32 requires that by July 1, 2007, CARB adopt a list of discrete early action measures, or regulations, to be adopted and implemented by January 1, 2010. These actions will form part of the State's comprehensive plan for achieving greenhouse gas emission reductions. In June 2007, CARB adopted three discrete early action measures. These three new proposed regulations meet the definition of

“discrete early action greenhouse gas reduction measures,” which include the following: a low carbon fuel standard; reduction of HFC-134a emissions from non-professional servicing of motor vehicle air conditioning systems; and improved landfill methane capture. CARB estimates that by 2020, the reductions from those three discrete early action measures would be approximately 13-26 MMT CO₂e.

CARB evaluated over 100 possible measures identified by the CAT for inclusion in the list of discrete early action measures. On October 25, 2007 CARB gave final approval to the list of Early Action Measures, which includes nine discrete measures and 35

additional measures, all of which are to be enforceable by January 1, 2010. AB 32 requires that by January 1, 2009, CARB adopt a scoping plan indicating how emission reductions will be achieved via regulations, market mechanisms and other actions.

Senate Bill 97

Senate Bill (SB) 97, signed in August 2007, acknowledges that climate change is an important environmental issue that requires analysis under CEQA. This bill directs the OPR to prepare, develop, and transmit to the Resources Agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, by July 1, 2009. The Resources Agency is required to certify or adopt those guidelines by January 1, 2010. This bill also protects projects funded by the Highway Safety, Traffic Reduction, Air Quality and Port Security Bond Act of 2006, or the Disaster Preparedness and Flood Protection Bond Act of 2006 (Proposition 1B or 1E) from claims of inadequate analysis of GHG as a legitimate cause of action. This latter provision will be repealed on January 1, 2010. Thus, this “protection” is highly limited to a handful of projects and for a short time period.



The Role of Air Districts in the CEQA Process

Air districts assume one of three roles in the CEQA process. They may be lead agencies when they are adopting regulations and air quality plans. In some instances, they can also be a lead agency when approving permits to construct or operate for applicants subject to district rules. However, in many cases where an air district permit is involved, another agency has broader permitting authority over the project and assumes the role of lead agency. In these situations, the air district becomes what is referred to as a responsible agency under CEQA. When CEQA documents are prepared for projects that do not involve discretionary approval of a district regulation, plan or permit, the air district may assume the role of a concerned or commenting agency. In this role, it is typical for air districts to comment on CEQA documents where there may be air quality-related adverse impacts, such as projects that may create significant contributions to existing violations of ambient standards, cause a violation of an ambient standard or create an exposure to toxic air contaminants or odors. In some cases, the air district may also act in an “advisory” capacity to a lead agency early on in its review of an application for a proposed development project.

A few air districts in California began developing significance thresholds for use in CEQA analyses in the late 1980’s and early 1990’s. By the mid-1990’s most air districts had developed CEQA thresholds for air quality analyses. Many of the districts have included in their guidance the analysis of rule development and permits that may be subject to CEQA.

What is Not Addressed in this Paper

Impacts of Climate Change to a Project

The focus of this paper is addressing adverse impacts to climate change and the ability to meet statewide GHG reduction goals caused by proposed new land development projects.



CEQA also requires an assessment of significant adverse impacts a project might cause by bringing development and people into an area affected by climate change (CEQA Guidelines §15126.2). For example, an area that

experiences higher average temperatures due to climate change may expose new development to more frequent exceedances and higher levels of ozone concentrations. Alternatively, a rise in sea level brought on by climate change may inundate new development locating in a low-lying area. The methodologies, mitigation and threshold approaches discussed in this paper do not specifically address the potential adverse impacts resulting from climate change that may affect a project.

Impacts from Construction Activity

Although construction activity has been addressed in the analytical methodologies and mitigation chapters, this paper does not discuss whether any of the threshold approaches adequately addresses impacts from construction activity. More study is needed to make this assessment or to develop separate thresholds for construction activity. The focus of this paper is the long-term adverse operational impacts of land use development.



Introduction

Any analysis of environmental impacts under CEQA includes an assessment of the nature and extent of each impact expected to result from the project to determine whether the impact will be treated as significant or less than significant. CEQA gives lead agencies discretion whether to classify a particular environmental impact as significant. "The determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved," ref: CEQA Guidelines §15064(b) ("Guidelines"). Ultimately, formulation of a standard of significance requires the lead agency to make a policy judgment about where the line should be drawn distinguishing adverse impacts it considers significant from those that are not deemed significant. This judgment must, however, be based on scientific information and other factual data to the extent possible (Guidelines §15064(b)).

CEQA does not require that agencies establish thresholds of significance. Guidelines §15064.7(a) encourages each public agency "...to develop and publish thresholds of significance that the agency uses in the determination of the significance of environmental effects. A threshold of significance is an identifiable quantitative, qualitative or performance level of a particular environmental effect, non-compliance with which means the effect will normally be determined to be significant by the agency and compliance with which normally means the effect will be determined to be less than significant."

Once such thresholds are established, an impact that complies with the applicable threshold will "normally" be found insignificant and an impact that does not comply with the applicable threshold will "normally" be found significant.

Additionally, Guidelines §15064.7(b) requires that if thresholds of significance are adopted for general use as part of the lead agency's environmental review process they must be adopted by ordinance, resolution, rule or regulation, and developed through a public review process and be supported by substantial evidence.

While many public agencies adopt regulatory standards as thresholds, the standards do not substitute for a public agency's use of careful judgment in determining significance. They also do not replace the legal standard for significance (i.e., if there is a fair argument, based on substantial evidence in light of the whole record that the project may have a significant effect, the effect should be considered significant) (Guidelines §15064(f)(1). Also see *Communities for a Better Environment v. California Resource Agency* 103 Cal. App. 4th 98 (2002)). In other words, the adoption of a regulatory standard does not create an irrebuttable presumption that impacts below the regulatory standard are less than significant.

Summary of CEQA Thresholds at Air Districts

This section briefly summarizes the evolution of air district CEQA significance thresholds. Ventura County APCD, in 1980, was the first air district in California that formally adopted CEQA significance thresholds. Their first CEQA assessment document contained impact thresholds based on project type: residential, nonresidential, and government. Then, as now, the District’s primary CEQA thresholds applied only to ROG and NO_x. The 1980 Guidelines did not address other air pollutants.

Santa Barbara County APCD and the Bay Area AQMD adopted thresholds in 1985. The South Coast AQMD recommended regional air quality thresholds in 1987 for CO, SO₂, NO₂, particulates, ROG, and lead. Most of the other California air districts adopted CEQA guidance and thresholds during the 1990’s. Air districts have updated their thresholds and guidelines several times since they were first published.

Originally, most districts that established CEQA thresholds focused on criteria pollutants for which the district was nonattainment and the thresholds only addressed project level impacts. Updates during the 1990’s began to add additional air quality impacts such as odors, toxic air contaminants and construction. Several air districts also developed thresholds for General Plans that relied on an assessment of the plan consistency with the district’s air quality plans. A consistency analysis involves comparing the project’s land use to that of the general plan and the population and employment increase to the forecasts underlying the assumptions used to develop the air quality plan.

Most air district thresholds for CEQA are based on the threshold for review under the New Source Review (NSR). The NSR threshold level is set by district rule and is different depending on the nonattainment classification of the air district. Areas with a less severe classification have a higher NSR trigger level while the most polluted areas have the lowest NSR trigger level. Some districts, such as Ventura County APCD, have significantly lower CEQA thresholds that are not tied to the NSR requirements. In Ventura, one set of CEQA thresholds is 25 pounds per day for all regions of Ventura County, except the Ojai Valley. The second set of CEQA thresholds was set at 5 pounds per day for the Ojai Valley.

The Sacramento Metropolitan AQMD bases its thresholds for ozone precursors on the projected land use share of emission reductions needed for attainment. The emission reductions needed to reach attainment are based on commitments made in the state implementation plan (SIP) prepared for the federal clean air act.



CEQA Considerations in Setting Thresholds

Public agencies use significance thresholds to disclose to their constituents how they plan on evaluating and characterizing the severity of various environmental impacts that could be associated with discretionary projects that they review. Significance thresholds are also used to help identify the level of mitigation needed to reduce a potentially significant impact to a less than significant level and to determine what type



of an environmental document should be prepared for a project; primarily a negative declaration, mitigated negative declaration or an environmental impact report.

While public agencies are not required to develop significance thresholds, if they decide to develop them, they are required to adopt them by ordinance, resolution, rule or regulation through a

public process. A lead agency is not restrained from adopting any significance threshold it sees as appropriate, as long as it is based on substantial evidence. CEQA Guidelines §15064.7 encourages public agencies to develop and publish significance thresholds that are identifiable, quantitative, qualitative or performance level that the agency uses in the determination of the significance of environmental effects. The courts have ruled that a “threshold of significance” for a given environmental effect is simply that level at which the lead agency finds the effects of the project to be significant.

Before an agency determines its course with regard to climate change and CEQA, it must be made clear that a threshold, or the absence of one, will not relieve a lead agency from having to prepare an EIR or legal challenges to the adequacy of an analysis leading to a conclusion, or lack of a conclusion, of significance under CEQA. CEQA has generally favored the preparation of an EIR where there is any substantial evidence to support a fair argument that a significant adverse environmental impact may occur due to a proposed project. This paper explores three alternative approaches to thresholds, including a no threshold option, a zero threshold option and a non-zero threshold option.

Fair Argument Considerations

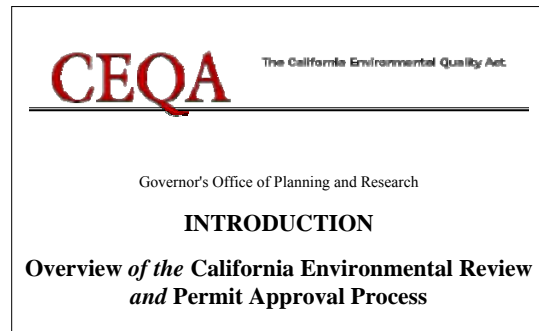
Under the CEQA fair argument standard, an EIR must be prepared whenever it can be fairly argued, based on substantial evidence in the administrative record, that a project may have a significant adverse effect on the environment. “Substantial evidence” comprises “enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion, even though other conclusions might also be reached.” (Guidelines §15384) This means that if factual information is presented to the public agency that there is a reasonable possibility the project could have

a significant effect on the environment, an EIR is required even if the public agency has information to the contrary (Guidelines §15064 (f)).

The courts have held that the fair argument standard “establishes a low threshold for initial preparation of an EIR, which reflects a preference for resolving doubts in favor of environmental review.” (*Santa Teresa Citizen Action Group v. City of San Jose* [2003] 114 Cal.App.4th 689) Although the determination of whether a fair argument exists is made by the public agency, that determination is subject to judicial scrutiny when challenged in litigation. When the question is whether an EIR should have been prepared, the court will review the administrative record for factual evidence supporting a fair argument.

The fair argument standard essentially empowers project opponents to force preparation of an EIR by introducing factual evidence into the record that asserts that the project may have a significant effect on the environment. This evidence does not need to be conclusive regarding the potential significant effect.

In 1998, the Resources Agency amended the State CEQA Guidelines to encourage the use of thresholds of significance. Guidelines §15064 (h) provided that when a project’s impacts did not exceed adopted standards, the impacts were to be considered less than significant. The section went on to describe the types of adopted standards that were to be considered thresholds. Guidelines § 15064.7 provided that agencies may adopt thresholds of significance to guide their determinations of significance. Both of these sections were challenged when environmental groups sued the Resources Agency in 2000 over the amendments. The trial court concluded that §15064.7 was proper, if it was applied in the context of the fair argument standard.



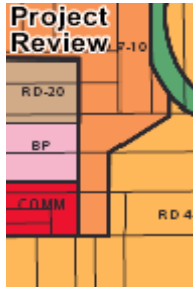
At the appellate court level, §15064(h) was invalidated.² Establishing a presumption that meeting an adopted standard would avoid significant impacts was “inconsistent with controlling CEQA law governing the fair argument approach.” The Court of Appeal explained that requiring agencies to comply with a regulatory standard “relieves the agency of a duty it would have under the fair argument approach to look at evidence beyond the regulatory standard, or in contravention of the standard, in deciding whether an EIR must be prepared. Under the fair argument approach, any substantial evidence supporting a fair argument that a project may have a significant environmental effect would trigger the preparation of an EIR.” (*Communities for a Better Environment v. California Resources Agency* [2002] 103 Cal.App.4th 98)

² Prior §15064(h) has been removed from the State CEQA Guidelines. Current §15064(h) discusses cumulative impacts.

In summary, CEQA law does not require a lead agency to establish significance thresholds for GHG. CEQA guidelines encourage the development of thresholds, but the absence of an adopted threshold does not relieve the agency from the obligation to determine significance.

Defensibility of CEQA Analyses

The basic purposes of CEQA, as set out in the State CEQA Guidelines, include: (1) informing decision makers and the public about the significant environmental effects of proposed projects; (2) identifying ways to reduce or avoid those impacts; (3) requiring the implementation of feasible mitigation measures or alternatives that would reduce or avoid those impacts; and (4) requiring public agencies to disclose their reasons for approving any project that would have significant and unavoidable impacts (Guidelines §15002). CEQA is enforced through civil litigation over procedure (i.e., did the public agency follow the correct CEQA procedures?) and adequacy (i.e., has the potential for impacts been disclosed, analyzed, and mitigated to the extent feasible?).



The California Supreme Court has held that CEQA is "to be interpreted in such manner as to afford the fullest possible protection to the environment within the reasonable scope of the statutory language." (*Friends of Mammoth v. Board of Supervisors* [1972] 8 Cal.3d 247, 259) Within that context, the role of the courts is to weigh the facts in each case and apply their judgment. Although the court may rule on the adequacy of the CEQA work, the court is not empowered to act in the place of the public agency to approve or deny the project for which the CEQA document was prepared. Further, the court's review is limited to the evidence contained in the administrative record that was before the public agency when it acted on the project.

Putting aside the issue of CEQA procedure, the defensibility of a CEQA analysis rests on the following concerns:

- whether the public agency has sufficiently analyzed the environmental consequences to enable decision makers to make an intelligent decision;
- whether the conclusions of the public agency are supported by substantial evidence in the administrative record; and
- whether the agency has made a good faith effort at the full disclosure of significant effects.

CEQA analyses need not be perfect or exhaustive -- the depth and breadth of the analysis is limited to what is "reasonably feasible." (Guidelines §15151) At the same time, the analysis "must include detail sufficient to enable those who did not participate in its preparation to understand and to consider meaningfully the issues raised by the proposed

project.” (Laurel Heights Improvement Assn. v. Regents of University of California (1988) 47 Cal.3d 376)

By itself, establishment of a GHG threshold will not insulate individual CEQA analyses from challenge. Defensibility depends upon the adequacy of the analysis prepared by the lead agency and the process followed. However, the threshold can help to define the boundaries of what is a reasonable analysis by establishing when an analysis will be required and the basic scope of that analysis. The threshold would attempt to define the point at which an analysis will be required and when a level of impact becomes significant, requiring preparation of an EIR. If the threshold includes recommendations for the method or methods of analysis, it can establish the minimum level of analysis to address this issue.

Considerations in Setting Thresholds for Stationary Source Projects

In many respects, the analysis of GHG emissions from stationary sources is much more straightforward than the analysis of land use patterns, forecasted energy consumption, and emissions from mobile sources. The reason is that, for the most part, the latter analyses depend largely on predictive models with myriad inputs and have a wider range of error. Emissions from stationary sources involve a greater reliance on mass and energy balance calculations and direct measurements of emissions from the same or similar sources. Energy demand is more directly tied to production, and even associated mobile source emissions will likely fall within narrower predictive windows.



Implementing CEQA Without a Threshold

A lead agency is not required to establish significance thresholds for GHG emissions from stationary sources. The lead agency may find that it needs more information or experience evaluating GHG from these types of projects to determine an appropriate significance threshold. As with other project types, the lead agency could conduct a project specific analysis to determine whether an environmental impact report is needed and to determine the level of mitigation that is appropriate. The agency might also rely on thresholds established for criteria pollutants as a screening method, and analyze GHG emissions (and require mitigation) from projects with emissions above the criteria pollutant thresholds. Over time, the agency could amass information and experience with specific project categories that would support establishing explicit thresholds. The lead agency may also choose to base local CEQA thresholds on state guidelines or on the category-specific reduction targets established by ARB in its scoping plan for implementing AB32. Resource constraints and other considerations associated with implementing CEQA without GHG thresholds for stationary sources would be similar to those outlined for other types of projects (see Chapter 5 – No Threshold Option).

Implementing CEQA with Threshold of Zero

A lead agency may find that any increase in GHG emissions is potentially significant under CEQA. The resources and other considerations for implementing a threshold of zero for stationary sources are the same as those outlined for other types of projects (see Chapter 6 – Zero Threshold Option).

Implementing CEQA with a Non-Zero Threshold

A lead agency may identify one or more non-zero thresholds for significance of emissions of GHG from stationary sources. The agency could elect to rely on existing thresholds for reviewing new or modified stationary sources of GHG, if the state or local air district has established any. The agency could also apply the threshold(s) established for non-stationary sources to GHG emissions from stationary sources. Significance thresholds could also be established by ordinance, rule, or policy for a given category of stationary sources; this approach is especially conducive to a tiered threshold approach. For example, the agency could establish significance and mitigation tiers for stationary compression-ignition diesel-fueled generators. Under such an approach, the project proponent could be first required to use a lower GHG-emitting power source if feasible, and if not, to apply mitigation based on the size of the generator and other defined considerations, such as hours of operation. Certain classes of generators could be found to be insignificant under CEQA (e.g., those used for emergency stand-by power only, with a limit on the annual hours of use). As with non-stationary projects, the goal of establishing non-zero thresholds is to maximize environmental protection, while minimizing resources used. Resource and other considerations outlined for non-stationary projects are applicable here (see Chapter 7 – Non-Zero Threshold Options).

Implementing CEQA with Different Thresholds for Stationary and Non-stationary Projects

Although a lead agency may apply the same thresholds to stationary and non-stationary projects, it is not required to do so. There are, in fact, some important distinctions between the two types of projects that could support applying different thresholds. The lead agency should consider the methods used to estimate emissions. Are the estimates a “best/worst reasonable scenario” or are they based on theoretical maximum operation? How accurate are the estimates (are they based on models, simulations, emission factors, source test data, manufacturer specifications, etc.)? To what extent could emissions be reduced through regulations after the project is constructed if they were found to be greater than originally expected (i.e., is it possible to retrofit emissions control technology onto the source(s) of GHG at a later date, how long is the expected project life, etc.)? Are there emission limits or emissions control regulations (such as New Source Review) that provide certainty that emissions will be mitigated? Generally, stationary source emissions are based on maximum emissions (theoretical or allowed under law or regulation), are more accurate, and are more amenable to retrofit at a later time than non-stationary source emissions. It is also more likely that category specific

rules or some form of NSR will apply to stationary sources than non-stationary projects. Notwithstanding, it is almost always more effective and cost-efficient to apply emission reduction technology at the design phase of a project. There are, therefore, a number of considerations that need to be evaluated and weighed before establishing thresholds – and which may support different thresholds for stationary and non-stationary projects. Furthermore, the considerations may change over time as new regulations are established and as emissions estimation techniques and control technology evolves.

Direct GHG Emissions from Stationary Sources



The main focus of this paper has been the consideration of projects that do not, in the main, involve stationary sources of air pollution, because stationary source projects are generally a smaller percentage of the projects seen by most local land use agencies. That said, some discussion of stationary sources is warranted. As the broader program for regulating GHG from these sources is developed, the strategies for addressing them

under CEQA will likely become more refined.

The primary focus of analysis of stationary source emissions has traditionally been those pollutants that are directly emitted by the source, whether through a stack or as fugitive releases (such as leaks). CAPCOA conducted a simplified analysis of permitting activity to estimate the number of stationary source projects with potentially significant emissions of greenhouse gases that might be seen over the course of a year. This analysis looked only at stationary combustion sources (such as boilers and generators), and only considered direct emissions. A lead agency under CEQA may see a different profile of projects than the data provided here suggest, depending on what other resources are affected by projects. In addition, air districts review like-kind replacements of equipment to ensure the new equipment meets current standards, but such actions might not constitute a project for many land use agencies or other media regulators. The data does provide a useful benchmark, however, for lead agencies to assess the order of magnitude of potential stationary source projects. A similar analysis is included for non-stationary projects in Chapter 7.

Table 1: Analysis of GHG Emissions from Stationary Combustion Equipment Permits³

	BAAQMD	SMAQMD	SJVUAPCD	SCAQMD
Total Applications for Year	1499	778	1535	1179
Affected at threshold of:				
900 metric tons/year	26	43	63	108
10,000 metric tons/year	7	5	26	8
25,000 metric tons/year	3	1	11	4

³ District data varies based on specific local regulations and methodologies.

Emissions from Energy Use

In addition to the direct emissions of GHG from stationary projects, CEQA will likely need to consider the project's projected energy use. This could include an analysis of opportunities for energy efficiency, onsite clean power generation (e.g., heat/energy recovery, co-generation, geothermal, solar, or wind), and the use of dedicated power contracts as compared to the portfolio of generally available power. In some industries, water use and conservation may provide substantial GHG emissions reductions, so the CEQA analysis should consider alternatives that reduce water consumption and wastewater discharge. The stationary project may also have the opportunity to use raw or feedstock materials that have a smaller GHG footprint; material substitution should be evaluated where information is available to do so.



Emissions from Associated Mobile Sources

The stationary project will also include emissions from associated mobile sources. These will include three basic components: emissions from employee trips, emissions from delivery of raw or feedstock materials, and emissions from product transport. Employee trips can be evaluated using trip estimation as is done for non-stationary projects, and mitigations would include such measures as providing access to and incentives for use of public transportation, accessibility for bicycle and pedestrian modes of transport, employer supported car or vanpools (including policies such as guaranteed rides home, etc). Upstream and downstream emissions related to goods movement can also be estimated with available models. The evaluation will need to determine the extent of the transport chain that should be included (to ensure that all emissions in the chain have been evaluated and mitigated, but to avoid double counting). Mitigations could include direct actions by operators who own their own fleet, or could be implemented through contractual arrangements with independent carriers; again, the evaluation will need to consider how far up and down the chain mitigation is feasible and can be reasonably required.



Comparing Emissions Changes Across Pollutant Categories

The potential exists for certain GHG reduction measures to increase emissions of criteria and toxic pollutants known to cause or aggravate respiratory, cardiovascular, and other health problems. For instance, GHG reduction efforts such as alternative fuels and methane digesters may create significant levels of increased pollutants that are detrimental to the health of the nearby population (e.g.; particulate matter, ozone precursors, toxic air contaminants). Such considerations should be included in any CEQA analysis of a project's environmental impacts. While there are many win-win

strategies that can reduce both GHG and criteria/toxic pollutant emissions, when faced with situations that involve tradeoffs between the two, the more immediate public health concerns that may arise from an increase in criteria or toxic pollutant emissions should take precedence. GHG emission reductions could be achieved offsite through other mitigation programs.

Introduction

Under state law, it is the purview of each lead agency to determine what, if any, significance thresholds will be established to guide its review of projects under CEQA. While the state does provide guidelines for implementing CEQA, the guidelines have left the decision of whether to establish thresholds (and if so, at what level) to individual lead agencies. Frequently, lead agencies consult with resource-specific agencies (such as air districts) for assistance in determining what constitutes a significant impact on that specific resource.

With the passage of AB 32, the ARB has broad authority to regulate GHG emissions as necessary to meet the emission reduction goals of the statute. This may include authority to establish emission reduction requirements for new land use projects, and may also enable them to recommend statewide thresholds for GHG under CEQA.

In developing this white paper, CAPCOA recognizes that, as the GHG reduction program evolves over time, GHG thresholds and other policies and procedures for CEQA may undergo significant revision, and that uniform statewide thresholds and procedures may be established. This paper is intended to serve as a resource for public agencies until such time that statewide guidance is established, recognizing that decisions will need to be made about GHG emissions from projects before such guidance is available. This paper is not, however, uniform statewide guidance. As stated before, it outlines several possible approaches without endorsing any one over the others.

Some air districts may choose to use this paper to support their establishment of guidance for GHG under CEQA, including thresholds. This paper does not, nor should it be construed to require a district to implement any of the approaches evaluated here. Decisions about whether to provide formal local guidance on CEQA for projects with GHG emissions, including the question of thresholds, will be made by individual district boards.

Each of the 35 air districts operates independently and has its own set of regulations and programs to address the emissions from stationary, area and mobile sources, consistent with state and federal laws, regulations, and guidelines. The independence of the districts allows specific air quality problems to be addressed on a local level. In addition, districts have also established local CEQA thresholds of significance for criteria pollutants – also to address the specific air quality problems relative to that particular district.

The overall goal of air district thresholds is to achieve and maintain health based air quality standards within their respective air basins and to reduce transport of emissions to other air basins. In establishing recommended thresholds, air districts consider the existing emission inventory of criteria pollutants and the amount of emission reductions needed to attain and maintain ambient air quality standards.

However, unlike criteria pollutants where individual districts are characterized by varying levels of pollutant concentrations and source types, greenhouse gases (GHG) and their attendant climate change ramifications are a global problem and, therefore, may suggest a uniform approach to solutions that ensure both progress and equity.

Under SB97, the Office of Planning and Research is directed to prepare, develop, and transmit to the Resources Agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions through CEQA by July 1, 2009. Those guidelines may recommend thresholds. As stated, this paper is intended to provide a common platform of information and tools to support local decision makers until such time that statewide guidance or requirements are promulgated.

Local Ability to Promulgate District-Specific GHG Thresholds

One of the primary reasons behind the creation of air districts in California is the recognition that some regions within the state face more critical air pollution problems than others and, as has often been pointed out – one size does not fit all. For example, a “Serious” federal nonattainment district would need greater emission reductions than a district already in attainment – and, therefore, the more “serious” district would set its criteria pollutant CEQA thresholds of significance much lower than the air district already in attainment.

The action of GHGs is global in nature, rather than local or regional (or even statewide or national). Ultimately there may be a program that is global, or at least national in scope. That said, actions taken by a state, region, or local government can contribute to the solution of the global problem. Local governments are not barred from developing and implementing programs to address GHGs. In the context of California and CEQA, lead agencies have the primary responsibility and authority to determine the significance of a project’s impacts.

Further, air districts have primary authority under state law for "control of air pollution from all sources, other than emissions from motor vehicles." (H&SC §40000) The term air contaminant or "air pollutant" is defined extremely broadly, to mean "any discharge, release, or other propagation into the atmosphere" and includes, but is not limited to, soot, carbon, fumes, gases, particulate matter, etc. Greenhouse gases and other global warming pollutants such as black carbon would certainly be included in this definition, just as the U.S. Supreme Court held in *Massachusetts v. EPA* that greenhouse gases were air pollutants under the federal Clean Air Act. Therefore, air districts have the primary authority to regulate global warming pollutants from nonvehicular sources. AB 32 does not change this result. Although it gives wide responsibility to CARB to regulate greenhouse gases from all sources, including nonvehicular sources, it does not preempt the districts. AB 32 specifically states That "nothing in this division shall limit or expand the existing authority of any district..."(H&SC § 38594). Thus, districts and CARB retain concurrent authority over nonvehicular source greenhouse gas emissions.

Introduction

The CEQA statutes do not require an air district or any lead agency to establish significance thresholds under CEQA for any pollutant. While there are considerations that support the establishment of thresholds (which are discussed in other sections of this document), there is no obligation to do so.

An air district or other lead agency may elect not to establish significance thresholds for a number of reasons. The agency may believe that the global nature of the climate change problem necessitates a statewide or national framework for consideration of environmental impacts. SB 97 directs OPR to develop “guidelines for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions by July 1, 2009,” and directs the California Resources Agency to certify and adopt the guidelines by June 30, 2010.



An agency may also believe there is insufficient information to support selecting one specific threshold over another. As described earlier, air districts have historically set CEQA thresholds for air pollutants in the context of the local clean air plan, or (in the case of toxic air pollutants) within the framework of a rule or policy that manages risks and exposures due to toxic pollutants.

There is no current framework that would similarly manage impacts of greenhouse gas pollutants, although the CARB is directed to establish one by June 30, 2009, pursuant to AB 32. A local agency may decide to defer any consideration of thresholds until this framework is in place.

Finally, an agency may believe that the significance of a given project should be assessed on a case-by-case basis in the context of the project at the time it comes forward.

Implementing CEQA Without Significance Thresholds for GHG

The absence of a threshold does not in any way relieve agencies of their obligations to address GHG emissions from projects under CEQA. The implications of not having a threshold are different depending on the role the agency has under CEQA – whether it is acting in an advisory capacity, as a responsible agency, or as a lead agency.

Implications of No Thresholds for an Agency Acting in an Advisory Capacity

Air districts typically act in an advisory capacity to local governments in establishing the framework for environmental review of air pollution impacts under CEQA. This may include recommendations regarding significance thresholds, analytical tools to assess emissions and impacts, and mitigations for potentially significant impacts. Although districts will also address some of these issues on a project-specific basis as responsible agencies, they may provide general guidance to local governments on these issues that

are program wide, and these are advisory (unless they have been established by regulation).

An air district that has not established significance thresholds for GHG will not provide guidance to local governments on this issue. This does not prevent the local government from establishing thresholds under its own authority. One possible result of this would be the establishment of different thresholds by cities and counties within the air district. Alternatively, the air district could advise local governments not to set thresholds and those jurisdictions may follow the air district's guidance.

It is important to note here (as has been clearly stated by the Attorney General in comments and filings) that lack of a threshold does *not* mean lack of significance. An agency may argue lack of significance for any project, but that argument would have to be carried forth on a case-by-case, project specific basis. By extension then, a decision not to establish thresholds for GHG is likely to result in a greater workload for responsible and lead agencies as they consider individual projects under CEQA.

Implications of No Thresholds for a Responsible Agency

If there are no established thresholds of significance, the significance of each project will have to be determined during the course of review. The responsible agency (e.g., the air district) will review each project referred by the lead agency. The review may be qualitative or quantitative in nature. A qualitative review would discuss the nature of GHG emissions expected and their potential effect on climate change as the district understands it. It could also include a discussion of the relative merits of alternative scenarios. A quantitative analysis would evaluate, to the extent possible, the expected GHG emissions; it would also need to evaluate their potential effect on climate change and might include corresponding analysis of alternatives. The air district, as a responsible agency, may also identify mitigation measures for the project.

The lack of established thresholds will make the determination of significance more resource intensive for each project. The district may defer to the lead agency to make this determination, however the district may be obligated, as a responsible agency, to evaluate the analysis and determination.



Implications of No Thresholds for a Lead Agency

The main impact of not having significance thresholds will be on the primary evaluation of projects by the lead agency. Without significance thresholds, the agency will have to conduct some level of analysis of every project to determine whether an environmental impact report is needed. There are three fundamental approaches to the case-by-case analysis of significance, including presumptions of significance or insignificance, or no presumption:

1. The agency can begin with a presumption of significance and the analysis would be used to support a case-specific finding of no significance. This is similar to establishing a threshold of zero, except that here, the “threshold” is rebuttable. This approach may result in a large number of projects proceeding to preparation of an environmental impact report. Because of the attendant costs, project proponents may challenge the determination of significance, although formal challenge is less likely than attempts to influence the determination.

2. The agency can begin with a presumption of insignificance, and the analysis would be used to support a case-specific finding of significance. A presumption of insignificance could be based on the perspective that it would be speculative to attempt to identify the significance of GHG emissions from a project relative to climate change on a global scale. This approach might reduce the number of projects proceeding to preparation of environmental impact reports. It is likely to have greater success with smaller projects than larger ones, and a presumption of *insignificance* may be more likely to be challenged by project opponents.

3. It is not necessary for the lead agency to have any presumption either way. The agency could approach each project from a *tabula rasa* perspective, and have the determination of significance more broadly tied to the specific context of the project; this approach is likely to be resource intensive, and creates the greatest uncertainty for project proponents. To the extent that it results in a lead agency approving similar projects based on different determinations of significance for GHG emissions, it may be more vulnerable to challenge from either proponents or opponents of the project. Alternatively, in the absence of either thresholds or presumptions, the lead agency could use each determination of significance to build its approach in the same way that subsequent judgments define the law.



Relevant Citations

The full text of relevant citations is in Appendix A.

Public Resources Code – §21082.2, Significant Effect on Environment; Determination; Environmental Impact Report Preparation.

State CEQA Guidelines – §15064, Determining the Significance of the Environmental Effects Caused by a Project.

Chapter 6

CEQA with a
GHG
Threshold of
Zero**Introduction**

If an air district or lead agency determines that any degree of project-related increase in GHG emissions would contribute considerably to climate change and therefore would be a significant impact, it could adopt a zero-emission threshold to identify projects that would need to reduce their emissions. A lead agency may determine that a zero-emission threshold is justified even if other experts may disagree. A lead agency is not prevented from adopting any significance threshold it sees as appropriate, as long as it is based on substantial evidence.

If the zero threshold option is chosen, all projects subject to CEQA would be required to quantify and mitigate their GHG emissions, regardless of the size of the project or the availability of GHG reduction measures available to reduce the project's emissions. Projects that could not meet the zero-emission threshold would be required to prepare environmental impact reports to disclose the unmitigable significant impact, and develop the justification for a statement of overriding consideration to be adopted by the lead agency.

**Implementing CEQA With a Zero Threshold for GHG**

The scientific community overwhelmingly agrees that the earth's climate is becoming warmer, and that human activity is playing a role in climate change. Unlike other environmental impacts, climate change is a global phenomenon in that all GHG emissions generated throughout the earth contribute to it. Consequently, both large and small GHG generators cause the impact. While it may be true that many GHG sources are individually too small to make any noticeable difference to climate change, it is also true that the countless small sources around the globe combine to produce a very substantial portion of total GHG emissions.

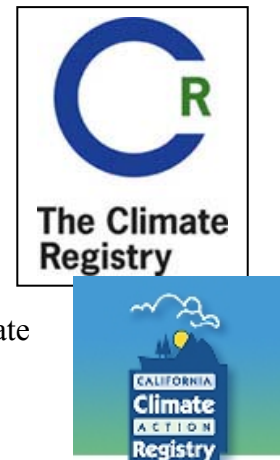
A zero threshold approach is based on a belief that, 1) all GHG emissions contribute to global climate change and could be considered significant, and 2) not controlling emissions from smaller sources would be neglecting a major portion of the GHG inventory.

CEQA explicitly gives lead agencies the authority to choose thresholds of significance. CEQA defers to lead agency discretion when choosing thresholds. Consequently, a zero-emission threshold has merits.

The CEQA review process for evaluating a project’s impact on global climate change under the zero threshold option would involve several components. Air quality sections would be written by lead agencies to include discussions on climate change in CEQA documents, GHG emissions would be calculated, and a determination of significance would be made. The local air districts would review and comment on the climate change discussions in environmental documents. Lead agencies may then revise final EIRs to accommodate air district comments. More than likely, mitigation measures will be specified for the project, and a mitigation monitoring program will need to be put in place to ensure that these measures are being implemented.

Since CEQA requires mitigation to a less than significant level, it is conceivable that many projects subjected to a zero threshold could only be deemed less than significant with offsite reductions or the opportunity to purchase greenhouse gas emission reduction credits. GHG emission reduction credits are becoming more readily available however the quality of the credits varies considerably. High quality credits are generated by actions or projects that have clearly demonstrated emission reductions that are real, permanent, verifiable, enforceable, and not otherwise required by law or regulation. When the pre- or post-project emissions are not well quantified or cannot be independently confirmed, they are considered to be of lesser quality. Similarly, if the reductions are temporary in nature, they are also considered to be poor quality. Adoption of a zero threshold should consider the near-term availability and the quality of potential offsets.

There are also environmental justice concerns about the effects of using offsite mitigations or emission reduction credits to offset, or mitigate, the impacts of a new project. Although GHGs are global pollutants, some of them are emitted with co-pollutants that have significant near-source or regional impacts. Any time that increases in emissions at a specific site will be mitigated at a remote location or using emission reduction credits, the agency evaluating the project should ensure that it does not create disproportionate impacts.



Administrative Considerations

If electing to pursue a zero threshold, an air district or lead agency should consider the administrative costs and the environmental review system capacity. Some projects that previously would have qualified for an exemption could require further substantial analysis, including preparation of a Negative Declaration (ND), a Mitigated Negative Declaration (MND) or an EIR. Moreover, the trade-offs between the volume of projects requiring review and the quality of consideration given to reviews should be considered. It may also be useful to consider whether meaningful mitigation can be achieved from smaller projects.

Consideration of Exemptions from CEQA

A practical concern about identifying GHG emissions as a broad cumulative impact is whether the zero threshold option will preclude a lead agency from approving a large set of otherwise qualified projects utilizing a Categorical Exemption, ND, or MND. The results could be a substantial increase in the number of EIR's. This is a valid and challenging concern, particularly for any threshold approach that is based on a zero threshold for net GHG emission increases.

CEQA has specified exceptions to the use of a categorical exemption. Specifically, CEQA Guidelines §15300.2 includes the following exceptions:

“(b) Cumulative Impact. All exemptions for these classes are inapplicable when the cumulative impact of successive projects of the same type in the same place, over time is significant.”

“(c) Significant Effect. A categorical exemption shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances.”

These CEQA Guidelines sections could be argued to mean that any net increase in GHG emissions would preclude the use of a categorical exemption. However, as described below, if the following can be shown, then the exceptions above could be argued not to apply:

- (1) Cumulative local, regional and/or state GHG emissions are being reduced or will be reduced by adopted, funded, and feasible measures in order to meet broader state targets.
- (2) Mandatory state or local GHG reduction measures would apply to the project's emissions such that broader GHG reduction goals would still be met and the project contributions would not be cumulatively considerable.
- (3) Project GHG emissions are below an adopted significance threshold designed to take into account the cumulative nature of GHG emissions.

A similar argument could be made relative to the use of a ND (provided no additional mitigation (beyond existing mandates) is required to control GHG emissions) and to the use of a MND instead of an EIR. However, due to the “fair argument” standard, which is discussed in Chapter 3, caution is recommended in use of a ND or MND unless all three elements above can be fully supported through substantial evidence and there is no substantial evidence to the contrary. Establishing a significance threshold of zero is likely to preclude the use of a categorical exemption.

Relevant Citations

The full text of relevant citations is in Appendix A.

Public Resources Code – §21004, Mitigating or Avoiding a Significant Effect; Powers of Public Agency.

State CEQA Guidelines – §15064, Determining the Significance of the Environmental Effects Caused by a Project.

State CEQA Guidelines – §15130, Discussion of Cumulative Impacts.

State CEQA Guidelines – §15064.7, Thresholds of Significance.

Introduction

A non-zero threshold could minimize the resources spent reviewing environmental analyses that do not result in real GHG reductions or to prevent the environmental review system from being overwhelmed. The practical advantages of considering non-zero thresholds for GHG significance determinations can fit into the concept regarding whether the project’s GHG emissions represent a “considerable contribution to the cumulative impact” and therefore warrant analysis.

Specifying a non-zero threshold could be construed as setting a *de minimis* value for a cumulative impact. In effect, this would be indicating that there are certain GHG emission sources that are so small that they would not contribute substantially to the global GHG budget. This could be interpreted as allowing public agencies to approve certain projects without requiring any mitigation of their GHG. Any threshold framework should include a proper context to address the *de minimis* issue. However, the CEQA Guidelines recognize that there may be a point where a project’s contribution, although above zero, would not be a *considerable contribution* to the cumulative impact and, therefore, not trigger the need for a significance determination.

GHG emissions from all sources are under the purview of CARB and as such may eventually be “regulated” no matter how small. Virtually all projects will result in some direct or indirect release of GHG. However, a decision by CARB to regulate a class of sources does not necessarily mean that an individual source in that class would constitute a project with significant GHG impacts under CEQA. For example, CARB has established criteria pollutant emission standards for automobiles, but the purchase and use of a single new car is not considered a project with significant impacts under CEQA. At the same time, it is important to note that it is likely that all meaningful sources of emissions, no matter how small are likely to be considered for regulation under AB 32. It is expected that projects will have to achieve some level of GHG reduction to comply with CARB’s regulations meant to implement AB 32. As such all projects will have to play a part in reducing our GHG emissions budget and no project, however small, is truly being considered *de minimis* under CARB’s regulations.

This chapter evaluates a range of conceptual approaches toward developing GHG significance criteria. The air districts retained the services of J&S an environmental consulting, firm to assist with the development of a Statute and Executive Order-based threshold (Approach 1) and a tiered threshold (Approach 2) based on a prescribed list of tasks and deliverables. Time and financial constraints limited the scope and depth of this analysis, however, the work presented here may be useful in developing interim guidance while AB 32 is being implemented. J&S recognized that approaches other than those described here could be used.

As directed, J&S explored some overarching issues, such as:

- what constitutes “new” emissions?

- how should “baseline emissions” be established?
- what is cumulatively “considerable” under CEQA?
- what is “business as usual” ? and
- should an analysis include “life-cycle” emissions?

The answers to these issues were key to evaluating each of the threshold concepts.

Approach 1 – Statute and Executive Order Approach

Thresholds could be grounded in existing mandates and their associated GHG emission reduction targets. A project would be required to meet the targets, or reduce GHG emissions to the targets, to be considered less than significant.

AB 32 and S-3-05 target the reduction of statewide emissions. It should be made clear that AB 32 and S-3-05 do not specify that the emissions reductions should be achieved through uniform reduction by geographic location or by emission source characteristics. For example, it is conceivable, although unlikely, that AB 32 goals could be achieved by new regulations that only apply to urban areas or that only apply to the transportation and/or energy sector. However, this approach to evaluating GHG under CEQA is based on the presumption that a new project must at least be consistent with AB 32 GHG emission reduction mandates.

The goal of AB 32 and S-3-05 is the significant reduction of future GHG emissions in a state that is expected to rapidly grow in both population and economic output. As such, there will have to be a significant reduction in the per capita GHG output for these goals to be met. CEQA is generally used to slow or zero the impact of new emissions, leaving the reduction of existing emission sources to be addressed by other regulatory means. With these concepts in mind, four options were identified for statute/executive order-based GHG significance thresholds and are described below.

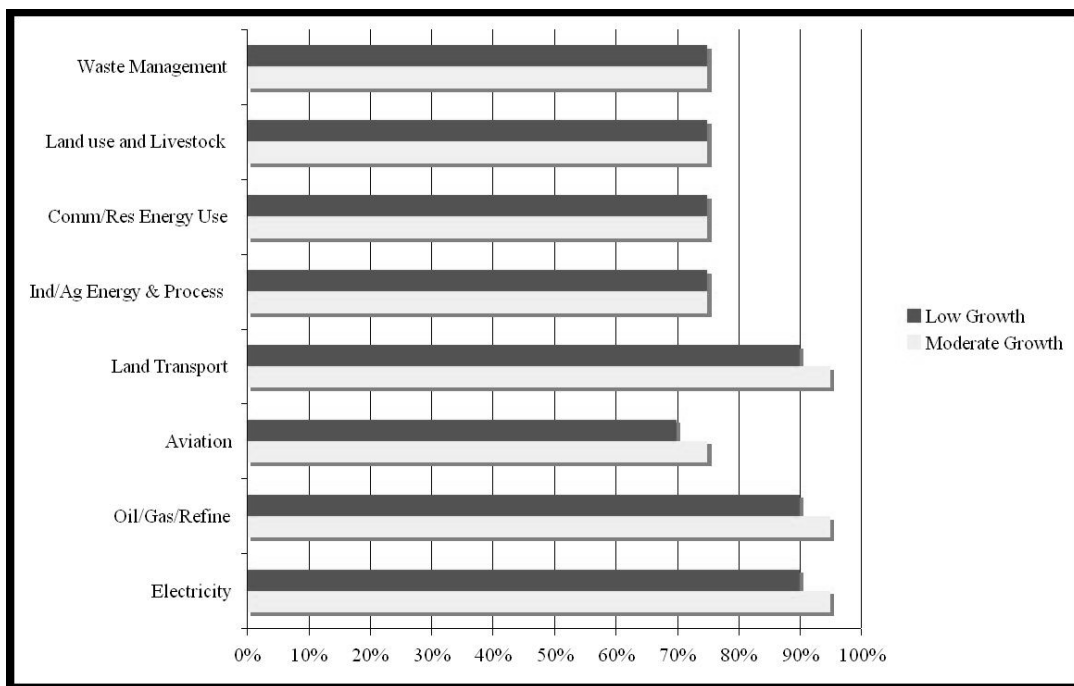
Threshold 1.1: AB 32/S-3-05 Derived Uniform Percentage-Based Reduction. AB 32 requires the state to reduce California-wide GHG emissions to 1990 levels by 2020. Reducing greenhouse gas emission levels from 2020 to 1990 levels could require a 28 to 33 percent reduction of business-as-usual GHG emissions depending on the methodology used to determine the future emission inventories. The exact percent reduction may change slightly once CARB finalizes its 1990 and 2020 inventory estimates. In this context, business-as-usual means the emissions that would have occurred in the absence of the mandated reductions. The details of the business-as-usual scenario are established by CARB in the assumptions it uses to project what the state’s GHG emissions would have been in 2020, and the difference between that level and the level that existed in 1990 constitutes the reductions that must be achieved if the mandated goals are to be met.

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- Approach 1: Statute and Executive Order
- 1.1: AB32/S-3-05 Derived Uniform Percentage-Based Reduction

This threshold approach would require a project to meet a percent reduction target based on the average reductions needed from the business-as-usual emission from all GHG sources. Using the 2020 target, this approach would require all discretionary projects to achieve a 33 percent reduction from projected business-as-usual emissions in order to be considered less than significant. A more restrictive approach would use the 2050 targets. S-3-05 seeks to reduce GHG emissions to 80 percent below 1990 levels by 2050. To reach the 2050 milestone would require an estimated 90 percent reduction (effective immediately) of business-as-usual emissions. Using this goal as the basis for a significance threshold may be more appropriate to address the long-term adverse impacts associated with global climate change. Note that AB 32 and S-3-05 set emission inventory goals at milestone years; it is unclear how California will progress to these goals in non-milestone years.



SOURCE: ARB 2007

Threshold 1.2: Uniform Percentage-Based (e.g.50%) Reduction for New Development.

This threshold is based on a presumption that new development should contribute a greater percent reduction from business-as-usual because greater reductions can be achieved at lower cost from new projects than can be achieved from existing sources. This approach would establish that new development emit 50 percent less GHG emissions than business-as-usual development. This reduction rate is greater than the recommended reduction rate for meeting the Threshold 1.1 2020 target (33 percent) but is significantly less restrictive than the Threshold 1.1 2050 target reduction rate (90 percent). If a 50 percent GHG reduction were achieved from new development, existing emissions would have to be reduced by 25 to 30 percent in order to meet the 2020 emissions goal depending on the year used to determine the baseline inventory. Although this reduction goal is reasonable for achieving the 2020 goal, it would not be possible to

reach the 2050 emissions target with this approach even if existing emissions were 100 percent controlled.

Threshold 1.3: Uniform Percentage-Based Reduction by Economic Sector. This threshold would use a discrete GHG reduction goal specific to the economic sector associated with the project. There would be specific reduction goals for each economic sector, such as residential, commercial, and industrial development. Specifying different reduction thresholds for each market sector allows selection of the best regulatory goal for each sector taking into account available control technology and costs. This approach would avoid over-regulating projects (i.e. requiring emissions to be controlled in excess of existing technology) or under-regulating projects (i.e. discouraging the use of available technology to control emissions in excess of regulations). This approach requires extensive information on the emission inventories and best available control technology for each economic sector. This data will be compiled as CARB develops its scoping plan under AB 32 and its implementing regulations; as a result, this approach will be more viable in the long term.

Threshold 1.4: Uniform Percentage-Based Reduction by Region. AB 32 and S-3-05 are written such that they apply to a geographic region (i.e. the entire state of California) rather than on a project or sector level. One could specify regions of the state such as the South Coast Air Basin, Sacramento Valley, or Bay Area which are required to plan (plans could be developed by regional governments, such as councils of governments) and demonstrate compliance with AB 32 and S-3-05 reduction goals at a regional level. To demonstrate that a project has less than significant emissions, one would have to show compliance with the appropriate regional GHG plan. Effectively this approach allows for analysis of GHG emissions at a landscape scale smaller than the state as a whole. Specifying regions in rough correlation to existing air basins or jurisdictional control allows for regional control of emissions and integration with regional emission reduction strategies for criteria and toxic air pollutants. Although differing GHG reduction controls for each region are possible, it is likely that all regions would be



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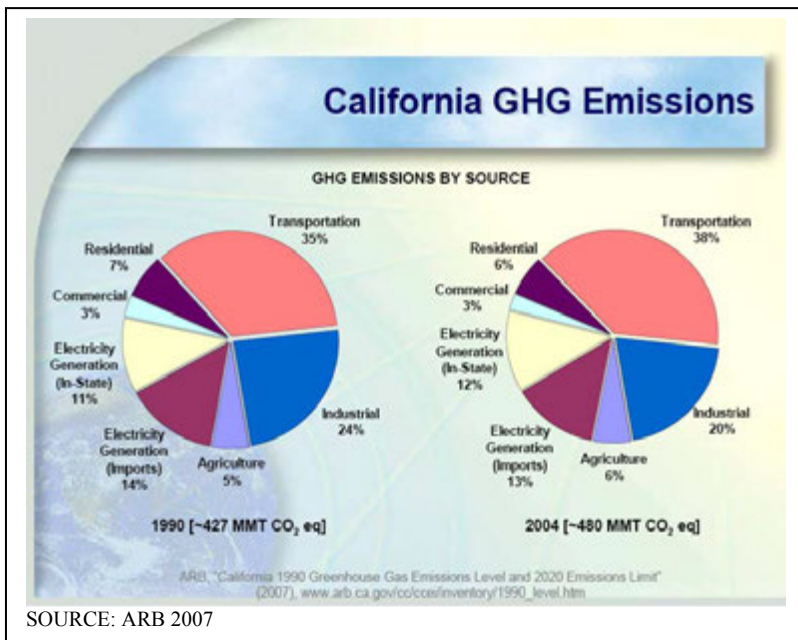
- Approach 1: Statute and Executive Order
- 1.4: Uniform % Based Reduction by Region

required to achieve 1990 emission inventories by the year 2020 and 80 percent less emissions by 2050. Threshold 1.4 is considered viable long-term significance criteria that is unlikely to be used in the short term.

Implementing CEQA Thresholds Based on Emission Reduction Targets

Characterizing Baseline and Project Emissions

While the population and economy of California is expanding, all new projects can be considered to contribute new emissions. Furthermore, GHG impacts are exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective. “Business-as-usual” is the projection of GHG emissions at a future date based on current technologies and regulatory requirements in absence of other reductions. For example to determine the future emissions from a power plant for “business-as-usual” one would multiply the projected energy throughput by the current emission factor for that throughput. If adopted regulations (such as those that may be



promulgated by CARB for AB 32) dictate that power plant emissions must be reduced at some time in the future, it is appropriate to consider these regulation standards as the new business-as-usual for a future date. In effect, business-as-usual will continue to evolve as regulations manifest. Note that “business-as-usual” defines the CEQA No Project conditions, but does not necessarily form the baseline under

CEQA. For instance, it is common to subtract the future traffic with and without a project to determine the future cumulative contribution of a project on traffic conditions. However, existing conditions at the time of issuance of the notice of preparation is normally the baseline.

Establishing Emission Reduction Targets

One of the obvious drawbacks to using a uniform percent reduction approach to GHG control is that it is difficult to allow for changes in the 1990 and future emission inventories estimates. To determine what emission reductions are required for new projects one would have to know accurately the 1990 budget and efficacy of other GHG promulgated regulations as a function of time. Since CARB will not outline its

regulation strategy for several more years, it is difficult to determine accurately what the new project reductions should be in the short term. Future updates to the 1990 inventory could necessitate changes in thresholds that are based on that inventory. It is important to note that it is difficult to create near term guidance for a uniform reduction threshold strategy since it would require considerable speculation regarding the implementation and effectiveness of forthcoming CARB regulations.

Of greater importance are the assumptions used to make the projected 2020 emission inventories. Projecting future inventories over the next 15-50 years involves substantial uncertainty. Furthermore, there are likely to be federal climate change regulations and possibly additional international GHG emission treaties in the near future. To avoid such speculation, this paper defines all future emission inventories as hypothetical business-as-usual projections.

This white paper is intended to support local decisions about CEQA and GHG in the near term. During this period, it is unlikely that a threshold based on emission reduction targets would need to be changed. However, it is possible that future inventory updates will show that targets developed on the current inventory were not stringent enough, or were more stringent than was actually needed.

Approach 2 – Tiered Approach

The goal of a tiered threshold is to maximize reduction predictability while minimizing administrative burden and costs. This would be accomplished by prescribing feasible mitigation measures based on project size and type, and reserving the detailed review of an EIR for those projects of greater size and complexity. This approach may require inclusion in a General Plan, or adoption of specific rules or ordinances in order to fully and effectively implement it.

A tiered CEQA significance threshold could establish different levels at which to determine if a project would have a significant impact. The tiers could be established based on the gross GHG emission estimates for a project or could be based on the physical size and characteristics of the project. This approach would then prescribe a set of GHG mitigation strategies that would have to be incorporated into the project in order for the project to be considered less than significant.

The framework for a tiered threshold would include the following:

- disclosure of GHG emissions for all projects;
- support for city/county/regional GHG emissions reduction planning;
- creation and use of a “green list” to promote the construction of projects that have desirable GHG emission characteristics;
- a list of mitigation measures;

- a decision tree approach to tiering; and
- quantitative or qualitative thresholds.

Decision-Tree Approach to Tiering

CEQA guidance that allows multiple methodologies to demonstrate GHG significance will facilitate the determination of significance for a broad range of projects/plans that would otherwise be difficult to address with a single non-compound methodology. Even though there could be multiple ways that a project can determine GHG significance using a decision-tree approach, only one methodology need be included in any single CEQA document prepared by the applicant. The presence of multiple methodologies to determine significance is designed to promote flexibility rather than create additional analysis overhead. Figure 1 shows a conceptual approach to significance determination using a tiered approach that shows the multiple routes to significance determination.

Figure 1 Detail Description

Figure 1 pictorially represents how an agency can determine a project's or plan's significance for CEQA analysis using the non-zero threshold methodology. The emissions associated with a project/plan are assumed to have a significant impact unless one can arrive at a less-than-significant finding by at least one of the methodologies below.

1. Demonstrate that a General Plan (GP) or Regional Plan is in Compliance with AB32
 - For most GPs or RPs this will require demonstration that projected 2020 emissions will be equal to or less than 1990 emissions.
 - GPs or RPs are expected to fully document 1990 and 2020 GHG emission inventories.
 - Projection of 2020 emissions is complicated by the fact that CARB is expected to promulgate emission reductions in the short term. Until explicit CARB regulations are in place, unmitigated GP 2020 emission inventories represent business-as-usual scenarios.
 - EIRs for GPs or RPs which demonstrate 2020 mitigated emissions are less than or equal to 1990 emissions are considered less than significant.
2. Demonstrate the Project is Exempt Based on SB 97
 - As specified in SB 97, projects that are funded under November 2006 Proposition 1B (Highway Safety, Traffic Reduction, Air Quality and Port Security Bond Act) and 1C (Disaster Preparedness and Flood Prevention Bond Act) may be exempt from analysis until January 1, 2010.

Climate Change Significance Criteria Flow Chart

- This chart pictorially represents how an agency can determine a project's or plan's significance for CEQA analysis.
- The emissions associated with a project/plan are assumed to have a significant impact unless one can arrive at a less-than-significant finding by at least one of the methodologies below.

The Green List (Conceptual Approach)

- Publish and update a list of projects and project types that are deemed a positive contribution to CA efforts to reduce GHG emissions.
- Consult the ARB and the AG prior to listing a project on the Green List to ensure consistency with ARB AB-32 efforts and to ensure that the Green List entries are consistent with how the AG office interprets AB-32 and GHG CEQA compliance.
- The Green List will be updated every 6 months or as major regulatory or legal developments unfold.
- Projects that are on the green list are to be considered less than significant for GHG emissions purposes.
- An example of a Green List entry would be a wind farm that had negligible construction emissions.

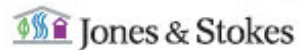
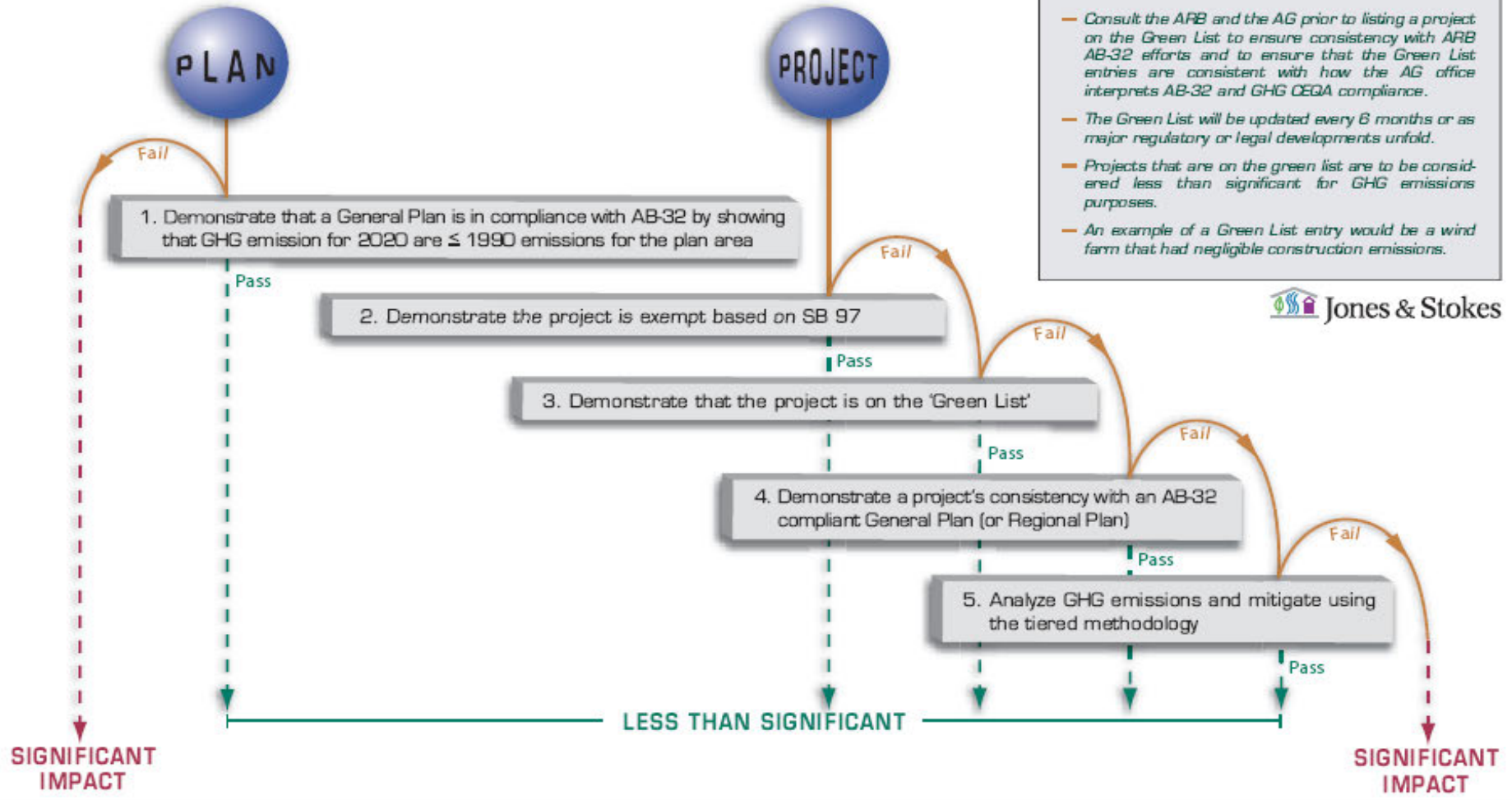


Figure 1
Climate Change Significance Criteria Flow Chart

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Item No. E.3

- An exemption can be used in an ND, MND, or EIR to support a less than significant finding for GHG impacts.
3. Demonstrate that the Project is on the ‘Green List’
 - This list would include projects that are deemed a positive contribution to California efforts to reduce GHG emissions. If the project is of the type described on the Green List it is considered less than significant.
 - If the Green List entry description requires mitigation for impacts other than GHG, this methodology can be used in MNDs or EIRs; if the Green List entry does not require mitigation this methodology can be used in NDs, MNDs, or EIRs.
 4. Demonstrate a Project’s Compliance with a General Plan
 - If a project is consistent with an appropriate General Plan’s Greenhouse Gas Reduction Plan (GGRP), a project can be declared less than significant.
 - Note that at this time there are no known jurisdictions that have a GGRP that has been fully subject to CEQA review. While Marin County has adopted a forward-thinking GGRP and it is described in the most recent GP update, the associated EIR does not analyze the secondary environmental impacts of some of the GGRP measures such as tidal energy. While one can reference GGRPs that have not been reviewed fully in CEQA, to attempt to show a project’s compliance with such a plan as evidence that the project’s GHG emission contributions are less than significant may not be supported by substantial evidence that cumulative emissions are being fully addressed in the particular jurisdiction.
 - Compliance with a CEQA-vetted GGRP can be cited as evidence for all CEQA documents (Categorical Exemption, ND, MND, and EIR).
 5. Analyze GHG Emissions and Mitigate using the Tiered Methodology
 - Guidance and mitigation methodology for various development projects (residential, commercial, industrial) are listed in the form of tiered thresholds. If a project incorporates the mitigation measures specified in the tiered threshold tables the project is considered less than significant.
 - All project emissions are considered less than significant if they are less than the threshold(s).
 - If the tiered approach requires mitigation, this methodology can be used in MNDs or EIRs; if the tiered approach does not require mitigation this methodology can be used in NDs, MNDs, or EIRs.

The Green List

- The Green List would be a list of projects and project types that are deemed a positive contribution to California's efforts to reduce GHG emissions.
- If this approach is followed, it is suggested that CARB and the Attorney General (AG) are consulted prior to listing a project on the Green List to ensure consistency with CARB AB 32 efforts and to ensure that the Green List entries are consistent with how the AG office interprets AB 32 and GHG CEQA compliance.
- The Green List should be updated every 6 months or as major regulatory or legal developments unfold.
- Projects that are on the Green List are to be considered less than significant for GHG emissions purposes.
- A tentative list of potential Green List entries is presented below. Actual Green List entries should be far more specific and cover a broad range of project types and mitigation approaches. The list below is merely a proof-of-concept for the actual Green List.
 1. Wind farm for the generation of wind-powered electricity
 2. Extension of transit lines to currently developed but underserved communities
 3. Development of high-density infill projects with easily accessible mass transit
 4. Small hydroelectric power plants at existing facilities that generate 5 mw or less (as defined in Class 28 Categorical Exemption)
 5. Cogeneration plants with a capacity of 50 mw or less at existing facilities (as defined in Class 29 Cat Exemption)
 6. Increase in bus service or conversion to bus rapid transit service along an existing bus line
 7. Projects with LEED "Platinum" rating
 8. Expansion of recycling facilities within existing urban areas
 9. Recycled water projects that reduce energy consumption related to water supplies that services existing development
 10. Development of bicycle, pedestrian, or zero emission transportation infrastructure to serve existing regions

There are also several options for tiering and thresholds, as shown in Table 2 below. One could establish strictly numeric emissions thresholds and require mitigation to below the specific threshold to make a finding of less than significant. One could establish narrative emissions threshold that are based on a broader context of multiple approaches to GHG reductions and a presumption that projects of sufficiently low GHG intensity are less than significant.

In Concept 2A, a zero threshold would be applied to projects and thus only projects that result in a reduction of GHG emissions compared to baseline emissions would be less than significant absent mitigation. All projects would require quantified inventories. All projects that result in a net increase of GHG emissions would be required to mitigate their emissions to zero through direct mitigation or through fees or offsets or the impacts

Table 2: Approach 2 Tiering Options

	Concept 2A Zero	Concept 2B Quantitative	Concept 2C Qualitative
Tier 1	Project results in a net reduction of GHG emissions <i>Less than Significant</i>	Project in compliance with an AB 32-compliant General/Regional Plan, on the Green List, or below Tier 2 threshold. Level 1 Reductions (Could include such measures as: bike parking, transit stops for planned route, Energy Star roofs, Energy Star appliances, Title 24, water use efficiency, etc.) <i>Less than Significant</i>	Project in compliance with an AB 32-compliant General/Regional Plan, on the Green List, or below Tier 2 threshold. Level 1 Reductions (See measures under 2B) <i>Less than Significant</i>
Tier 2	Project results in net increase of GHG emissions Mitigation to zero (including offsets) <i>Mitigated to Less than Significant</i>	Above Tier 2 threshold Level 2 Mitigation (Could include such measures as: Parking reduction beyond code, solar roofs, LEED Silver or Gold Certification, exceed Title 24 by 20%, TDM measures, etc.) <i>Mitigated to Less than Significant</i>	Above Tier 2 threshold Level 2 Mitigation (See measures under 2B) <i>Mitigated to Less than Significant</i>
Tier 3	Mitigation infeasible to reduce emissions to zero (e.g., cost of offsets infeasible for project or offsets not available) <i>Significant and Unavoidable</i>	Above Tier 2 threshold With Level 1, 2 Mitigation Level 3 Mitigation: (Could include such measures as: On-site renewable energy systems, LEED Platinum certification, Exceed Title 24 by 40%, required recycled water use for irrigation, zero waste/high recycling requirements, mandatory transit passes, offsets/carbon impact fees) <i>Mitigated to Less than Significant</i>	Above Tier 3 thresholds Quantify Emissions, Level 3 Mitigation (see measures under 2B), and Offsets for 90% of remainder <i>Significance and Unavoidable</i>

would be identified as significant and unavoidable. This could be highly problematic and could eliminate the ability to use categorical exemptions and negative declarations for a wide range of projects.

In Concepts 2B and 2C, the first tier of a tiered threshold includes projects that are within a jurisdiction with an adopted greenhouse gas reduction plan (GGRP) and General Plan/Regional Plan that is consistent with AB 32 (and in line with S-3-05), or are on the Green List, or are below the Tier 2 threshold. All Tier 1 projects would be required to implement mandatory reductions required due to other legal authority (Level 1 reductions) such as AB 32, Title 24, or local policies and ordinances. With Level 1

reduction measures, qualifying Tier 1 projects would be considered less than significant without being required to demonstrate mitigation to zero.

In Concept 2B, the Tier 2 threshold would be quantitative, and quantified inventories would be required. Several quantitative threshold options are discussed below. A more comprehensive set of Level 2 mitigation would be required. If the project's emissions still exceed the Tier 2 threshold, an even more aggressive set of Level 3 mitigation measures would be required including offsets (when feasible) to reduce emissions below the Tier 2 threshold.

In Concept 2C, there would be two thresholds, a lower Tier 2 threshold (the "low bar") and a higher Tier 3 threshold (the "high bar"). The Tier 2 threshold would be the significance threshold for the purposes of CEQA and would be qualitative in terms of units (number of dwelling units, square feet of commercial space, etc.) or a per capita ratio. Projects above the Tier 2 threshold would be required to implement the comprehensive set of Level 2 mitigation. Projects below the Tier 2 threshold would not be required to quantify emissions or reductions. The Tier 3 threshold would be a threshold to distinguish the larger set of projects for which quantification of emissions would be required. Level 3 mitigation would be required and the project would be required to purchase offsets (when feasible) in the amount of 90 percent of the net emissions after application of Level 1 reductions and Level 2 and 3 mitigation. A variant on Concept 2C would be to require mandatory Level 3 mitigation without quantification and offsets.

Approach 2 Threshold Options

Seven threshold options were developed for this approach. The set of options are framed to capture different levels of new development in the CEQA process and thus allow different levels of mitigation. Options range from a zero first-tier threshold (Threshold 2.1) up to a threshold for GHG that would be equivalent to the capture level (i.e., number of units) of the current criteria pollutant thresholds used by some air districts (Threshold 2.4). The decision-based implementation approach discussed above could be used for any of these options. Table 3 below compares the results of each of the approaches discussed here.

Threshold 2.1: Zero First Tier Tiered Threshold.

This option would employ the decision tree concept and set the first tier cut-point at zero. The second tier cut-point could be one of the qualitative or quantitative thresholds discussed below. First-tier projects would be required to implement a list of very feasible and readily available mitigation measures.

Threshold 2.2: Quantitative Threshold Based on Market Capture

A single quantitative threshold was developed in order to ensure capture of 90 percent or more of likely future discretionary developments. The objective was to set the emission

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threshold low enough to capture a substantial fraction of future residential and non-residential development that will be constructed to accommodate future statewide population and job growth, while setting the emission threshold high enough to exclude small development projects that will contribute a relatively small fraction of the cumulative statewide GHG emissions.

The quantitative threshold was created by using the following steps:

- Reviewing data from four diverse cities (Los Angeles in southern California and Pleasanton, Dublin, and Livermore in northern California) on pending applications for development.
- Determining the unit (dwelling unit or square feet) threshold that would capture approximately 90 percent of the residential units or office space in the pending application lists.
- Based on the data from the four cities, the thresholds selected were 50 residential units and 30,000 square feet of commercial space.
- The GHG emissions associated with 50 single-family residential units and 30,000 square feet of office were estimated and were found to be 900 metric tons and 800 metric tons, respectively. Given the variance on individual projects, a single threshold of 900 metric tons was selected for residential and office projects.
- A 900 metric ton threshold was also selected for non-office commercial projects and industrial projects to provide equivalency for different projects in other economic sectors.
- If this threshold is preferred, it is suggested that a more robust data set be examined to increase the representativeness of the selected thresholds. At a minimum, a diverse set of at least 20 cities and/or counties from throughout the state should be examined in order to support the market capture goals of this threshold. Further, an investigation of market capture may need to be conducted for different commercial project types and for industrial projects in order to examine whether multiple quantitative emissions thresholds or different thresholds should be developed.

The 900-ton threshold corresponds to 50 residential units, which corresponds to the 84th percentile of projects in the City of Los Angeles, the 79th percentile in the City of Pleasanton, the 50th percentile in the City of Livermore and the 4th percentile in the City of Dublin. This is suggestive that the GHG reduction burden will fall on larger projects that will be a relatively small portion of overall projects within more developed central cities (Los Angeles) and suburban areas of slow growth (Pleasanton) but would be the higher portion of projects within moderately (Livermore) or more rapidly developing areas (Dublin). These conclusions are suggestive but not conclusive due to the small sample size. The proposed threshold would exclude the smallest proposed developments

from potentially burdensome requirements to quantify and mitigate GHG emissions under CEQA. While this would exclude perhaps 10 percent of new residential development, the capture of 90 percent of new residential development would establish a strong basis for demonstrating that cumulative reductions are being achieved across the state. It can certainly serve as an interim measure and could be revised if subsequent regulatory action by CARB shows that a different level or different approach altogether is called for.

The 900-ton threshold would correspond to office projects of approximately 35,000 square feet, retail projects of approximately 11,000 square feet, or supermarket space of approximately 6,300 square feet. 35,000 square feet would correspond to the 46th percentile of commercial projects in the City of Los Angeles, the 54th percentile in the City of Livermore, and the 35th percentile in the City of Dublin. However, the commercial data was not separated into office, retail, supermarket or other types, and thus the amount of capture for different commercial project types is not known. The proposed threshold would exclude smaller offices, small retail (like auto-parts stores), and small supermarkets (like convenience stores) from potentially burdensome requirements to quantify and mitigate GHG emissions under CEQA but would include many medium-scale retail and supermarket projects.

The industrial sector is less amenable to a unit-based approach given the diversity of projects within this sector. One option would be to adopt a quantitative GHG emissions threshold (900 tons) for industrial projects equivalent to that for the residential/commercial thresholds described above. Industrial emissions can result from both stationary and mobile sources. CARB estimates that their suggested reporting threshold for stationary sources of 25,000 metric tons accounts for more than 90 percent of the industrial sector GHG emissions (see Threshold 2.3 for 25,000 metric ton discussion). If the CARB rationale holds, then a 900 metric ton threshold would likely capture at least 90 percent (and likely more) of new industrial and manufacturing sources. If this approach is advanced, we suggest further examination of industrial project data to determine market capture.

This threshold would require the vast majority of new development emission sources to quantify their GHG emissions, apportion the forecast emissions to relevant source categories, and develop GHG mitigation measures to reduce their emissions.

Threshold 2.3: CARB Reporting Threshold

CARB has recently proposed to require mandatory reporting from cement plants, oil refineries, hydrogen plants, electric generating facilities and electric retail providers, cogeneration facilities, and stationary combustion sources emitting $\geq 25,000$ MT CO₂e/yr. AB 32 requires CARB to adopt a regulation to require the mandatory reporting and verification of emissions. CARB issued a preliminary draft version of its proposed reporting requirements in August 2007 and estimates that it would capture 94 percent of the GHG emissions associated with stationary sources.

This threshold would use 25,000 metric tons per year of GHG as the CEQA significance level. CARB proposed to use the 25,000 metric tons/year value as a reporting threshold, not as a CEQA significance threshold that would be used to define mitigation requirements. CARB is proposing the reporting threshold to begin to compile a statewide emission inventory, applicable only for a limited category of sources (large industrial facilities using fossil fuel combustion).

A 25,000 metric ton significance threshold would correspond to the GHG emissions of approximately 1,400 residential units, 1 million square feet of office space, 300,000 square feet of retail, and 175,000 square feet of supermarket space. This threshold would capture far less than half of new residential or commercial development.

As noted above, CARB estimates the industrial-based criteria would account for greater than 90 percent of GHG emissions emanating from stationary sources. However, industrial and manufacturing projects can also include substantial GHG emissions from mobile sources that are associated with the transportation of materials and delivery of products. When all transportation-related emissions are included, it is unknown what portion of new industrial or manufacturing projects a 25,000-ton threshold would actually capture.

An alternative would be to use a potential threshold of 10,000 metric tons considered by the Market Advisory Committee for inclusion in a Greenhouse Gas Cap and Trade System in California. A 10,000 metric ton significance threshold would correspond to the GHG emissions of approximately 550 residential units, 400,000 square feet of office space, 120,000 square feet of retail, and 70,000 square feet of supermarket space. This threshold would capture roughly half of new residential or commercial development.

Threshold 2.4: Regulated Emissions Inventory Capture

Most California air districts have developed CEQA significance thresholds for NOx and ROG emissions to try to reduce emissions of ozone precursors from proposed sources that are not subject to NSR pre-construction air quality permitting. The historical management of ozone nonattainment issues in urbanized air districts is somewhat analogous to today’s concerns with greenhouse gas emissions in that regional ozone concentrations are a cumulative air quality problem caused by relatively small amounts of NOx and ROG emissions from thousands of individual sources, none of which emits enough by themselves to cause elevated ozone concentrations. Those same conditions apply to global climate change where the environmental problem is caused by emissions from a countless number of individual sources, none of which is large enough by itself to cause the problem. Because establishment of NOx/ROG emissions CEQA significance thresholds has been a well-tested mechanism to ensure that individual projects address cumulative impacts and to force individual projects to reduce emissions under CEQA, this threshold presumes the analogy of NOx/ROG emission thresholds could be used to develop similar GHG thresholds.

The steps to develop a GHG emission threshold based on the NOx/ROG analogy were as follows:

- For each agency, define its NOx/ROG CEQA thresholds.
- For each agency, define the regional NOx/ROG emission inventory the agency is trying to regulate with its NOx/ROG thresholds.
- For each agency, calculate the percentage of the total emission inventory for NOx represented by that agency's CEQA emission threshold. That value represents the "minimum percentage of regulated inventory" for NOx.
- The current (2004) California-wide GHG emission inventory is 499 million metric tons per year of CO₂ equivalent (MMT CO₂e). Apply the typical "minimum percentage of regulated inventory" value to the statewide GHG inventory, to develop a range of analogous GHG CEQA thresholds.

The preceding methodology was applied to two different air quality districts: the Bay Area Air Quality Management District (BAAQMD), a mostly-urbanized agency within which most emissions are generated from urban areas; and the San Joaquin Valley Air Pollution Control District (SJVAPCD), which oversees emissions emanating in part from rural areas that are generated at dispersed agricultural sources and area sources. For example, in the Bay Area the NOx threshold is 15 tons/year. The total NOx inventory for 2006 was 192,000 tons/year (525 tons/day). The threshold represents 0.008 percent of the total NOx inventory. Applying that ratio to the total statewide GHG emissions inventory of 499 MMT CO₂e (2004) yields an equivalent GHG threshold of 39,000 MMT CO₂e.

The range of analogous CEQA GHG thresholds derived from those two agencies is tightly clustered, ranging from 39,000 to 46,000 tons/year. A 39,000 to 46,000 metric ton threshold would correspond to the GHG emissions of approximately 2,200 to 2,600 residential units, 1.5 to 1.8 million square feet of office space, 470,000 to 560,000 square feet of retail, and 275,000 to 320,000 square feet of supermarket space. This threshold would capture far less than half of new residential or commercial development. Similarly, this threshold would capture less of new industrial/manufacturing GHG emissions inventory than Thresholds 2.2 or 2.3.

Threshold 2.5: Unit-Based Thresholds Based on Market Capture

Unit thresholds were developed for residential and commercial developments in order to capture approximately 90 percent of future development. The objective was to set the unit thresholds low enough to capture a substantial fraction of future housing and commercial developments that will be constructed to accommodate future statewide population and job growth, while setting the unit thresholds high enough to exclude small development projects that will contribute a relatively small fraction of the cumulative statewide GHG emissions. Sector-based thresholds were created by using the same steps

and data used to create Threshold 2.2- Quantitative Threshold Based on Market Capture above.

The distribution of pending application data suggests that the GHG reduction burden will fall on larger projects that will be a relatively small portion of overall projects within more developed central cities and suburban areas of slow growth but would be the higher portion of projects within moderately or rapidly developing areas. The proposed threshold would exclude the smallest proposed developments from potentially burdensome requirements to quantify and mitigate GHG emissions under CEQA. While this would exclude perhaps 10 percent of new residential development, the capture of 90 percent of new residential development would establish a strong basis for demonstrating that cumulative reductions are being achieved across the state. It can certainly serve as an interim measure and could be revised if subsequent regulatory action by CARB shows that a different level or different approach altogether is called for.

A similar rationale can be applied to the development of a commercial threshold. Threshold 2.5 would exclude many smaller businesses from potentially burdensome requirements to quantify and mitigate GHG emissions under CEQA. It should be noted that the GHG emissions of commercial projects vary substantially. For example, the carbon dioxide emissions associated with different commercial types were estimated as follows:

- 30,000 square-foot (SF) office = 800 metric tons/year CO₂
- 30,000 SF retail = 2,500 metric tons/year CO₂
- 30,000 SF supermarket = 4,300 metric tons/year CO₂

Thus, in order to assure appropriate market capture on an emissions inventory basis, it will be important to examine commercial project size by type, instead of in the aggregate (which has been done in this paper).

The industrial sector is less amenable to a unit-based approach given the diversity of projects within this sector. One option would be to use a quantitative threshold of 900 tons for industrial projects in order to provide for rough equivalency between different sectors. Industrial emissions can result from both stationary and mobile sources. However, if the CARB rationale for > 90 percent stationary source capture with a threshold of 25,000 metric tons holds, then a 900 metric ton threshold would likely capture at least 90 percent (and likely more) of new industrial sources. Further examination of unit-based industrial thresholds, such as the number of employees or manufacturing floor space or facility size, may provide support for a unit-based threshold based on market capture.

This threshold would require the vast majority of new development emission sources to quantify their GHG emissions, apportion the forecast emissions to relevant source categories, and develop GHG mitigation measures to reduce their emissions.

Threshold 2.6. Projects of Statewide, Regional, or Areawide Significance

For this threshold, a set of qualitative, tiered CEQA thresholds would be adopted based on the definitions of “projects with statewide, regional or areawide significance” under the Guidelines for California Environmental Quality Act, CCR Title 14, Division 6, Section 15206(b).

Project sizes defined under this guideline include the following:

- Proposed residential development of more than 500 dwelling units.
- Proposed shopping center or business establishment employing more than 1,000 persons or encompassing more than 500,000 square feet of floor space.
- Proposed commercial office building employing more than 1,000 persons or encompassing more than 250,000 square feet of floor space.
- Proposed hotel/motel development of more than 500 rooms.
- Proposed industrial, manufacturing or processing plant or industrial park planned to house more than 1,000 persons, or encompassing more than 600,000 square feet of floor space.

These thresholds would correspond to the GHG emissions of approximately 9,000 metric tons for residential projects, 13,000 metric tons for office projects, and 41,000 metric tons for retail projects. These thresholds would capture approximately half of new residential development and substantially less than half of new commercial development. It is unknown what portion of the new industrial or manufacturing GHG inventory would be captured by this approach.

Threshold 2.7 Efficiency-Based Thresholds

For this approach, thresholds would be based on measurements of efficiency. For planning efforts, the metric could be GHG emissions per capita or per job or some combination thereof. For projects, the metric could be GHG emission per housing unit or per square foot of commercial space. In theory, one could also develop metrics for GHG emissions per dollar of gross product to measure the efficiency of the economy.

This approach is attractive because it seeks to benchmark project GHG intensity against target levels of efficiency. The thresholds would need to be set such that there is reasonably foreseeable and sufficient reductions compared to business as usual to support meeting AB 32 and S-3-05 goals in time (in combination with command and control regulations). Because this approach would require substantial data and modeling to fully develop, this is a concept considered as a potential future threshold and not appropriate

for interim guidance in the short term. Thus, it is not evaluated in the screening evaluation in the next section.

Table 3 compares the results for each of the approaches.

Table 3: Comparison of Approach 2 Tiered Threshold Options

Threshold	GHG Emission Threshold (metric tons/year)	Future Development Captured by GHG Threshold
2.1: Zero Threshold	0 tons/year	All
2.2: Quantitative Threshold Based on Market Capture	~900 tons/year	Residential development > 50 dwelling units Office space > 36,000 ft ² Retail space >11,000 ft ² Supermarkets >6,300 ft ² small, medium, large industrial
2.3: CARB GHG Mandatory Reporting Threshold OR Potential Cap and Trade Entry Level	25,000 metric tons/year OR 10,000 metric tons/year	Residential development >1,400 dwelling units OR 550 dwelling units Office space >1 million ft ² OR 400,000 ft ² Retail space >300,000 ft ² OR 120,000 ft ² Supermarkets >175,000 ft ² OR 70,000 ft ² medium/larger industrial
2.4: Regulated Inventory Capture	40,000 – 50,000 metric tons/year	Residential development >2,200 to 2,600 dwelling units Office space >1.5 to 1.8 million ft ² Retail space >470,000 to 560,000 ft ² Supermarkets >270,000 to 320,000 ft ² medium/larger industrial
2.5: Unit-Based Threshold Based on Market Capture	Not applicable.	Residential development >50 dwelling units Commercial space >50,000 ft ² > small, medium, large industrial (with GHG emissions > 900 tonsCO ₂ e)
2.6: Projects of Statewide, Regional, or Areawide Significance	Not applicable.	Residential development >500 dwelling units Office space >250,000 ft ² Retail space >500,000 ft ² Hotels >500 units Industrial project >1,000 employees Industrial project >40 acre or 650,000 ft ²
2.7: Efficiency-Based Thresholds	TBD tons/year/person TBD tons/year/unit	Depends on the efficiency measure selected.

Implementing CEQA With Tiered Thresholds

Several issues related to Approach 2 are addressed below:

1. *Some applications of this approach may need to be embodied in a duly approved General Plan, or in some other formal regulation or ordinance to be fully enforceable.* Because CEQA does not expressly provide that projects may be deemed insignificant based on implementation of a set of mitigations, this approach may need to be supported with specific and enforceable mechanisms adopted with due public process.
2. *How would this concept affect adoption of air district rules and regulations?* Proposed air district rules and regulations may be subject to CEQA like other projects and plans. Thus, if significance thresholds were adopted by an APCD or AQMD, then they could also apply to air district discretionary actions. If GHG emissions would be increased by a rule or regulation for another regulated pollutant, that would be a potential issue for review under CEQA.
3. *Mitigation measures may not be all-inclusive; better measures now or new future technology would make these measures obsolete.* The mandatory mitigation measures could be periodically updated to reflect current technology, feasibility, and efficiency.
4. *Total reduction may not be quantified or difficult to quantify.* CEQA only requires the adoption of feasible mitigation and thus the reduction effectiveness of required mitigation should not be in question. However, the precise reduction effectiveness may indeed be difficult to identify. As described above, if a quantitative threshold is selected as the measure of how much mitigation is mandated, then best available evidence will need to be used to estimate resultant GHG emissions with mitigation adoption. If a qualitative threshold is selected, then it may not be necessary to quantify reductions.
5. *Difficult to measure progress toward legislative program goals.* One could require reporting of project inventories to the Climate Action Registry, air district, or regional council of governments, or other suitable body. Collection of such data would allow estimates of the GHG intensity of new development over time, which could be used by CARB to monitor progress toward AB 32 goals.
6. *Measures may have adverse impacts on other programs.* The identification of mandatory mitigation will need to consider secondary environmental impacts, including those to air quality.
7. *Consideration of life-cycle emissions.* In many cases, only direct and indirect emissions may be addressed, rather than life-cycle emissions. A project applicant has traditionally been expected to only address emissions that are closely related and within the capacity of the project to control and/or influence. The long chain

8. of economic production resulting in materials manufacture, for example, involves numerous parties, each of which in turn is responsible for the GHG emissions associated with their particular activity. However, there are situations where a lead agency could reasonably determine that a larger set of upstream and downstream emissions should be considered because they are being caused by the project and feasible alternatives and mitigation measures may exist to lessen this impact.

Approach 2 Tiered Threshold with Mandatory Mitigation

As shown in Table 2, due to the cumulative nature of GHG emissions and climate change impacts, there could be a level of mandatory reductions and/or mitigation for all projects integrated into a tiered threshold approach. In order to meet AB 32 mandates by 2020 and S-3-05 goals, there will need to be adoption of GHG reduction measures across a large portion of the existing economy and new development. As such, in an effort to support a determination under CEQA that a project has a less than considerable contribution to significant cumulative GHG emissions, mitigation could be required on a progressively more comprehensive basis depending on the level of emissions.

- Level 1 Reductions – These reduction measures would apply to all projects and would only consist of AB 32 and other local/state mandates. They would be applied to a project from other legal authority (not CEQA). Level 1 reductions could include such measures as bike parking, transit stops for planned routes, Energy Star roofs, Energy Star appliances, Title 24 compliance, water use efficiency, and other measures. All measures would have to be mandated by CARB or local regulations and ordinances.
- Level 2 Mitigation – Projects that exceed the determined threshold would be required to first implement readily available technologies and methodologies with widespread availability. Level 2 Mitigation could include such measures as: parking reduction below code minimum levels, solar roofs, LEED Silver or Gold Certification, exceed Title 24 building standards by 20 percent, Traffic Demand Management (TDM) measures, and other requirements.
- Level 3 Mitigation - If necessary to reduce emissions to the thresholds, more extensive mitigation measures that represent the top tier of feasible efficiency design would also be required. Level 3 Mitigation could include such measures as: on-site renewable energy systems, LEED Platinum certification, exceed Title 24 building requirements by 40 percent, required recycled water use for irrigation, zero waste/high recycling requirements, mandatory transit pass provision, and other measures.
- Offset Mitigation – If, after adoption of all feasible on-site mitigation, the project is still found to exceed a Tier 2 quantitative threshold, or exceed a Tier 3 qualitative threshold, or if a project cannot feasibly implement the mandatory on-site mitigation, then purchases of offsets could be used for mitigation. In the case

of a quantitative threshold, the amount of purchase would be to offset below the Tier 2 significance threshold. In the case of a qualitative threshold, the amount of purchase could be to offset GHG emissions overall to below the lowest equivalent GHG emissions among the Tier 2 qualitative thresholds. With Threshold 2.5, this would be approximately 900 tons of GHG emissions (corresponding to 50 residential units). With Threshold 2.6, this would be approximately 9,000 tons (corresponding to 500 residential units). Alternatively, one could require purchase of offsets in the amount of a set percentage (such as 90% or 50% for example) of the residual GHG emissions (after other mitigation). As discussed earlier, any decision to include or require the use of emission reduction credits (or offsets) must consider issues of availability, quality, and environmental justice.

Substantial Evidence Supporting Different Thresholds

If a project can be shown by substantial evidence not to increase GHG emissions relative to baseline emissions, then no fair argument will be available that the project contributes considerably to a significant cumulative climate change impact.

It is more challenging to show that a project that increases GHG emissions above baseline emissions does not contribute considerably to a significant cumulative climate change impact. It is critical therefore, to establish an appropriate cumulative context, in which, although an individual project may increase GHG emissions, broader efforts will result in net GHG reductions.

Approach 1-based thresholds that by default will require an equal level of GHG reductions from the existing economy (Thresholds 1.1, 1.3, and 1.4) may be less supportable in the short run (especially before 2012) than Approach 1.2 (which requires new development to be relatively more efficient than a retrofitted existing economy). This is because, prior to 2012, there will only be limited mandatory regulations implementing AB 32 that could address the existing economy in a truly systematic way that can be relied upon to demonstrate that overall GHG reduction goals can be achieved by 2020. Approach 1.2 will still rely on substantial reductions in the existing economy but to a lesser degree.

Approach 1-based thresholds that would spread the mitigation burden across a sector (Threshold 1.3) or across a region (Threshold 1.4) will allow for tradeoffs between projects or even between municipalities. In order to demonstrate that a sector or a region is achieving net reductions overall, there would need to be feasible, funded, and mandatory requirements in place promoting an overall reduction scheme, in order for a project to result in nominal net increased GHG emissions.

Approach 2-based thresholds that capture larger portions of the new development GHG inventory (Thresholds 2.2 and 2.5) would promote growth that results in a smaller increase in GHG emissions; they may therefore be more supportable than thresholds that do not and that have a greater reliance on reductions in the existing economy (Thresholds

2.3, 2.4, and 2.6), especially in the next three to five years. With an established cumulative context that demonstrates overall net reductions, all threshold approaches could be effective in ensuring growth and development that significantly mitigates GHG emissions growth in a manner that will allow the CARB to achieve the emission reductions necessary to meet AB 32 targets. In that respect, all of these thresholds are supported by substantial evidence.

Evaluation of Non-Zero Threshold Options

Overarching issues concerning threshold development are reviewed below. Where appropriate, different features or application of the two conceptual approaches and the various options for thresholds under each conceptual approach described above are analyzed. The screening evaluation is summarized in Tables 4 (Approach 1) and 5 (Approach 2). The summary tables rate each threshold for the issues discussed below based on the level of confidence (low, medium or high) ascribed by J&S. The confidence levels relate to whether a threshold could achieve a particular attribute, such as emission reduction effectiveness. For example, a low emission reduction effectiveness rating means the threshold is not expected to capture a relatively large portion of the new development inventory.

As described above, Threshold 2.7 is not included in this evaluation because the data to develop an efficiency-based threshold has not been reviewed at this time and because this threshold is not considered feasible as an interim approach until more detailed inventory information is available across the California economy.

What is the GHG Emissions Effectiveness of Different Thresholds?

Effectiveness was evaluated in terms of whether a threshold would capture a large portion of the GHG emissions inventory and thus require mitigation under CEQA to control such emissions within the larger framework of AB 32. In addition, effectiveness was also evaluated in terms of whether a threshold would require relatively more or less GHG emissions reductions from the existing economy verses new development. This is presumptive that gains from the existing economy (through retrofits, etc.) will be more difficult and inefficient relative to requirements for new development.

Approach 1-based thresholds that require equivalent reductions relative to business-as-usual (Thresholds 1.1, 1.3, and 1.4) for both the existing and new economy will be less effective than thresholds that support lower-GHG intensity new development (Approach 1.2). However, since Approach 1-based thresholds do not establish a quantitative threshold below which projects do not have to mitigate, the market capture for new development is complete.

Approach 2-based thresholds can be more or less effective at capturing substantial portions of the GHG inventory associated with new development depending on where the quantitative or qualitative thresholds are set. Lower thresholds will capture a broader range of projects and result in greater mitigation. Based on the review of project data for

the select municipalities described in the Approach 2 section above, thresholds based on the CARB Reporting Threshold/Cap and Trade Entry Level (Threshold 2.4) or CEQA definitions of “Statewide, Regional or Areawide” projects (Threshold 2.6) will result in a limited capture of the GHG inventory. Lower quantitative or qualitative thresholds (Thresholds 2.1, 2.2 and 2.5) could result in capture of greater than 90 percent of new development.

Are the Different Thresholds Consistent with AB 32 and S-3-05?

Thresholds that require reductions compared to business-as-usual for all projects or for a large portion of new development would be consistent with regulatory mandates. In time, the required reductions will need to be adjusted from 2020 (AB 32) to 2050 (S-3-05) horizons, but conceptually broad identification of significance for projects would be consistent with both of these mandates. Thresholds that exclude a substantial portion of new development would likely not be consistent, unless it could be shown that other more effective means of GHG reductions have already been, or will be adopted, within a defined timeframe.

All Approach 1-based thresholds would be consistent with AB 32 and S-3-05 if it can be demonstrated that other regulations and programs are effective in achieving the necessary GHG reduction from the existing economy to meet the overall state goals.

Approach 2-based thresholds that include substantive parts of the new development GHG inventory (Thresholds 2.1, 2.2 and 2.5) will be more consistent with AB 32 and S-3-05 than those that do not (Thresholds 2.3, 2.4, and 2.6) unless it can be demonstrated that other regulations and programs are effective in achieving the necessary GHG reduction from the existing economy to meet the overall state goals.

What are the Uncertainties Associated with Different Thresholds?

All thresholds have medium to high uncertainties associated with them due to the uncertainty associated with the effectiveness of AB 32 implementation overall, the new character of GHG reduction strategies on a project basis, the immaturity of GHG reduction technologies or infrastructure (such as widespread biodiesel availability), and the uncertainty of GHG reduction effectiveness of certain technologies (such as scientific debate concerning the relative lifecycle GHG emissions of certain biofuels, for example).

In general, Approach 1-based thresholds have higher uncertainties than Approach 2 thresholds because they rely on a constantly changing definition of business-as-usual. Threshold 1.2, with its relatively smaller reliance on the existing economy for GHG reductions has relatively less uncertainty than other Approach 1 thresholds. Thresholds that spread mitigation more broadly (Thresholds 1.3 and 1.4) have less uncertainty by avoiding the need for every project to mitigate equally.

Approach 2 thresholds with lower quantitative (2.1 and 2.2) or qualitative (2.5) thresholds will have uncertainties associated with the ability to achieve GHG reductions

from small to medium projects. Approach 2 thresholds with higher quantitative (2.3, 2.4) or qualitative (2.6) thresholds will have uncertainties associated with the ability to achieve relatively larger GHG reductions from the existing economy.

What are Other Advantages/Disadvantages of the Different Thresholds?

Thresholds with a single project metric (Thresholds 1.1, 1.2, 2.1, 2.2, 2.3, 2.4, 2.5, and 2.6) will be easier to apply to individual projects and more easily understood by project applicants and lead agencies broadly. Thresholds that spread mitigation across sectors (1.3) or regions (1.4), while simple in concept, will require adoption of more complicated cross-jurisdictional reduction plans or evaluation of broad sector-based trends in GHG intensity reduction over time. Approach 1 options would require all projects to quantify emissions in order to determine needed reductions relative to business-as-usual (which will change over time as described above). Concepts that are unit-based (Threshold 2.5 and 2.6) will not result in thresholds that have equal amount of GHG emissions, and thus equity issues may arise.

Table 4: Non-Zero Threshold Evaluation Matrix – Approach 1

Approach 1	1.1	1.2	1.3	1.4
	28% - 33% Reduction from BAU by 2020 by Project	50% Reduction from BAU by 2020 by Project	28% - 33% Reduction by 2020 by Sector	28% - 33% Reduction by 2020 by Region
<i>GHG Emissions Reduction Effectiveness</i>	Low - Captures all new projects but relies on a high level of reductions from the existing economy.	Medium - Captures all new projects and has a more realistic level of reductions from the existing economy.	Low - Captures all new projects but relies on a high level of reductions from the existing economy.	Low - Captures all new projects but relies on a high level of reductions from the existing economy.
<i>Economic Feasibility</i>	Low - Some projects will not be able to afford this level of reduction without effective market-based mechanisms like offsets.	Low - Some projects will not be able to afford this level of reduction without effective market-based mechanisms like offsets.	Medium - Sectors as a whole will be better able to achieve reductions than individual projects.	Low - Some regions and newly developed areas may not be able to afford this level of reduction without effective market-based mechanisms like offsets.
<i>Technical Feasibility</i>	Medium - Some projects will not be able to achieve this level of reduction without effective market-based mechanisms like offsets	Low - Relatively larger set of projects will not be able to achieve this level of reduction without effective market-based mechanisms like offsets	High - Some projects will not be able to achieve this level of reduction without effective market-based mechanisms like offsets	Medium - Some regions and newly developed areas may not be able to afford this level of reduction without effective market-based mechanisms like offsets.
<i>Logistical Feasibility</i>	Low - Absent broader reductions strategies, each project may reinvent the wheel each time to achieve mandated reductions.	Low - Absent broader reductions strategies, each project may reinvent the wheel each time to achieve mandated reductions.	Low - Absent broader reductions strategies, each project may reinvent the wheel each time to achieve mandated reductions.	Low - Absent broader reductions strategies, each project may reinvent the wheel each time to achieve mandated reductions.
<i>Consistency with AB-32 and S-03-05</i>	Medium - Would require heavy reliance on command and control gains.	High	Medium-High - Would rely on command and control gains, but would allow sectoral flexibility.	Medium-High - Would rely on command and control gains, but would allow regional flexibility.
<i>Cost Effectiveness</i>	Low - Will require all types of projects to reduce the same regardless of the cost/ton of GHG reductions.	Low - Will require all types of projects to reduce the same regardless of the cost/ton of GHG reductions.	Low/Medium - Allows tradeoffs within sector between high and low cost reduction possibilities but not between sectors.	Low/Medium - Allows tradeoffs within region between high and low cost reduction possibilities, but not between regions.
<i>Uncertainties</i>	High - BAU changes over time. Ability to reduce GHG emissions from existing economy will take years to demonstrate. Ability to limit GHG emissions from other new development will take years to demonstrate.	Medium/High - BAU changes over time. Ability to limit GHG emissions from other new development will take years to demonstrate.	High - BAU changes over time. Ability to reduce GHG emissions from existing economy will take years to demonstrate. Ability to limit GHG emissions from other new development will take years to demonstrate.	High - BAU changes over time. Ability to reduce GHG emissions from existing economy will take years to demonstrate. Ability to limit GHG emissions from other new development will take years to demonstrate.
<i>Other Advantages</i>	Simple/easy to explain.	Simple/easy to explain.	Spreads mitigation broadly	Spreads mitigation broadly
<i>Other Disadvantages</i>	Requires all projects to quantify emissions.	Requires all projects to quantify emissions.	Requires all projects to quantify emissions.	Requires all projects to quantify emissions.

Table 5: Non-Zero Threshold Evaluation Matrix – Approach 2

Approach 2	2.1	2.2	2.3	2.4	2.5	2.6
	Zero Threshold	Quantitative (900 tons)	Quantitative CARB Reporting Threshold/Cap and Trade (25,000 tons/ 10,000 tons)	Quantitative Regulated Inventory Capture (~40,000 - 50,000 tons)	Qualitative Unit-Based Thresholds	Statewide, Regional or Areawide (CEQA Guidelines 15206(b)).
<i>GHG Emissions Reduction Effectiveness</i>	High - Captures all sources.	High - Market capture at >90%. Captures diverse sources.	Medium - Moderate market capture.	Low - Low market capture.	High - Market capture at ~90%. Captures diverse sources; excl. smallest proj.	Medium - Moderate market capture. Excludes small and med. projects.
<i>Economic Feasibility</i>	Low - Early phases will be substantial change in BAU, esp. for smaller projects; may be infeasible to mitigate.	Medium - Early phases will be substantial change in BAU, esp. for smaller projects; may be infeasible to mitigate.	High - Large projects have greater ability to absorb cost.	High - Large projects have greater ability to absorb cost.	Medium - Early phases will be substantial change in BAU, esp. for smaller projects; may be infeasible to mitigate.	High - Large projects have greater ability to absorb cost.
<i>Technical Feasibility</i>	Low - Early phases will be substantial change in BAU, esp. for smaller projects; may be infeasible to mitigate.	Medium - Early phases will be substantial change in BAU, esp. for smaller projects; may be inefficient to mitigate.	High - Greater opportunities for multiple reduction approaches.	High - Greater opportunities for multiple reduction approaches.	Medium - Early phases will be substantial change in BAU, particularly for smaller projects may be inefficient to mitigate.	High - Greater opportunities for multiple reduction approaches.
<i>Logistical Feasibility</i>	Low - Unless fee or offset basis, very difficult to mitigate all projects.	Medium - BMPs broadly written to allow diversity; new req. will take time to integrate into new dev.	High - Less mitigation.	High - Less mitigation.	Medium - BMPs broadly written to allow diversity; new req. will take time to integrate into new dev.	High - Less mitigation.
<i>Consistency with AB-32 and S-03-05</i>	High - Market capture.	High - Market capture at >90%.	Low - Would rely on command and control success heavily.	Low - Would rely on command and control success heavily.	Medium - Need to demonstrate adequate market capture over time.	Low - Would rely on command and control success heavily.
<i>Cost Effectiveness</i>	Low - Will result in inefficient mitigation approaches. Efficiency will improve in time.	Medium - Emphasis is on new dev., req. for mitigation will result in inefficient mitigation approaches in early phases. Efficiency will improve in time.	Medium - Relies on command and control reductions for existing economy more heavily. With focus on larger projects, eff. of mitigation for new dev. high.	Medium - Relies on command and control reductions for existing economy more heavily. With focus on larger projects, eff. of mitigation for new dev. high.	Medium - Emphasis is on new dev.; req. for mitigation will result in inefficient mitigation approaches in early phases. Efficiency will improve in time.	Medium - Relies on command and control reductions for existing economy more heavily. With focus on larger projects, eff. of mitigation for new dev. high.
<i>Uncertainties</i>	High - Time to adapt for res. and comm. sectors. Ability to mitigate without market-based mechanism for smaller projects unlikely.	Medium/High - Time to adapt for res. and comm. sectors. Ability to mitigate without market-based mechanism for smaller projects uncertain.	High - Gains from command and control likely longer to be realized.	High - Gains from command and control likely longer to be realized.	Medium/High - Time to adapt for res. and comm. sectors. Ability to mitigate without market-based mechanism for smaller projects uncertain.	High - Gains from command and control likely longer to be realized.
<i>Other Advantages</i>	Single threshold.	Single threshold. BMPs can be updated. Greenlist can be updated.	Single threshold. Does not change CEQA processing for most projects. CARB inventory = project inv.. All projects treated same.	Single threshold. Does not change CEQA processing for most projects. Follows established SIP practice.	BMPs can be updated. Greenlist can be updated. Unit-Based thresholds can be updated.	Existing guideline. Does not change CEQA processing for most projects. Endorsed by Cal. Chapter of the APA.
<i>Other Disadvantages</i>	Requires all projects to quantify emissions.	Requires nearly all projects to quantify emissions.			Sectoral projects have different GHG emis. Only largest projects to quantify emis.	Sectoral projects have different GHG emissions.

Introduction

This chapter evaluates the availability of various analytical methods and modeling tools that can be applied to estimate the greenhouse gas emissions from different project types subject to CEQA. This chapter will also provide comments on the suitability of the methods and tools to accurately characterize a project's emissions and offer recommendations for the most favorable methodologies and tools available. Some sample projects will be run through the methodologies and modeling tools to demonstrate what a typical GHG analysis might look like for a lead agency to meet its CEQA obligations. The air districts retained the services of EDAW environmental consultants to assist with this effort.

Methodologies/Modeling Tools

There are wide varieties of discretionary projects that fall under the purview of CEQA. Projects can range from simple residential developments to complex expansions of petroleum refineries to land use or transportation planning documents. It is more probably than not, that a number of different methodologies would be required by any one project to estimate its direct and indirect GHG emissions. Table 10 contains a summary of numerous modeling tools that can be used to estimate GHG emissions associated with various emission sources for numerous types of project's subject to CEQA. The table also contains information about the models availability for public use, applicability, scope, data requirements and its advantages and disadvantages for estimating GHG emissions.

In general, there is currently not one model that is capable of estimating all of a project's direct and indirect GHG emissions. However, one of the models identified in Table 9 would probably be the most consistently used model to estimate a project's direct GHG emissions based on the majority of projects reviewed in the CEQA process. The Urban Emissions Model (URBEMIS) is designed to model emissions associated with development of urban land uses. URBEMIS attempts to summarize criteria air pollutants and CO₂ emissions that would occur during construction and operation of new development. URBEMIS is publicly available and already widely used by CEQA practitioners and air districts to evaluate criteria air pollutants emissions against air district-adopted significance thresholds. URBEMIS is developed and approved for statewide use by CARB. The administrative reasons for using URBEMIS are less important than the fact that this model would ensure consistency statewide in how CO₂ emissions are modeled and reported from various project types.

One of the shortfalls of URBEMIS is that the model does not contain emission factors for GHGs other than CO₂, except for methane (CH₄) from mobile-sources, which is converted to CO₂e. This may not be a major problem since CO₂ is the most important GHG from land development projects. Although the other GHGs have a higher global warming potential, a metric used to normalize other GHGs to CO₂e, they are emitted in far fewer quantities. URBEMIS does not calculate other GHG emissions associated with

off-site waste disposal, wastewater treatment, emissions associated with goods and services consumed by the residents and workers supported by a project. Nor does URBEMIS calculate GHGs associated with consumption of energy produced off-site. (For that matter, URBEMIS does not report criteria air pollutant emissions from these sources either).

Importantly, URBEMIS does not fully account for interaction between land uses in its estimation of mobile source operational emissions. Vehicle trip rates are defaults derived from the Institute of Transportation Engineers trip generation manuals. The trip rates are widely used and are generally considered worst-case or conservative. URBEMIS does not reflect “internalization” of trips between land uses, or in other words, the concept that a residential trip and a commercial trip are quite possibly the same trip, and, thus, URBEMIS counts the trips separately. There are some internal correction settings that the modeler can select in URBEMIS to correct for “double counting”; however, a project-specific “double-counting correction” is often not available. URBEMIS does allow the user to overwrite the default trip rates and characteristics with more project-specific data from a traffic study prepared for a project.

Residential, Commercial, Mixed-Use Type Projects/ Specific Plans

Direct Emissions

URBEMIS can be used to conduct a project-specific model run and obtain CO₂e emissions for area and mobile sources from the project, and convert to metric tons CO₂e. When a project-specific traffic study is not available, the user should consult with their local air district for guidance. Many air district staff are experienced practitioners of URBEMIS and can advise the lead agency or the modeler on how to best tailor URBEMIS default input parameters to conduct a project-specific model run. When a traffic study has been prepared for the project, the user must overwrite default trip length and trip rates in URBEMIS to match the total number of trips and vehicle miles traveled (VMT) contained in the traffic study to successfully conduct a project-specific model run. URBEMIS is recommended as a calculation tool to combine the transportation study (if available) and EMFAC emission factors for mobile-sources. Use of a project-specific traffic study gets around the main shortfall of URBEMIS: the lack of trip internalization. URBEMIS also provides the added feature of quantifying direct area-source GHG emissions.

Important steps for running URBEMIS

1. Without a traffic study prepared for the project, the user should consult with the local air district for direction on which default options should be used in the modeling exercise. Some air districts have recommendations in the CEQA guidelines.
2. If a traffic study was prepared specifically for the project, the following information must be provided:

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- a. Total number of average daily vehicle trips *or* trip-generation rates by land use type per number of units; and,
 - b. Average VMT per residential *and* nonresidential trip.
 - c. The user overwrites the “Trip Rate (per day)” fields for each land use in URBEMIS such that the resultant “Total Trips” and the “Total VMT” match the number of total trips and total VMT contained in the traffic study.
 - d. Overwrite “Trip Length” fields for residential and nonresidential trips in URBEMIS with the project-specific lengths obtained from the traffic study.
3. Calculate results and obtain the CO₂ emissions from the URBEMIS output file (units of tons per year [TPY]).

Indirect Emissions

URBEMIS does estimate indirect emissions from landscape maintenance equipment, hot water heaters, etc. URBEMIS does not however, provide modeled emissions from indirect sources of emissions, such as those emissions that would occur off-site at utility providers associated with the project’s energy demands. The California Climate Action Registry (CCAR) Protocol v.2.2 includes methodology, which could be used to quantify and disclose a project’s increase in indirect GHG emissions from energy use. Some assumptions must be made for electrical demand per household or per square foot of commercial space, and would vary based on size, orientation, and various attributes of a given structure. An average rate of electrical consumption for residential uses is 7,000 kilowatt hours per year per household and 16,750 kilowatt hours per thousand square feet of commercial floor space. Commercial floor space includes offices, retail uses, warehouses, and schools. These values have been increasing steadily over the last 20 years. Energy consumption from residential uses has increased due to factors such as construction and occupation of larger homes, prices of electricity and natural gas, and increased personal income allowing residents to purchase more electronic appliances. Commercial energy consumption is linked to factors such as vacancy rates, population, and sales.

The modeler will look up the estimated energy consumption for the project’s proposed land uses under year of project buildout, or use the values given in the previous paragraph for a general estimate. The CCAR Protocol contains emission factors for CO₂, CH₄, and nitrous oxide. The “CALI” region grid serves most of the State of California. If a user has information about a specific utility provider’s contribution from renewable sources, the protocol contains methodology to reflect that, rather than relying on the statewide average grid. The incremental increase in energy production associated with project operation should be accounted for in the project’s total GHG emissions for inclusion in the environmental document.

The incremental increase in energy production associated with project operation should be accounted for in the project’s total GHG emissions, but it should be noted that these emissions would be closely controlled by stationary-source control-based regulations and additional regulations are expected under AB 32. However, in the interest of disclosing project-generated GHG emissions and mitigating to the extent feasible, the indirect emissions from off-site electricity generation can be easily calculated for inclusion in the environmental document.

Example Project Estimates for GHG Emissions

Residential Project

Project Attributes:

- 68 detached dwelling units
- 15.9 acres
- 179 residents
- 0 jobs
- Located in unincorporated Placer County (PCAPCD jurisdiction)
- Analysis year 2009

As shown in Table 6, the project’s direct GHG emissions per service population (SP) would be approximately 8 metric tons CO₂e/SP/year.

Table 6: Residential Project Example GHG Emissions Estimates

URBEMIS Output (Project Specific)	Metric Tons/Year CO₂e	Demographic Data	
Area-source emissions	251	Residents	179
Mobile-source emissions	1,044	Jobs	0
Indirect emissions (from CCAR Protocol)	174		
Total operational emissions	1,469	Service population	179
Operational emissions/SP	8.2		
Notes: CO ₂ e = carbon dioxide equivalent; CCAR = California Climate Action Registry; SP = service population(see definition of service population below in discussion of Normalization/Service Population Metric).			
Sources: EDAW 2007, ARB 2007b, CCAR 2007, CEC 2000			

Commercial Project

Project Attributes:

- Free Standing Discount Superstore: 241 thousand square feet (ksf)
- 0 residents

- 400 jobs
- Located in the San Joaquin Valley Air Pollution Control District’s (SJVAPCD) jurisdiction
- Analysis year 2009

Table 7: Commercial Project Example GHG Emissions Estimates

URBEMIS Output (Project Specific)	Metric Tons/Year CO ₂ e	Demographic Data	
Area-source emissions	464	Residents	0
Mobile-source emissions	13,889	Jobs	400
Indirect emissions (from CCAR Protocol)	1,477		
Total operational emissions	15,830	Service population	400
Operational emissions/SP	39.6		
Notes: CO ₂ e = carbon dioxide equivalent; CCAR = California Climate Action Registry; SP = service population (see definition of service population below in discussion of Normalization/Service Population Metric).			
Sources: EDAW 2007, ARB 2007b, CCAR 2007, CEC 2000			

Specific Plan

If used traditionally with default trip rates and lengths, rather than project-specific (Traffic Analysis Zone-specific) trip rates and lengths, URBEMIS does not work well for specific plan or general plan-sized projects with multiple land use types proposed. However, in all instances, projects of these sizes (several hundred or thousand acres) would be accompanied by a traffic study. Thus, for large planning-level projects, URBEMIS can be used as a calculation tool to easily obtain project-specific mobile-source emissions. The user should follow the steps discussed above; wherein he/she overwrites the default ITE trip rates for each land use type with that needed to make total VMT match that contained in the traffic study. The URBEMIS interface is a simple calculator to combine the traffic study and EMFAC emissions factors for mobile-source CO₂.

Project Attributes:

- 985 acres
- Total dwelling units: 5,634
- Commercial/Mixed Use: 429 ksf
- Educational: 2,565 ksf
- 14,648 residents
- 3,743 jobs
- Located in Sacramento County (SMAQMD jurisdiction)
- Analysis year 2009

Table 8: Specific Plan Example GHG Emissions Estimates

URBEMIS Output (Project Specific)	Metric Tons/Year CO ₂ e	Demographic Data	
Area-source emissions	23,273	Residents	14,648
Mobile-source emissions	73,691	Jobs	3,743
Indirect emissions (from CCAR Protocol)	32,744	Service population	18,391
Total operational emissions	129,708		
Operational emissions/SP	7.1		
Notes: CO ₂ e = carbon dioxide equivalent; CCAR = California Climate Action Registry; SP = service population (see definition of service population below in discussion of Normalization/Service Population Metric).			
Sources: EDAW 2007, ARB 2007b, CCAR 2007, CEC 2000			

The specific plan example, when compared to the residential or commercial examples, illustrates the benefit of a mixed-use development when you look at CO₂e emissions per resident or job (service population) metric (see definition of service population below in discussion of Normalization/Service Population Metric). Though this particular specific plan is not an example of a true jobs/housing balance, the trend is clear: accommodating residents and jobs in a project is more efficient than residents or jobs alone.

Stationary- and Area-Source Project Types

GHG emissions from stationary or area sources that require a permit to operate from the air district also contain both direct and indirect sources of emissions. Examples of these types of sources would be fossil fuel power plants, cement plants, landfills, wastewater treatment plants, gas stations, dry cleaners and industrial boilers. All air districts have established procedures and methodologies for projects subject to air district permits to calculate their regulated pollutants. It is anticipated that these same procedures and methodologies could be extended to estimate a permitted facility's GHG calculations. For stationary and area sources that do not require air district permits, the same methodologies used for permitted sources could be used in addition to URBEMIS and CCAR GRP to calculate GHG emissions from these facilities.

Wastewater Treatment Facilities

Direct GHG emissions associated with a proposed waste water treatment plant can be calculated using AP-42 emission factors from Chapter 4.3.5 Evaporative Loss Sources: Waste Water-Greenhouse Gases and the CCAR methodology. In general, most wastewater operations recover CH₄ for energy, or use a flare to convert the CH₄ to CO₂. There are many types of wastewater treatment processes and the potential for GHG emissions from different types of plants varies substantially. There is not one standard set of emission factors that could be used to quantify GHG emissions for a state

“average” treatment plant. Thus, research will need to be conducted on a case-by-case basis to determine the “Fraction Anaerobically Digested” which is a function of the type of treatment process. Indirect emissions from these facilities can be calculated using the CCAR energy use protocols and URBEMIS model for transportation emissions.

Solid Waste Disposal Facilities

Air districts will have emission estimate methodologies established for methane emissions at permitted landfills. In addition, EPA’s Landfill Gas Emissions Model (LandGem) and the CCAR methodology could also be used to quantify GHG emissions from landfill off gassing; however, this model requires substantial detail be input. The model uses a decomposition rate equation, where the rate of decay is dependent on the quantity of waste in place and the rate of change over time. This modeling tool is free to the public, but substantial project detail about the operation of the landfill is needed to run the model. Indirect emissions from these facilities can be calculated using the CCAR energy use protocols and URBEMIS model for transportation emissions.

Construction Emissions

GHG emissions would occur during project construction, over a finite time. In addition, a project could result in the loss of GHG sequestration opportunity due primarily to the vegetation removed for construction. URBEMIS should be used to quantify the mass of CO₂ that would occur during the construction of a project for land development projects. Some construction projects would occur over an extended period (up to 20–30 years on a planning horizon for general plan buildout, or 5–10 years to construct a dam, for example). OFFROAD emission factors are contained in URBEMIS for CO₂ emissions from construction equipment. For other types of construction projects, such as roadway construction projects or levee improvement projects, SMAQMD’s spreadsheet modeling tool, the Road Construction Emissions Model (RoadMod), should be used. This tool is currently being updated to include CO₂ emissions factors from OFFROAD.

The full life-cycle of GHG emissions from construction activities is not accounted for in the modeling tools available, and the information needed to characterize GHG emissions from manufacture, transport, and end-of-life of construction materials would be speculative at the CEQA analysis level. The emissions disclosed will be from construction equipment and worker commutes during the duration of construction activities. Thus, the mass emissions in units of metric tons CO₂e/year should be reported in the environmental document as new emissions.

General Plans

In the short-term, URBEMIS can be used as a calculation tool to model GHG emissions from proposed general plans, but only if data from the traffic study is incorporated into model input. The same methodology applied above in the specific plan example applies to general plans. The CCAR GRP can be used to approximate indirect emissions from

increased energy consumption associated with the proposed plan area. The same models and methodologies discussed previously for wastewater, water supply and solid waste would be used to estimate indirect emissions resulting from buildout of the general plan.

In the longer-term, more complex modeling tools are needed, which would integrate GHG emission sources from land use interaction, such as I-PLACE³S or CTG Energetics' Sustainable Communities Custom Model attempt to do. These models are not currently available to the public and only have applicability in certain areas of the state. It is important that a tool with statewide applicability be used to allow for consistency in project treatment, consideration, and approval under CEQA.

Scenarios

At the general plan level, the baseline used for analyzing most environmental impacts of a general plan update is typically no different from the baseline for other projects. The baseline for most impacts represents the existing conditions, normally on the date the Notice of Preparation is released. Several comparative scenarios could be relevant, depending on the exact methodological approach and significance criteria used for GHG assessment:

- Existing Conditions. The GHG emissions associated with the existing, on-the-ground conditions within the planning area.
- 1990 conditions. The GHG emissions associated with the general plan area in 1990. This is relevant due to the state's AB 32 GHG emission reduction goals' benchmark year of 1990. The GHG-efficiency of 1990 development patterns could be compared to that of the general plan buildout.
- Buildout of the Existing General Plan. The GHG emissions associated with buildout of the existing general plan (without the subject update). This is the no project alternative for the purposes of general plan CEQA analysis.
- Buildout of the Updated General Plan. The GHG emissions associated with buildout of the general plan, as proposed as a part of the subject update. This would include analysis of any changes included as a part of the general plan update for the existing developed portions of the planning area. Many communities include redevelopment and revitalization strategies as a part of the general plan update. The general plan EIR can include assumptions regarding what level and type of land use change could be facilitated by infill and redevelopment. Many jurisdictions wish to provide future projects consistent with these land use change assumptions with some environmental review streamlining. In addition, many communities include transit expansions, pedestrian/bicycle pathway improvements, multi-modal facility construction, travel demand policies, energy efficiency policies, or other measures that could apply to the existing developed area, just as they may apply to any new growth

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areas. Such policies could affect the overall GHG emissions of the built out general plan area.

- Increment between Buildout of Updated General Plan and Existing General Plan Area. There are many important considerations associated with the characterization of the impact of the General Plan update. The actual GHG emissions impact could be described as the difference between buildout under the existing and proposed land use plan (No-Build Alternative). However, the courts have held that an EIR should also analyze the difference between the proposed General Plan and the existing environment (*Environmental Planning & Information Council v. County of El Dorado* (EPIC) (1982) 131 Cal.App.3d 350). At the General Plan level, over the course of buildout, some new land uses are introduced, which could potentially add operational GHG emissions and potentially remove existing sequestration potential. Some properties become vacant and are not redeveloped. Other properties become vacant and then are redeveloped. Communities cannot pretend to understand fully in advance each component of land use change. The programmatic document is the preferred method of environmental analysis. Through this programmatic framework, communities develop buildout assumptions as a part of the General Plan that are normally used as a basis of environmental analysis. For certain aspects of the impact analysis, it becomes important not just to understand how much “new stuff” could be accommodated under the updated General Plan, but also the altered interactions between both “new” and “existing” land uses within the planning area. As addressed elsewhere, there are tools available for use in understanding land use/transportation interactions at the General Plan level. Without the GHG targets established by AB 32, a simple mass comparison of existing conditions to General Plan buildout might be appropriate.

However, within the current legal context, the GHG efficiency of the updated General Plan becomes the focus of analysis. Some options in this regard include:

- Estimate the GHG emissions associated with all the land uses included within the planning area upon buildout of the General Plan using no project specific information (regional, countywide, or statewide defaults). Estimate GHG emissions using project specific information from the transportation engineer, transportation demand policies, community design elements, energy efficiency requirements, wastewater treatment and other public infrastructure design changes, and other components. Compare these two calculations. Is the second calculation reduced by the percent needed to meet AB 32 goals compared to the first calculation?
- Estimate the GHG emissions associated with the 1990 planning area and the per-capita or per-service population GHG associated with the 1990 planning area. (Many communities are establishing GHG inventories using different tools). Estimate the GHG emissions associated with buildout of the proposed General Plan update and the resulting per-capita or per-service population GHG

emissions. Compare the two calculations. Is the General Plan buildout per-capita or per-service population level greater than the 1990 estimate?

Example General Plan Update: Proposed new growth area

Project Attributes:

- 10,050 single family dwelling units
- 652 multi-family dwelling units
- 136 acres parks
- 2,047 ksf commercial (regional shopping center)
- 2,113 ksf office
- 383 acres industrial park
- 31,293 new residents
- 4,945 new jobs
- Located in Stanislaus County (SJVAPCD jurisdiction)
- Analysis year 2025

Table 9: General Plan Example GHG Emissions Estimates

URBEMIS Output (Project Specific)	Metric CO ₂ e	Tons/Year	Demographic Data
Construction emissions	12,083*		Residents 31,293
Area-source emissions	45,708		
Mobile-source emissions	263,954		Jobs 4,945
Indirect emissions (from CCAR Protocol)	78,385		
Total operational emissions	388,046		Service population 36,238
Operational emissions/SP	10.7		

* Approximately 241,656 metric tons CO₂e total at general plan buildout (assumes 20-year buildout period). Construction emissions were not included in total operational emissions.
Notes:
CO₂e = carbon dioxide equivalent; CCAR = California Climate Action Registry; SP = service population (see definition of service population below in discussion of Normalization/Service Population Metric).
Sources: EDAW 2007, ARB 2007b, CCAR 2007, CEC 2000

Due to the programmatic level of analysis that often occurs at the general plan level, and potential for many relevant GHG emission quantities, it could be preferable to use a qualitative approach. Such an analysis could address the presence of GHG-reducing policy language in the general plan.

Three possible tiers of approaches to addressing GHG mitigation strategies, either as general plan policy, general plan EIR mitigation measures, or both, include:

- Forward planning
- Project toolbox
- Defer to GHG reductions plan

The three basic approaches are described below.

1. Bring reduction strategies into the plan itself. The most effective way for local jurisdictions to achieve GHG emissions reductions in the medium- and long-term is through land use and transportation policies that are built directly into the community planning document. This involves creating land use diagrams and circulation diagrams, along with corresponding descriptive standards, that enable and encourage alternatives to travel and goods movement via cars and trucks. The land use and circulation diagrams provide a general framework for a community where people can conduct their everyday business without necessarily using their cars. The overall community layout expressed as a part of the land use and circulation diagrams is accompanied by a policy and regulatory scheme designed to achieve this community layout. Impact fees, public agency spending, regulations, administrative procedures, incentives, and other techniques are designed to facilitate land use change consistent with the communities' overall vision, as expressed in policy and in the land use diagram. There are many widely used design principles that can be depicted in land use and circulation diagrams and implemented according to narrative objectives, standards, and policies:

- Connectivity. A finely-connected transportation network shortens trip lengths and creates the framework for a community where homes and destinations can be placed close in proximity and along direct routes. A hierarchical or circuitous transportation network can increase trip lengths and create obstacles for walking, bicycling, and transit access. This policy language would likely be found in the Circulation Element.
- Compactness. Compact development, by its nature, can increase the efficiency of infrastructure provision and enable travel modes other than the car. If communities can place the same level of activity in a smaller space, GHG emissions would be reduced concurrently with VMT and avoid unnecessary conversion of open space. This policy language would likely be found in the Land Use Element.
- Diversity. Multiple land use types mixed in proximity around central “nodes” of higher-activity land uses can accommodate travel through means other than a car. The character and overall design of this land use mix is, of course, different from community to community. This policy language would likely be found in the Land Use Element.
- Facilities. Pedestrian, bicycle, and public transportation improvements, planning, and programming are sometimes an afterthought. To get a more GHG-efficient mode share, safe and convenient bike lanes, pedestrian pathways, transit shelters, and other facilities are required to be planned along with the vehicular travel network. This policy language would likely be found in the Circulation Element.

- Redevelopment. One way to avoid GHG emissions is to facilitate more efficient and economic use of the lands in already-developed portions of a community. Reinvestment in existing neighborhoods and retrofit of existing buildings is appreciably more GHG efficient than greenfield development, and can even result in a net reduction in GHG emissions. This policy language would likely be found in the Conservation or Land Use Element.
 - Housing and Employment. Most communities assess current and future economic prospects along with long-range land use planning. Part of the objective for many communities is to encourage the coalescence of a labor force with locally available and appropriate job opportunities. This concept is best known as “jobs-housing balance.” This policy language would likely be found in the Housing Element.
 - Planning Level Versus Project Level. For transportation-related GHG emissions that local governments can mitigate through land use entitlement authority, the overall community land use strategy and the overall transportation network are the most fruitful areas of focus. The reduction capacity of project-specific mitigation measures is greatly limited if supportive land use and transportation policies are lacking at the community planning level. The regional economic context, of course, provides an important backdrop for land use and transportation policy to address GHG emissions. Within this context, the general plan is the readily available tool for local governments to establish such land use and transportation strategies. This policy language would likely be found in the Land Use and Circulation Elements.
 - Shipping Mode Shift. Locate shipping-intensive land uses in areas with rail access. Some modes of shipping are more GHG-intensive than others. Rail, for example, requires only about 15 to 25 percent of the energy used by trucks to ship freight equivalent distances and involves reduced transportation-related GHG emissions. Cities and counties have little direct control over the method of shipment that any business may choose. Nevertheless, as a part of the general planning process, cities and counties can address constraints on the use of rail for transporting goods. This policy language would likely be found in the Land Use and Circulation Elements.
2. Provide a “toolbox” of strategies after the project site has been selected. In addition to the examples of design principles that are built into the community planning process, communities can offer project applicants a range of tools to reduce GHG emissions. Mitigation strategies are elaborated in detail in Chapter 9.
3. Defer to General Plan implementation measure. Develop and implement a GHG Emissions Reduction Plan. Another option for local governments would be development of an implementation measure as a part of the general plan that outlines an enforceable GHG reduction program. Perhaps the most well known example of this approach is the result of California’s Attorney General settlement of the lawsuit brought against San

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Bernardino County. The County has agreed to create a 1990 GHG inventory and develop measures to reduce such emissions according to the state's overall goals. Other communities have pursued similar programs (i.e., the City of San Diego, Marin County). Along with the inventories, targets, and example reduction measures, these programs would include quantitative standards for new development; targets for reductions from retrofitting existing development; targets for government operations; fee and spending program for GHG reduction programs; monitoring and reporting; and other elements. The local government itself should serve as a model for GHG reduction plan implementation, by inventorying emissions from government operations and achieving emission reductions in accordance with the plan's standards. An optional climate change element could be added to contain goals, policies, and this implementation strategy, or this could belong in an optional air quality element.

Other Project Types

Air District Rules, Regulations and Air Quality Plans

Air district air quality plans, rules and regulations could have the potential to increase or decrease GHG emissions within their respective jurisdiction. In general, air district air quality plans, rules and regulations act to reduce ozone precursors, criteria air pollutant and toxic air contaminant emissions, which would almost always act to reduce GHG emissions simultaneously. However, this may not always be the case.

Air Quality Plans

Air districts will have to include GHG emissions analysis as part of their criteria air pollutant and toxic air contaminant air pollutant analysis when considering the adoption of air quality plans and their subsequent rules and regulations needed to implement the plans. Multiple models and methodologies will be needed to accomplish this analysis.

Regional Transportation Plans

Regional transportation plans would also need to be evaluated on a case-by-case basis to determine if a net increase or decrease in GHG emissions would occur. Complex interactions between the roadway network, operating conditions, alternative transportation availability (such as public transit, bicycle pathways, and pedestrian infrastructure), and many other independent parameters specific to a region should be considered. Regional transportation models exist to estimate vehicular emissions associated with regional transportation plans, which includes the ability to estimate GHG emissions.

Normalization/Service Population Metric

The above methodology would provide an estimate of the mass GHG emissions generated by a proposed project, which could be compared to a mass emission threshold. EDAW developed a methodology that would measure a project's overall GHG efficiency

in order to determine if a project is more efficient than the existing statewide average for per capita GHG emissions. The following steps could be employed to estimate the GHG-“efficiency,” which may be more directly correlated to the project’s ability to help obtain objectives outlined in AB 32, although it relies on establishment of an efficiency-based significance threshold. The subcommittee believes this methodology may eventually be appropriate to evaluate the long-term GHG emissions from a project in the context of meeting AB 32 goals. However, this methodology will need substantially more work and is not considered viable for the interim guidance presented in this white paper.

- Divide the total operational GHG emissions by the Service Population (SP) supported by the project (where SP is defined as the sum of the number of residents and the number of jobs supported by the project). This value should be compared to that of the projected statewide GHG emissions inventory from the applicable end-use sectors (electricity generation, residential, commercial/institutional, and mobile-source) in 1990 divided by the projected statewide SP for the year 2020 (i.e., AB 32 requirements), to determine if the project would conflict with legislative goals.
 - If the project’s operational GHG/SP falls below AB 32 requirements, then the project’s GHG emissions are less than cumulatively considerable.
 - If the project’s operational GHG/SP exceed AB 32 requirements (a substantial contribution), then the project’s GHG emissions would conflict with legislative requirements, and the impact would be cumulatively considerable and mitigation would be required where feasible.
- New stationary and area sources/facilities: calculate GHG emissions using the CCAR GRP. All GHG emissions associated with new stationary or area sources should be treated as a net increase in emissions, and if deemed significant, should be mitigated where feasible.
- Road or levee construction projects or other construction-only projects: calculate GHG emissions using the RoadMod, which will be updated to contain GHG emission factors from EMFAC and OFFROAD. All construction-generated GHG emissions should be treated as a net increase, and if deemed significant, should be mitigated to the extent feasible.
- Air District rulemaking or air quality management plan-type projects should be evaluated on a case-by-case basis for secondary impacts of increased GHG emissions generation. In most cases, the types of projects that act to reduce regional air pollution simultaneously act to reduce GHG emissions, and would be beneficial, but should be evaluated for secondary effects from GHG emissions.
- Regional transportation plans should also be evaluated on a case-by-case basis for potential to either reduce or increase GHG emissions from the transportation sector. EMFAC can be utilized to determine the net change in GHG emissions

associated with projected vehicle VMT and from operating speed changes associated with additional or alleviated congestion.

To achieve the goals of AB 32, which are tied to GHG emission rates of specific benchmark years (i.e., 1990), California would have to achieve a lower rate of emissions per unit of population and per unit of economic activity than it has now. Further, in order to accommodate future population and economic growth, the state would have to achieve an even lower rate of emissions per unit than was generated in 1990. (The goal to achieve 1990 quantities of GHG emissions by 2020 means that this will need to be accomplished in light of 30 years of population and economic growth in place beyond 1990.) Thus, future planning efforts that would not encourage new development to achieve its fair share of reductions in GHG emissions would conflict with the spirit of the policy decisions contained in AB 32, thus impeding California's ability to comply with the mandate.

Thus, if a statewide context for GHG emissions were pursued, any net increase in GHG emissions within state boundaries would be considered "new" emissions. For example, a land development project, such as a specific plan, does not necessarily create "new" emitters of GHG, but would theoretically accommodate a greater number of residents in the state. Some of the residents that move to the project could already be California residents, while some may be from out of state (or would 'take the place' of in-state residents who 'vacate' their current residences to move to the new project). Some may also be associated with new births over deaths (net population growth) in the state. The out-of-state residents would be contributing new emissions in a statewide context, but would not necessarily be generating new emissions in a global context. Given the California context established by AB 32, the project would need to accommodate an increase in population in a manner that would not inhibit the state's ability to achieve the goals of lower total mass of emissions.

The average net influx of new residents to California is approximately 1.4 percent per year (this value represents the net increase in population, including the net contribution from births and deaths). With population growth, California also anticipates economic growth. Average statewide employment has grown by approximately 1.1 percent over the last 15 years. The average percentage of population employed over the last 15 years is 46 percent. Population is expected to continue growing at a projected rate of approximately 1.5 percent per year through 2050. Long-range employment projection data is not available from the California Department of Finance (DOF) and can be extrapolated in different ways (e.g., linear extrapolation by percentage rate of change, percentage of population employed, mathematical series expansion, more complex extrapolation based on further research of demographic projections such as age distribution). Further study would be needed to refine accurate employment projections from the present to 2050. For developing this framework, employment is assumed to have a constant proportionate relationship with the state's population. The projected number of jobs is assumed to be roughly 46 percent of the projected population.

In light of the statewide context established by California law, consistency is most important for evaluating GHG emissions from projects. Thus, URBEMIS and the CCAR GRP are the recommended tools for quantification of GHG emissions from most project types in the short term. Over the long term, more sophisticated models that integrate the relationship between GHG emissions and land use, transportation, energy, water, waste, and other resources, and have similar application statewide would have better application to the problem, but may not currently be as accessible or as easily operable. I-PLACE³S and CTG Energetics' Sustainable Communities Model (SCM) are two examples of such models that contain emission factors for GHGs, which could be refined to have applicability statewide and made available to CEQA practitioners. Other models are likely to be developed, given the importance of this issue.

Short-Term and Long-Term Methodologies

The following tools can be used to quantify a project's GHG emissions until tools that are more comprehensive become available statewide:

1. Land development projects: URBEMIS 2007 v. 9.2 and the CCAR GRP v. 2.2 (short-term); further development of I-PLACE³S or CTG's Sustainable Communities Model (long-term).
2. New stationary and area sources/facilities: AP-42 Chapter 4.3, LandGem v. 3.02, and/or CCAR GRP v. 2.2.
3. Road or levee construction projects or other construction-only projects: RoadMod/OFFROAD 2007.

Ideally, I-PLACE³S or CTG's Sustainable Communities Model would be expanded to apply to all regions of the state. These types of models use an integrated approach, which is the best approach for reasonably approximating the emissions that result from interaction between land uses, but neither is available to the public and would create consistency problems in reporting emissions from projects across the state if these were used today. However, a similar model with statewide applicability will likely be developed due to the importance of the issue. Table 10 Summary of Modeling Tools for Estimating GHG Emissions and Project Applicability

Table 10: Summary of Modeling Tools for GHG Emissions

Method/Tool Description	Availability	Applicability	Scope	Ease of Use	Data Input (Requirements and Guidance)	Data Output	Recommendation Comments	Advantages/ Disadvantages
URBEMIS 2007	Public domain -Download (www.urbemis.com) free of charge	Land development and construction projects (construction, mobile- and area-source emissions)	Local	Fairly Easy	Land use information, construction and operational data and assumptions (e.g., jurisdiction, acres of land use type, year of operation, etc.)	Mobile-source Construction & Operational CO ₂ (lb/day or tons/year)	-Recommended for land use development and construction projects -Also recommended for net change in land use (zoning changes)	-Does not quantify indirect emissions from energy consumption or other GHGs (except methane from mobile-sources) -Free, available to public, and applicable statewide -Widely used for assessment of other air quality impacts
California Climate Action Registry General Reporting Protocol v. 2.2	Public guidance document	Indirect emissions from land development projects, stationary-area-source facilities regulated under AB 32	State	Easy	Energy consumption	CO ₂ e (Metric tons/year)	-Recommended for indirect emissions from energy consumption for land use development projects, and for new stationary- or area-sources to be regulated	-Contains emission factors for CH ₄ and N ₂ O in addition to CO ₂ -Does not contain emission factors broken down by utility provider (statewide average grid sources to be only)
Clean Air and Climate Projection (CACP) Software	Public agencies (members of ICLEI, NACAA, or similar)	Local governments used for emissions inventories	Local	N/A	Energy usage, waste generation/disposal transportation	CO ₂ e (tons/year)	-Recommended for inventories of local government entities (must be a member of affiliated agency or group)	-Not available to public
CTG Sustainable Communities Model	Custom model	Land development	Regional, scalable	N/A	Land use information, operational (mobile, economic, infrastructure) assumptions	energy, CO ₂ e (tons/year)	-An integrated and comprehensive modeling tool, but cannot obtain	-Not available to public

Method/Tool Description	Availability	Applicability	Scope	Ease of Use	Data Input (Requirements and Guidance)	Data Output	Recommendation Comments	Advantages/ Disadvantages
I-PLACE ³ S	Access fee through local COG Only available for eight California counties	Land use change	Regional, scalable	Fairly Easy	Parcel information	CO ₂ (lb/day or tons/year)	-Recommended for land development projects and land use changes -Especially good for general plans	-Not freely available to public -Not applicable statewide -Actually provides insight into land use interaction -Can include very specific project attributes -Trip rates are from behavioral survey data, instead of ITE
EMFAC 2007	Public domain	On-road mobile-sources	Statewide, regional	Fairly Easy	Vehicle information	fleet CO ₂ (grams/mile)	-Not recommended for most projects (URBEMIS preferred) -Could be used for certain Air District Rulemaking applications	-Can compare emissions based on speed-distribution -Emission factors contained in URBEMIS -Not a stand-alone model
OFFROAD 2007	Public domain	Off-road mobile sources (construction equipment)	Statewide, regional	Fairly Easy	Construction information	fleet CO ₂ (lb/day)	-Not recommended (URBEMIS preferred) -could be used for certain Air District Rulemaking applications (re: construction equipment)	-Emission factors contained in URBEMIS
RoadMod (to be updated to include CO ₂)	Public domain	Off-road and on-road mobile sources (construction equipment and material haul trucks)	Statewide	Easy	Construction information	CO ₂ (lb/day or tons/project)	-Recommended for construction-only projects (linear in nature; i.e., levees, roads, pipelines)	-To be updated to support emissions factors from OFFROAD 2007

Method/Tool Description	Availability	Applicability	Scope	Ease of Use	Data Input (Requirements and Guidance)	Data Output	Recommendation Comments	Advantages/ Disadvantages
DTIM	Public domain	On-road mobile-sources	Statewide, regional	Difficult (consists of a series of three programs and requires input files from traffic and emissions modeling)	-EMFAC files -Traffic model output files (e.g., link, interzonal, and trip end data) -User options file -Optional files	CO ₂ (tons/year)	-Not recommended	-Not updated to support EMFAC 2007 emission factors -Input files include output files from regional transportation models which more accurately reflect VMT
Southeast Climate Change Partnership Spreadsheet Model (UK)	Public domain http://www.climate-southeast.org.uk/	UK government/agencies/organizations used for emissions inventories	Local, county, regional	Fairly easy	Energy usage, waste generation/disposal, transportation	CO ₂ (tonnes/year)	-Not recommended for use in California, but could be a valuable source for building an applicable spreadsheet model	-Applicability for UK, but could be updated with CA-specific emission factors
EPA AP-42; Evaporation Loss Sources Chapter 4.3.5	Public reference document	GHG emissions from waste water treatment facilities	Facility level	Easy equation; substantial research needed to use	Biochemical oxygen demand (BOD) loading, anaerobically digested	Fraction CH ₄ (lb/year)	-Recommended for Publicly owned treatment works (POTW) projects	-Substantial research needed to determine the "fraction anaerobically digested" parameter, which is dependent on the type of treatment plant/process
LandGem v. 3.02	Public domain http://www.epa.gov/ttn/catc/dir1/landgem-v302.xls	GHG emissions from anaerobic decomposition associated with landfills	Facility Level	Moderate	Solid waste processing, year of analysis, lifetime of waste in place	CO ₂ , CH ₄ (Mega grams/year)	-Recommended for landfill emissions	-Emission rates change dependent on years of decomposition, waste in place rates of change. -Complex decomposition rate equation, but good first approximation

Method/Tool Description	Availability	Applicability	Scope	Ease of Use	Data Input (Requirements and Guidance)	Data Output	Recommendation Comments	Advantages/ Disadvantages
CARROT	Registry members	Stationary source emissions, vehicle fleet, mobile sources	Facility level	Moderate	Facility-specific information	All GHGs	-Recommended for reporting facilities under AB 32 and for indirect emissions from energy consumption (CCAR Protocol)	-Estimates all GHGs and normalizes to CO _{2e} -Not publicly available
<p>Notes: GHG = greenhouse gas; AB = assembly bill; CO_{2e} = carbon dioxide equivalent; CH₄ = methane; N₂O = nitrous oxide; COG = council of governments ; ITE = Institute of Transportation Engineers; CCAR = California Climate Action Registry Source: Data compiled by EDAW and the California Air Pollution Control Officers Association in 2007</p>								

Chapter 9: Mitigation Strategies for GHG

Chapter 9

Mitigation Strategies for GHG

Introduction

This chapter (and Appendix B) identifies existing and potential mitigation measures that could be applied to projects during the CEQA process to reduce a project's GHG emissions that would be identified using the analytical methodologies included in this white paper. The Subcommittee retained the services of EDAW to assist with this effort. EDAW performed a global search of mitigation measures currently in practice and under study that would reduce GHG emissions.

Table 16 (Appendix B) provides a brief description of each measure along with an assessment of their feasibility (from a standpoint of economical, technological, and logistical feasibility, and emission reduction effectiveness), and identifies their potential for secondary impacts to air quality. During the global search performed, EDAW also took note of GHG reduction strategies being implemented as rules and regulation (e.g., early action items under AB 32), which are summarized in Table 18 (Appendix C). It is important to note that though compliance with such would be required by regulation for some sources, such strategies may be applicable to other project and source types.

The recurring theme that echoes throughout a majority of these measures is the shift toward New Urbanism, and research has consistently shown that implementation of Neotraditional Development techniques reduces VMT and associated emissions. The material reviewed assessed reductions from transportation-related measures (e.g., bicycle, pedestrian, transit, and parking) as a single comprehensive approach to land use. This comprehensive approach focuses on development design criteria conducive to enhancing alternate modes of transportation, including transit, walking, and bicycling. Transportation Demand Management (TDM) programs are viewed as a mechanism to implement specific measures. TDM responsibilities may include offering incentives to potential users of alternative modes of transportation and monitoring and reporting mode split changes.

The comprehensive approach makes it more difficult to assess reductions attributable to each measure. Nevertheless, there is a strong interrelationship between many of the measures, which justifies a combined approach. Consider the relationship between bike parking nonresidential, bike parking residential, endtrip facilities, and proximity to bike path/bike lane measures. In reality, these measures combined act as incentives for one individual to bike to work, while implementation of a single measure without the others reduces effectiveness.

The global nature of GHG emissions is an important feature that enables unique mitigation: abatement. When designing a project subject to CEQA, the preferred practice is first to avoid, then to minimize, and finally to compensate for impacts. Where the impact cannot be mitigated on-site, off-site mitigation is often and effectively implemented in several resource areas, either in the form of offsetting the same impact or preserving the resource elsewhere in the region. Frequently, mitigation fee programs or funds are established, where the proponent pays into the program and fees collected

throughout the region or state are used to implement projects that, in turn, proportionately offset the impacts of the projects to the given resource. It may be more cost-effective to reduce as much GHG on-site as feasible (economically and technologically). Then the proponent would pay into a “GHG retrofit fund” to reduce equivalent GHG emissions off-site. In contrast to regional air pollutant offset programs such as the Carl Moyer Program, it matters greatly where reductions of ozone precursors occur, as ozone affects regional air quality. The GHG retrofit fund could be used to provide incentives to upgrade older buildings and make them more energy efficient. This would reduce demand on the energy sector and reduce stationary source emissions associated with utilities. This program has been successfully implemented in the United Kingdom where developments advertise “carbon neutrality.” Of course, some GHG emissions occur associated with operation of the development, but the development would offset the remainder of emissions through off-site retrofit. Avoiding emissions that would otherwise continue to occur at existing development would be a unique opportunity for mitigation of GHG emissions. Reduction of GHG emissions also may have important side benefits including reduction of other forms of pollution.

Depending on the significance threshold concept adopted, projects subject to the CEQA process would either qualitatively or quantitatively identify the amount of GHG emissions associated with their project using the analytical methodologies identified in the previous chapter. The analysis would then apply the appropriate number of mitigation measures listed in Appendix B to their project to reduce their GHG emissions below the significance level. Calculating the amount of GHG emission reductions attributable to a given mitigation measure would require additional research. The examples below illustrate how a project would be mitigated using this approach.

Residential Project Example

Project Attributes:

- 68 detached dwelling units
- 15.9 acres
- Located in unincorporated Placer County PCAPCD jurisdiction)
- Assume URBEMIS defaults for a rural project in Placer County, in absence of a traffic study (This is contrary to the recommendations contained under Task 1; a traffic study is necessary to assess project-specific GHG emissions).
- Analysis year 2009

Table 11: Residential Project Example GHG Emissions Estimates with Mitigation

URBEMIS Output (Unmitigated)	Metric Tons/Year CO ₂ e	URBEMIS Output (Mitigated)	Metric Tons/Year CO ₂ e	Percent Reduction
Area-source emissions	252	Area-source emissions	215	14.6
Mobile-source emissions	1,047	Mobile-source emissions	916	12.5
Total direct operational emissions (area + mobile)	1,299	Total operational emissions (area + mobile)	1,131	12.9
Notes: CO ₂ e = carbon dioxide equivalent				
Sources: Data compiled by EDAW in 2007				

Using URBEMIS 2007 and assuming the project would implement the mitigation measures listed below, yearly project-generated emissions of CO₂e would be reduced by approximately 13 percent. Implementation of the following mitigation measures is assumed:

- 100 housing units within one-half-mile radius of project’s center, including this project’s 68 residential units;
- provision of 80 jobs in the study area;
- retail uses present with one-half-mile radius of project’s center;
- 10 intersections per square mile;
- 100% of streets with sidewalks on one side;
- 50% of streets with sidewalks on both sides;
- 30% of collectors and arterials with bike lanes, or where suitable, direct parallel routes exist;
- 15% of housing units deed restricted below market rate;
- 20% energy efficiency increase beyond Title 24; and
- 100% of landscape maintenance equipment electrically powered and electrical outlets in front and rear of units.

Example Project Methodology and Mitigation

Table 12 –Residential Projects Example Methodology and Mitigation

Source	Methodology	Mitigation
Direct Emissions		
Construction	URBEMIS (OFFROAD emission factors)	MM C-1→MM C-4
Mobile Sources	URBEMIS (EMFAC emission factors)	MM T-3→MM T-8, MM T-10→MM T-14, MM T-16, MM T-19→MM T-21 MM D-2→MM D-8, MM D-10→MM D-15, MM D-17 MM S-1→MM S-2 MM M-1→MM M-2
Area Sources	URBEMIS	MM D-13→MM D-15, MM D-17
Indirect Emissions		
Energy Consumption	CCAR GRP & CEC	MM E-1→MM E-8, MM E-10, MM E-12→MM E-23 MM S-1→MM S-2 MM M-1→MM M-2

Table 13 –Commercial Projects Example Methodology and Mitigation

Source	Methodology	Mitigation
Direct Emissions		
Construction	URBEMIS (OFFROAD emission factors)	MM C-1→MM C-4
Mobile Sources	URBEMIS (EMFAC emission factors)	MM T-1→MM T-2, MM T-4→MM T-15, MM T-17→MM T-21 MM D-1→MM D-3, MM D-5→MM D-6, MM D-10, MM D-12, MM D-14→MM D-17 MM E-24 MM S-1→MM S-2 MM M-1→MM M-2
Area Sources	URBEMIS	MM D-14→MM D-17
Indirect Emissions		
Energy Consumption	CCAR GRP & CEC	MM E-1, MM E-4→MM E-13, MM E-16→MM E-24 MM S-1→MM S-2 MM M-1→MM M-2

Chapter 9

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Table 14 –Specific Plans Example Methodology and Mitigation

Source	Methodology	Mitigation
Direct Emissions		
Construction	URBEMIS (OFFROAD emission factors)	MM C-1→MM C-4
Mobile Sources	Short-term: URBEMIS (EMFAC emission factors). Long-term: I-PLACE ³ S/CTG SCM	MM T-1→MM T-21 MM D-1→MM D-12, MM D-18→MM D-19 MM E-24 MM S-1→MM S-2 MM M-1→MM M-2
Area Sources	Short-term: URBEMIS (EMFAC emission factors). Long-term: I-PLACE ³ S/CTG SCM	MM D-13→MM D-19 MM E-1→MM E-24 MM S-1→MM S-2
Indirect Emissions		
Energy Consumption	Short-term: CCAR GRP & CEC. Long-term: I-PLACE ³ S/CTG SCM	MM M-1→MM M-2

General Plans

- Include a general plan policy to reduce emissions within planning area to a level consistent with legislative requirements.
- Implementation strategies include preparation of a GHG reduction plan.
- Projects consistent with a general plan could be responsible for complying with such a policy.

Table 15 –General Plans Example Methodology and Mitigation

Source	Methodology	Mitigation
Direct Emissions		
Construction	URBEMIS (OFFROAD emission factors).	MS G-1 MM G-15
Mobile Sources	Short-term: URBEMIS (EMFAC emission factors). Long-term: I-PLACE ³ S/CTG SCM	MS G-1 MS G-2→MS C-7, MS G-9, MS G-12, MS-13→MS-14, MS-16→MS-23
Area Sources	Short-term: URBEMIS (EMFAC emission factors). Long-term: I-PLACE ³ S/CTG SCM	MS G-1 MS G-8→MS C-11, MS G-134, MS G-12, MS-15, MS-17, MS-22
Indirect Emissions		
Energy Consumption	Short-term: CCAR GRP & CEC. Long-term: I-PLACE ³ S/CTG SCM	

Other Project Types

Air District Rules and Regulations

Air district rules and regulations could have the potential to increase or decrease GHG emissions within the respective jurisdiction. In general, air district rules and regulations act to decrease criteria air pollutant or toxic air contaminant emissions, which would usually act to reduce GHG emissions simultaneously. However, this may not always be the case and air district rules and regulations could address emissions from a large variety of different source types. Reductions of GHG emissions associated with implementation of applicable mitigation, which could also vary greatly, would need to be evaluated on a case-by-case basis. However, once applicable mitigation measures are identified, percent reductions based on the best available research to date, such as those specified in Table 15, could be applied to determine mitigated emissions.

Air Quality Plans

Similarly to air district rules and regulations, air quality plans could have the potential to increase or decrease GHG emissions because of criteria air pollutant reduction strategies. In general, strategies implemented by air districts to reduce criteria air pollutants also act to reduce GHG emissions. However, this may not always be the case. Reductions of GHG emissions associated with implementation of applicable mitigation would need to be evaluated on a case-by-case basis. The methodology identified above for determining whether the strategies contained within the GHG reduction plan would adhere to the level specified in general plan policy could also be used to determine the reductions associated with CAP strategies.

Regional Transportation Plans

Regional transportation plans and reductions of GHG emissions associated with implementation of applicable mitigation would also need to be evaluated on a case-by-case basis to determine if a net increase or decrease in GHG emissions would occur. Complex interactions between the roadway network, operating conditions, alternative transportation availability (such as public transit, bicycle pathways, and pedestrian infrastructure), and many other independent parameters specific to a region should be considered. EMFAC 2007 can be used with VMT from the RTP to create an inventory of GHG emissions. Reductions associated with implementation of applicable measures contained in Table 16 could be accomplished by accounting for VMT reductions in the traffic model.

Many states, counties, and cities have developed policies and regulations concerning greenhouse gas emissions that seek to require or promote reductions in GHG emissions through standards for vehicle emissions, fuels, electricity production/renewables, building efficiency, and other means. However, we could only identify three public agencies in the United States that are considering formally requiring the analysis of greenhouse gas emissions and climate change for development projects during their associated environmental processes. There may be others, but they were not identified during research conducted during preparation of this paper.

The following is a summary of those three efforts.

Commonwealth of Massachusetts - MEPA Greenhouse Gas Emissions Policy and Protocol

The Massachusetts Executive Office of Energy and Environmental Affairs (EEA) has determined that the phrase “damage to the environment” as used in the Massachusetts Environmental Policy Act (MEPA) includes the emission of greenhouse gases caused by projects subjects to MEPA Review. EEA has published a Greenhouse Gas Emissions Policy (GGEP) to fulfill the statutory obligation to take all feasible measures to avoid, minimize or mitigate damage to the environment.

The GGEP concerns the following projects only:

- The Commonwealth or a state agency is the proponent;
- The Commonwealth or a state agency is providing financial assistance;
- The project is privately funded, but requires an Air Quality Permit from the department of Environmental Protection;
- The project is privately funded, but will generate:
 - 3,000 or more new vehicle trips per day for office projects;
 - 6,000 or more new vehicle trips per day for mixed use projects that are 25% or more office space; or
 - 10,000 or more new vehicle trips per day for other projects.

As a comparison, the trip generation amounts correspond as follows:

- 3,000 vehicle trips per day = approximately 250,000 square foot office development;
- 6,000 or more new vehicle trips per day for mixed use projects that are 25% or more office space = if 25% office space, then equivalent to approximately 130,000 square feet of office and either 100,000 square feet of retail or 450 single-family residential units or some combination thereof.
- 10,000 or more new vehicle trips per day = approximately 1,000 single family residential units or 250,000 square feet retail.

The draft policy states it is not intended to create a numerical GHG emission limit or a numerical GHG emissions reduction target, but rather to ensure that project proponents and reviewers have considered the GHG emissions impacts of their projects and taken all feasible means and measure to reduce those impacts.

The draft policy notes that some projects within these categories will have little or no greenhouse gas emission and the policy will not apply to such projects. EEA intends to identify in the scoping certificate whether a project falls within this *de minimis* exception.

The GGEP requires qualifying projects to do the following:

- to quantify their GHG emissions;
- identify measures to minimize or mitigate such emissions;
- quantify the reduction in emissions and energy savings from mitigation.

Emissions inventories are intended to focus on carbon dioxide, but analysis of other GHGs may be required for certain projects. EEA will require analysis of direct GHG emissions and indirect (electricity and transportation) emissions. The GGEP references the protocols prepared by the World Resource Institute as guidance for inventory preparation.

The policy is still in draft form, but the comment period closed on August 10, 2007.

King County, Washington - Executive Order on the Evaluation of Climate Change Impacts through the State Environmental Policy Act (SEPA)

On June 27, 2007, the King County Executive Ron Sims directed all King County Departments, as follows:

“...effective September 1, 2007 to require that climate impacts, including, but not limited to those pertaining to greenhouse gases, be appropriately identified and evaluated when such Departments are acting as the lead agency in reviewing the environmental impacts of private or public proposals pursuant to the State Environmental Policy Act”.

The Executive Order does not define what a “climate impact” is. Based on statements of the County Deputy Chief of Staff*

- County agencies will ask project proponents to supply information on transportation, energy usage and other impacts of proposed projects using the County’s existing SEPA checklist.

* Marten Law Group: Environmental News, August 1, 2007, “King County (WA) First in Nation to Require Climate Change Impacts to be Considered During Environmental Review of New Projects”.

- There is no current plan to require project proponents to take action to mitigate the impacts identifies.
- Development of emissions thresholds and mitigation requirements will be undertaken in connection with the County's upcoming 2008 update of its Comprehensive Plan.

Sacramento Metropolitan Air Quality Management District

The Sacramento Metropolitan Air Quality Management District released an interim guidance on addressing climate change in CEQA documents on September 6, 2007. While very general in nature, the District recommends that CEQA environmental documents include a discussion of anticipated GHG emissions during both the construction and operation phases of the project. This includes assessing the GHG emissions from projects (using readily available models) to determine whether a project may have a significant impact. If so, then the District recommends addressing all of the District's GHG mitigation measures (drawn from comments made by the California Attorney General) – with explanations on how the mitigation will be implemented or providing rationale for why a measure would be considered infeasible. The District provides assistance to agencies in their analysis of GHG emissions and the applicability of specific mitigation measures. The District's guidance can be found at: <http://64.143.64.21/climatechange/ClimateChangeCEQAGuidance.pdf>

Mendocino Air Quality Management District – CEQA Guidelines

The Mendocino AQMD updated its “Guidelines for Use During Preparation of Air Quality Impacts in EIRs or Mitigated Negative Declarations” in May 2007. The guidelines call for preparing estimates of the increased emissions of air contaminations (including GHG) for projects.

The guidelines state that GHG emissions should be presumed to have a significant impact if CO emissions from District-approved modeling exceed either of the following:

- 80% of the level defined as significant for stationary sources in Regulation 1, Rule 130 (s2) of the District (which is 550 lbs/day for CO, meaning a threshold of 440 lbs/day for CO for stationary sources); or
- levels established in District Regulation 1 Rule 130 (i2) for indirect sources (which is 690 lbs/day for CO for indirect sources).

If an average passenger vehicle emits 22 grams of CO/mile and 0.8 lb/mile of CO₂, then the 690-lb/day threshold for CO corresponds to approximately 11,400 lb/day CO₂ threshold for passenger vehicle-related emissions. If one assumes that the average passenger vehicle goes 12,500 miles/year (about 35 miles/day), then this is a threshold equivalent to about 420 vehicles. Using an average in California of about 1.77 vehicles/household, this would correspond to about 250 households/dwelling units.

Appendix A

Relevant Citations

Citations from the Public Resources Code (Division 13, §21000 et seq.) as amended through January 1, 2005.

Public Resources Code – Section 21004, MITIGATING OR AVOIDING A SIGNIFICANT EFFECT; POWERS OF PUBLIC AGENCY:

“In mitigating or avoiding a significant effect of a project on the environment, a public agency may exercise only those express or implied powers provided by law other than this division. However, a public agency may use discretionary powers provided by such other law for the purpose of mitigating or avoiding a significant effect on the environment subject to the express or implied constraints or limitations that may be provided by law.”

Public Resources Code – Section 21082.2, SIGNIFICANT EFFECT ON ENVIRONMENT; DETERMINATION; ENVIRONMENTAL IMPACT REPORT PREPARATION:

- (a) The lead agency shall determine whether a project may have a significant effect on the environment based on substantial evidence in light of the whole record.
- (b) The existence of public controversy over the environmental effects of a project shall not require preparation of an environmental impact report if there is no substantial evidence in light of the whole record before the lead agency that the project may have a significant effect on the environment.
- (c) Argument, speculation, unsubstantiated opinion or narrative, evidence which is clearly inaccurate or erroneous, or evidence of social or economic impacts which do not contribute to, or are not caused by, physical impacts on the environment, is not substantial evidence. Substantial evidence shall include facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts.
- (d) If there is substantial evidence, in light of the whole record before the lead agency, that a project may have a significant effect on the environment, an environmental impact report shall be prepared.
- (e) Statements in an environmental impact report and comments with respect to an environmental impact report shall not be deemed determinative of whether the project may have a significant effect on the environment.

Citations from the Guidelines for California Environmental Quality Act, CCR, Title 14, Division 6 (§15000 et seq.) as amended through July 27, 2007.

AG=Attorney General; ARB=California Air Resources Board; ASTM=American Society for Testing and Material; BAAQMD=Bay Area Air Quality Management District; BEES= Building for Environmental and Economic Sustainability; CA=California; Caltrans=California Department of Transportation; CAPs=Criteria Air Pollutants; CCAP=Center for Clean Air Policy; CF=Connectivity Factor; CIWMB=California Integrated Waste Management Board; CO= Carbon Monoxide; CO₂=Carbon Dioxide; DGS=Department of General Services; DOE=U.S. Department of Energy; DPF=Diesel particulate Filter; E85=85% Ethanol; EERE=Energy Efficiency and Renewable Energy; EOE=Encyclopedia of Earth; EPA=U.S. Environmental Protection Agency; ETC=Edmonton Trolley Coalition; EVs/CNG=Electric Vehicles/Compressed Natural Gas; FAR=Floor Area Ratio; GHG=Greenhouse Gas; ITE=Institute of Transportation Engineers; kg/m²=kilogram per square meter; km=Kilometer; lb=pound; LEED=Leadership in Energy and Environmental Design; M=Million; NA=Not Available; NEV=Neighborhood Electric Vehicle; NIST=National Institute of Standards and Technology; NO_x=Oxides of Nitrogen; NREL=National Renewable Energy Laboratory; N/S=North/South; PG&E=Pacific Gas and Electric; PM=Particulate Matter; SJVAPCD=San Joaquin Valley Air Pollution Control District; SMAQMD=Sacramento Metropolitan Air Quality Management District; SMUD=Sacramento Municipal Utilities District; SO_x=Sulfur Oxides; SRI=Solar Reflectance Index; TACs=Toxic Air Contaminants; TDM=Transportation Demand Management; TMA=Transportation Management Association; THC=Total Hydrocarbon; ULEV=Ultra Low Emission Vehicle; USGBC=U.S. Green Building Council; and VTPI=Victoria Transit Policy.

State CEQA Guidelines – Section 15064, DETERMINING THE SIGNIFICANCE OF THE ENVIRONMENTAL EFFECTS CAUSED BY A PROJECT:

(a) Determining whether a project may have a significant effect plays a critical role in the CEQA process.

(1) If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, the agency shall prepare a draft EIR.

(2) When a final EIR identifies one or more significant effects, the Lead Agency and each Responsible Agency shall make a finding under Section 15091 for each significant effect and may need to make a statement of overriding considerations under Section 15093 for the project.

(b) The determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data. An ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting. For example, an activity which may not be significant in an urban area may be significant in a rural area.

(c) In determining whether an effect will be adverse or beneficial, the Lead Agency shall consider the views held by members of the public in all areas affected as expressed in the whole record before the lead agency. Before requiring the preparation of an EIR, the Lead Agency must still determine whether environmental change itself might be substantial.

(d) In evaluating the significance of the environmental effect of a project, the Lead Agency shall consider direct physical changes in the environment which may be caused by the project and reasonably foreseeable indirect physical changes in the environment which may be caused by the project.

(1) A direct physical change in the environment is a physical change in the environment which is caused by and immediately related to the project. Examples of direct physical changes in the environment are the dust, noise, and traffic of heavy equipment that would result from construction of a sewage treatment plant and possible odors from operation of the plant.

(2) An indirect physical change in the environment is a physical change in the environment which is not immediately related to the project, but which is caused indirectly by the project. If a direct physical change in the environment in turn causes another change in the environment, then the other change is an indirect physical change in the environment. For example, the construction of a new sewage treatment plant may facilitate population growth in the service area due to the increase in sewage treatment capacity and may lead to an increase in air pollution.

(3) An indirect physical change is to be considered only if that change is a reasonably foreseeable impact which may be caused by the project. A change which is speculative or unlikely to occur is not reasonably foreseeable.

(e) Economic and social changes resulting from a project shall not be treated as significant effects on the environment. Economic or social changes may be used, however, to determine that a physical change shall be regarded as a significant effect on the environment. Where a physical change is caused by economic or social effects of a

project, the physical change may be regarded as a significant effect in the same manner as any other physical change resulting from the project. Alternatively, economic and social effects of a physical change may be used to determine that the physical change is a significant effect on the environment. If the physical change causes adverse economic or social effects on people, those adverse effects may be used as a factor in determining whether the physical change is significant. For example, if a project would cause overcrowding of a public facility and the overcrowding causes an adverse effect on people, the overcrowding would be regarded as a significant effect.

(f) The decision as to whether a project may have one or more significant effects shall be based on substantial evidence in the record of the lead agency.

(1) If the lead agency determines there is substantial evidence in the record that the project may have a significant effect on the environment, the lead agency shall prepare an EIR (*Friends of B Street v. City of Hayward* (1980) 106 Cal.App.3d 988). Said another way, if a lead agency is presented with a fair argument that a project may have a significant effect on the environment, the lead agency shall prepare an EIR even though it may also be presented with other substantial evidence that the project will not have a significant effect (*No Oil, Inc. v. City of Los Angeles* (1974) 13 Cal.3d 68).

(2) If the lead agency determines there is substantial evidence in the record that the project may have a significant effect on the environment but the lead agency determines that revisions in the project plans or proposals made by, or agreed to by, the applicant would avoid the effects or mitigate the effects to a point where clearly no significant effect on the environment would occur and there is no substantial evidence in light of the whole record before the public agency that the project, as revised, may have a significant effect on the environment then a mitigated negative declaration shall be prepared.

(3) If the lead agency determines there is no substantial evidence that the project may have a significant effect on the environment, the lead agency shall prepare a negative declaration (*Friends of B Street v. City of Hayward* (1980) 106 Cal.App. 3d 988).

(4) The existence of public controversy over the environmental effects of a project will not require preparation of an EIR if there is no substantial evidence before the agency that the project may have a significant effect on the environment.

(5) Argument, speculation, unsubstantiated opinion or narrative, or evidence that is clearly inaccurate or erroneous, or evidence that is not credible, shall not constitute substantial evidence. Substantial evidence shall include facts, reasonable assumptions predicated upon facts, and expert opinion support by facts.

(6) Evidence of economic and social impacts that do not contribute to or are not caused by physical changes in the environment is not substantial evidence that the project may have a significant effect on the environment.

(7) The provisions of sections 15162, 15163, and 15164 apply when the project being analyzed is a change to, or further approval for, a project for which an EIR or negative declaration was previously certified or adopted (e.g. a tentative subdivision, conditional use permit). Under case law, the fair argument standard does not apply to determinations of significance pursuant to sections 15162, 15163, and 15164.

(g) After application of the principles set forth above in Section 15064(f)(g), and in marginal cases where it is not clear whether there is substantial evidence that a project may have a significant effect on the environment, the lead agency shall be guided by the following principle: If there is disagreement among expert opinion supported by facts

over the significance of an effect on the environment, the Lead Agency shall treat the effect as significant and shall prepare an EIR.

(h)(1) When assessing whether a cumulative effect requires an EIR, the lead agency shall consider whether the cumulative impact is significant and whether the effects of the project are cumulatively considerable. An EIR must be prepared if the cumulative impact may be significant and the project’s incremental effect, though individually limited, is cumulatively considerable. “Cumulatively considerable” means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

(2) A lead agency may determine in an initial study that a project’s contribution to a significant cumulative impact will be rendered less than cumulatively considerable and thus is not significant. When a project might contribute to a significant cumulative impact, but the contribution will be rendered less than cumulatively considerable through mitigation measures set forth in a mitigated negative declaration, the initial study shall briefly indicate and explain how the contribution has been rendered less than cumulatively considerable.

(3) A lead agency may determine that a project’s incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program which provides specific requirements that will avoid or substantially lessen the cumulative problem (e.g., water quality control plan, air quality plan, integrated waste management plan) within the geographic area in which the project is located. Such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding that the project complies with the specified plan or mitigation program addressing the cumulative problem, an EIR must be prepared for the project.

(4) The mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project’s incremental effects are cumulatively considerable.

State CEQA Guidelines – Section 15130, DISCUSSION OF CUMULATIVE IMPACTS:

(a)(3). “An EIR may determine that a project’s contribution to a significant cumulative impact will be rendered less than cumulatively considerable and thus is not significant. A project’s contribution is less than cumulatively considerable if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact. The lead agency shall identify facts and analysis supporting its conclusion that the contribution will be rendered less than cumulatively considerable.

State CEQA Guidelines – Section 15064.7, THRESHOLDS OF SIGNIFICANCE:

“Each public agency is encouraged to develop and publish thresholds of significance that the agency uses in the determination of the significance of environmental effects. A threshold of significance is an identifiable quantitative, qualitative or performance level

of a particular environmental effect, non-compliance with which means the effect will normally be determined to be significant by the agency and compliance with which means the effect normally will be determined to be less than significant.”



Appendix B

Mitigation Measure Summary

**Table 16
Mitigation Measure Summary**

Mitigation Measure	Applicable Project/Source Type ¹	Effective	Feasible (Yes/No)		Secondary Effects (Yes/No)	Agency/Organization/Other ⁶	Description/Comments	
		Emissions Reduction/Score ²	Cost (Yes/No) ³	Technical ⁴				Logistical ⁵
Transportation								
<i>Bicycle/Pedestrian/Transit Measures</i>								
MM T-1: Bike Parking	LD (C, M), I, SP, TP, AQP, RR, P/Mobile	1%-5%/High: CCAP presents combined % reductions for a range of mitigation measures (Dierkers et al. 2007). SMAQMD allocates combined reductions among individual measures (e.g., 2.5% reduction for all bicycle-related measures and one-quarter of 2.5% for each individual measure) (TIAX 2005, EDAW 2006, SMAQMD 2007). VTPI presents % reductions for showers and combined measures in the TDM encyclopedia (VTPI	Yes: Lockers (\$1,200-\$2,950, \$700/bike on average), Racks (\$70-\$2,000, \$70/bike on average).	Yes (Caltrans 2005, Dierkers et al. 2007, VTPI 2007)	Yes (Caltrans 2005, Dierkers et al. 2007, VTPI 2007)	Adverse: No Beneficial: CAPs, TACs	Caltrans, Portland Bicycle Master Plan (City of Portland 1998), CCAP Transportation Emissions Guidebook (Dierkers et al. 2007), SMAQMD Recommended Guidance for Land Use Emission Reductions (SMAQMD 2007), VTPI, CA air quality management and control districts, and cities/counties.	Nonresidential projects provide plentiful short- and long-term bicycle parking facilities to meet peak season maximum demand (e.g., one bike rack space per 20 vehicle/employee parking spaces).
IM T-2: End of Trip Facilities	LD (C, M), I, SP, TP, AQP, RR, P/Mobile		Yes	Yes (Caltrans 2005, Dierkers et al. 2007, VTPI 2007)	Yes (Caltrans 2005, Dierkers et al. 2007, VTPI 2007)	Adverse: No Beneficial: CAPs, TACs		Nonresidential projects provide “end-of-trip” facilities including showers, lockers, and changing space (e.g., four clothes lockers and one shower provided for every 80 employee parking spaces, separate facilities for each gender for projects with 160 or more employee parking spaces).
MM T-3: Bike-Parking at Multi-	LD (R, M), SP, AQP, RR,		Yes: Lockers (\$1,200-	Yes (Caltrans 2005,	Yes (Caltrans	Adverse: No Beneficial:		Long-term bicycle parking is provided at apartment

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**Table 16
Mitigation Measure Summary**

Mitigation Measure	Applicable Project/Source Type ¹	Effective	Feasible (Yes/No)		Secondary Effects (Yes/No)	Agency/Organization/Other ⁶	Description/Comments
		Emissions Reduction/Score ²	Cost (Yes/No) ³	Technical ⁴	Logistical ⁵		
Unit Residential	P/Mobile	2007). JSA bases estimates on CCAP information (JSA 2004).	\$2,950, \$700/bike on average), Racks (\$70-\$2,000, \$70/bike on average).	Dierkers et al. 2007, VTPI 2007)	2005, Dierkers et al. 2007, VTPI 2007)	CAPs, TACs	complexes or condominiums without garages (e.g., one long-term bicycle parking space for each unit without a garage). Long-term facilities shall consist of one of the following: a bicycle locker, a locked room with standard racks and access limited to bicyclists only, or a standard rack in a location that is staffed and/or monitored by video surveillance 24 hours per day.
MIT-4: Proximity to Bike Path/Bike Lanes	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile		Yes	Yes (Caltrans 2005, Dierkers et al. 2007, VTPI 2007)	Yes (Caltrans 2005, Dierkers et al. 2007, VTPI 2007)	Adverse: No Beneficial: CAPs, TACs	Entire project is located within one-half mile of an existing/planned Class I or Class II bike lane and project design includes a comparable network that connects the project uses to the existing offsite facility. Project design includes a designated bicycle route connecting all units, on-site bicycle parking facilities, offsite bicycle facilities, site entrances, and primary building entrances to existing Class I or Class II bike lane(s) within one-half mile. Bicycle route connects to all streets contiguous with project site. Bicycle route has minimum conflicts with automobile parking and circulation

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**Table 16
Mitigation Measure Summary**

Mitigation Measure	Applicable Project/Source Type ¹	Effective		Feasible (Yes/No)		Secondary Effects (Yes/No)	Agency/Organization/Other ⁶	Description/Comments
		Emissions Reduction/Score ²	Cost (Yes/No) ³	Technical ⁴	Logistical ⁵			
								facilities. All streets internal to the project wider than 75 feet have Class II bicycle lanes on both sides.

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**Table 16
Mitigation Measure Summary**

Mitigation Measure	Applicable Project/Source Type ¹	Effective	Feasible (Yes/No)			Secondary Effects (Yes/No)	Agency/Organization/Other ⁶	Description/Comments
		Emissions Reduction/Score ²	Cost (Yes/No) ³	Technical ⁴	Logistical ⁵			
MM T-5: Pedestrian Network	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile	1%-10%/High: CCAP presents combined % reductions for a range of mitigation measures (Dierkers et al. 2007). SMAQMD allocates 1% for each individual measure (TIAX 2005, EDAW 2006, SMAQMD 2007).	Yes	Yes (Dierkers et al. 2007, VTPI 2007)	Yes (Dierkers et al. 2007, VTPI 2007)	Adverse: No Beneficial: CAPs, TACs	CCAP Transportation Emissions Guidebook (Dierkers et al. 2007), SMAQMD Recommended Guidance for Land Use Emission Reductions (SMAQMD 2007), VTPI, CA air quality management and control districts, and cities/counties.	The project provides a pedestrian access network that internally links all uses and connects to all existing/planned external streets and pedestrian facilities contiguous with the project site. Project design includes a designated pedestrian route interconnecting all internal uses, site entrances, primary building entrances, public facilities, and adjacent uses to existing external pedestrian facilities and streets. Route has minimal conflict with parking and automobile circulation facilities. Streets (with the exception of alleys) within the project have sidewalks on both sides. All sidewalks internal and adjacent to project site are minimum of five feet wide. All sidewalks feature vertical curbs. Pedestrian facilities and improvements such as grade separation, wider sidewalks, and traffic calming are implemented wherever feasible to minimize pedestrian barriers. All site entrances provide pedestrian access.
MT-6: Pedestrian	LD (R, C, M), I, SP, TP,		Yes	Yes (Dierkers et al. 2007,	Yes (Dierkers et	Adverse: No Beneficial:	Site design and building placement minimize barriers to	

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**Table 16
Mitigation Measure Summary**

Mitigation Measure	Applicable Project/Source Type ¹	Effective		Feasible (Yes/No)		Secondary Effects (Yes/No)	Agency/Organization/Other ⁶	Description/Comments
		Emissions Reduction/Score ²	Cost (Yes/No) ³	Technical ⁴	Logistical ⁵			
Barriers Minimized	AQP, RR, P/Mobile			VTPI 2007)	al. 2007, VTPI 2007)	CAPs, TACs		pedestrian access and interconnectivity. Physical barriers such as walls, berms, landscaping, and slopes between residential and nonresidential uses that impede bicycle or pedestrian circulation are eliminated.
MM T-7: Bus Shelter for Existing/Planned Transit Service	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile	1%-2%/High: CCAP presents these % reductions (Dierkers et al., 2007). SMAQMD assigns from .25%-1%, depending on headway frequency (TIAX 2005, EDAW 2006, SMAQMD 2007).	Yes: \$15,000-\$70,000.	Yes (Dierkers et al. 2007, VTPI 2007)	Yes (Dierkers et al. 2007, VTPI 2007)	Adverse: No Beneficial: CAPs, TACs	CCAP Transportation Emissions Guidebook (Dierkers et al. 2007), SMAQMD Recommended Guidance for Land Use Emission Reductions (SMAQMD 2007), VTPI, City of Calgary (City of Calgary 2004), CA air quality management and control districts, and cities/counties.	Bus or streetcar service provides headways of one hour or less for stops within one-quarter mile; project provides safe and convenient bicycle/pedestrian access to transit stop(s) and provides essential transit stop improvements (i.e., shelters, route information, benches, and lighting).

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Mitigation Measure Summary**

Mitigation Measure	Applicable Project/Source Type ¹	Effective Emissions Reduction/Score ²	Cost (Yes/No) ³	Feasible (Yes/No)		Secondary Effects (Yes/No)	Agency/Organization/Other ⁶	Description/Comments
				Technical ⁴	Logistical ⁵			
MM T-8: Traffic Calming	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile	1%-10%/High: CCAP presents combined % reductions for a range of mitigation measures (Dierkers et al. 2007). SMAQMD allocates .25%-1.0% for each individual measure depending on percent of intersections and streets with improvements (TIAX 2005, EDAW 2006, SMAQMD 2007).	Yes	Yes (Dierkers et al. 2007, VTPI 2007)	Yes (Dierkers et al. 2007, VTPI 2007)	Adverse: No Beneficial: CAPs, TACs	CCAP Transportation Emissions Guidebook (Dierkers et al. 2007), SMAQMD Recommended Guidance for Land Use Emission Reductions (SMAQMD 2007), VTPI, CA air quality management and control districts, and cities/counties.	Project design includes pedestrian/bicycle safety and traffic calming measures in excess of jurisdiction requirements. Roadways are designed to reduce motor vehicle speeds and encourage pedestrian and bicycle trips by featuring traffic calming features. All sidewalks internal and adjacent to project site are minimum of five feet wide. All sidewalks feature vertical curbs. Roadways that converge internally within the project are routed in such a way as to avoid "skewed intersections;" which are intersections that meet at acute, rather than right, angles. Intersections internal and adjacent to the project feature one or more of the following pedestrian safety/traffic calming design techniques: marked crosswalks, count-down signal timers, curb extensions, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, and roundabouts or mini-circles. Streets internal and adjacent to the project feature pedestrian safety/traffic calming measures such as on-street parking, planter strips with street trees,

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**Table 16
Mitigation Measure Summary**

Mitigation Measure	Applicable Project/Source Type ¹	Effective	Feasible (Yes/No)		Secondary Effects (Yes/No)	Agency/Organization/Other ⁶	Description/Comments	
		Emissions Reduction/Score ²	Cost (Yes/No) ³	Technical ⁴				Logistical ⁵
							and chicanes/chokers (variations in road width to discourage high-speed travel).	
Parking Measures								
MM T-9: Paid Parking (Parking Cash Out)	LD (C, M), I, SP, TP, AQP, RR, P/Mobile	1%-30%/High: CCAP presents a range of 15%-30% reduction for parking programs (Dierkers et al. 2007). SMAQMD presents a range of 1.0%-7.2%, depending on cost/day and distance to transit (TIAX 2005, EDAW 2006, SMAQMD 2007). Shoupe presents a 21% reduction [\$5/day for commuters to downtown LA, with elasticity of -0.18 (e.g., if price increases 10%, then solo driving goes down by 1.8% more)] (Shoupe 2005). Urban Transit Institute	Yes: Vary by location and project size.	Yes (Dierkers et al. 2007, VTPI 2007)	Yes (Dierkers et al. 2007, VTPI 2007)	Adverse: No Beneficial: CAPs, TACs	CCAP Transportation Emissions Guidebook (Dierkers et al. 2007), SMAQMD Recommended Guidance for Land Use Emission Reductions (SMAQMD 2007), VTPI, CA air quality management and control districts, and cities/counties.	Project provides employee and/or customer paid parking system. Project must have a permanent and enforceable method of maintaining user fees for all parking facilities. The facility may not provide customer or employee validations. Daily charge for parking must be equal to or greater than the cost of a transit day/monthly pass plus 20%.

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		Emissions Reduction/Score ²	Cost (Yes/No) ³	Technical ⁴				Logistical ⁵
		presents a range of 1%-10% reduction in trips to central city sites, and 2%-4% in suburban sites (VTPI 2007).						
MM T-10: Minimum Parking	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile	1%-30%/High: CCAP presents a range of 15%-30% reduction for parking programs (Dierkers et al. 2007). SMAQMD presents a maximum of 6% (Nelson/Nygaard Consulting Associates, 2005, TIAX 2005, EDAW 2006).	Yes	Yes (Dierkers et al. 2007, VTPI 2007)	Yes (Dierkers et al. 2007, VTPI 2007), Note that in certain areas of the state, the minimum parking required by code is greater than the peak period parking demand for most land uses. Simply meeting minimum code requirements in these areas would not result in an emissions reduction.	Adverse: No Beneficial: CAPs, TACs	CCAP Transportation Emissions Guidebook (Dierkers et al. 2007), SMAQMD Recommended Guidance for Land Use Emission Reductions (SMAQMD 2007), VTPI, Governor's Office of Smart Growth (Annapolis, Maryland) (Zimble), CA air quality management and control districts, and cities/counties.	Provide minimum amount of parking required. Once land uses are determined, the trip reduction factor associated with this measure can be determined by utilizing the ITE parking generation publication. The reduction in trips can be computed as shown below by the ratio of the difference of minimum parking required by code and ITE peak parking demand to ITE peak parking demand for the land uses multiplied by 50%. Percent Trip Reduction = 50 * [(min parking required by code – ITE peak parking demand)/ (ITE peak parking demand)]

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Mitigation Measure Summary**

Mitigation Measure	Applicable Project/Source Type ¹	Effective Emissions Reduction/Score ²	Cost (Yes/No) ³	Feasible (Yes/No)		Secondary Effects (Yes/No)	Agency/Organization/Other ⁶	Description/Comments
				Technical ⁴	Logistical ⁵			
MM T-11: Parking Reduction Beyond Code/Shared Parking	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile	1%-30%/High: CCAP presents a range of 15%-30% reduction for parking programs (Dierkers et al. 2007). SMAQMD presents a maximum of 12% (Nelson/Nygaard, 2005, TIAX 2005, EDAW 2006).	Yes	Yes (Dierkers et al. 2007, VTPI 2007)	Yes (Dierkers et al. 2007, VTPI 2007)	Adverse: No Beneficial: CAPs, TACs		Provide parking reduction less than code. This measure can be readily implemented through a shared parking strategy, wherein parking is utilized jointly among different land uses, buildings, and facilities in an area that experience peak parking needs at different times of day and day of the week.
MM T-12: Pedestrian Pathway through Parking	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile	1%-4%/Moderate: CCAP presents combined % reductions for a range of mitigation measures (Dierkers et al. 2007). SMAQMD allocates 0.5% reduction for this measure (TIAX 2005, EDAW 2006, SMAQMD 2007).	Yes	Yes (Dierkers et al. 2007, VTPI 2007)	Yes (Dierkers et al. 2007, VTPI 2007)	Adverse: No Beneficial: CAPs, TACs		Provide a parking lot design that includes clearly marked and shaded pedestrian pathways between transit facilities and building entrances.

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Mitigation Measure	Applicable Project/Source Type ¹	Effective	Feasible (Yes/No)		Secondary Effects (Yes/No)	Agency/Organization/Other ⁶	Description/Comments
		Emissions Reduction/Score ²	Cost (Yes/No) ³	Technical ⁴			
MM T-13: Off-Street Parking	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile	1%-4%/Moderate: CCAP presents combined % reductions for a range of mitigation measures (Dierkers et al. 2007). SMAQMD allocates a range of 0.1%-1.5% for this measure (TIAX 2005, EDAW 2006, SMAQMD 2007).	Yes	Yes (Dierkers et al. 2007, VTPI 2007)	Yes (Dierkers et al. 2007, VTPI 2007)	Adverse: No Beneficial: CAPs, TACs	Parking facilities are not adjacent to street frontage.
MM T-14: Tree Cover	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile	Annual net CO ₂ reduction of 3.1 kg/m ² canopy cover/Moderate (McPherson 2001).	Yes: \$19 per new tree for CA, cost varies for maintenance, removal and replacement (McPherson 2001).	Yes	Yes	Adverse: VOCs Beneficial: CAPs, TACs	AG, State of CA Department of Justice (Goldberg 2007) and cities/counties (e.g., parking lot ordinances in Sacramento, Davis, and Los Angeles, CA). Provide parking lot areas with 50% tree cover within 10 years of construction, in particular low emitting, low maintenance, native drought resistant trees. Reduces urban heat island effect and requirement for air conditioning, effective when combined with other measures (e.g., electrical maintenance equipment and reflective paving material).
MM T-15: Valet Bicycle Parking	LD (C, M), SP, AQP, TP, RR, P/Mobile	NA/Low	Yes	Yes	Yes: Raley Field (Sacramento, CA)	Adverse: No Beneficial: CAPs, TACs	Raley Field (Sacramento, CA). Provide spaces for the operation of valet bicycle parking at community event “centers” such as amphitheatres, theaters, and stadiums.
MM T-16: Storage Bicycle Storage	LD (R, M), SP, AQP, TP, RR, P/Mobile	NA/Low	Yes: Less than \$200/multiple bike rack.	Yes	Yes	Adverse: No Beneficial: CAPs, TACs	City of Fairview, OR Provide storage space in one-car garages for bicycles and bicycle trailers.

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**Table 16
Mitigation Measure Summary**

Mitigation Measure	Applicable Project/Source Type ¹	Effective		Feasible (Yes/No)		Secondary Effects (Yes/No)	Agency/Organization/Other ⁶	Description/Comments
		Emissions Reduction/Score ²	Cost (Yes/No) ³	Technical ⁴	Logistical ⁵			
MM T-17: Preferential Parking for EVs/CNG Vehicles	LD (C, M), I, SP, TP, AQP, RR, P/Mobile	NA/Low	Yes	Yes	Yes	Adverse: No Beneficial: CAPs, TACs	USGBC, CA air quality management and control districts and cities/counties (e.g., BAAQMD).	Provide preferential parking space locations for EVs/CNG vehicles.
MM T-18: Reduced/No Parking Fee for EVs/CNG Vehicles	LD (C, M), I, SP, TP, AQP, RR, P/Mobile	NA/Low	Yes	Yes	Yes	Adverse: No Beneficial: CAPs, TACs	Hotels (e.g., Argonaut in San Francisco, CA)	Provide a reduced/no parking fee for EVs/CNG vehicles.

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**Table 16
Mitigation Measure Summary**

Mitigation Measure	Applicable Project/Source Type ¹	Effective	Feasible (Yes/No)		Secondary Effects (Yes/No)	Agency/Organization/Other ⁶	Description/Comments	
		Emissions Reduction/Score ²	Cost (Yes/No) ³	Technical ⁴				Logistical ⁵
<i>Miscellaneous Measure</i>								
MM T-19: TMA Membership	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile	1%-28%/High: CCAP presents a range of 3%-25% for TDMs with complementary transit and land use measures (Dierkers et al. 2007). VTPI presents a range of 6%-7% in the TDM encyclopedia (VTPI 2007). URBEMIS offers a 2%-10% range in reductions for a TDM that has 5 elements that are pedestrian and transit friendly and 1%-5% for 3 elements. SMAQMD presents a reduction of 5% (TIAX 2005, EDAW 2006, SMAQMD 2007).	Yes	Yes (Dierkers et al. 2007, VTPI 2007)	Yes (Dierkers et al. 2007, VTPI 2007)	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties (e.g., SMAQMD).	Include permanent TMA membership and funding requirement. Funding to be provided by Community Facilities District or County Service Area or other nonrevocable funding mechanism. TDMs have been shown to reduce employee vehicle trips up to 28% with the largest reductions achieved through parking pricing and transit passes. The impact depends on the travel alternatives.
MM T-20: ULEV	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile	NA/Low	Yes: Higher than corresponding gasoline models.	Yes	Yes: Fueling stations might not be readily available depending on location. More than 900 E85 fueling	Adverse: No Beneficial: CAPs, TACs	DGS, CA air quality management and control districts and cities/counties (e.g., SMAQMD).	Use of and/or provide ULEV that are 50% cleaner than average new model cars (e.g., natural gas, ethanol, electric).

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**Table 16
Mitigation Measure Summary**

Mitigation Measure	Applicable Project/Source Type ¹	Effective		Feasible (Yes/No)		Secondary Effects (Yes/No)	Agency/Organization/Other ⁶	Description/Comments
		Emissions Reduction/Score ²	Cost (Yes/No) ³	Technical ⁴	Logistical ⁵			
					stations in the U.S., 5 in CA. Vehicles available in select regions only			
MM T-21: Flex Fuel Vehicles	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile	5466.97 lb GHG/year/Low (DOE Fuel Economy)	Yes: E85 costs less than gasoline per gallon, but results in lower fuel economy.	Yes	Yes: More than 900 E85 fueling stations in the U.S., 5 in CA. Vehicles available in select regions only	Adverse: Yes Issues with the energy intensive ethanol production process (e.g., wastewater treatment requirements). Beneficial: CAPs, TACs	DGS, CA air quality management and control districts and cities/counties (e.g., SJVAPCD).	Use of and/or provide vehicles that utilize gasoline/ethanol blends (e.g., E85).
Design								
Commercial & Residential Building Design Measures								
MM D-1: Office/Mixed Use Density	LD (C, M), SP, TP, AQP, RR, P/Mobile	0.05%-2%/Moderate: This range is from SMAQMD, depending	Yes	Yes (VTPI 2007)	Yes (VTPI 2007)	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties	Project provides high density office or mixed-use proximate to transit. Project must provide

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**Table 16
Mitigation Measure Summary**

Mitigation Measure	Applicable Project/Source Type ¹	Effective	Feasible (Yes/No)		Secondary Effects (Yes/No)	Agency/Organization/Other ⁶	Description/Comments	
		Emissions Reduction/Score ²	Cost (Yes/No) ³	Technical ⁴				Logistical ⁵
		on FAR and headway frequencies (Nelson/Nygaard Consulting Associates 2005, EDAW 2006, SMAQMD 2007).				(e.g., SMAQMD).	safe and convenient pedestrian and bicycle access to all transit stops within one-quarter mile.	
MM D-2: Orientation to Existing/Planned Transit, Bikeway, or Pedestrian Corridor	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile	0.4%-1%/Moderate: CCAP attributes a 0.5% reduction per 1% improvement in transit frequency (Dierkers et al. 2007). SMAQMD presents a range of 0.25%-5% (JSA 2005, EDAW 2006, SMAQMD 2007).	Yes	Yes (Dierkers et al. 2007)	Yes (Dierkers et al. 2007)	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties (e.g., SMAQMD).	Project is oriented towards existing transit, bicycle, or pedestrian corridor. Setback distance between project and existing or planned adjacent uses is minimized or nonexistent. Setback distance between different buildings on project site is minimized. Setbacks between project buildings and planned or existing sidewalks are minimized. Buildings are oriented towards existing or planned street frontage. Primary entrances to buildings are located along planned or existing public street frontage. Project provides bicycle access to any planned bicycle corridor(s). Project provides pedestrian access to any planned pedestrian corridor(s).
MD-3: Operational Services	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile	0.5%-5%/Moderate	Yes	Yes	Yes	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties (e.g., SMAQMD).	Project provides on-site shops and services for employees.

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**Table 16
Mitigation Measure Summary**

Mitigation Measure	Applicable Project/Source Type ¹	Effective Emissions Reduction/Score ²	Cost (Yes/No) ³	Feasible (Yes/No)		Secondary Effects (Yes/No)	Agency/Organization/Other ⁶	Description/Comments
				Technical ⁴	Logistical ⁵			
MM D-4: Residential Density (Employ Sufficient Density for New Residential Development to Support the Use of Public Transit)	LD (R, M), SP, TP, AQP, RR, P/Mobile	1%-40%/High: #7, EPA presents a range of 32%-40% (EPA 2006). SMAQMD presents a range of 1%-12% depending on density and headway frequencies (Nelson/Nygaard Consulting Associates 2005, JSA 2005, EDAW 2006, SMAQMD 2007). Nelson/Nygaard presents a trip reduction formula: Trip Reduction = $0.6 * (1 - (19749 * ((4.814 + \text{households per residential acre}) / (4.814 + 7.14))) ^ -0.639) / 25914$.	Yes	Yes (VTPI 2007, Holtzclaw 2007)	Yes (VTPI 2007, Holtzclaw 2007)	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties (e.g., SMAQMD).	Project provides high-density residential development. Transit facilities must be within one-quarter mile of project border. Project provides safe and convenient bicycle/pedestrian access to all transit stop(s) within one-quarter mile of project border.
MM D-5: Street Grid	LD (R, C, M), I, SP, TP, AQP, RR,	1%/Moderate: SMAQMD presents this % reduction (JSA	Yes	Yes (Dierkers et al. 2007, VTPI 2007)	Yes (Dierkers et al. 2007,	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties	Multiple and direct street routing (grid style). This measure only applies to projects

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Mitigation Measure Summary**

Mitigation Measure	Applicable Project/Source Type ¹	Effective		Feasible (Yes/No)		Secondary Effects (Yes/No)	Agency/Organization/Other ⁶	Description/Comments
		Emissions Reduction/Score ²	Cost (Yes/No) ³	Technical ⁴	Logistical ⁵			
	P/Mobile	2005, EDAW 2006, SMAQMD 2007).			VTPI 2007)		(e.g., SMAQMD).	with an internal CF \geq 0.80, and average of one-quarter mile or less between external connections along perimeter of project. [CF= # of intersections / (# of cul-de-sacs + intersections)]. Cul-de-sacs with bicycle/pedestrian through access may be considered “complete intersections” when calculating the project’s internal connectivity factor. External connections are bike/pedestrian pathways and access points, or streets with safe and convenient bicycle and pedestrian access that connect the project to adjacent streets, sidewalks, and uses. If project site is adjacent to undeveloped land; streets, pathways, access points, and right-of-ways that provide for future access to adjacent uses may count for up to 50% of the external connections. Block perimeter (the sum of the measurement of the length of all block sides) is limited to no more than 1,350 feet. Streets internal to the project should connect to streets external to the project whenever possible.

**Table 16
Mitigation Measure Summary**

Mitigation Measure	Applicable Project/Source Type ¹	Effective Emissions Reduction/Score ²	Cost (Yes/No) ³	Feasible (Yes/No)		Secondary Effects (Yes/No)	Agency/Organization/Other ⁶	Description/Comments
				Technical ⁴	Logistical ⁵			
MM D-6: NEV Access	LD (R, C, M), SP, TP, AQP, RR, P/Mobile	0.5%-1.5%/Low: SMAQMD presents this % reduction (EDAW 2006, SMAQMD 2007).	Yes	Yes (Litman 1999, Sperling 1994)	Yes (Litman 1999, Sperling 1994)	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties (e.g., SMAQMD).	Make physical development consistent with requirements for neighborhood electric vehicles. Current studies show that for most trips, NEVs do not replace gas-fueled vehicles as the primary vehicle.
MM D-7: Affordable Housing Component	LD (R, M), SP, TP, AQP, RR, P/Mobile	0.4%-6%/Moderate: SMAQMD presents this % reduction (Nelson/Nygaard Consulting Associates 2005, EDAW 2006, SMAQMD 2007).	Yes	Yes	Yes	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties (e.g., SMAQMD).	Residential development projects of five or more dwelling units provide a deed-restricted low-income housing component on-site (or as defined in the code). Developers who pay into In-Lieu Fee Programs are not considered eligible to receive credit for this measure. The award of emission reduction credit shall be based only on the proportion of affordable housing developed on-site because in-lieu programs simply induce a net increase in development. Percentage reduction shall be calculated according to the following formula:

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Mitigation Measure Summary**

Mitigation Measure	Applicable Project/Source Type ¹	Effective	Feasible (Yes/No)		Secondary Effects (Yes/No)	Agency/Organization/Other ⁶	Description/Comments
		Emissions Reduction/Score ²	Cost (Yes/No) ³	Technical ⁴			
							% reduction = % units deed-restricted below market rate housing * 0.04
MM D-8: Recharging Area	LD (R, M), SP, TP, AQP, RR, P/Mobile	NA/Low	Yes	Yes	Yes	Adverse: No Beneficial: CAPs, TACs	Provide residential buildings with a “utility” room or space for recharging batteries, whether for use in a car, electric lawnmower, other electric landscaping equipment, or even batteries for small items such as flashlights.
fixed-Use Development Measures							
MM D-9: Urban fixed-Use	LD (M), SP, TP, AQP, RR, P/Mobile	3%-9%/Moderate: SMAQMD presents this % reduction (TIAX 2005, EDAW 2006, SMAQMD 2007).	Yes	Yes (EPA 2006)	Yes (EPA 2006)	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties (e.g., SMAQMD). Development of projects predominantly characterized by properties on which various uses, such as office, commercial, institutional, and residential, are combined in a single building or on a single site in an integrated development project with functional interrelationships and a coherent physical design.
MM D-10: Suburban Mixed-Use	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile	3%/Moderate: SMAQMD presents this % reduction (TIAX 2005, EDAW 2006, SMAQMD 2007).	Yes	Yes (EPA 2006)	Yes (EPA 2006)	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties (e.g., SMAQMD). Have at least three of the following on site and/or offsite within one-quarter mile: Residential Development, Retail Development, Park, Open Space, or Office.
MM D-11: Other fixed-Use	LD (R, M), SP, TP, AQP, RR, P/Mobile	1%/Moderate: SMAQMD presents this % reduction (TIAX 2005, EDAW	Yes	Yes (EPA 2006)	Yes (EPA 2006)	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties (e.g., SMAQMD). All residential units are within one-quarter mile of parks, schools or other civic uses.

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Mitigation Measure Summary**

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		Emissions Reduction/Score ²	Cost (Yes/No) ³	Technical ⁴				Logistical ⁵
		2006, SMAQMD 2007).						
MM D-12: Infill Development	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile	3%-30%/High: Infill development reduces vehicle trips and VMT by 3% and 20%, respectively (Fehr & Peers 2007). CCAP identifies a site level VMT reduction range of 20%-30% (Dierkers et al. 2007).	Yes	Yes (Dierkers et al. 2007)	Yes (Dierkers et al. 2007)	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties (e.g., SMAQMD).	Project site is on a vacant infill site, redevelopment area, or brownfield or greyfield lot that is highly accessible to regional destinations, where the destinations rating of the development site (measured as the weighted average travel time to all other regional destinations) is improved by 100% when compared to an alternate greenfield site.
Miscellaneous Measures								
MM D-13: Electric Lawnmower	LD (R, M), SP, AQP, RR, P/Area	1%/Low: SMAQMD presents this % reduction (EDAW 2006, SMAQMD 2007).	Yes	Yes	Yes	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties (e.g., SMAQMD).	Provide a complimentary electric lawnmower to each residential buyer.

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		Emissions Reduction/Score ²	Cost (Yes/No) ³	Technical ⁴	Logistical ⁵			
MM D-14: Enhanced Recycling/Waste Reduction, Reuse, Composting	LD (R, C, M), I, SP, AQP, RR, P/Stationary & Area	NA/Low	Yes	Yes	Yes: Association with social awareness.	Adverse: No Beneficial: CAPs, TACs	CIWMB	Provide infrastructure/education that promotes the avoidance of products with excessive packaging, recycle, buying of refills, separating of food and yard waste for composting, and using rechargeable batteries.
MM D-15: LEED Certification	LD (R, C, M), I, SP, AQP, RR, P/Stationary & Area	NA/Moderate	Yes: Receive tax rebates, incentives (e.g., EDAW San Diego office interior remodel cost \$1,700,000 for 32,500 square feet) (USGBC 2007)	Yes	Yes: More than 700 buildings of different certifications in CA (USGBC 2007).	Adverse: No Beneficial: CAPs, TACs	USGBC, CA air quality management and control districts and cities/counties (e.g., BAAQMD).	LEED promotes a whole-building approach to sustainability by recognizing performance in five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality.
MM D-16: Retro-Commissioning	LD (C, M), I, SP, AQP, RR, P/Stationary & Area	8%-10% reduction in energy usage/Moderate: (Mills et al. 2004)	Yes: Average \$0.28/square feet, varies with building size (Haasl and Sharp 1999).	Yes	Yes: 27 projects underway in CA, 21 more to be completed in 2007, mostly state buildings owned by DGS (DGS 2007).	Adverse: No Beneficial: CAPs, TACs	DGS, CA air quality management and control districts and cities/counties (e.g., BAAQMD).	The process ensures that all building systems perform interactively according to the contract documents, the design intent and the owner's operational needs to optimize energy performance.
MD-17 Landscaping	LD (R, C, M), I, SP, AQP, RR,	NA/Low	Yes	Yes	Yes	Adverse: No Beneficial: CAPs, TACs	Alliance for the Chesapeake Bay, EPA Green Landscaping	Project shall use drought resistant native trees, trees with low emissions and high carbon

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**Table 16
Mitigation Measure Summary**

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		Emissions Reduction/Score ²	Cost (Yes/No) ³	Technical ⁴	Logistical ⁵			
	P/Stationary & Area						Resources	sequestration potential. Evergreen trees on the north and west sides afford the best protection from the setting summer sun and cold winter winds. Additional considerations include the use of deciduous trees on the south side of the house that will admit summer sun; evergreen plantings on the north side will slow cold winter winds; constructing a natural planted channel to funnel summer cooling breezes into the house. Neighborhood CCR's not requiring that front and side yards of single family homes be planted with turf grass. Vegetable gardens, bunch grass, and low-water landscaping shall also be permitted, or even encouraged.
MM D-18: Local Farmers' Market	LD (M), SP/Mobile, Stationary, &	NA/Low	Yes	Yes	Yes: Associated with social	Adverse: No Beneficial: CAPs, TACs	Cities/counties (e.g., Davis, Sacramento)	Project shall dedicate space in a centralized, accessible location for a weekly farmers' market.

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**Table 16
Mitigation Measure Summary**

Mitigation Measure	Applicable Project/Source Type ¹	Effective		Feasible (Yes/No)		Secondary Effects (Yes/No)	Agency/Organization/Other ⁶	Description/Comments
		Emissions Reduction/Score ²	Cost (Yes/No) ³	Technical ⁴	Logistical ⁵			
	Area							choice and public awareness.
MM D-19: Community Gardens	LD (M), SP/Mobile, Stationary, & Area	NA/Low	Yes	Yes	Yes: Associated with social choice and public awareness.	Adverse: No Beneficial: CAPs, TACs	Cities/counties (e.g., Davis)	Project shall dedicate space for community gardens.
Energy Efficiency/Building Component								
MM E-1: High-efficiency pumps	LD (R, C, M), SP, AQP, RR, P/Stationary & Area	NA/Low	Yes	Yes	Yes	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties (e.g., BAAQMD).	Project shall use high-efficiency pumps.
MM E-2: Wood Burning Fireplaces/Stoves	LD (R, M), SP, AQP, RR, P/Stationary & Area	NA/Low: EDAW 2006	Yes	Yes	Yes	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties (e.g., SMAQMD).	Project does not feature fireplaces or wood burning stoves.
MM E-3: Natural Gas Stove	LD (R, M), SP, AQP, RR, P/Stationary & Area	NA/Low: EDAW 2006	Yes: Cost of stove—\$350 (gas) and \$360 (electric) same brand, total yearly cost of \$42.17 as opposed to \$56.65 for electric (Saving Electricity 2006).	Yes	Yes	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties (e.g., SMAQMD).	Project features only natural gas or electric stoves in residences.

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**Table 16
Mitigation Measure Summary**

Mitigation Measure	Applicable Project/Source Type ¹	Effective Emissions Reduction/Score ²	Cost (Yes/No) ³	Feasible (Yes/No)		Secondary Effects (Yes/No)	Agency/Organization/Other ⁶	Description/Comments
				Technical ⁴	Logistical ⁵			
MM E-4: Energy Star Roof	LD (R, C, M), I, SP, AQP, RR, P/Stationary & Area	0.5%-1%/Low: SMAQMD presents this % reduction (EDAW 2006, SMAQMD 2007).	Yes	Yes	Yes: 866 Energy Star labeled buildings in California (Energy Star 2007)	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties (e.g., SMAQMD).	Project installs Energy Star labeled roof materials.
MM E-5: On-site Renewable Energy System	LD (R, C, M), I, SP, AQP, RR, P/Stationary & Area	1%-3%/Moderate: SMAQMD presents this % reduction (USGBC 2002 and 2005, EDAW 2006, SMAQMD 2007).	Yes	Yes (USGBC 2002 and 2005)	Yes (USGBC 2002 and 2005)	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties (e.g., SMAQMD).	Project provides onsite renewable energy system(s). Nonpolluting and renewable energy potential includes solar, wind, geothermal, low-impact hydro, biomass and bio-gas strategies. When applying these strategies, projects may take advantage of net metering with the local utility.

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		Emissions Reduction/Score ²	Cost (Yes/No) ³	Technical ⁴				Logistical ⁵
MM E-6: Exceed Title 24	LD (R, C, M), I, GSP, AQP, RR, P/Stationary & Area	1%/Moderate: SMAQMD presents this % reduction (EDAW 2006, SMAQMD 2007).	Yes	Yes (PG&E 2002, SMUD 2006)	Yes (PG&E 2002, SMUD 2006)	Adverse: No Beneficial: CAPs, TACs	PG&E, SMUD, CA air quality management and control districts and cities/counties (e.g., SMAQMD).	Project exceeds title 24 requirements by 20%.
MM E-7: Solar Orientation	LD (R, C, M), I, SP, AQP, RR, P/Stationary & Area	0.5%/Low: SMAQMD presents this % reduction (EDAW 2006, SMAQMD 2007).	Yes	Yes	Yes	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties (e.g., SMAQMD).	Project orients 75% or more of homes and/or buildings to face either north or south (within 30° of N/S). Building design includes roof overhangs that are sufficient to block the high summer sun, but not the lower winter sun, from penetrating south facing windows. Trees, other landscaping features and other buildings are sited in such a way as to maximize shade in the summer and maximize solar access to walls and windows in the winter.
MM E-8: Nonroof Surfaces	LD (R, C, M), I, GSP, AQP, RR, P/Stationary & Area	1.0%/Low: SMAQMD presents this % reduction (EDAW 2006, SMAQMD 2007).	Yes	Yes (USGBC 2002 and 2005)	Yes (USGBC 2002 and 2005)	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties (e.g., SMAQMD).	Provide shade (within 5 years) and/or use light-colored/high-albedo materials (reflectance of at least 0.3) and/or open grid pavement for at least 30% of the site's nonroof impervious surfaces, including parking lots, walkways, plazas, etc.; OR place a minimum of 50% of parking spaces underground or covered by structured parking; OR use an open-grid pavement system (less than 50% impervious) for a minimum of

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**Table 16
Mitigation Measure Summary**

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		Emissions Reduction/Score ²	Cost (Yes/No) ³	Technical ⁴	Logistical ⁵			
								50% of the parking lot area. The mitigation measure reduces heat islands (thermal gradient differences between developed and undeveloped areas to minimize impact on microclimate and human and wildlife habitats. This measure requires the use of patented or copyright protected methodologies created by the ASTM. The SRI is a measure of the constructed surface's ability to reflect solar heat, as shown by a small rise in temperature. It is defined so that a standard black (reflectance 0.05, emittance 0.90) is "0" and a standard white (reflectance 0.80, emittance 0.90) is 100. To calculate SRI for a given material, obtain the reflectance value and emittance value for the material. SRI is calculated according to ASTM E 1980-01. Reflectance is measured

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		Emissions Reduction/Score ²	Cost (Yes/No) ³	Technical ⁴	Logistical ⁵			
								according to ASTM E 903, ASTM E 1918, or ASTM C 1549. Emittance is measured according to ASTM E 408 or ASTM C 1371. Default values for some materials will be available in the LEED-NC v2.2 Reference Guide.
MM E-9: Low-Energy Cooling	LD (C, M), I, SP, AQP, RR, P/Stationary & Area	1%-10%/Low: EDAW presents this percent reduction range (EDAW 2006).	Yes	Yes (USGBC 2002 and 2005)	Yes (USGBC 2002 and 2005)	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties (e.g., SMAQMD).	Project optimizes building's thermal distribution by separating ventilation and thermal conditioning systems.
MM E-10: Green Roof	LD (R, C, M), I, SP, AQP, RR, P/Stationary & Area	1.0%/Moderate: SMAQMD presents this % reduction (EDAW 2006, SMAQMD 2007).	Yes	Yes (USGBC 2002 and 2005)	Yes (USGBC 2002 and 2005)	Adverse: Increased Water Consumption Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties (e.g., SMAQMD).	Install a vegetated roof that covers at least 50% of roof area. The reduction assumes that a vegetated roof is installed on a least 50% of the roof area or that a combination high albedo and vegetated roof surface is installed that meets the following standard: (Area of SRI Roof/0.75)+(Area of vegetated roof/0.5) >= Total Roof Area. Water consumption reduction measures shall be considered in the design of the green roof.
MM E-11: EV Charging Facilities	LD (C, M), SP, AQP, RR, P/Stationary & Area	NA/Low	Yes: \$500-\$5000/vehicle site (PG&E 1999)	Yes	Yes: 381 facilities in CA (Clean Air Maps 2007).	Adverse: No Beneficial: CAPs, TACs	DOE, EERE, CA air quality management and control districts and cities/counties (e.g., BAAQMD).	Project installs EV charging facilities.
MM E-12:	LD (R, C, M),	NA/Low: Increasing	Yes: Light	Yes	Yes: Apply	Adverse: No		Project provides light-colored

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**Table 16
Mitigation Measure Summary**

Mitigation Measure	Applicable Project/Source Type ¹	Effective	Feasible (Yes/No)		Secondary Effects (Yes/No)	Agency/Organization/Other ⁶	Description/Comments	
		Emissions Reduction/Score ²	Cost (Yes/No) ³	Technical ⁴				Logistical ⁵
Light-Colored Paving	I, SP, AQP, RR, P/Stationary & Area	the albedo of 1,250 km of pavement by 0.25 would save cooling energy worth \$15M per year.	colored aggregates and white cement are more expensive than gray cement. Certain blended cements are very light in color and may reflect similarly to white cement at an equivalent cost to normal gray cement.	Yes	natural sand or gravel colored single surface treatments to asphalt (EOE 2007).	Beneficial: CAPs, TACs	CEC	paving (e.g., increased albedo pavement).
MM E-13: Cool Roofs	LD (R, C, M), I, SP, AQP, RR, P/Stationary & Area	NA/Low	Yes: 0.75–1.5/square feet coating (EPA 2007a)	Yes	Yes: Over 90% of the roofs in the United States are dark colored	Adverse: No Beneficial: CAPs, TACs	CEC	Project provides cool roofs. Highly reflective, highly emissive roofing materials that stay 50-60°F cooler than a normal roof under a hot summer sun. CA's Cool Savings

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		Emissions Reduction/Score ²	Cost (Yes/No) ³	Technical ⁴	Logistical ⁵			
						(EPA 2007a).		Program provided rebates to building owners for installing roofing materials with high solar reflectance and thermal emittance. The highest rebate went to roofs on air conditioned buildings, while buildings with rooftop ducts and other nonresidential buildings were eligible for slightly less. The program aimed to reduce peak summer electricity demand and was administered by the CEC.
MM E-14: Solar Water Heaters	LD (R, M), SP, AQP, RR, P/Stationary & Area	20%–70% reduction in cooling energy needs/Moderate	Yes: \$1675/20 square feet, requires a 50 gallon tank, annual operating cost of \$176 (DOE 2007).	Yes	Yes: Based on solar orientation, building codes, zoning ordinances.	Adverse: No Beneficial: CAPs, TACs	Europe	Project provides solar water heaters.
MM E-15: Electric Yard Equipment Compatibility	LD (R, M), SP, AQP, RR, P/Stationary & Area	NA/Low	Yes: \$75–\$250/outlet from existing circuit (Cost Helper 2007).	Yes	Yes	Adverse: No Beneficial: CAPs, TACs		Project provides electrical outlets at building exterior areas.
MM E-16: Energy Efficient Compliance Standards	LD (R, C, M), SP, AQP, RR, P/Stationary & Area	NA/Low	Yes: Varies for each appliance—higher capital costs, lower operating costs (Energy	Yes	Yes: Major retail stores.	Adverse: No Beneficial: CAPs, TACs		Project uses energy efficient appliances (e.g., Energy Star).

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		Emissions Reduction/Score ²	Cost (Yes/No) ³	Technical ⁴			
			Star 2007).				
MM E-17: Green Building Materials	LD (R, C, M), SP, AQP, RR, P/Stationary & Area	NA/Low: 25-30% more efficient on average.	Yes	Yes: BEES software allows users to balance the environmental and economic performance of building products; developed by NIST (NIST 2007).	Yes	Adverse: No Beneficial: CAPs, TACs	Project uses materials which are resource efficient, recycled, with long life cycles and manufactured in an environmentally friendly way.
MM E-18: Shading Mechanisms	LD (R, C, M), I, SP, AQP, RR, P/Stationary, & Area	NA/Low: Up to \$450 annual energy savings (Energy Star 2007).	Yes: Higher capital costs, lower operating and maintenance costs (Energy Star 2007).	Yes	Yes: Major retail stores.	Adverse: No Beneficial: CAPs, TACs	Install energy-reducing shading mechanisms for windows, porch, patio and walkway overhangs.

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		Emissions Reduction/Score ²	Cost (Yes/No) ³	Technical ⁴			
MM E-19: Ceiling/Whole-House Fans	LD (R, C, M), I, SP, AQP, RR, P/Stationary, & Area	NA/Low: 50% more efficient than conventional fans (Energy Star 2007).	Yes: \$45-\$200/fan, installation extra (Lowe's 2007).	Yes	Yes: Major retail stores.	Adverse: No Beneficial: CAPs, TACs	Install energy-reducing ceiling/whole-house fans.
MM E-20: Programmable Thermostats	LD (R, C, M), I, SP, AQP, RR, P/Stationary, & Area	NA/Low: \$100 annual savings in energy costs (Energy Star 2007).	Yes: \$60/LCD display and 4 settings for typical residential use (Lowe's 2007).	Yes	Yes: Major retail stores.	Adverse: Yes, Mercury Beneficial: CAPs, TACs	Install energy-reducing programmable thermostats that automatically adjust temperature settings.
MM E-21: Passive Heating and Cooling Systems	LD (R, C, M), I, SP, AQP, RR, P/Stationary, & Area	NA/Low	Yes: \$800 (wall heaters) to \$4,000+ (central systems)	Yes	Yes	Adverse: No Beneficial: CAPs, TACs	Install energy-reducing passive heating and cooling systems (e.g., insulation and ventilation).
MM E-22: Day Lighting Systems	LD (R, C, M), I, SP, AQP, RR, P/Stationary, & Area	NA/Low	Yes: \$1,300 to \$1,500 depending upon the kind of roof (Barrier 1995), installation extra.	Yes	Yes: Work well only for space near the roof of the building, little benefit in multi-floor buildings.	Adverse: No Beneficial: CAPs, TACs	Install energy-reducing day lighting systems (e.g., skylights, light shelves and interior transom windows).
MM E-23: Low-Water Use Appliances	LD (R, C, M), I, SP, AQP, RR, P/Stationary, & Area	NA/Low: Avoided water agency cost for using water-efficient kitchen pre-rinse spray valves of \$65.18 per acre-foot.	Yes: Can return their cost through reduction in water consumption,	Yes	Yes	Adverse: No Beneficial: CAPs, TACs	Require the installation of low-water use appliances.

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			Emissions Reduction/Score ²	Cost (Yes/No) ³			
							pumping, and treatment.
MM E-24: Goods Transport by Rail	LD (C, M), I, SP, AQP, RR, P/Mobile	NA/Moderate	Yes	Yes	Yes	Adverse: No Beneficial: CAPs, TACs	ARB Goods Movement Plan (ARB 2007) Provide a spur at nonresidential projects to use nearby rail for goods movement.
Social Awareness/Education							
MM S-1: GHG Emissions Reductions Education	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile, Stationary, & Mobile	NA/Low	Yes	Yes	Yes: Similar programs currently exist in CA.	Adverse: No Beneficial: CAPs, TACs	Provide local governments, businesses, and residents with guidance/protocols/information on how to reduce GHG emissions (e.g., energy saving, food miles).
MM S-2: School Curriculum	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile, Stationary, & Mobile	NA/Low	Yes	Yes	Yes: Similar programs currently exist in CA.	Adverse: No Beneficial: CAPs, TACs	Include how to reduce GHG emissions (e.g., energy saving, food miles) in the school curriculum.
Construction							
MM C-1: ARB-Certified Diesel Construction Equipment	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile	NA/Low	Yes: Oxidation Catalysts, \$1,000-	Yes	Yes	Adverse: Yes, NO _x Beneficial: CAPs, TACs	AG, EPA, ARB, and CA air quality management and pollution control districts. Use ARB-certified diesel construction equipment. Increases CO ₂ emissions when trapped CO and carbon particles

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		Emissions Reduction/Score ²	Cost (Yes/No) ³	Technical ⁴	Logistical ⁵			
			\$2,000. DPF, \$5000-\$10,000; installation extra (EPA 2007b).					are oxidized (Catalyst Products 2007, ETC 2007).
MM C-2: Alternative Fuel Construction Equipment	LD (R, C, M), NA/Low I, SP, TP, AQP, RR, P/Mobile		Yes	Yes	Yes	Adverse: Yes, THC, NO _x Beneficial: CO, PM, SO _x	AG, EPA, ARB, and CA air quality management and pollution control districts.	Use alternative fuel types for construction equipment. At the tailpipe biodiesel emits 10% more CO ₂ than petroleum diesel. Overall lifecycle emissions of CO ₂ from 100% biodiesel are 78% lower than those of petroleum diesel (NREL 1998, EPA 2007b).
MM C-3: Local Building Materials	LD (R, C, M), NA/Low I, SP, TP, AQP, RR, P/Mobile		Yes	Yes	Yes: Depends on location of building material manufacture sites.	Adverse: No Beneficial: CAPs, TACs		Use locally made building materials for construction of the project and associated infrastructure.
MM C-4: Recycle Demolished Construction Material	LD (R, C, M), NA/Low I, SP, TP, AQP, RR, P/Mobile		Yes	Yes	Yes	Adverse: No Beneficial: CAPs, TACs		Recycle/Reuse demolished construction material. Use locally made building materials for construction of the project and associated infrastructure.

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**Table 16
Mitigation Measure Summary**

Mitigation Measure	Applicable Project/Source Type ¹	Effective	Feasible (Yes/No)		Secondary Effects (Yes/No)	Agency/Organization/Other ⁶	Description/Comments
			Emissions Reduction/Score ²	Cost (Yes/No) ³			
Miscellaneous							
MM M-1: Off-Site Mitigation Fee Program	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile & Area	NA/Moderate-High: Though there is currently no program in place, the potential for real and quantifiable reductions of GHG emissions could be high if a defensible fee program were designed.	Yes	Yes	No: Program does not exist in CA, but similar programs currently exist (e.g., Carl Moyer Program, SJVAPCD Rule 9510, SMAQMD Off-Site Construction Mitigation Fee Program).	Adverse: No Beneficial: CAPs, TACs	Provide/Pay into an off-site mitigation fee program, which focuses primarily on reducing emissions from existing development and buildings through retro-fit (e.g., increased insulation).
MM M-2: Offset Purchase	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile, Stationary, & Area	NA/Low	Yes	Yes	No: ARB has not adopted official program, but similar programs	No	Provide/purchase offsets for additional emissions by acquiring carbon credits or engaging in other market “cap and trade” systems.

AG=Attorney General; ARB=California Air Resources Board; ASTM=American Society for Testing and Material; BAAQMD=Bay Area Air Quality Management District; BEES= Building for Environmental and Economic Sustainability; CA=California; Caltrans=California Department of Transportation; CAPs=Criteria Air Pollutants; CCAP=Center for Clean Air Policy; CF=Connectivity Factor; CIWMB=California Integrated Waste Management Board; CO= Carbon Monoxide; CO₂=Carbon Dioxide; DGS=Department of General Services; DOE=U.S. Department of Energy; DPF=Diesel particulate Filter; E85=85% Ethanol; EERE=Energy Efficiency and Renewable Energy; EOE=Encyclopedia of Earth; EPA=U.S. Environmental Protection Agency; ETC=Edmonton Trolley Coalition; EVs/CNG=Electric Vehicles/Compressed Natural Gas; FAR=Floor Area Ratio; GHG=Greenhouse Gas; ITE=Institute of Transportation Engineers; kg/m²=kilogram per square meter; km=Kilometer; lb=pound; LEED=Leadership in Energy and Environmental Design; M=Million; NA=Not Available; NEV=Neighborhood Electric Vehicle; NIST=National Institute of Standards and Technology; NO_x=Oxides of Nitrogen; NREL=National Renewable Energy Laboratory; N/S=North/South; PG&E=Pacific Gas and Electric; PM=Particulate Matter; SJVAPCD=San Joaquin Valley Air Pollution Control District; SMAQMD=Sacramento Metropolitan Air Quality Management District; SMUD=Sacramento Municipal Utilities District; SO_x=Sulfur Oxides; SRI=Solar Reflectance Index; TACs=Toxic Air Contaminants; TDM=Transportation Demand Management; TMA=Transportation Management Association; THC=Total Hydrocarbon; ULEV=Ultra Low Emission Vehicle; USGBC=U.S. Green Building Council; and VTPI=Victoria Transit Policy.

**Table 16
Mitigation Measure Summary**

Mitigation Measure	Applicable Project/Source Type ¹	Effective	Feasible (Yes/No)		Secondary Effects (Yes/No)	Agency/Organization/Other ⁶	Description/Comments
		Emissions Reduction/Score ²	Cost (Yes/No) ³	Technical ⁴			
currently exist.							
Regional Transportation Plan Measures							
MM RTP-1: Dedicate High Occupancy Vehicle (HOV) lanes prior to adding capacity to existing highways.	RTP	Yes	Yes	Yes	Adverse: possible local CO Beneficial: regional CAPs, TACs	Caltrans, local government	Evaluate the trip reduction (and GHG reduction) potential of adding HOV lanes prior to adding standard lanes.
IM RTP-2: Implement toll/user fee programs prior to adding capacity to existing highways.	RTP	Yes	Yes	Yes	Adverse: possible local CO. Beneficial: regional CAPs, TACs	Caltrans	Evaluate price elasticity and associated trip reduction (and GHG reduction) potential with adding or increasing tolls prior to adding capacity to existing highways.
<p>Note: ¹ Where LD (R, C, M) =Land Development (Residential, Commercial, Mixed-Use), I=Industrial, GP=General Plan, SP=Specific Plan, TP=Transportation Plans, AQP=Air Quality Plans, RR=Rules/Regulations, and P=Policy. It is important to note that listed project types may not be directly specific to the mitigation measure (e.g., TP, AQP, RR, and P) as such could apply to a variety of source types, especially RR and P. ² This score system entails ratings of high, moderate, and low that refer to the level of the measure to provide a substantive, reasonably certain (e.g., documented emission reductions with proven technologies), and long-term reduction of GHG emissions. ³ Refers to whether the measure would provide a cost-effective reduction of GHG emissions based on available documentation. ⁴ Refers to whether the measure is based on currently, readily available technology based on available documentation. ⁵ Refers to whether the measure could be implemented without extraordinary effort based on available documentation. ⁶ List is not meant to be all inclusive. Source: Data compiled by EDAW in 2007</p>							

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**Table 17
General Planning Level Mitigation Strategies Summary**

Strategy	Source Type ¹	Agency/Organization ²	Description/Comments
MS G-1: Adopt a GHG reduction plan	GP/ Mobile, Stationary, & Area	City of San Bernardino	<p>- Adopt GHG reduction targets for the planning area, based on the current legislation providing direction for state-wide targets, and update the plan as necessary.</p> <p>-The local government agency should serve as a model by inventorying its GHG emissions from agency operations, and implementing those reduction goals.</p>
Circulation			
MS G-2: Provide for convenient and safe local travel	GP/ Mobile	Cities/Counties (e.g., Aliso Viejo, Claremont)	<p>- Create a gridded street pattern with small block sizes. This promotes walkability through direct routing and ease of navigation.</p> <p>-Maintain a high level of connectivity of the roadway network. Minimize cul-de-sacs and incomplete roadway segments.</p> <p>-Plan and maintain an integrated, hierarchical and multi-modal system of roadways, pedestrian walks, and bicycle paths throughout the area.</p> <p>-Apply creative traffic management approaches to address congestion in areas with unique problems, particularly on roadways and intersections in the vicinity of schools in the morning and afternoon peak hours, and near churches, parks and community centers.</p> <p>-Work with adjacent jurisdictions to address the impacts of regional development patterns (e.g. residential development in surrounding communities, regional universities, employment centers, and commercial developments) on the circulation system.</p> <p>-Actively promote walking as a safe mode of local travel, particularly for children attending local schools. -Employ traffic calming methods such as median landscaping and provision of bike or transit lanes to slow traffic, improve roadway capacity, and address safety issues.</p>
MS G-3: Enhance the regional transportation network and maintain effectiveness	GP/ Mobile	Cities/Counties (e.g., Aliso Viejo, Claremont)	<p>-Encourage the transportation authority to reduce fees for short distance trips.</p> <p>-Ensure that improvements to the traffic corridors do not negatively impact the operation of local roadways and land uses.</p>

**Table 17
General Planning Level Mitigation Strategies Summary**

Strategy	Source Type ¹	Agency/Organization ²	Description/Comments
			<ul style="list-style-type: none"> -Cooperate with adjacent jurisdictions to maintain adequate service levels at shared intersections and to provide adequate capacity on regional routes for through traffic. -Support initiatives to provide better public transportation. Work actively to ensure that public transportation is part of every regional transportation corridor. - Coordinate the different modes of travel to enable users to transfer easily from one mode to another. -Work to provide a strong paratransit system that promotes the mobility of all residents and educate residents about local mobility choices. - Promote transit-oriented development to facilitate the use of the community’s transit services.
<p>MS G-4: Promote and support an efficient public transportation network connecting activity centers in the area to each other and the region.</p>	<p>GP/ Mobile</p>	<p>Cities/Counties (e.g., Aliso Viejo, Claremont)</p>	<ul style="list-style-type: none"> -Promote increased use of public transportation and support efforts to increase bus service range and frequency within the area as appropriate. -Enhance and encourage provision of attractive and appropriate transit amenities, including shaded bus stops, to encourage use of public transportation. -Encourage the school districts, private schools and other operators to coordinate local bussing and to expand ride-sharing programs. All bussing options should be fully considered before substantial roadway improvements are made in the vicinity of schools to ease congestion.
<p>MS G-5: Establish and maintain a comprehensive system, which is safe and convenient, of pedestrian ways and bicycle routes that provide viable options to travel by automobile.</p>	<p>GP/ Mobile</p>	<p>Cities/Counties (e.g., Aliso Viejo, Claremont)</p>	<ul style="list-style-type: none"> -Improve area sidewalks and rights-of-way to make them efficient and appealing for walking and bicycling safely. Coordinate with adjacent jurisdictions and regional agencies to improve pedestrian and bicycle trails, facilities, signage, and amenities. -Provide safe and convenient pedestrian and bicycle connections to and from town centers, other commercial districts, office complexes, neighborhoods, schools, other major activity centers, and surrounding communities. -Work with neighboring jurisdictions to provide well-designed pedestrian and bicycle crossings of major roadways. -Promote walking throughout the community. Install sidewalks where missing and make improvements

**Table 17
General Planning Level Mitigation Strategies Summary**

Strategy	Source Type ¹	Agency/Organization ²	Description/Comments
			<p>to existing sidewalks for accessibility purposes. Particular attention should be given to needed sidewalk improvement near schools and activity centers.</p> <ul style="list-style-type: none"> -Encourage businesses or residents to sponsor street furniture and landscaped areas. - Strive to provide pedestrian pathways that are well shaded and pleasantly landscaped to encourage use. - Attract bicyclists from neighboring communities to ride their bicycles or to bring their bicycles on the train to enjoy bicycling around the community and to support local businesses. - Meet guidelines to become nationally recognized as a Bicycle-Friendly community. - Provide for an education program and stepped up code enforcement to address and minimize vegetation that degrades access along public rights-of-way. -Engage in discussions with transit providers to increase the number of bicycles that can be accommodated on buses
<p>MS G-6: Achieve optimum use of regional rail transit.</p>	<p>GP/ Mobile</p>	<p>Cities/Counties (e.g., Aliso Viejo, Claremont)</p>	<ul style="list-style-type: none"> -Support regional rail and work with rail authority to expand services. - Achieve better integration of all transit options. -Work with regional transportation planning agencies to finance and provide incentives for multimodal transportation systems. - Promote activity centers and transit-oriented development projects around the transit station.
<p>MS G-7: Expand and optimize use of local and regional bus and transit systems.</p>	<p>GP/ Mobile</p>	<p>Cities/Counties (e.g., Aliso Viejo, Claremont)</p>	<ul style="list-style-type: none"> -Encourage convenient public transit service between area and airports. -Support the establishment of a local shuttle to serve commercial centers. -Promote convenient, clean, efficient, and accessible public transit that serves transit-dependent riders and attracts discretionary riders as an alternative to reliance on single-occupant automobiles.

**Table 17
General Planning Level Mitigation Strategies Summary**

Strategy	Source Type ¹	Agency/Organization ²	Description/Comments
			<ul style="list-style-type: none"> - Empower seniors and those with physical disabilities who desire maximum personal freedom and independence of lifestyle with unimpeded access to public transportation. -Integrate transit service and amenities with surrounding land uses and buildings.
Conservation, Open Space			
<p>MS G-8: Emphasize the importance of water conservation and maximizing the use of native, low-water landscaping.</p>	<p>GP/Stationary & Area</p>	<p>Cities/Counties (e.g., Aliso Viejo, Claremont)</p>	<ul style="list-style-type: none"> -Reduce the amount of water used for landscaping and increase use of native and low water plants. Maximize use of native, low-water plants for landscaping of areas adjacent to sidewalks or other impermeable surfaces. -Encourage the production, distribution and use of recycled and reclaimed water for landscaping projects throughout the community, while maintaining urban runoff water quality objectives. -Promote water conservation measures, reduce urban runoff, and prevent groundwater pollution within development projects, property maintenance, area operations and all activities requiring approval. -Educate the public about the importance of water conservation and avoiding wasteful water habits. -Work with water provider in exploring water conservation programs, and encourage the water provider to offer incentives for water conservation.
<p>MS G-9: Improve air quality within the region.</p>	<p>GP/ Mobile, Stationary, & Area</p>	<p>Cities/Counties (e.g., Aliso Viejo, Claremont)</p>	<ul style="list-style-type: none"> -Integrate air quality planning with area land use, economic development and transportation planning efforts. -Support programs that reduce air quality emissions related to vehicular travel. -Support alternative transportation modes and technologies, and develop bike- and pedestrian-friendly neighborhoods to reduce emissions associated with automobile use. -Encourage the use of clean fuel vehicles. -Promote the use of fuel-efficient heating and cooling equipment and other appliances, such as water

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**Table 17
General Planning Level Mitigation Strategies Summary**

Strategy	Source Type ¹	Agency/Organization ²	Description/Comments
			<p>heaters, swimming pool heaters, cooking equipment, refrigerators, furnaces, and boiler units.</p> <ul style="list-style-type: none"> - Promote the use of clean air technologies such as fuel cell technologies, renewable energy sources, UV coatings, and alternative, non-fossil fuels. -Require the planting of street trees along streets and inclusion of trees and landscaping for all development projects to help improve airshed and minimize urban heat island effects. - Encourage small businesses to utilize clean, innovative technologies to reduce air pollution. - Implement principles of green building. - Support jobs/housing balance within the community so more people can both live and work within the community. To reduce vehicle trips, encourage people to telecommute or work out of home or in local satellite offices.
<p>MS G-10: Encourage and maximize energy conservation and identification of alternative energy sources.</p>	<p>GP/ Stationary & Area</p>	<p>Cities/Counties (e.g., Aliso Viejo, Claremont)</p>	<ul style="list-style-type: none"> -Encourage green building designs for new construction and renovation projects within the area. -Coordinate with regional and local energy suppliers to ensure adequate supplies of energy to meet community needs, implement energy conservation and public education programs, and identify alternative energy sources where appropriate. -Encourage building orientations and landscaping that enhance natural lighting and sun exposure. -Encourage expansion of neighborhood-level products and services and public transit opportunities throughout the area to reduce automobile use. - Incorporate the use of energy conservation strategies in area projects. - Promote energy-efficient design features, including appropriate site orientation, use of light color roofing and building materials, and use of evergreen trees and wind-break trees to reduce fuel consumption for heating and cooling.

**Table 17
General Planning Level Mitigation Strategies Summary**

Strategy	Source Type ¹	Agency/Organization ²	Description/Comments
			<ul style="list-style-type: none"> -Explore and consider the cost/benefits of alternative fuel vehicles including hybrid, natural gas, and hydrogen powered vehicles when purchasing new vehicles. -Continue to promote the use of solar power and other energy conservation measures. - Encourage residents to consider the cost/benefits of alternative fuel vehicles. - Promote the use of different technologies that reduce use of non-renewable energy resources. -Facilitate the use of green building standards and LEED in both private and public projects. -Promote sustainable building practices that go beyond the requirements of Title 24 of the California Administrative Code, and encourage energy-efficient design elements, as appropriate. -Support sustainable building practices that integrate building materials and methods that promote environmental quality, economic vitality, and social benefit through the design, construction, and operation of the built environment. - Investigate the feasibility of using solar (photovoltaic) street lights instead of conventional street lights that are powered by electricity in an effort to conserve energy. - Encourage cooperation between neighboring development to facilitate on-site renewable energy supplies or combined heat and power co-generation facilities that can serve the energy demand of contiguous development.

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**Table 17
General Planning Level Mitigation Strategies Summary**

Strategy	Source Type ¹	Agency/Organization ²	Description/Comments
<p>MS G-11: Preserve unique community forests, and provide for sustainable increase and maintenance of this valuable resource.</p>	<p>GP/Stationary & Area</p>	<p>Cities/Counties (e.g., Aliso Viejo, Claremont)</p>	<ul style="list-style-type: none"> - Develop a tree planting policy that strives to accomplish specific % shading of constructed paved and concrete surfaces within five years of construction. -Provide adequate funding to manage and maintain the existing forest, including sufficient funds for tree planting, pest control, scheduled pruning, and removal and replacement of dead trees. -Coordinate with local and regional plant experts in selecting tree species that respect the natural region in which Claremont is located, to help create a healthier, more sustainable urban forest. - Continue to plant new trees (in particular native tree species where appropriate), and work to preserve mature native trees. -Increase the awareness of the benefits of street trees and the community forest through a area wide education effort. -Encourage residents to properly care for and preserve large and beautiful trees on their own private property.
<p>Housing</p>			
<p>MS G-12: Provide affordability levels to meet the needs of community residents.</p>	<p>GP/ Mobile</p>	<p>Cities/Counties (e.g., Aliso Viejo, Claremont)</p>	<ul style="list-style-type: none"> -Encourage development of affordable housing opportunities throughout the community, as well as development of housing for elderly and low and moderate income households near public transportation services. -Ensure a portion of future residential development is affordable to low and very low income households.
<p>Land Use</p>			
<p>MS G-13: Promote a visually-cohesive urban form and establish connections between the urban core and outlying portions of the</p>	<p>GP/ Mobile, Stationary, & Area</p>	<p>Cities/Counties (e.g., Aliso Viejo, Claremont)</p>	<ul style="list-style-type: none"> -Preserve the current pattern of development that encourages more intense and higher density development at the core of the community and less intense uses radiating from the central core. -Create and enhance landscaped greenway, trail and sidewalk connections between neighborhoods and to commercial areas, town centers, and parks.

**Table 17
General Planning Level Mitigation Strategies Summary**

Strategy	Source Type ¹	Agency/Organization ²	Description/Comments
community.			<p>-Identify ways to visually identify and physically connect all portions of the community, focusing on enhanced gateways and unifying isolated and/or outlying areas with the rest of the area.</p> <p>-Study and create a diverse plant identity with emphasis on drought-resistant native species.</p>
<p>MS G-14: Provide a diverse mix of land uses to meet the future needs of all residents and the business community.</p>	GP/ Mobile	<p>Cities/Counties (e.g., Aliso Viejo, Claremont)</p>	<p>-Attract a broad range of additional retail, medical, and office uses providing employment at all income levels.</p> <p>-Support efforts to provide beneficial civic, religious, recreational, cultural and educational opportunities and public services to the entire community.</p> <p>-Coordinate with public and private organizations to maximize the availability and use of parks and recreational facilities in the community.</p> <p>-Support development of hotel and recreational commercial land uses to provide these amenities to local residents and businesses.</p>
<p>MS G-15: Collaborate with providers of solid waste collection, disposal and recycling services to ensure a level of service that promotes a clean community and environment.</p>	GP/ Stationary, & Area	<p>Cities/Counties (e.g., Aliso Viejo, Claremont)</p>	<p>-Require recycling, composting, source reduction and education efforts throughout the community, including residential, businesses, industries, and institutions, within the construction industry, and in all sponsored activities.</p>
<p>MS G-16: Promote construction, maintenance and active use of publicly- and privately-operated parks, recreation programs, and a community center.</p>	GP/ Mobile	<p>Cities/Counties (e.g., Aliso Viejo, Claremont)</p>	<p>-Work to expand and improve community recreation amenities including parks, pedestrian trails and connections to regional trail facilities.</p> <p>-As a condition upon new development, require payment of park fees and/or dedication and provision of parkland, recreation facilities and/or multi-use trails that improve the public and private recreation system.</p> <p>-Research options or opportunities to provide necessary or desired community facilities.</p>

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**Table 17
General Planning Level Mitigation Strategies Summary**

Strategy	Source Type ¹	Agency/Organization ²	Description/Comments
MS G-17: Promote the application of sustainable development practices.	GP/ Mobile, Stationary, & Area	Cities/Counties (e.g., Aliso Viejo, Claremont)	<ul style="list-style-type: none"> - Encourage sustainable development that incorporates green building best practices and involves the reuse of previously developed property and/or vacant sites within a built-up area. - Encourage the conservation, maintenance, and rehabilitation of the existing housing stock. -Encourage development that incorporates green building practices to conserve natural resources as part of sustainable development practices. -Avoid development of isolated residential areas in the hillsides or other areas where such development would require significant infrastructure investment, adversely impact biotic resources. - Provide land area zoned for commercial and industrial uses to support a mix of retail, office, professional, service, and manufacturing businesses.
MS G-18: Create activity nodes as important destination areas, with an emphasis on public life within the community.	GP/ Mobile	Cities/Counties (e.g., Aliso Viejo, Claremont)	<ul style="list-style-type: none"> -Provide pedestrian amenities, traffic-calming features, plazas and public areas, attractive streetscapes, shade trees, lighting, and retail stores at activity nodes. -Provide for a mixture of complementary retail uses to be located together to create activity nodes to serve adjacent neighborhoods and to draw visitors from other neighborhoods and from outside the area.
MS G-19: Make roads comfortable, safe, accessible, and attractive for use day and night.	GP/ Mobile	Cities/Counties (e.g., Aliso Viejo, Claremont)	<ul style="list-style-type: none"> -Provide crosswalks and sidewalks along streets that are accessible for people with disabilities and people who are physically challenged. -Provide lighting for walking and nighttime activities, where appropriate. -Provide transit shelters that are comfortable, attractive, and accommodate transit riders.
MS G-20: Maintain and expand where possible the system of neighborhood connections that attach neighborhoods to larger roadways.	GP/ Mobile	Cities/Counties (e.g., Aliso Viejo, Claremont)	<ul style="list-style-type: none"> - Provide sidewalks where they are missing, and provide wide sidewalks where appropriate with buffers and shade so that people can walk comfortably. -Make walking comfortable at intersections through traffic-calming, landscaping, and designated crosswalks.

**Table 17
General Planning Level Mitigation Strategies Summary**

Strategy	Source Type ¹	Agency/Organization ²	Description/Comments
MS G-21: Create distinctive places throughout the area.	GP/ Mobile	Cities/Counties (e.g., Aliso Viejo, Claremont)	<ul style="list-style-type: none"> -Look for opportunities for connections along easements & other areas where vehicles not permitted. -Provide benches, streetlights, public art, and other amenities in public areas to attract pedestrian activities. -Encourage new developments to incorporate drought tolerant and native landscaping that is pedestrian friendly, attractive, and consistent with the landscaped character of area. -Encourage all new development to preserve existing mature trees. -Encourage streetscape design programs for commercial frontages that create vibrant places which support walking, bicycling, transit, and sustainable economic development. -Encourage the design and placement of buildings on lots to provide opportunities for natural systems such as solar heating and passive cooling. - Ensure that all new industrial development projects are positive additions to the community setting, provide amenities for the comfort of the employees such as outdoor seating area for breaks or lunch, and have adequate landscape buffers.
MS G-22: Reinvest in existing neighborhoods and promote infill development as a preference over new, greenfield development	GP/ Mobile, Stationary, & Area	Cities/Counties (e.g., Aliso Viejo, Claremont)	<ul style="list-style-type: none"> - Identify all underused properties in the plan area and focus development in these opportunity sites prior to designating new growth areas for development. - Implement programs to retro-fit existing structures to make them more energy-efficient. -Encourage compact development, by placing the desired activity areas in smaller spaces.

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**Table 17
General Planning Level Mitigation Strategies Summary**

Strategy	Source Type ¹	Agency/Organization ²	Description/Comments
Public Safety			
MS G-23: Promote a safe community in which residents can live, work, shop, and play.	GP/ Mobile	Cities/Counties (e.g., Aliso Viejo, Claremont)	- Foster an environment of trust by ensuring non-biased policing, and by adopting policies and encouraging collaboration that creates transparency. - Facilitate traffic safety for motorists and pedestrians through proper street design and traffic monitoring.
Note: ¹ Where GP=General Plan. ² List is not meant to be all inclusive. Source: Data compiled by EDAW in 2007			



Appendix C

Rule and Regulation Summary

**Table 18
Rule and Regulation Summary**

Rule/Regulation	Reduction	Implementation Date	Agency	Description	Comments
Low Carbon Fuel Standard	10-20 MMT CO ₂ e by 2020	January 1, 2010	ARB	This rule/regulation will require fuel providers (e.g., producers, importers, refiners and blenders) to ensure that the mix of fuels they sell in CA meets the statewide goal to reduce the carbon intensity of CA's transportation fuels by at least 10% by the 2020 target.	ARB Early Action Measure
Reduction of HFC-134a Emissions from Nonprofessional Servicing of Motor Vehicle Air Conditioning Systems	1-2 MMT CO ₂ e by 2020	January 1, 2010	ARB	This rule/regulation will restrict the use of high GWP refrigerants for nonprofessional recharging of leaky automotive air conditioning systems.	ARB Early Action Measure
Landfill Gas Recovery	2-4 MMT CO ₂ e by 2020	January 1, 2010	IWMB, ARB	This rule/regulation will require landfill gas recovery systems on small to medium landfills that do not have them and upgrade the requirements at landfills with existing systems to represent best capture and destruction efficiencies.	ARB Early Action Measure
Vehicle Climate Change Standards (AB 1493 Pavley, Chapter 200, Statutes of 2002)	30 MMT CO ₂ e by 2020	2009	ARB	This rule/regulation will require ARB to achieve the maximum feasible and cost effective reduction of GHG emissions from passenger vehicles and light-duty trucks.	ARB Early Action Measure
Reduction of PFCs from the Semiconductor Industry	0.5 MMT CO ₂ e by 2020	2007-2009	ARB	This rule/regulation will reduce GHG emissions by process improvements/source reduction, alternative chemicals capture and beneficial reuse, and destruction technologies	Underway or to be initiated by CAT members in 2007-2009 period

AB=Assembly Bill; ARB=California Air Resources Board; Calfire=California Fire; CA=California; Caltrans=California Department of Transportation; CAT=California Action Team; CEC=California Energy Commission; CDFA=California Department of Food and Agriculture; CH₄=Methane; CO₂=Carbon Dioxide; CPUC=California Public Utilities Commission; CUFR=California Urban Forestry; DGS=Department of General Services; DWR=Department of Water Resources; GHG=Greenhouse Gas; GWP=Global Warming Potential; IGCC= Integrated Gasification Combined Cycle; IOU= Investor-Owned Utility; IT=Information Technology; IWCB= Integrated Waste Management Board; LNG= Liquefied Natural Gas; MMT CO₂e=Million Metric Tons Carbon Dioxide Equivalent; MW=Megawatts; NA=Not Available; N₂O=Nitrous Oxide; PFC= Perfluorocompound; POU= Publicly Owned Utility; RPS= Renewable Portfolio Standards; RTP=Regional Transportation Plan SB=Senate Bill; SWP=State Water Project; TBD=To Be Determined; UC/CSU=University of California/California State University; ULEV=Ultra Low Emission Vehicle.

**Table 18
Rule and Regulation Summary**

Rule/Regulation	Reduction	Implementation Date	Agency	Description	Comments
Restrictions on High GWP Refrigerants	9 MMT CO ₂ e by 2020	2010	ARB	This rule/regulation will expand and enforce the national ban on release of high GWP refrigerants during appliance lifetime.	ARB Early Action Measure
Cement Manufacture	<1 MMT CO ₂ e per year (based on 2004 production levels)	2010	Caltrans	This rule/regulation will allow 2.5% interground limestone concrete mix in cement use.	CAT Early Action Measure
Hydrogen Fuel Standards (SB 76 of 2005)	TBD	By 2008	CDFA	This rule/regulation will develop hydrogen fuel standards for use in combustion systems and fuel cells.	CAT Early Action Measure
Regulation of GHG from Load Serving Entities (SB 1368)	15 MMT CO ₂ e by 2020	May 23, 2007	CEC, CPUC	This rule/regulation will establish a GHG emission performance standard for baseload generation of local publicly owned electric utilities that is no higher than the rate of emissions of GHG for combined-cycle natural gas baseload generation.	CAT Early Action Measure
Energy Efficient Building Standards	TBD	In 2008	CEC	This rule/regulation will update of Title 24 standards.	CAT Early Action Measure
Energy Efficient Appliance Standards	TBD	January 1, 2010	CEC	This rule/regulation will regulate light bulb efficiency	CAT Early Action Measure
Tire Efficiency (Chapter 8.7 Division 15 of the Public Resources Code)	<1 MMT CO ₂ e by 2020	January 1, 2010	CEC & IWMB	This rule/regulation will ensure that replacement tires sold in CA are at least as energy efficient, on average, as tires sold in the state as original equipment on these vehicles.	CAT Early Action Measure
New Solar Homes Partnership	TBD	January 2007	CEC	Under this rule/regulation, approved solar systems will receive incentive funds based on system performance above building standards.	CAT Early Action Measure

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**Table 18
Rule and Regulation Summary**

Rule/Regulation	Reduction	Implementation Date	Agency	Description	Comments
Water Use Efficiency	1 MMT CO ₂ e by 2020	2010	DWR	This rule/regulation will adopt standards for projects and programs funded through water bonds that would require consideration of water use efficiency in construction and operation.	CAT Early Action Measure
State Water Project	TBD	2010	DWR	This rule/regulation will include feasible and cost effective renewable energy in the SWP's portfolio.	CAT Early Action Measure
Cleaner Energy for Water Supply	TBD	2010	DWR	Under this rule/regulation, energy supply contracts with conventional coal power plants will not be renewed.	CAT Early Action Measure
IOU Energy Efficiency Programs	4 MMT CO ₂ e by 2020	2010	CPUC	This rule/regulation will provide a risk/reward incentive mechanism for utilities to encourage additional investment in energy efficiency; evaluate new technologies and new measures like encouraging compact fluorescent lighting in residential and commercial buildings	CAT Early Action Measure
Solar Generation	TBD	2007–2009	DGS	3 MW of clean solar power generation implemented in CA last year, with another 1 MW coming up. The second round is anticipated to total additional 10 MW and may include UC/CSU campuses and state fairgrounds.	Underway or to be initiated by CAT members in 2007-2009 period

AB=Assembly Bill; ARB=California Air Resources Board; Calfire=California Fire; CA=California; Caltrans=California Department of Transportation; CAT=California Action Team; CEC=California Energy Commission; CDFA=California Department of Food and Agriculture; CH₄=Methane; CO₂=Carbon Dioxide; CPUC=California Public Utilities Commission; CUFR=California Urban Forestry; DGS=Department of General Services; DWR=Department of Water Resources; GHG=Greenhouse Gas; GWP=Global Warming Potential; IGCC= Integrated Gasification Combined Cycle; IOU= Investor-Owned Utility; IT=Information Technology; IWCB= Integrated Waste Management Board; LNG= Liquefied Natural Gas; MMT CO₂e=Million Metric Tons Carbon Dioxide Equivalent; MW=Megawatts; NA=Not Available; N₂O=Nitrous Oxide; PFC= Perfluorocompound; POU= Publicly Owned Utility; RPS= Renewable Portfolio Standards; RTP=Regional Transportation Plan SB=Senate Bill; SWP=State Water Project; TBD=To Be Determined; UC/CSU=University of California/California State University; ULEV=Ultra Low Emission Vehicle.

**Table 18
Rule and Regulation Summary**

Rule/Regulation	Reduction	Implementation Date	Agency	Description	Comments
Transportation Efficiency	9 MMT CO ₂ e by 2020	2007–2009	Caltrans	This rule/regulation will reduce congestion, improve travel time in congested corridors, and promote coordinated, integrated land use.	Underway or to be initiated by CAT members in 2007-2009 period
Smart Land Use and Intelligent Transportation	10 MMT CO ₂ e by 2020	2007–2009	Caltrans	This rule/regulation will integrate consideration of GHG reduction measures and energy efficiency factors into RTPs, project development etc.	Underway or to be initiated by CAT members in 2007-2009 period
Cool Automobile Paints	1.2 to 2.0 MMT CO ₂ e by 2020	2009	ARB	Cool paints would reduce the solar heat gain in a vehicle and reduce air conditioning needs.	ARB Early Action Measure
Tire Inflation Program	TBD	2009	ARB	This rule/regulation will require tires to be checked and inflated at regular intervals to improve fuel economy.	ARB Early Action Measure
Electrification of Stationary Agricultural Engines	0.1 MMT CO ₂ e by 2020	2010	ARB	This rule/regulation will provide incentive funding opportunities for replacing diesel engines with electric motors.	ARB Early Action Measure
Desktop Power Management	Reduce energy use by 50%	2007–2009	DGS, ARB	This rule/regulation will provide software to reduce electricity use by desktop computers by up to 40%.	Currently deployed in DGS
Reducing CH ₄ Venting/Leaking from Oil and Gas Systems (EJAC-3/ARB 2-12)	1 MMT CO ₂ e by 2020	2010	ARB	This rule/regulation will reduce fugitive CH ₄ emissions from production, processing, transmission, and distribution of natural gas and oil.	ARB Early Action Measure
Replacement of High GWP Gases Used in Fire Protection Systems with Alternate Chemical (ARB 2-10)	0.1 MMT CO ₂ e by 2020	2011	ARB	This rule/regulation will require the use of lower GWP substances in fire protection systems.	ARB Early Action Measure
Contracting for Environmentally Preferable Products	NA	2007–2009	DGS	New state contracts have been or are being created for more energy and resource efficient IT goods, copiers, low mercury fluorescent lamps, the CA Gold Carpet Standard and office furniture.	Underway or to be initiated by CAT members in 2007-2009 period
Hydrogen Fuel Cells	NA	2007–2009	DGS	This rule/regulation will incorporate clean hydrogen fuel cells in stationary applications	Underway or to be initiated by CAT members in 2007-2009

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Table 18 Rule and Regulation Summary					
Rule/Regulation	Reduction	Implementation Date	Agency	Description	Comments
				at State facilities and as back-up generation for emergency radio services.	period
High Performance Schools	NA	2007–2009	DGS	New guidelines adopted for energy and resource efficient schools; up to \$100 million in bond money for construction of sustainable, high performance schools.	Underway or to be initiated by CAT members in 2007-2009 period
Urban Forestry	1 MMT CO ₂ e by 2020	2007–2009	Calfire, CUFR	This rule/regulation will provide five million additional trees in urban areas by 2020.	Underway or to be initiated by CAT members in 2007-2009 period
Fuels Management/Biomass	3 MMT CO ₂ e by 2020	2007–2009	Calfire	This rule/regulation will provide biomass from forest fuel treatments to existing biomass utilization facilities.	Underway or to be initiated by CAT members in 2007-2009 period
Forest Conservation and Forest Management	10 MMT CO ₂ e by 2020	2007–2009	Calfire, WCB	This rule/regulation will provide opportunities for carbon sequestration in Proposition 84 forest land conservation program to conserve an additional 75,000 acres of forest landscape by 2010.	Underway or to be initiated by CAT members in 2007-2009 period
Afforestation/Reforestation	2 MMT CO ₂ e by 2020	2007–2009	Calfire	This rule/regulation will subsidize tree planting.	Underway or to be initiated by CAT members in 2007-2009 period
Dairy Digesters	TBD	January 1, 2010	CDFA	This rule/regulation will develop a dairy digester protocol to document GHG emission reductions from these facilities.	ARB Early Action Measure

AB=Assembly Bill; ARB=California Air Resources Board; Calfire=California Fire; CA=California; Caltrans=California Department of Transportation; CAT=California Action Team; CEC=California Energy Commission; CDFA=California Department of Food and Agriculture; CH₄=Methane; CO₂=Carbon Dioxide; CPUC=California Public Utilities Commission; CUFR=California Urban Forestry; DGS=Department of General Services; DWR=Department of Water Resources; GHG=Greenhouse Gas; GWP=Global Warming Potential; IGCC= Integrated Gasification Combined Cycle; IOU= Investor-Owned Utility; IT=Information Technology; IWCB= Integrated Waste Management Board; LNG= Liquefied Natural Gas; MMT CO₂e=Million Metric Tons Carbon Dioxide Equivalent; MW=Megawatts; NA=Not Available; N₂O=Nitrous Oxide; PFC= Perfluorocompound; POU= Publicly Owned Utility; RPS= Renewable Portfolio Standards; RTP=Regional Transportation Plan SB=Senate Bill; SWP=State Water Project; TBD=To Be Determined; UC/CSU=University of California/California State University; ULEV=Ultra Low Emission Vehicle.

**Table 18
Rule and Regulation Summary**

Rule/Regulation	Reduction	Implementation Date	Agency	Description	Comments
Conservation Tillage and Enteric Fermentation	1 MMT CO ₂ e by 2020	2007–2009	CDFA	This rule/regulation will develop and implement actions to quantify and reduce enteric fermentation emissions from livestock and sequester soil carbon using cover crops and conservation tillage.	Underway or to be initiated by CAT members in 2007-2009 period
ULEV	TBD	2007–2009	DGS	A new long term commercial rental contract was released in March 2007 requiring a minimum ULEV standard for gasoline vehicles and requires alternative fuel and hybrid-electric vehicles.	Underway or to be initiated by CAT members in 2007-2009 period
Flex Fuel Vehicles	370 metric tons CO ₂ , 0.85 metric tons of CH ₄ , and 1.14 metric tons of N ₂ O	2007–2009	DGS	Under this rule/regulation, DGS is replacing 800 vehicles with new, more efficient vehicles.	Underway or to be initiated by CAT members in 2007-2009 period
Climate Registry	TBD	2007–2009	DGS	Benchmarking and reduction of GHG emissions for state owned buildings, leased buildings and light duty vehicles.	Underway or to be initiated by CAT members in 2007-2009 period
Municipal Utilities Electricity Sector Carbon Policy	Included in SB 1368 reductions	2007–2009	CEC, CPUC, ARB	Under this rule/regulation, GHG emissions cap policy guidelines for CA's electricity sector (IOUs and POUs).	Underway or to be initiated by CAT members in 2007-2009 period
Alternative Fuels: Nonpetroleum Fuels	TBD	2007–2009	CEC	State plan to increase the use of alternative fuels for transportation; full fuel cycle assessment.	Underway or to be initiated by CAT members in 2007-2009 period
Zero Waste/High Recycling Strategy	5 MMT CO ₂ e by 2020	2007–2009	IWMB	This rule/regulation will identify materials to focus on to achieve GHG reduction at the lowest possible cost; Builds on the success of 50% Statewide Recycling Goal.	Underway or to be initiated by CAT members in 2007-2009 period
Organic Materials Management	TBD	2007–2009	IWMB	This rule/regulation will develop a market incentive program to increase organics diversion to the agricultural industry.	Underway or to be initiated by CAT members in 2007-2009 period
Landfill Gas Energy	TBD	2007–2009	IWMB	Landfill Gas to Energy & LNG/biofuels	Underway or to be initiated by CAT members in 2007-2009 period

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**Table 18
Rule and Regulation Summary**

Rule/Regulation	Reduction	Implementation Date	Agency	Description	Comments
Target Recycling	TBD	2007–2009	IWMB	This rule/regulation will focus on industry/public sectors with high GHG components to implement targeted commodity recycling programs.	Underway or to be initiated by CAT members in 2007-2009 period
Accelerated Renewable Portfolio Standard	Included in SB 1368 reductions	2007–2009	CPUC	This rule/regulation will examine RPS long term planning and address the use of tradable renewable energy credits for RPS compliance.	Underway or to be initiated by CAT members in 2007-2009 period
CA Solar Initiative	1 MMT CO ₂ e by 2020	2007–2009	CPUC	Initiative to deliver 2000 MWs of clean, emissions free energy to the CA grid by 2016.	Underway or to be initiated by CAT members in 2007-2009 period
Carbon Capture and Sequestration	TBD	2007–2009	CPUC	Proposals for power plants with IGCC and/or carbon capture in the next 18 months.	Underway or to be initiated by CAT members in 2007-2009

Source: Data compiled by EDAW in 2007

AB=Assembly Bill; ARB=California Air Resources Board; Calfire=California Fire; CA=California; Caltrans=California Department of Transportation; CAT=California Action Team; CEC=California Energy Commission; CDFA=California Department of Food and Agriculture; CH₄=Methane; CO₂=Carbon Dioxide; CPUC=California Public Utilities Commission; CUFR=California Urban Forestry; DGS=Department of General Services; DWR=Department of Water Resources; GHG=Greenhouse Gas; GWP=Global Warming Potential; IGCC= Integrated Gasification Combined Cycle; IOU= Investor-Owned Utility; IT=Information Technology; IWCB= Integrated Waste Management Board; LNG= Liquefied Natural Gas; MMT CO₂e=Million Metric Tons Carbon Dioxide Equivalent; MW=Megawatts; NA=Not Available; N₂O=Nitrous Oxide; PFC= Perfluorocompound; POU= Publicly Owned Utility; RPS= Renewable Portfolio Standards; RTP=Regional Transportation Plan SB=Senate Bill; SWP=State Water Project; TBD=To Be Determined; UC/CSU=University of California/California State University; ULEV=Ultra Low Emission Vehicle.

METHODS

NATIVE AMERICAN CONTACT PER SB18

Native American contact as part of SB18 consultation was conducted for the project on behalf of the City. LSA requested that a Sacred Lands File (SLF) search be performed by the Native American Heritage Commission (NAHC) on July 13, 2011. The NAHC responded on July 20, 2011 to state that the SLF search did not identify Native American cultural resources in the project area. However, the NAHC also provided a list of 10 Native American contacts that may have knowledge of cultural resources that could be affected by the project. These individuals/organizations were contacted by letter sent via certified mail dated July 25, 2011. The letter provided notification of the project and requested comment. The following individuals/organizations were contacted per the NAHC's recommendation:

- Los Coyotes Band of Mission Indians, Spokesperson
- Santa Rosa Band of Mission Indians, Maybe Estrada, Chairwoman
- Pala Band of Mission Indians, Tribal Historic Preservation Office/Shasta Gaughen
- Morongo Band of Mission Indians, Robert Martin, Chairperson
- Ramona Band of Cahuilla Mission Indians, Joseph Hamilton, Chairman
- Pechanga Band of Mission Indians, Mark Macarro, Chairperson
- San Manuel Band of Mission Indians, James Ramos, Chairperson
- Serrano Nation of Indians, Goldie Walker
- Soboba Band of Mission Indians, Scott Cozaet, Chairperson; Attn: Carrie Garcia
- Cahuilla Band of Indians, Luther Salgado, Sr., Chairperson

RESULTS

NATIVE AMERICAN CONTACT PER SB18

No initial responses were received from any of the Native American Tribes contacted. Two rounds of follow up communication to the Native American Tribes were attempted using phone calls and emails between August 9 and August 16, 2011. As a result, comments were received from seven of the Tribes as reported below.

- Santa Rosa Band of Mission Indians – An email was received from Gabriella Rubalcava, Tribal Council on August 10, 2011. The email stated that the Band does not have specific concerns and deferred further consultation to Joe Ontiveros with the Soboba Band of Luiseño Indians.
- Pala Band of Mission Indians – Shasta Gaughen responded by email on August 9, 2011 to say that the project is outside of the Tribe's area of concerns and that a letter

was forthcoming. A letter stating the above and dated August 5, 2001 was received from the Tribe on August 10, 2011.

- Morongo Band of Mission Indians – Michael Contreras in Cultural Resources responded by telephone on August 17, 2011 to state that the Tribe has no concerns at this time. He requested a copy of the final report and a contact for the City of Norco, should the Tribe wish to engage in consultation after reviewing the cultural resources assessment.
- Pechanga Band of Mission Indians – Anna Hoover in Cultural Resources responded by email on August 9, 2011 to say that the Tribe does have concerns and they will send an official comment letter directly to the City.
- Serrano Nation of Indians – In a telephone call on August 16, 2011 Mark Lee Cochran spoke on behalf of the Tribe and requested that they be notified of any discoveries. They also request a copy of the final report.
- Soboba Band of Mission Indians – A letter was received by email on August 17, 2011 from Joe Ontiveros in Cultural Resources. The letter stated that the area is very sensitive to the Soboba people. The Tribe requests government to government consultation in accordance with SB18; that they continue to be the lead consulting Tribe for the project; that project construction be monitored by a Soboba Tribal monitor; and that the proper procedures be taken and the requests of the Tribe are honored.

No responses were received from the Los Coyotes Band of Mission Indians, the Ramona Band of Cahuilla Mission Indians, or the San Manuel Band of Mission Indians. Please see Appendix B-2 for a detailed record of the Native American contact and communications.

SENATE BILL (SB18) NATIVE AMERICAN CONTACT RECORD

Proposed Eucalyptus Industrial Park Project, City of Moreno Valley, Riverside County, California

Date LSA Requested a Sacred Lands File Search from the Native American Heritage Commission (NAHC): July 13, 2011.

Date the NAHC Replied: July 20, 2011.

Results of Sacred Lands File Search: Native American cultural resources were *not* identified in the USGS coordinates specified for the project area; however the NAHC recommended that 10 tribes/individuals be contacted for information regarding cultural resources that could be impacted.

Group Contacted	Data LSA Sent Letter To Tribes	Date a Response to the Letter was Received by LSA (if Applicable)	Date and Results of LSA Follow up Telephone Calls and/or emails
Los Coyotes Band of Mission Indians Spokesperson <i>Cahuilla</i>	07-25-11	No response received.	08-09-11: A follow up email was sent. 08-16-11: A message was left with an administrator. The Tribe will return the call if there are concerns
Santa Rosa Band of Mission Indians Mayme Estrada, Chairwoman <i>Cahuilla</i>	0-25-11	No response received.	08-09-11: A follow up email was sent to Ms. Estrada, and also to Steven Estrada in Cultural Resources. 08-10-11: An email was received from Gabriella Rubalcava, Tribal Council. The email stated that the Band does not have specific concerns and deferred further consultation to Joe Ontiveros, Soboba Band of Louiseño Indians. 07/19/12: Mitigation measures related to the participation of tribal monitors were added to the Mitigation Monitoring Program. Requested documentation was sent per the request of the band or tribal group.
Pala Band of Mission Indians Tribal Historic Preservation Office/Shasta Gaughen <i>Louiseño, Cupeño</i>	07-25-11	No response received.	08-09-11: A follow up email was sent to Ms. Gaughen. She responded to say that the project is outside of their area and they have no concerns. A letter is forthcoming. 08-10-11: a letter stating the above dated August 5, 2011 was received.
Morongo Band of Mission Indians Robert Martin, Chairperson <i>Cahuilla, Serranto</i>	07-25-11	No response received.	08-09-11: A follow up email was sent to Michael Contreras. He is the spokesperson for cultural resources. 08-17-11: Mr. Contreras responded by telephone to state that they have no concerns at this time. He requested a copy of the final report and a City contact should the Tribe wish to engage in formal consultation. 07/19/12: Mitigation measures related to the participation of tribal monitors were added to the Mitigation Monitoring Program. Requested documentation was sent per the request of the band or tribal group.
Ramona Band of Cahuilla Mission Indians Joseph Hamilton, Chairperson <i>Cahuilla</i>	07-25-11	No response received.	08-09-11: A follow up email was sent to Mr. Hamilton, and also to John Gomez in Cultural Resources. 08-16-11: A second follow up email was sent to Mr. Hamilton and Mr. Gomez.
Pechanga Band of Mission Indians	07-25-11	No response received	08-09-11: a follow up email was sent to Terrie Brown, Executive

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Mark Macarro, Chairperson <i>Luiŕeño</i>			Secretary, and also to Paul Macarro and Anna Hoover in Cultural Resources. Ms. Hoover responded to say that they do have comments and will send an official comment letter directly to the City. 07/19/12: Mitigation measures related to the participation of tribal monitors were added to the Mitigation Monitoring Program. Requested documentation was sent per the request of the band or tribal group.
San Manuel Band of Mission Indians James Ramos, Chairperson <i>Serrano</i>	07-25-11	No response received.	08-09-11: A follow up email was sent to Mr. Ramos, and also to Ann Brierty in Cultural Resources. 08-16-11: A voicemail was left for Ms. Brierty.
Serrano Nation of Indians Goldie Walker <i>Serrano</i>	07-25-11	No response received.	08-16-11: Mark Lee Cochrane, Ms. Walker's son who is also on the Tribal Council, spoke for the Tribe. They would like to be notified of any discoveries and also request a copy of the final report.
Soboba Band of Mission Indians Scott Cozaet, Chairperson; Attn. Carrie Garcia <i>Luiŕeño</i>	07-25-11	No response received.	08-009-11: A follow up email was sent to Darren Hill (the email contact provided by the NAHC) and also to Joe Ontiveros in Cultural Resources. The email to Mr. Hill was returned. 08-16-11: A voicemail was left for Carrie Garcia, the Executive Secretary for Chairman Cozaet as shown on the NAHC list. 08-17-11: a letter was received via email from Joe Ontiveros, Cultural Resources Department. The letter stated that the project is within the Tribe's Traditional Use Area and is very sensitive to the people of Soboba. The Tribe requests government to government consultation in accordance with SB18; that Soboba continue to be the lead consulting Tribe for the project; that project construction be monitored by a Soboba monitor, and that the proper procedures be taken and the requests of the Tribe are honored. 07/19/12: Mitigation measures related to the participation of tribal monitors were added to the Mitigation Monitoring Program. Requested documentation was sent per the request of the band or tribal group.
Cahuilla Band of Indians Luther Salgado, Sr., Chairperson <i>Cahuilla</i>	07-25-11	No response received.	08-09-11: A follow up email was sent to Mr. Salgado, and also to Environmental Officer Yvonne Markel. Ms. Markel responded to say that the Tribe presently has no knowledge of cultural resources within the project area. However, due to the possibility of encountering cultural resources during construction, they request monitoring by a Native American and can provide trained monitors. They also would like to request copies of any cultural resource documentation. 07/19/12: Mitigation measures related to the participation of tribal monitors were added to the Mitigation Monitoring Program. Requested documentation was sent per the request of the band or tribal group.

LOCAL GOVERNMENT TRIBAL CONSULTATION LIST REQUEST

NATIVE AMERICAN HERITAGE COMMISSION
915 Capitol Mall, Room 364
Sacramento, CA 95814
(916) 653-4082
(916) 657-5390 - Fax

Project Title: Eucalyptus Industrial Park
Local Government/Lead Agency: City of Moreno Valley (via LSA)
Contact Person: Terri Fulton, LSA Associates, Inc
Street Address: 20 Executive Park, Suite 200
City: Irvine Zip: 92614
Phone: 949-553-0666 Fax: 949-553-8076

Specific Area Subject to Proposed Action

County: Riverside
City/Community: City of Moreno Valley

Local Action Type:

General Plan General Plan Element General Plan Amendment
 Specific Plan Specific Plan Amendment
 Pre-planning Outreach Activity

Project Description:

The proposed Eucalyptus Industrial Park project is on a 121-acre site in the City of Moreno Valley. A General Plan Amendment is proposed for the project location.

SACRED LANDS FILE SEARCH AND NATIVE AMERICAN CONTACTS LIST REQUEST

Information Below is Required for a Sacred Lands File Search

USGS Quadrangle Name Sunnymead, California
Township 3S Range 3W Section(s) 2

Native American Tribal Consultation lists are only applicable for consulting with California Native American tribes per Government Code Section 65352.3.

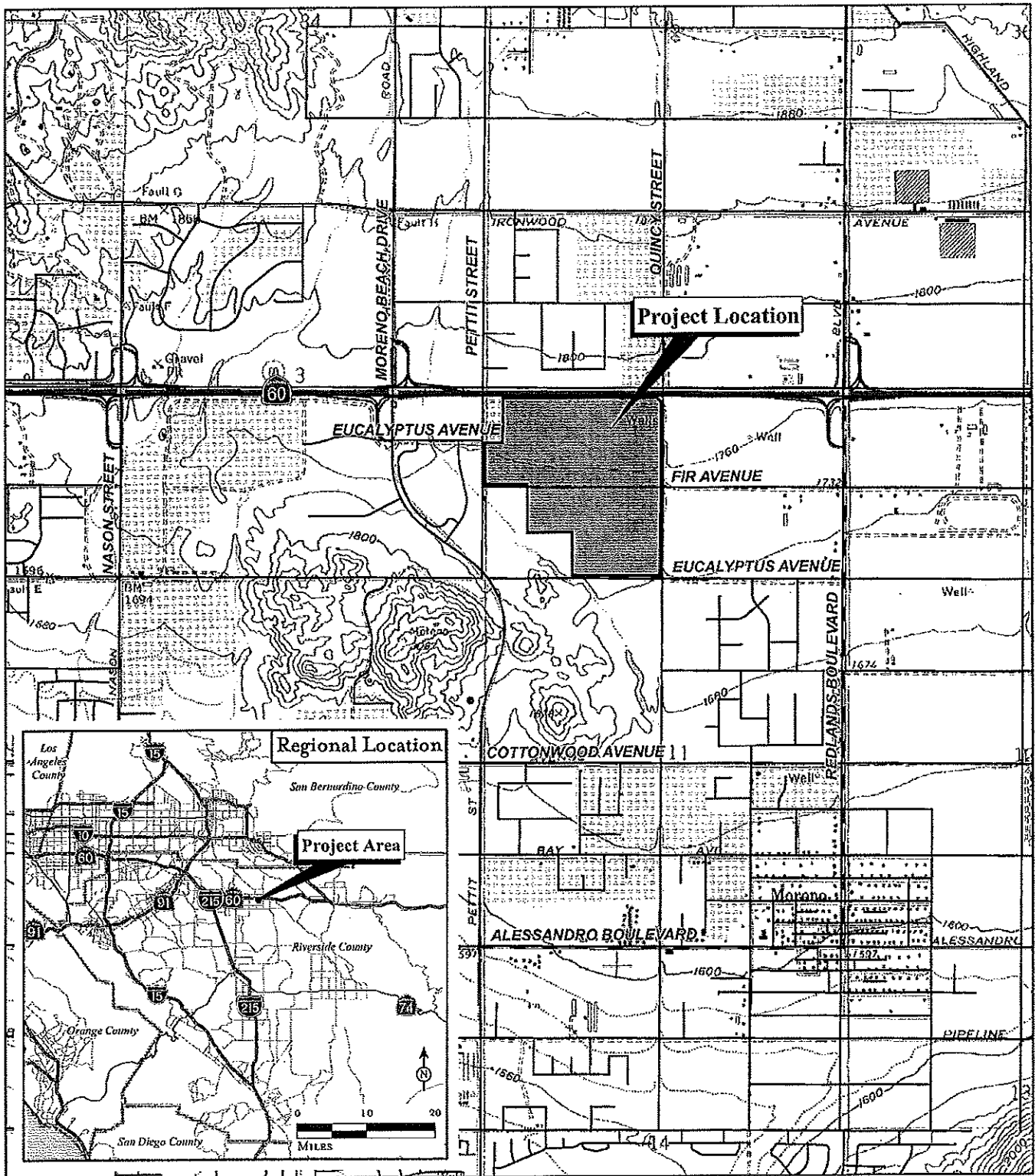
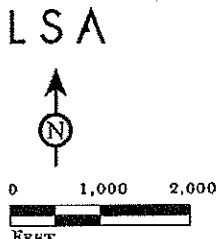


FIGURE 1



SOURCE: County of Riverside, 2006; Quad: Sunnymead (1980), CA.

Eucalyptus Industrial Park
Regional and Project Location

TRANSMISSION VERIFICATION REPORT

TIME : 07/13/2011 13:35
NAME :
FAX :
TEL :
SER.# : 000C5J225683

DATE, TIME 07/13 13:34
FAX NO./NAME NAHC
DURATION 00:00:36
PAGE(S) 02
RESULT OK
MODE STANDARD
ECM

LOCAL GOVERNMENT TRIBAL CONSULTATION LIST REQUEST

NATIVE AMERICAN HERITAGE COMMISSION
915 Capitol Mall, Room 364
Sacramento, CA 95814
(916) 633-4082
(916) 657-5390 - Fax

Project Title: Eucalyptus Industrial Park
Local Government/Lead Agency: City of Moreno Valley (via LSA)
Contact Person: Terri Fulton, LSA Associates, Inc
Street Address: 20 Executive Park, Suite 200
City: Irvine Zip: 92614
Phone: 949-553-0166 Fax: 949-553-8076

Specific Area Subject to Proposed Action

County: Riverside
City/Community: City of Moreno Valley

Local Action Type:

- General Plan
- General Plan Element
- General Plan Amendment
- Specific Plan
- Specific Plan Amendment
- Pre-planning Outreach Activity

Project Description:

The proposed E-3293 Eucalyptus Industrial Park
is a 121-acre site in the City of
Item No. E.3

STATE OF CALIFORNIA

Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION

915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390
Web Site www.nahc.ca.gov
e-mail: ds_nahc@pacbell.net



July 20, 2011

Ms. Terri Fulton, Senior Archaeologist
**LSA Associates, Inc. for the
City of Moreno Valley**
20 Executive Park, Suite 200
Irvine, CA 92614

Sent by FAX to: 949-553-8076
No. of Pages: 3

Re: Tribal Consultation Per Government Code §§ 65092, 65351, 65352.3, 65352.4, 65560 and 65562.5 (SB 18) General Plan Amendment for the Eucalyptus Industrial Park Project, located in the City of Moreno Valley, Riverside County, California

Dear Mr. Fulton:

Government Code §65352.3 requires local governments to consult with California Native American tribes identified by the Native American Heritage Commission (NAHC) for the purpose of protecting, and/or mitigating impacts to cultural places. The Native American Heritage Commission is the state "trustee agency" designated for the protection of Native American Cultural Resource pursuant to CA Public Resources Code §21070.. Attached is a consultation list of tribes with traditional lands or cultural places located within the Project Area of Potential Effect (APE). The tribal entities on the list are for your guidance for **government-to-government consultation** purposes. Pursuant to CA Public Resources Code §5097.95, please provide pertinent project information to the tribal consulting parties.

The NAHC did perform a Sacred Lands File search of the project location and **Native American cultural resources were not identified** by the USGS coordinates provided for the 'area of potential effect - APE'. Also, the NAHC Sacred Lands Inventory is not exhaustive; cultural resources may be discovered during construction ground-breaking activity. Please contact the Native Americans on the attached list to determine, from their knowledge, if the proposed changes might impact on Native American cultural resources.. in order to see if your proposed project might impact Native American cultural resources that may be affected by the proposed action. If so, Section 15382 of the CEQA Guidelines defines a significant impact on the environment as "substantial," and Section 2183.2 requires documentation, data recovery of cultural resources identified. The NAHC recommends that lead agencies provide appropriate archaeological studies and pertinent project information to the consulting Native American tribes.

The Native American Heritage Commission works with Native American tribal governments regarding its identification of 'Areas of Traditional Use.' The Commission may adjust the submitted data defining the 'Area of Traditional Use' in accordance with generally accepted ethnographic, anthropological, archeological research and oral history.

If you have any questions, please contact me at (916) 653-6251.

Sincerely,


Dave Singleton, Program Analyst

Attachment: Native American Tribal Consultation List

PS: The California native American Heritage Commission and the Governor's Office of Planning & Research discourages the use of consulting firms, by California local governments to do the SB 18 government-to-government consultation as required by California Government Code §§65352.3 and 65352.4.

**Native American Tribal Consultation List
Riverside County
July 20, 2011**

Los Coyotes Band of Mission Indians
Spokesperson
P.O. Box 189 Cahuilla
Warner , CA 92086
loscoyotes@earthlink.net
(760) 782-0711

Santa Rosa Band of Mission Indians
Mayme Estrada, Chairwoman
P.O. Box 609 Cahuilla
Hemet , CA 92546
srbciooffice@yahoo.com
(951) 658-5311
(951) 658-6733 Fax

Pala Band of Mission Indians
Tribal Historic Preservation Office/Shasta Gaughen
35008 PalaTemecula Rd, PMB 445 Luiseno
Pala , CA 92059 Cupeno
sgaughen@palatribe.com
(760) 891-3515

Morongo Band of Mission Indians
Robert Martin, Chairperson
12700 Pumarra Road Cahuilla
Banning , CA 92220 Serrano
(951) 849-8807
(951) 755-5200

Ramona Band of Cahuilla Mission Indians
Joseph Hamilton, Chairman
P.O. Box 391670 Cahuilla
Anza , CA 92539
admin@ramonatribe.com
(951) 763-4105

Pechanga Band of Mission Indians
Mark Macarro, Chairperson
P.O. Box 1477 Luiseno
Temecula , CA 92593
tbrown@pechanga-rsn.gov
(951) 770-6100

San Manuel Band of Mission Indians
James Ramos, Chairperson
26569 Community Center Drive Serrano
Highland , CA 92346
(909) 864-8933
(909) 864-3724 - FAX

Serrano Nation of Indians
Goldie Walker
P.O. Box 343 Serrano
Patton , CA 92369
(909) 862-9883

Soboba Band of Mission Indians
Scott Cozaet, Chairperson; Attn: Carrie Garcia
P.O. Box 487 Luiseno
San Jacinto , CA 92581
dhill@soboba-nsn.gov
(951) 654-2765

Cahuilla Band of Indians
Luther Salgado, Sr., , Chairperson
PO Box 391760 Cahuilla
Anza , CA 92539
tribalcouncil@cahuilla.net
915-763-5549

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable only for consultation with Native American tribes under Government Code Section 65352.3. and 65362.4. et seq.



LSA ASSOCIATES, INC.
20 EXECUTIVE PARK, SUITE 200 949.553.0666 TEL
IRVINE, CALIFORNIA 92614 949.553.8076 FAX

BERKELEY
CARLSBAD
FORT COLLINS
FRESNO
PALM SPRINGS
POINT RICHMOND

RIVERSIDE
ROCKLIN
SAN LUIS OBISPO
SOUTH SAN FRANCISCO

July 25, 2011

Pechanga Band of Mission Indians
Mark Macarro, Chairperson
P.O. Box 1477

Temecula, CA 92593

Subject: SB 18 Native American Consultation for the Eucalyptus Industrial Park Project, City of
Moreno Valley, Riverside County, California

Mr. Macarro:

LSA Associates, Inc. (LSA) was retained by the City of Moreno Valley (City) to conduct a cultural resources assessment of the approximately 121-acre (ac) project site for the Eucalyptus Industrial Park project in the City of Moreno Valley, Riverside County, California. The project is depicted on the *Sunnymead, California* United States Geological Survey 7.5-minute topographic quadrangle map in Section 2, Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The project is bounded by California State Route 60 on the north, Pettit Street on the west, Quincy Street on the east, and Eucalyptus Avenue on the south. The cultural resources assessment is being conducted pursuant to the California Environmental Quality Act (CEQA).

A General Plan Amendment is now proposed for the project location. This letter of notification regarding the Eucalyptus Industrial Park Project is being sent on behalf of the City as part of the Native American scoping for Senate Bill 18 (SB 18 [Burton]) consultation. SB 18 states that local California governments consult with Native American tribes and groups when a General Plan amendment is being proposed. A map of the project area is attached.

To determine whether any cultural resources may be affected by the project, LSA has contacted the Eastern Information Center located at the University of California, Riverside to perform a records search for the project area. Results of the records search are pending. LSA has also contacted the Native American Heritage Commission (NAHC) to request a search of its Sacred Lands File (SLF) Results of the SLF search did not indicate the presence of Native American cultural resources within the proposed project area. However, you are being contacted because the NAHC has identified you as someone who may have information and/or concerns about cultural resources that could be impacted by the Eucalyptus Industrial Park Project.

Please contact me at your earliest convenience if you have comments or knowledge regarding the Eucalyptus Industrial Park Project and its potential to impact cultural resources. You may contact me at the above telephone number or address, or by email at terri.fulton@lsa-assoc.com. If you would like to speak with a City representative directly, I will be happy to provide contact information.

If I do not receive a response from you, I will contact you by telephone or email in the near future to discuss any comments or concerns you may have. Thank you for your involvement in this process. Your input is important to this project, and I look forward to hearing from you.

Sincerely,

LSA ASSOCIATES, INC.

Terri Fulton
Archaeologist/Senior Cultural Resources Manager
Native American Consultation Coordinator

Attachment: Project Location Map

07/25/11 «P:\PLO1101\SB 18 NA Consultation\SB18 consultation letter.doc»

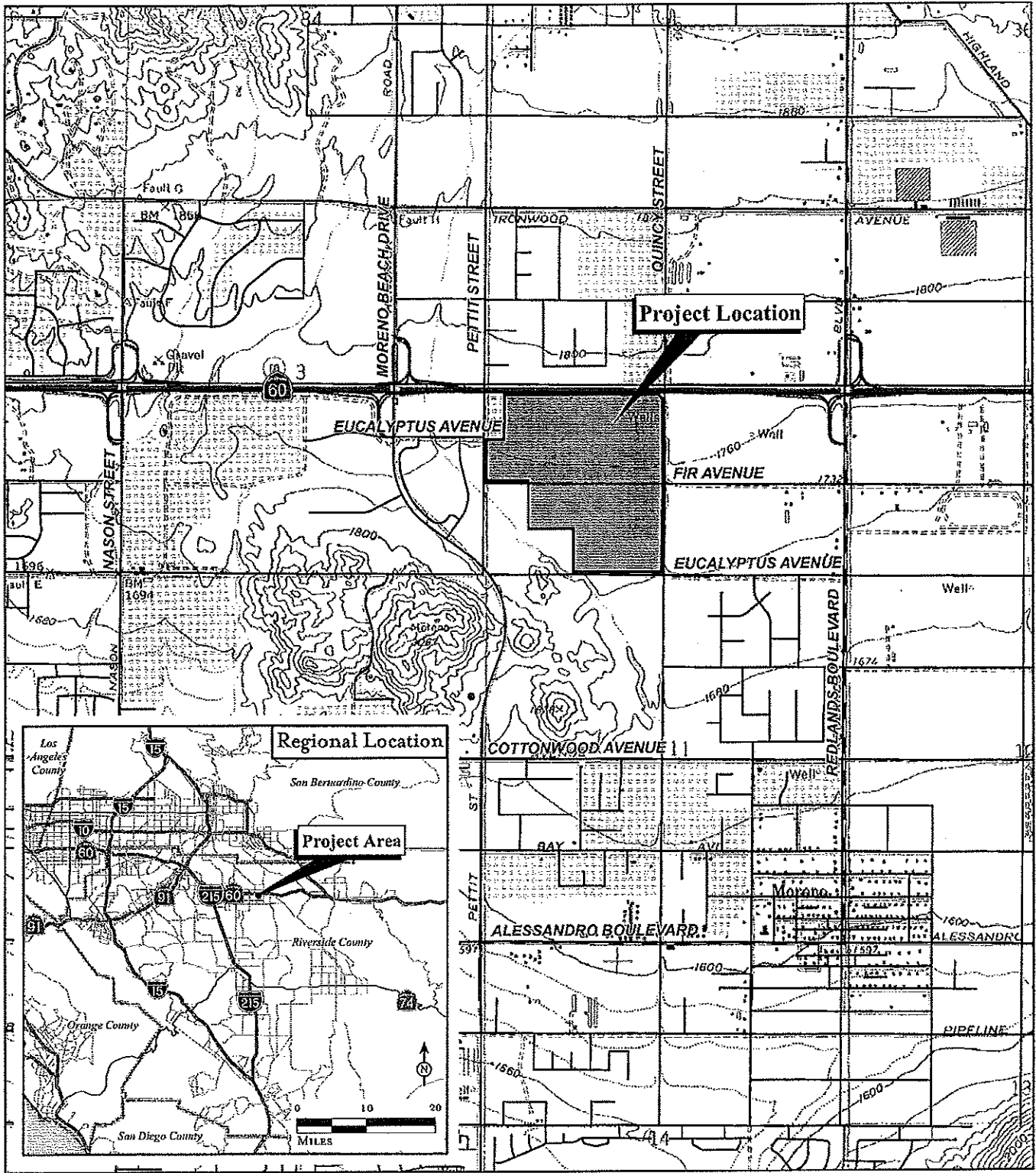
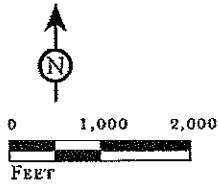


FIGURE 1

LSA



SOURCE: County of Riverside, 2006; Quad: Sumnymead (1980), CA.

reg_loc.mxd (12/07/07)

Eucalyptus Industrial Park
Regional and Project Location

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY	
<ul style="list-style-type: none"> Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. Print your name and address on the reverse so that we can return the card to you. Attach this card to the back of the mailpiece, or on the front if space permits. 	A. Signature <input checked="" type="checkbox"/> <i>[Signature]</i> <input type="checkbox"/> Agent <input type="checkbox"/> Addressee	
	B. Received by (Printed Name) <i>UZ Castro</i>	C. Date of Delivery <i>8-9-11</i>
1. Article Addressed to: Ramona Band of Cahuilla Mission Indians Joseph Hamilton, Chairman P.O. Box 391671 Anza, CA 92539 <i>PL01101</i>	D. Is delivery address different from item 1? <input checked="" type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No <i>P.O. BOX 391670 Anza Ca 92539</i>	
2. Article Number (Transfer from service label) <u>7005 1820 0003 7885 5896</u>		
PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540		

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY	
<ul style="list-style-type: none"> Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. Print your name and address on the reverse so that we can return the card to you. Attach this card to the back of the mailpiece, or on the front if space permits. 	A. Signature <input checked="" type="checkbox"/> <i>[Signature]</i> <input type="checkbox"/> Agent <input type="checkbox"/> Addressee	
	B. Received by (Printed Name) <i>Amanda Dodson</i>	C. Date of Delivery <i>8-1</i>
1. Article Addressed to: San Manuel Band of Mission Indians James Ramos, Chairperson 26569 Community Center Drive Highland, CA 92346 <i>PL01101</i>	D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No	
2. Article Number (Transfer from service label) <u>7005 1820 0003 7885 5926</u>		
PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540		

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY	
<ul style="list-style-type: none"> Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. Print your name and address on the reverse so that we can return the card to you. Attach this card to the back of the mailpiece, or on the front if space permits. 	A. Signature <input checked="" type="checkbox"/> <i>[Signature]</i> <input type="checkbox"/> Agent <input type="checkbox"/> Addressee	
	B. Received by (Printed Name) <i>WORTH</i>	C. Date of Delivery <i>8/11</i>
1. Article Addressed to: Santa Rosa Band of Mission Indians Mayme Estrada, Chairwoman P.O. Box 609 Hemet, CA 92546 <i>PL01101</i>	D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No	
2. Article Number (Transfer from service label) <u>7005 1820 0003 78E</u>		
PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540		

Item No. E.3

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Los Coyotes Band of Mission Indians
Spokesperson
P.O. Box 189
Warner, CA 92086

PL01101

2. Article Number
(Transfer from service label)

7005 1820 0003 7885 5964

PS Form 3811, February 2004

Domestic Return Receipt

102595-02-M-1540

COMPLETE THIS SECTION ON DELIVERY

A. Signature Agent
 Addressee
Wade Kue

B. Received by (Printed Name) *Wade Kue* C. Date of Delivery *7-28-04*

D. Is delivery address different from item 1? Yes
If YES, enter delivery address below: No

3. Service Type
 Certified Mail Express Mail
 Registered Return Receipt for Merchandise
 Insured Mail C.O.D.

4. Restricted Delivery? (Extra Fee) Yes

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Morongo Band of Mission Indians
Robert Martin, Chairperson
12700 Pumarra Road
Banning, CA 92220

PL01101

2. Article Number
(Transfer from service label)

7005 1820 0003 7885 5919

PS Form 3811, February 2004

Domestic Return Receipt

102595

COMPLETE THIS SECTION ON DELIVERY

A. Signature Agent
 Addressee
Georgia Aparicio

B. Received by (Printed Name) *Georgia Aparicio*

D. Is delivery address different from item 1? Yes
If YES, enter delivery address below:

3. Service Type
 Certified Mail Express Mail
 Registered Return Receipt
 Insured Mail C.O.D.

4. Restricted Delivery? (Extra Fee)

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Pechanga Band of Mission Indians
Mark Macarro, Chairperson
P.O. Box 1477
Temecula, CA 92593

PL01101

2. Article Number
(Transfer from service label)

7005 1820 0003 7885 5902

PS Form 3811, February 2004

Domestic Return Receipt

102595-02-M-1540

COMPLETE THIS SECTION ON DELIVERY

A. Signature Agent
 Addressee
Martin

B. Received by (Printed Name) *Laura Martin* C. Date of Delivery *8-1-04*

D. Is delivery address different from item 1? Yes
If YES, enter delivery address below: No

3. Service Type
 Certified Mail Express Mail
 Registered Return Receipt for Merchandise
 Insured Mail C.O.D.

4. Restricted Delivery? (Extra Fee) Yes

Item No. E.3

3300

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<ul style="list-style-type: none"> ■ Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. ■ Print your name and address on the reverse so that we can return the card to you. ■ Attach this card to the back of the mailpiece, or on the front if space permits. 	<p>A. Signature <input type="checkbox"/> Agent <input checked="" type="checkbox"/> Addressee</p> <p>B. Received by (Printed Name) C. Date of Delivery</p> <p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No</p>
<p>1. Article Addressed to:</p> <p>Pala Band of Mission Indians Tribal Historic Preservations Office/ Shasta Gaughen 35008 Pala-Temecula Road PMB 445 Pala, CA 92059</p> <p style="text-align: right; font-size: 2em;">PL01101</p>	<p>3. Service Type</p> <p><input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input checked="" type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.</p> <p>4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes</p>
<p>2. Article Number (Transfer from service label)</p>	<p>7005 1820 0003 7885 5957</p>
<p>PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540</p>	

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<ul style="list-style-type: none"> ■ Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. ■ Print your name and address on the reverse so that we can return the card to you. ■ Attach this card to the back of the mailpiece, or on the front if space permits. 	<p>A. Signature <input type="checkbox"/> Agent <input checked="" type="checkbox"/> Addressee</p> <p>B. Received by (Printed Name) C. Date of Delivery</p> <p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No</p>
<p>1. Article Addressed to:</p> <p>Serrano Nation of Indians Goldie Walker P.O. Box 343 Patton, CA 92369</p> <p style="text-align: right; font-size: 2em;">R01101</p>	<p>3. Service Type</p> <p><input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input checked="" type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.</p> <p>4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes</p>
<p>2. Article Number (Transfer from service label)</p>	<p>7005 1820 0003 7885 5940</p>
<p>PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540</p>	

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY	
<ul style="list-style-type: none"> Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. Print your name and address on the reverse so that we can return the card to you. Attach this card to the back of the mailpiece, or on the front if space permits. 	A. Signature <input checked="" type="checkbox"/> <i>Billy Bentista</i> <input type="checkbox"/> Agent <input type="checkbox"/> Addressee	
1. Article Addressed to:	B. Received by (Printed Name)	C. Date of Delivery
	D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No	
Soboba Band of Mission Indians Scott Cozaet, Chairperson; Attn: Carrie Garcia P.O. Box 487 San Jacinto, CA 92581 PD1101	3. Service Type	
	<input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input checked="" type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.	
2. Article Number (Transfer from service label)	4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes	
	7005 1820 0003 7885 5872	
PS Form 3811, February 2004	Domestic Return Receipt	102595-02-M-1540

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY	
<ul style="list-style-type: none"> Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. Print your name and address on the reverse so that we can return the card to you. Attach this card to the back of the mailpiece, or on the front if space permits. 	A. Signature <input checked="" type="checkbox"/> <i>M. J. Salgado</i> <input type="checkbox"/> Agent <input type="checkbox"/> Addressee	
1. Article Addressed to:	B. Received by (Printed Name)	C. Date of Delivery
	D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No	
Cahuilla Band of Indians Luther Salgado, Sr., Chairperson P.O. Box 391760 Anza, CA 92539 PD1101	3. Service Type	
	<input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input checked="" type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.	
2. Article Number (Transfer from service label)	4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes	
	7005 1820 0003 7885 5933	
PS Form 3811, February 2004	Domestic Return Receipt	102595-02-M-1540

Terri Fulton

From: Terri Fulton
Sent: Tuesday, August 09, 2011 1:12 PM
To: loscoyotes@earthlink.net
Subject: FW: SB18 Notification, Eucalyptus Industrial Park Project, Moreno Valley
Attachments: Figure 1.pdf; image002.jpg; image001.jpg

Hello,

I sent a letter on July 25, 2011, notifying the Tribe of the Eucalyptus Industrial Park Project. The text of the letter is pasted below, and a map of the project area is attached. I am following up to see if there are any comments or concerns about this project and its potential to affect cultural resources. Please let me know at your earliest convenience. Thank you.

Best Regards,

Terri Fulton
 Archaeologist/Senior Cultural Resources Manager
 Native American Consultation Coordinator

LSA Associates, Inc.
 20 Executive Park, Suite 200
 Irvine, CA 92614-4731
 Phone (949) 553-0666
 Fax (949) 553-8076
 Wireless (949) 337-5454

July 25, 2011

Los Coyotes Band of Mission Indians
 Spokesperson
 P.O. Box 189
 Warner, CA 92086

Subject: SB 18 Native American Consultation for the Eucalyptus Industrial Park Project, City of Moreno Valley, Riverside County, California

To whom it may concern:

LSA Associates, Inc. (LSA) was retained by the City of Moreno Valley (City) to conduct a cultural resources assessment of the approximately 121-acre (ac) project site for the Eucalyptus Industrial Park project in the City of Moreno Valley, Riverside County, California. The project is depicted on the *Sunnymead, California* United States Geological Survey 7.5-minute topographic quadrangle map in Section 2, Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The project is bounded by California State Route 60 on the north, Pettit Street on the west, Quincy Street on the east, and Eucalyptus Avenue on the south. The cultural resources assessment is being conducted pursuant to the California Environmental Quality Act (CEQA).

A General Plan Amendment is now proposed for the project location. This letter of notification regarding the Eucalyptus Industrial Park Project is being sent on behalf of the City as part of the Native American scoping for Senate Bill 18 (SB 18 [Burton]) consultation. SB 18 states that local California governments consult with Native American tribes and groups when a General Plan amendment is being proposed. A map of the project area is attached.

To determine whether any cultural resources may be affected by the project, LSA has contacted the Eastern Information Center located at the University of California, Riverside to perform a records search for the project area. Results of the records search are pending. LSA has also contacted the Native American Heritage Commission (NAHC) to request a search of its Sacred Lands File (SLF) Results of the SLF search did not indicate the presence of Native American cultural resources within the proposed project area. However, you are being contacted because the NAHC has identified you as someone who may have information and/or concerns about cultural resources that could be impacted by the Eucalyptus Industrial Park Project.

Please contact me at your earliest convenience if you have comments or knowledge regarding the Eucalyptus Industrial Park Project and its potential to impact cultural resources. You may contact me at the above telephone number or address, or by email at terri.fulton@lsa-assoc.com. If you would like to speak with a City representative directly, I will be happy to provide contact information.

If I do not receive a response from you, I will contact you by telephone or email in the near future to discuss any comments or concerns you may have. Thank you for your involvement in this process. Your input is important to this project, and I look forward to hearing from you.

Sincerely,

LSA ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read "Terri Fulton", with a long horizontal line extending to the right.

Terri Fulton
Archaeologist/Senior Cultural Resources Manager
Native American Consultation Coordinator

Attachment: Project Location Map

Terri Fulton

From: Terri Fulton
Sent: Tuesday, August 09, 2011 1:28 PM
To: srbcioffice@yahoo.com; Steven Estrada
Subject: FW: SB18 Notification, Eucalyptus Industrial Park Project, Moreno Valley
Attachments: Figure 1.pdf; image002.jpg; image001.jpg; image002.jpg; image003.jpg
 Chairwoman Estrada,

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Best Regards,

Terri Fulton
 Archaeologist/Senior Cultural Resources Manager
 Native American Consultation Coordinator

LSA Associates, Inc.
 20 Executive Park, Suite 200
 Irvine, CA 92614-4731
 Phone (949) 553-0666
 Fax (949) 553-8076
 Wireless (949) 337-5454
 July 25, 2011

Santa Rosa Band of Mission Indians
 Mayme Estrada, Chairwoman
 P.O. Box 609
 Hemet, CA 92546

Subject: SB 18 Native American Consultation for the Eucalyptus Industrial Park Project, City of Moreno Valley, Riverside County, California

Ms. Estrada:

LSA Associates, Inc. (LSA) was retained by the City of Moreno Valley (City) to conduct a cultural resources assessment of the approximately 121-acre (ac) project site for the Eucalyptus Industrial Park project in the City of Moreno Valley, Riverside County, California. The project is depicted on the *Sunnymead, California* United States Geological Survey 7.5-minute topographic quadrangle map in Section 2, Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The project is bounded by California State Route 60 on the north, Pettit Street on the west, Quincy Street on the east, and Eucalyptus Avenue on the south. The cultural resources assessment is being conducted pursuant to the California Environmental Quality Act (CEQA).

A General Plan Amendment is now proposed for the project location. This letter of notification regarding the Eucalyptus Industrial Park Project is being sent on behalf of the City as part of the Native American scoping for Senate Bill 18 (SB 18 [Burton]) consultation. SB 18 states that local California governments consult with Native American tribes and groups when a General Plan amendment is being proposed. A map of the project area is attached.

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Please contact me at your earliest convenience if you have comments or knowledge regarding the Eucalyptus Industrial Park Project and its potential to impact cultural resources. You may contact me at the above telephone number or address, or by email at terri.fulton@lsa-assoc.com. If you would like to speak with a City representative directly, I will be happy to provide contact information.

If I do not receive a response from you, I will contact you by telephone or email in the near future to discuss any comments or

-3305-

Item No. E.3

8/23/2011

concerns you may have. Thank you for your involvement in this process. Your input is important to this project, and I look forward to hearing from you.

Sincerely,

LSA ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read "Terri Fulton", written over a horizontal line.

Terri Fulton
Archaeologist/Senior Cultural Resources Manager
Native American Consultation Coordinator

Attachment: Project Location Map

Terri Fulton

From: Gabriella Rubalcava [grubalcava89@gmail.com]
Sent: Wednesday, August 10, 2011 10:14 AM
To: Terri Fulton
Cc: Steven Estrada; jontiveros@soboba-nsn.gov
Subject: Eucalyptus Industrial Park Project

Good morning Terri,

The Santa Rosa Band of Cahuilla Indians would like to thank you for your consultation efforts in regards to the above mentioned project. After reviewing the project it has been determined that the Band does not have specific concerns at this time, however there is the possibility that cultural resources could be found. With this said, the Santa Rosa Band of Cahuilla Indians will defer further consultation and monitoring efforts to the Soboba Band of Luiseno Indians and their Cultural Resources Department. If you have any other questions please contact Mr. Joseph Ontiveros.

Thank you,
Gabriella

Gabriella Rubalcava
Tribal Council
Santa Rosa Band of Cahuilla Indians

Terri Fulton

From: Shasta Gaughen [sgaughen@palatribe.com]
Sent: Tuesday, August 09, 2011 1:06 PM
To: Terri Fulton
Subject: Re: SB18 Notification, Eucalyptus Industrial Park Project, Moreno Valley

Hi Terri - this one is out of our area, so we have no concerns. You should be receiving our letter in the mail soon.

Shasta Gaughen, PhD
Environmental Director
Pala Band of Mission Indians
760.891.3515
sgaughen@palatribe.com

On Aug 9, 2011, at 12:44 PM, "Terri Fulton" <Terri.Fulton@lsa-assoc.com> wrote:

> Hi Shasta,
>
> I sent you a letter on July 25, 2011, notifying you of the Eucalyptus Industrial Park Project. The text of the letter is pasted below, and a map of the project area is attached. I am following up to see if you have any comments or concerns about this project and its potential to affect cultural resources. Please let me know at your earliest convenience. Thank you.
>
> Best Regards,
>
> Terri Fulton
> Archaeologist/Senior Cultural Resources Manager Native American
> Consultation Coordinator
>
> LSA Associates, Inc.
> 20 Executive Park, Suite 200
> Irvine, CA 92614-4731
> Phone (949) 553-0666
> Fax (949) 553-8076
> Wireless (949) 337-5454
>
> July 25, 2011
>
>
> Pala Band of Mission Indians
> Tribal Historic Preservations Office/Shasta Gaughen
> 35008 Pala-Temecula Road
> PMB 445
> Pala, CA 92059
>
> Subject: SB 18 Native American Consultation for the Eucalyptus Industrial Park Project, City of Moreno Valley, Riverside County, California
>
> Ms. Gaughen:
>
> LSA Associates, Inc. (LSA) was retained by the City of Moreno Valley (City) to conduct a cultural resources assessment of the approximately 121-acre (ac) project site for the Eucalyptus Industrial Park project in the City of Moreno Valley, Riverside County, California. The project is depicted on the Sunnymead, California United States Geological Survey 7.5-minute topographic quadrangle map in Section 2, Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The project is bounded by California State Route 60 on the north, Pettit Street on the west, Quincy Street on the east, and Eucalyptus Avenue on the south. The cultural resources assessment is being conducted pursuant to the California Environmental Quality Act (CEQA).
>
> A General Plan Amendment is now proposed for the project location. This letter of notification regarding the Eucalyptus Industrial Park Project is being sent on behalf of the City as part of the Native American scoping for Senate Bill 18 (SB 18

[Burton]) consultation. SB 18 states that local California governments consult with Native American tribes and groups when a General Plan amendment is being proposed. A map of the project area is attached.

>
> To determine whether any cultural resources may be affected by the project, LSA has contacted the Eastern Information Center located at the University of California, Riverside to perform a records search for the project area. Results of the records search are pending. LSA has also contacted the Native American Heritage Commission (NAHC) to request a search of its Sacred Lands File (SLF) Results of the SLF search did not indicate the presence of Native American cultural resources within the proposed project area. However, you are being contacted because the NAHC has identified you as someone who may have information and/or concerns about cultural resources that could be impacted by the Eucalyptus Industrial Park Project.

>
> Please contact me at your earliest convenience if you have comments or knowledge regarding the Eucalyptus Industrial Park Project and its potential to impact cultural resources. You may contact me at the above telephone number or address, or by email at terri.fulton@lsa-assoc.com. If you would like to speak with a City representative directly, I will be happy to provide contact information.

>
> If I do not receive a response from you, I will contact you by telephone or email in the near future to discuss any comments or concerns you may have. Thank you for your involvement in this process. Your input is important to this project, and I look forward to hearing from you.

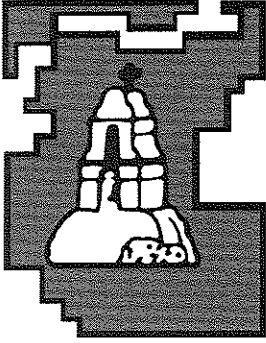
>
> Sincerely,

>
> [cid:image002.jpg@01CC5692.18136540]LSA ASSOCIATES, INC.

>
>
>
> Terri Fulton
> Archaeologist/Senior Cultural Resources Manager Native American
> Consultation Coordinator

>
> Attachment: Project Location Map

>
>
> <image002.jpg>
> <image001.jpg>
> <Figure 1.pdf>



**Pala Band Of
Mission Indians**

Cupa Cultural Center

PMB 445
35008 Pala Temecula Road
Pala, CA 92059

Tel. (760) 891-3590
Fax (760) 742-4543

LSA
LSA ASSOCIATES, INC.

AUG 10 2011

**RECEIVED
IRVINE**

August 5, 2011

Terri Fulton
LSA Associates Inc
20 Executive Park, Suite 200
Irvine, CA 92614

Re: Eucalyptus Industrial Park Project

Dear Ms. Fulton,

The Pala Band of Mission Indians Tribal Historic Preservation Office has received your notification of the project referenced above. This letter constitutes our response on behalf of Robert Smith, Tribal Chairman.

We have consulted our maps and determined that the project as described is not within the boundaries of the recognized Pala Indian Reservation. The project is also beyond the boundaries of the territory that the tribe considers its Traditional Use Area (TUA). Therefore, we have no objection to the continuation of project activities as currently planned and we defer to the wishes of Tribes in closer proximity to the project area.

We appreciate involvement with your initiative and look forward to working with you on future efforts. If you have questions or need additional information, please do not hesitate to contact me by telephone at 760-891-3515 or by e-mail at sgaughen@palatribe.com.

Sincerely,

Shasta C. Gaughen, PhD
Tribal Historic Preservation Officer
Pala Band of Mission Indians

ATTENTION: THE PALA TRIBAL HISTORIC PRESERVATION OFFICE IS RESPONSIBLE FOR ALL REQUESTS FOR CONSULTATION. PLEASE ADDRESS CORRESPONDENCE TO **SHASTA C. GAUGHEN** AT THE ABOVE ADDRESS. IT IS NOT NECESSARY TO ALSO SEND NOTICES TO PALA TRIBAL CHAIRMAN ROBERT SMITH.

Terri Fulton

From: Terri Fulton
Sent: Tuesday, August 09, 2011 1:43 PM
To: Mike Contreras
Subject: FW: SB18 Notification, Eucalyptus Industrial Park Project, Moreno Valley
Attachments: Figure 1.pdf; image002.jpg; image002.jpg; image003.jpg; image002.jpg; image003.jpg; image001.jpg

Hi Mike,

I sent a letter to Chairman Martin on July 25, 2011, notifying the Tribe of the Eucalyptus Industrial Park Project. The text of the letter is pasted below, and a map of the project area is attached. I am following up to see if you have any comments or concerns about this project and its potential to affect cultural resources. Please let me know at your earliest convenience. Thank you.

Best Regards,

Terri Fulton
 Archaeologist/Senior Cultural Resources Manager
 Native American Consultation Coordinator

LSA Associates, Inc.
 20 Executive Park, Suite 200
 Irvine, CA 92614-4731
 Phone (949) 553-0666
 Fax (949) 553-8076
 Wireless (949) 337-5454

July 25, 2011

Morongo Band of Mission Indians
 Robert Martin, Chairperson
 12700 Pumarra Road
 Banning, CA 92220

Subject: SB 18 Native American Consultation for the Eucalyptus Industrial Park Project, City of Moreno Valley, Riverside County, California

Mr. Martin:

LSA Associates, Inc. (LSA) was retained by the City of Moreno Valley (City) to conduct a cultural resources assessment of the approximately 121-acre (ac) project site for the Eucalyptus Industrial Park project in the City of Moreno Valley, Riverside County, California. The project is depicted on the *Sunnymead, California* United States Geological Survey 7.5-minute topographic quadrangle map in Section 2, Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The project is bounded by California State Route 60 on the north, Pettit Street on the west, Quincy Street on the east, and Eucalyptus Avenue on the south. The cultural resources assessment is being conducted pursuant to the California Environmental Quality Act (CEQA).

A General Plan Amendment is now proposed for the project location. This letter of notification regarding the Eucalyptus Industrial Park Project is being sent on behalf of the City as part of the Native American scoping for Senate Bill 18 (SB 18 [Burton]) consultation. SB 18 states that local California governments consult with Native American tribes and groups when a General Plan amendment is being proposed. A map of the project area is attached.

To determine whether any cultural resources may be affected by the project, LSA has contacted the Eastern Information Center located at the University of California, Riverside to perform a records search for the project area. Results of the records search are pending. LSA has also contacted the Native American Heritage Commission (NAHC) to request a search of its Sacred Lands File (SLF) Results of the SLF search did not indicate the presence of Native American cultural resources within the proposed project area. However, you are being contacted because the NAHC has identified you as someone who may have information and/or concerns about cultural resources that could be impacted by the Eucalyptus Industrial Park Project.

Please contact me at your earliest convenience if you have comments or knowledge regarding the Eucalyptus Industrial Park Project and its potential to impact cultural resources. You may contact me at the above telephone number or address, or by email at terri.fulton@lsa-assoc.com. If you would like to speak with a City representative directly, I will be happy to provide contact information.

If I do not receive a response from you, I will contact you by telephone or email in the near future to discuss any comments or concerns you may have. Thank you for your involvement in this process. Your input is important to this project, and I look forward to hearing from you.

Sincerely,

LSA ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read "Terry Fulton", with a long horizontal line extending to the right.

Terry Fulton

Archaeologist/Senior Cultural Resources Manager
Native American Consultation Coordinator

Attachment: Project Location Map

Terri Fulton

From: Terri Fulton
Sent: Tuesday, August 16, 2011 2:42 PM
To: admin@ramonatribe.com; jgomez@ramonatribe.com
Subject: FW: SB18 Notification, Eucalyptus Industrial Park Project, Moreno Valley
Attachments: Figure 1.pdf; image002.jpg; image001.jpg; image002.jpg

Hello Chairman Hamilton,

I would like to follow up on this project one more time to make sure you don't have any comments. Thank you.

Best,

Terri Fulton
Archaeologist/Senior Cultural Resources Manager
Native American Consultation

LSA Associates, Inc.
20 Executive Park, Suite 200
Irvine, CA 92614-4731
Phone (949) 553-0666
Fax (949) 553-8076
Wireless (949) 337-5454

From: Terri Fulton
Sent: Tuesday, August 09, 2011 1:17 PM
To: admin@ramonatribe.com
Cc: 'jgomez@ramonatribe.com'
Subject: FW: SB18 Notification, Eucalyptus Industrial Park Project, Moreno Valley

Chairman Hamilton,

I sent you a letter on July 25, 2011, notifying you of the Eucalyptus Industrial Park Project. The text of the letter is pasted below, and a map of the project area is attached. I am following up to see if you have any comments or concerns about this project and its potential to affect cultural resources. Please let me know at your earliest convenience. Thank you.

Best Regards,

Terri Fulton
Archaeologist/Senior Cultural Resources Manager
Native American Consultation Coordinator

LSA Associates, Inc.
20 Executive Park, Suite 200
Irvine, CA 92614-4731
Phone (949) 553-0666
Fax (949) 553-8076
Wireless (949) 337-5454

July 25, 2011

Ramona Band of Cahuilla Mission Indians
Joseph Hamilton, Chairman
P.O. Box 391671
Anza, CA 92539

Subject: SB 18 Native American Consultation for the Eucalyptus Industrial Park Project, City of Moreno Valley, Riverside County, California

Mr. Hamilton:

LSA Associates, Inc. (LSA) was retained by the City of Moreno Valley (City) to conduct a cultural resources assessment of the approximately 121-acre (ac) project site for the Eucalyptus Industrial Park project in the City of Moreno Valley, Riverside County, California. The project is depicted on the *Sunnymead, California* United States Geological Survey 7.5-minute topographic quadrangle map in Section 2, Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The project is bounded by California State Route 60 on the north, Pettit Street on the west, Quincy Street on the east, and Eucalyptus Avenue on the south. The cultural resources assessment is being conducted pursuant to the California Environmental Quality Act (CEQA).

A General Plan Amendment is now proposed for the project location. This letter of notification regarding the Eucalyptus Industrial Park Project is being sent on behalf of the City as part of the Native American scoping for Senate Bill 18 (SB 18 [Burton]) consultation. SB 18 states that local California governments consult with Native American tribes and groups when a General Plan amendment is being proposed. A map of the project area is attached.

To determine whether any cultural resources may be affected by the project, LSA has contacted the Eastern Information Center located at the University of California, Riverside to perform a records search for the project area. Results of the records search are pending. LSA has also contacted the Native American Heritage Commission (NAHC) to request a search of its Sacred Lands File (SLF) Results of the SLF search did not indicate the presence of Native American cultural resources within the proposed project area. However, you are being contacted because the NAHC has identified you as someone who may have information and/or concerns about cultural resources that could be impacted by the Eucalyptus Industrial Park Project.

Please contact me at your earliest convenience if you have comments or knowledge regarding the Eucalyptus Industrial Park Project and its potential to impact cultural resources. You may contact me at the above telephone number or address, or by email at terri.fulton@lsa-assoc.com. If you would like to speak with a City representative directly, I will be happy to provide contact information.

If I do not receive a response from you, I will contact you by telephone or email in the near future to discuss any comments or concerns you may have. Thank you for your involvement in this process. Your input is important to this project, and I look forward to hearing from you.

Sincerely,

LSA ASSOCIATES, INC.



Terri Fulton
Archaeologist/Senior Cultural Resources Manager
Native American Consultation Coordinator

Attachment: Project Location Map

Terri Fulton

From: Anna Hoover [a Hoover@pechanga-nsn.gov]
Sent: Tuesday, August 09, 2011 2:13 PM
To: Terri Fulton; Terrie Brown
Cc: Paul Macarro
Subject: RE: SB18 Notification, Eucalyptus Industrial Park Project, Moreno Valley
Attachments: image001.jpg

Oh, I did not realize this was an official SB18 request. We will respond directly to the City then. Thank you Terri!

Anna

From: Terri Fulton [mailto:Terri.Fulton@lsa-assoc.com]
Sent: Tuesday, August 09, 2011 2:12 PM
To: Anna Hoover; Terrie Brown
Cc: Paul Macarro
Subject: RE: SB18 Notification, Eucalyptus Industrial Park Project, Moreno Valley

The time frame is the standard 90 days for SB18. We can always note that you will have comments, and an official letter is forthcoming and can be expected within the 90 day comment period.

Terri Fulton
 Archaeologist/Senior Cultural Resources Manager
 Native American Consultation

LSA Associates, Inc.
 20 Executive Park, Suite 200
 Irvine, CA 92614-4731
 Phone (949) 553-0666
 Fax (949) 553-8076
 Wireless (949) 337-5454

From: Anna Hoover [mailto:a Hoover@pechanga-nsn.gov]
Sent: Tuesday, August 09, 2011 1:46 PM
To: Terri Fulton; Terrie Brown
Cc: Paul Macarro
Subject: RE: SB18 Notification, Eucalyptus Industrial Park Project, Moreno Valley

Terri,
 Thank you for contacting us regarding the upcoming Project. Yes, we do have comments on this property. Can you please provide a timeframe as to when you need our comment letter?
 Thanks!

Anna M. Hoover
 Cultural Analyst
 Pechanga Band of Luiseno Mission Indians
 P.O. Box 2183
 Temecula, CA 92593

951-770-8104 (O)
 951-694-0446 (F)
 951-757-6139 (C)
a Hoover@pechanga-nsn.gov

From: Terri Fulton [mailto:Terri.Fulton@lsa-assoc.com]

-3315-

Item No. E.3

Sent: Tuesday, August 09, 2011 1:26 PM
To: Terrie Brown; Anna Hoover
Cc: Paul Macarro
Subject: FW: SB18 Notification, Eucalyptus Industrial Park Project, Moreno Valley

Chairman Macarro,

I sent a letter on July 25, 2011, notifying you of the Eucalyptus Industrial Park Project. The text of the letter is pasted below, and a map of the project area is attached. I am following up to see if you have any comments or concerns about this project and its potential to affect cultural resources. Please let me know at your earliest convenience. Thank you.

Best Regards,

Terri Fulton
 Archaeologist/Senior Cultural Resources Manager
 Native American Consultation Coordinator

LSA Associates, Inc.
 20 Executive Park, Suite 200
 Irvine, CA 92614-4731
 Phone (949) 553-0666
 Fax (949) 553-8076
 Wireless (949) 337-5454

July 25, 2011

Pechanga Band of Mission Indians
 Mark Macarro, Chairperson
 P.O. Box 1477
 Temecula, CA 92593

Subject: SB 18 Native American Consultation for the Eucalyptus Industrial Park Project, City of Moreno Valley, Riverside County, California

Mr. Macarro:

LSA Associates, Inc. (LSA) was retained by the City of Moreno Valley (City) to conduct a cultural resources assessment of the approximately 121-acre (ac) project site for the Eucalyptus Industrial Park project in the City of Moreno Valley, Riverside County, California. The project is depicted on the *Sunnymead, California* United States Geological Survey 7.5-minute topographic quadrangle map in Section 2, Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The project is bounded by California State Route 60 on the north, Pettit Street on the west, Quincy Street on the east, and Eucalyptus Avenue on the south. The cultural resources assessment is being conducted pursuant to the California Environmental Quality Act (CEQA).

A General Plan Amendment is now proposed for the project location. This letter of notification regarding the Eucalyptus Industrial Park Project is being sent on behalf of the City as part of the Native American scoping for Senate Bill 18 (SB 18 [Burton]) consultation. SB 18 states that local California governments consult with Native American tribes and groups when a General Plan amendment is being proposed. A map of the project area is attached.

To determine whether any cultural resources may be affected by the project, LSA has contacted the Eastern Information Center located at the University of California, Riverside to perform a records search for the project area. Results of the records search are pending. LSA has also contacted the Native American Heritage Commission (NAHC) to request a search of its Sacred Lands File (SLF) Results of the SLF search did not indicate the presence of Native American cultural resources within the proposed project area. However, you are being contacted because the NAHC has identified you as someone who may have information and/or concerns about cultural resources that could be impacted by the Eucalyptus Industrial Park Project.

Please contact me at your earliest convenience if you have comments or knowledge regarding the Eucalyptus Industrial Park Project and its potential to impact cultural resources. You may contact me at the above telephone number or address, or by email at terri.fulton@lsa-assoc.com. If you would like to speak with a City representative directly, I will be happy to provide contact information.

Response from you, I will contact you by telephone or email in the near future to discuss any comments or

concerns you may have. Thank you for your involvement in this process. Your input is important to this project, and I look forward to hearing from you.

Sincerely,

LSA ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read "Terri Fulton", with a horizontal line extending to the right.

Terri Fulton
Archaeologist/Senior Cultural Resources Manager
Native American Consultation Coordinator

Attachment: Project Location Map

Terri Fulton

From: Terri Fulton
Sent: Tuesday, August 09, 2011 1:41 PM
To: Ann Brierty
Subject: FW: SB18 Notification, Eucalyptus Industrial Park Project, Moreno Valley
Attachments: Figure 1.pdf; image002.jpg; image002.jpg; image003.jpg; image002.jpg; image001.jpg

Hi Ann,

I sent a letter to Chairman Ramos on July 25, 2011, notifying the Tribe of the Eucalyptus Industrial Park Project. The text of the letter is pasted below, and a map of the project area is attached. I am following up to see if you have any comments or concerns about this project and its potential to affect cultural resources. Please let me know at your earliest convenience. Thank you.

Best Regards,

Terri Fulton
 Archaeologist/Senior Cultural Resources Manager
 Native American Consultation Coordinator

LSA Associates, Inc.
 20 Executive Park, Suite 200
 Irvine, CA 92614-4731
 Phone (949) 553-0666
 Fax (949) 553-8076
 Wireless (949) 337-5454

July 25, 2011

San Manuel Band of Mission Indians
 James Ramos, Chairperson
 26569 Community Center Drive
 Highland, CA 92346

Subject: SB 18 Native American Consultation for the Eucalyptus Industrial Park Project, City of Moreno Valley, Riverside County, California

Mr. Ramos:

LSA Associates, Inc. (LSA) was retained by the City of Moreno Valley (City) to conduct a cultural resources assessment of the approximately 121-acre (ac) project site for the Eucalyptus Industrial Park project in the City of Moreno Valley, Riverside County, California. The project is depicted on the *Sunnymead, California* United States Geological Survey 7.5-minute topographic quadrangle map in Section 2, Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The project is bounded by California State Route 60 on the north, Pettit Street on the west, Quincy Street on the east, and Eucalyptus Avenue on the south. The cultural resources assessment is being conducted pursuant to the California Environmental Quality Act (CEQA).

A General Plan Amendment is now proposed for the project location. This letter of notification regarding the Eucalyptus Industrial Park Project is being sent on behalf of the City as part of the Native American scoping for Senate Bill 18 (SB 18 [Burton]) consultation. SB 18 states that local California governments consult with Native American tribes and groups when a General Plan amendment is being proposed. A map of the project area is attached.

To determine whether any cultural resources may be affected by the project, LSA has contacted the Eastern Information Center located at the University of California, Riverside to perform a records search for the project area. Results of the records search are pending. LSA has also contacted the Native American Heritage Commission (NAHC) to request a search of its Sacred Lands File (SLF) Results of the SLF search did not indicate the presence of Native American cultural resources within the proposed project area. However, you are being contacted because the NAHC has identified you as someone who may have information and/or concerns about cultural resources that could be impacted by the Eucalyptus Industrial Park Project.

Please contact me at your earliest convenience if you have comments or knowledge regarding the Eucalyptus Industrial Park Project and its potential to impact cultural resources. You may contact me at the above telephone number or address, or by email at terri.fulton@lsa-assoc.com. If you would like to speak with a City representative directly, I will be happy to provide contact information

If I do not receive a response from you, I will contact you by telephone or email in the near future to discuss any comments or concerns you may have. Thank you for your involvement in this process. Your input is important to this project, and I look forward to hearing from you.

Sincerely,

LSA ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read "Terri Fulton", with a long horizontal line extending to the right.

Terri Fulton
Archaeologist/Senior Cultural Resources Manager
Native American Consultation Coordinator

Attachment: Project Location Map

Terri Fulton

From: Terri Fulton
Sent: Tuesday, August 09, 2011 1:32 PM
To: Darren Hill; Joseph Ontiveros
Subject: FW: SB18 Notification, Eucalyptus Industrial Park Project, Moreno Valley
Attachments: Figure 1.pdf; image002.jpg; image001.jpg; image002.jpg; image003.jpg; image002.jpg
 Chairman Cozaet/Ms. Carrie Garcia,

I sent a letter on July 25, 2011, notifying you of the Eucalyptus Industrial Park Project. The text of the letter is pasted below, and a map of the project area is attached. I am following up to see if you have any comments or concerns about this project and its potential to affect cultural resources. Please let me know at your earliest convenience. Thank you.

Best Regards,

Terri Fulton
 Archaeologist/Senior Cultural Resources Manager
 Native American Consultation Coordinator

LSA Associates, Inc.
 20 Executive Park, Suite 200
 Irvine, CA 92614-4731
 Phone (949) 553-0666
 Fax (949) 553-8076
 Wireless (949) 337-5454

July 25, 2011

Soboba Band of Mission Indians
 Scott Cozaet, Chairperson; Attn: Carrie Garcia
 P.O. Box 487
 San Jacinto, CA 92581

Subject: SB 18 Native American Consultation for the Eucalyptus Industrial Park Project, City of Moreno Valley, Riverside County, California

Mr. Cozaet/Ms. Garcia:

LSA Associates, Inc. (LSA) was retained by the City of Moreno Valley (City) to conduct a cultural resources assessment of the approximately 121-acre (ac) project site for the Eucalyptus Industrial Park project in the City of Moreno Valley, Riverside County, California. The project is depicted on the *Sunnymead, California* United States Geological Survey 7.5-minute topographic quadrangle map in Section 2, Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The project is bounded by California State Route 60 on the north, Pettit Street on the west, Quincy Street on the east, and Eucalyptus Avenue on the south. The cultural resources assessment is being conducted pursuant to the California Environmental Quality Act (CEQA).

A General Plan Amendment is now proposed for the project location. This letter of notification regarding the Eucalyptus Industrial Park Project is being sent on behalf of the City as part of the Native American scoping for Senate Bill 18 (SB 18 [Burton]) consultation. SB 18 states that local California governments consult with Native American tribes and groups when a General Plan amendment is being proposed. A map of the project area is attached.

To determine whether any cultural resources may be affected by the project, LSA has contacted the Eastern Information Center located at the University of California, Riverside to perform a records search for the project area. Results of the records search are pending. LSA has also contacted the Native American Heritage Commission (NAHC) to request a search of its Sacred Lands File (SLF) Results of the SLF search did not indicate the presence of Native American cultural resources within the proposed project area. However, you are being contacted because the NAHC has identified you as someone who may have information and/or concerns about cultural resources that could be impacted by the Eucalyptus Industrial Park Project.

Please contact me at your earliest convenience if you have comments or knowledge regarding the Eucalyptus Industrial Park Project and its potential to impact cultural resources. You may contact me at the above telephone number or address, or by email at terri.fulton@lsa-assoc.com. If you would like to speak with a City representative directly, I will be happy to provide contact information.

If I do not receive a response from you, I will contact you by telephone or email in the near future to discuss any comments or concerns you may have. Thank you for your involvement in this process. Your input is important to this project, and I look forward to hearing from you.

Sincerely,

LSA ASSOCIATES, INC.

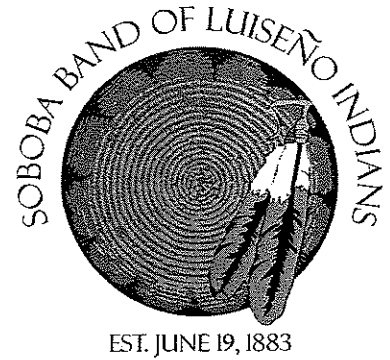
A handwritten signature in black ink, appearing to read "Terri Fulton", with a horizontal line extending to the right.

Terri Fulton
Archaeologist/Senior Cultural Resources Manager
Native American Consultation Coordinator

Attachment: Project Location Map

August 17, 2011

Attn: Terri Fulton
LSA Associates
20 Executive Park, Suite 200
Irvine, CA 92614



Re: SB 18 Consultation for the Eucalyptus Industrial Park Project, in the City of Moreno Valley, Riverside County, California

The Soboba Band of Luiseño Indians appreciates your observance of Tribal Cultural Resources and their preservation in your project. The information provided to us on said project has been assessed through our Cultural Resource Department, where it was concluded that although it is outside the existing reservation, the project area does fall within the bounds of our Tribal Traditional Use Areas. This project location is in close proximity to known village sites and is a shared use area that was used in ongoing trade between the Luiseno and Cahuilla tribes. Therefore it is regarded as highly sensitive to the people of Soboba.

Soboba Band of Luiseño Indians is requesting the following:

1. **Government to Government** consultation in accordance to SB18. Including the transfer of information to the Soboba Band of Luiseno Indians regarding the progress of this project should be done as soon as new developments occur.
2. Soboba Band of Luiseño Indians continue to be a lead consulting tribal entity for this project.
3. Working in and around traditional use areas intensifies the possibility of encountering cultural resources during the construction/excavation phase. For this reason the Soboba Band of Luiseño Indians requests that Native American Monitor(s) from the Soboba Band of Luiseño Indians Cultural Resource Department to be present during any ground disturbing proceedings. Including surveys and archaeological testing.
4. Request that proper procedures be taken and requests of the tribe be honored (Please see the attachment)

Sincerely,

Joseph Ontiveros
Soboba Cultural Resource Department
P.O. Box 487
San Jacinto, CA 92581
Phone (951) 654-5544 ext. 4137
Cell (951) 663-5279
jontiveros@soboba-nsn.gov

Cultural Items (Artifacts). Ceremonial items and items of cultural patrimony reflect traditional religious beliefs and practices of the Soboba Band. The Developer should agree to return all Native American ceremonial items and items of cultural patrimony that may be found on the project site to the Soboba Band for appropriate treatment. In addition, the Soboba Band requests the return of all other cultural items (artifacts) that are recovered during the course of archaeological investigations. Where appropriate and agreed upon in advance, Developer's archeologist may conduct analyses of certain artifact classes if required by CEQA, Section 106 of NHPA, the mitigation measures or conditions of approval for the Project. This may include but is not limited or restricted to include shell, bone, ceramic, stone or other artifacts.

The Developer should waive any and all claims to ownership of Native American ceremonial and cultural artifacts that may be found on the Project site. Upon completion of authorized and mandatory archeological analysis, the Developer should return said artifacts to the Soboba Band within a reasonable time period agreed to by the Parties and not to exceed (30) days from the initial recovery of the items.

Treatment and Disposition of Remains

A. The Soboba Band shall be allowed, under California Public Resources Code § 5097.98 (a), to (1) inspect the site of the discovery and (2) make determinations as to how the human remains and grave goods shall be treated and disposed of with appropriate dignity.

B. The Soboba Band, as MLD, shall complete its inspection within twenty-four (24) hours of receiving notification from either the Developer or the NAHC, as required by California Public Resources Code § 5097.98 (a). The Parties agree to discuss in good faith what constitutes "appropriate dignity" as that term is used in the applicable statutes.

C. Reburial of human remains shall be accomplished in compliance with the California Public Resources Code § 5097.98 (a) and (b). The Soboba Band, as the MLD in consultation with the Developer, shall make the final discretionary determination regarding the appropriate disposition and treatment of human remains.

D. All parties are aware that the Soboba Band may wish to rebury the human remains and associated ceremonial and cultural items (artifacts) on or near, the site of their discovery, in an area that shall not be subject to future subsurface disturbances. The Developer should accommodate on-site reburial in a location mutually agreed upon by the Parties.

E. The term "human remains" encompasses more than human bones because the Soboba Band's traditions periodically necessitated the ceremonial burning of human remains. Grave goods are those artifacts associated with any human remains. These items, and other funerary remnants and their ashes are to be treated in the same manner as human bone fragments or bones that remain intact

Coordination with County Coroner's Office. The Lead Agencies and the Developer should immediately contact both the Coroner and the Soboba Band in the event that any human remains are discovered during implementation of the Project. If the Coroner recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, the Coroner shall ensure that notification is provided to the NAHC within twenty-four (24) hours of the determination, as required by California Health and Safety Code § 7050.5 (c).

Non-Disclosure of Location Reburials. It is understood by all parties that unless otherwise required by law, the site of any reburial of Native American human remains or cultural artifacts shall not be disclosed and shall not be governed by public disclosure requirements of the California Public Records Act. The Coroner, parties, and Lead Agencies, will be asked to withhold public disclosure information related to such reburial, pursuant to the specific exemption set forth in California Government Code § 6254 (r).

Ceremonial items and items of cultural patrimony reflect traditional religious beliefs and practices of the Soboba Band. The Developer agrees to return all Native American ceremonial items and items of cultural patrimony that may be found on the project site to the Soboba Band for appropriate treatment. In addition, the Soboba Band requests the return of all other cultural items (artifacts) that are recovered during the course of archaeological investigations. Where appropriate and agreed upon in advance, Developer's archeologist may conduct analyses of certain artifact classes if required by CEQA, Section 106 of NHPA, the mitigation measures or conditions of approval for the Project. This may include but is not limited or restricted to include shell, bone, ceramic, stone or other artifacts.

Terri Fulton

From: Terri Fulton
Sent: Tuesday, August 09, 2011 1:45 PM
To: tribalcouncil@cahuilla.net; environmentalofficer@cahuilla.net
Subject: FW: SB18 Notification, Eucalyptus Industrial Park Project, Moreno Valley
Attachments: Figure 1.pdf; image002.jpg; image002.jpg; image003.jpg; image002.jpg; image003.jpg; image001.jpg; image002.jpg

Hi Yvonne,

I sent a letter to Chairman Salgado on July 25, 2011, notifying the Tribe of the Eucalyptus Industrial Park Project. The text of the letter is pasted below, and a map of the project area is attached. I am following up to see if you have any comments or concerns about this project and its potential to affect cultural resources. Please let me know at your earliest convenience. Thank you.

Best Regards,

Terri Fulton
 Archaeologist/Senior Cultural Resources Manager
 Native American Consultation Coordinator

LSA Associates, Inc.
 20 Executive Park, Suite 200
 Irvine, CA 92614-4731
 Phone (949) 553-0666
 Fax (949) 553-8076
 Wireless (949) 337-5454

July 25, 2011

Cahuilla Band of Indians
 Luther Salgado, Sr., Chairperson
 P.O. Box 391760
 Anza, CA 92539

Subject: SB 18 Native American Consultation for the Eucalyptus Industrial Park Project, City of Moreno Valley, Riverside County, California

Mr. Salgado:

LSA Associates, Inc. (LSA) was retained by the City of Moreno Valley (City) to conduct a cultural resources assessment of the approximately 121-acre (ac) project site for the Eucalyptus Industrial Park project in the City of Moreno Valley, Riverside County, California. The project is depicted on the *Sunnymead, California* United States Geological Survey 7.5-minute topographic quadrangle map in Section 2, Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The project is bounded by California State Route 60 on the north, Pettit Street on the west, Quincy Street on the east, and Eucalyptus Avenue on the south. The cultural resources assessment is being conducted pursuant to the California Environmental Quality Act (CEQA).

A General Plan Amendment is now proposed for the project location. This letter of notification regarding the Eucalyptus Industrial Park Project is being sent on behalf of the City as part of the Native American scoping for Senate Bill 18 (SB 18 [Burton]) consultation. SB 18 states that local California governments consult with Native American tribes and groups when a General Plan amendment is being proposed. A map of the project area is attached.

To determine whether any cultural resources may be affected by the project, LSA has contacted the Eastern Information Center located at the University of California, Riverside to perform a records search for the project area. Results of the records search are pending. LSA has also contacted the Native American Heritage Commission (NAHC) to request a search of its Sacred Lands File (SLF) Results of the SLF search did not indicate the presence of Native American cultural resources within the proposed project area. However, you are being contacted because the NAHC has identified you as someone who may have information and/or concerns about cultural resources that could be impacted by the Eucalyptus Industrial Park Project.

Please contact me at your earliest convenience if you have comments or knowledge regarding the Eucalyptus Industrial Park Project and its potential to impact cultural resources. You may contact me at the above telephone number or address, or by email at

-3325-

Item No. E.3


8/23/2011

terri.fulton@lsa-assoc.com. If you would like to speak with a City representative directly, I will be happy to provide contact information.

If I do not receive a response from you, I will contact you by telephone or email in the near future to discuss any comments or concerns you may have. Thank you for your involvement in this process. Your input is important to this project, and I look forward to hearing from you.

Sincerely,

LSA ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read "Terri Fulton", with a long horizontal line extending to the right.

Terri Fulton
Archaeologist/Senior Cultural Resources Manager
Native American Consultation Coordinator

Attachment: Project Location Map

Terri Fulton

From: environmentalofficer@cahuilla.net
Sent: Tuesday, August 09, 2011 3:59 PM
To: Terri Fulton
Subject: Eucalyptus Industrial Park Project Moreno Valley

August 5, 2011

Terri Fulton, Archaeologist/Senior Cultural Resources Manager
LSA Associates, Inc.
Native American Consultation

RE: Eucalyptus Industrial Park Project
Moreno Valley, California

Dear Ms. Fulton:

Thank you for contacting the Cahuilla Band of Indians concerning the above referenced project. We presently have no knowledge of any cultural resources within the plan project; however, although the project area is outside the Cahuilla Indian Reservation territory, it is not outside the Traditional Use Area for the Cahuilla Band of Indians and we are requesting copies of archeological and /or cultural resource documentation if any.

Finally, working in and around traditional use areas intensifies the possibility of encountering cultural resources during the construction/excavation phase. For this, the Cahuilla Band of Indians requests Cultural Resource Monitor(s) to be present during any ground disturbing proceedings. The Cahuilla tribe does have trained and certified Native American Monitors who are qualified to monitor construction and archaeological activities. Please contact the Cahuilla Tribal Environmental Protection Office (CTEPO) for proposed monitoring.

Yvonne L. Markle
Cahuilla Environmental Office Manager
environmentalofficer@cahuilla.net
Cahuilla Tribal Environmental Protection Office
P.O. Box 391741
Anza, CA 92539
951-763-2631
FAX 951-763-2632

SENATE BILL 18 (SB18) NATIVE AMERICAN CONTACT RECORD

Proposed Eucalyptus Industrial Park Project, City of Moreno Valley, Riverside County, California

Date LSA Requested a Sacred Lands File Search from the Native American Heritage Commission (NAHC): July 13, 2011.

Date the NAHC Replied: July 20, 2011.

Results of Sacred Lands File Search: Native American cultural resources were *not* identified in the USGS coordinates specified for the project area; however, the NAHC recommended that 10 tribes/individuals be contacted for information regarding cultural resources that could be impacted.

Groups Contacted	Date LSA Sent Letter to Tribes	Date a Response to the Letter was Received by LSA (if Applicable)	Date and Results of LSA Follow-up Telephone Calls and/or emails
Los Coyotes Band of Mission Indians Spokesperson <i>Cahuilla</i>	07-25-11	No response received.	08-09-11: A follow up email was sent. 08-16-11: A message was left with an administrator. The Tribe will return the call if there are concerns.
Santa Rosa Band of Mission Indians Mayme Estrada, Chairwoman <i>Cahuilla</i>	07-25-11	No response received.	08-09-11: A follow up email was sent to Ms. Estrada, and also to Steven Estrada in Cultural Resources. 08-10-11: An email was received from Gabriella Rubalcava, Tribal Council. The email stated that the Band does not have specific concerns and deferred further consultation to Joe Ontiveros, Soboba Band of Luiseño Indians.
Pala Band of Mission Indians Tribal Historic Preservation Office/Shasta Gaughen <i>Luiseño, Cupeño</i>	07-25-11	No response received.	08-09-11: A follow up email was sent to Ms. Gaughen. She responded to say that the project is outside of their area and they have no concerns. A letter is forthcoming. 08-10-11: A letter stating the above dated August 5, 2011 was received.
Morongo Band of Mission Indians Robert Martín, Chairperson <i>Cahuilla, Serrano</i>	07-25-11	No response received.	08-09-11: A follow up email was sent to Michael Contreras. He is the spokesperson for cultural resources. 08-17-11: Mr. Contreras responded by telephone to state that they have no concerns at this time. He requested a copy of the final report and a City contact should the Tribe wish to engage in formal consultation.
Ramona Band of Cahuilla Mission Indians Joseph Hamilton, Chairman <i>Cahuilla</i>	07-25-11	No response received.	08-09-11: A follow up email was sent to Mr. Hamilton, and also to John Gomez in Cultural Resources. 08-16-11: A second follow up email was sent to Mr. Hamilton and Mr. Gomez.
Pechanga Band of Mission Indians Mark Macarro, Chairperson <i>Luiseño</i>	07-25-11	No response received.	08-09-11: A follow email was sent to Terrie Brown, Executive Secretary, and also to Paul Macarro and Anna Hoover in Cultural Resources. Ms. Hoover

Groups Contacted	Date LSA Sent Letter to Tribes	Date a Response to the Letter was Received by LSA (if Applicable)	Date and Results of LSA Follow-up Telephone Calls and/or emails
			responded to say that they do have comments and will send an official comment letter directly to the City.
San Manuel Band of Mission Indians James Ramos, Chairperson <i>Serrano</i>	07-25-11	No response received.	08-09-11: A follow up email was sent to Mr. Ramos, and also to Ann Brierty in Cultural Resources. 08-16-11: A voicemail was left for Ms. Brierty.
Serrano Nation of Indians Goldie Walker <i>Serrano</i>	07-25-11	No response received.	08-16-11: Mark Lee Cochrane, Ms. Walker's son who is also on the Tribal Council, spoke for the Tribe. They would like to be notified of any discoveries and also request a copy of the final report.
Soboba Band of Mission Indians Scott Cozaet, Chairperson; Attn. Carrie Garcia <i>Luiseno</i>	07-25-11	No response received.	08-09-11: A follow up email was sent to Darren Hill (the email contact provided by the NAHC) and also to Joe Ontiveros in Cultural Resources. The email to Mr. Hill was returned. 08-16-11: A voicemail was left for Carrie Garcia, the Executive Secretary for Chairman Cozaet as shown on the NAHC list. 08-17-11: A letter was received via email from Joe Ontiveros, Cultural Resources Department. The letter stated that the project is within the Tribe's Traditional Use Area and is very sensitive to the people of Soboba. The Tribe requests government to government consultation in accordance with SB18; that Soboba continue to be the lead consulting Tribe for the project; that project construction be monitored by a Soboba monitor; and that the proper procedures be taken and the requests of the Tribe are honored.
Cahuilla Band of Indians Luther Salgado, Sr., Chairperson <i>Cahuilla</i>	07-25-11	No response received.	08-09-11: A follow up email was sent to Mr. Salgado, and also to Environmental Officer Yvonne Markel. Ms. Markel responded to say that the Tribe presently has no knowledge of cultural resources within the project area. However, due to the possibility of encountering cultural resources during construction, they request monitoring by a Native American and can provide trained monitors. They also would like to request copies of any cultural resource documentation.

LOCAL GOVERNMENT TRIBAL CONSULTATION LIST REQUEST

NATIVE AMERICAN HERITAGE COMMISSION
915 Capitol Mall, Room 364
Sacramento, CA 95814
(916) 653-4082
(916) 657-5390 - Fax

Project Title: Eucalyptus Industrial Park
Local Government/Lead Agency: City of Moreno Valley (via LSA)
Contact Person: Terri Fulton, LSA Associates, Inc
Street Address: 20 Executive Park, Suite 200
City: Irvine Zip: 92614
Phone: 949-553-0666 Fax: 949-553-8076

Specific Area Subject to Proposed Action

County: Riverside
City/Community: City of Moreno Valley

Local Action Type:

General Plan General Plan Element General Plan Amendment
 Specific Plan Specific Plan Amendment
 Pre-planning Outreach Activity

Project Description:

The proposed Eucalyptus Industrial Park project is on a 121-acre site in the City of Moreno Valley. A General Plan Amendment is proposed for the project location.

SACRED LANDS FILE SEARCH AND NATIVE AMERICAN CONTACTS LIST REQUEST

Information Below is Required for a Sacred Lands File Search

USGS Quadrangle Name Sunnymead, California
Township 3S Range 3W Section(s) 2

Native American Tribal Consultation lists are only applicable for consulting with California Native American tribes per Government Code Section 65352.3.

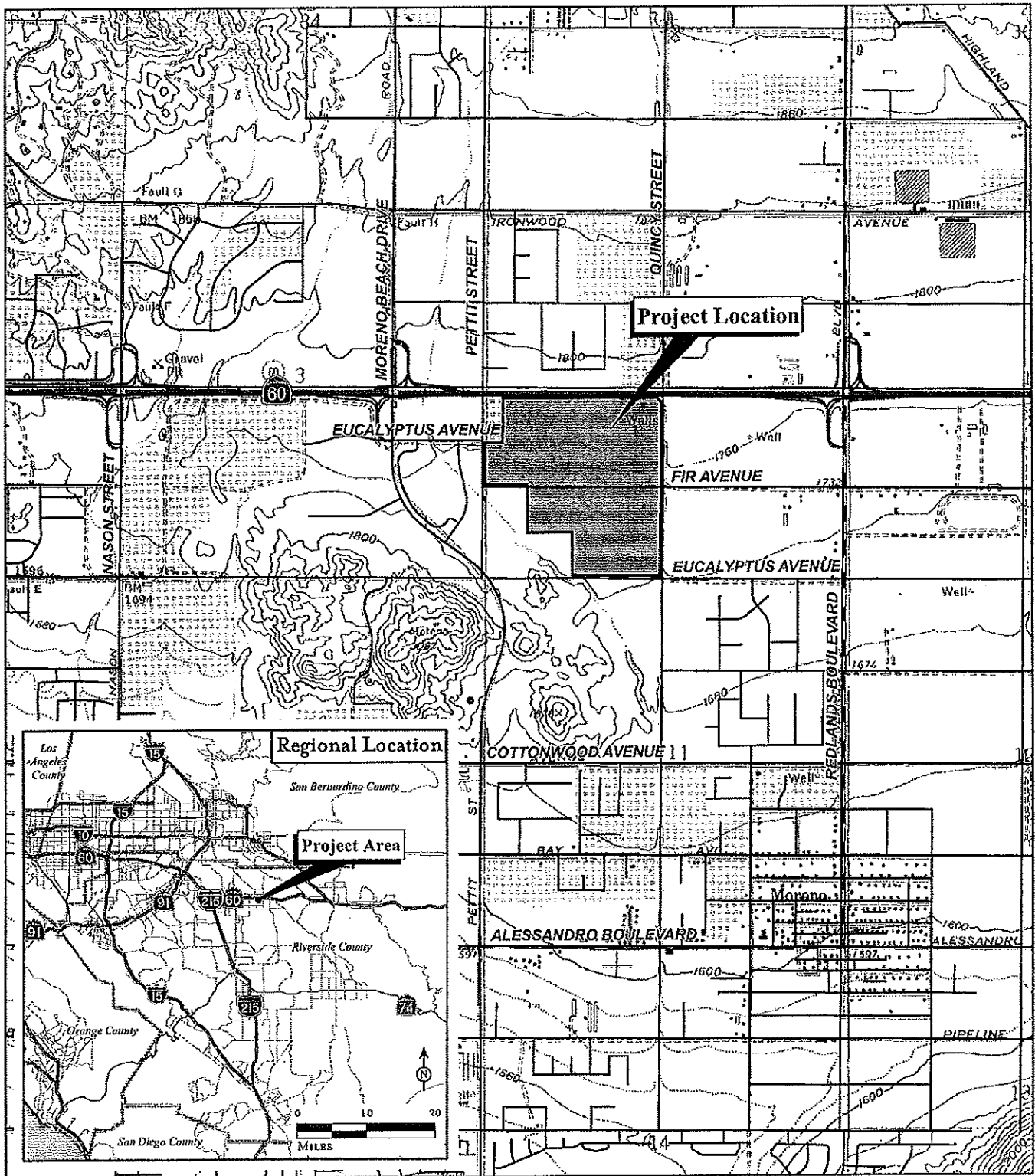
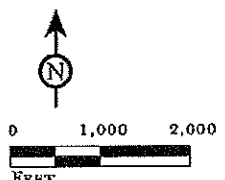


FIGURE 1

LSA



SOURCE: County of Riverside, 2006; Quad: Sunnymead (1980), CA.

I:\P\0701\Reports\Cultural\reg_loc.mxd (12/07/07)

Eucalyptus Industrial Park
Regional and Project Location

TRANSMISSION VERIFICATION REPORT

TIME : 07/13/2011 13:35
NAME :
FAX :
TEL :
SER.# : 000C5J225683

DATE, TIME : 07/13 13:34
FAX NO./NAME : NAHC
DURATION : 00:00:36
PAGE(S) : 02
RESULT : OK
MODE : STANDARD
ECM

LOCAL GOVERNMENT TRIBAL CONSULTATION LIST REQUEST

NATIVE AMERICAN HERITAGE COMMISSION
915 Capitol Mall, Room 364
Sacramento, CA 95814
(916) 633-4082
(916) 657-5390 - Fax

Project Title: Eucalyptus Industrial Park
Local Government/Lead Agency: City of Moreno Valley (via LSA)
Contact Person: Terri Fulton, LSA Associates, Inc
Street Address: 20 Executive Park, Suite 200
City: Irvine Zip: 92614
Phone: 949-553-0166 Fax: 949-553-8076

Specific Area Subject to Proposed Action

County: Riverside
City/Community: City of Moreno Valley

Local Action Type:

- General Plan General Plan Element General Plan Amendment
 Specific Plan Specific Plan Amendment
 Pre-planning Outreach Activity

Project Description:

Item No. E.3 The proposed E-3332 Eucalyptus Industrial Park
is a 121-acre site in the City of

STATE OF CALIFORNIA

Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION

915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390
Web Site www.nahc.ca.gov
e-mail: ds_nahc@pacbell.net



July 20, 2011

Ms. Terri Fulton, Senior Archaeologist
**LSA Associates, Inc. for the
City of Moreno Valley**
20 Executive Park, Suite 200
Irvine, CA 92614

Sent by FAX to: 949-553-8076
No. of Pages: 3

Re: Tribal Consultation Per Government Code §§ 65092, 65351, 65352.3, 65352.4, 65560 and 65562.5 (SB 18) General Plan Amendment for the Eucalyptus Industrial Park Project, located in the City of Moreno Valley, Riverside County, California

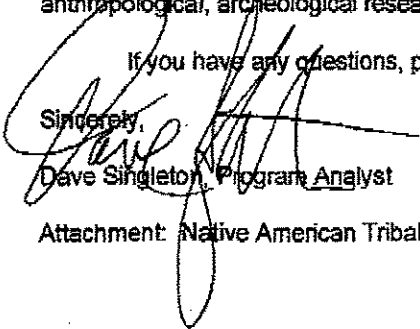
Dear Mr. Fulton:

Government Code §65352.3 requires local governments to consult with California Native American tribes identified by the Native American Heritage Commission (NAHC) for the purpose of protecting, and/or mitigating impacts to cultural places. The Native American Heritage Commission is the state "trustee agency" designated for the protection of Native American Cultural Resource pursuant to CA Public Resources Code §21070.. Attached is a consultation list of tribes with traditional lands or cultural places located within the Project Area of Potential Effect (APE). The tribal entities on the list are for your guidance for **government-to-government consultation** purposes. Pursuant to CA Public Resources Code §5097.95, please provide pertinent project information to the tribal consulting parties.

The NAHC did perform a Sacred Lands File search of the project location and **Native American cultural resources were not identified** by the USGS coordinates provided for the 'area of potential effect - APE'. Also, the NAHC Sacred Lands Inventory is not exhaustive; cultural resources may be discovered during construction ground-breaking activity. Please contact the Native Americans on the attached list to determine, from their knowledge, if the proposed changes might impact on Native American cultural resources.. in order to see if your proposed project might impact Native American cultural resources that may be affected by the proposed action. If so, Section 15382 of the CEQA Guidelines defines a significant impact on the environment as "substantial," and Section 2183.2 requires documentation, data recovery of cultural resources identified. The NAHC recommends that lead agencies provide appropriate archaeological studies and pertinent project information to the consulting Native American tribes.

The Native American Heritage Commission works with Native American tribal governments regarding its identification of 'Areas of Traditional Use.' The Commission may adjust the submitted data defining the 'Area of Traditional Use' in accordance with generally accepted ethnographic, anthropological, archeological research and oral history.

If you have any questions, please contact me at (916) 653-6251.

Sincerely,

Dave Singleton, Program Analyst

Attachment: Native American Tribal Consultation List

PS: The California native American Heritage Commission and the Governor's Office of Planning & Research discourages the use of consulting firms, by California local governments to do the SB 18 government-to-government consultation as required by California Government Code §§65352.3 and 65352.4.

**Native American Tribal Consultation List
Riverside County
July 20, 2011**

Los Coyotes Band of Mission Indians
Spokesperson
P.O. Box 189 Cahuilla
Warner , CA 92086
loscoyotes@earthlink.net
(760) 782-0711

Santa Rosa Band of Mission Indians
Mayme Estrada, Chairwoman
P.O. Box 609 Cahuilla
Hemet , CA 92546
srbcioffice@yahoo.com
(951) 658-5311
(951) 658-6733 Fax

Pala Band of Mission Indians
Tribal Historic Preservation Office/Shasta Gaughen
35008 PalaTemecula Rd, PMB 445 Luiseno
Pala , CA 92059 Cupeno
sgaughen@palatribe.com
(760) 891-3515

Morongo Band of Mission Indians
Robert Martin, Chairperson
12700 Pumarra Road Cahuilla
Banning , CA 92220 Serrano
(951) 849-8807
(951) 755-5200

Ramona Band of Cahuilla Mission Indians
Joseph Hamilton, Chairman
P.O. Box 391670 Cahuilla
Anza , CA 92539
admin@ramonatribe.com
(951) 763-4105

Pechanga Band of Mission Indians
Mark Macarro, Chairperson
P.O. Box 1477 Luiseno
Temecula , CA 92593
tbrown@pechanga-rsn.gov
(951) 770-6100

San Manuel Band of Mission Indians
James Ramos, Chairperson
26569 Community Center Drive Serrano
Highland , CA 92346
(909) 864-8933
(909) 864-3724 - FAX

Serrano Nation of Indians
Goldie Walker
P.O. Box 343 Serrano
Patton , CA 92369
(909) 862-9883

Soboba Band of Mission Indians
Scott Cozaet, Chairperson; Attn: Carrie Garcia
P.O. Box 487 Luiseno
San Jacinto , CA 92581
dhill@soboba-nsn.gov
(951) 654-2765

Cahuilla Band of Indians
Luther Salgado, Sr., , Chairperson
PO Box 391760 Cahuilla
Anza , CA 92539
tribalcouncil@cahuilla.net
915-763-5549

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable only for consultation with Native American tribes under Government Code Section 65362.3. and 65362.4. et seq.



LSA ASSOCIATES, INC.
20 EXECUTIVE PARK, SUITE 200 949.553.0666 TEL
IRVINE, CALIFORNIA 92614 949.553.8076 FAX

BERKELEY
CARLSBAD
FORT COLLINS

FRESNO
PALM SPRINGS
POINT RICHMOND

RIVERSIDE
ROCKLIN
SAN LUIS OBISPO
SOUTH SAN FRANCISCO

July 25, 2011

Pechanga Band of Mission Indians
Mark Macarro, Chairperson
P.O. Box 1477

Temecula, CA 92593

Subject: SB 18 Native American Consultation for the Eucalyptus Industrial Park Project, City of
Moreno Valley, Riverside County, California

Mr. Macarro:

LSA Associates, Inc. (LSA) was retained by the City of Moreno Valley (City) to conduct a cultural resources assessment of the approximately 121-acre (ac) project site for the Eucalyptus Industrial Park project in the City of Moreno Valley, Riverside County, California. The project is depicted on the *Sunnymead, California* United States Geological Survey 7.5-minute topographic quadrangle map in Section 2, Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The project is bounded by California State Route 60 on the north, Pettit Street on the west, Quincy Street on the east, and Eucalyptus Avenue on the south. The cultural resources assessment is being conducted pursuant to the California Environmental Quality Act (CEQA).

A General Plan Amendment is now proposed for the project location. This letter of notification regarding the Eucalyptus Industrial Park Project is being sent on behalf of the City as part of the Native American scoping for Senate Bill 18 (SB 18 [Burton]) consultation. SB 18 states that local California governments consult with Native American tribes and groups when a General Plan amendment is being proposed. A map of the project area is attached.

To determine whether any cultural resources may be affected by the project, LSA has contacted the Eastern Information Center located at the University of California, Riverside to perform a records search for the project area. Results of the records search are pending. LSA has also contacted the Native American Heritage Commission (NAHC) to request a search of its Sacred Lands File (SLF) Results of the SLF search did not indicate the presence of Native American cultural resources within the proposed project area. However, you are being contacted because the NAHC has identified you as someone who may have information and/or concerns about cultural resources that could be impacted by the Eucalyptus Industrial Park Project.

Please contact me at your earliest convenience if you have comments or knowledge regarding the Eucalyptus Industrial Park Project and its potential to impact cultural resources. You may contact me at the above telephone number or address, or by email at terri.fulton@lsa-assoc.com. If you would like to speak with a City representative directly, I will be happy to provide contact information.

If I do not receive a response from you, I will contact you by telephone or email in the near future to discuss any comments or concerns you may have. Thank you for your involvement in this process. Your input is important to this project, and I look forward to hearing from you.

Sincerely,

LSA ASSOCIATES, INC.

Terri Fulton
Archaeologist/Senior Cultural Resources Manager
Native American Consultation Coordinator

Attachment: Project Location Map

07/25/11 «P:\PLO1101\SB 18 NA Consultation\SB18 consultation letter.doc»

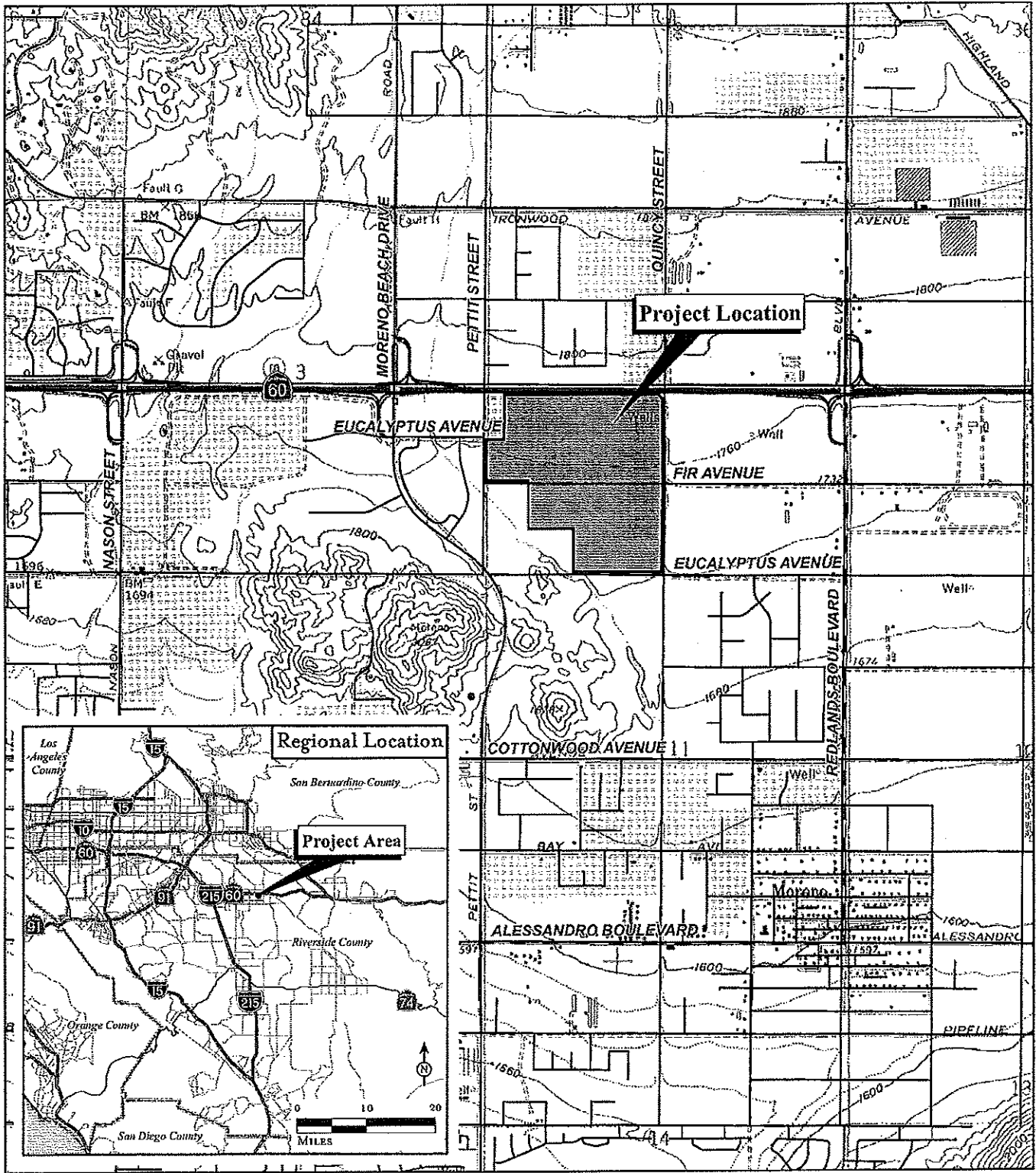
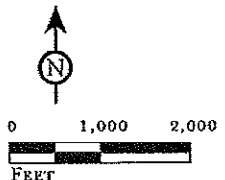


FIGURE 1

LSA



SOURCE: County of Riverside, 2006; Quad: Sunnymead (1980), CA.

I:\P\0701\Reports\Cultural\reg_loc.mxd (12/07/07)

Eucalyptus Industrial Park
Regional and Project Location

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Ramona Band of Cahuilla Mission Indians
Joseph Hamilton, Chairman
P.O. Box 391671
Anza, CA 92539

PL01101

2. Article Number
(Transfer from service label)

7005 1820 0003 7885 5896

PS Form 3811, February 2004

Domestic Return Receipt

102595-02-M-1540

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X *[Signature]* Agent
 Addressee

B. Received by (Printed Name)
UZ Castro

C. Date of Delivery
8-9-11

D. Is delivery address different from item 1? Yes
If YES, enter delivery address below: No
*P.O. BOX 391670
Anza Ca 92539*

3. Service Type
 Certified Mail Express Mail
 Registered Return Receipt for Merchandise
 Insured Mail C.O.D.

4. Restricted Delivery? (Extra Fee) Yes

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

San Manuel Band of Mission Indians
James Ramos, Chairperson
26569 Community Center Drive
Highland, CA 92346

PL01101

2. Article Number
(Transfer from service label)

7005 1820 0003 7885 5926

PS Form 3811, February 2004

Domestic Return Receipt

102595-02-M-1540

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X *[Signature]* Agent
 Addressee

B. Received by (Printed Name)
Amanda Dodson

C. Date of Delivery
8-1

D. Is delivery address different from item 1? Yes
If YES, enter delivery address below: No

3. Service Type
 Certified Mail Express Mail
 Registered Return Receipt for Merchandise
 Insured Mail C.O.D.

4. Restricted Delivery? (Extra Fee) Yes

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Santa Rosa Band of Mission Indians
Mayme Estrada, Chairwoman
P.O. Box 609
Hemet, CA 92546

PL01101

2. Article Number
(Transfer from service label)

7005 1820 0003 7885 5889

PS Form 3811, February 2004

Domestic Return Receipt

102595-02-M-1540

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X *[Signature]* Agent
 Addressee

B. Received by (Printed Name)
WORTH

C. Date of Delivery
8-11-11

D. Is delivery address different from item 1? Yes
If YES, enter delivery address below: No

3. Service Type
 Certified Mail Express Mail
 Registered Return Receipt for Merchandise
 Insured Mail C.O.D.

4. Restricted Delivery? (Extra Fee) Yes

Item No. E.3

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Los Coyotes Band of Mission Indians
Spokesperson
P.O. Box 189
Warner, CA 92086

PL01101

2. Article Number
(Transfer from service label)

7005 1820 0003 7885 5964

PS Form 3811, February 2004

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COMPLETE THIS SECTION ON DELIVERY

A. Signature

Wade Kue

- Agent
 Addressee

B. Received by (Printed Name)

Wade Kue

C. Date of Delivery

7-28-04

D. Is delivery address different from item 1? Yes

If YES, enter delivery address below: No

3. Service Type

- Certified Mail Express Mail
 Registered Return Receipt for Merchandise
 Insured Mail C.O.D.

4. Restricted Delivery? (Extra Fee)

Yes

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Morongo Band of Mission Indians
Robert Martin, Chairperson
12700 Pumarra Road
Banning, CA 92220

PL01101

2. Article Number
(Transfer from service label)

7005 1820 0003 7885 5919

PS Form 3811, February 2004

Domestic Return Receipt

102595

COMPLETE THIS SECTION ON DELIVERY

A. Signature

Georgia Aparicio

B. Received by (Printed Name)

Georgia Aparicio

D. Is delivery address different from item 1? Yes

If YES, enter delivery address below: No

3. Service Type

- Certified Mail Express Mail
 Registered Return Receipt
 Insured Mail C.O.D.

4. Restricted Delivery? (Extra Fee)

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Pechanga Band of Mission Indians
Mark Macarro, Chairperson
P.O. Box 1477
Temecula, CA 92593

PL01101

2. Article Number
(Transfer from service label)

7005 1820 0003 7885 5902

PS Form 3811, February 2004

Domestic Return Receipt

3339

Item No. E.3

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<ul style="list-style-type: none"> ■ Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. ■ Print your name and address on the reverse so that we can return the card to you. ■ Attach this card to the back of the mailpiece, or on the front if space permits. 	<p>A. Signature <input type="checkbox"/> Agent <input checked="" type="checkbox"/> Addressee</p> <p>B. Received by (Printed Name) C. Date of Delivery</p> <p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No</p>
<p>1. Article Addressed to:</p> <p>Pala Band of Mission Indians Tribal Historic Preservations Office/ Shasta Gaughen 35008 Pala-Temecula Road PMB 445 Pala, CA 92059</p> <p style="text-align: right; font-size: 2em;">PL01101</p>	<p>3. Service Type</p> <p><input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input checked="" type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.</p> <p>4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes</p>
<p>2. Article Number (Transfer from service label)</p>	<p>7005 1820 0003 7885 5957</p>

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<ul style="list-style-type: none"> ■ Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. ■ Print your name and address on the reverse so that we can return the card to you. ■ Attach this card to the back of the mailpiece, or on the front if space permits. 	<p>A. Signature <input type="checkbox"/> Agent <input checked="" type="checkbox"/> Addressee</p> <p>B. Received by (Printed Name) C. Date of Delivery</p> <p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No</p>
<p>1. Article Addressed to:</p> <p>Serrano Nation of Indians Goldie Walker P.O. Box 343 Patton, CA 92369</p> <p style="text-align: right; font-size: 2em;">R01101</p>	<p>3. Service Type</p> <p><input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input checked="" type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.</p> <p>4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes</p>
<p>2. Article Number (Transfer from service label)</p>	<p>7005 1820 0003 7885 5940</p>

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY	
<ul style="list-style-type: none"> Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. Print your name and address on the reverse so that we can return the card to you. Attach this card to the back of the mailpiece, or on the front if space permits. 	A. Signature <input checked="" type="checkbox"/> <i>Billy Bentista</i> <input type="checkbox"/> Agent <input type="checkbox"/> Addressee	
	B. Received by (Printed Name) <i>Billy Bentista</i>	C. Date of Delivery
1. Article Addressed to:	D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No	
Soboba Band of Mission Indians Scott Cozaet, Chairperson; Attn: Carrie Garcia P.O. Box 487 San Jacinto, CA 92581 PO1101	3. Service Type <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input checked="" type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.	
2. Article Number (Transfer from service label)	4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes	
	7005 1820 0003 7885 5872	
PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540		

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY	
<ul style="list-style-type: none"> Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. Print your name and address on the reverse so that we can return the card to you. Attach this card to the back of the mailpiece, or on the front if space permits. 	A. Signature <input checked="" type="checkbox"/> <i>M. J. Salgado</i> <input type="checkbox"/> Agent <input type="checkbox"/> Addressee	
	B. Received by (Printed Name) <i>Linda Flaxbeard</i>	C. Date of Delivery <i>7-27-04</i>
1. Article Addressed to:	D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No	
Cahuilla Band of Indians Luther Salgado, Sr., Chairperson P.O. Box 391760 Anza, CA 92539 PO1101	3. Service Type <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input checked="" type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.	
2. Article Number (Transfer from service label)	4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes	
	7005 1820 0003 7885 5933	
PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540		

Terri Fulton

From: Terri Fulton
Sent: Tuesday, August 09, 2011 1:12 PM
To: loscoyotes@earthlink.net
Subject: FW: SB18 Notification, Eucalyptus Industrial Park Project, Moreno Valley
Attachments: Figure 1.pdf; image002.jpg; image001.jpg

Hello,

I sent a letter on July 25, 2011, notifying the Tribe of the Eucalyptus Industrial Park Project. The text of the letter is pasted below, and a map of the project area is attached. I am following up to see if there are any comments or concerns about this project and its potential to affect cultural resources. Please let me know at your earliest convenience. Thank you.

Best Regards,

Terri Fulton
 Archaeologist/Senior Cultural Resources Manager
 Native American Consultation Coordinator

LSA Associates, Inc.
 20 Executive Park, Suite 200
 Irvine, CA 92614-4731
 Phone (949) 553-0666
 Fax (949) 553-8076
 Wireless (949) 337-5454

July 25, 2011

Los Coyotes Band of Mission Indians
 Spokesperson
 P.O. Box 189
 Warner, CA 92086

Subject: SB 18 Native American Consultation for the Eucalyptus Industrial Park Project, City of Moreno Valley, Riverside County, California

To whom it may concern:

LSA Associates, Inc. (LSA) was retained by the City of Moreno Valley (City) to conduct a cultural resources assessment of the approximately 121-acre (ac) project site for the Eucalyptus Industrial Park project in the City of Moreno Valley, Riverside County, California. The project is depicted on the *Sunnymead, California* United States Geological Survey 7.5-minute topographic quadrangle map in Section 2, Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The project is bounded by California State Route 60 on the north, Pettit Street on the west, Quincy Street on the east, and Eucalyptus Avenue on the south. The cultural resources assessment is being conducted pursuant to the California Environmental Quality Act (CEQA).

A General Plan Amendment is now proposed for the project location. This letter of notification regarding the Eucalyptus Industrial Park Project is being sent on behalf of the City as part of the Native American scoping for Senate Bill 18 (SB 18 [Burton]) consultation. SB 18 states that local California governments consult with Native American tribes and groups when a General Plan amendment is being proposed. A map of the project area is attached.

To determine whether any cultural resources may be affected by the project, LSA has contacted the Eastern Information Center located at the University of California, Riverside to perform a records search for the project area. Results of the records search are pending. LSA has also contacted the Native American Heritage Commission (NAHC) to request a search of its Sacred Lands File (SLF) Results of the SLF search did not indicate the presence of Native American cultural resources within the proposed project area. However, you are being contacted because the NAHC has identified you as someone who may have information and/or concerns about cultural resources that could be impacted by the Eucalyptus Industrial Park Project.

Please contact me at your earliest convenience if you have comments or knowledge regarding the Eucalyptus Industrial Park Project and its potential to impact cultural resources. You may contact me at the above telephone number or address, or by email at terri.fulton@lsa-assoc.com. If you would like to speak with a City representative directly, I will be happy to provide contact information.

If I do not receive a response from you, I will contact you by telephone or email in the near future to discuss any comments or concerns you may have. Thank you for your involvement in this process. Your input is important to this project, and I look forward to hearing from you.

Sincerely,

LSA ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read "Terri Fulton", with a horizontal line extending to the right.

Terri Fulton
Archaeologist/Senior Cultural Resources Manager
Native American Consultation Coordinator

Attachment: Project Location Map

Terri Fulton

From: Terri Fulton
Sent: Tuesday, August 09, 2011 1:28 PM
To: srbcioffice@yahoo.com; Steven Estrada
Subject: FW: SB18 Notification, Eucalyptus Industrial Park Project, Moreno Valley
Attachments: Figure 1.pdf; image002.jpg; image001.jpg; image002.jpg; image003.jpg
 Chairwoman Estrada,

I sent a letter on July 25, 2011, notifying you of the Eucalyptus Industrial Park Project. The text of the letter is pasted below, and a map of the project area is attached. I am following up to see if you have any comments or concerns about this project and its potential to affect cultural resources. Please let me know at your earliest convenience. Thank you.

Best Regards,

Terri Fulton
 Archaeologist/Senior Cultural Resources Manager
 Native American Consultation Coordinator

LSA Associates, Inc.
 20 Executive Park, Suite 200
 Irvine, CA 92614-4731
 Phone (949) 553-0666
 Fax (949) 553-8076
 Wireless (949) 337-5454
 July 25, 2011

Santa Rosa Band of Mission Indians
 Mayme Estrada, Chairwoman
 P.O. Box 609
 Hemet, CA 92546

Subject: SB 18 Native American Consultation for the Eucalyptus Industrial Park Project, City of Moreno Valley, Riverside County, California

Ms. Estrada:

LSA Associates, Inc. (LSA) was retained by the City of Moreno Valley (City) to conduct a cultural resources assessment of the approximately 121-acre (ac) project site for the Eucalyptus Industrial Park project in the City of Moreno Valley, Riverside County, California. The project is depicted on the *Sunnymead, California* United States Geological Survey 7.5-minute topographic quadrangle map in Section 2, Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The project is bounded by California State Route 60 on the north, Pettit Street on the west, Quincy Street on the east, and Eucalyptus Avenue on the south. The cultural resources assessment is being conducted pursuant to the California Environmental Quality Act (CEQA).

A General Plan Amendment is now proposed for the project location. This letter of notification regarding the Eucalyptus Industrial Park Project is being sent on behalf of the City as part of the Native American scoping for Senate Bill 18 (SB 18 [Burton]) consultation. SB 18 states that local California governments consult with Native American tribes and groups when a General Plan amendment is being proposed. A map of the project area is attached.

To determine whether any cultural resources may be affected by the project, LSA has contacted the Eastern Information Center located at the University of California, Riverside to perform a records search for the project area. Results of the records search are pending. LSA has also contacted the Native American Heritage Commission (NAHC) to request a search of its Sacred Lands File (SLF). Results of the SLF search did not indicate the presence of Native American cultural resources within the proposed project area. However, you are being contacted because the NAHC has identified you as someone who may have information and/or concerns about cultural resources that could be impacted by the Eucalyptus Industrial Park Project.

Please contact me at your earliest convenience if you have comments or knowledge regarding the Eucalyptus Industrial Park Project and its potential to impact cultural resources. You may contact me at the above telephone number or address, or by email at terri.fulton@lsa-assoc.com. If you would like to speak with a City representative directly, I will be happy to provide contact information.

If I do not receive a response from you, I will contact you by telephone or email in the near future to discuss any comments or

concerns you may have. Thank you for your involvement in this process. Your input is important to this project, and I look forward to hearing from you.

Sincerely,

LSA ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read "Terri Fulton", with a horizontal line extending to the right.

Terri Fulton
Archaeologist/Senior Cultural Resources Manager
Native American Consultation Coordinator

Attachment: Project Location Map

Terri Fulton

From: Gabriella Rubalcava [grubalcava89@gmail.com]
Sent: Wednesday, August 10, 2011 10:14 AM
To: Terri Fulton
Cc: Steven Estrada; jontiveros@soboba-nsn.gov
Subject: Eucalyptus Industrial Park Project

Good morning Terri,

The Santa Rosa Band of Cahuilla Indians would like to thank you for your consultation efforts in regards to the above mentioned project. After reviewing the project it has been determined that the Band does not have specific concerns at this time, however there is the possibility that cultural resources could be found. With this said, the Santa Rosa Band of Cahuilla Indians will defer further consultation and monitoring efforts to the Soboba Band of Luiseno Indians and their Cultural Resources Department. If you have any other questions please contact Mr. Joseph Ontiveros.

Thank you,
Gabriella

Gabriella Rubalcava
Tribal Council
Santa Rosa Band of Cahuilla Indians

Terri Fulton

From: Shasta Gaughen [sgaughen@palatribe.com]
Sent: Tuesday, August 09, 2011 1:06 PM
To: Terri Fulton
Subject: Re: SB18 Notification, Eucalyptus Industrial Park Project, Moreno Valley

Hi Terri - this one is out of our area, so we have no concerns. You should be receiving our letter in the mail soon.

Shasta Gaughen, PhD
Environmental Director
Pala Band of Mission Indians
760.891.3515
sgaughen@palatribe.com

On Aug 9, 2011, at 12:44 PM, "Terri Fulton" <Terri.Fulton@lsa-assoc.com> wrote:

> Hi Shasta,
>
> I sent you a letter on July 25, 2011, notifying you of the Eucalyptus Industrial Park Project. The text of the letter is pasted below, and a map of the project area is attached. I am following up to see if you have any comments or concerns about this project and its potential to affect cultural resources. Please let me know at your earliest convenience. Thank you.
>
> Best Regards,
>
> Terri Fulton
> Archaeologist/Senior Cultural Resources Manager Native American
> Consultation Coordinator
>
> LSA Associates, Inc.
> 20 Executive Park, Suite 200
> Irvine, CA 92614-4731
> Phone (949) 553-0666
> Fax (949) 553-8076
> Wireless (949) 337-5454
>
> July 25, 2011
>
>
> Pala Band of Mission Indians
> Tribal Historic Preservations Office/Shasta Gaughen
> 35008 Pala-Temecula Road
> PMB 445
> Pala, CA 92059
>
> Subject: SB 18 Native American Consultation for the Eucalyptus Industrial Park Project, City of Moreno Valley, Riverside County, California
>
> Ms. Gaughen:
>
> LSA Associates, Inc. (LSA) was retained by the City of Moreno Valley (City) to conduct a cultural resources assessment of the approximately 121-acre (ac) project site for the Eucalyptus Industrial Park project in the City of Moreno Valley, Riverside County, California. The project is depicted on the Sunnymead, California United States Geological Survey 7.5-minute topographic quadrangle map in Section 2, Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The project is bounded by California State Route 60 on the north, Pettit Street on the west, Quincy Street on the east, and Eucalyptus Avenue on the south. The cultural resources assessment is being conducted pursuant to the California Environmental Quality Act (CEQA).
>
> A General Plan Amendment is now proposed for the project location. This letter of notification regarding the Eucalyptus Industrial Park Project is being sent on behalf of the City as part of the Native American scoping for Senate Bill 18 (SB 18

[Burton]) consultation. SB 18 states that local California governments consult with Native American tribes and groups when a General Plan amendment is being proposed. A map of the project area is attached.

>
> To determine whether any cultural resources may be affected by the project, LSA has contacted the Eastern Information Center located at the University of California, Riverside to perform a records search for the project area. Results of the records search are pending. LSA has also contacted the Native American Heritage Commission (NAHC) to request a search of its Sacred Lands File (SLF) Results of the SLF search did not indicate the presence of Native American cultural resources within the proposed project area. However, you are being contacted because the NAHC has identified you as someone who may have information and/or concerns about cultural resources that could be impacted by the Eucalyptus Industrial Park Project.

>
> Please contact me at your earliest convenience if you have comments or knowledge regarding the Eucalyptus Industrial Park Project and its potential to impact cultural resources. You may contact me at the above telephone number or address, or by email at terri.fulton@lsa-assoc.com. If you would like to speak with a City representative directly, I will be happy to provide contact information.

>
> If I do not receive a response from you, I will contact you by telephone or email in the near future to discuss any comments or concerns you may have. Thank you for your involvement in this process. Your input is important to this project, and I look forward to hearing from you.

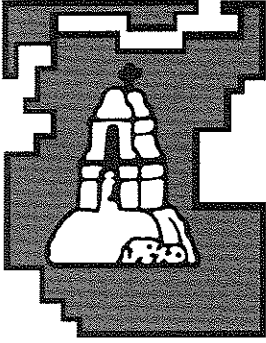
>
> Sincerely,

>
> [cid:image002.jpg@01CC5692.18136540]LSA ASSOCIATES, INC.

>
>
>
> Terri Fulton
> Archaeologist/Senior Cultural Resources Manager Native American
> Consultation Coordinator

>
> Attachment: Project Location Map

>
>
> <image002.jpg>
> <image001.jpg>
> <Figure 1.pdf>



**Pala Band Of
Mission Indians**

Cupa Cultural Center

PMB 445
35008 Pala Temecula Road
Pala, CA 92059

Tel. (760) 891-3590
Fax (760) 742-4543

LSA
LSA ASSOCIATES, INC.

AUG 10 2011

**RECEIVED
IRVINE**

August 5, 2011

Terri Fulton
LSA Associates Inc
20 Executive Park, Suite 200
Irvine, CA 92614

Re: Eucalyptus Industrial Park Project

Dear Ms. Fulton,

The Pala Band of Mission Indians Tribal Historic Preservation Office has received your notification of the project referenced above. This letter constitutes our response on behalf of Robert Smith, Tribal Chairman.

We have consulted our maps and determined that the project as described is not within the boundaries of the recognized Pala Indian Reservation. The project is also beyond the boundaries of the territory that the tribe considers its Traditional Use Area (TUA). Therefore, we have no objection to the continuation of project activities as currently planned and we defer to the wishes of Tribes in closer proximity to the project area.

We appreciate involvement with your initiative and look forward to working with you on future efforts. If you have questions or need additional information, please do not hesitate to contact me by telephone at 760-891-3515 or by e-mail at sgaughen@palatribe.com.

Sincerely,

Shasta C. Gaughen, PhD
Tribal Historic Preservation Officer
Pala Band of Mission Indians

ATTENTION: THE PALA TRIBAL HISTORIC PRESERVATION OFFICE IS RESPONSIBLE FOR ALL REQUESTS FOR CONSULTATION. PLEASE ADDRESS CORRESPONDENCE TO **SHASTA C. GAUGHEN** AT THE ABOVE ADDRESS. IT IS NOT NECESSARY TO ALSO SEND NOTICES TO PALA TRIBAL CHAIRMAN ROBERT SMITH.

Terri Fulton

From: Terri Fulton
Sent: Tuesday, August 09, 2011 1:43 PM
To: Mike Contreras
Subject: FW: SB18 Notification, Eucalyptus Industrial Park Project, Moreno Valley
Attachments: Figure 1.pdf; image002.jpg; image002.jpg; image003.jpg; image002.jpg; image003.jpg; image001.jpg

Hi Mike,

I sent a letter to Chairman Martin on July 25, 2011, notifying the Tribe of the Eucalyptus Industrial Park Project. The text of the letter is pasted below, and a map of the project area is attached. I am following up to see if you have any comments or concerns about this project and its potential to affect cultural resources. Please let me know at your earliest convenience. Thank you.

Best Regards,

Terri Fulton
 Archaeologist/Senior Cultural Resources Manager
 Native American Consultation Coordinator

LSA Associates, Inc.
 20 Executive Park, Suite 200
 Irvine, CA 92614-4731
 Phone (949) 553-0666
 Fax (949) 553-8076
 Wireless (949) 337-5454

July 25, 2011

Morongo Band of Mission Indians
 Robert Martin, Chairperson
 12700 Pumarra Road
 Banning, CA 92220

Subject: SB 18 Native American Consultation for the Eucalyptus Industrial Park Project, City of Moreno Valley, Riverside County, California

Mr. Martin:

LSA Associates, Inc. (LSA) was retained by the City of Moreno Valley (City) to conduct a cultural resources assessment of the approximately 121-acre (ac) project site for the Eucalyptus Industrial Park project in the City of Moreno Valley, Riverside County, California. The project is depicted on the *Sunnymead, California* United States Geological Survey 7.5-minute topographic quadrangle map in Section 2, Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The project is bounded by California State Route 60 on the north, Pettit Street on the west, Quincy Street on the east, and Eucalyptus Avenue on the south. The cultural resources assessment is being conducted pursuant to the California Environmental Quality Act (CEQA).

A General Plan Amendment is now proposed for the project location. This letter of notification regarding the Eucalyptus Industrial Park Project is being sent on behalf of the City as part of the Native American scoping for Senate Bill 18 (SB 18 [Burton]) consultation. SB 18 states that local California governments consult with Native American tribes and groups when a General Plan amendment is being proposed. A map of the project area is attached.

To determine whether any cultural resources may be affected by the project, LSA has contacted the Eastern Information Center located at the University of California, Riverside to perform a records search for the project area. Results of the records search are pending. LSA has also contacted the Native American Heritage Commission (NAHC) to request a search of its Sacred Lands File (SLF) Results of the SLF search did not indicate the presence of Native American cultural resources within the proposed project area. However, you are being contacted because the NAHC has identified you as someone who may have information and/or concerns about cultural resources that could be impacted by the Eucalyptus Industrial Park Project.

Please contact me at your earliest convenience if you have comments or knowledge regarding the Eucalyptus Industrial Park Project and its potential to impact cultural resources. You may contact me at the above telephone number or address, or by email at terri.fulton@lsa-assoc.com. If you would like to speak with a City representative directly, I will be happy to provide contact information

Item No. E.3

-3350-

8/23/2011

If I do not receive a response from you, I will contact you by telephone or email in the near future to discuss any comments or concerns you may have. Thank you for your involvement in this process. Your input is important to this project, and I look forward to hearing from you.

Sincerely,

LSA ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read "Terry Fulton", with a long horizontal line extending to the right.

Terry Fulton
Archaeologist/Senior Cultural Resources Manager
Native American Consultation Coordinator

Attachment: Project Location Map

Terri Fulton

From: Terri Fulton
Sent: Tuesday, August 16, 2011 2:42 PM
To: admin@ramonatribe.com; jgomez@ramonatribe.com
Subject: FW: SB18 Notification, Eucalyptus Industrial Park Project, Moreno Valley
Attachments: Figure 1.pdf; image002.jpg; image001.jpg; image002.jpg

Hello Chairman Hamilton,

I would like to follow up on this project one more time to make sure you don't have any comments. Thank you.

Best,

Terri Fulton
Archaeologist/Senior Cultural Resources Manager
Native American Consultation

LSA Associates, Inc.
20 Executive Park, Suite 200
Irvine, CA 92614-4731
Phone (949) 553-0666
Fax (949) 553-8076
Wireless (949) 337-5454

From: Terri Fulton
Sent: Tuesday, August 09, 2011 1:17 PM
To: admin@ramonatribe.com
Cc: 'jgomez@ramonatribe.com'
Subject: FW: SB18 Notification, Eucalyptus Industrial Park Project, Moreno Valley

Chairman Hamilton,

I sent you a letter on July 25, 2011, notifying you of the Eucalyptus Industrial Park Project. The text of the letter is pasted below, and a map of the project area is attached. I am following up to see if you have any comments or concerns about this project and its potential to affect cultural resources. Please let me know at your earliest convenience. Thank you.

Best Regards,

Terri Fulton
Archaeologist/Senior Cultural Resources Manager
Native American Consultation Coordinator

LSA Associates, Inc.
20 Executive Park, Suite 200
Irvine, CA 92614-4731
Phone (949) 553-0666
Fax (949) 553-8076
Wireless (949) 337-5454

July 25, 2011

Ramona Band of Cahuilla Mission Indians
Joseph Hamilton, Chairman
P.O. Box 391671
Anza, CA 92539

Subject: SB 18 Native American Consultation for the Eucalyptus Industrial Park Project, City of Moreno Valley, Riverside
Item No. E.3 y, California

-3352-

Mr. Hamilton:

LSA Associates, Inc. (LSA) was retained by the City of Moreno Valley (City) to conduct a cultural resources assessment of the approximately 121-acre (ac) project site for the Eucalyptus Industrial Park project in the City of Moreno Valley, Riverside County, California. The project is depicted on the *Sunnymead, California* United States Geological Survey 7.5-minute topographic quadrangle map in Section 2, Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The project is bounded by California State Route 60 on the north, Pettit Street on the west, Quincy Street on the east, and Eucalyptus Avenue on the south. The cultural resources assessment is being conducted pursuant to the California Environmental Quality Act (CEQA).

A General Plan Amendment is now proposed for the project location. This letter of notification regarding the Eucalyptus Industrial Park Project is being sent on behalf of the City as part of the Native American scoping for Senate Bill 18 (SB 18 [Burton]) consultation. SB 18 states that local California governments consult with Native American tribes and groups when a General Plan amendment is being proposed. A map of the project area is attached.

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Please contact me at your earliest convenience if you have comments or knowledge regarding the Eucalyptus Industrial Park Project and its potential to impact cultural resources. You may contact me at the above telephone number or address, or by email at terri.fulton@lsa-assoc.com. If you would like to speak with a City representative directly, I will be happy to provide contact information.

If I do not receive a response from you, I will contact you by telephone or email in the near future to discuss any comments or concerns you may have. Thank you for your involvement in this process. Your input is important to this project, and I look forward to hearing from you.

Sincerely,

LSA ASSOCIATES, INC.



Terri Fulton
Archaeologist/Senior Cultural Resources Manager
Native American Consultation Coordinator

Attachment: Project Location Map

Terri Fulton

From: Anna Hoover [a Hoover@pechanga-nsn.gov]
Sent: Tuesday, August 09, 2011 2:13 PM
To: Terri Fulton; Terrie Brown
Cc: Paul Macarro
Subject: RE: SB18 Notification, Eucalyptus Industrial Park Project, Moreno Valley
Attachments: image001.jpg

Oh, I did not realize this was an official SB18 request. We will respond directly to the City then. Thank you Terri!

Anna

From: Terri Fulton [mailto:Terri.Fulton@lsa-assoc.com]
Sent: Tuesday, August 09, 2011 2:12 PM
To: Anna Hoover; Terrie Brown
Cc: Paul Macarro
Subject: RE: SB18 Notification, Eucalyptus Industrial Park Project, Moreno Valley

The time frame is the standard 90 days for SB18. We can always note that you will have comments, and an official letter is forthcoming and can be expected within the 90 day comment period.

Terri Fulton
 Archaeologist/Senior Cultural Resources Manager
 Native American Consultation

LSA Associates, Inc.
 20 Executive Park, Suite 200
 Irvine, CA 92614-4731
 Phone (949) 553-0666
 Fax (949) 553-8076
 Wireless (949) 337-5454

From: Anna Hoover [mailto:a Hoover@pechanga-nsn.gov]
Sent: Tuesday, August 09, 2011 1:46 PM
To: Terri Fulton; Terrie Brown
Cc: Paul Macarro
Subject: RE: SB18 Notification, Eucalyptus Industrial Park Project, Moreno Valley

Terri,
 Thank you for contacting us regarding the upcoming Project. Yes, we do have comments on this property. Can you please provide a timeframe as to when you need our comment letter?
 Thanks!

Anna M. Hoover
 Cultural Analyst
 Pechanga Band of Luiseno Mission Indians
 P.O. Box 2183
 Temecula, CA 92593

951-770-8104 (O)
 951-694-0446 (F)
 951-757-6139 (C)
a Hoover@pechanga-nsn.gov

From: Terri Fulton [mailto:Terri.Fulton@lsa-assoc.com]

Item No. E.3

-3354-

Sent: Tuesday, August 09, 2011 1:26 PM
To: Terrie Brown; Anna Hoover
Cc: Paul Macarro
Subject: FW: SB18 Notification, Eucalyptus Industrial Park Project, Moreno Valley

Chairman Macarro,

I sent a letter on July 25, 2011, notifying you of the Eucalyptus Industrial Park Project. The text of the letter is pasted below, and a map of the project area is attached. I am following up to see if you have any comments or concerns about this project and its potential to affect cultural resources. Please let me know at your earliest convenience. Thank you.

Best Regards,

Terri Fulton
 Archaeologist/Senior Cultural Resources Manager
 Native American Consultation Coordinator

LSA Associates, Inc.
 20 Executive Park, Suite 200
 Irvine, CA 92614-4731
 Phone (949) 553-0666
 Fax (949) 553-8076
 Wireless (949) 337-5454

July 25, 2011

Pechanga Band of Mission Indians
 Mark Macarro, Chairperson
 P.O. Box 1477
 Temecula, CA 92593

Subject: SB 18 Native American Consultation for the Eucalyptus Industrial Park Project, City of Moreno Valley, Riverside County, California

Mr. Macarro:

LSA Associates, Inc. (LSA) was retained by the City of Moreno Valley (City) to conduct a cultural resources assessment of the approximately 121-acre (ac) project site for the Eucalyptus Industrial Park project in the City of Moreno Valley, Riverside County, California. The project is depicted on the *Sunnymead, California* United States Geological Survey 7.5-minute topographic quadrangle map in Section 2, Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The project is bounded by California State Route 60 on the north, Pettit Street on the west, Quincy Street on the east, and Eucalyptus Avenue on the south. The cultural resources assessment is being conducted pursuant to the California Environmental Quality Act (CEQA).

A General Plan Amendment is now proposed for the project location. This letter of notification regarding the Eucalyptus Industrial Park Project is being sent on behalf of the City as part of the Native American scoping for Senate Bill 18 (SB 18 [Burton]) consultation. SB 18 states that local California governments consult with Native American tribes and groups when a General Plan amendment is being proposed. A map of the project area is attached.

To determine whether any cultural resources may be affected by the project, LSA has contacted the Eastern Information Center located at the University of California, Riverside to perform a records search for the project area. Results of the records search are pending. LSA has also contacted the Native American Heritage Commission (NAHC) to request a search of its Sacred Lands File (SLF) Results of the SLF search did not indicate the presence of Native American cultural resources within the proposed project area. However, you are being contacted because the NAHC has identified you as someone who may have information and/or concerns about cultural resources that could be impacted by the Eucalyptus Industrial Park Project.

Please contact me at your earliest convenience if you have comments or knowledge regarding the Eucalyptus Industrial Park Project and its potential to impact cultural resources. You may contact me at the above telephone number or address, or by email at terri.fulton@lsa-assoc.com. If you would like to speak with a City representative directly, I will be happy to provide contact information.

If I do not receive a response from you, I will contact you by telephone or email in the near future to discuss any comments or

-3355-

Item No. E.3

concerns you may have. Thank you for your involvement in this process. Your input is important to this project, and I look forward to hearing from you.

Sincerely,

LSA ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read "T. Fulton", with a horizontal line extending to the right.

Terri Fulton
Archaeologist/Senior Cultural Resources Manager
Native American Consultation Coordinator

Attachment: Project Location Map

Terri Fulton

From: Terri Fulton
Sent: Tuesday, August 09, 2011 1:41 PM
To: Ann Brierty
Subject: FW: SB18 Notification, Eucalyptus Industrial Park Project, Moreno Valley
Attachments: Figure 1.pdf; image002.jpg; image002.jpg; image003.jpg; image002.jpg; image001.jpg

Hi Ann,

I sent a letter to Chairman Ramos on July 25, 2011, notifying the Tribe of the Eucalyptus Industrial Park Project. The text of the letter is pasted below, and a map of the project area is attached. I am following up to see if you have any comments or concerns about this project and its potential to affect cultural resources. Please let me know at your earliest convenience. Thank you.

Best Regards,

Terri Fulton
 Archaeologist/Senior Cultural Resources Manager
 Native American Consultation Coordinator

LSA Associates, Inc.
 20 Executive Park, Suite 200
 Irvine, CA 92614-4731
 Phone (949) 553-0666
 Fax (949) 553-8076
 Wireless (949) 337-5454

July 25, 2011

San Manuel Band of Mission Indians
 James Ramos, Chairperson
 26569 Community Center Drive
 Highland, CA 92346

Subject: SB 18 Native American Consultation for the Eucalyptus Industrial Park Project, City of Moreno Valley, Riverside County, California

Mr. Ramos:

LSA Associates, Inc. (LSA) was retained by the City of Moreno Valley (City) to conduct a cultural resources assessment of the approximately 121-acre (ac) project site for the Eucalyptus Industrial Park project in the City of Moreno Valley, Riverside County, California. The project is depicted on the *Sunnymead, California* United States Geological Survey 7.5-minute topographic quadrangle map in Section 2, Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The project is bounded by California State Route 60 on the north, Pettit Street on the west, Quincy Street on the east, and Eucalyptus Avenue on the south. The cultural resources assessment is being conducted pursuant to the California Environmental Quality Act (CEQA).

A General Plan Amendment is now proposed for the project location. This letter of notification regarding the Eucalyptus Industrial Park Project is being sent on behalf of the City as part of the Native American scoping for Senate Bill 18 (SB 18 [Burton]) consultation. SB 18 states that local California governments consult with Native American tribes and groups when a General Plan amendment is being proposed. A map of the project area is attached.

To determine whether any cultural resources may be affected by the project, LSA has contacted the Eastern Information Center located at the University of California, Riverside to perform a records search for the project area. Results of the records search are pending. LSA has also contacted the Native American Heritage Commission (NAHC) to request a search of its Sacred Lands File (SLF) Results of the SLF search did not indicate the presence of Native American cultural resources within the proposed project area. However, you are being contacted because the NAHC has identified you as someone who may have information and/or concerns about cultural resources that could be impacted by the Eucalyptus Industrial Park Project.

Please contact me at your earliest convenience if you have comments or knowledge regarding the Eucalyptus Industrial Park Project and its potential to impact cultural resources. You may contact me at the above telephone number or address, or by email at terri.fulton@lsa-assoc.com. If you would like to speak with a City representative directly, I will be happy to provide contact information.

If I do not receive a response from you, I will contact you by telephone or email in the near future to discuss any comments or concerns you may have. Thank you for your involvement in this process. Your input is important to this project, and I look forward to hearing from you.

Sincerely,

LSA ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read "Terri Fulton", with a long horizontal line extending to the right.

Terri Fulton
Archaeologist/Senior Cultural Resources Manager
Native American Consultation Coordinator

Attachment: Project Location Map

Terri Fulton

From: Terri Fulton
Sent: Tuesday, August 09, 2011 1:32 PM
To: Darren Hill; Joseph Ontiveros
Subject: FW: SB18 Notification, Eucalyptus Industrial Park Project, Moreno Valley
Attachments: Figure 1.pdf; image002.jpg; image001.jpg; image002.jpg; image003.jpg; image002.jpg
 Chairman Cozaet/Ms. Carrie Garcia,

I sent a letter on July 25, 2011, notifying you of the Eucalyptus Industrial Park Project. The text of the letter is pasted below, and a map of the project area is attached. I am following up to see if you have any comments or concerns about this project and its potential to affect cultural resources. Please let me know at your earliest convenience. Thank you.

Best Regards,

Terri Fulton
 Archaeologist/Senior Cultural Resources Manager
 Native American Consultation Coordinator

LSA Associates, Inc.
 20 Executive Park, Suite 200
 Irvine, CA 92614-4731
 Phone (949) 553-0666
 Fax (949) 553-8076
 Wireless (949) 337-5454

July 25, 2011

Soboba Band of Mission Indians
 Scott Cozaet, Chairperson; Attn: Carrie Garcia
 P.O. Box 487
 San Jacinto, CA 92581

Subject: SB 18 Native American Consultation for the Eucalyptus Industrial Park Project, City of Moreno Valley, Riverside County, California

Mr. Cozaet/Ms. Garcia:

LSA Associates, Inc. (LSA) was retained by the City of Moreno Valley (City) to conduct a cultural resources assessment of the approximately 121-acre (ac) project site for the Eucalyptus Industrial Park project in the City of Moreno Valley, Riverside County, California. The project is depicted on the *Sunnymead, California* United States Geological Survey 7.5-minute topographic quadrangle map in Section 2, Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The project is bounded by California State Route 60 on the north, Pettit Street on the west, Quincy Street on the east, and Eucalyptus Avenue on the south. The cultural resources assessment is being conducted pursuant to the California Environmental Quality Act (CEQA).

A General Plan Amendment is now proposed for the project location. This letter of notification regarding the Eucalyptus Industrial Park Project is being sent on behalf of the City as part of the Native American scoping for Senate Bill 18 (SB 18 [Burton]) consultation. SB 18 states that local California governments consult with Native American tribes and groups when a General Plan amendment is being proposed. A map of the project area is attached.

To determine whether any cultural resources may be affected by the project, LSA has contacted the Eastern Information Center located at the University of California, Riverside to perform a records search for the project area. Results of the records search are pending. LSA has also contacted the Native American Heritage Commission (NAHC) to request a search of its Sacred Lands File (SLF) Results of the SLF search did not indicate the presence of Native American cultural resources within the proposed project area. However, you are being contacted because the NAHC has identified you as someone who may have information and/or concerns about cultural resources that could be impacted by the Eucalyptus Industrial Park Project.

Please contact me at your earliest convenience if you have comments or knowledge regarding the Eucalyptus Industrial Park Project and its potential to impact cultural resources. You may contact me at the above telephone number or address, or by email at terri.fulton@lsa-assoc.com. If you would like to speak with a City representative directly, I will be happy to provide contact information.

If I do not receive a response from you, I will contact you by telephone or email in the near future to discuss any comments or concerns you may have. Thank you for your involvement in this process. Your input is important to this project, and I look forward to hearing from you.

Sincerely,

LSA ASSOCIATES, INC.

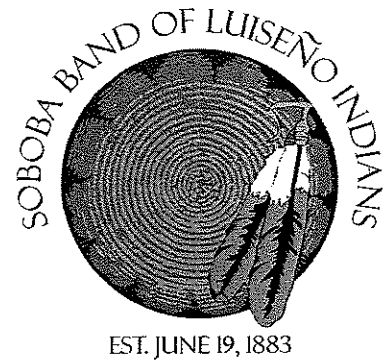
A handwritten signature in black ink, appearing to read "Terri Fulton", with a long horizontal line extending to the right.

Terri Fulton
Archaeologist/Senior Cultural Resources Manager
Native American Consultation Coordinator

Attachment: Project Location Map

August 17, 2011

Attn: Terri Fulton
LSA Associates
20 Executive Park, Suite 200
Irvine, CA 92614



Re: SB 18 Consultation for the Eucalyptus Industrial Park Project, in the City of Moreno Valley, Riverside County, California

The Soboba Band of Luiseño Indians appreciates your observance of Tribal Cultural Resources and their preservation in your project. The information provided to us on said project has been assessed through our Cultural Resource Department, where it was concluded that although it is outside the existing reservation, the project area does fall within the bounds of our Tribal Traditional Use Areas. This project location is in close proximity to known village sites and is a shared use area that was used in ongoing trade between the Luiseno and Cahuilla tribes. Therefore it is regarded as highly sensitive to the people of Soboba.

Soboba Band of Luiseño Indians is requesting the following:

1. **Government to Government** consultation in accordance to SB18. Including the transfer of information to the Soboba Band of Luiseno Indians regarding the progress of this project should be done as soon as new developments occur.
2. Soboba Band of Luiseño Indians continue to be a lead consulting tribal entity for this project.
3. Working in and around traditional use areas intensifies the possibility of encountering cultural resources during the construction/excavation phase. For this reason the Soboba Band of Luiseño Indians requests that Native American Monitor(s) from the Soboba Band of Luiseño Indians Cultural Resource Department to be present during any ground disturbing proceedings. Including surveys and archaeological testing.
4. Request that proper procedures be taken and requests of the tribe be honored (Please see the attachment)

Sincerely,

Joseph Ontiveros
Soboba Cultural Resource Department
P.O. Box 487
San Jacinto, CA 92581
Phone (951) 654-5544 ext. 4137
Cell (951) 663-5279
jontiveros@soboba-nsn.gov

Cultural Items (Artifacts). Ceremonial items and items of cultural patrimony reflect traditional religious beliefs and practices of the Soboba Band. The Developer should agree to return all Native American ceremonial items and items of cultural patrimony that may be found on the project site to the Soboba Band for appropriate treatment. In addition, the Soboba Band requests the return of all other cultural items (artifacts) that are recovered during the course of archaeological investigations. Where appropriate and agreed upon in advance, Developer's archeologist may conduct analyses of certain artifact classes if required by CEQA, Section 106 of NHPA, the mitigation measures or conditions of approval for the Project. This may include but is not limited or restricted to include shell, bone, ceramic, stone or other artifacts.

The Developer should waive any and all claims to ownership of Native American ceremonial and cultural artifacts that may be found on the Project site. Upon completion of authorized and mandatory archeological analysis, the Developer should return said artifacts to the Soboba Band within a reasonable time period agreed to by the Parties and not to exceed (30) days from the initial recovery of the items.

Treatment and Disposition of Remains

A. The Soboba Band shall be allowed, under California Public Resources Code § 5097.98 (a), to (1) inspect the site of the discovery and (2) make determinations as to how the human remains and grave goods shall be treated and disposed of with appropriate dignity.

B. The Soboba Band, as MLD, shall complete its inspection within twenty-four (24) hours of receiving notification from either the Developer or the NAHC, as required by California Public Resources Code § 5097.98 (a). The Parties agree to discuss in good faith what constitutes "appropriate dignity" as that term is used in the applicable statutes.

C. Reburial of human remains shall be accomplished in compliance with the California Public Resources Code § 5097.98 (a) and (b). The Soboba Band, as the MLD in consultation with the Developer, shall make the final discretionary determination regarding the appropriate disposition and treatment of human remains.

D. All parties are aware that the Soboba Band may wish to rebury the human remains and associated ceremonial and cultural items (artifacts) on or near, the site of their discovery, in an area that shall not be subject to future subsurface disturbances. The Developer should accommodate on-site reburial in a location mutually agreed upon by the Parties.

E. The term "human remains" encompasses more than human bones because the Soboba Band's traditions periodically necessitated the ceremonial burning of human remains. Grave goods are those artifacts associated with any human remains. These items, and other funerary remnants and their ashes are to be treated in the same manner as human bone fragments or bones that remain intact

Coordination with County Coroner's Office. The Lead Agencies and the Developer should immediately contact both the Coroner and the Soboba Band in the event that any human remains are discovered during implementation of the Project. If the Coroner recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, the Coroner shall ensure that notification is provided to the NAHC within twenty-four (24) hours of the determination, as required by California Health and Safety Code § 7050.5 (c).

Non-Disclosure of Location Reburials. It is understood by all parties that unless otherwise required by law, the site of any reburial of Native American human remains or cultural artifacts shall not be disclosed and shall not be governed by public disclosure requirements of the California Public Records Act. The Coroner, parties, and Lead Agencies, will be asked to withhold public disclosure information related to such reburial, pursuant to the specific exemption set forth in California Government Code § 6254 (r).

Ceremonial items and items of cultural patrimony reflect traditional religious beliefs and practices of the Soboba Band. The Developer agrees to return all Native American ceremonial items and items of cultural patrimony that may be found on the project site to the Soboba Band for appropriate treatment. In addition, the Soboba Band requests the return of all other cultural items (artifacts) that are recovered during the course of archaeological investigations. Where appropriate and agreed upon in advance, Developer's archeologist may conduct analyses of certain artifact classes if required by CEQA, Section 106 of NHPA, the mitigation measures or conditions of approval for the Project. This may include but is not limited or restricted to include shell, bone, ceramic, stone or other artifacts.

Terri Fulton

From: Terri Fulton
Sent: Tuesday, August 09, 2011 1:45 PM
To: tribalcouncil@cahuilla.net; environmentalofficer@cahuilla.net
Subject: FW: SB18 Notification, Eucalyptus Industrial Park Project, Moreno Valley
Attachments: Figure 1.pdf; image002.jpg; image002.jpg; image003.jpg; image002.jpg; image003.jpg; image001.jpg; image002.jpg

Hi Yvonne,

I sent a letter to Chairman Salgado on July 25, 2011, notifying the Tribe of the Eucalyptus Industrial Park Project. The text of the letter is pasted below, and a map of the project area is attached. I am following up to see if you have any comments or concerns about this project and its potential to affect cultural resources. Please let me know at your earliest convenience. Thank you.

Best Regards,

Terri Fulton
 Archaeologist/Senior Cultural Resources Manager
 Native American Consultation Coordinator

LSA Associates, Inc.
 20 Executive Park, Suite 200
 Irvine, CA 92614-4731
 Phone (949) 553-0666
 Fax (949) 553-8076
 Wireless (949) 337-5454

July 25, 2011

Cahuilla Band of Indians
 Luther Salgado, Sr., Chairperson
 P.O. Box 391760
 Anza, CA 92539

Subject: SB 18 Native American Consultation for the Eucalyptus Industrial Park Project, City of Moreno Valley, Riverside County, California

Mr. Salgado:

LSA Associates, Inc. (LSA) was retained by the City of Moreno Valley (City) to conduct a cultural resources assessment of the approximately 121-acre (ac) project site for the Eucalyptus Industrial Park project in the City of Moreno Valley, Riverside County, California. The project is depicted on the *Sunnymead, California* United States Geological Survey 7.5-minute topographic quadrangle map in Section 2, Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. The project is bounded by California State Route 60 on the north, Pettit Street on the west, Quincy Street on the east, and Eucalyptus Avenue on the south. The cultural resources assessment is being conducted pursuant to the California Environmental Quality Act (CEQA).

A General Plan Amendment is now proposed for the project location. This letter of notification regarding the Eucalyptus Industrial Park Project is being sent on behalf of the City as part of the Native American scoping for Senate Bill 18 (SB 18 [Burton]) consultation. SB 18 states that local California governments consult with Native American tribes and groups when a General Plan amendment is being proposed. A map of the project area is attached.

To determine whether any cultural resources may be affected by the project, LSA has contacted the Eastern Information Center located at the University of California, Riverside to perform a records search for the project area. Results of the records search are pending. LSA has also contacted the Native American Heritage Commission (NAHC) to request a search of its Sacred Lands File (SLF) Results of the SLF search did not indicate the presence of Native American cultural resources within the proposed project area. However, you are being contacted because the NAHC has identified you as someone who may have information and/or concerns about cultural resources that could be impacted by the Eucalyptus Industrial Park Project.

Please contact me at your earliest convenience if you have comments or knowledge regarding the Eucalyptus Industrial Park Project and its potential to impact cultural resources. You may contact me at the above telephone number or address, or by email at

terri.fulton@lsa-assoc.com. If you would like to speak with a City representative directly, I will be happy to provide contact information.

If I do not receive a response from you, I will contact you by telephone or email in the near future to discuss any comments or concerns you may have. Thank you for your involvement in this process. Your input is important to this project, and I look forward to hearing from you.

Sincerely,

LSA ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read "Terri Fulton", with a long horizontal line extending to the right.

Terri Fulton
Archaeologist/Senior Cultural Resources Manager
Native American Consultation Coordinator

Attachment: Project Location Map

Terri Fulton

From: environmentalofficer@cahuilla.net
Sent: Tuesday, August 09, 2011 3:59 PM
To: Terri Fulton
Subject: Eucalyptus Industrial Park Project Moreno Valley

August 5, 2011

Terri Fulton, Archaeologist/Senior Cultural Resources Manager
LSA Associates, Inc.
Native American Consultation

RE: Eucalyptus Industrial Park Project
Moreno Valley, California

Dear Ms. Fulton:

Thank you for contacting the Cahuilla Band of Indians concerning the above referenced project. We presently have no knowledge of any cultural resources within the plan project; however, although the project area is outside the Cahuilla Indian Reservation territory, it is not outside the Traditional Use Area for the Cahuilla Band of Indians and we are requesting copies of archeological and /or cultural resource documentation if any.

Finally, working in and around traditional use areas intensifies the possibility of encountering cultural resources during the construction/excavation phase. For this, the Cahuilla Band of Indians requests Cultural Resource Monitor(s) to be present during any ground disturbing proceedings. The Cahuilla tribe does have trained and certified Native American Monitors who are qualified to monitor construction and archaeological activities. Please contact the Cahuilla Tribal Environmental Protection Office (CTEPO) for proposed monitoring.

Yvonne L. Markle
Cahuilla Environmental Office Manager
environmentalofficer@cahuilla.net
Cahuilla Tribal Environmental Protection Office
P.O. Box 391741
Anza, CA 92539
951-763-2631
FAX 951-763-2632

Kent Norton

From: Jeffrey Bradshaw <jeffreyb@moval.org>
Sent: Wednesday, September 05, 2012 11:04 AM
To: Kent Norton
Subject: FW: Pechanga Tribe Comments on the Prologis Park DEIR
Attachments: Pechanga Tribe Cmnts DEIR PrologisPark final 9-4-12.pdf

I left a message for Anna Hoover with the Pechanga Tribe and will hopefully have a chance to speak with her today. Attached are the tribe's comments on the DEIR.

Thanks.

Jeff Bradshaw
Associate Planner
City of Moreno Valley
Community & Economic Development Department
Planning Division
14177 Frederick Street
P.O. Box 88005
Moreno Valley, CA 92552
Tel: 951.413.3224
Fax: 951.413.3210
Email: jeffreyb@moval.org
www.moval.org

From: Anna Hoover [<mailto:ahoover@pechanga-nsn.gov>]
Sent: Tuesday, September 04, 2012 9:49 AM
To: Jeffrey Bradshaw
Cc: Marcy Hernandez; Michele Fahley; John Terell
Subject: Pechanga Tribe Comments on the Prologis Park DEIR

Mr. Bradshaw;

Electronically attached are the Pechanga Tribe's comments regarding the above named project. Please respond to this e-mail for confirmation of receipt. A hard copy will also follow via USPS.

Please do not hesitate to contact me should the attachment not open. I look forward to hearing from you soon so that we may schedule our SB18 consultation.

Thank you,

Anna M. Hoover
Cultural Analyst
Pechanga Band of Luiseno Mission Indians
P.O. Box 2183
Temecula, CA 92593

951-770-8104 (O)
951-694-0446 (F)
951-757-6139 (C)
ahoover@pechanga-nsn.gov

SENATE BILL (SB18) NATIVE AMERICAN CONTACT RECORD

Proposed Eucalyptus Industrial Park Project, City of Moreno Valley, Riverside County, California

Date LSA Requested a Sacred Lands File Search from the Native American Heritage Commission (NAHC): July 13, 2011.

Date the NAHC Replied: July 20, 2011.

Results of Sacred Lands File Search: Native American cultural resources were *not* identified in the USGS coordinates specified for the project area; however the NAHC recommended that 10 tribes/individuals be contacted for information regarding cultural resources that could be impacted.

Group Contacted	Data LSA Sent Letter To Tribes	Date a Response to the Letter was Received by LSA (if Applicable)	Date and Results of LSA Follow up Telephone Calls and/or emails
Los Coyotes Band of Mission Indians Spokesperson <i>Cahuilla</i>	07-25-11	No response received.	08-09-11: A follow up email was sent. 08-16-11: A message was left with an administrator. The Tribe will return the call if there are concerns
Santa Rosa Band of Mission Indians Mayme Estrada, Chairwoman <i>Cahuilla</i>	0-25-11	No response received.	08-09-11: A follow up email was sent to Ms. Estrada, and also to Steven Estrada in Cultural Resources. 08-10-11: An email was received from Gabriella Rubalcava, Tribal Council. The email stated that the Band does not have specific concerns and deferred further consultation to Joe Ontiveros, Soboba Band of Louiseño Indians. 07/19/12: Mitigation measures related to the participation of tribal monitors were added to the Mitigation Monitoring Program. Requested documentation was sent per the request of the band or tribal group.
Pala Band of Mission Indians Tribal Historic Preservation Office/Shasta Gaughen <i>Louiseño, Cupeño</i>	07-25-11	No response received.	08-09-11: A follow up email was sent to Ms. Gaughen. She responded to say that the project is outside of their area and they have no concerns. A letter is forthcoming. 08-10-11: a letter stating the above dated August 5, 2011 was received.
Morongo Band of Mission Indians Robert Martin, Chairperson <i>Cahuilla, Serranto</i>	07-25-11	No response received.	08-09-11: A follow up email was sent to Michael Contreras. He is the spokesperson for cultural resources. 08-17-11: Mr. Contreras responded by telephone to state that they have no concerns at this time. He requested a copy of the final report and a City contact should the Tribe wish to engage in formal consultation. 07/19/12: Mitigation measures related to the participation of tribal monitors were added to the Mitigation Monitoring Program. Requested documentation was sent per the request of the band or tribal group.
Ramona Band of Cahuilla Mission Indians Joseph Hamilton, Chairperson <i>Cahuilla</i>	07-25-11	No response received.	08-09-11: A follow up email was sent to Mr. Hamilton, and also to John Gomez in Cultural Resources. 08-16-11: A second follow up email was sent to Mr. Hamilton and Mr. Gomez.
Pechanga Band of Mission Indians	07-25-11	No response received	08-09-11: a follow up email was sent to Terrie Brown, Executive

Mark Macarro, Chairperson <i>Luiseno</i>			Secretary, and also to Paul Macarro and Anna Hoover in Cultural Resources. Ms. Hoover responded to say that they do have comments and will send an official comment letter directly to the City. 07/19/12: Mitigation measures related to the participation of tribal monitors were added to the Mitigation Monitoring Program. Requested documentation was sent per the request of the band or tribal group.
San Manuel Band of Mission Indians James Ramos, Chairperson <i>Serrano</i>	07-25-11	No response received.	08-09-11: A follow up email was sent to Mr. Ramos, and also to Ann Brierty in Cultural Resources. 08-16-11: A voicemail was left for Ms. Brierty.
Serrano Nation of Indians Goldie Walker <i>Serrano</i>	07-25-11	No response received.	08-16-11: Mark Lee Cochrane, Ms. Walker's son who is also on the Tribal Council, spoke for the Tribe. They would like to be notified of any discoveries and also request a copy of the final report.
Soboba Band of Mission Indians Scott Cozaet, Chairperson; Attn. Carrie Garcia <i>Luiseno</i>	07-25-11	No response received.	08-009-11: A follow up email was sent to Darren Hill (the email contact provided by the NAHC) and also to Joe Ontiveros in Cultural Resources. The email to Mr. Hill was returned. 08-16-11: A voicemail was left for Carrie Garcia, the Executive Secretary for Chairman Cozaet as shown on the NAHC list. 08-17-11: a letter was received via email from Joe Ontiveros, Cultural Resources Department. The letter stated that the project is within the Tribe's Traditional Use Area and is very sensitive to the people of Soboba. The Tribe requests government to government consultation in accordance with SB18; that Soboba continue to be the lead consulting Tribe for the project; that project construction be monitored by a Soboba monitor, and that the proper procedures be taken and the requests of the Tribe are honored. 07/19/12: Mitigation measures related to the participation of tribal monitors were added to the Mitigation Monitoring Program. Requested documentation was sent per the request of the band or tribal group.
Cahuilla Band of Indians Luther Salgado, Sr., Chairperson <i>Cahuilla</i>	07-25-11	No response received.	08-09-11: A follow up email was sent to Mr. Salgado, and also to Environmental Officer Yvonne Markel. Ms. Markel responded to say that the Tribe presently has no knowledge of cultural resources within the project area. However, due to the possibility of encountering cultural resources during construction, they request monitoring by a Native American and can provide trained monitors. They also would like to request copies of any cultural resource documentation. 07/19/12: Mitigation measures related to the participation of tribal monitors were added to the Mitigation Monitoring Program. Requested documentation was sent per the request of the band or tribal group.

Assessing the Economic and Market Trends Affecting Agriculture in the Western Inland Empire

Prepared by:
Justin L. Adams, Ph.D.

Chang & Adams Consulting

September 2011

About Chang & Adams Consulting:

Chang & Adams Consulting is Sacramento's premier management consulting firm, operating at the intersection of the public and private sectors. We are professional economists who routinely advise clients on market and business trends so that they may assess and understand the environment in which they are operating. We specialize in applying cutting-edge quantitative analyses to help frame and solve public policy and business strategy issues. We advise a range of clients, including government agencies, non-profit organizations, campaigns for initiatives and candidates, and Fortune 1000 companies. We provide them with the analytical insight to shape their strategic direction, improve their operations, and develop sound policies. Copies of resumes of our principals are attached to this report as Appendix A.

**Assessing the Economic and Market Trends Affecting
Agriculture in the Western Inland Empire
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**Assessing the Economic and Market Trends Affecting
Agriculture in the Western Inland Empire
(Key Findings)**

- The Inland Empire makes up a small part of California's agriculture industry. In 2009, the value of all agricultural production in Riverside and San Bernardino Counties totaled \$1.4 billion, compared with \$41.4 billion of agricultural production in California as a whole. Additionally, each of the ten most productive agricultural counties in California produces more than Riverside and San Bernardino combined.
- Agriculture is also small compared to other industries in the Inland Empire. The Natural Resources and Mining sector, which is comprised mostly of the agriculture industry, made up 1 percent of the regional economy that year. The largest sectors were Financial Activities (23 percent), Trade (18 percent), and Education and Health Services (11 percent).
- Agriculture is also in decline in the Inland Empire. Between 2006 and 2010, three of the top five agricultural products in Riverside County (nursery stock, milk, and table grapes) decreased in production value or remained flat. Similarly, three of the top five agricultural products in San Bernardino County (cattle and calves, replacement heifers, and trees/shrubs) also have decreased in value and are expected to continue to decrease in value as agricultural operators relocate from the Riverside and San Bernardino Counties in general to places such as Kern County and in some instances out of state.
- The decline in agriculture can be attributed to five key factors:
 - Growth in the demand for housing and development following the 2007 market collapse: After the market collapse in 2007, home prices have stabilized to 2002-2003 prices and monthly home sales have increased since 2009.
 - Growth in the transportation and warehousing sector: Over 40 percent of all goods imported into the United States enter through the Ports of Los Angeles and Long Beach, and most of these goods pass through the Inland Empire for distribution. After declining from 2006 through 2009, imports are rising to near-record levels again.
 - Increased restrictions on water deliveries for agricultural uses after several consecutive drought seasons: Drought conditions led to water allocation cutbacks from both the State Water Project and local water sources, driving the cost of water up across the region as well as limiting access.
 - Higher wages in other industries in the region: Trade, transportation, and construction industries have all seen significant growth in the region and offer higher annual salaries than agriculture for the same skilled and semi-skilled labor.
 - Strong agricultural competition from the southern Central Valley for dairies: The Valley offers cheaper land, a greater number of support industries for agriculture, a larger

agricultural employment base, and cheaper labor for the dairy industry, as well as agriculture in general.

- Increased regulatory pressures from air quality and local jurisdictions regarding particulate matter emissions and land use adjacency issues.
- The trend in Riverside and San Bernardino Counties is for agricultural operations to continue to shift to places like Kern County regardless independent of land use policy due to the economic issues set forth in this report.

Assessing the Economic and Market Trends Affecting Agriculture in the Western Inland Empire

1. Introduction

The Inland Empire region of Southern California generally consists of Riverside and San Bernardino Counties, and is located just east of Los Angeles. The two counties encompass more than 4.2 million people. Figure 1.1 below shows the general geography of the region.

Figure 1.1
The Inland Empire



Compared to the rest of the state, the Inland Empire makes up only a small part of California's agriculture industry. In 2009, the value of all agricultural production in Riverside and San Bernardino totaled \$1.4 billion. Agricultural production includes crop production, such as for food grains, feed crops, cotton, oil crops, fruits and tree nuts, and vegetables, and livestock production, including meat animals, dairy products, poultry, and eggs.

Table 1.1
Agricultural Production in California and Inland Empire

Geographic Region	Agricultural Production, 2009 (% of State)	Agricultural Employment, 2007 (% of State)
Riverside/San Bernardino	\$1.4 Billion (3.3%)	16,800 (4.3%)
California	\$41.4 Billion (100%)	386,400 (100%)

SOURCES: California Department of Food and Agriculture, "County Rank by Gross Value of Agricultural Production, 2008–2009," California Agricultural Resource Directory 2010-2011; California Statistical Abstract, "Wage and Salary Employees in Agricultural Establishments by Areas in California, 1995 to 2007," 2008

By comparison, the value of all agricultural production in California in 2009 was \$41.4 billion. The Inland Empire represented just 3.3 percent of this total.

The distribution of employment in the agriculture industry resembles that of production value. In 2007, Riverside and San Bernardino Counties had 16,800 workers in the agriculture industry. This represented 4.3 percent of the 386,000 Californians employed in agriculture that year.

2. Agricultural Production in the Inland Empire is Small

Compared to other individual counties across the state, both Riverside and San Bernardino Counties produce significantly smaller agricultural output. Each of the ten most productive agricultural counties in California produces more than both counties combined.

Table 2.1
Top California Counties by Value of Agricultural Production, 2009

Rank	County	Total Value (\$000)	Leading Commodities
1	Fresno	\$5,372,009	Grapes, Tomatoes, Poultry, Almonds, Cattle & Calves
2	Tulare	\$4,046,355	Milk, Oranges, Grapes, Cattle & Calves, Corn
3	Monterey	\$4,033,718	Lettuce, Strawberries, Nursery, Broccoli, Grapes
4	Kern	\$3,606,356	Grapes, Milk, Vegetables, Almonds, Pistachios
5	Merced	\$2,460,474	Milk, Chickens, Almonds, Cattle & Calves, Sweet Potatoes
6	Stanislaus	\$2,310,071	Milk, Almonds, Chickens, Cattle & Calves, Tomatoes
7	San Joaquin	\$2,000,474	Grapes, Milk, Cherries, Tomatoes, Walnuts
8	Ventura	\$1,621,575	Strawberries, Nursery Stock, Celery, Raspberries, Lemons
9	San Diego	\$1,548,124	Woody Ornamentals, Flowers & Foliage, Bedding Plants, Avocados, Tomatoes
10	Imperial	\$1,452,970	Lettuce, Cattle, Wheat, Alfalfa, Broccoli
13	Riverside	\$1,015,755	Nursery Stock, Milk, Eggs, Table Grapes, Hay
25	San Bernardino	\$355,379	Milk, Eggs, Cattle & Calves, Alfalfa, Replacement Heifers

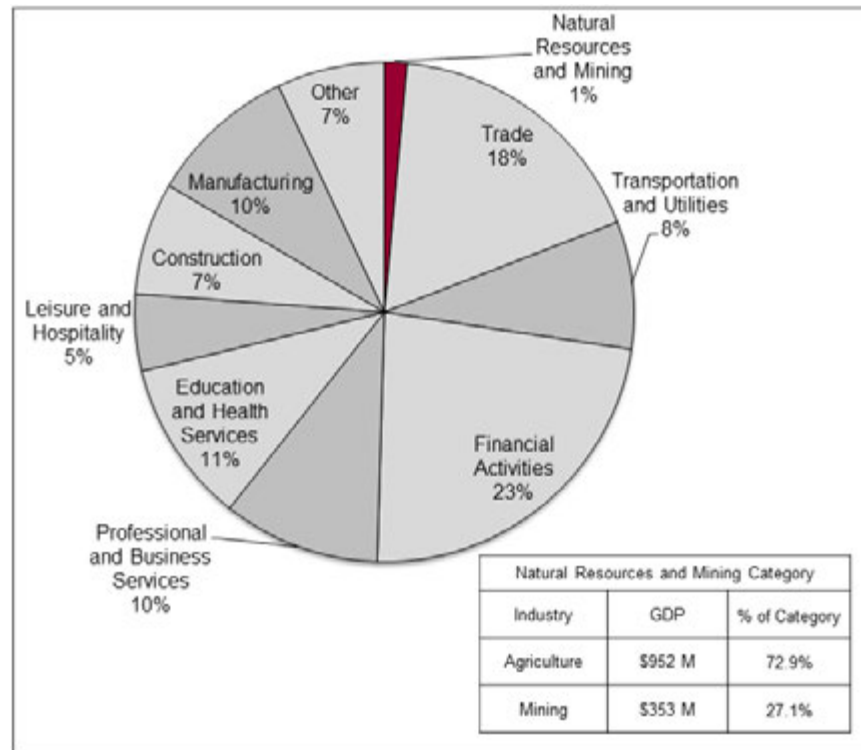
SOURCE: California Department of Food and Agriculture, "County Rank by Gross Value of Agricultural Production, 2008–2009," California Agricultural Resource Directory 2010-2011

The largest California county by agricultural production in 2009 was Fresno. The county produced nearly \$5.4 billion in agricultural commodities, including grapes, tomatoes, poultry and almonds, while the tenth largest California county in 2009 was Imperial, producing almost \$1.5 billion in agricultural commodities, primarily through lettuce, cattle, wheat, alfalfa, and broccoli.

By contrast, Riverside was the 13th largest agricultural producer, generating \$1.0 billion in commodities such as nursery stock, milk, eggs, table grapes, and hay, and San Bernardino was the 25th largest agricultural producer, with \$355 million in products including milk, eggs, cattle and calves, alfalfa, and replacement heifers. Together, Riverside and San Bernardino Counties produced nearly \$1.4 billion in commodities, but still less than Imperial County.

Agriculture is also small compared to other industries in the Inland Empire region. The largest industrial sectors in the Riverside-San Bernardino-Ontario Metropolitan Statistical Area in 2009 were Financial Activities, Trade, and Education and Health Services. These represented 23 percent, 18 percent, and 11 percent of the Inland Empire’s economic activity, respectively, as seen in Figure 2.1.

Figure 2.1
Shares of Private GDP for Riverside-San Bernardino-Ontario, 2009



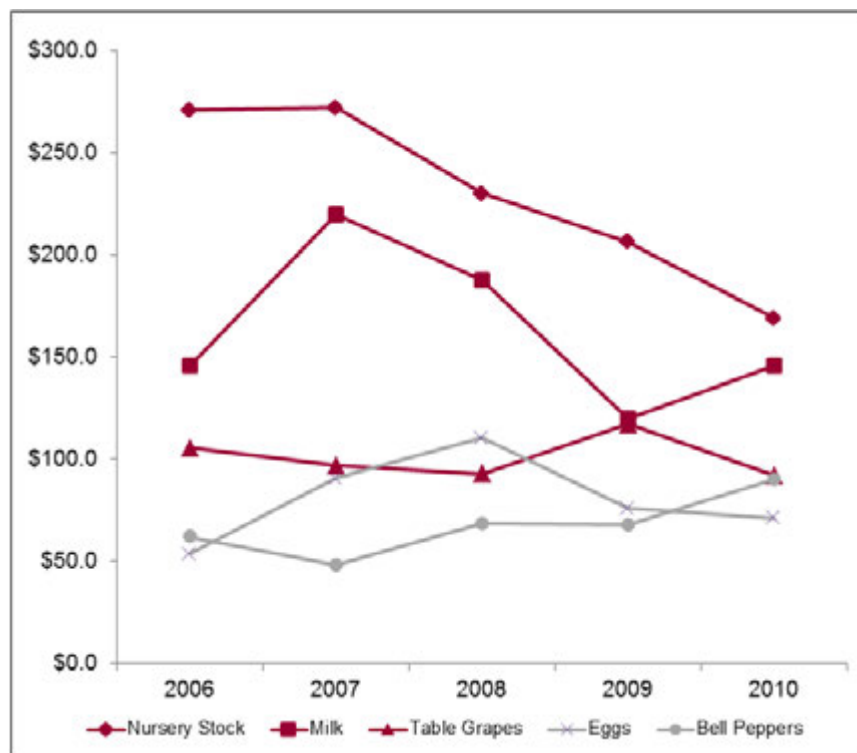
SOURCE: Bureau of Economic Analysis, U.S. Department of Commerce, “Gross Domestic Product by Metropolitan Statistical Area, Riverside-San Bernardino-Ontario 2009,” accessed August 2011 (<http://www.bea.gov/iTable/iTable.cfm?reqid=70&step=1&isuri=1&acrdn=2>)

By contrast, the Natural Resources and Mining sector made up 1 percent of the regional economy that year. This sector includes both the agriculture and mining industries. In fact, given that the agriculture industry comprises about 73 percent of the sector, then in essence agriculture currently makes up about seven-tenths of 1 percent of the Inland Empire’s economy.

3. Agriculture in the Inland Empire Continues to Decline

Both Riverside and San Bernardino Counties have seen declines in production for some of their top agricultural products since 2006. Three of the top five agricultural products in Riverside County have decreased in production value or remained flat since 2006 as seen in Figure 3.1. From 2006 to 2010, the top five agricultural products in Riverside County by combined value were nursery stock, milk, table grapes, eggs, and bell peppers.

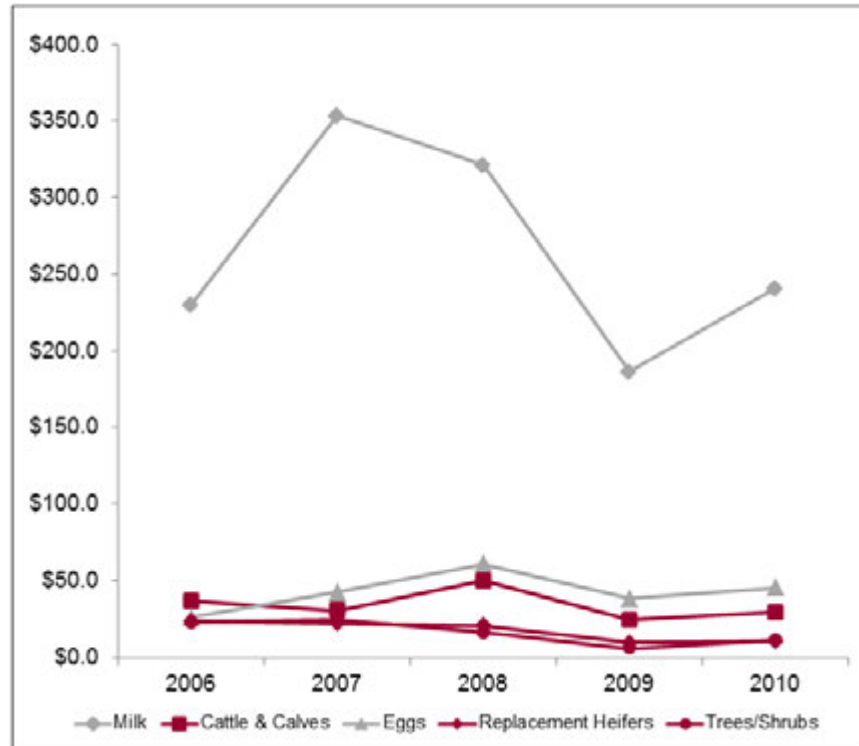
Figure 3.1
Riverside County Leading Agricultural Values (Top 5 Products)



SOURCE: Agricultural Commissioner's Office, County of Riverside, Riverside County Annual Production Report, Assorted Years

Over this five-year time period, three of these agricultural products declined in value in the County or remained flat: nursery stock dropped from \$270 million in production value to under \$170 million; after a brief run-up, milk production began and ended at \$145 million; and table grapes declined in production value from over \$105 million to around \$92 million. Although eggs and bell peppers did experience higher production values over the five-year period, these are less valuable agricultural products.

Figure 3.2
San Bernardino County Leading Agricultural Values (Top 5 Products)



SOURCE: Department of Agriculture/Weights and Measures, County of San Bernardino, Crop and Livestock Report, Assorted Years

Though San Bernardino did not face as significant losses as Riverside, it has still seen falling revenues. Since 2006, three of the top five agricultural products in San Bernardino County have decreased in value, seen in Figure 3.2. From 2006 to 2010, the top five agricultural products in San Bernardino County by combined value were milk, cattle and calves, eggs, replacement heifers, and trees/shrubs.

Over this five-year time period, three of these agricultural products declined in value in the County: the production value of cattle and calves decreased by nearly \$7 million; replacement heifers lost over half of their production value, with a drop from \$24.2 million to \$10.4 million; and trees and shrubs lost nearly half of their production value, declining from \$22.8 million to \$11.5 million. Additionally, there was little growth in milk production (just over \$10 million) in the county despite it being the top product, and eggs also saw higher production by about \$19 million over the five years.

4. Five Major Barriers Limit the Inland Empire's Agriculture Industry

With the agriculture industry continuing to decline in the Inland Empire, five major barriers to the industry were identified. These barriers center on pressures from competing industries, environmental concerns, and operations costs:

- Growth in Demand for Housing and Development
- Growth in Trade and Transportation Sectors
- Increased Restrictions on Water
- Higher Wages in Other Industries
- Strong Agricultural Competition from Central Valley

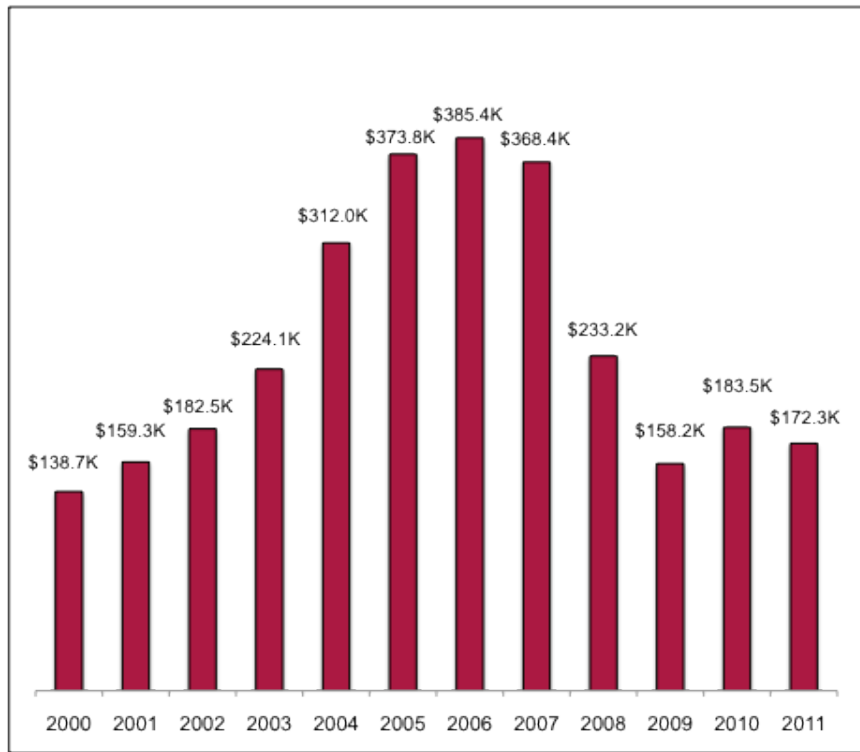
4.1. Growth in Demand for Housing and Development

The Inland Empire generally boasts relatively inexpensive land values compared to other regions of California, such as the coastal counties, making the Inland Empire attractive to developers looking to build residential and commercial property. Beyond this, the return of home prices in the region to more traditional levels has also spurred additional investment in land purchases and developments.

The Inland Empire region saw robust demand for housing during the previous decade, as reflected by significant increases in median home prices between 2002-03 and 2006 to record highs for the region. Much of these gains were erased with the market collapse of 2007, however, with home prices returning to levels last seen in 2002 and 2003. But some analysts believe that the housing market in the region has finally begun to stabilize given that home and land prices are beginning to inch higher. Whittlesey Doyle, a land brokerage firm based in Irvine, stated that a number of recent land deals to homebuilders in the Inland Empire indicate that the market is rebounding.¹

¹ Wesley G. Hughes, "Land buyers back in game," Inland Valley Daily Bulletin, December 6, 2010.

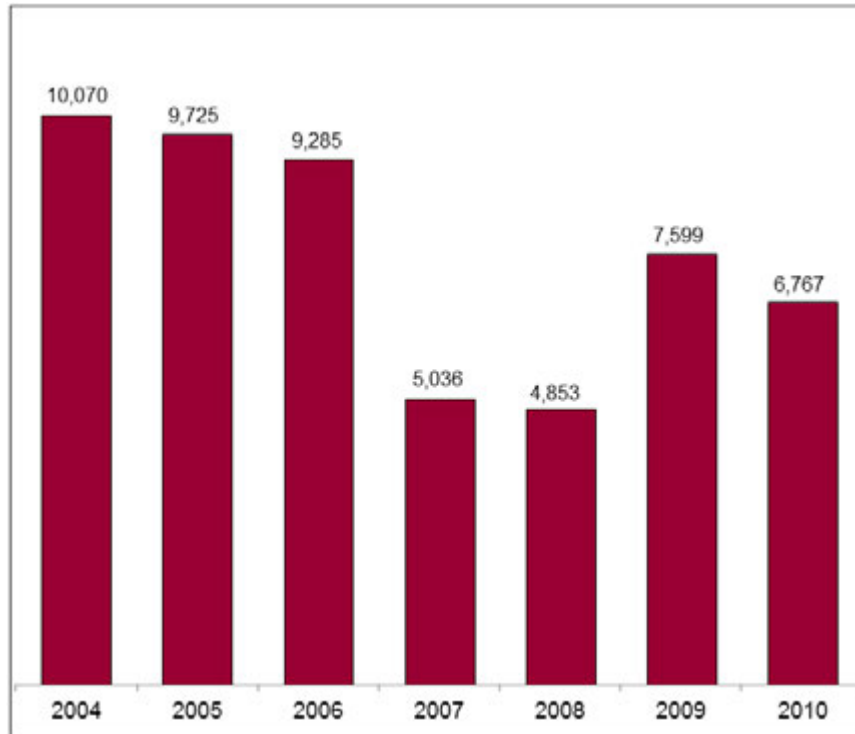
Figure 4.1
 Inland Empire Median Home Sales Price, July 2000-July 2011



SOURCE: California Association of REALTORS, "Median Prices of Existing Detached Homes, Historical Data"

As shown in Figure 4.1, the median home sales price in the Inland Empire was just over \$385,000 at the peak of the real estate market in 2006. When the market dropped to its low in 2009, the median sales price had fallen 59 percent to just over \$158,000. Though prices have fallen significantly since 2007, the median price actually began to increase in 2010 to over \$183,000. While there has been some retrenchment in prices this year, they still remain above \$172,000.

Figure 4.2
Monthly Home Sales



SOURCE: DataQuick Information Systems, "Southland Home Sales," 2004-2010

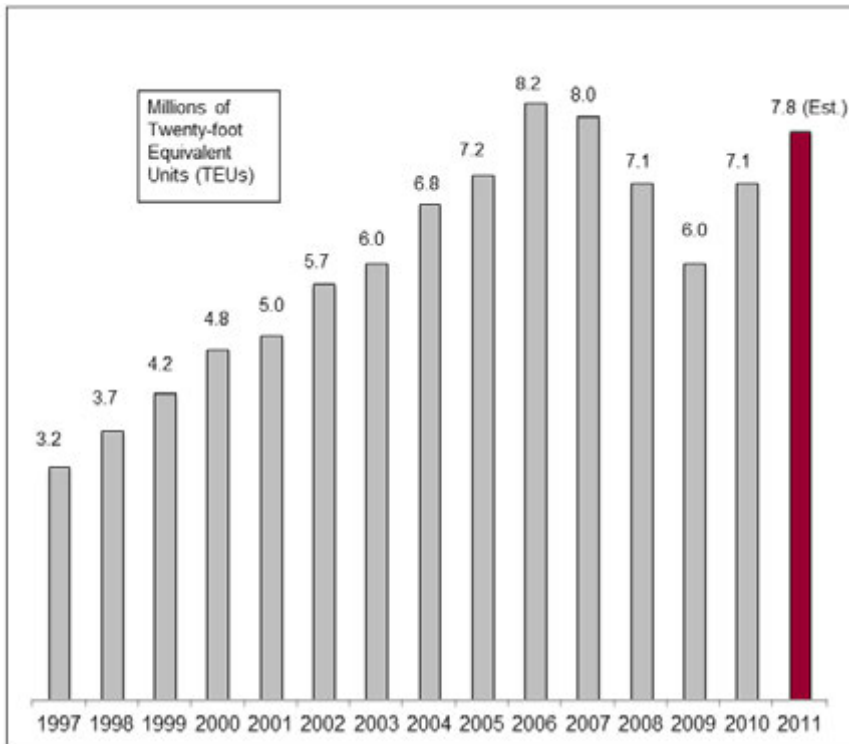
Correspondingly, monthly home sales have tapered off from their peak in 2004, as illustrated in Figure 4.2. As home prices have decreased, there has been an increase in monthly home sales in the region. Though sales remain off of their historic highs, monthly home sales indicate that consumers are buying properties again and driving some growth in the market.

With home prices stabilizing and home sales returning, newspaper accounts and anecdotal evidence suggest that several large homebuilders have indicated that they have begun purchasing more land and restarting stalled home developments across the region.

4.2. Growth in Trade and Transportation Sectors

On the commercial front, the agriculture industry faces increasing competition from trade and transportation, two of the largest industrial sectors in the Inland Empire. Transportation, warehousing, and other goods movement industries are strong in the region because of their proximity to the Ports of Los Angeles and Long Beach and because of the abundance of relatively inexpensive land for distribution centers and transportation hubs.

Figure 4.3
Flow of Imported Containers, Los Angeles-Long Beach Ports



SOURCE: Husing, John, Inland Empire 2011... Start of the Recovery?, Economics & Politics, Inc., April 2011

Over 40 percent of all goods imported into the United States enter through the Ports of Los Angeles and Long Beach, and most of these goods pass through the Inland Empire for distribution. The Burlington Northern Santa Fe (BNSF) Railway has an intermodal railroad yard located in San Bernardino, for example. The Union Pacific Railroad has its main switching yard in Colton as well.

And as shown in Figure 4.3, imports into the Ports of Los Angeles and Long Beach have begun to rebound from the recent recession. Imports as measured by Twenty-foot Equivalent Unit (TEU) containers steadily increased between 1997 and 2006 from 3.2 million TEUs to 8.2 million TEUs. With the recession, imports dropped in 2009 to 6.0 million – the same level as seen in 2003. But as a sign that economic activity is returning to California and the United States, imports into the Ports of Los Angeles and Long Beach increased to 7.1 million TEUs in 2010 and are projected to reach 7.8 million TEUs in 2011. These represent near-record levels of goods movement in the region.

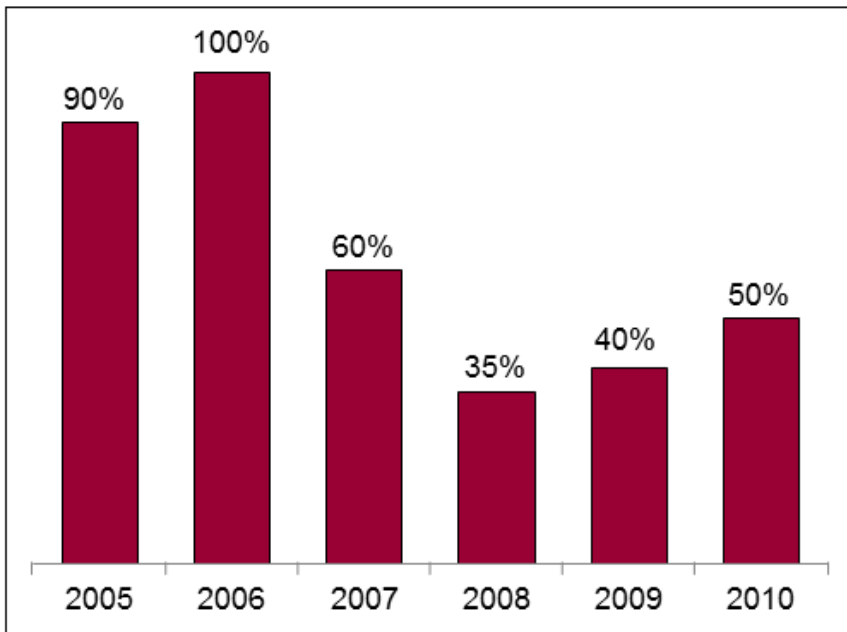
4.3. Increased Restrictions on Water

The State Water Project was constructed in the 1950s and 1960s to provide most of California, particularly Southern California, with a stable statewide water resource to

augment local sources. Currently, the State Water Project provides supplemental water to approximately 25 million Californians and about 750,000 acres of irrigated farmland. Each year, its contracting water agencies make water allocation requests and the state Department of Water Resources plans the initial allocation percentage. Over the course of the year, these allocations can be increased to adjust for wet years, or rolled back in cases of drought.

California faced severe drought conditions for most of the latter-half of the previous decade, however. These conditions necessitated reduced water allocations to the Inland Empire through the State Water Project, and hindered farms and dairies' ability to extract water from their nearby groundwater basins and reservoirs.

Figure 4.4
State Water Project Allocations to Inland Empire Water Districts

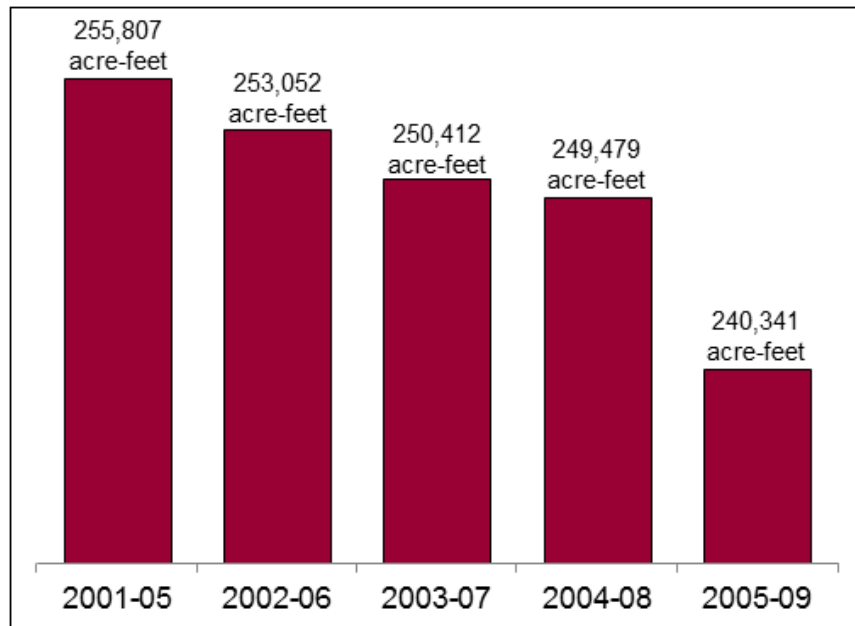


SOURCE: California Department of Water Resources, Notice to State Water Project Contractors, 2005-2010

As illustrated in Figure 4.4, drought conditions following 2006 led to a decrease in State Water Project allocations across California between 2007 and 2010. The drought was so severe that in 2008 only 35 percent of water allocations were provided. Last year the allocation was only 50 percent. A wet 2011 combined with heavy snowpacks promises to increase allocations, however much of the damage to the agriculture industry has already occurred considering that the operating costs to the Inland Empire's agriculture industry have been severely impacted by the water restrictions.

Additionally, water extractions from the San Bernardino Basin have also steadily declined over the previous decade. This is shown in Figure 4.5 below. As the secondary water resource for the region, groundwater and reservoir stores backfill losses to agriculture from the State Water Project. Restrictions on forced groundwater recharge and environmental regulations have also decreased the amount of water extracted from these sources, even in drought seasons.

Figure 4.5
Water Extractions from the San Bernardino Basin



SOURCE: Western-San Bernardino Watermaster, "Annual Report of the Western-San Bernardino Watermaster," Calendar Year 2010

With respect to agriculture, water restrictions adversely impact the industry in a couple of ways. First, they limit the amount of water available for crops and livestock, requiring farmers and ranchers to reduce the size of their production and thus negatively impacting their revenue, according to Gregg Warren, vice president of American AgCredit². Additionally, farmers and ranchers' costs rise as well since the inputs obtained from associated agricultural industries, such as feed, become more scarce and therefore more expensive.

² Chris Sieroty, "Inland Farmers Facing Several Threats," The Business Press (Riverside, CA), March 23, 2009.

4.4. Higher Wages in Other Industries

Improved economic conditions have brought a resurgence of housing and other industries such as trade and transportation in the Inland Empire. This resurgence has resulted in more job opportunities that provide higher salary options for skilled and semi-skilled labor.

Figure 4.6
Occupations in the Inland Empire

Occupation	Estimated Employment, 2010	Mean Annual Salary, 2010
Construction and Extraction	51,850	\$48,720
Office and Administrative Support	195,850	\$33,900
Sales and Related Occupations	121,510	\$32,860
Transportation and Material Moving	108,130	\$32,400
Personal Care and Service	31,190	\$24,370
Farming, Fishing, and Forestry	58,402	\$21,400
Food Preparation and Serving Related Occupations	111,450	\$21,310

SOURCE: U.S. Department of Labor, "Occupational Employment Statistics, May 2010, Riverside-San Bernardino-Ontario, CA, " accessed August 2011 (http://www.bls.gov/oes/current/oes_40140.htm)

As shown in Figure 4.6, agriculture competes with a number of other higher-paying industries for hired labor. Compared to other skilled and semi-skilled employment, agricultural salaries lag behind most of their counterparts across the region. Construction jobs, for example, have highest mean salary of the group at \$48,720 a year. Additionally, three of the four largest occupations in the Inland Empire – office and administrative support, sales and related occupations, and transportation and material moving – all provide higher mean salaries for employees with semi-skilled or low-skilled backgrounds. In fact the third-largest occupation, food preparation and serving, had a mean annual salary only \$90 below that of agriculture.

Jack King, of the California Farm Bureau Federation, pointed out that even agricultural wages increases were not enough to draw an adequate amount of agricultural workers. He

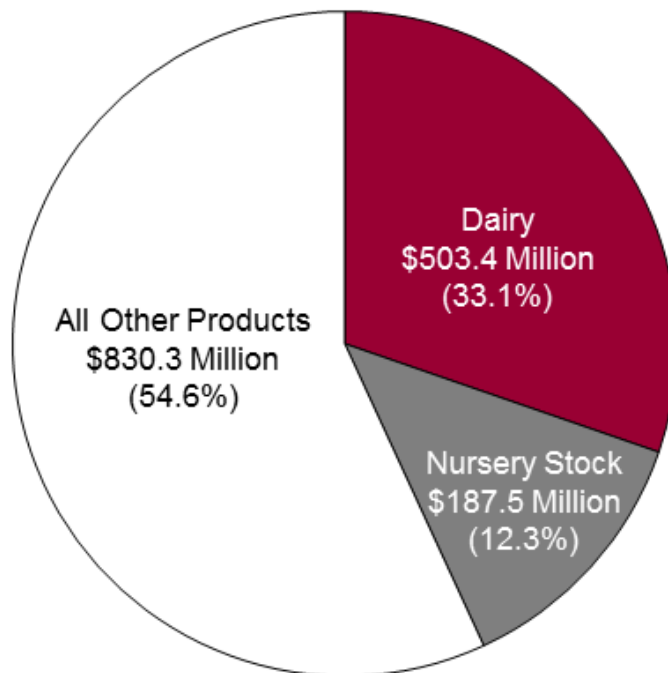
stated that even with raises, the soft market will only allow agriculture to make limited raises.³

It should be noted that the farming employment figure does not take into account family labor and other non-paid employment. That said, the total employment and mean annual salary for agriculture do not compare favorably to other equivalent employment opportunities in the region, particularly as the agricultural industry continues to decline relative to other industries such as transportation and construction.

4.5. Strong Agricultural Competition from Central Valley

The fifth barrier involves competition with the southern Central Valley for agricultural production, particularly with respect to the dairy industry. The dairy industry comprises the production of milk, meat, and feed, such as alfalfa and hay. Milk is the largest agricultural product for San Bernardino County, and it is the second largest in Riverside County. As shown in Figure 4.7 below, dairy and nursery production accounts for approximately 45.4 percent of all agricultural production in the Inland Empire. In fact, dairy alone accounts for approximately one-third of all agriculture in the region.

Figure 4.7
Agriculture in the Region



SOURCE: Department of Agriculture/Weights and Measures, County of San Bernardino, Crop and Livestock Report, Assorted Years; Agricultural Commissioner's Office, County of Riverside, Riverside County Annual Production Report, Assorted Years

³ Andrew Silva, "Lack of laborers leaves crops to rot," Inland Valley Daily Bulletin (Ontario, CA), December 13, 2006.

Bill Van Leeuwen, a dairy farmer from the region, has expressed surprise at the speed with which the milk industry is leaving the Inland Empire for places such as the Central Valley.⁴

The Central Valley produces milk more cheaply than the Inland Empire does. In the Southern California region (consisting of San Luis Obispo, Santa Barbara, San Bernardino, Los Angeles, Riverside, Imperial and San Diego counties), the average total investment per cow is \$274 more than in the Southern Central Valley (consisting of Fresno, Tulare, Kings and Kern counties). The average total investment per cow takes into account all expenses, capital costs, and operating costs for every cow on the dairy. This is shown in Figure 4.8 below.

Moreover, dairy production in the Central Valley is far larger than that in the Inland Empire. The total number of milk cows in Tulare County alone (502,395) more than quadruples the number in the Southern California region. This is also shown in Figure 4.8 below.

Figure 4.8
Total Dairy Costs, 2010

	Southern California	Southern Central Valley
Average Total Investment per Cow	\$2,993	\$2,719
Total Cows	119,805 (San Bernardino and Riverside)	983,954
Hourly Wage, All Hired Labor	\$16.23	\$13.78

SOURCE: California Department of Food and Agriculture, "California Dairy Statistics," 2010 Data; California Department of Food and Agriculture, "Cost of Production" 2010 Annual Report

Additionally, hourly wages are roughly \$2.50 higher in the Southern California region than the Central Valley. The cheaper costs to operate in the Southern Central Valley can make a significant difference in the bottom line of dairy producers. In fact, there has been anecdotal evidence of dairy ranchers selling land in the Inland Empire and using those profits to open or expand dairy operations in the Central Valley.

⁴ Jerry Hirsch, "Dairies Moving Out of Inland Empire," Los Angeles Times, January 9, 2006.

5. Conclusion

Our analysis shows that agriculture is small compared to other industries in the Inland Empire – Riverside and San Bernardino Counties – and is continuing to decline in importance in the region. We identify a number of systemic and regional economic factors that create significant economic barriers to the continued viability of agriculture in the Inland Empire. These barriers include the growth in demand for housing and development; the growth in the trade and transportation sectors; increased restrictions on water; higher wages in other industries; and strong agricultural competition from the Central Valley.

It should be pointed out that the decline of agriculture in the Inland Empire and the barriers to its viability are independent of any land use policies pursued by Riverside and San Bernardino Counties. That is, the market forces affecting agricultural production in Riverside and San Bernardino Counties will continue to shrink the industry in the future regardless of potential local efforts to preserve agricultural production through land use policies or other similar measures.

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- Western-San Bernardino Watermaster, "Annual Report of the Western-San Bernardino Watermaster," Calendar Year 2010

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- PROFILE:** A seasoned political economist who brings a combination of practical and theoretical expertise in public policy as well as fiscal and economic analysis. Over 12 years of experience as a consultant and an executive in state government. A Ph.D. with deep knowledge of economics, political science, game theory, and public policy. Familiarity with techniques for surveying and analyzing large data sets, including regression analysis.
- PROFESSIONAL EXPERIENCE:**
- 07/09 – present **Chang & Adams Consulting** Sacramento, CA
Director
- Provide economic analysis and strategy consulting to Fortune 1000 companies at the intersection of the public- and private-sectors. Provide policy, economic, and public finance analysis as well as operations consulting for government agencies and not-for-profit organizations.
- 10/07 – 06/09 **Forward Observer, Inc.** Sacramento, CA
Director of Economics
- Led the economics business unit of a political and public policy consulting firm. Oversaw the development of all of the firm's fiscal and economic studies, approved their analytical methodologies, and testified in front of the Legislative Analyst's Office.
- 08/01 – 09/07 **The RAND Corporation** Santa Monica, CA
Associate Economist
- Specialized in research and analysis focusing on domestic and international economic development, defense economics, and the economics of public-sector organizations. Projects included performance-based logistics and information technology consulting for the U.S. Army; purchasing and supply management best practices for the U.S. Air Force; and, the design of a viable economy for an independent Palestinian state. Developed growth accounting models and other economic frameworks to guide the analyses, and supplemented these analyses with surveys and insights drawn from expert interviews and background research.
- 06/96 – 09/97 **California Department of Transportation** Sacramento, CA
Special Assistant to the Chief Deputy Director
- Supported the COO of a \$6 billion, 17,000-person organization. Managed Caltrans' \$200 million Administrative Program, providing accounting, personnel, information technology and facilities services to the entire department. Led cross-functional team in reorganization of Caltrans' administrative service units. Collaborated on executive-level teams to spin off Equipment Service Center, streamline Caltrans, and protect California's infrastructure.
- 03/95 – 05/96 **California Department of Housing and Community Development** Sacramento, CA
Assistant for Policy Development
- A member of the Department's executive staff. Analyzed the fiscal and economic impact to California of state and federal legislation affecting housing. Authored policy white papers on homelessness and departmental reorganization.
- 08/94 – 02/95 **California Office of the Governor** Sacramento, CA
Staff Economist
- Analyzed the fiscal and economic impact to California of federal appropriations, clean air regulations, and natural disasters.
- EDUCATION:** **Stanford University Graduate School of Business** Stanford, CA
Ph.D., Business. Specialization in Political Economics
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A.M., Political Science
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Appendix A

FELLOWSHIPS AND AWARDS:

1998-99	Public Affairs Fellow, Hoover Institution on War, Revolution and Peace	Stanford, CA
1990-94	Stanford Graduate School of Business Fellowship	Stanford, CA
1990	National Science Foundation Minority Graduate Fellow, Economics	Stanford, CA

ANDREW J. CHANG
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PROFESSIONAL EXPERIENCE:

- 07/09 – present **Chang & Adams Consulting** Sacramento, CA
Managing Director
- Provide business intelligence and strategy consulting to Fortune 1000 companies with an emphasis on private sector interaction with government. Private sector specialization in assessing and identifying new market opportunities and developing strategies to enter new markets. Public sector emphasis on public policy, economic and public finance analysis and operations management consulting.
- 04/07 – 07/09 **Forward Observer, Inc.** Sacramento, CA
Vice President
- Provide business intelligence and strategy consulting to Fortune 1000 companies to support market entry initiatives. Provide business-political risk and due diligence assessment for investment companies. Conduct fiscal, economic and public policy assessments.
- 08/04 – 04/07 **California Department of General Services** Sacramento, CA
Chief Deputy Director
- Chief Financial and Operations Officer of a state department with \$1 billion annual operating budget, thirteen business units and 4,000 employees. Oversaw the state's procurement and real estate operations. Also responsible for the state's telecommunications, automobile fleet, printing, warehousing, insurance and school construction operations.
 - Special assignment to the Governor's Office to serve as chief staff economist for the Governor's Council of Economic Advisors. Facilitated Council meetings, prepared written briefings for the Governor on policy issues for consideration and assisted Council members with original research to present at the Council meetings.
 - Special assignment to the California Department of Corrections and Rehabilitation to assess the agencies procurement operations and develop recommendations to improve procedures and operations.
- 06/00 – 08/04 **A.T. Kearney, Inc.** San Francisco, CA
Senior/Engagement Manager (06/02 – 08/04)
- Lead teams to develop strategies for new lines of business for a Fortune 1000 technology company, a national consumer products consortium and an international consumer products retail company.
 - Lead teams to develop strategies to both acquire and sell technology services, R&D and manufacturing business units.
 - Analytic and modeling methods subject matter expert. Finance and Accounting business processes subject matter expert.
- Associate Management Consultant** (06/00 – 06/02)
- Conduct research and develop recommendations for various clients in the high technology and consumer products industries.
- 12/98 – 02/00 **MGT of America, Inc.** Sacramento, CA
Senior Management Consultant
- Implemented studies to improve finances and operations for Cleveland Unified School District, Florida State University and the California Resources Agency.

Appendix A

- 10/95 – 12/98 **California State and Consumer Services Agency** Sacramento, CA
Assistant Secretary for Policy and Operations
▪ Executive of a government agency with an annual operating budget of \$1.3 billion, twelve departments and over 14,000 employees.
▪ Under supervision of the Secretary, guided agency and department policies, budgets and strategic plans.
- 05/95 – 10/95 **Personal Staff of Governor Pete Wilson** Sacramento, CA
Chief Economist/Deputy Issues Director
▪ Managed the development of national tax, trade, environment, agriculture and crime policies for Governor Pete Wilson's presidential campaign.
- 09/93 – 05/95 **California Office of the Governor** Sacramento, CA
Deputy Chief Economist
▪ Lead research teams to assess the economic and fiscal impact of tax, economic development, health care and immigration policies.
- EDUCATION:** **University of Michigan** Ann Arbor, MI
Master of Business Administration Essentials (1 of 30 A.T. Kearney consultants selected globally to participate in a tailored executive MBA program.)
- Georgetown University** Washington, DC
Master of Public Policy
- University of California** Berkeley, CA
Bachelor of Arts

CBRE CONSULTING



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January 19, 2009

Dana Whitmer
Vice President
Sares Regis Group
18802 Bardeen Avenue
Irvine, CA 92612

Re: Economic Viability of Agriculture in the West Inland Empire

Dear Mr. Whitmer:

Per your request CBRE Consulting has examined the economic and market trends affecting agriculture operations throughout California, with particular attention to the specific challenges relative to the communities of Chino and Ontario in the western Inland Empire.

Founded in 1978 as Sedway Group, CBRE Consulting is a nationally recognized full-service real estate and urban economics consulting firm with offices in Los Angeles and San Francisco. CBRE brings a multi-disciplined approach to property evaluation of all major land use types. CBRE specializes in real estate market analysis, economic development studies for residential, commercial and industrial projects throughout California and the western United States.

BACKGROUND

The Inland Empire once held the largest concentration of dairies in the world, with most of them in the Chino/Ontario basin. This region is now facing tremendous urbanization and development pressures. According to the San Bernardino County General Plan, the agricultural land is continually declining. According to the State of California, Department of Conservation, the County lost 47,000 acres of farmland from 1990 through 2002. Riverside County lost 50,000 acres in prime farmland over the same period.

For this analysis, CBRE performed an extensive internet/literature search relative to the economics of agricultural and dairy farming to understand the economic and other challenges to continued agriculture uses in the Inland Empire. CBRE also gathered relevant demographic, real estate and other economic data to illustrate historic and projected land use trends near Chino and the western Inland Empire.

There are many factors which demonstrate the infeasibility of agriculture production in Western Inland Empire, resulting in many dairy operators moving to Kern County.

- Urbanization in the Inland Empire, resulting in dramatically increasing land prices,
- Higher water and labor costs;
- Environmental regulation (insects, odors, ground water contamination and solid waste removal) and,
- Competition from Kern County and the Central Valley with lower land costs and reduced regulations

1. Increasing Land Values

Due to competing land uses, land prices have increased dramatically in the area in excess of \$300,000 per acre. It has become more profitable for farmers to sell their land for a premium and relocate to a different area. The adoption of the Ontario Sphere of Influence General Plan in 1998, which provided for significant residential and commercial development, encouraged the farmers to sell their land and relocate.

2. Conflicts between Urban Neighbors and Dairy Farms

The proximity of agriculture and urban development in the Inland Empire region bring with it many conflicts. There is an increase in the land use incompatibility with nuisance complaints from the urban neighbors regarding flies, farm odors, early morning noise, and also water and air pollution. The farmers also face pressures due to increased water and land-use restrictions.

3. Increasingly Stringent Environmental Regulations

The Region 8 Water Board, which encompasses Chino/Ontario, was among the first to develop environmental regulations to control dairy operations, with increasing restrictions imposed in 1994, 1999 and 2004, as the proximity of urban neighborhoods, contamination of ground water and air pollution started raised more concerns.

4. Competition from Central Valley

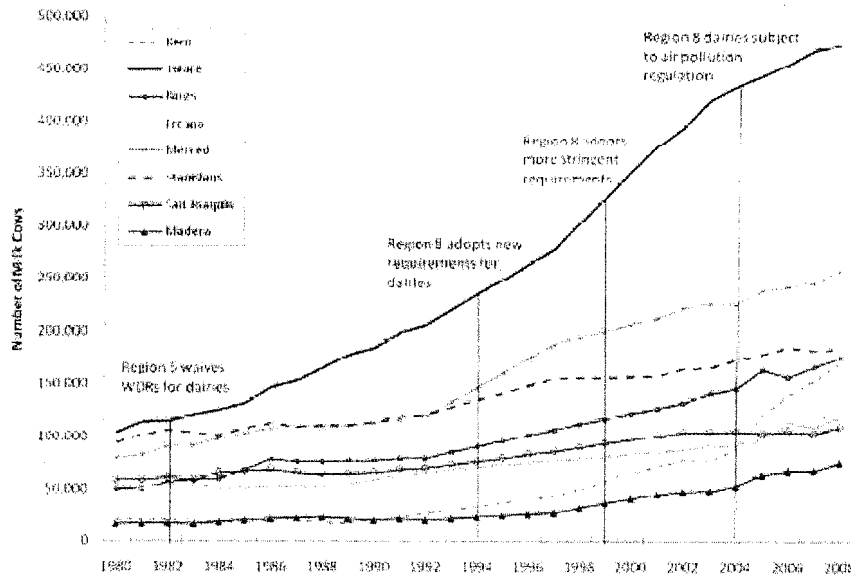
The dairy farmers in the Chino basin face stiff competition from the farmers in the Central Valley because of "high operating costs, including high feed costs and the cost of manure disposal" (Ontario Sphere of Influence General Plan, which is hereby incorporated by reference).

A study published in Agriculture and Resource Economics Review in 2008 demonstrated the effect of environmental regulations over time and the growth in dairy industries, attributed to the cheap land and relatively weak regulations in the Central Valley.

According to CDFA, milk production has declined by 55 percent in San Bernardino County between 2003 and 2007, while production increased by 88 percent in Kern County.

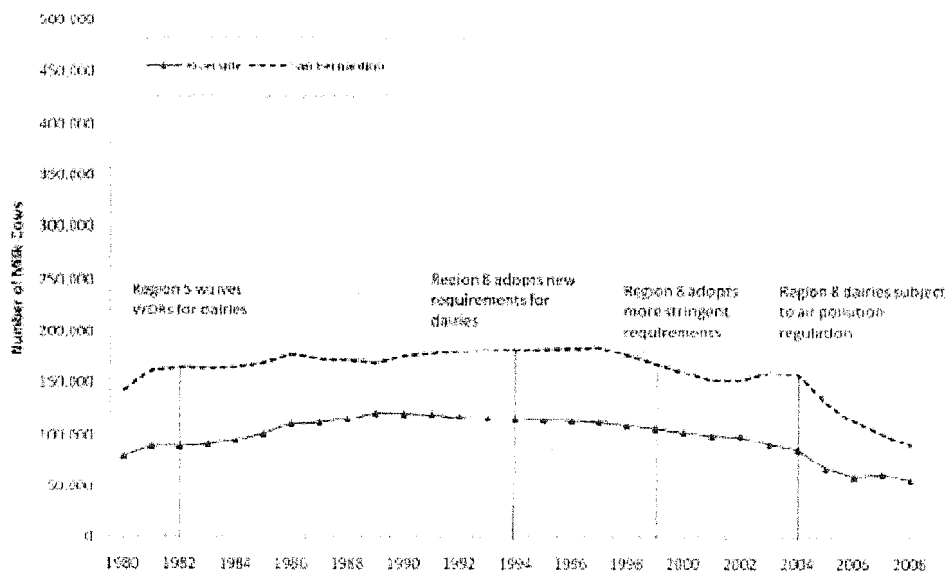
Figures 1 and 2 on the following page show trends in the number of milk cows in the Central Valley (Region 5) as compared to the loss in Region 8 from 1980 to 2008.

Figure: 1
Milk Cows in Counties of Region 5 Central Valley



Source: Steering and Hogle, 2008

Figure: 2
Milk Cows in Region 8 – Inland Empire



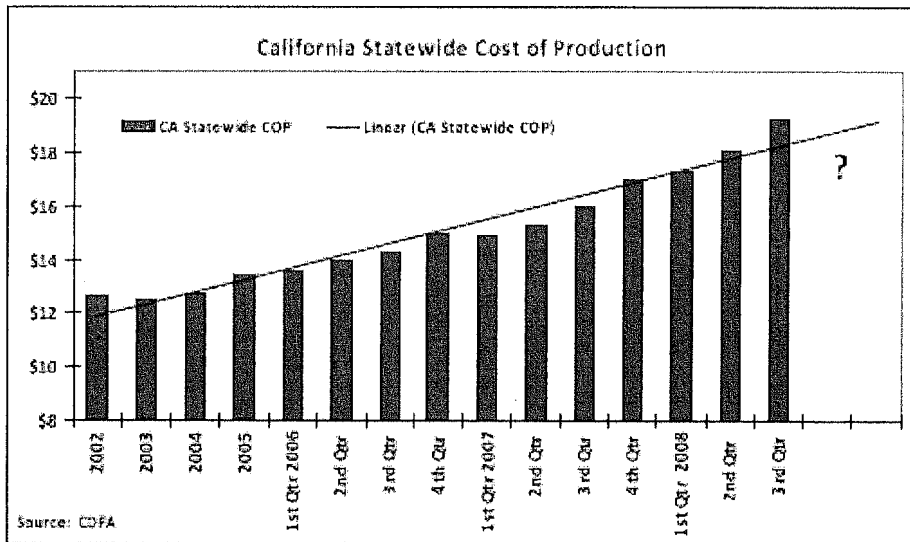
Source: Steering and Hogle, 2008

The Central Valley farmers also face few development pressures as compared to the Chino area and they benefit from diverse farm economy, which is no longer present in the Chino basin. For example, the farmers use dairy waste to fertilize their own crops or of the neighbors. They also use agricultural waste from neighboring farms as feed. This reduces their waste disposal and feed costs.

5. Operating Costs

According to the CDFA, production costs in dairy industry have risen by 50 percent since 2002 in California, putting more pressure on dairy farmers to cut other costs. Figure 3 below shows the growth in cost of production per CWT from 2002 to 3rd quarter 2008.

Figure 3
Cost of Production in the California Dairy Industry



Source: California Department of Food and Agriculture, 2008

Labor Costs

There is a shortage of labor in the dairy industry. Many agricultural workers are looking for higher paying jobs in non-agricultural industries according to the CDFA, which makes it difficult for the dairy farmers to compete for labor and leads to increased labor costs.

The issue of immigration and compliance also leads to labor problems. As shown in Figure 4 there is significant difference in labor costs in the different milk-producing regions of California. In the chart, South Valley represents the counties of the Central Valley composed of Fresno, Kings, Tulare and Kern County. Overall labor costs are 25 percent higher in the Southern California region as compared to the statewide average.

Figure 4 – Labor Costs, 2007

Labor Costs	North Coast	North Valley	South Valley	Southern California	2007 State Average
Per Hired Milker					
Hourly Cash Wage	\$8.77	\$10.29	\$9.82	\$12.38	\$10.02
Hourly Perquisites (1)	1.84	2.24	0.95	1.49	1.40
Hourly Wage (2)	12.53	14.60	12.67	16.52	13.40
Per Hired Labor					
Hourly Cash Wage	8.87	10.88	11.36	13.79	11.18
Hourly Perquisites (1)	1.58	2.49	1.44	1.52	1.86
Hourly Wage (2)	12.40	15.56	14.94	18.18	15.21
Per All Hired					
Hourly Cash Wage	8.81	10.55	10.37	12.89	10.47
Hourly Wage (2)	12.48	15.03	13.48	17.12	14.10

(1) Includes Fair Market Value For Housing Supplied By Employer, Health Insurance, Meat, Etc.
(2) Includes Cash Wages, Perquisites, and Employment Taxes Paid by Employer

Source: Cost of production, 2007, California Department of Food and Agriculture (CDFA)

Water and Feed Costs

The San Bernardino County General Plan indicates that increasing cost of water is another reason for the conversion of agricultural land into other uses. Dairying itself does not need as much water, but increasing cost and lower supply of water affects the feed supply for dairy. Dairy producers rely on alfalfa produced in the state as the source for their feed supply. If production of alfalfa is curtailed, the dairy farmers will incur high costs in getting the feed from outside the area.

Waste Disposal Costs

It is estimated that the cows in Chino corrals¹ produce 500,000 tons of manure every year. With nearby farmland, encroached by urbanization, the cost of waste disposal increases, as distances to where the waste can be disposed increases, as well as the frequency of disposal that is required. As a result many farmers need to hire professional corral cleaners, which increases costs by up to \$50,000 a year.

Commercial/Industrial and Residential Development Trends

With historic growth in commercial/industrial/residential demand throughout southern California over the past 50 years, there has been a consistent growth in residential and commercial/industrial development activity on former agricultural lands throughout Orange County, Los Angeles County and more recently into Riverside and San Bernardino County. Since 1990, the Inland Empire has seen population growth of over 1.5 million people, and it is projected to add another 75,000 people each year over the coming decade. In the City of Chino, there have been almost 4,000 new housing units

¹ An enclosure for confining livestock

built since 2000, with median housing prices tripling by 2007 (still more than doubling after the dramatic 2008 market declines).

Industrial development in the West Inland Empire region has seen similar growth with inventory increasing by 40 percent, or 75 million square feet since 2000. In Chino the growth has been over 50 percent, with 13 million square feet built in past eight years.

As a result of these trends, average land prices in the Inland Empire have increased to over \$300,000 per acre, which compares to Kern County land values of less than \$50,000 per acre

See Appendix Exhibits A-1 through A-6 for detailed trends in Chino/Inland Empire population, employment, residential building permits, home prices, industrial markets and land prices. Exhibit A-7 illustrates land sales in Kern County over the past three years.

Conclusion

Agriculture is being significantly impacted by numerous economic, political and regulatory factors. As a result over 100,000 acres of farmland has been taken out of service since 1990 and is being redeveloped for residential, commercial and industrial uses. With massively lower land costs and less regulation, dairy operators have been steadily moving out of the Inland Empire towards Central Valley, Barstow and Kern County.

Continued agricultural operations are not financially feasible in western San Bernardino County. Agricultural operations of all types will continue to decline as a result of the economic forces at work impacting land owners. Agricultural operator's business decisions to cease production in western San Bernardino County will continue to occur regardless of land use decisions made by local agencies. In other words, land designated for agricultural use has little impact on the continued declining agricultural trends in western San Bernardino County.

Respectfully submitted,



Thomas R. Jirovsky
Senior Managing Director

Attachment

**Exhibit A-1:
POPULATION, HOUSEHOLD & EMPLOYMENT TRENDS
City of Chino and Inland Empire Region, 1990 - 2028**

	1990	2000	2008	2013	2018	2023	2028	
City of Chino								
Population	59,542	67,159	80,840	87,171	95,363	103,310	110,925	
Households	15,591	17,302	20,037	22,439	25,267	28,129	31,011	
Employment (1)	--	34,055	40,083	43,601	46,369	49,176	52,014	
Inland Empire								
Population	2,588,793	3,254,821	4,170,780	4,412,362	4,860,408	5,288,378	5,694,330	
Households	866,804	1,034,812	1,297,214	1,408,835	1,589,394	1,770,540	1,951,244	
Employment (1)	--	1,121,464	1,403,755	1,622,181	1,837,011	2,055,234	2,276,332	
Growth - #		1990-2000	2000-08	2008-13	2013-18	2018-23	2023-28	2008-28 Total
City of Chino								
Population		7,617	13,681	6,331	8,192	7,947	7,615	30,085
Households		1,711	2,735	2,402	2,828	2,862	2,882	10,974
Employment (1)		--	6,028	3,518	2,769	2,806	2,838	11,931
Inland Empire								
Population		666,028	915,959	241,582	448,046	427,970	405,952	1,523,550
Households		168,008	262,402	111,621	180,559	181,147	180,704	654,030
Employment (1)		--	282,291	218,426	214,830	218,223	221,097	872,577
Growth - % CAGR		1990-2000	2000-08	2008-13	2013-18	2018-23	2023-28	2008-28
City of Chino								
Population		1.2%	2.3%	1.5%	1.8%	1.6%	1.4%	1.6%
Households		1.0%	1.9%	2.3%	2.4%	2.2%	2.0%	2.2%
Employment (1)		--	2.1%	1.7%	1.2%	1.2%	1.1%	1.3%
Inland Empire								
Population		2.3%	3.1%	1.1%	2.0%	1.7%	1.5%	1.6%
Households		1.8%	2.9%	1.7%	2.4%	2.2%	2.0%	2.1%
Employment (1)		--	2.8%	2.9%	2.5%	2.3%	2.1%	2.4%

Sources: Southern California Association of Governments (SCAG); Claritas; and CBRE Consulting

(1) Daytime employment data available from the year 2000.

(2) Projections based on forecast growth rates in population, households and employment according to SCAG.

Exhibit A-2:
RESIDENT EMPLOYMENT TRENDS BY INDUSTRY & OCCUPATION
US Census, 1990 and 2000

	City of Chino, California					Inland Empire Region, CA				
	1990		2000		Change (‘90-‘00)	1990		2000		Change (‘90-‘00)
	#	%	#	%		#	%	#	%	
RESIDENT EMPLOYMENT BY INDUSTRY										
Agriculture, forestry, and fisheries	995	4.0%	378	1.4%	-62.0%	36,314	3.4%	18,997	1.5%	-47.7%
Construction	2,172	8.6%	1,904	7.1%	-12.3%	109,894	10.2%	105,268	8.3%	-4.2%
Manufacturing	5,062	20.1%	4,660	17.3%	-7.9%	161,282	14.9%	157,003	12.4%	-2.7%
Transportation, Communication & Utilities	1,921	7.6%	1,907	7.1%	-0.7%	79,357	7.4%	78,459	6.2%	-1.1%
Wholesale trade	1,148	4.6%	1,355	5.0%	18.0%	44,018	4.1%	48,574	3.8%	10.4%
Retail trade	4,324	17.2%	3,360	12.5%	-22.3%	191,714	17.8%	160,926	12.7%	-16.1%
Finance, insurance, and real estate	1,811	7.2%	1,772	6.6%	-2.2%	68,174	6.3%	71,208	5.6%	4.5%
Services	6,404	25.4%	10,402	38.6%	62.4%	333,481	30.9%	557,909	44.1%	67.3%
Public administration	1,344	5.3%	1,243	4.6%	-7.5%	55,394	5.1%	65,784	5.2%	18.8%
RESIDENT EMPLOYMENT BY OCCUPATION										
Managerial & professional specialty	5,777	22.9%	7,702	28.5%	33.3%	253,002	23.4%	353,835	28.0%	39.9%
Technical, sales, & administrative support	8,655	34.4%	7,920	29.4%	-8.5%	338,842	31.4%	343,542	27.2%	1.4%
Service occupations, excl. Farming	6,098	24.2%	3,649	13.5%	-40.2%	297,318	27.5%	210,174	16.6%	-29.3%
Farming, forestry, & fishing	825	3.3%	230	0.9%	-72.1%	31,593	2.9%	12,539	1.0%	-60.3%
Operators, fabricators, & laborers	3,826	15.2%	7,480	27.7%	95.5%	158,873	14.7%	344,038	27.2%	116.5%

Sources: US Census 1990 and 2000; and, CBRE Consulting

Exhibit A-3:

RESIDENTIAL BUILDING PERMIT TRENDS

City of Chino and Inland Empire, 2003 - 2008 YTD

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008 YTD (1)	Total
<u>CITY OF CHINO</u>											
Number of Units											
Single Family	208	97	213	290	133	461	548	1,530	270	233	3,983
2-4 Units	2	0	0	6	0	6	3	2	10	11	40
Over 5 Units	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>46</u>	<u>0</u>	<u>0</u>	<u>5</u>	<u>0</u>	<u>51</u>
Total	210	97	213	296	133	513	551	1,532	285	244	4,074
<u>INLAND EMPIRE</u>											
Number of Units											
Single Family	18,776	18,824	23,588	29,876	35,965	43,029	43,911	33,001	15,807	5,723	268,500
2-4 Units	154	169	335	323	719	1,085	971	943	717	218	5,634
Over 5 Units	1,730	2,198	3,486	2,103	5,568	7,206	3,887	3,609	3,346	2,667	<u>35,800</u>
Total	20,660	21,191	27,409	32,302	42,252	51,320	48,769	37,553	19,870	8,608	309,934

Source: US Census Bureau; and CBRE Consulting

(1) Year-to-date figures are through November.

Exhibit A-4:
SINGLE FAMILY DETACHED AND CONDOMINIUM RESALES AND MEDIAN PRICES
1999 - 2008 YTD

	1999	2000	2001	2002	2003	2004	2005	2006	2007	CAGR(1) 1999-2007	2008 YTD (2)
CITY OF CHINO											
Single Family Detached											
Number of Sales	771	742	734	824	807	812	892	638	383	-8.4%	390
Median Price	\$165,000	\$180,000	\$200,000	\$245,000	\$293,000	\$393,000	\$468,000	\$510,000	\$493,000	14.7%	\$348,828
Median Price per Sq. Ft.	\$107	\$117	\$130	\$150	\$186	\$242	\$282	\$316	\$299	13.7%	\$205
Condominium											
Number of Sales	176	177	249	227	270	297	249	199	114	-5.3%	75
Median Price	\$89,000	\$101,000	\$213,000	\$139,000	\$172,000	\$257,000	\$350,000	\$360,000	\$349,000	18.6%	\$220,000
INLAND EMPIRE (3)											
Single Family Detached											
Number of Sales	53,616	53,280	53,402	60,923	66,117	71,107	77,105	57,655	34,418	-5.4%	47,428
Median Price	\$114,093	\$127,093	\$147,072	\$169,301	\$209,463	\$279,000	\$351,000	\$384,000	\$371,000	15.9%	\$237,000
Median Price per Sq. Ft.	\$80	\$89	\$100	\$114	\$139	\$183	\$225	\$243	\$219	13.4%	\$129
Condominium											
Number of Sales	7,907	8,241	7,523	9,135	9,556	10,125	9,208	6,234	4,526	-6.7%	3,818
Median Price	\$110,654	\$125,616	\$134,856	\$156,656	\$185,689	\$246,000	\$305,000	\$324,000	\$309,000	13.7%	\$235,000

Source: DataQuick, and CBRE Consulting

(1) CAGR is the Compounded attached product.

(2) Through November of 2008.

(3) Counties of Riverside and San Bernardino.

Exhibit A-5:

INDUSTRIAL MARKET TRENDS (Including Manufacturing, Warehouse/Distribution and Flex/R&D Space)

All Industrial Space, 2000 - 2008

Annual Trend by Market Area	SUPPLY				DEMAND				LEASE RATE (\$/ SF/Yr.) (1,2)
	Inventory Bldgs.	Inventory GLA (SF)	Vacancy Rate % (1)	SF Delivered	Availability Rate % (1)	Total Deals	Total SF Leased	SF Net Absorption	
CITY OF CHINO									
2000	700	26,193,974	6.3%	1,324,718	6.2%	48	2,837,298	2,066,088	\$4.22
2001	740	29,556,952	9.1%	3,356,978	7.0%	69	3,992,191	1,143,131	4.23
2002	746	30,987,160	9.5%	1,430,208	6.7%	62	1,837,843	2,333,176	4.22
2003	759	31,808,016	6.9%	840,856	5.3%	70	3,269,765	1,233,039	4.28
2004	810	34,244,597	5.8%	2,436,581	4.8%	58	2,298,219	2,646,719	4.05
2005	839	35,806,075	6.0%	1,561,478	3.2%	49	4,086,926	1,408,611	4.37
2006	890	36,983,611	4.1%	1,177,536	3.2%	90	2,519,670	1,741,256	4.89
2007	920	37,807,715	3.5%	824,104	1.9%	79	3,439,874	1,253,582	5.27
2008	940	39,388,723	3.8%	1,532,073	3.0%	92	1,272,884	236,914	5.62
Total				14,484,532		617	25,554,670	14,062,516	
INLAND EMPIRE - WEST									
2000	4,525	182,350,197	7.0%	11,832,057	6.0%	327	20,719,392	11,652,452	\$4.33
2001	4,647	196,559,678	9.1%	14,229,605	7.0%	386	16,767,690	7,590,465	4.10
2002	4,733	205,652,089	9.7%	9,112,241	8.0%	449	14,359,710	10,426,034	4.07
2003	4,846	212,236,879	8.1%	6,616,190	6.9%	420	17,009,833	8,889,859	4.10
2004	5,020	221,351,863	6.7%	9,114,984	5.1%	520	15,696,199	11,621,860	4.16
2005	5,193	231,106,533	5.9%	9,754,670	4.1%	428	17,533,422	9,322,643	4.37
2006	5,354	241,718,326	6.6%	10,693,858	5.2%	556	14,797,337	7,318,331	4.76
2007	5,517	247,095,120	4.9%	5,357,915	3.5%	492	18,765,295	10,781,364	5.28
2008	5,605	256,069,663	7.0%	8,902,188	6.3%	656	12,466,952	(807,685)	5.50
Total				85,613,708		4,234	148,115,830	76,795,323	

Sources: Costar Group Inc., 2008; and, CBRE Consulting

Exhibit A-6:

LAND SALES IN THE CITY OF CHINO

5+ Acres Land Sales, 2005 - 2008

#	Property Location		Property Characteristics				Sales Characteristics		
	Address	Property Name	Land Improvements	Zoning	Acres	Land SF	Sale Date	Sale Price	\$/Acre
1	8649 Merrill Ave	Land			83.5	3,635,082	11/30/2006	\$36,050,400	\$432,000
2	8711 Fine Ave	Single Family Residence Site	Previously developed lot	LDR, Chino	51.3	2,233,321	4/17/2006	14,242,000	277,784
3	Bickmore Ave	Warehouse/distribution Site	Raw land	M2, Chino	33.2	1,444,014	10/4/2005	14,229,525	429,247
4	7851 Bickmore Ave	H & RWestra Dairy Land	Raw land	N/Av, Chino	27.7	1,206,612	6/30/2006	6,248,000	225,560
5	4619 Eucalyptus Ave	26.67 acres		C	26.7	1,161,745	11/9/2006	6,774,500	254,012
6	Riverside Dr	Single Family Residence Site	Not Available	N/Av, Chino	23.6	1,028,016	3/29/2006	4,250,000	180,085
7	Mountain Ave	M2 Zoned Acreage	Raw land	M2, Chino	19.1	832,919	11/4/2005	1,102,000	57,632
8	7850 Bickmore Ave	Mdr Zoned Land	None	MDR, Chino	18.8	817,246	10/5/2005	6,097,000	324,976
9	Kimball Ave	Lewis Preserve	Finished lot	PD, Chino	18.8	817,185	7/15/2005	11,300,000	602,346
10	4500 Chino Hills Pky	The Village At Chino Walk	Raw land	CO, Chino	12.8	558,439	2/10/2006	7,889,000	615,367
11	13945 Ramona Ave	Planned Industrial Development Site	Fully Improved Lot	M2, Chino	9.0	392,911	11/3/2005	935,000	103,659
12	7.19 Acres Mountain Ave				7.2	313,196	9/4/2007	725,000	100,835
13	15757 Mountain Ave				6.2	270,072	10/12/2006	5,075,000	818,548
14	Kimball Ave	58 Lot Condominums Site	Raw land	RD8, Chino	6.1	266,587	7/22/2005	7,431,000	1,214,217
15	12594 Roswell Ave		Previously developed lot	RD-20M	4.9	214,315	7/22/2005	1,100,000	223,577
16	13116-13142 Norton Ave	Residential Zoned Acreage		RS-1, SB County	4.8	211,004	9/19/2006	1,625,000	335,468
								<i>Land Sales Avg.:</i>	\$353,718
								<i>Land Sales Median:</i>	\$301,380

Sources: Costar Group Inc., 2008; and, CBRE Consulting

- The above is not an exhaustive list of sales. Only those sales greater than 5 acres in size with complete sale price information as reported by the Costar Group are presented.

-3407-

Item No. E.3

January 19, 2009

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Exhibit A-7:

LAND SALES IN KERN COUNTY

Commercial, Industrial and Residential Land Sales, 2005 - 2008

#	Property Location		Property Characteristics				Sales Characteristics		
	Address in City of Chino	City	Property Name/ Land Imp.	Zoning	Acres	Land SF	Sale Date	Sale Price	\$/Acre
1	SE Elmo Hwy @ Elmo Hwy & Browning Rd	Mc Farland	Falcon Heights		135.0	5,880,600	11/15/2007	\$2,142,000	\$15,867
2	Pacheco Rd	Bakersfield	Vacant Land 67.57 Acres	M-3, Bakersfield	67.6	2,943,349	10/10/2008	2,500,000	36,999
3	1234 Willow Springs Rd	Mojave			40.0	1,742,400	12/19/2008	128,000	3,200
4	Scofield Rd	Wasco	Wasco Valley Rose - vacant land		40.0	1,742,400	9/29/2006	1,999,582	49,990
5	Mojave Tropical Rd	Rosamond			40.0	1,742,400	6/7/2007	335,000	8,375
6	NW Hanawalt Ave @ Hanawalt & Mast Ave	Mc Farland	Sierra Springs		38.2	1,665,655	11/15/2007	599,000	15,665
7	16701 Brimhall Rd	Bakersfield		E-1 RS, Bakersfield	35.0	1,524,164	12/7/2007	2,000,000	57,159
8	17174 Highway 14	Mojave		M-2	34.4	1,496,286	2/22/2008	550,000	16,012
9	4057-4061 Industrial Pky	Lebec	Tejon Industrial Complex - Bldg. U.C.		23.8	1,034,550	7/1/2008	2,500,000	105,263
10	College Heights Blvd @ Kendall Avenue	Ridgecrest	Villas at College Heights		22.7	988,812	3/22/2007	2,300,000	101,322
11	Stockdale Hwy @ Heath	Bakersfield		Commercial	20.0	871,200	5/1/2007	3,600,000	180,000
12	Archibald Ave	Maricopa	Parcel 4		20.0	871,200	4/20/2007	165,000	8,250
13	Johnson Rd @ Driver	Bakersfield		A-1	20.0	871,200	9/11/2007	1,000,000	50,000
14	Wheeler Ridge Rd @ Creekside Dr.	Arvin	Wheeler Ridge Site		19.5	847,242	11/17/2008	379,990	19,537
15	132 White Ln	Bakersfield	3 Buildings apx 2,555 SF	Light Industrial	15.5	673,002	11/28/2007	1,300,000	84,142
16	Avenue A & 120th W	Rosamond	no zoning restrictions		14.5	631,620	1/24/2007	125,000	8,621
17	Henry Rd	Taft		M-2	14.3	620,730	2/5/2008	505,000	35,439
18	NWC McCutchen & Gosford Rd	Bakersfield		C2	10.0	435,600	6/15/2007	2,275,000	227,500
19	Compagnoni St	Bakersfield			10.0	435,600	9/21/2007	650,000	65,000
20	Mercedes Blvd	California City	10 Acres	R2.5	10.0	435,600	5/4/2007	25,000	2,500
21	Redrock Randsburg Rd	North Edwards	Vacant Land-10 Acres		10.0	435,600	5/26/2006	20,000	2,000
22	Eucalyptus Dr (2 Properties)	Bakersfield	Multi-Property Sale		9.6	418,176	11/9/2007	980,000	102,083
23	5901 Mills Rd	Bakersfield	Mills Road Land		8.8	381,150	9/12/2007	820,000	93,714
24	S China Lake Blvd @ Bowman Ave.	Ridgecrest	NEC of S. China Lake @ Bowman	GC, Ridgecrest	6.9	302,306	7/3/2008	1,500,000	216,139
25	1245 Kern St	Taft			6.4	279,655	8/31/2007	200,000	31,153
26	N Norma St @ West Ward Avenue	Ridgecrest		R-2	6.0	259,618	10/4/2006	420,000	70,470
27	W Day Ave @ Airport Drive	Bakersfield			5.8	250,470	10/4/2007	1,300,000	226,087
<i>Residential Land Sales Avg.:</i>									\$44,347
<i>Residential Land Sales Median:</i>									\$49,990

Sources: Costar Group Inc., 2008; and, CBRE Consulting

- The above is not an exhaustive list of sales. Only those sales greater than 5 acres in size with complete sale price information as reported by the Costar Group are presented.

CBRE CONSULTING



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March 18, 2009

Matt Englhard
Regional Development Officer
First Industrial Realty Trust, Inc.
114 Pacifica, Suite 220
Irvine, CA 92618

Re: Economic Viability of Agriculture in the East Inland Empire

Dear Mr. Englhard:

Per your request CBRE Consulting has examined the economic and market trends affecting agriculture operations throughout California, with particular attention to the specific challenges relative to the communities of Perris and Sun City in eastern Riverside County area of the Inland Empire.

Founded in 1978 as Sedway Group, CBRE Consulting is a nationally recognized full-service real estate and urban economics consulting firm with offices in Los Angeles and San Francisco. CBRE brings a multi-disciplined approach to property evaluation of all major land use types. CBRE specializes in real estate market analysis, economic development studies for residential, commercial and industrial projects throughout California and the western United States.

BACKGROUND

The Inland Empire once held the largest concentration of dairies and supporting agriculture (e.g., alfalfa farming) in the world. This region is now facing tremendous urbanization and development pressures. The agricultural land is continually declining in the Inland Empire. According to the State of California, Department of Conservation, Riverside County lost 50,000 acres of farmland from 1990 through 2002. San Bernardino County lost 47,000 acres in prime farmland over the same period.

For this analysis, CBRE performed an extensive internet/literature search relative to the economics of agricultural and dairy farming to understand the economic and other challenges to continued agriculture uses in the Inland Empire. CBRE also gathered relevant demographic, real estate and other economic data to illustrate historic and projected land use trends near Perris and the eastern Inland Empire.

There are many factors which demonstrate the infeasibility of agriculture production in Eastern Inland Empire, resulting in many dairy operators and supporting agricultural operations moving to Kern County.

- Urbanization in the Inland Empire, resulting in dramatically increasing land prices,
- Higher water and labor costs;
- Environmental regulation (insects, odors, ground water contamination and solid waste removal) and,
- Competition from Kern County and the Central Valley with lower land costs and reduced regulations

1. Increasing Land Values

Due to competing land uses, land prices have increased dramatically in the area in excess of \$250,000 per acre. It has become more profitable for farmers to sell their land for a premium and relocate to a different area. The adoption of various General Plans in the Inland Empire emphasizing significant residential and commercial development have also encouraged the farmers to sell their land and relocate.

2. Conflicts between Urban Neighbors and Dairy Farms

The proximity of agriculture and urban development in the Inland Empire region bring with it many conflicts. There is an increase in the land use incompatibility with nuisance complaints from the urban neighbors regarding flies, farm odors, early morning noise, and also water and air pollution. The farmers also face pressures due to increased water and land-use restrictions.

3. Increasingly Stringent Environmental Regulations

The Region 8 Water Board, which encompasses Perris, was among the first to develop environmental regulations to control dairy operations, with increasing restrictions imposed in 1994, 1999 and 2004, as the proximity of urban neighborhoods, contamination of ground water and air pollution started raised more concerns.

4. Competition from Central Valley

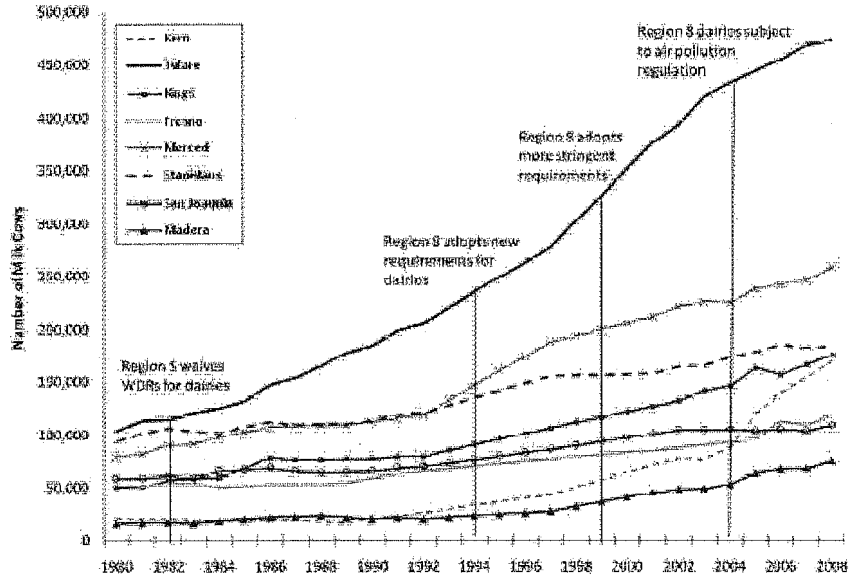
The dairy farmers in the Inland Empire face stiff competition from the farmers in the Central Valley because of high operating costs, including high feed costs and the cost of manure disposal.

A study published in Agriculture and Resource Economics Review in 2008 demonstrated the effect of environmental regulations over time and the growth in dairy industries, attributed to the cheap land and relatively weak regulations in the Central Valley.

According to CDFA, milk production has declined by approximately 45 percent in Riverside County between 2002 and 2007, while production increased by 88 percent in Kern County.

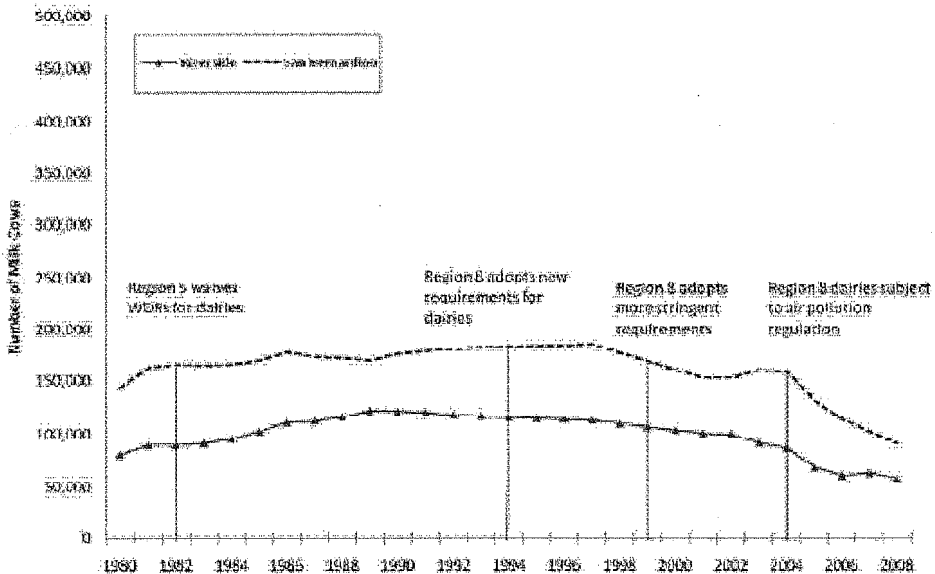
Figures 1 and 2 on the following page show trends in the number of milk cows in the Central Valley (Region 5) as compared to the loss in Region 8 from 1980 to 2008.

Figure: 1
Milk Cows in Counties of Region 5 Central Valley



Source: Steering and Hogle, 2008

Figure: 2
Milk Cows in Region 8 – Inland Empire



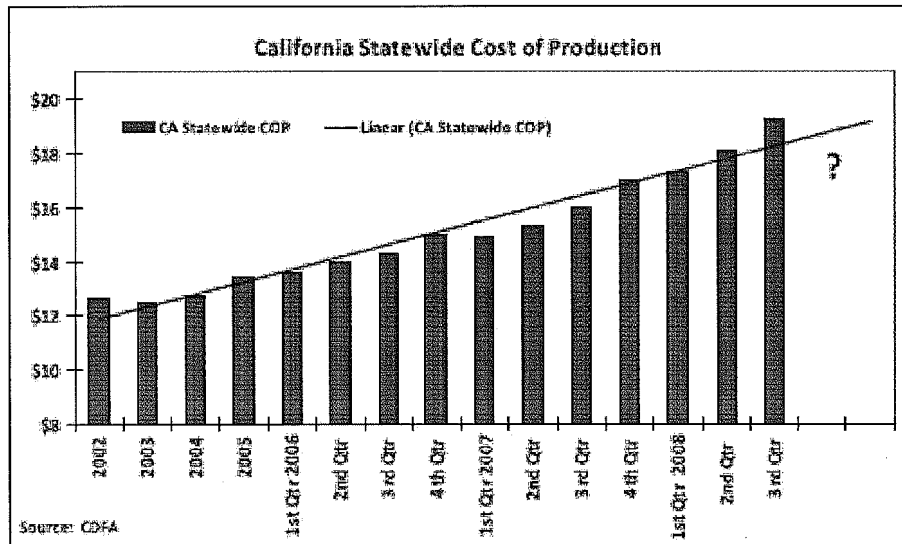
Source: Steering and Hogle, 2008

The Central Valley farmers also face few development pressures as compared to the Inland Empire and they benefit from diverse farm economy. For example, the farmers use dairy waste to fertilize their own crops or of the neighbors. They also use agricultural waste from neighboring farms as feed. This reduces their waste disposal and feed costs.

5. Operating Costs

According to the CDFA, production costs in dairy industry have risen by 50 percent since 2002 in California, putting more pressure on dairy farmers to cut other costs. Figure 3 below shows the growth in cost of production per CWT from 2002 to 3rd quarter 2008.

Figure 3
Cost of Production in the California Dairy Industry



Source: California Department of Food and Agriculture, 2008

Labor Costs

There is a shortage of labor in the dairy industry. Many agricultural workers are looking for higher paying jobs in non-agricultural industries according to the CDFA, which makes it difficult for the dairy farmers to compete for labor and leads to increased labor costs.

The issue of immigration and compliance also leads to labor problems. As shown in Figure 4 there is significant difference in labor costs in the different milk-producing regions of California. In the chart, South Valley represents the counties of the Central Valley composed of Fresno, Kings, Tulare and Kern County. Overall labor costs are 25 percent higher in the Southern California region as compared to the statewide average.

Figure 4 – Labor Costs, 2007

Labor Costs	North Coast	North Valley	South Valley	Southern California	2007 State Average
Per Hired Milker					
Hourly Cash Wage	\$8.77	\$10.29	\$9.82	\$12.38	\$10.02
Hourly Perquisites (1)	1.84	2.24	0.95	1.49	1.40
Hourly Wage (2)	12.53	14.60	12.67	16.52	13.40
Per Hired Labor					
Hourly Cash Wage	8.87	10.88	11.36	13.79	11.18
Hourly Perquisites (1)	1.58	2.49	1.44	1.52	1.86
Hourly Wage (2)	12.40	15.56	14.94	18.18	15.21
Per All Hired					
Hourly Cash Wage	8.81	10.55	10.37	12.89	10.47
Hourly Wage (2)	12.48	15.03	13.48	17.12	14.10

(1) Includes Fair Market Value For Housing Supplied By Employer, Health Insurance, Meat, Etc.

(2) Includes Cash Wages, Perquisites, and Employment Taxes Paid by Employer

Source: Cost of production, 2007, California Department of Food and Agriculture (CDFA)

Water and Feed Costs

Increasing cost of water is another reason for the conversion of agricultural land into other uses. Dairying itself does not need as much water, but increasing cost and lower supply of water affects the feed supply for dairy. Dairy producers rely on alfalfa produced in the state as the source for their feed supply. If production of alfalfa is curtailed, the dairy farmers will incur high costs in getting the feed from outside the area.

Waste Disposal Costs

The livestock at dairy farms produce significant tonnage of manure every year. With nearby farmland, encroached by urbanization, the cost of waste disposal increases, as distances to where the waste can be disposed increases, as well as the frequency of disposal that is required. As a result many farmers need to hire professional corral cleaners, which increases costs by up to \$50,000 a year.

Commercial/Industrial and Residential Development Trends

With historic growth in commercial/industrial/residential demand throughout southern California over the past 50 years, there has been a consistent growth in residential and commercial/industrial development activity on former agricultural lands throughout Orange County, Los Angeles County and more recently into Riverside and San Bernardino County. Since 1990, the Inland Empire has seen population growth of over 1.5 million people, and it is projected to add another 75,000 people each year over the coming decade. In the City of Perris, there have been almost 4,500 new housing units built since 2000, with median housing prices more than tripling by 2007, and still nearly doubling after the dramatic 2008 market declines.

Industrial development in the East Inland Empire region has seen similar growth with inventory increasing by 60 percent, or 92 million square feet since 2000. In Perris the growth has been nearly 100 percent, with 5 million square feet built in past eight years.

As a result of these trends, average land prices in the Inland Empire have increased to over \$250,000 per acre, which compares to Kern County land values of less than \$50,000 per acre

See Appendix Exhibits A-1 through A-6 for detailed trends in Perris/Inland Empire population, employment, residential building permits, home prices, industrial markets and land prices. Exhibit A-7 illustrates land sales in Kern County over the past three years.

Conclusion

Agriculture is being significantly impacted by numerous economic, political and regulatory factors. As a result over 100,000 acres of farmland has been taken out of service since 1990 and is being redeveloped for residential, commercial and industrial uses. With lower land costs and less regulation, dairy operators and supporting agricultural uses such as dry farming and alfalfa production have been steadily moving out of the Inland Empire towards Central Valley, Barstow and Kern County.

Continued agricultural operations are not financially feasible in the Perris/eastern Riverside County region. Agricultural operations of all types will continue to decline as a result of the economic forces at work impacting land owners. Agricultural operator's business decisions to cease production will continue to occur regardless of land use decisions made by local agencies. In other words, land designated for agricultural use has little impact on the continued declining agricultural trends in Perris/eastern Riverside County.

Respectfully submitted,



Thomas R. Jirovsky
Senior Managing Director

Attachment



Exhibit A-1:
POPULATION, HOUSEHOLD & EMPLOYMENT TRENDS
City of Perris and Inland Empire Region, 1990 - 2029

	1990	2000	2009	2014	2019	2024	2029	
City of Perris								
Population	22,202	36,189	54,592	62,440	69,956	77,175	83,601	
Households	6,848	9,652	14,160	16,300	18,032	19,808	21,616	
Employment (1)	--	11,715	17,332	19,042	20,108	22,194	24,810	
Inland Empire								
Population	2,588,793	3,254,821	4,170,780	4,505,315	4,950,365	5,373,155	5,774,903	
Households	866,804	1,034,812	1,297,214	1,445,415	1,626,549	1,807,342	1,988,035	
Employment (1)	--	1,121,464	1,450,397	1,665,604	1,881,342	2,099,942	2,321,648	
Growth - #		1990-00	2000-09	2009-14	2014-19	2019-24	2024-29	2009-29 Total
City of Perris								
Population		13,987	18,403	7,848	7,516	7,219	6,426	29,009
Households		2,804	4,508	2,140	1,732	1,776	1,808	7,456
Employment (1)		--	5,617	1,710	1,066	2,086	2,616	7,478
Inland Empire								
Population		666,028	915,959	334,535	445,050	422,791	401,748	1,604,123
Households		168,008	262,402	148,201	181,134	180,793	180,693	690,821
Employment (1)		--	328,933	215,207	215,738	218,600	221,706	871,251
Growth - % CAGR		1990-00	2000-09	2009-14	2014-19	2019-24	2024-29	2009-29
City of Perris								
Population		5.0%	4.7%	2.7%	2.3%	2.0%	1.6%	2.2%
Households		3.5%	4.4%	2.9%	2.0%	1.9%	1.8%	2.1%
Employment (1)		--	4.4%	1.9%	1.1%	2.0%	2.3%	1.8%
Inland Empire								
Population		2.3%	2.8%	1.6%	1.9%	1.7%	1.5%	1.6%
Households		1.8%	2.5%	2.2%	2.4%	2.1%	1.9%	2.2%
Employment (1)		--	2.9%	2.8%	2.5%	2.2%	2.0%	2.4%

Sources: Southern California Association of Governments (SCAG); Claritas; and CBRE Consulting

(1) Daytime employment data available from the year 2000.

(2) Projections based on forecast growth rates in population, households and employment according to SCAG.

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Item No. E.3

Exhibit A-2:
RESIDENT EMPLOYMENT TRENDS BY INDUSTRY & OCCUPATION
 US Census, 1990 and 2000

	City of Perris, California					Inland Empire Region, CA				
	1990		2000		Change (90-'00)	1990		2000		Change (90-'00)
	#	%	#	%		#	%	#	%	
RESIDENT EMPLOYMENT BY INDUSTRY										
Agriculture, forestry, and fisheries	389	5.0%	97	0.8%	-75.1%	36,314	3.4%	18,997	1.5%	-47.7%
Construction	965	12.4%	1,352	11.3%	40.1%	109,894	10.2%	105,268	8.3%	-4.2%
Manufacturing	1,668	21.4%	2,233	18.7%	33.9%	161,282	14.9%	157,003	12.4%	-2.7%
Transportation, Communication & Utilities	484	6.2%	634	5.3%	31.0%	79,357	7.4%	78,459	6.2%	-1.1%
Wholesale trade	242	3.1%	474	4.0%	95.9%	44,018	4.1%	48,574	3.8%	10.4%
Retail trade	1,274	16.3%	1,563	13.1%	22.7%	191,714	17.8%	160,926	12.7%	-16.1%
Finance, insurance, and real estate	400	5.1%	408	3.4%	2.0%	68,174	6.3%	71,208	5.6%	4.5%
Services	2,019	25.9%	4,653	39.0%	130.5%	333,481	30.9%	557,909	44.1%	67.3%
Public administration	357	4.6%	520	4.4%	45.7%	55,394	5.1%	65,784	5.2%	18.8%
RESIDENT EMPLOYMENT BY OCCUPATION										
Managerial & professional specialty	1,357	17.4%	2,110	17.7%	55.5%	253,002	23.4%	353,835	28.0%	39.9%
Technical, sales, & administrative support	2,042	26.2%	2,967	24.9%	45.3%	338,842	31.4%	343,542	27.2%	1.4%
Service occupations, excl. Farming	2,327	29.8%	2,071	17.4%	-11.0%	297,318	27.5%	210,174	16.6%	-29.3%
Farming, forestry, & fishing	345	4.4%	52	0.4%	-84.9%	31,593	2.9%	12,539	1.0%	-60.3%
Operators, fabricators, & laborers	1,727	22.1%	4,734	39.7%	174.1%	158,873	14.7%	344,038	27.2%	116.5%

Sources: US Census 1990 and 2000; and, CBRE Consulting



Exhibit A-3:
RESIDENTIAL BUILDING PERMIT TRENDS
City of Perris and Inland Empire, 10-Year Trends

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Total
CITY OF PERRIS											
Number of Units											
Single Family	186	9	145	492	1,269	1,573	1,746	812	599	107	6,938
2-4 Units	4	8	0	0	0	0	0	0	0	0	12
Over 5 Units	<u>76</u>	<u>62</u>	<u>0</u>	<u>186</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>96</u>	<u>0</u>	<u>420</u>
Total	266	79	145	678	1,269	1,573	1,746	812	695	107	7,370
INLAND EMPIRE											
Number of Units											
Single Family	18,776	18,824	23,588	29,876	35,965	43,029	43,911	33,001	15,807	5,723	268,500
2-4 Units	154	169	335	323	719	1,085	971	943	717	218	5,634
Over 5 Units	1,730	2,198	3,486	2,103	5,568	7,206	3,887	3,609	3,346	2,667	<u>35,800</u>
Total	20,660	21,191	27,409	32,302	42,252	51,320	48,769	37,553	19,870	8,608	309,934

Source: US Census Bureau; and CBRE Consulting

March 6, 2009
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Exhibit A-4:
SINGLE FAMILY DETACHED AND CONDOMINIUM REALES AND MEDIAN PRICES
1999 - 2008 YTD

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	CAGR(1) 1999-2008
CITY OF PERRIS											
Single Family Detached											
Number of Sales	1,042	970	919	976	1,069	1,166	1,657	1,466	638	1,670	5.4%
Median Price	\$81,246	\$94,597	\$116,899	\$133,884	\$170,564	\$241,973	\$326,336	\$372,010	\$348,354	\$183,635	9.5%
Median Price per Sq. Ft.	\$62	\$72	\$87	\$101	\$126	\$178	\$224	\$240	\$207	\$96	5.1%
Condominium											
Number of Sales	0	0	0	0	1	0	0	0	0	6	n.a.
Median Price	\$0	\$0	\$0	\$0	\$140	\$0	\$0	\$0	\$0	\$138	n.a.
INLAND EMPIRE (2)											
Single Family Detached											
Number of Sales	53,616	53,280	53,402	60,923	66,117	71,107	77,105	57,655	34,418	53,947	0.1%
Median Price	\$114,093	\$127,093	\$147,072	\$169,301	\$209,463	\$279,000	\$351,000	\$384,000	\$371,000	\$231,000	8.2%
Median Price per Sq. Ft.	\$80	\$89	\$100	\$114	\$139	\$183	\$225	\$243	\$219	\$125	5.0%
Condominium											
Number of Sales	7,907	8,241	7,523	9,135	9,556	10,125	9,208	6,234	4,526	4,095	-7.1%
Median Price	\$110,654	\$125,616	\$134,856	\$156,656	\$185,689	\$246,000	\$305,000	\$324,000	\$309,000	\$220,000	7.9%

Source: DataQuick; and CBRE Consulting

(1) CAGR is the Compounded annual growth rate.

(2) Counties of Riverside and San Bernardino.

Exhibit A-5:
INDUSTRIAL MARKET TRENDS (Including Manufacturing, Warehouse/ Distribution and Flex/ R&D Space)
All Industrial Space, 2000 - 2008

Annual Trend by Market Area	SUPPLY				DEMAND				LEASE RATE (\$/SF/Yr.) (1,2)
	Inventory Bldgs	Inventory GLA (SF)	Vacancy Rate % (1)	SF Delivered	Availability Rate % (1)	Total Deals	Total SF Leased	SF Net Absorption	
CITY OF PERRIS SUB-MARKET									
2000	141	5,373,641	0.6%	38,110	0.6%	1	1,272,500	51,860	\$4.88
2001	146	7,076,631	1.7%	1,702,990	1.6%	1	20,350	1,606,362	5.64
2002	146	7,076,631	2.1%	0	1.4%	2	115,960	5,509	4.68
2003	147	7,125,503	2.2%	48,872	2.2%	2	65,303	28,429	5.11
2004	150	7,381,220	1.0%	255,717	0.7%	0	17,800	367,551	n.a.
2005	153	7,595,862	0.9%	214,642	0.9%	2	2,500	165,460	n.a.
2006	157	7,663,213	1.3%	67,351	1.3%	3	3,458	4,173	5.72
2007	175	9,666,032	8.8%	2,002,819	8.7%	5	1,760,642	1,768,468	7.08
2008	206	10,458,307	11.1%	792,275	11.1%	13	38,674	(339,813)	6.74
Total				5,122,776		29	3,297,187	3,657,999	
INLAND EMPIRE - EAST MARKET									
2000	5,002	150,133,588	3.9%	6,630,360	3.6%	312	10,892,596	7,668,578	\$6.50
2001	5,076	157,202,306	3.9%	7,068,718	3.1%	355	7,684,689	6,501,787	4.68
2002	5,182	161,820,506	4.3%	4,582,653	3.8%	404	6,636,531	2,394,637	4.57
2003	5,269	167,822,636	5.0%	6,098,659	4.3%	387	9,055,454	5,240,209	4.59
2004	5,470	176,211,830	4.6%	8,389,194	3.1%	500	8,017,923	9,626,436	4.98
2005	5,725	188,313,075	4.6%	12,120,753	3.6%	470	7,611,452	8,938,859	5.01
2006	6,055	208,029,558	7.5%	19,691,663	5.7%	545	13,195,412	13,006,436	5.90
2007	6,291	226,876,355	8.4%	18,563,797	7.5%	624	17,026,809	16,405,909	6.28
2008	6,541	242,869,862	13.0%	15,234,949	12.0%	996	12,632,717	1,932,294	5.71
Total				98,380,746		4,593	92,753,583	71,715,145	

Sources: Costar Group Inc., 2008; and, CBRE Consulting

(1) The sub-market is defined as a 5-mile radius from the City Hall and includes the entire City of Perris.

(2) Inland Empire East market, which comprises the City of Perris per Costar definition, also includes the Coachella Valley, Corona, East San Bernardino, Riverside, South Riverside and Outlying San Bernardino sub-markets.

-3419-

Item No. E.3



Exhibit A-6:
LAND SALES IN THE CITY OF PERRIS SUB-MARKET
5+ Acres Land Sales, 2006 - 2009

#	Property Location		Property Characteristics				Sales Characteristics			
	Address	Property Name	Land Improvements	Type	Zoning	Acres	Land SF	Sale Date	Sale Price	\$/Acre
1	Lukens Ln			Commercial	M3	36.7	1,599,087	9/21/2007	\$500,000	\$13,620
2	Nuevo Rd @ I-215	Nuevo & A St.		Commercial		6.0	261,360	7/27/2007	1,833,000	305,500
3	Dawson Rd @ San Jacinto			Commercial	RR	14.4	628,570	6/13/2007	1,734,000	120,166
4	Ethanac Rd @ McPherson	5.0 Acres		Commercial	Commercial Community	5.0	217,800	5/17/2007	1,250,000	250,000
5	Nuevo Rd @ I-215	Nuevo & A St.		Commercial		6.0	261,360	5/10/2007	653,400	108,900
6	Morgan St	Hold For Development Site	Raw land	Commercial	CC, Perris	6.2	268,329	2/7/2007	1,895,000	307,631
7	9.24 acres Nuevo Rd	Vacant Land	None	Commercial	U	9.2	402,494	1/24/2007	1,600,000	173,160
8	Old Nuevo Rd @ Ferris Blvd		None	Commercial	C1	7.8	341,510	1/2/2007	4,960,000	632,654
9	23040 Rder St			Commercial		7.3	318,423	12/7/2006	875,000	119,699
10	Palomar Rd @ McLaughlin Rd			Commercial		18.2	794,098	11/15/2006	1,700,000	93,253
11	23641 Placentia Ave	Zoned Acreage	Not Available	Commercial	RR	9.5	412,077	9/5/2006	900,000	95,138
12	Redlands Ave	Sp Zoned Acreage	Raw land	Commercial	SP, Perris	20.7	901,774	8/25/2006	3,500,000	169,067
13	Citrus Ave	CC Zoned Acreage	Raw land	Commercial	CC, Perris	38.4	1,670,765	6/29/2006	7,087,000	184,771
14	Cajaloo Rd	Acreage	Raw land	Commercial	N/Av, Riverside Co.	13.3	580,219	6/14/2006	2,800,000	210,210
15	23772 Water St	Indacochea Sheep Farm	Not Available	Commercial	N/Av	9.7	420,354	6/6/2006	1,650,000	170,984
16	28067 State Highway 74	R Zoned Acreage	Raw land	Commercial	RR, Riverside Co.	5.2	227,383	5/23/2006	1,275,000	244,253
17	Markham St	Unknown Site	Raw land	Commercial	A102, Riverside	9.7	422,967	3/3/2006	1,150,000	118,435
									<i>Commercial Average:</i>	\$158,336
									<i>Commercial Median:</i>	\$170,984
18	Mountain Ave	Future Cemex Location		Industrial	GI	5.0	218,235	12/5/2008	1,819,837	363,242
19	355 W Markham St	22.25 acres		Industrial	RA	22.4	977,050	5/20/2008	5,446,960	242,843
20	24390 Nuevo Rd		None	Industrial	IP	6.0	261,360	1/18/2007	1,090,000	181,667
21	Rder St @ Redlands Ave	17.1 Acres		Industrial	M1, RA	17.1	744,876	6/26/2007	3,550,000	207,602
22	Webster Ave @ Morgan St	6.0-Acres Vacant Land		Industrial		6.0	261,360	3/9/2007	1,895,000	315,833
23	24345 Citrus Ave	First Park Nuevo Rd Phase I	None	Industrial	M-H	16.2	707,414	3/9/2007	6,366,730	392,040
24	23121 Cajaloo Rd	6.91 ac		Industrial	MSC	6.9	300,999	11/20/2006	2,521,500	364,907
25	Mountain Ave	Finished Land Parcels		Industrial	GI	19.2	838,094	10/4/2006	4,350,000	226,092
26	Cajaloo Expy @ 215 Freew	10.42 Acre Industrial Park Site		Industrial	M-SC, Riverside	10.4	453,895	9/13/2006	2,500,000	239,923
27	24475 Markham St	Planned Industrial Development Site	Previously developed lot	Industrial	U, Perris	9.1	396,901	7/18/2006	2,778,000	304,886
28	Ramona Expy	Planned Industrial Development Site	Raw land	Industrial	U, Perris	9.2	399,880	7/12/2006	1,999,500	217,811
29	Indian Ave	Planned Industrial Development Site	Raw land	Industrial	MSC, Perris	8.4	366,661	6/30/2006	2,099,500	249,424
30	Perry St	Planned Unit Development Site	Raw land	Industrial	U, Perris	9.1	396,901	6/30/2006	1,954,000	214,452
31	4244 Perry St	Planned Industrial Development Site	Raw land	Industrial	U, Perris	18.2	793,798	6/30/2006	5,562,000	305,217
32	24392 Nance St	Auto Salvage Yard Site	Raw land	Industrial	GI, Perris	9.1	395,960	6/14/2006	2,079,000	228,713
33	Perry St	Planned Unit Development Site	Raw land	Industrial	U, Perris	8.8	384,634	6/9/2006	2,308,000	261,382
34	Markham St	Planned Unit Development Site	Raw land	Industrial	U, Perris	9.1	396,901	5/31/2006	2,600,000	285,351
35	Harvill Ave	M-Sc Zoned Acreage	Raw land	Industrial	L1	20.8	903,870	5/9/2006	3,358,500	161,855
36	Mapes Rd	GI Zoned Acreage	Raw land	Industrial	GI, Perris	5.9	258,746	5/8/2006	1,113,000	187,374
37	Rder St	Planned Industrial Development Site	Raw land	Industrial	U, Perris	16.3	709,592	3/15/2006	3,550,000	217,925
									<i>Industrial Average:</i>	\$252,529
									<i>Industrial Median:</i>	241,383



Exhibit A-6: Continued.....
LAND SALES IN THE CITY OF PERRIS SUB-MARKET
5+ Acres' Land Sales, 2006 - 2009

#	Property Location		Property Characteristics				Sales Characteristics			
	Address	Property Name	Land Improvements	Type	Zoning	Acres	Land SF	Sale Date	Sale Price	\$/Acre
38	Barnett Rd @ McLughlin Road			Residential	RR	42.3	1,842,587	11/14/2006	4,600,000	108,747
39	Evans Rd			Residential		12.8	558,874	9/27/2006	885,000	68,979
40	Evans Rd	F6000 Zoned Acreage	Raw land	Residential	F6000	12.8	558,874	8/25/2006	885,500	69,018
41	Nuevo Rd	A1 Zoned Acreage	Not Available	Residential	CC & R14	29.8	1,298,523	5/24/2006	2,700,000	90,574
42	Dockery Ln	Residential Zoned Acreage	Raw land	Residential	N/Av, Perris	6.0	259,617	4/19/2006	1,050,000	176,175
43	Dockery Ln	Residential Zoned Acreage	Raw land	Residential	N/Av, Perris	9.7	420,789	4/19/2006	1,750,000	181,160
								<i>Residential Average:</i>		\$104,687
								<i>Residential Median:</i>		99,660
								<i>All Land Sales Average:</i>		\$186,228
								<i>All Land Sales Median:</i>		210,210

Sources: Costar Group Inc., 2009; and, CBRE Consulting

(1) The sub-market is defined as a 5-mile radius from the City Hall and includes the entire City of Perris

(2) The above is not an exhaustive list of sales. Only those sales greater than 5 and up to 50 acres in size with complete sale price information as reported by the Costar Group are presented.

-3421-

Item No. E.3

AR039485

March 6, 2009

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Exhibit A-7:

LAND SALES IN KERN COUNTY

Commercial, Industrial and Residential Land Sales, 2006 - 2008

#	Property Location		Property Characteristics				Sales Characteristics		
	Address in City of Chino	City	Property Name/Land Imp.	Zoning	Acres	Land SF	Sale Date	Sale Price	\$/Acre
1	SE Elmo Hwy @ Elmo Hwy & Browning Rd	Mc Farland	Falcon Heights		135.0	5,880,600	11/15/2007	\$2,142,000	\$15,867
2	Pacheco Rd	Bakersfield	Vacant Land 67.57 Acres	M-3, Bakersfield	67.6	2,943,349	10/10/2008	2,500,000	36,999
3	1234 Willow Springs Rd	Mojave			40.0	1,742,400	12/19/2008	128,000	3,200
4	Scofield Rd	Wasco	Wasco Valley Rose - vacant land		40.0	1,742,400	9/29/2006	1,999,582	49,990
5	Mojave Tropical Rd	Rosamond			40.0	1,742,400	6/7/2007	335,000	8,375
6	NW Hanawalt Ave @ Hanawalt & Mast Ave	Mc Farland	Sierra Springs		38.2	1,665,655	11/15/2007	599,000	15,665
7	16701 Brimhall Rd	Bakersfield		E-1 RS, Bakersfield	35.0	1,524,164	12/7/2007	2,000,000	57,159
8	17174 Highway 14	Mojave		M-2	34.4	1,496,286	2/22/2008	550,000	16,012
9	4057-4061 Industrial Pky	Lebec	Tejon Industrial Complex - Bldg. U.C.		23.8	1,034,550	7/1/2008	2,500,000	105,263
10	College Heights Blvd @ Kendall Avenue	Ridgecrest	Villas at College Heights		22.7	988,812	3/22/2007	2,300,000	101,322
11	Stockdale Hwy @ Heath	Bakersfield		Commercial	20.0	871,200	5/1/2007	3,600,000	180,000
12	Archibald Ave	Maricopa	Parcel 4		20.0	871,200	4/20/2007	165,000	8,250
13	Johnson Rd @ Driver	Bakersfield		A-1	20.0	871,200	9/11/2007	1,000,000	50,000
14	Wheeler Ridge Rd @ Creekside Dr.	Arvin	Wheeler Ridge Site		19.5	847,242	11/17/2008	379,990	19,537
15	132 White Ln	Bakersfield	3 Buildings apx 2,555 SF	Light Industrial	15.5	673,002	11/28/2007	1,300,000	84,142
16	Avenue A & 120th W	Rosamond	no zoning restrictions		14.5	631,620	1/24/2007	125,000	8,621
17	Henry Rd	Taft		M-2	14.3	620,730	2/5/2008	505,000	35,439
18	NWC McCutchen & Gosford Rd	Bakersfield		C2	10.0	435,600	6/15/2007	2,275,000	227,500
19	Compagnoni St	Bakersfield			10.0	435,600	9/21/2007	650,000	65,000
20	Mercedes Blvd	California City	10 Acres	R2.5	10.0	435,600	5/4/2007	25,000	2,500
21	Redrock Randsburg Rd	North Edwards	Vacant Land-10 Acres		10.0	435,600	5/26/2006	20,000	2,000
22	Eucalyptus Dr (2 Properties)	Bakersfield	Multi-Property Sale		9.6	418,176	11/9/2007	980,000	102,083
23	5901 Mills Rd	Bakersfield	Mills Road Land		8.8	381,150	9/12/2007	820,000	93,714
24	S China Lake Blvd @ Bowman Ave.	Ridgecrest	NEC of S. China Lake @ Bowman	GC, Ridgecrest	6.9	302,306	7/3/2008	1,500,000	216,139
25	1245 Kern St	Taft			6.4	279,655	8/31/2007	200,000	31,153
26	N Norma St @ West Ward Avenue	Ridgecrest		R-2	6.0	259,618	10/4/2006	420,000	70,470
27	W Day Ave @ Airport Drive	Bakersfield			5.8	250,470	10/4/2007	1,300,000	226,087
<i>Land Sales Avg.:</i>									\$44,347
<i>Land Sales Median:</i>									\$49,990

Sources: Costar Group Inc., 2008; and, CBRE Consulting

- The above is not an exhaustive list of sales. Only those sales greater than 5 acres in size with complete sale price information, as reported by the Costar Group, are presented.

March 18, 2009

Matt Englhard
Regional Development Officer
First Industrial Realty Trust, Inc.
114 Pacifica, Suite 220
Irvine, CA 92618

Re: Economic Viability of Agriculture in the East Inland Empire

Dear Mr. Englhard:

Per your request CBRE Consulting has examined the economic and market trends affecting agriculture operations throughout California, with particular attention to the specific challenges relative to the communities of Perris and Sun City in eastern Riverside County area of the Inland Empire.

Founded in 1978 as Sedway Group, CBRE Consulting is a nationally recognized full-service real estate and urban economics consulting firm with offices in Los Angeles and San Francisco. CBRE brings a multi-disciplined approach to property evaluation of all major land use types. CBRE specializes in real estate market analysis, economic development studies for residential, commercial and industrial projects throughout California and the western United States.

BACKGROUND

The Inland Empire once held the largest concentration of dairies and supporting agriculture (e.g., alfalfa farming) in the world. This region is now facing tremendous urbanization and development pressures. The agricultural land is continually declining in the Inland Empire. According to the State of California, Department of Conservation, Riverside County lost 50,000 acres of farmland from 1990 through 2002. San Bernardino County lost 47,000 acres in prime farmland over the same period.

For this analysis, CBRE performed an extensive internet/literature search relative to the economics of agricultural and dairy farming to understand the economic and other challenges to continued agriculture uses in the Inland Empire. CBRE also gathered relevant demographic, real estate and other economic data to illustrate historic and projected land use trends near Perris and the eastern Inland Empire.

There are many factors which demonstrate the infeasibility of agriculture production in Eastern Inland Empire, resulting in many dairy operators and supporting agricultural operations moving to Kern County.

- Urbanization in the Inland Empire, resulting in dramatically increasing land prices,
- Higher water and labor costs;
- Environmental regulation (insects, odors, ground water contamination and solid waste removal) and,
- Competition from Kern County and the Central Valley with lower land costs and reduced regulations

1. Increasing Land Values

Due to competing land uses, land prices have increased dramatically in the area in excess of \$250,000 per acre. It has become more profitable for farmers to sell their land for a premium and relocate to a different area. The adoption of various General Plans in the Inland Empire emphasizing significant residential and commercial development have also encouraged the farmers to sell their land and relocate.

2. Conflicts between Urban Neighbors and Dairy Farms

The proximity of agriculture and urban development in the Inland Empire region bring with it many conflicts. There is an increase in the land use incompatibility with nuisance complaints from the urban neighbors regarding flies, farm odors, early morning noise, and also water and air pollution. The farmers also face pressures due to increased water and land-use restrictions.

3. Increasingly Stringent Environmental Regulations

The Region 8 Water Board, which encompasses Perris, was among the first to develop environmental regulations to control dairy operations, with increasing restrictions imposed in 1994, 1999 and 2004, as the proximity of urban neighborhoods, contamination of ground water and air pollution started raised more concerns.

4. Competition from Central Valley

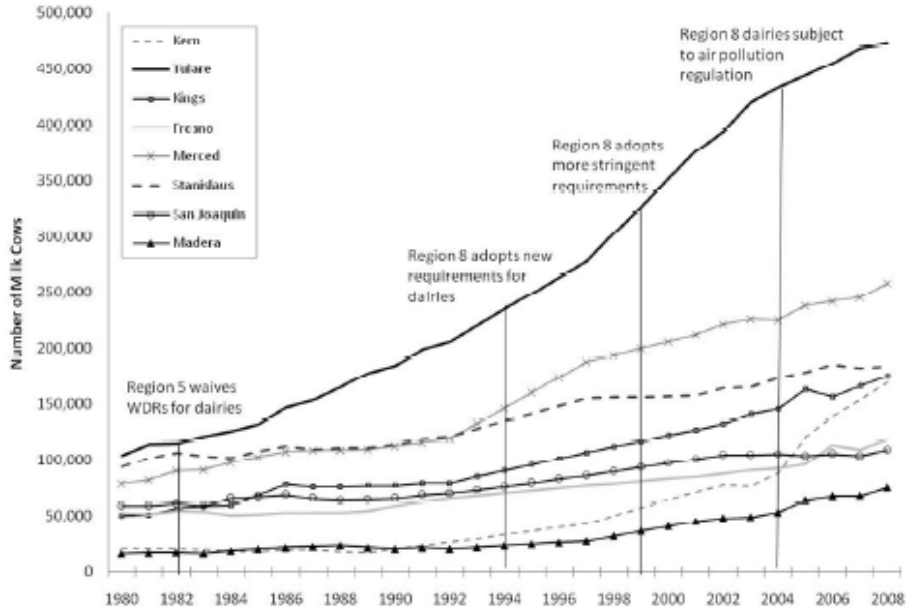
The dairy farmers in the Inland Empire face stiff competition from the farmers in the Central Valley because of high operating costs, including high feed costs and the cost of manure disposal.

A study published in Agriculture and Resource Economics Review in 2008 demonstrated the effect of environmental regulations over time and the growth in dairy industries, attributed to the cheap land and relatively weak regulations in the Central Valley.

According to CDFA, milk production has declined by approximately 45 percent in Riverside County between 2002 and 2007, while production increased by 88 percent in Kern County.

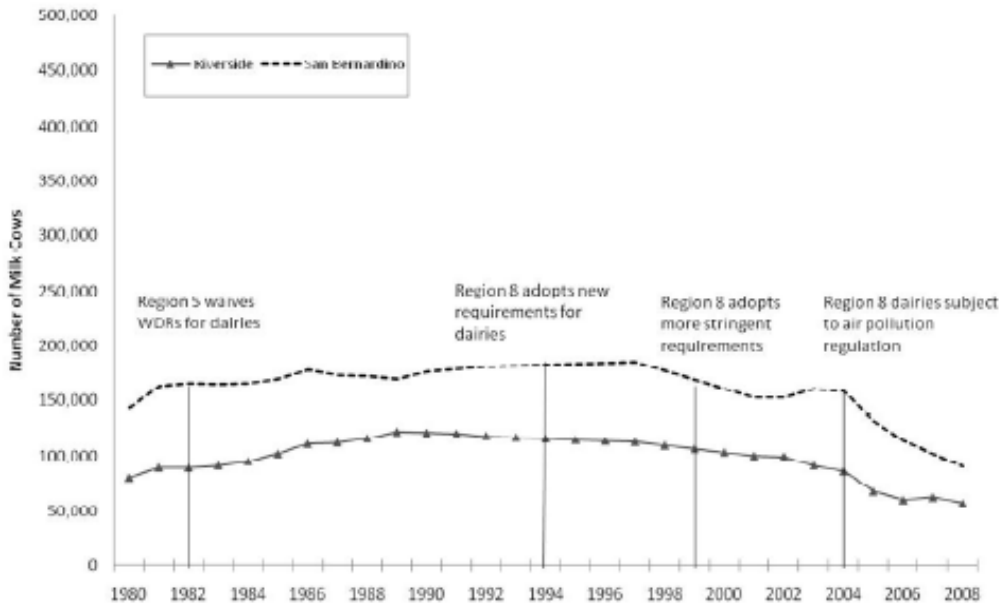
Figures 1 and 2 on the following page show trends in the number of milk cows in the Central Valley (Region 5) as compared to the loss in Region 8 from 1980 to 2008.

Figure: 1
Milk Cows in Counties of Region 5 Central Valley



Source: Steering and Hogle, 2008

Figure: 2
Milk Cows in Region 8 – Inland Empire



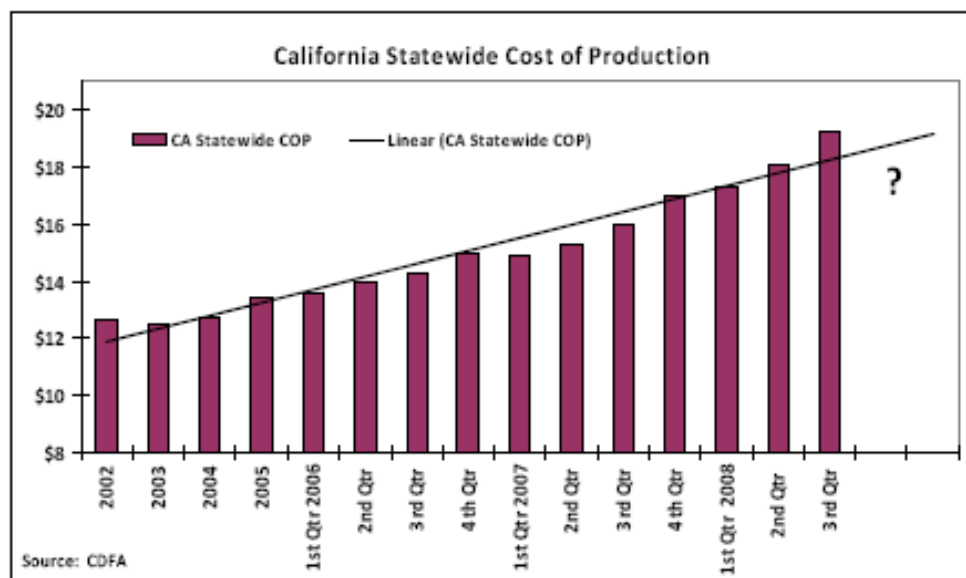
Source: Steering and Hogle, 2008

The Central Valley farmers also face few development pressures as compared to the Inland Empire and they benefit from diverse farm economy. For example, the farmers use dairy waste to fertilize their own crops or of the neighbors. They also use agricultural waste from neighboring farms as feed. This reduces their waste disposal and feed costs.

5. Operating Costs

According to the CDFA, production costs in dairy industry have risen by 50 percent since 2002 in California, putting more pressure on dairy farmers to cut other costs. Figure 3 below shows the growth in cost of production per CWT from 2002 to 3rd quarter 2008.

Figure 3
Cost of Production in the California Dairy Industry



Source: California Department of Food and Agriculture, 2008

Labor Costs

There is a shortage of labor in the dairy industry. Many agricultural workers are looking for higher paying jobs in non-agricultural industries according to the CDFA, which makes it difficult for the dairy farmers to compete for labor and leads to increased labor costs.

The issue of immigration and compliance also leads to labor problems. As shown in Figure 4 there is significant difference in labor costs in the different milk-producing regions of California. In the chart, South Valley represents the counties of the Central Valley composed of Fresno, Kings, Tulare and Kern County. Overall labor costs are 25 percent higher in the Southern California region as compared to the statewide average.

Figure 4 – Labor Costs, 2007

Labor Costs	North Coast	North Valley	South Valley	Southern California	2007 State Average
Per Hired Milker					
Hourly Cash Wage	\$8.77	\$10.29	\$9.82	\$12.38	\$10.02
Hourly Perquisites (1)	1.84	2.24	0.95	1.49	1.40
Hourly Wage (2)	12.53	14.60	12.67	16.52	13.40
Per Hired Labor					
Hourly Cash Wage	8.87	10.88	11.36	13.79	11.18
Hourly Perquisites (1)	1.58	2.49	1.44	1.52	1.86
Hourly Wage (2)	12.40	15.56	14.94	18.18	15.21
Per All Hired					
Hourly Cash Wage	8.81	10.55	10.37	12.89	10.47
Hourly Wage (2)	12.48	15.03	13.48	17.12	14.10

(1) Includes Fair Market Value For Housing Supplied By Employer, Health Insurance, Meat, Etc.

(2) Includes Cash Wages, Perquisites, and Employment Taxes Paid by Employer

Source: Cost of production, 2007, California Department of Food and Agriculture (CDFA)

Water and Feed Costs

Increasing cost of water is another reason for the conversion of agricultural land into other uses. Dairying itself does not need as much water, but increasing cost and lower supply of water affects the feed supply for dairy. Dairy producers rely on alfalfa produced in the state as the source for their feed supply. If production of alfalfa is curtailed, the dairy farmers will incur high costs in getting the feed from outside the area.

Waste Disposal Costs

The livestock at dairy farms produce significant tonnage of manure every year. With nearby farmland, encroached by urbanization, the cost of waste disposal increases, as distances to where the waste can be disposed increases, as well as the frequency of disposal that is required. As a result many farmers need to hire professional corral cleaners, which increases costs by up to \$50,000 a year.

Commercial/Industrial and Residential Development Trends

With historic growth in commercial/industrial/residential demand throughout southern California over the past 50 years, there has been a consistent growth in residential and commercial/industrial development activity on former agricultural lands throughout Orange County, Los Angeles County and more recently into Riverside and San Bernardino County. Since 1990, the Inland Empire has seen population growth of over 1.5 million people, and it is projected to add another 75,000 people each year over the coming decade. In the City of Perris, there have been almost 4,500 new housing units built since 2000, with median housing prices more than tripling by 2007, and still nearly doubling after the dramatic 2008 market declines.

Industrial development in the East Inland Empire region has seen similar growth with inventory increasing by 60 percent, or 92 million square feet since 2000. In Perris the growth has been nearly 100 percent, with 5 million square feet built in past eight years.

As a result of these trends, average land prices in the Inland Empire have increased to over \$250,000 per acre, which compares to Kern County land values of less than \$50,000 per acre

See Appendix Exhibits A-1 through A-6 for detailed trends in Perris/Inland Empire population, employment, residential building permits, home prices, industrial markets and land prices. Exhibit A-7 illustrates land sales in Kern County over the past three years.

Conclusion

Agriculture is being significantly impacted by numerous economic, political and regulatory factors. As a result over 100,000 acres of farmland has been taken out of service since 1990 and is being redeveloped for residential, commercial and industrial uses. With lower land costs and less regulation, dairy operators and supporting agricultural uses such as dry farming and alfalfa production have been steadily moving out of the Inland Empire towards Central Valley, Barstow and Kern County.

Continued agricultural operations are not financially feasible in the Perris/eastern Riverside County region. Agricultural operations of all types will continue to decline as a result of the economic forces at work impacting land owners. Agricultural operator's business decisions to cease production will continue to occur regardless of land use decisions made by local agencies. In other words, land designated for agricultural use has little impact on the continued declining agricultural trends in Perris/eastern Riverside County.

Respectfully submitted,



Thomas R. Jirovsky
Senior Managing Director

Attachment



**Exhibit A-1:
POPULATION, HOUSEHOLD & EMPLOYMENT TRENDS
City of Perris and Inland Empire Region, 1990 - 2029**

	1990	2000	2009	2014	2019	2024	2029	
City of Perris								
Population	22,202	36,189	54,592	62,440	69,956	77,175	83,601	
Households	6,848	9,652	14,160	16,300	18,032	19,808	21,616	
Employment (1)	--	11,715	17,332	19,042	20,108	22,194	24,810	
Inland Empire								
Population	2,588,793	3,254,821	4,170,780	4,505,315	4,950,365	5,373,155	5,774,903	
Households	866,804	1,034,812	1,297,214	1,445,415	1,626,549	1,807,342	1,988,035	
Employment (1)	--	1,121,464	1,450,397	1,665,604	1,881,342	2,099,942	2,321,648	
Growth - #		1990-00	2000-09	2009-14	2014-19	2019-24	2024-29	2009-29 Total
City of Perris								
Population		13,987	18,403	7,848	7,516	7,219	6,426	29,009
Households		2,804	4,508	2,140	1,732	1,776	1,808	7,456
Employment (1)		--	5,617	1,710	1,066	2,086	2,616	7,478
Inland Empire								
Population		666,028	915,959	334,535	445,050	422,791	401,748	1,604,123
Households		168,008	262,402	148,201	181,134	180,793	180,693	690,821
Employment (1)		--	328,933	215,207	215,738	218,600	221,706	871,251
Growth - % CAGR		1990-00	2000-09	2009-14	2014-19	2019-24	2024-29	2009-29
City of Perris								
Population		5.0%	4.7%	2.7%	2.3%	2.0%	1.6%	2.2%
Households		3.5%	4.4%	2.9%	2.0%	1.9%	1.8%	2.1%
Employment (1)		--	4.4%	1.9%	1.1%	2.0%	2.3%	1.8%
Inland Empire								
Population		2.3%	2.8%	1.6%	1.9%	1.7%	1.5%	1.6%
Households		1.8%	2.5%	2.2%	2.4%	2.1%	1.9%	2.2%
Employment (1)		--	2.9%	2.8%	2.5%	2.2%	2.0%	2.4%

Sources: Southern California Association of Governments (SCAG); Claritas; and CBRE Consulting

(1) Daytime employment data available from the year 2000.

(2) Projections based on forecast growth rates in population, households and employment according to SCAG.

Exhibit A-2:
RESIDENT EMPLOYMENT TRENDS BY INDUSTRY & OCCUPATION
 US Census, 1990 and 2000

	City of Perris, California					Inland Empire Region, CA				
	1990		2000		Change (90-'00)	1990		2000		Change (90-'00)
	#	%	#	%		#	%	#	%	
RESIDENT EMPLOYMENT BY INDUSTRY										
Agriculture, forestry, and fisheries	389	5.0%	97	0.8%	-75.1%	36,314	3.4%	18,997	1.5%	-47.7%
Construction	965	12.4%	1,352	11.3%	40.1%	109,894	10.2%	105,268	8.3%	-4.2%
Manufacturing	1,668	21.4%	2,233	18.7%	33.9%	161,282	14.9%	157,003	12.4%	-2.7%
Transportation, Communication & Utilities	484	6.2%	634	5.3%	31.0%	79,357	7.4%	78,459	6.2%	-1.1%
Wholesale trade	242	3.1%	474	4.0%	95.9%	44,018	4.1%	48,574	3.8%	10.4%
Retail trade	1,274	16.3%	1,563	13.1%	22.7%	191,714	17.8%	160,926	12.7%	-16.1%
Finance, insurance, and real estate	400	5.1%	408	3.4%	2.0%	68,174	6.3%	71,208	5.6%	4.5%
Services	2,019	25.9%	4,653	39.0%	130.5%	333,481	30.9%	557,909	44.1%	67.3%
Public administration	357	4.6%	520	4.4%	45.7%	55,394	5.1%	65,784	5.2%	18.8%
RESIDENT EMPLOYMENT BY OCCUPATION										
Managerial & professional specialty	1,357	17.4%	2,110	17.7%	55.5%	253,002	23.4%	353,835	28.0%	39.9%
Technical, sales, & administrative support	2,042	26.2%	2,967	24.9%	45.3%	338,842	31.4%	343,542	27.2%	1.4%
Service occupations, excl. Farming	2,327	29.8%	2,071	17.4%	-11.0%	297,318	27.5%	210,174	16.6%	-29.3%
Farming, forestry, & fishing	345	4.4%	52	0.4%	-84.9%	31,593	2.9%	12,539	1.0%	-60.3%
Operators, fabricators, & laborers	1,727	22.1%	4,734	39.7%	174.1%	158,873	14.7%	344,038	27.2%	116.5%

Sources: US Census 1990 and 2000; and, CBRE Consulting



Exhibit A-3:
RESIDENTIAL BUILDING PERMIT TRENDS
City of Perris and Inland Empire, 10-Year Trends

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Total
<u>CITY OF PERRIS</u>											
Number of Units											
Single Family	186	9	145	492	1,269	1,573	1,746	812	599	107	6,938
2-4 Units	4	8	0	0	0	0	0	0	0	0	12
Over 5 Units	<u>76</u>	<u>62</u>	<u>0</u>	<u>186</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>96</u>	<u>0</u>	<u>420</u>
Total	266	79	145	678	1,269	1,573	1,746	812	695	107	7,370
<u>INLAND EMPIRE</u>											
Number of Units											
Single Family	18,776	18,824	23,588	29,876	35,965	43,029	43,911	33,001	15,807	5,723	268,500
2-4 Units	154	169	335	323	719	1,085	971	943	717	218	5,634
Over 5 Units	1,730	2,198	3,486	2,103	5,568	7,206	3,887	3,609	3,346	2,667	<u>35,800</u>
Total	20,660	21,191	27,409	32,302	42,252	51,320	48,769	37,553	19,870	8,608	309,934

Source: US Census Bureau; and CBRE Consulting

Exhibit A-4:
SINGLE FAMILY DETACHED AND CONDOMINIUM RESALES AND MEDIAN PRICES
 1999 - 2008 YTD

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	CAGR(1) 1999-2008
CITY OF PERRIS											
Single Family Detached											
Number of Sales	1,042	970	919	976	1,069	1,166	1,657	1,466	638	1,670	5.4%
Median Price	\$81,246	\$94,597	\$116,899	\$133,884	\$170,564	\$241,973	\$326,336	\$372,010	\$348,354	\$183,635	9.5%
Median Price per Sq. Ft.	\$62	\$72	\$87	\$101	\$126	\$178	\$224	\$240	\$207	\$96	5.1%
Condominium											
Number of Sales	0	0	0	0	1	0	0	0	0	6	n.a.
Median Price	\$0	\$0	\$0	\$0	\$140	\$0	\$0	\$0	\$0	\$138	n.a.
INLAND EMPIRE (2)											
Single Family Detached											
Number of Sales	53,616	53,280	53,402	60,923	66,117	71,107	77,105	57,655	34,418	53,947	0.1%
Median Price	\$114,093	\$127,093	\$147,072	\$169,301	\$209,463	\$279,000	\$351,000	\$384,000	\$371,000	\$231,000	8.2%
Median Price per Sq. Ft.	\$80	\$89	\$100	\$114	\$139	\$183	\$225	\$243	\$219	\$125	5.0%
Condominium											
Number of Sales	7,907	8,241	7,523	9,135	9,556	10,125	9,208	6,234	4,526	4,095	-7.1%
Median Price	\$110,654	\$125,616	\$134,856	\$156,656	\$185,689	\$246,000	\$305,000	\$324,000	\$309,000	\$220,000	7.9%

Source: DataQuick; and CBRE Consulting

(1) CAGR is the Compounded annual growth rate.

(2) Counties of Riverside and San Bernardino.



Exhibit A-5:
INDUSTRIAL MARKET TRENDS (Including Manufacturing, Warehouse/ Distribution and Flex/ R&D Space)
All Industrial Space, 2000 - 2008

Annual Trend by Market Area	SUPPLY				DEMAND				LEASE RATE (\$/SF/Yr.) (1,2)
	Inventory Bldgs	Inventory GLA (SF)	Vacancy Rate % (1)	SF Delivered	Availability Rate % (1)	Total Deals	Total SF Leased	SF Net Absorption	
CITY OF PERRIS SUB-MARKET									
2000	141	5,373,641	0.6%	38,110	0.6%	1	1,272,500	51,860	\$4.88
2001	146	7,076,631	1.7%	1,702,990	1.6%	1	20,350	1,606,362	5.64
2002	146	7,076,631	2.1%	0	1.4%	2	115,960	5,509	4.68
2003	147	7,125,503	2.2%	48,872	2.2%	2	65,303	28,429	5.11
2004	150	7,381,220	1.0%	255,717	0.7%	0	17,800	367,551	n.a.
2005	153	7,595,862	0.9%	214,642	0.9%	2	2,500	165,460	n.a.
2006	157	7,663,213	1.3%	67,351	1.3%	3	3,458	4,173	5.72
2007	175	9,666,032	8.8%	2,002,819	8.7%	5	1,760,642	1,768,468	7.08
2008	206	10,458,307	11.1%	792,275	11.1%	13	38,674	(339,813)	6.74
Total				5,122,776		29	3,297,187	3,657,999	
INLAND EMPIRE - EAST MARKET									
2000	5,002	150,133,588	3.9%	6,630,360	3.6%	312	10,892,596	7,668,578	\$6.50
2001	5,076	157,202,306	3.9%	7,068,718	3.1%	355	7,684,689	6,501,787	4.68
2002	5,182	161,820,506	4.3%	4,582,653	3.8%	404	6,636,531	2,394,637	4.57
2003	5,269	167,822,636	5.0%	6,098,659	4.3%	387	9,055,454	5,240,209	4.59
2004	5,470	176,211,830	4.6%	8,389,194	3.1%	500	8,017,923	9,626,436	4.98
2005	5,725	188,313,075	4.6%	12,120,753	3.6%	470	7,611,452	8,938,859	5.01
2006	6,055	208,029,558	7.5%	19,691,663	5.7%	545	13,195,412	13,006,436	5.90
2007	6,291	226,876,355	8.4%	18,563,797	7.5%	624	17,026,809	16,405,909	6.28
2008	6,541	242,869,862	13.0%	15,234,949	12.0%	996	12,632,717	1,932,294	5.71
Total				98,380,746		4,593	92,753,583	71,715,145	

Sources: Costar Group Inc., 2008; and, CBRE Consulting

(1) The sub-market is defined as a 5-mile radius from the City Hall and includes the entire City of Perris.

(2) Inland Empire East market, which comprises the City of Perris per Costar definition, also includes the Coachella Valley, Corona, East San Bernardino, Riverside, South Riverside and Outlying San Bernardino sub-markets.

March 6, 2009

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Exhibit A-6:

LAND SALES IN THE CITY OF PERRIS SUB-MARKET

5+ Acres' Land Sales, 2006 - 2009

#	Property Location		Property Characteristics				Sales Characteristics			
	Address	Property Name	Land Improvements	Type	Zoning	Acres	Land SF	Sale Date	Sale Price	\$/Acre
1	Lukens Ln			Commercial	M3	36.7	1,599,087	9/21/2007	\$500,000	\$13,620
2	Nuevo Rd @ I-215	Nuevo & A St.		Commercial		6.0	261,360	7/27/2007	1,833,000	305,500
3	Dawson Rd @ San Jacinto			Commercial	RR	14.4	628,570	6/13/2007	1,734,000	120,166
4	Ethanac Rd @ McPherson	5.0 Acres		Commercial	Commercial Commuity	5.0	217,800	5/17/2007	1,250,000	250,000
5	Nuevo Rd @ I-215	Nuevo & A St.		Commercial		6.0	261,360	5/10/2007	653,400	108,900
6	Morgan St	Hold For Development Site	Raw land	Commercial	CC, Ferris	6.2	268,329	2/7/2007	1,895,000	307,631
7	9.24 acres Nuevo Rd	Vacant Land	None	Commercial	L1	9.2	402,494	1/24/2007	1,600,000	173,160
8	Old Nuevo Rd @ Ferris Blvd		None	Commercial	C1	7.8	341,510	1/2/2007	4,960,000	632,654
9	23040 Rider St			Commercial		7.3	318,423	12/7/2006	875,000	119,699
10	Palomar Rd @ McLaughlin Rd			Commercial		18.2	794,098	11/15/2006	1,700,000	93,253
11	23641 Placentia Ave	Zoned Acreage	Not Available	Commercial	RR	9.5	412,077	9/5/2006	900,000	95,138
12	Redlands Ave	Sp Zoned Acreage	Raw land	Commercial	SP, Ferris	20.7	901,774	8/25/2006	3,500,000	169,067
13	Citrus Ave	CC Zoned Acreage	Raw land	Commercial	CC, Ferris	38.4	1,670,765	6/29/2006	7,087,000	184,771
14	Cajalco Rd	Acreage	Raw land	Commercial	N/Av, Riverside Co.	13.3	580,219	6/14/2006	2,800,000	210,210
15	23772 Water St	Indacochea Sheep Farm	Not Available	Commercial	N/Av	9.7	420,354	6/6/2006	1,650,000	170,984
16	28067 State Highway 74	Rr Zoned Acreage	Raw land	Commercial	RR Riverside Co.	5.2	227,383	5/23/2006	1,275,000	244,253
17	Markham St	Unknown Site	Raw land	Commercial	A102, Riverside	9.7	422,967	3/3/2006	1,150,000	118,435
									<i>Commercial Average:</i>	\$158,336
									<i>Commercial Median:</i>	\$170,984
18	Mountain Ave	Future Cemex Location		Industrial	GI	5.0	218,235	12/5/2008	1,819,837	363,242
19	355 W Markham St	22.25 acres		Industrial	RA	22.4	977,050	5/20/2008	5,446,960	242,843
20	24390 Nuevo Rd		None	Industrial	IP	6.0	261,360	11/8/2007	1,090,000	181,667
21	Rider St @ Redlands Ave	17.1 Acres		Industrial	M1, RA	17.1	744,876	6/26/2007	3,550,000	207,602
22	Webster Ave @ Morgan St	6.0-Acres Vacant Land		Industrial		6.0	261,360	3/9/2007	1,895,000	315,833
23	24345 Citrus Ave	First Park Nuevo Rd Phase I	None	Industrial	M-H	16.2	707,414	3/9/2007	6,366,730	392,040
24	23121 Cajalco Rd	6.91 ac		Industrial	MSC	6.9	300,999	11/20/2006	2,521,500	364,907
25	Mountain Ave	Finished Land Parcels		Industrial	GI	19.2	838,094	10/4/2006	4,350,000	226,092
26	Cajalco Expy @ 215 Freew	10.42 Acre Industrial Park Site		Industrial	M-SC, Riverside	10.4	453,895	9/13/2006	2,500,000	239,923
27	24475 Markham St	Planned Industrial Development Site	Previously developed lot	Industrial	L1, Ferris	9.1	396,901	7/18/2006	2,778,000	304,886
28	Ramona Expy	Planned Industrial Development Site	Raw land	Industrial	L1, Ferris	9.2	399,880	7/12/2006	1,999,500	217,811
29	Indian Ave	Planned Industrial Development Site	Raw land	Industrial	MSC, Ferris	8.4	366,661	6/30/2006	2,099,500	249,424
30	Perry St	Planned Unit Development Site	Raw land	Industrial	L1, Ferris	9.1	396,901	6/30/2006	1,954,000	214,452
31	4244 Perry St	Planned Industrial Development Site	Raw land	Industrial	L1, Ferris	18.2	793,798	6/30/2006	5,562,000	305,217
32	24392 Nance St	Auto Salvage Yard Site	Raw land	Industrial	GI, Ferris	9.1	395,960	6/14/2006	2,079,000	228,713
33	Perry St	Planned Unit Development Site	Raw land	Industrial	L1, Ferris	8.8	384,634	6/9/2006	2,308,000	261,382
34	Markham St	Planned Unit Development Site	Raw land	Industrial	L1, Ferris	9.1	396,901	5/31/2006	2,600,000	285,351
35	Harvill Ave	M-Sc Zoned Acreage	Raw land	Industrial	L1	20.8	903,870	5/9/2006	3,358,500	161,855
36	Mapes Rd	GI Zoned Acreage	Raw land	Industrial	GI, Ferris	5.9	258,746	5/8/2006	1,113,000	187,374
37	Rider St	Planned Industrial Development Site	Raw land	Industrial	L1, Ferris	16.3	709,592	3/15/2006	3,550,000	217,925
									<i>Industrial Average:</i>	\$252,529
									<i>Industrial Median:</i>	241,383



Exhibit A-6: Continued.....

LAND SALES IN THE CITY OF PERRIS SUB-MARKET
5+ Acres' Land Sales, 2006 - 2009

#	Property Location		Property Characteristics				Sales Characteristics			
	Address	Property Name	Land Improvements	Type	Zoning	Acres	Land SF	Sale Date	Sale Price	\$/ Acre
38	Barnett Rd @ McLughlin Road			Residential	RR	42.3	1,842,587	11/14/2006	4,600,000	108,747
39	Evans Rd			Residential		12.8	558,874	9/27/2006	885,000	68,979
40	Evans Rd	R6000 Zoned Acreage	Raw land	Residential	R6000	12.8	558,874	8/25/2006	885,500	69,018
41	Nuevo Rd	A1 Zoned Acreage	Not Available	Residential	CC & R14	29.8	1,298,523	5/24/2006	2,700,000	90,574
42	Dockery Ln	Residential Zoned Acreage	Raw land	Residential	N/Av, Perris	6.0	259,617	4/19/2006	1,050,000	176,175
43	Dockery Ln	Residential Zoned Acreage	Raw land	Residential	N/Av, Perris	9.7	420,789	4/19/2006	1,750,000	181,160
									<i>Residential Average:</i>	\$104,687
									<i>Residential Median:</i>	99,660
									<i>All Land Sales Average:</i>	\$186,228
									<i>All Land Sales Median:</i>	210,210

Sources: Costar Group Inc., 2009; and, CBRE Consulting

(1) The sub-market is defined as a 5-mile radius from the City Hall and includes the entire City of Perris.

(2) The above is not an exhaustive list of sales. Only those sales greater than 5 and up to 50 acres in size with complete sale price information as reported by the Costar Group are presented.

March 6, 2009

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Exhibit A-7:

LAND SALES IN KERN COUNTY

Commercial, Industrial and Residential Land Sales, 2006 - 2008

#	Property Location		Property Characteristics				Sales Characteristics		
	Address in City of Chino	City	Property Name/ Land Imp.	Zoning	Acres	Land SF	Sale Date	Sale Price	\$/ Acre
1	SE Elmo Hwy @ Elmo Hwy & Browning Rd	Mc Farland	Falcon Heights		135.0	5,880,600	11/15/2007	\$2,142,000	\$15,867
2	Pacheco Rd	Bakersfield	Vacant Land 67.57 Acres	M-3, Bakersfield	67.6	2,943,349	10/10/2008	2,500,000	36,999
3	1234 Willow Springs Rd	Mojave			40.0	1,742,400	12/19/2008	128,000	3,200
4	Scofield Rd	Wasco	Wasco Valley Rose - vacant land		40.0	1,742,400	9/29/2006	1,999,582	49,990
5	Mojave Tropical Rd	Rosamond			40.0	1,742,400	6/7/2007	335,000	8,375
6	NW Hanawalt Ave @ Hanawalt & Mast Ave	Mc Farland	Sierra Springs		38.2	1,665,655	11/15/2007	599,000	15,665
7	16701 Brimhall Rd	Bakersfield		E-1 RS, Bakersfield	35.0	1,524,164	12/7/2007	2,000,000	57,159
8	17174 Highway 14	Mojave		M-2	34.4	1,496,286	2/22/2008	550,000	16,012
9	4057-4061 Industrial Pky	Lebec	Tejon Industrial Complex - Bldg. U.C.		23.8	1,034,550	7/1/2008	2,500,000	105,263
10	College Heights Blvd @ Kendall Avenue	Ridgecrest	Villas at College Heights		22.7	988,812	3/22/2007	2,300,000	101,322
11	Stockdale Hwy @ Heath	Bakersfield		Commercial	20.0	871,200	5/1/2007	3,600,000	180,000
12	Archibald Ave	Maricopa	Parcel 4		20.0	871,200	4/20/2007	165,000	8,250
13	Johnson Rd @ Driver	Bakersfield		A-1	20.0	871,200	9/11/2007	1,000,000	50,000
14	Wheeler Ridge Rd @ Creekside Dr.	Arvin	Wheeler Ridge Site		19.5	847,242	11/17/2008	379,990	19,537
15	132 White Ln	Bakersfield	3 Buildings apx 2,555 SF	Light Industrial	15.5	673,002	11/28/2007	1,300,000	84,142
16	Avenue A & 120th W	Rosamond	no zoning restrictions		14.5	631,620	1/24/2007	125,000	8,621
17	Henry Rd	Taft		M-2	14.3	620,730	2/5/2008	505,000	35,439
18	NWC McCutchen & Gosford Rd	Bakersfield		C2	10.0	435,600	6/15/2007	2,275,000	227,500
19	Compagnoni St	Bakersfield			10.0	435,600	9/21/2007	650,000	65,000
20	Mercedes Blvd	California City	10 Acres	R2.5	10.0	435,600	5/4/2007	25,000	2,500
21	Redrock Randsburg Rd	North Edwards	Vacant Land-10 Acres		10.0	435,600	5/26/2006	20,000	2,000
22	Eucalyptus Dr (2 Properties)	Bakersfield	Multi-Property Sale		9.6	418,176	11/9/2007	980,000	102,083
23	5901 Mills Rd	Bakersfield	Mills Road Land		8.8	381,150	9/12/2007	820,000	93,714
24	S China Lake Blvd @ Bowman Ave.	Ridgecrest	NEC of S. China Lake @ Bowman	GC, Ridgecrest	6.9	302,306	7/3/2008	1,500,000	216,139
25	1245 Kern St	Taft			6.4	279,655	8/31/2007	200,000	31,153
26	N Norma St @ West Ward Avenue	Ridgecrest		R-2	6.0	259,618	10/4/2006	420,000	70,470
27	W Day Ave @ Airport Drive	Bakersfield			5.8	250,470	10/4/2007	1,300,000	226,087
								<i>Land Sales Avg.:</i>	\$44,347
								<i>Land Sales Median:</i>	\$49,990

Sources: Costar Group Inc., 2008; and, CBRE Consulting

- The above is not an exhaustive list of sales. Only those sales greater than 5 acres in size with complete sale price information, as reported by the Costar Group, are presented.

CBRE CONSULTING



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January 19, 2009

Dana Whitmer
Vice President
Sares Regis Group
18802 Bardeen Avenue
Irvine, CA 92612

Re: Economic Viability of Agriculture in the West Inland Empire

Dear Mr. Whitmer:

Per your request CBRE Consulting has examined the economic and market trends affecting agriculture operations throughout California, with particular attention to the specific challenges relative to the communities of Chino and Ontario in the western Inland Empire.

Founded in 1978 as Sedway Group, CBRE Consulting is a nationally recognized full-service real estate and urban economics consulting firm with offices in Los Angeles and San Francisco. CBRE brings a multi-disciplined approach to property evaluation of all major land use types. CBRE specializes in real estate market analysis, economic development studies for residential, commercial and industrial projects throughout California and the western United States.

BACKGROUND

The Inland Empire once held the largest concentration of dairies in the world, with most of them in the Chino/Ontario basin. This region is now facing tremendous urbanization and development pressures. According to the San Bernardino County General Plan, the agricultural land is continually declining. According to the State of California, Department of Conservation, the County lost 47,000 acres of farmland from 1990 through 2002. Riverside County lost 50,000 acres in prime farmland over the same period.

For this analysis, CBRE performed an extensive internet/literature search relative to the economics of agricultural and dairy farming to understand the economic and other challenges to continued agriculture uses in the Inland Empire. CBRE also gathered relevant demographic, real estate and other economic data to illustrate historic and projected land use trends near Chino and the western Inland Empire.

There are many factors which demonstrate the infeasibility of agriculture production in Western Inland Empire, resulting in many dairy operators moving to Kern County.

- Urbanization in the Inland Empire, resulting in dramatically increasing land prices,
- Higher water and labor costs;
- Environmental regulation (insects, odors, ground water contamination and solid waste removal) and,
- Competition from Kern County and the Central Valley with lower land costs and reduced regulations

1. Increasing Land Values

Due to competing land uses, land prices have increased dramatically in the area in excess of \$300,000 per acre. It has become more profitable for farmers to sell their land for a premium and relocate to a different area. The adoption of the Ontario Sphere of Influence General Plan in 1998, which provided for significant residential and commercial development, encouraged the farmers to sell their land and relocate.

2. Conflicts between Urban Neighbors and Dairy Farms

The proximity of agriculture and urban development in the Inland Empire region bring with it many conflicts. There is an increase in the land use incompatibility with nuisance complaints from the urban neighbors regarding flies, farm odors, early morning noise, and also water and air pollution. The farmers also face pressures due to increased water and land-use restrictions.

3. Increasingly Stringent Environmental Regulations

The Region 8 Water Board, which encompasses Chino/Ontario, was among the first to develop environmental regulations to control dairy operations, with increasing restrictions imposed in 1994, 1999 and 2004, as the proximity of urban neighborhoods, contamination of ground water and air pollution started raised more concerns.

4. Competition from Central Valley

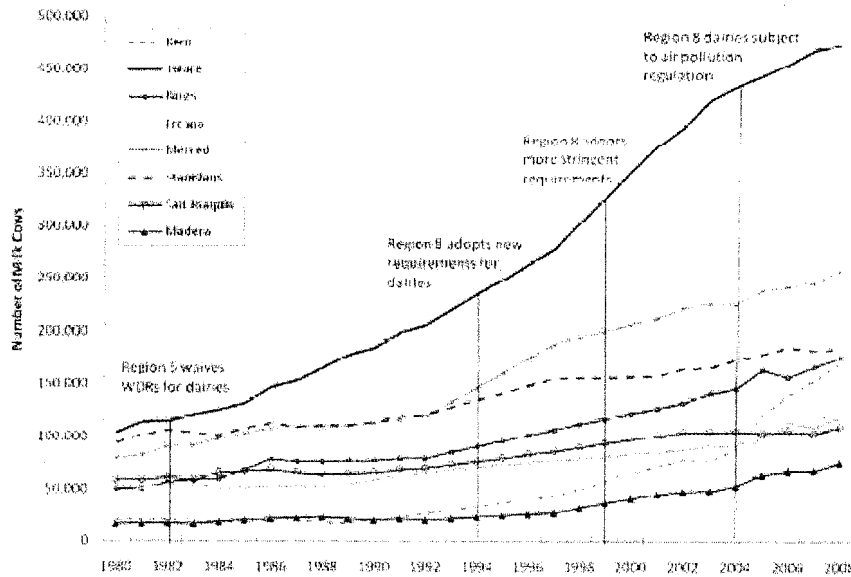
The dairy farmers in the Chino basin face stiff competition from the farmers in the Central Valley because of "high operating costs, including high feed costs and the cost of manure disposal" (Ontario Sphere of Influence General Plan, which is hereby incorporated by reference).

A study published in Agriculture and Resource Economics Review in 2008 demonstrated the effect of environmental regulations over time and the growth in dairy industries, attributed to the cheap land and relatively weak regulations in the Central Valley.

According to CDFA, milk production has declined by 55 percent in San Bernardino County between 2003 and 2007, while production increased by 88 percent in Kern County.

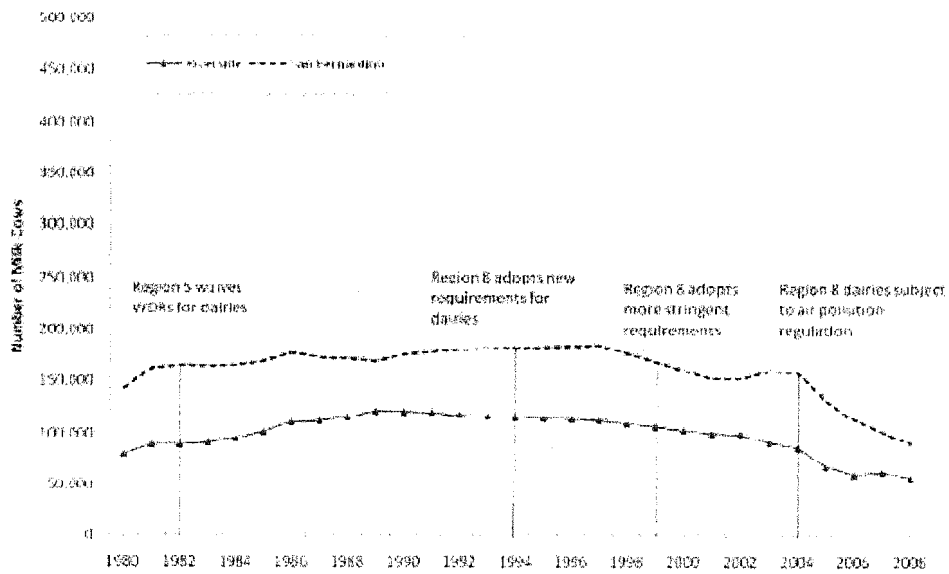
Figures 1 and 2 on the following page show trends in the number of milk cows in the Central Valley (Region 5) as compared to the loss in Region 8 from 1980 to 2008.

Figure: 1
Milk Cows in Counties of Region 5 Central Valley



Source: Steering and Hogle, 2008

Figure: 2
Milk Cows in Region 8 – Inland Empire



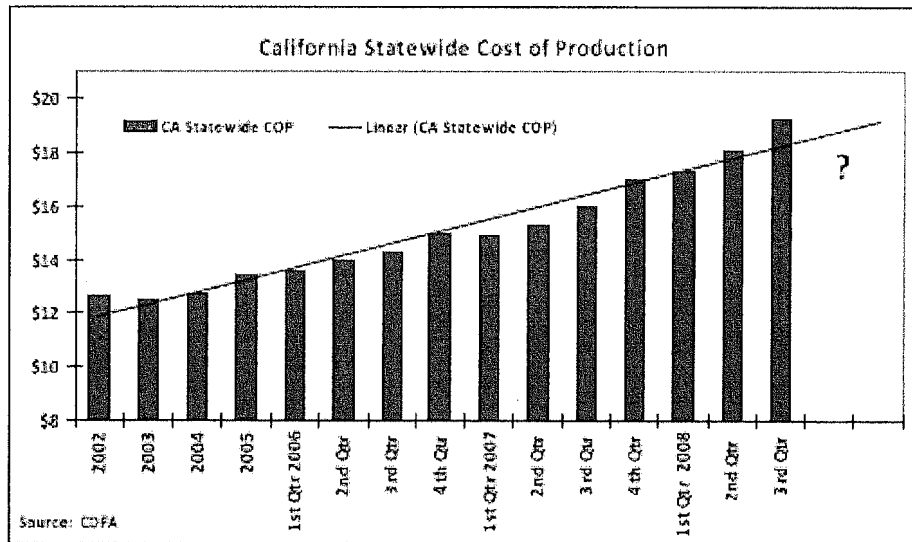
Source: Steering and Hogle, 2008

The Central Valley farmers also face few development pressures as compared to the Chino area and they benefit from diverse farm economy, which is no longer present in the Chino basin. For example, the farmers use dairy waste to fertilize their own crops or of the neighbors. They also use agricultural waste from neighboring farms as feed. This reduces their waste disposal and feed costs.

5. Operating Costs

According to the CDFA, production costs in dairy industry have risen by 50 percent since 2002 in California, putting more pressure on dairy farmers to cut other costs. Figure 3 below shows the growth in cost of production per CWT from 2002 to 3rd quarter 2008.

Figure 3
Cost of Production in the California Dairy Industry



Source: California Department of Food and Agriculture, 2008

Labor Costs

There is a shortage of labor in the dairy industry. Many agricultural workers are looking for higher paying jobs in non-agricultural industries according to the CDFA, which makes it difficult for the dairy farmers to compete for labor and leads to increased labor costs.

The issue of immigration and compliance also leads to labor problems. As shown in Figure 4 there is significant difference in labor costs in the different milk-producing regions of California. In the chart, South Valley represents the counties of the Central Valley composed of Fresno, Kings, Tulare and Kern County. Overall labor costs are 25 percent higher in the Southern California region as compared to the statewide average.

Figure 4 – Labor Costs, 2007

Labor Costs	North Coast	North Valley	South Valley	Southern California	2007 State Average
Per Hired Milker					
Hourly Cash Wage	\$8.77	\$10.29	\$9.82	\$12.38	\$10.02
Hourly Perquisites (1)	1.84	2.24	0.95	1.49	1.40
Hourly Wage (2)	12.53	14.60	12.67	16.52	13.40
Per Hired Labor					
Hourly Cash Wage	8.87	10.88	11.36	13.79	11.18
Hourly Perquisites (1)	1.58	2.49	1.44	1.52	1.86
Hourly Wage (2)	12.40	15.56	14.94	18.18	15.21
Per All Hired					
Hourly Cash Wage	8.81	10.55	10.37	12.89	10.47
Hourly Wage (2)	12.48	15.03	13.48	17.12	14.10

(1) Includes Fair Market Value For Housing Supplied By Employer, Health Insurance, Meat, Etc.

(2) Includes Cash Wages, Perquisites, and Employment Taxes Paid by Employer

Source: Cost of production, 2007, California Department of Food and Agriculture (CDFA)

Water and Feed Costs

The San Bernardino County General Plan indicates that increasing cost of water is another reason for the conversion of agricultural land into other uses. Dairying itself does not need as much water, but increasing cost and lower supply of water affects the feed supply for dairy. Dairy producers rely on alfalfa produced in the state as the source for their feed supply. If production of alfalfa is curtailed, the dairy farmers will incur high costs in getting the feed from outside the area.

Waste Disposal Costs

It is estimated that the cows in Chino corrals¹ produce 500,000 tons of manure every year. With nearby farmland, encroached by urbanization, the cost of waste disposal increases, as distances to where the waste can be disposed increases, as well as the frequency of disposal that is required. As a result many farmers need to hire professional corral cleaners, which increases costs by up to \$50,000 a year.

Commercial/Industrial and Residential Development Trends

With historic growth in commercial/industrial/residential demand throughout southern California over the past 50 years, there has been a consistent growth in residential and commercial/industrial development activity on former agricultural lands throughout Orange County, Los Angeles County and more recently into Riverside and San Bernardino County. Since 1990, the Inland Empire has seen population growth of over 1.5 million people, and it is projected to add another 75,000 people each year over the coming decade. In the City of Chino, there have been almost 4,000 new housing units

¹ An enclosure for confining livestock

built since 2000, with median housing prices tripling by 2007 (still more than doubling after the dramatic 2008 market declines).

Industrial development in the West Inland Empire region has seen similar growth with inventory increasing by 40 percent, or 75 million square feet since 2000. In Chino the growth has been over 50 percent, with 13 million square feet built in past eight years.

As a result of these trends, average land prices in the Inland Empire have increased to over \$300,000 per acre, which compares to Kern County land values of less than \$50,000 per acre

See Appendix Exhibits A-1 through A-6 for detailed trends in Chino/Inland Empire population, employment, residential building permits, home prices, industrial markets and land prices. Exhibit A-7 illustrates land sales in Kern County over the past three years.

Conclusion

Agriculture is being significantly impacted by numerous economic, political and regulatory factors. As a result over 100,000 acres of farmland has been taken out of service since 1990 and is being redeveloped for residential, commercial and industrial uses. With massively lower land costs and less regulation, dairy operators have been steadily moving out of the Inland Empire towards Central Valley, Barstow and Kern County.

Continued agricultural operations are not financially feasible in western San Bernardino County. Agricultural operations of all types will continue to decline as a result of the economic forces at work impacting land owners. Agricultural operator's business decisions to cease production in western San Bernardino County will continue to occur regardless of land use decisions made by local agencies. In other words, land designated for agricultural use has little impact on the continued declining agricultural trends in western San Bernardino County.

Respectfully submitted,



Thomas R. Jirovsky
Senior Managing Director

Attachment

**Exhibit A-1:
POPULATION, HOUSEHOLD & EMPLOYMENT TRENDS
City of Chino and Inland Empire Region, 1990 - 2028**

	1990	2000	2008	2013	2018	2023	2028	
City of Chino								
Population	59,542	67,159	80,840	87,171	95,363	103,310	110,925	
Households	15,591	17,302	20,037	22,439	25,267	28,129	31,011	
Employment (1)	--	34,055	40,083	43,601	46,369	49,176	52,014	
Inland Empire								
Population	2,588,793	3,254,821	4,170,780	4,412,362	4,860,408	5,288,378	5,694,330	
Households	866,804	1,034,812	1,297,214	1,408,835	1,589,394	1,770,540	1,951,244	
Employment (1)	--	1,121,464	1,403,755	1,622,181	1,837,011	2,055,234	2,276,332	
Growth - #		1990-2000	2000-08	2008-13	2013-18	2018-23	2023-28	2008-28 Total
City of Chino								
Population		7,617	13,681	6,331	8,192	7,947	7,615	30,085
Households		1,711	2,735	2,402	2,828	2,862	2,882	10,974
Employment (1)		--	6,028	3,518	2,769	2,806	2,838	11,931
Inland Empire								
Population		666,028	915,959	241,582	448,046	427,970	405,952	1,523,550
Households		168,008	262,402	111,621	180,559	181,147	180,704	654,030
Employment (1)		--	282,291	218,426	214,830	218,223	221,097	872,577
Growth - % CAGR		1990-2000	2000-08	2008-13	2013-18	2018-23	2023-28	2008-28
City of Chino								
Population		1.2%	2.3%	1.5%	1.8%	1.6%	1.4%	1.6%
Households		1.0%	1.9%	2.3%	2.4%	2.2%	2.0%	2.2%
Employment (1)		--	2.1%	1.7%	1.2%	1.2%	1.1%	1.3%
Inland Empire								
Population		2.3%	3.1%	1.1%	2.0%	1.7%	1.5%	1.6%
Households		1.8%	2.9%	1.7%	2.4%	2.2%	2.0%	2.1%
Employment (1)		--	2.8%	2.9%	2.5%	2.3%	2.1%	2.4%

Sources: Southern California Association of Governments (SCAG); Claritas; and CBRE Consulting

(1) Daytime employment data available from the year 2000.

(2) Projections based on forecast growth rates in population, households and employment according to SCAG.

Exhibit A-2:
RESIDENT EMPLOYMENT TRENDS BY INDUSTRY & OCCUPATION
US Census, 1990 and 2000

	City of Chino, California					Inland Empire Region, CA				
	1990		2000		Change (90-'00)	1990		2000		Change (90-'00)
	#	%	#	%		#	%	#	%	
RESIDENT EMPLOYMENT BY INDUSTRY										
Agriculture, forestry, and fisheries	995	4.0%	378	1.4%	-62.0%	36,314	3.4%	18,997	1.5%	-47.7%
Construction	2,172	8.6%	1,904	7.1%	-12.3%	109,894	10.2%	105,268	8.3%	-4.2%
Manufacturing	5,062	20.1%	4,660	17.3%	-7.9%	161,282	14.9%	157,003	12.4%	-2.7%
Transportation, Communication & Utilities	1,921	7.6%	1,907	7.1%	-0.7%	79,357	7.4%	78,459	6.2%	-1.1%
Wholesale trade	1,148	4.6%	1,355	5.0%	18.0%	44,018	4.1%	48,574	3.8%	10.4%
Retail trade	4,324	17.2%	3,360	12.5%	-22.3%	191,714	17.8%	160,926	12.7%	-16.1%
Finance, insurance, and real estate	1,811	7.2%	1,772	6.6%	-2.2%	68,174	6.3%	71,208	5.6%	4.5%
Services	6,404	25.4%	10,402	38.6%	62.4%	333,481	30.9%	557,909	44.1%	67.3%
Public administration	1,344	5.3%	1,243	4.6%	-7.5%	55,394	5.1%	65,784	5.2%	18.8%
RESIDENT EMPLOYMENT BY OCCUPATION										
Managerial & professional specialty	5,777	22.9%	7,702	28.5%	33.3%	253,002	23.4%	353,835	28.0%	39.9%
Technical, sales, & administrative support	8,655	34.4%	7,920	29.4%	-8.5%	338,842	31.4%	343,542	27.2%	1.4%
Service occupations, excl. Farming	6,098	24.2%	3,649	13.5%	-40.2%	297,318	27.5%	210,174	16.6%	-29.3%
Farming, forestry, & fishing	825	3.3%	230	0.9%	-72.1%	31,593	2.9%	12,539	1.0%	-60.3%
Operators, fabricators, & laborers	3,826	15.2%	7,480	27.7%	95.5%	158,873	14.7%	344,038	27.2%	116.5%

Sources: US Census 1990 and 2000; and, CBRE Consulting

Exhibit A-3:
RESIDENTIAL BUILDING PERMIT TRENDS
City of Chino and Inland Empire, 2003 - 2008 YTD

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008 YTD (1)	Total
CITY OF CHINO											
Number of Units											
Single Family	208	97	213	290	133	461	548	1,530	270	233	3,983
2-4 Units	2	0	0	6	0	6	3	2	10	11	40
Over 5 Units	0	0	0	0	0	46	0	0	5	0	51
Total	210	97	213	296	133	513	551	1,532	285	244	4,074
INLAND EMPIRE											
Number of Units											
Single Family	18,776	18,824	23,588	29,876	35,965	43,029	43,911	33,001	15,807	5,723	268,500
2-4 Units	154	169	335	323	719	1,085	971	943	717	218	5,634
Over 5 Units	1,730	2,198	3,486	2,103	5,568	7,206	3,887	3,609	3,346	2,667	35,800
Total	20,660	21,191	27,409	32,302	42,252	51,320	48,769	37,553	19,870	8,608	309,934

Source: US Census Bureau; and CBRE Consulting

(1) Year-to-date figures are through November.

Exhibit A-4:

SINGLE FAMILY DETACHED AND CONDOMINIUM RESALES AND MEDIAN PRICES
 1999 - 2008 YTD

	1999	2000	2001	2002	2003	2004	2005	2006	2007	CAGR(1) 1999-2007	2008 YTD (2)
CITY OF CHINO											
Single Family Detached											
Number of Sales	771	742	734	824	807	812	892	638	383	-8.4%	390
Median Price	\$165,000	\$180,000	\$200,000	\$245,000	\$293,000	\$393,000	\$468,000	\$510,000	\$493,000	14.7%	\$348,828
Median Price per Sq. Ft.	\$107	\$117	\$130	\$150	\$186	\$242	\$282	\$316	\$299	13.7%	\$205
Condominium											
Number of Sales	176	177	249	227	270	297	249	199	114	-5.3%	75
Median Price	\$89,000	\$101,000	\$213,000	\$139,000	\$172,000	\$257,000	\$350,000	\$360,000	\$349,000	18.6%	\$220,000
INLAND EMPIRE (3)											
Single Family Detached											
Number of Sales	53,616	53,280	53,402	60,923	66,117	71,107	77,105	57,655	34,418	-5.4%	47,428
Median Price	\$114,093	\$127,093	\$147,072	\$169,301	\$209,463	\$279,000	\$351,000	\$384,000	\$371,000	15.9%	\$237,000
Median Price per Sq. Ft.	\$80	\$89	\$100	\$114	\$139	\$183	\$225	\$243	\$219	13.4%	\$129
Condominium											
Number of Sales	7,907	8,241	7,523	9,135	9,556	10,125	9,208	6,234	4,526	-6.7%	3,818
Median Price	\$110,654	\$125,616	\$134,856	\$156,656	\$185,689	\$246,000	\$305,000	\$324,000	\$309,000	13.7%	\$235,000

Source: DataQuick, and CBRE Consulting

(1) CAGR is the Compounded attached product.

(2) Through November of 2008.

(3) Counties of Riverside and San Bernardino.

Exhibit A-5:
INDUSTRIAL MARKET TRENDS (Including Manufacturing, Warehouse/Distribution and Flex/R&D Space)
All Industrial Space, 2000 - 2008

Annual Trend by Market Area	SUPPLY				DEMAND				LEASE RATE (\$/ SF/Yr.) (1,2)
	Inventory Bldgs.	Inventory GLA (SF)	Vacancy Rate % (1)	SF Delivered	Availability Rate % (1)	Total Deals	Total SF Leased	SF Net Absorption	
CITY OF CHINO									
2000	700	26,193,974	6.3%	1,324,718	6.2%	48	2,837,298	2,066,088	\$4.22
2001	740	29,556,952	9.1%	3,356,978	7.0%	69	3,992,191	1,143,131	4.23
2002	746	30,987,160	9.5%	1,430,208	6.7%	62	1,837,843	2,333,176	4.22
2003	759	31,808,016	6.9%	840,856	5.3%	70	3,269,765	1,233,039	4.28
2004	810	34,244,597	5.8%	2,436,581	4.8%	58	2,298,219	2,646,719	4.05
2005	839	35,806,075	6.0%	1,561,478	3.2%	49	4,086,926	1,408,611	4.37
2006	890	36,983,611	4.1%	1,177,536	3.2%	90	2,519,670	1,741,256	4.89
2007	920	37,807,715	3.5%	824,104	1.9%	79	3,439,874	1,253,582	5.27
2008	940	39,388,723	3.8%	1,532,073	3.0%	92	1,272,884	236,914	5.62
Total				14,484,532		617	25,554,670	14,062,516	
INLAND EMPIRE - WEST									
2000	4,525	182,350,197	7.0%	11,832,057	6.0%	327	20,719,392	11,652,452	\$4.33
2001	4,647	196,559,678	9.1%	14,229,605	7.0%	386	16,767,690	7,590,465	4.10
2002	4,733	205,652,089	9.7%	9,112,241	8.0%	449	14,359,710	10,426,034	4.07
2003	4,846	212,236,879	8.1%	6,616,190	6.9%	420	17,009,833	8,889,859	4.10
2004	5,020	221,351,863	6.7%	9,114,984	5.1%	520	15,696,199	11,621,860	4.16
2005	5,193	231,106,533	5.9%	9,754,670	4.1%	428	17,533,422	9,322,643	4.37
2006	5,354	241,718,326	6.6%	10,693,858	5.2%	556	14,797,337	7,318,331	4.76
2007	5,517	247,095,120	4.9%	5,357,915	3.5%	492	18,765,295	10,781,364	5.28
2008	5,605	256,069,663	7.0%	8,902,188	6.3%	656	12,466,952	(807,685)	5.50
Total				85,613,708		4,234	148,115,830	76,795,323	

Sources: Costar Group Inc., 2008; and, CBRE Consulting

Exhibit A-6:

LAND SALES IN THE CITY OF CHINO

5+ Acres Land Sales, 2005 - 2008

#	Property Location		Property Characteristics				Sales Characteristics		
	Address	Property Name	Land Improvements	Zoning	Acres	Land SF	Sale Date	Sale Price	\$/Acre
1	8649 Merrill Ave	Land			83.5	3,635,082	11/30/2006	\$36,050,400	\$432,000
2	8711 Fine Ave	Single Family Residence Site	Previously developed lot	LDR, Chino	51.3	2,233,321	4/17/2006	14,242,000	277,784
3	Bickmore Ave	Warehouse/distribution Site	Raw land	M2, Chino	33.2	1,444,014	10/4/2005	14,229,525	429,247
4	7851 Bickmore Ave	H & RWestra Dairy Land	Raw land	N/Av, Chino	27.7	1,206,612	6/30/2006	6,248,000	225,560
5	4619 Eucalyptus Ave	26.67 acres		C	26.7	1,161,745	11/9/2006	6,774,500	254,012
6	Riverside Dr	Single Family Residence Site	Not Available	N/Av, Chino	23.6	1,028,016	3/29/2006	4,250,000	180,085
7	Mountain Ave	M2 Zoned Acreage	Raw land	M2, Chino	19.1	832,919	11/4/2005	1,102,000	57,632
8	7850 Bickmore Ave	Mdr Zoned Land	None	MDR, Chino	18.8	817,246	10/5/2005	6,097,000	324,976
9	Kimball Ave	Lewis Preserve	Finished lot	PD, Chino	18.8	817,185	7/15/2005	11,300,000	602,346
10	4500 Chino Hills Pky	The Village At Chino Walk	Raw land	CO, Chino	12.8	558,439	2/10/2006	7,889,000	615,367
11	13945 Ramona Ave	Planned Industrial Development Site	Fully Improved Lot	M2, Chino	9.0	392,911	11/3/2005	935,000	103,659
12	7.19 Acres Mountain Ave				7.2	313,196	9/4/2007	725,000	100,835
13	15757 Mountain Ave				6.2	270,072	10/12/2006	5,075,000	818,548
14	Kimball Ave	58 Lot Condominums Site	Raw land	RD8, Chino	6.1	266,587	7/22/2005	7,431,000	1,214,217
15	12594 Roswell Ave		Previously developed lot	RD-20M	4.9	214,315	7/22/2005	1,100,000	223,577
16	13116-13142 Norton Ave	Residential Zoned Acreage		RS-1, SB County	4.8	211,004	9/19/2006	1,625,000	335,468
								<i>Land Sales Avg.:</i>	\$353,718
								<i>Land Sales Median:</i>	\$301,380

Sources: Costar Group Inc., 2008; and, CBRE Consulting

- The above is not an exhaustive list of sales. Only those sales greater than 5 acres in size with complete sale price information as reported by the Costar Group are presented.



Exhibit A-7:
LAND SALES IN KERN COUNTY
Commercial, Industrial and Residential Land Sales, 2005 - 2008

#	Property Location		Property Characteristics				Sales Characteristics		
	Address in City of Chino	City	Property Name/ Land Imp.	Zoning	Acres	Land SF	Sale Date	Sale Price	\$/ Acre
1	SE Elmo Hwy @ Elmo Hwy & Browning Rd	Mc Farland	Falcon Heights		135.0	5,880,600	11/15/2007	\$2,142,000	\$15,867
2	Pacheco Rd	Bakersfield	Vacant Land 67.57 Acres	M-3, Bakersfield	67.6	2,943,349	10/10/2008	2,500,000	36,999
3	1234 Willow Springs Rd	Mojave			40.0	1,742,400	12/19/2008	128,000	3,200
4	Scofield Rd	Wasco	Wasco Valley Rose - vacant land		40.0	1,742,400	9/29/2006	1,999,582	49,990
5	Mojave Tropical Rd	Rosamond			40.0	1,742,400	6/7/2007	335,000	8,375
6	NW Hanawalt Ave @ Hanawalt & Mast Ave	Mc Farland	Sierra Springs		38.2	1,665,655	11/15/2007	599,000	15,665
7	16701 Brimhall Rd	Bakersfield		E-1 RS, Bakersfield	35.0	1,524,164	12/7/2007	2,000,000	57,159
8	17174 Highway 14	Mojave		M-2	34.4	1,496,286	2/22/2008	550,000	16,012
9	4057-4061 Industrial Pky	Lebec	Tejon Industrial Complex - Bldg. U.C.		23.8	1,034,550	7/1/2008	2,500,000	105,263
10	College Heights Blvd @ Kendall Avenue	Ridgecrest	Villas at College Heights		22.7	988,812	3/22/2007	2,300,000	101,322
11	Stockdale Hwy @ Heath	Bakersfield		Commercial	20.0	871,200	5/1/2007	3,600,000	180,000
12	Archibald Ave	Maricopa	Parcel 4		20.0	871,200	4/20/2007	165,000	8,250
13	Johnson Rd @ Driver	Bakersfield		A-1	20.0	871,200	9/11/2007	1,000,000	50,000
14	Wheeler Ridge Rd @ Creekside Dr.	Arvin	Wheeler Ridge Site		19.5	847,242	11/17/2008	379,990	19,537
15	132 White Ln	Bakersfield	3 Buildings apx 2,555 SF	Light Industrial	15.5	673,002	11/28/2007	1,300,000	84,142
16	Avenue A & 120th W	Rosamond	no zoning restrictions		14.5	631,620	1/24/2007	125,000	8,621
17	Henry Rd	Taft		M-2	14.3	620,730	2/5/2008	505,000	35,439
18	NWC McCutchen & Gosford Rd	Bakersfield		C2	10.0	435,600	6/15/2007	2,275,000	227,500
19	Compagnoni St	Bakersfield			10.0	435,600	9/21/2007	650,000	65,000
20	Mercedes Blvd	California City	10 Acres	R2.5	10.0	435,600	5/4/2007	25,000	2,500
21	Redrock Randsburg Rd	North Edwards	Vacant Land-10 Acres		10.0	435,600	5/26/2006	20,000	2,000
22	Eucalyptus Dr (2 Properties)	Bakersfield	Multi-Property Sale		9.6	418,176	11/9/2007	980,000	102,083
23	5901 Mills Rd	Bakersfield	Mills Road Land		8.8	381,150	9/12/2007	820,000	93,714
24	S China Lake Blvd @ Bowman Ave.	Ridgecrest	NEC of S. China Lake @ Bowman	GC, Ridgecrest	6.9	302,306	7/3/2008	1,500,000	216,139
25	1245 Kern St	Taft			6.4	279,655	8/31/2007	200,000	31,153
26	N Norma St @ West Ward Avenue	Ridgecrest		R-2	6.0	259,618	10/4/2006	420,000	70,470
27	W Day Ave @ Airport Drive	Bakersfield			5.8	250,470	10/4/2007	1,300,000	226,087
								<i>Residential Land Sales Avg.:</i>	\$44,347
								<i>Residential Land Sales Median:</i>	\$49,990

Sources: Costar Group Inc., 2008; and, CBRE Consulting

- The above is not an exhaustive list of sales. Only those sales greater than 5 acres in size with complete sale price information as reported by the Costar Group are presented.

-3449-

Item No. E.3

CBRE CONSULTING



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March 18, 2009

Matt Englhard
Regional Development Officer
First Industrial Realty Trust, Inc.
114 Pacifica, Suite 220
Irvine, CA 92618

Re: Economic Viability of Agriculture in the East Inland Empire

Dear Mr. Englhard:

Per your request CBRE Consulting has examined the economic and market trends affecting agriculture operations throughout California, with particular attention to the specific challenges relative to the communities of Perris and Sun City in eastern Riverside County area of the Inland Empire.

Founded in 1978 as Sedway Group, CBRE Consulting is a nationally recognized full-service real estate and urban economics consulting firm with offices in Los Angeles and San Francisco. CBRE brings a multi-disciplined approach to property evaluation of all major land use types. CBRE specializes in real estate market analysis, economic development studies for residential, commercial and industrial projects throughout California and the western United States.

BACKGROUND

The Inland Empire once held the largest concentration of dairies and supporting agriculture (e.g., alfalfa farming) in the world. This region is now facing tremendous urbanization and development pressures. The agricultural land is continually declining in the Inland Empire. According to the State of California, Department of Conservation, Riverside County lost 50,000 acres of farmland from 1990 through 2002. San Bernardino County lost 47,000 acres in prime farmland over the same period.

For this analysis, CBRE performed an extensive internet/literature search relative to the economics of agricultural and dairy farming to understand the economic and other challenges to continued agriculture uses in the Inland Empire. CBRE also gathered relevant demographic, real estate and other economic data to illustrate historic and projected land use trends near Perris and the eastern Inland Empire.

There are many factors which demonstrate the infeasibility of agriculture production in Eastern Inland Empire, resulting in many dairy operators and supporting agricultural operations moving to Kern County.

- Urbanization in the Inland Empire, resulting in dramatically increasing land prices,
- Higher water and labor costs;
- Environmental regulation (insects, odors, ground water contamination and solid waste removal) and,
- Competition from Kern County and the Central Valley with lower land costs and reduced regulations

1. Increasing Land Values

Due to competing land uses, land prices have increased dramatically in the area in excess of \$250,000 per acre. It has become more profitable for farmers to sell their land for a premium and relocate to a different area. The adoption of various General Plans in the Inland Empire emphasizing significant residential and commercial development have also encouraged the farmers to sell their land and relocate.

2. Conflicts between Urban Neighbors and Dairy Farms

The proximity of agriculture and urban development in the Inland Empire region bring with it many conflicts. There is an increase in the land use incompatibility with nuisance complaints from the urban neighbors regarding flies, farm odors, early morning noise, and also water and air pollution. The farmers also face pressures due to increased water and land-use restrictions.

3. Increasingly Stringent Environmental Regulations

The Region 8 Water Board, which encompasses Perris, was among the first to develop environmental regulations to control dairy operations, with increasing restrictions imposed in 1994, 1999 and 2004, as the proximity of urban neighborhoods, contamination of ground water and air pollution started raised more concerns.

4. Competition from Central Valley

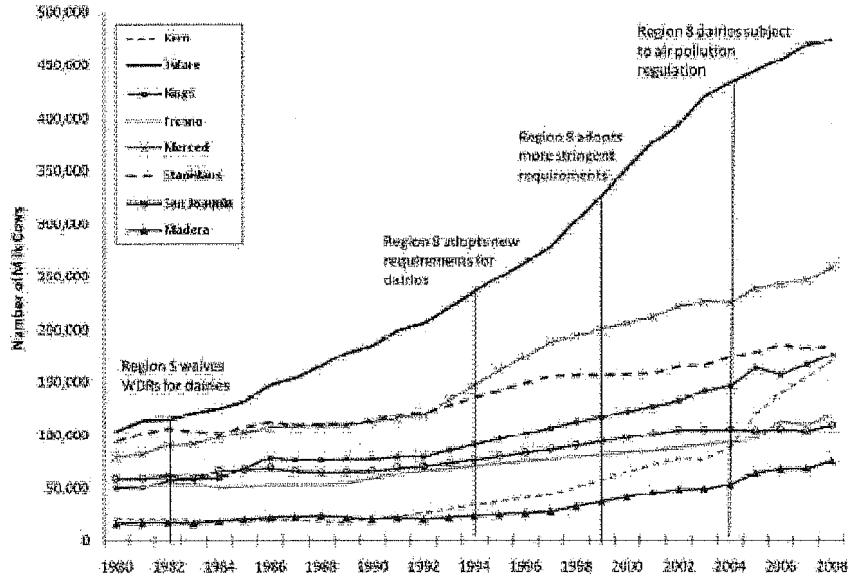
The dairy farmers in the Inland Empire face stiff competition from the farmers in the Central Valley because of high operating costs, including high feed costs and the cost of manure disposal.

A study published in Agriculture and Resource Economics Review in 2008 demonstrated the effect of environmental regulations over time and the growth in dairy industries, attributed to the cheap land and relatively weak regulations in the Central Valley.

According to CDFA, milk production has declined by approximately 45 percent in Riverside County between 2002 and 2007, while production increased by 88 percent in Kern County.

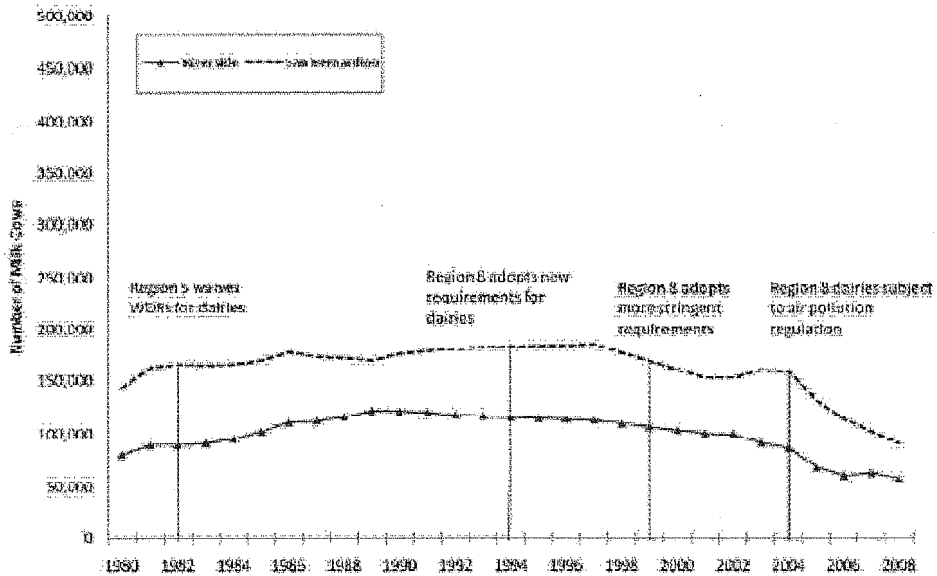
Figures 1 and 2 on the following page show trends in the number of milk cows in the Central Valley (Region 5) as compared to the loss in Region 8 from 1980 to 2008.

Figure 1
Milk Cows in Counties of Region 5 Central Valley



Source: Steering and Hogle, 2008

Figure 2
Milk Cows in Region 8 – Inland Empire



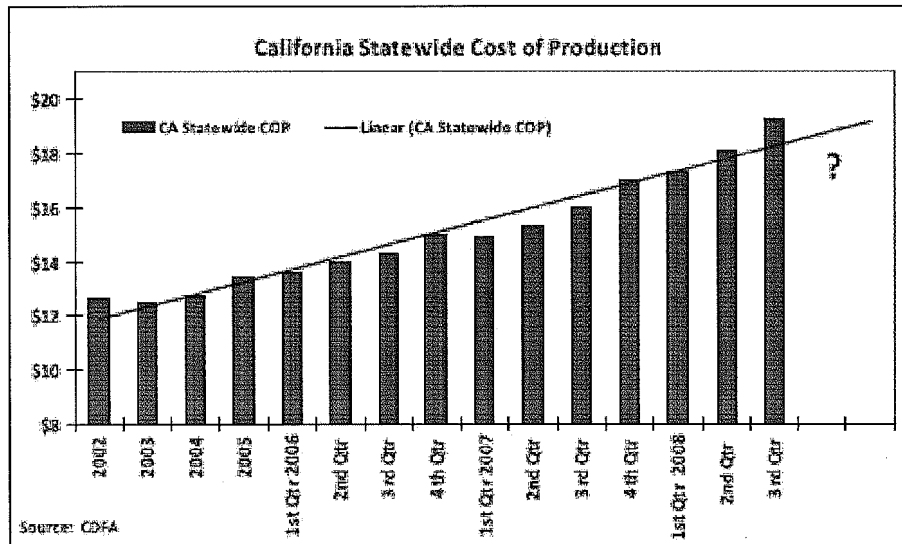
Source: Steering and Hogle, 2008

The Central Valley farmers also face few development pressures as compared to the Inland Empire and they benefit from diverse farm economy. For example, the farmers use dairy waste to fertilize their own crops or of the neighbors. They also use agricultural waste from neighboring farms as feed. This reduces their waste disposal and feed costs.

5. Operating Costs

According to the CDFA, production costs in dairy industry have risen by 50 percent since 2002 in California, putting more pressure on dairy farmers to cut other costs. Figure 3 below shows the growth in cost of production per CWT from 2002 to 3rd quarter 2008.

Figure 3
Cost of Production in the California Dairy Industry



Source: California Department of Food and Agriculture, 2008

Labor Costs

There is a shortage of labor in the dairy industry. Many agricultural workers are looking for higher paying jobs in non-agricultural industries according to the CDFA, which makes it difficult for the dairy farmers to compete for labor and leads to increased labor costs.

The issue of immigration and compliance also leads to labor problems. As shown in Figure 4 there is significant difference in labor costs in the different milk-producing regions of California. In the chart, South Valley represents the counties of the Central Valley composed of Fresno, Kings, Tulare and Kern County. Overall labor costs are 25 percent higher in the Southern California region as compared to the statewide average.

Figure 4 – Labor Costs, 2007

Labor Costs	North Coast	North Valley	South Valley	Southern California	2007 State Average
Per Hired Milker					
Hourly Cash Wage	\$8.77	\$10.29	\$9.82	\$12.38	\$10.02
Hourly Perquisites (1)	1.84	2.24	0.95	1.49	1.40
Hourly Wage (2)	12.53	14.60	12.67	16.52	13.40
Per Hired Labor					
Hourly Cash Wage	8.87	10.88	11.36	13.79	11.18
Hourly Perquisites (1)	1.58	2.49	1.44	1.52	1.86
Hourly Wage (2)	12.40	15.56	14.94	18.18	15.21
Per All Hired					
Hourly Cash Wage	8.81	10.55	10.37	12.89	10.47
Hourly Wage (2)	12.48	15.03	13.48	17.12	14.10

(1) Includes Fair Market Value For Housing Supplied By Employer, Health Insurance, Meat, Etc.

(2) Includes Cash Wages, Perquisites, and Employment Taxes Paid by Employer

Source: Cost of production, 2007, California Department of Food and Agriculture (CDFA)

Water and Feed Costs

Increasing cost of water is another reason for the conversion of agricultural land into other uses. Dairying itself does not need as much water, but increasing cost and lower supply of water affects the feed supply for dairy. Dairy producers rely on alfalfa produced in the state as the source for their feed supply. If production of alfalfa is curtailed, the dairy farmers will incur high costs in getting the feed from outside the area.

Waste Disposal Costs

The livestock at dairy farms produce significant tonnage of manure every year. With nearby farmland, encroached by urbanization, the cost of waste disposal increases, as distances to where the waste can be disposed increases, as well as the frequency of disposal that is required. As a result many farmers need to hire professional corral cleaners, which increases costs by up to \$50,000 a year.

Commercial/Industrial and Residential Development Trends

With historic growth in commercial/industrial/residential demand throughout southern California over the past 50 years, there has been a consistent growth in residential and commercial/industrial development activity on former agricultural lands throughout Orange County, Los Angeles County and more recently into Riverside and San Bernardino County. Since 1990, the Inland Empire has seen population growth of over 1.5 million people, and it is projected to add another 75,000 people each year over the coming decade. In the City of Perris, there have been almost 4,500 new housing units built since 2000, with median housing prices more than tripling by 2007, and still nearly doubling after the dramatic 2008 market declines.

Industrial development in the East Inland Empire region has seen similar growth with inventory increasing by 60 percent, or 92 million square feet since 2000. In Perris the growth has been nearly 100 percent, with 5 million square feet built in past eight years.

As a result of these trends, average land prices in the Inland Empire have increased to over \$250,000 per acre, which compares to Kern County land values of less than \$50,000 per acre

See Appendix Exhibits A-1 through A-6 for detailed trends in Perris/Inland Empire population, employment, residential building permits, home prices, industrial markets and land prices. Exhibit A-7 illustrates land sales in Kern County over the past three years.

Conclusion

Agriculture is being significantly impacted by numerous economic, political and regulatory factors. As a result over 100,000 acres of farmland has been taken out of service since 1990 and is being redeveloped for residential, commercial and industrial uses. With lower land costs and less regulation, dairy operators and supporting agricultural uses such as dry farming and alfalfa production have been steadily moving out of the Inland Empire towards Central Valley, Barstow and Kern County.

Continued agricultural operations are not financially feasible in the Perris/eastern Riverside County region. Agricultural operations of all types will continue to decline as a result of the economic forces at work impacting land owners. Agricultural operator's business decisions to cease production will continue to occur regardless of land use decisions made by local agencies. In other words, land designated for agricultural use has little impact on the continued declining agricultural trends in Perris/eastern Riverside County.

Respectfully submitted,



Thomas R. Jirovsky
Senior Managing Director

Attachment

**Exhibit A-1:
POPULATION, HOUSEHOLD & EMPLOYMENT TRENDS
City of Perris and Inland Empire Region, 1990 - 2029**

	1990	2000	2009	2014	2019	2024	2029	
City of Perris								
Population	22,202	36,189	54,592	62,440	69,956	77,175	83,601	
Households	6,848	9,652	14,160	16,300	18,032	19,808	21,616	
Employment (1)	--	11,715	17,332	19,042	20,108	22,194	24,810	
Inland Empire								
Population	2,588,793	3,254,821	4,170,780	4,505,315	4,950,365	5,373,155	5,774,903	
Households	866,804	1,034,812	1,297,214	1,445,415	1,626,549	1,807,342	1,988,035	
Employment (1)	--	1,121,464	1,450,397	1,665,604	1,881,342	2,099,942	2,321,648	
Growth - #		1990-00	2000-09	2009-14	2014-19	2019-24	2024-29	2009-29 Total
City of Perris								
Population		13,987	18,403	7,848	7,516	7,219	6,426	29,009
Households		2,804	4,508	2,140	1,732	1,776	1,808	7,456
Employment (1)		--	5,617	1,710	1,066	2,086	2,616	7,478
Inland Empire								
Population		666,028	915,959	334,535	445,050	422,791	401,748	1,604,123
Households		168,008	262,402	148,201	181,134	180,793	180,693	690,821
Employment (1)		--	328,933	215,207	215,738	218,600	221,706	871,251
Growth - % CAGR		1990-00	2000-09	2009-14	2014-19	2019-24	2024-29	2009-29
City of Perris								
Population		5.0%	4.7%	2.7%	2.3%	2.0%	1.6%	2.2%
Households		3.5%	4.4%	2.9%	2.0%	1.9%	1.8%	2.1%
Employment (1)		--	4.4%	1.9%	1.1%	2.0%	2.3%	1.8%
Inland Empire								
Population		2.3%	2.8%	1.6%	1.9%	1.7%	1.5%	1.6%
Households		1.8%	2.5%	2.2%	2.4%	2.1%	1.9%	2.2%
Employment (1)		--	2.9%	2.8%	2.5%	2.2%	2.0%	2.4%

Sources: Southern California Association of Governments (SCAG); Claritas; and CBRE Consulting

(1) Daytime employment data available from the year 2000.

(2) Projections based on forecast growth rates in population, households and employment according to SCAG.

Exhibit A-2:
RESIDENT EMPLOYMENT TRENDS BY INDUSTRY & OCCUPATION
US Census, 1990 and 2000

	City of Perris, California					Inland Empire Region, CA				
	1990		2000		Change	1990		2000		Change
	#	%	#	%	('90-'00)	#	%	#	%	('90-'00)
RESIDENT EMPLOYMENT BY INDUSTRY										
Agriculture, forestry, and fisheries	389	5.0%	97	0.8%	-75.1%	36,314	3.4%	18,997	1.5%	-47.7%
Construction	965	12.4%	1,352	11.3%	40.1%	109,894	10.2%	105,268	8.3%	-4.2%
Manufacturing	1,668	21.4%	2,233	18.7%	33.9%	161,282	14.9%	157,003	12.4%	-2.7%
Transportation, Communication & Utilities	484	6.2%	634	5.3%	31.0%	79,357	7.4%	78,459	6.2%	-1.1%
Wholesale trade	242	3.1%	474	4.0%	95.9%	44,018	4.1%	48,574	3.8%	10.4%
Retail trade	1,274	16.3%	1,563	13.1%	22.7%	191,714	17.8%	160,926	12.7%	-16.1%
Finance, insurance, and real estate	400	5.1%	408	3.4%	2.0%	68,174	6.3%	71,208	5.6%	4.5%
Services	2,019	25.9%	4,653	39.0%	130.5%	333,481	30.9%	557,909	44.1%	67.3%
Public administration	357	4.6%	520	4.4%	45.7%	55,394	5.1%	65,784	5.2%	18.8%
RESIDENT EMPLOYMENT BY OCCUPATION										
Managerial & professional specialty	1,357	17.4%	2,110	17.7%	55.5%	253,002	23.4%	353,835	28.0%	39.9%
Technical, sales, & administrative support	2,042	26.2%	2,967	24.9%	45.3%	338,842	31.4%	343,542	27.2%	1.4%
Service occupations, excl. Farming	2,327	29.8%	2,071	17.4%	-11.0%	297,318	27.5%	210,174	16.6%	-29.3%
Farming, forestry, & fishing	345	4.4%	52	0.4%	-84.9%	31,593	2.9%	12,539	1.0%	-60.3%
Operators, fabricators, & laborers	1,727	22.1%	4,734	39.7%	174.1%	158,873	14.7%	344,038	27.2%	116.5%

Sources: US Census 1990 and 2000; and, CBRE Consulting



Exhibit A-3:
RESIDENTIAL BUILDING PERMIT TRENDS
City of Perris and Inland Empire, 10-Year Trends

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Total
CITY OF PERRIS											
Number of Units											
Single Family	186	9	145	492	1,269	1,573	1,746	812	599	107	6,938
2-4 Units	4	8	0	0	0	0	0	0	0	0	12
Over 5 Units	<u>76</u>	<u>62</u>	<u>0</u>	<u>186</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>96</u>	<u>0</u>	<u>420</u>
Total	266	79	145	678	1,269	1,573	1,746	812	695	107	7,370
INLAND EMPIRE											
Number of Units											
Single Family	18,776	18,824	23,588	29,876	35,965	43,029	43,911	33,001	15,807	5,723	268,500
2-4 Units	154	169	335	323	719	1,085	971	943	717	218	5,634
Over 5 Units	1,730	2,198	3,486	2,103	5,568	7,206	3,887	3,609	3,346	2,667	<u>35,800</u>
Total	20,660	21,191	27,409	32,302	42,252	51,320	48,769	37,553	19,870	8,608	309,934

Source: US Census Bureau; and CBRE Consulting



Exhibit A-4:
SINGLE FAMILY DETACHED AND CONDOMINIUM REALES AND MEDIAN PRICES
1999 - 2008 YTD

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	CAGR(1) 1999-2008
CITY OF PERRIS											
Single Family Detached											
Number of Sales	1,042	970	919	976	1,069	1,166	1,657	1,466	638	1,670	5.4%
Median Price	\$81,246	\$94,597	\$116,899	\$133,884	\$170,564	\$241,973	\$326,336	\$372,010	\$348,354	\$183,635	9.5%
Median Price per Sq. Ft.	\$62	\$72	\$87	\$101	\$126	\$178	\$224	\$240	\$207	\$96	5.1%
Condominium											
Number of Sales	0	0	0	0	1	0	0	0	0	6	n.a.
Median Price	\$0	\$0	\$0	\$0	\$140	\$0	\$0	\$0	\$0	\$138	n.a.
INLAND EMPIRE (2)											
Single Family Detached											
Number of Sales	53,616	53,280	53,402	60,923	66,117	71,107	77,105	57,655	34,418	53,947	0.1%
Median Price	\$114,093	\$127,093	\$147,072	\$169,301	\$209,463	\$279,000	\$351,000	\$384,000	\$371,000	\$231,000	8.2%
Median Price per Sq. Ft.	\$80	\$89	\$100	\$114	\$139	\$183	\$225	\$243	\$219	\$125	5.0%
Condominium											
Number of Sales	7,907	8,241	7,523	9,135	9,556	10,125	9,208	6,234	4,526	4,095	-7.1%
Median Price	\$110,654	\$125,616	\$134,856	\$156,656	\$185,689	\$246,000	\$305,000	\$324,000	\$309,000	\$220,000	7.9%

Source: DataQuick; and CBRE Consulting

(1) CAGR is the Compounded annual growth rate.

(2) Counties of Riverside and San Bernardino.

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Exhibit A-5:

INDUSTRIAL MARKET TRENDS (Including Manufacturing, Warehouse/ Distribution and Flex/ R&D Space)

All Industrial Space, 2000 - 2008

Annual Trend by Market Area	SUPPLY				DEMAND				LEASE RATE (\$/SF/Yr.) (1,2)
	Inventory Bldgs	Inventory GLA (SF)	Vacancy Rate % (1)	SF Delivered	Availability Rate % (1)	Total Deals	Total SF Leased	SF Net Absorption	
CITY OF PERRIS SUB-MARKET									
2000	141	5,373,641	0.6%	38,110	0.6%	1	1,272,500	51,860	\$4.88
2001	146	7,076,631	1.7%	1,702,990	1.6%	1	20,350	1,606,362	5.64
2002	146	7,076,631	2.1%	0	1.4%	2	115,960	5,509	4.68
2003	147	7,125,503	2.2%	48,872	2.2%	2	65,303	28,429	5.11
2004	150	7,381,220	1.0%	255,717	0.7%	0	17,800	367,551	n.a.
2005	153	7,595,862	0.9%	214,642	0.9%	2	2,500	165,460	n.a.
2006	157	7,663,213	1.3%	67,351	1.3%	3	3,458	4,173	5.72
2007	175	9,666,032	8.8%	2,002,819	8.7%	5	1,760,642	1,768,468	7.08
2008	206	10,458,307	11.1%	792,275	11.1%	13	38,674	(339,813)	6.74
Total				5,122,776		29	3,297,187	3,657,999	
INLAND EMPIRE - EAST MARKET									
2000	5,002	150,133,588	3.9%	6,630,360	3.6%	312	10,892,596	7,668,578	\$6.50
2001	5,076	157,202,306	3.9%	7,068,718	3.1%	355	7,684,689	6,501,787	4.68
2002	5,182	161,820,506	4.3%	4,582,653	3.8%	404	6,636,531	2,394,637	4.57
2003	5,269	167,822,636	5.0%	6,098,659	4.3%	387	9,055,454	5,240,209	4.59
2004	5,470	176,211,830	4.6%	8,389,194	3.1%	500	8,017,923	9,626,436	4.98
2005	5,725	188,313,075	4.6%	12,120,753	3.6%	470	7,611,452	8,938,859	5.01
2006	6,055	208,029,558	7.5%	19,691,663	5.7%	545	13,195,412	13,006,436	5.90
2007	6,291	226,876,355	8.4%	18,563,797	7.5%	624	17,026,809	16,405,909	6.28
2008	6,541	242,869,862	13.0%	15,234,949	12.0%	996	12,632,717	1,932,294	5.71
Total				98,380,746		4,593	92,753,583	71,715,145	

Sources: Costar Group Inc., 2008; and, CBRE Consulting

(1) The sub-market is defined as a 5-mile radius from the City Hall and includes the entire City of Perris.

(2) Inland Empire East market, which comprises the City of Perris per Costar definition, also includes the Coachella Valley, Corona, East San Bernardino, Riverside, South Riverside and Outlying San Bernardino sub-markets.



Exhibit A-6:
LAND SALES IN THE CITY OF PERRIS SUB-MARKET
5+ Acres Land Sales, 2006 - 2009

#	Property Location		Property Characteristics				Sales Characteristics			
	Address	Property Name	Land Improvements	Type	Zoning	Acres	Land SF	Sale Date	Sale Price	\$/Acre
1	Lukens Ln			Commercial	M3	36.7	1,599,087	9/21/2007	\$500,000	\$13,620
2	Nuevo Rd @ I-215	Nuevo & A St.		Commercial		6.0	261,360	7/27/2007	1,833,000	305,500
3	Dawson Rd @ San Jacinto			Commercial	FR	14.4	628,570	6/13/2007	1,734,000	120,166
4	Ethanac Rd @ McPherson	5.0 Acres		Commercial	Commercial Community	5.0	217,800	5/17/2007	1,250,000	250,000
5	Nuevo Rd @ I-215	Nuevo & A St.		Commercial		6.0	261,360	5/10/2007	653,400	108,900
6	Morgan St	Hold For Development Site	Raw land	Commercial	CC, Perris	6.2	268,329	2/7/2007	1,895,000	307,631
7	9.24 acres Nuevo Rd	Vacant Land	None	Commercial	U	9.2	402,494	1/24/2007	1,600,000	173,160
8	Old Nuevo Rd @ Ferris Blvd		None	Commercial	C1	7.8	341,510	1/2/2007	4,960,000	632,654
9	23040 Rder St			Commercial		7.3	318,423	12/7/2006	875,000	119,699
10	Palomar Rd @ McLaughlin Rd			Commercial		18.2	794,098	11/15/2006	1,700,000	93,253
11	23641 Placentia Ave	Zoned Acreage	Not Available	Commercial	RR	9.5	412,077	9/5/2006	900,000	95,138
12	Redlands Ave	Sp Zoned Acreage	Raw land	Commercial	SP, Perris	20.7	901,774	8/25/2006	3,500,000	169,067
13	Citrus Ave	CC Zoned Acreage	Raw land	Commercial	CC, Perris	38.4	1,670,765	6/29/2006	7,087,000	184,771
14	Cajaloo Rd	Acreage	Raw land	Commercial	N/Av, Riverside Co.	13.3	580,219	6/14/2006	2,800,000	210,210
15	23772 Water St	Indacochea Sheep Farm	Not Available	Commercial	N/Av	9.7	420,354	6/6/2006	1,650,000	170,984
16	28067 State Highway 74	R Zoned Acreage	Raw land	Commercial	RR, Riverside Co.	5.2	227,383	5/23/2006	1,275,000	244,253
17	Markham St	Unknown Site	Raw land	Commercial	A102, Riverside	9.7	422,967	3/3/2006	1,150,000	118,435
									Commercial Average:	\$158,336
									Commercial Median:	\$170,984
18	Mountain Ave	Future Cemex Location		Industrial	GI	5.0	218,235	12/5/2008	1,819,837	363,242
19	355 W Markham St	22.25 acres		Industrial	RA	22.4	977,050	5/20/2008	5,446,960	242,843
20	24390 Nuevo Rd		None	Industrial	IP	6.0	261,360	11/8/2007	1,090,000	181,667
21	Rder St @ Redlands Ave	17.1 Acres		Industrial	M1, RA	17.1	744,876	6/26/2007	3,550,000	207,602
22	Webster Ave @ Morgan St	6.0-Acres Vacant Land		Industrial		6.0	261,360	3/9/2007	1,895,000	315,833
23	24345 Citrus Ave	First Park Nuevo Rd Phase I	None	Industrial	M-H	16.2	707,414	3/9/2007	6,366,730	392,040
24	23121 Cajaloo Rd	6.91 ac		Industrial	MSC	6.9	300,999	11/20/2006	2,521,500	364,907
25	Mountain Ave	Finished Land Parcels		Industrial	GI	19.2	838,094	10/4/2006	4,350,000	226,092
26	Cajaloo Expy @ 215 Freew	10.42 Acre Industrial Park Site		Industrial	M-SC, Riverside	10.4	453,895	9/13/2006	2,500,000	239,923
27	24475 Markham St	Planned Industrial Development Site	Previously developed lot	Industrial	U, Perris	9.1	396,901	7/18/2006	2,778,000	304,886
28	Ramona Expy	Planned Industrial Development Site	Raw land	Industrial	U, Perris	9.2	399,880	7/12/2006	1,999,500	217,811
29	Indian Ave	Planned Industrial Development Site	Raw land	Industrial	MSC, Perris	8.4	366,661	6/30/2006	2,099,500	249,424
30	Perry St	Planned Unit Development Site	Raw land	Industrial	U, Perris	9.1	396,901	6/30/2006	1,954,000	214,452
31	4244 Perry St	Planned Industrial Development Site	Raw land	Industrial	U, Perris	18.2	793,798	6/30/2006	5,562,000	305,217
32	24392 Nance St	Auto Salvage Yard Site	Raw land	Industrial	GI, Perris	9.1	395,960	6/14/2006	2,079,000	228,713
33	Perry St	Planned Unit Development Site	Raw land	Industrial	U, Perris	8.8	384,634	6/9/2006	2,308,000	261,382
34	Markham St	Planned Unit Development Site	Raw land	Industrial	U, Perris	9.1	396,901	5/31/2006	2,600,000	285,351
35	Harvill Ave	M-Sc Zoned Acreage	Raw land	Industrial	L1	20.8	903,870	5/9/2006	3,358,500	161,855
36	Mapes Rd	GI Zoned Acreage	Raw land	Industrial	GI, Perris	5.9	258,746	5/8/2006	1,113,000	187,374
37	Rder St	Planned Industrial Development Site	Raw land	Industrial	U, Perris	16.3	709,592	3/15/2006	3,550,000	217,925
									Industrial Average:	\$252,529
									Industrial Median:	241,383

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Exhibit A-6: Continued.....
LAND SALES IN THE CITY OF PERRIS SUB-MARKET
5+ Acres' Land Sales, 2006 - 2009

#	Property Location		Property Characteristics				Sales Characteristics			
	Address	Property Name	Land Improvements	Type	Zoning	Acres	Land SF	Sale Date	Sale Price	\$/Acre
38	Barnett Rd @ McLughlin Road			Residential	RR	42.3	1,842,587	11/14/2006	4,600,000	108,747
39	Evans Rd			Residential		12.8	558,874	9/27/2006	885,000	68,979
40	Evans Rd	F6000 Zoned Acreage	Raw land	Residential	F6000	12.8	558,874	8/25/2006	885,500	69,018
41	Nuevo Rd	A1 Zoned Acreage	Not Available	Residential	CC & R14	29.8	1,298,523	5/24/2006	2,700,000	90,574
42	Dockery Ln	Residential Zoned Acreage	Raw land	Residential	N/Av, Perris	6.0	259,617	4/19/2006	1,050,000	176,175
43	Dockery Ln	Residential Zoned Acreage	Raw land	Residential	N/Av, Perris	9.7	420,789	4/19/2006	1,750,000	181,160
									<i>Residential Average:</i>	\$104,687
									<i>Residential Median:</i>	99,660
									<i>All Land Sales Average:</i>	\$186,228
									<i>All Land Sales Median:</i>	210,210

Sources: Costar Group Inc., 2009; and, CBRE Consulting

(1) The sub-market is defined as a 5-mile radius from the City Hall and includes the entire City of Perris

(2) The above is not an exhaustive list of sales. Only those sales greater than 5 and up to 50 acres in size with complete sale price information as reported by the Costar Group are presented.



Exhibit A-7:
LAND SALES IN KERN COUNTY
Commercial, Industrial and Residential Land Sales, 2006 - 2008

#	Property Location		Property Characteristics				Sales Characteristics		
	Address in City of Chino	City	Property Name/Land Imp.	Zoning	Acres	Land SF	Sale Date	Sale Price	\$/Acre
1	SE Elmo Hwy @ Elmo Hwy & Browning Rd	Mc Farland	Falcon Heights		135.0	5,880,600	11/15/2007	\$2,142,000	\$15,867
2	Pacheco Rd	Bakersfield	Vacant Land 67.57 Acres	M-3, Bakersfield	67.6	2,943,349	10/10/2008	2,500,000	36,999
3	1234 Willow Springs Rd	Mojave			40.0	1,742,400	12/19/2008	128,000	3,200
4	Scofield Rd	Wasco	Wasco Valley Rose - vacant land		40.0	1,742,400	9/29/2006	1,999,582	49,990
5	Mojave Tropical Rd	Rosamond			40.0	1,742,400	6/7/2007	335,000	8,375
6	NW Hanawalt Ave @ Hanawalt & Mast Ave	Mc Farland	Sierra Springs		38.2	1,665,655	11/15/2007	599,000	15,665
7	16701 Brimhall Rd	Bakersfield		E-1 RS, Bakersfield	35.0	1,524,164	12/7/2007	2,000,000	57,159
8	17174 Highway 14	Mojave		M-2	34.4	1,496,286	2/22/2008	550,000	16,012
9	4057-4061 Industrial Pky	Lebec	Tejon Industrial Complex - Bldg. U.C.		23.8	1,034,550	7/1/2008	2,500,000	105,263
10	College Heights Blvd @ Kendall Avenue	Ridgecrest	Villas at College Heights		22.7	988,812	3/22/2007	2,300,000	101,322
11	Stockdale Hwy @ Heath	Bakersfield		Commercial	20.0	871,200	5/1/2007	3,600,000	180,000
12	Archibald Ave	Maricopa	Parcel 4		20.0	871,200	4/20/2007	165,000	8,250
13	Johnson Rd @ Driver	Bakersfield		A-1	20.0	871,200	9/11/2007	1,000,000	50,000
14	Wheeler Ridge Rd @ Creekside Dr.	Arvin	Wheeler Ridge Site		19.5	847,242	11/17/2008	379,990	19,537
15	132 White Ln	Bakersfield	3 Buildings apx 2,555 SF	Light Industrial	15.5	673,002	11/28/2007	1,300,000	84,142
16	Avenue A & 120th W	Rosamond	no zoning restrictions		14.5	631,620	1/24/2007	125,000	8,621
17	Henry Rd	Taft		M-2	14.3	620,730	2/5/2008	505,000	35,439
18	NWC McCutchen & Gosford Rd	Bakersfield		C2	10.0	435,600	6/15/2007	2,275,000	227,500
19	Compagnoni St	Bakersfield			10.0	435,600	9/21/2007	650,000	65,000
20	Mercedes Blvd	California City	10 Acres	R2.5	10.0	435,600	5/4/2007	25,000	2,500
21	Redrock Randsburg Rd	North Edwards	Vacant Land-10 Acres		10.0	435,600	5/26/2006	20,000	2,000
22	Eucalyptus Dr (2 Properties)	Bakersfield	Multi-Property Sale		9.6	418,176	11/9/2007	980,000	102,083
23	5901 Mills Rd	Bakersfield	Mills Road Land		8.8	381,150	9/12/2007	820,000	93,714
24	S China Lake Blvd @ Bowman Ave.	Ridgecrest	NEC of S. China Lake @ Bowman	GC, Ridgecrest	6.9	302,306	7/3/2008	1,500,000	216,139
25	1245 Kern St	Taft			6.4	279,655	8/31/2007	200,000	31,153
26	N Norma St @ West Ward Avenue	Ridgecrest		R-2	6.0	259,618	10/4/2006	420,000	70,470
27	W Day Ave @ Airport Drive	Bakersfield			5.8	250,470	10/4/2007	1,300,000	226,087
<i>Land Sales Avg.:</i>									\$44,347
<i>Land Sales Median:</i>									\$49,990

Sources: Costar Group Inc., 2008; and, CBRE Consulting

- The above is not an exhaustive list of sales. Only those sales greater than 5 acres in size with complete sale price information, as reported by the Costar Group, are presented.

-3463-

Item No. E.3

AR039486



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August 31, 2012

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**RE: Comment on Draft Environmental Impact Report for ProLogis
Eucalyptus Industrial Park (State Clearinghouse No. 2008021002)**

Dear Mr. Bradshaw:

I am writing on behalf of Laborers International Union of North America, Local Union No. 1184 and its members living in Riverside County (collectively "LIUNA Local Union No. 1184" or "LIUNA" or "Commenters") regarding the Draft Environmental Impact Report ("DEIR") prepared for the ProLogis Eucalyptus Industrial Park, State Clearinghouse No. 2008021002 ("Project").

We have reviewed the DEIR with the assistance of:

1. Atmospheric Scientist, Dr. James Clark, Ph.D.
2. Hydrogeologist, Matthew Hagemann, C.Hg., MS.

These experts have prepared written comments that are attached hereto, and which are incorporated in their entirety. The City of Moreno Valley ("City") should respond to the expert comments separately. These experts and our own independent review demonstrate that the DEIR is woefully inadequate and that a new supplemental EIR is required to be prepared and recirculated for public comment. In particular, the EIR suffers from the following significant errors and omissions, among others:

- **SEGMENTATION OF PROJECT:** The DEIR improperly segments the Project by failing to include the infrastructure (e.g., roads, water, and sewer) as part of the Project.
- **LOSS OF FARMLAND:** The DEIR acknowledges that the Project's conversion of Prime Farmland is a significant impact, but the DEIR fails to adequately mitigate for the loss of farmland. The conclusion that mitigation measures are infeasible is unsupported.
- **HAZARDOUS MATERIALS:** The baseline of the physical environmental conditions in the vicinity of the Project is erroneous because the DEIR does not provide any details on the types of pesticides used on the Project site, relies on two outdated Phase I Environmental Site Assessments ("ESAs") that do not cover the entire Project site, and fails to disclose the status of an underground storage tank.
- **GREENHOUSE GAS:** The DEIR fails to provide support for the conclusion that greenhouse gas emissions after mitigation will be less than significant.
- **AIR QUALITY:** The DEIR fails to adequately analyze impacts to air quality because: (1) the DEIR underestimates the potential particulate emissions for the construction phase of the Project, (2) fails to accurately compare construction emissions to daily construction significance thresholds, (3) fails to consider health risks from contaminated dust, (4) fails to properly identify and address the Project's operational air quality impacts, (5) fails to disclose impacts to offsite receptors, and (6) fails to adequately analyze cumulative impacts.

Commenters urge the City to revise the EIR to adequately describe, analyze, and mitigate the Project and its impacts.¹ The revised EIR should be recirculated to allow public review and comment.

I. PROJECT DESCRIPTION

The Project site encompasses 122.8 acres of land located within the City of Moreno Valley, south of and adjacent to SR-60, east of Moreno Valley Auto Mall, and adjacent to and west of the Quincy Channel in Riverside County. (DEIR, p. 3-1). Single-family residential uses are located approximately 50 feet southeast of the southeastern corner of the Project site. (DEIR, p. 3-1). The Assessor's Parcel Numbers ("APNs") for this site are 488-330-011, 488-330-012, 488-330-013, 488-330-017, 488-330-018, 488-330-019, 488-330-022, 488-330-023, 488-330-024, and 488-330-025. (DEIR, p. 3-1).

¹ We reserve the right to supplement these comments at later hearings and proceedings for this Project. See, *Galante Vineyards v. Monterey Water Dist.* (1997) 60 Cal. App. 4th 1109.

The Project would include the construction of a warehouse facility comprising six buildings consisting of a total of approximately 2,244,638 square feet. (DEIR, p. 3-2). The Project site is divided into 2 areas: (1) the northern area (north of future Eucalyptus Avenue) would contain approximately 1,030,377 square feet of warehouse uses divided between two buildings and (2) the southern area (south of the future Eucalyptus Avenue) would consist of approximately 1,214,261 square feet of warehouse uses divided among four separate buildings. (DEIR, p. 3-2). The specific uses/users are not known at this time. (DEIR, p. 3-11).

The Project site currently consists of 57 acres used to grow grapefruit, 36 acres used for hay and alfalfa production, as well as portions that are vacant. (DEIR p. 4.2-1). Approximately 82.5 acres of the Project site is designated as Prime Farmland. (DEIR, p. 4.2-6).

The Project would require significant changes to the General Plan and local zoning ordinances including:

- **General Plan Amendment.** The proposed project includes an amendment to the Land Use Element to change the General Plan designations for a portion of the project site from Residential 15, Residential 5 and Residential 2 to Business Park. (DEIR, p. 1-2). The project also proposes an amendment to the Circulation Element by making changes to the alignment of Encilia Street and the removal of Quincy Street from within the project boundaries. (DEIR, p. 1-2).
- **Change of Zone.** The proposed project includes a change to the project site zoning from Business Park (BP), Business Park Mixed-use (BPX), Residential Agriculture 2 (RA2), Residential 5 (R5), and Residential 15 (R15) to Light Industrial (LI). (DEIR, p. 1-2).
- **Municipal Code Amendment.** The project includes a Municipal Code Amendment to establish a minimum clearance of 250 feet between adjacent residential zoning districts and any truck court or primary truck circulation driveway in lieu of the buffer established by the Business Park zone. (DEIR, p. 1-2).

II. Standing

Members of Local Union No. 1184 live, work, and recreate in the immediate vicinity of the Project site. These members will suffer the impacts of a poorly executed or inadequately mitigated Project, just as would the members of any nearby homeowners association, community group, or environmental group. Hundreds of LIUNA Local Union No. 1184 members live and work in areas that will be affected by traffic, air pollution, and water pollution generated by the Project.

In addition, construction workers will suffer many of the most significant impacts from the Project as currently proposed, such as from air pollution emissions from poorly maintained or controlled construction equipment, possible risks related to hazardous materials on the Project site, and other impacts. Therefore, LIUNA Local Union No. 1184 and its members have a direct interest in ensuring that the Project is adequately analyzed and that its environmental and public health impacts are mitigated to the fullest extent feasible.

III. LEGAL STANDARDS

A. EIR

CEQA requires that an agency analyze the potential environmental impacts of its proposed actions in an environmental impact report (“EIR”) (except in certain limited circumstances). (See, e.g., Pub. Res. Code § 21100). The EIR is the very heart of CEQA. (*Dunn-Edwards v. BAAQMD* (1992) 9 Cal.App.4th 644, 652). “The ‘foremost principle’ in interpreting CEQA is that the Legislature intended the act to be read so as to afford the fullest possible protection to the environment within the reasonable scope of the statutory language.” (*Communities for a Better Environment v. Calif. Resources Agency* (2002) 103 Cal. App. 4th 98, 109).

CEQA has two primary purposes. First, CEQA is designed to inform decision makers and the public about the potential, significant environmental effects of a project. (14 Cal. Code Regs. (“CEQA Guidelines”) § 15002(a)(1)). “Its purpose is to inform the public and its responsible officials of the environmental consequences of their decisions before they are made. Thus, the EIR ‘protects not only the environment but also informed self-government.’” (*Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal. 3d 553, 564). The EIR has been described as “an environmental ‘alarm bell’ whose purpose it is to alert the public and its responsible officials to environmental changes before they have reached ecological points of no return.” (*Berkeley Keep Jets Over the Bay v. Bd. of Port Comm’rs.* (2001) 91 Cal. App. 4th 1344, 1354 (“*Berkeley Jets*”); *County of Inyo v. Yorty* (1973) 32 Cal.App.3d 795, 810).

Second, CEQA requires public agencies to avoid or reduce environmental damage when “feasible” by requiring “environmentally superior” alternatives and all feasible mitigation measures. (CEQA Guidelines § 15002(a)(2) and (3); See also, *Berkeley Jets*, 91 Cal. App. 4th 1344, 1354; *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 564). The EIR serves to provide agencies and the public with information about the environmental impacts of a proposed project and to “identify ways that environmental damage can be avoided or significantly reduced.” (Guidelines §15002(a)(2)). If the project will have a significant effect on the environment, the agency may approve the project only if it finds that it has “eliminated or substantially lessened all significant effects on the environment where feasible” and that

any unavoidable significant effects on the environment are “acceptable due to overriding concerns.” (Pub.Res.Code § 21081; 14 Cal.Code Regs. § 15092(b)(2)(A) & (B)).

While the courts review an EIR using an “abuse of discretion” standard, “the reviewing court is not to ‘uncritically rely on every study or analysis presented by a project proponent in support of its position. A ‘clearly inadequate or unsupported study is entitled to no judicial deference.’” (*Berkeley Jets*, 91 Cal. App. 4th 1344, 1355 (emphasis added), quoting, *Laurel Heights Improvement Assn. v. Regents of University of California*, 47 Cal. 3d 376, 391 409, fn. 12 (1988)). As the court stated in *Berkeley Jets*, 91 Cal. App. 4th at 1355:

A prejudicial abuse of discretion occurs “if the failure to include relevant information precludes informed decisionmaking and informed public participation, thereby thwarting the statutory goals of the EIR process.” (*San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal. App. 4th 713, 722; *Galante Vineyards v. Monterey Peninsula Water Management Dist.* (1997) 60 Cal. App. 4th 1109, 1117; *County of Amador v. El Dorado County Water Agency* (1999) 76 Cal. App. 4th 931, 946).

B. Supplemental EIR

Recirculation of an EIR prior to certification is required “when the new information added to an EIR discloses: (1) a new substantial environmental impact resulting from the project or from a new mitigation measure proposed to be implemented (cf. Guidelines, § 15162, subd. (a)(1), (3)(B)(1)); (2) a substantial increase in the severity of an environmental impact unless mitigation measures are adopted that reduce the impact to a level of insignificance (cf. Guidelines, § 15162, subd. (a)(3)(B)(2)); (3) a feasible project alternative or mitigation measure that clearly would lessen the environmental impacts of the project, but which the project’s proponents decline to adopt (cf. Guidelines, § 15162, subd. (a)(3)(B)(3), (4)); or (4) that the draft EIR was so fundamentally and basically inadequate and conclusory in nature that public comment on the draft was in effect meaningless.” *Laurel Heights Improvement Assn. v. Regents of University of California* (1993) 6 Cal. 4th 1112, 1130, citing *Mountain Lion Coalition v. Fish & Game Comm’n* (1989) 214 Cal.App.3d 1043.

Significant new information requiring recirculation can include:

- (1) A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented.
- (2) A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.

(3) A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the significant environmental impacts of the project, but the project's proponents decline to adopt it.

(4) The draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded.

(14 Cal. Code Regs. § 15088.5(a)).

The DEIR fails to analyze significant environmental impacts pertaining to the Project and to fully consider available mitigation measures to address those impacts. A revised EIR is required to be prepared and recirculated to address these deficiencies.

IV. THE DEIR IMPROPERLY SEGMENTS THE PROJECT

A. Legal Standard

The courts have repeatedly held that “an accurate, stable and finite project description is the *sine qua non* of an informative and legally sufficient [CEQA document].” *County of Inyo v. City of Los Angeles*, 71 Cal.App.3d 185, 193 (1977). Thus, CEQA mandates “that environmental considerations do not become submerged by chopping a large project into many little ones -- each with a minimal potential impact on the environment -- which cumulatively may have disastrous consequences.” *Bozung v. LAFCO*, 13 Cal.3d 263, 283-84 (1975); *City of Santee v. County of San Diego*, 214 Cal.App.3d 1438, 1452 (1989). Before undertaking a project, the lead agency must assess the environmental impacts of all reasonably foreseeable phases of a project and a public agency may not segment a large project into two or more smaller projects in order to mask serious environmental consequences. As the Court of Appeal stated:

The CEQA process is intended to be a careful examination, fully open to the public, of the environmental consequences of a given project, **covering the entire project, from start to finish**...the purpose of CEQA is not to generate paper, but to compel government at all levels to make decisions with environmental consequences in mind.

Natural Resources Defense Council v. City of Los Angeles, 103 Cal.App.4th 268 (2002) (emphasis added).

In *County of Amador v. City of Plymouth*, 149 Cal. App. 4th 1089, 1095 (2007) an Indian tribe intended to build a large gaming development comprised of a hotel, restaurants, and bars, on land located in or adjacent to the city. The Court held that the

construction of public works, including a city road to the casino hotel, constituted a project within the scope of CEQA. *Id.* at 1100. The Court cited to the CEQA Guideline § 15378(a)(1) which states that the following is included in the term “project”: “public works construction and related activities, clearing or grading of land [and] improvements to existing public structures...” *Id.* at 1100.

B. The DEIR Improperly Segments the Project By Failing to Include the Infrastructure as Part of the Project

The DEIR states:

If the proposed project is constructed prior to the West Ridge project, ProLogis will install the infrastructure necessary to serve its project (e.g., roads, water, and sewer) and will be reimbursed by the City from the West Ridge developer at the time that project is constructed. If the West Ridge project is constructed first, ProLogis will contribute an appropriate amount to the City for a reimbursement account to help off-site improvement costs installed by the West Ridge project that serve the ProLogis project. The timing of improvements shall be coordinated by the City in cooperation with ProLogis and the West Ridge.

(DEIR, p. 3-11). Instead of including the roads, water, and sewer lines required to serve the ProLogis Project as part of the Project, the DEIR treats these infrastructure improvements as a separate project included in the cumulative projects list provided in Table 3.C: Cumulative Projects. (DEIR, p. 3-16). The City is improperly chopping the ProLogis Project into different segments, which is prohibited by CEQA because proper analysis of the whole project is thwarted. Like the casino road in *County of Amador v. City of Plymouth*, the roads, water, and sewer lines that will serve the ProLogis Project must be included as part of the Project and properly analyzed as part of the whole Project.

V. THE DEIR FAILS TO ANALYZE AND MITIGATE ALL POTENTIALLY SIGNIFICANT IMPACTS

An EIR must disclose all potentially significant adverse environmental impacts of a project. (Pub. Res. Code § 21100(b)(1); 14 Cal.Code Regs. § 15126(a); *Berkeley Jets*, 91 Cal. App. 4th 1344, 1354). CEQA requires that an EIR must not only identify the impacts, but must also provide “information about how adverse the impacts will be.” (*Santiago County Water Dist. v. County of Orange* (1981) 118 Cal.App.3d 818, 831). The lead agency may deem a particular impact to be insignificant only if it produces rigorous analysis and concrete substantial evidence justifying the finding. (*Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692).

CEQA requires public agencies to avoid or reduce environmental damage when “feasible” by requiring mitigation measures. (CEQA Guidelines § 15002(a)(2) and (3); See also, *Berkeley Jets*, 91 Cal. App. 4th 1344, 1354; *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 564). The EIR serves to provide agencies and the public with information about the environmental impacts of a proposed project and to “identify ways that environmental damage can be avoided or significantly reduced.” (Guidelines §15002(a)(2)). If the project will have a significant effect on the environment, the agency may approve the project only if it finds that it has “eliminated or substantially lessened all significant effects on the environment where feasible” and that any unavoidable significant effects on the environment are “acceptable due to overriding concerns.” (Pub.Res.Code § 21081; 14 Cal.Code Regs. § 15092(b)(2)(A) & (B)).

In general, mitigation measures must be designed to minimize, reduce, or avoid an identified environmental impact or to rectify or compensate for that impact. (CEQA Guidelines § 15370). Where several mitigation measures are available to mitigate an impact, each should be discussed and the basis for selecting a particular measure should be identified. (*Id.* at § 15126.4(a)(1)(B)). A lead agency may not make the required CEQA findings unless the administrative record clearly shows that all uncertainties regarding the mitigation of significant environmental impacts have been resolved.

CEQA requires the lead agency to adopt feasible mitigation measures that will substantially lessen or avoid the Project’s potentially significant environmental impacts (Pub. Res. Code §§ 21002, 21081(a)), and describe those mitigation measures in the CEQA document. (Pub. Res. Code § 21100(b)(3); CEQA Guidelines § 15126.4). A public agency may not rely on mitigation measures of uncertain efficacy or feasibility. (*Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 727 (finding groundwater purchase agreement inadequate mitigation measure because no record evidence existed that replacement water was available)). “Feasible” means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors. (CEQA Guidelines § 15364). To demonstrate economic infeasibility, “evidence must show that the additional costs or lost profitability are sufficiently severe as to render it impractical to proceed with the project.” (*Citizens of Goleta Valley v. Board of Supervisors* (1988) 197 Cal.App.3d 1167, 1181). The EIR must provide evidence and analysis to show project cannot be economically implemented. (*Kings County, supra*, 221 Cal.App.3d at 734-737). This requires not just cost data, but also data showing insufficient income and profitability. (*See Burger v. County of Mendocino* (1975) 45 Cal.App.3d 322, 327 (infeasibility claim unfounded absent data on income and expenditures showing project unprofitable); *San Franciscans Upholding the Downtown Plan v. City and County of San Francisco* (2002) 102 Cal.App.4th 656, 694 (upholding infeasibility finding based on analysis of costs, projected revenues, and investment requirements)). Mitigation measures must be fully enforceable through permit conditions, agreements, or other legally binding instruments. (*Id.* at § 15126.4(a)(2)).

A lead agency may not conclude that an impact is significant and unavoidable without requiring the implementation of all feasible mitigation measures to reduce the impacts of a project to less than significant levels. (CEQA Guidelines §§ 15126.4, 15091).

A. The DEIR Fails to Adequately Mitigate for the Loss of Farmland

1. Preservation Is an Appropriate Mitigation Measure for the Loss of Agricultural Resources

Preservation can be used as a tool to mitigate impacts of urbanizing land and it is encouraged and supported by legislative pronouncements and case law. For example,

[s]ee the following legislative pronouncements to the effect that conversion of agricultural land is of significant concern, and that the preservation of agricultural land is significant goal of the state. Gov. Code, § 51220 (Williamson Act findings that agricultural preservation is valuable and necessary); Civ. Code, § 815 (legislative declaration that preservation of agricultural lands “is among the most important environmental assets of California”); Pub. Resources Code, § 10200 *et seq.* (California Farmland Conservancy Program Act (formerly the Agricultural Land Stewardship Program of 1995), promoting the establishment of agricultural easements as a means to preserve agricultural land); Pub. Resources Code, §§ 21031.1, 21061.2, 21095 (CEQA provisions requiring the Resources Agency to take steps it to ensure that the environmental effects of agricultural land conversion are quantitatively and consistently considered in the environmental review process); Stats. 1993, ch. 812, § 1, subd. (d) (declaring a legislative intent that CEQA should play an important role in the preservation of agricultural lands).

In *Mira Mar [Mobile Community v. City of Oceanside]* (4th Dist. 2004) 119 Cal. App. 4th 477 [14 Cal. Rptr. 3d 176]], the court heard a challenge to the City of Oceanside’s approval of a condominium project on 7.5 acres of private property. The project would cause the loss of about .86 acres of coastal sage scrub, which was identified as a significant impact to a sensitive resource. The EIR required the applicant to mitigate for this loss at a ratio of 3 to 1 (or 2.58 acres of mitigation for .86 acres of lost habitat). In implementing this mitigation measure, the city required the preservation of .65 acres of undisturbed coastal sage scrub, the restoration and preservation of 2.3 acres of disturbed coastal sage scrub, and the creation of .63 acres of new coastal sage scrub on site. Petitioners argued that this mitigation was inadequate because *preservation* of coastal sage scrub does not mitigate for lost habitat, making the measure “illusory and

inadequate.” 119 Cal. App. 4th 477, 495. The Court of Appeal disagreed, citing CEQA Guidelines section 15370, as well as the opinions of various resource agencies, for the proposition that preservation can be a feasible means of reducing or eliminating the impact of lost habitat.

While the *Mira Mar* case deals specifically with biological and habitat resources, the reasoning of this case seems to have more general applicability to mitigation for lost resources, including agricultural resources.

(Guide to CEQA, Michael H. Remy, et. al., eleventh edition, p. 549-550).

2. The DEIR Fails to Adopt Appropriate Mitigation Measures for the Loss of Farmland

Approximately 82.5 acres of the Project site is designated as Prime Farmland. (DEIR, p. 4.2-6). The DEIR states that “[b]ecause Prime Farmland is a finite resource, its conversion to a non-agricultural use is significant.” (DEIR, p. 4.2-6). The DEIR identifies several mitigation measures including mitigation measures discussed in the City General Plan EIR:

- Enrolling productive agricultural land, not presently under contract, under a Williamson Act Contract;
- Providing protection to ongoing agricultural operations from complaints and nuisance complaints from adjacent new development;
- Protecting productive agricultural land subject to conversion through the purchase of or transfer of its development rights;
- Purchasing conservation easements on existing agricultural land to ensure that the land is never converted to urban uses; and
- Donating funds to a regional or statewide program that promotes and implements the use of agricultural land conservation easements.

(DEIR, p. 4.2-7 - 4.2-8). However, the DEIR states that

[t]he potential mitigation measures identified by the City’s General Plan have been deemed infeasible by the property owner under current economic conditions. In addition, supplementary analysis of the project

site and local economic conditions indicates that continued citrus production and/or the raising of row crops would not be economically feasible on the project site (see Appendix L).

(DEIR, p. 4.2-8) (emphasis added).

The conclusion that the mitigation measures are infeasible is completely unsupported. The DEIR states the City General Plan EIR mitigation measure of enrolling productive land under Williamson Act contracts is infeasible because the “contracts are entered into voluntarily by property owners” and these contracts would “result only in temporary contracts at any time after the ten-year contract period ends.” (DEIR, p. 4.2-8). Mitigation measures are designed to minimize significant environmental impacts, not necessarily to eliminate them. (Pub. Res. Code § 21100(b)(3); 14 Cal. Code Regs. § 15126.4(a)(1)). The minimum term for a Williamson Act contract is 10 years, however jurisdictions have the option of making them longer. (*Williamson Act Program - Basic Contract Provisions*, State of California Department of Conservation, available at http://www.conservation.ca.gov/dlrp/lca/basic_contract_provisions/Pages/index.aspx#what is a williamson act contract). Enrolling land into Williamson Act contracts would minimize the environmental impacts of converting Prime Farmland to warehouses.

In evaluating the feasibility of the mitigation measures: (1) purchasing conservation easements and (2) donating funds to a regional or statewide program, the DEIR states

The purchase or transfer of development rights, purchase of conservation easements, or donation of funds to assist in the conservation of agricultural land would need to be implemented to ensure the preservation of agricultural land. As stated previously, the City anticipates the conversion of agricultural land within the City and does not set aside land for permanent preservation. The City expects that the majority of the land within the City will be converted to urban uses, although some agriculture will continue as interim uses, as allowed by the City’s Development Code for all zoning categories.

(DEIR, p. 4.2-8 - 4.2-9). These “reasons” are flawed because the identified mitigation measure was to donate funds to regional or statewide programs that promote and implement the use of agricultural land conservation easements. The “reasons” do not address why donating funds to regional or statewide programs is infeasible.

A supplemental EIR is required to analyze and require implementation of these feasible mitigation measures to reduce the Project’s impacts on agricultural land. The fact that the measures are set forth in the City’s own General Plan itself makes a prima facie case that the measures are feasible and should be implemented. If the City

concludes that the measures are infeasible, then it must provide substantial evidence to demonstrate infeasibility. The EIR must provide evidence and analysis to show project cannot be economically implemented. (*Kings County, supra*, 221 Cal.App.3d at 734-737). This requires not just cost data, but also data showing insufficient income and profitability. (*See Burger v. County of Mendocino* (1975) 45 Cal.App.3d 322, 327 (infeasibility claim unfounded absent data on income and expenditures showing project unprofitable); *San Franciscans Upholding the Downtown Plan v. City and County of San Francisco* (2002) 102 Cal.App.4th 656, 694 (upholding infeasibility finding based on analysis of costs, projected revenues, and investment requirements)). The EIR is devoid of any such evidence and is therefore legally inadequate.

B. The DEIR Fails to Adequately Analyze Hazards and Hazardous Materials and Establishes an Erroneous Baseline

1. CEQA Baseline Standard

Every CEQA document must start from a “baseline” assumption. The CEQA “baseline” is the set of environmental conditions against which to compare a project’s anticipated impacts. *Communities for a Better Environment v. So Coast Air Qual. Mgmt. Dist.* (2010) 48 Cal. 4th 310, 321. Section 15125(a) of the CEQA Guidelines (14 C.C.R., § 15125(a)) states in pertinent part that a lead agency’s environmental review under CEQA:

...must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time [environmental analysis] is commenced, from both a local and regional perspective. This environmental setting will normally constitute the baseline physical conditions by which a Lead Agency determines whether an impact is significant.

(See, *Save Our Peninsula Committee v. County of Monterey* (2001) 87 Cal.App.4th 99, 124-125 (“*Save Our Peninsula*”). As the court of appeal has explained, “the impacts of the project must be measured against the ‘real conditions on the ground,’” and not against hypothetical permitted levels. (*Save Our Peninsula*, 87 Cal.App.4th 99, 121-123). As the court has explained, using such a skewed baseline “mislead(s) the public” and “draws a red herring across the path of public input.” (*San Joaquin Raptor Rescue Center v. County of Merced* (2007) 149 Cal.App.4th 645, 656; *Woodward Park Homeowners v. City of Fresno* (2007) 150 Cal.App.4th 683, 708-711).

2. Residual Pesticides in the Soil May Pose Health Risks to Workers and Nearby Residents

According to the DEIR, 57 acres of the Project site are used to grow grapefruit and 36 acres of the Project site are used for hay and alfalfa production. (DEIR, p. 4.2-1).

The DEIR and supporting documents fail to provide any specific details on the types of pesticides that have been used on the Project site in association with these agricultural operations and therefore the DEIR fails to adequately describe the environmental setting for the Project. According to Mr. Hagemann,

[o]ur review has shown known and potential pesticide use at the Project site as follows:

- Data available online from the California Department of Pesticide Regulation show that 2,4-D, 2-Ethylhexyl Ester was used on the Project site.^{2,3} Occupational exposure to 2,4-D, 2-Ethylhexyl Ester can occur via inhalation or dermal contact and can result in skin irritation, respiratory failure, hyperventilation, and pulmonary enemas.⁴
- Organochlorine pesticides DDE and DDT were detected in soil samples collected at the Project site⁵, indicating past use. Use of organochlorine pesticides in the area is common: review of the Department of Toxic Substances Control's (DTSC) Envirostor database shows that the surrounding lands have been surveyed for organochlorine pesticides, DDE and DDT.⁶ These pesticides can persist in soil for hundreds of years despite being banned in the 1970s.⁷ Exposure to DDT can result in headaches, nausea, and convulsions.⁸ The U.S. EPA identifies DDT and DDE as probable human carcinogens.⁹
- The EPA states that soils at fruit orchards, such as the grapefruit orchard on the Project site, may contain high levels of arsenic from application as a pesticide.¹⁰ Another chemical used on fruit orchards is lead arsenate, a very persistent pesticide.¹¹ Arsenic is a known human carcinogen and even short-term inhalation of arsenic

² http://cdpr.ca.gov/pub/outgoing/calpip/26814174623515_120824104149.html

³ http://cdpr.ca.gov/pub/outgoing/calpip/26814174623515_120824104217.html

⁴ <http://toxnet.nlm.nih.gov/cgi-bin/sis/search/a?dbs+hsdb:@term+@DOCNO+7309>

⁵ Phase I Environmental Site Assessment, 84 acres. Near Intersection of Pittit Street and Highway 60, Moreno Valley, California, p. 9 and Phase I Environmental Site Assessment, 37 acres. Near Intersection of Pittit Street and Highway 60, Moreno Valley, California, p. 8

⁶ http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=60000825 and http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=60000931

⁷ <http://www.atsdr.cdc.gov/toxprofiles/tp35.pdf>, p. 3

⁸ <http://www.epa.gov/ttn/atw/hlthef/dde.html>

⁹ <http://www.atsdr.cdc.gov/toxfaqs/faq.asp?id=80&tid=20>

¹⁰ <http://water.epa.gov/drink/info/well/health.cfm>

¹¹ <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1551991/>

dust can cause gastrointestinal effects¹² while lead is known to cause neurotoxicological effects.¹³

Pesticide use at the Project site was not disclosed in the DEIR and the detection of pesticide residuals in soil were not described in the Hazards and Hazardous Materials section.

Failure to disclose the presence of pesticide residuals in Project site soils may pose significant health risks to construction workers. Construction of the Project requires grading and the disturbance of subsurface soils and removal of citrus groves (DEIR, p. 4.7-21). During earthmoving activities, construction workers will be exposed, via inhalation of dust and dermal contact, to Project site soils which may contain harmful levels of pesticide residuals associated with agricultural activities on the site. To protect worker safety, Project site soils must be sampled for pesticides. Sampling results should be compared to health-protective regulatory screening levels such as U.S. EPA Regional Screening Levels¹⁴ and California Human Health Screening Levels.¹⁵

Soil sampling results should also be evaluated for the protection of nearby residents, located 50 feet from the southern boundary and 200 feet from the northern boundary of the Project site (DEIR, p. 4.3-6). Inhalation of pesticides has been linked to asthma in recent research.^{16,17} A report prepared by the California Department of Health identifies pesticides as an asthma trigger.¹⁸ Offsite receptors, including any children living in the neighboring residences, may be exposed to pesticide residuals via dust generated during Project construction.

Construction activities, such as grading and excavation of soils, may generate dust that contains pesticides in concentrations that are harmful to the health of workers and nearby residents and which may act as an asthma trigger. Project site soils should be sampled and results should be compared to human health screening levels. A revised DEIR should be prepared to disclose the results of sampling and include any necessary mitigation to reduce impacts to the health of construction workers and nearby residents.

¹² <http://www.epa.gov/ttn/atw/hlthef/arsenic.html>

¹³ <http://www.epa.gov/lead/pubs/learn-about-lead.html#effects>

¹⁴ <http://www.epa.gov/region9/superfund/prg/>

¹⁵ <http://www.calepa.ca.gov/brownfields/documents/2005/CHHSLsGuide.pdf>

¹⁶ <http://extension.psu.edu/ipm/resources/urbanphilly/partnerships/handouts/asthma-pests.pdf>

¹⁷ <http://www.ncbi.nlm.nih.gov/pubmed/21368619>

¹⁸ <http://www.cdph.ca.gov/programs/caphi/Documents/AsthmaStrategicPlan.5-5-08.pdf>, p. 22

3. The Phase I Environmental Site Assessments Completed for the Project Site are Outdated and Inadequate

According to Mr. Hagemann,

The DEIR relies on the findings from two Phase I Environmental Site Assessments (ESAs) that were completed in October and November 2003, nearly nine years ago. The Phase I ESAs surveyed 121 acres of the 123-acre Project site. The Applicant purchased the Project site more than five years ago.¹⁹ A Phase I ESA, according to the U.S. EPA, must be conducted within one year of the acquisition of the property and on-site visual inspections must be completed within 180 days prior to acquiring ownership of the property.²⁰

Because the Phase I ESAs are dated and omit two acres of the Project site, they cannot be used to evaluate conditions that are potentially hazardous to construction workers and future site personnel. Therefore, the DEIR's analysis of the Project site based on these Phase I ESAs is inadequate.

Review of Google Earth images shows that the Project site has been used for ongoing agricultural operations since the Phase I ESAs were completed in 2003. Limited pesticide sampling was conducted during the Phase I ESAs (a total of 8 soil samples for a 123-acre Project site) but because the samples were collected nine years ago and because they do not reflect continued agricultural use, the results are reflective of current site conditions.

The Phase I ESAs cover 121 acres of the 123-acre Project site. We have created a map to show the areas of the Project site surveyed by the two 2003 Phase I ESAs and the boundaries for the current Project site (Attachment A). As the map shows, not all areas of the current Project site were included in the 2003 Phase I ESAs' site assessments.

The DEIR fails to establish an adequate environmental setting for the Project site because it relies on Phase I ESAs that are outdated and do not cover the entire Project site. A revised DEIR is required, including a new Phase I ESA, to evaluate the Project site's current environmental conditions.

¹⁹ <http://www.pe.com/local-news/riverside-county/moreno-valley/moreno-valley-headlines-index/20120726-moreno-valley-officials-seek-comments-on-prologis-project.ece>

²⁰ <http://www.epa.gov/brownfields/aai/aicerclafs.pdf>

4. The DEIR Fails to Disclose the Status of an Underground Storage Tank

According to Mr. Hagemann,

A 13,400 gallon underground storage tank (UST), abandoned in the 1950s, was removed from the Project site in 2004 (Appendix F, p. 3/191). The Phase I ESA recommended an additional investigation to be conducted in the area of the former UST (Appendix F, p. 10/191). Accordingly, a permit for removal of the UST was submitted to the Riverside County's Department of Environmental Health in December 2003 and soil samples around the area of the UST were analyzed in 2004. However, the DEIR and supporting documents did not include any documentation that the UST was properly closed by the Riverside County Department of Environmental Health. If the UST removal was not approved, an Underground Storage Tank Closure Application and Permit²¹, per the Riverside County Department of Environmental Health Guidelines,²² must be submitted.

The DEIR fails to establish an adequate baseline because it does not provide the status of a 13,400 gallon UST. A revised DEIR is required to disclose this important information (i.e., whether closure was granted by the Riverside County Department of Environmental Health).

C. The DEIR Fails to Adequately Analyze Greenhouse Gas Emissions

The DEIR states that the Project's operational greenhouse gas (GHG) emissions, before mitigation, are estimated to be 79,000 metric tons of CO₂e/year (MT CO₂e/yr) which exceed the SCAQMD threshold of 10,000 MT CO₂e/yr and are therefore considered significant. (DEIR, p. 4.13-19). The Project's GHG emissions exceed the SCAQMD threshold by nearly eight times. After mitigation, the DEIR states that GHG emissions will be less than significant. (DEIR, p. 4.13-21). This conclusion is completely unsupported. The DEIR fails calculate what the Project's GHG emissions will be after the mitigation measures are implemented. In fact, the DEIR and supporting documents, including a GHG Study (Appendix B), fail to provide any evidence that the proposed mitigation measures will reduce GHG emissions by a factor of eight.

According to Mr. Hagemann,

²¹ http://www.rivcoeh.org/opencms/system/galleries/download/Environmental-Health/HMM/UST_Closure_App.pdf

²² http://www.rivcoeh.org/opencms/system/galleries/download/Environmental-Health/HMM/Closure_by_removal_UST.pdf

A revised DEIR should be prepared to show the efficiency of the Project's proposed mitigation measures in reducing greenhouse gases. If these measures do not account for an eight-fold reduction in the Project's estimated GHG levels, additional mitigation measures (listed below) that are routinely considered in other CEQA projects should be implemented:

- Require preparation of a traffic control plan;
- Demonstrate proper inspection and maintenance of construction equipment;
- Implement a carpool program for construction workers;
- Employ a construction site manager to verify that engines are properly maintained and keep a maintenance log;
- Configure construction parking to minimize traffic interference;
- Consolidate truck deliveries when possible;
- Provide dedicated turn lanes for movement of construction trucks and equipment on and off site;
- Suspend use of all construction equipment operations during second stage smog alerts;
- Establish a staging zone for trucks that are waiting to load or unload material at the work zone in a location where diesel emissions from the trucks will have minimum impact on abutters and the general public;
- Locate construction equipment away from sensitive receptors such as fresh air intakes to buildings, air conditioners and operable windows;
- Require all diesel trucks used by construction contractor(s) at the site, or for on-road hauling of construction material, to be post-1996 models; Diesel portable generators less than 50 hp shall not be allowed at the construction site;
- Use of hybrid and fuel efficient construction equipment and support vehicles (e.g., pick-up trucks);
- Use of grid electricity for smaller equipment such as saws, pumps, and welders;²³
- Reduction in vehicle miles travelled in construction crew commutes through trip carpooling, trip reduction, providing bus service for crews from work sites to carpool parking areas, and in providing incentives to carpool; and
- Use of a Heavy-Duty Off-Road Vehicle Plan to ensure compliances with construction mitigation measures (e.g., hourly meters on equipment, documenting the serial number, horsepower,

²³ <http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf>, p. 47

manufacture age, fuel, etc. of all onsite equipment and daily logging of the operating hours of the equipment).²⁴

A supplemental EIR should be prepared that calculates the Project's GHG emissions after implementation of all feasible mitigation measures. The supplemental EIR should analyze all mitigation measures set forth in the GHG Guidance Document published by the California Attorney General, Addressing Climate Change at the Project Level (see attached exhibit, also available at http://ag.ca.gov/globalwarming/pdf/GW_mitigation_measures.pdf). If GHG impacts remain significant after implementation of all feasible mitigation measures, then the EIR must acknowledge that the impacts are significant and unavoidable, and the City must adopt a statement of overriding considerations.

D. The DEIR Fails to Adequately Analyze Impacts to Air Quality

1. The DEIR Underestimates the Potential Particulate Emissions for the Construction Phase of the Project

Computer modeling (e.g., the California Air Resource Board's ("CARB's") Urban Emission ("URBEMIS") and the California Emissions Estimator Model ("CalEEMod")) is used to estimate emissions of criteria pollutants during construction and operational phases of projects. The South Coast Air Quality Management District ("SCAQMD") permits the use of the outputs from both the URBEMIS and CalEEMOD in air quality analyses. According to Dr. Clark, there are significant differences between these two models that "must be highlighted in the DEIR." In pertinent part, Dr. Clark states:

The changes in the method used to estimate construction impacts from the proposed project by using the CalEEMod model instead of the URBEMIS model include:

- Failure to account for wind-blown fugitive dust²⁵. According to the July, 2011 CalEEMod Technical Paper, wind-blown fugitive dust is not calculated in CalEEMod. For sites as large as the proposed project site, this can result in significant quantities of particulate matter being released.
- SCAQMD's surveys of construction sites were limited to sites of 35 acres or less. For projects larger than 35 acres the data was extrapolated by increasing the number of construction days but not increasing the number of construction equipment pieces used on a

²⁴ Ibid., p. 431

²⁵ CalEEMod. Technical Paper: Methodology Reasoning and Policy Development of the California Emission Estimator Model. July, 2011. Pg 4.

given day. The impact is to reduce the construction PM estimates for the site as compared to URBEMIS²⁶.

- The acreage to be based upon Walker's Building Estimator's Reference Book. Grading in URBEMIS is based upon 25% of total project acreage in one day. The impact of this change is to decrease PM emissions from grading in the CalEEMod²⁷.

A revised DEIR should be prepared to highlight the differences between the two models so that the potential impacts are adequately analyzed.

2. The DEIR Fails to Accurately Compare Construction Emissions to Daily Construction Significant Thresholds

According to Dr. Clark, the CalEEMod results were not presented properly. The model shows CEQA significance levels were exceeded as well as South Coast Air Quality Management District Localized Significance Thresholds were exceeded. In pertinent part, Dr. Clark states:

Unlike the operational emissions from most projects, which are typically more or less continuous, emissions from construction sites are highly variable depending on the type of construction that is being performed. For example, grading results in large quantities of fugitive dust and combustion emissions from diesel-powered equipment. Short-term emissions during the various construction phases can be considerable and may result in degradation of local and regional air quality and severe health effects.

To determine whether short-term emissions may result in degradation of local and regional air quality and severe health effects, it is common practice for lead agencies to compare project emissions to quantitative significance thresholds developed by local air districts as a screening tool for CEQA review. Thresholds of significance for construction emissions are typically expressed on a short-term basis, *i.e.* daily or hourly basis to adequately capture impacts due to the high variability of emissions during different construction stages.

Table 1 presents a summary of short-term emissions thresholds developed by SCAQMD and other air districts for assessing impacts on air quality from construction projects.

²⁶ CalEEMod. Technical Paper: Methodology Reasoning and Policy Development of the California Emission Estimator Model. July, 2011. Pg 5.

²⁷ CalEEMod. Technical Paper: Methodology Reasoning and Policy Development of the California Emission Estimator Model. July, 2011. Pg 5.

**Table 1:
 CEQA significance thresholds for construction emissions from various air districts**

Air district construction thresholds*	NOx (lbs/day)	ROG (lbs/day)	PM₁₀ (lbs/day)	DPM (lbs/day)	PM_{2.5} (lbs/day)	CO (lbs/day)
SCAQMD	100	75	150		55	550
BAAQMD	54	54	82		54	
EDCAPCD	82	82				
SLOCAPCD				7		
MBUAPCD			82			550
FRAQMD	25	25	80			
SMAQMD	85					
YSAQMD	82	82	150			

SCAQMD = South Coast Air Quality Management District, CEAQ Handbook, 1993;
 BAAQMD = Bay Area Air Quality Management District, CEQA Guidelines 2009;
 EDCAPCD = El Dorado County Air Pollution Control District, CEQA Guide, February 2002;
 SLOCAPCD = San Louis Obispo County Air Pollution Control District, CEQA Air Quality Handbook, December 2009.
 MBUAPCD = Monterey Bay Unified Air Pollution Control District, CEQA Air Quality Guidelines, June 2004,
 FRAQMD = Feather River Air Quality Management District,
http://www.fraqmd.org/CEQA_Thresholds.htm;
 SMAQMD Sacramento Metropolitan Air Quality Management District, Guide to Air Quality Assessment, July 2004;
 YSAQMD, Yolo-Solano Air Quality Management District, Air Quality Handbook, Guidelines for Determining Air Quality Thresholds of Significance and Mitigation Measures for Proposed Development Projects that Generate Emissions from Motor Vehicles, revised 2002

A review of the CalEEMod analysis for the project shows that the mitigated construction emissions of ROG and PM_{2.5} exhaust (a surrogate for diesel particulate emissions) are in excess of the CEQA significance thresholds listed above. During Year 2013, ROG and PM_{2.5} exhaust emissions are estimated to be 368.03 lbs/day and 7.95 lbs/day, respectively.

In addition to the Significant Thresholds above, SCAQMD recommends the use of Localized Significance Thresholds (LSTs) to determine potential impacts to receptors near projects. According to the Air Quality Analysis prepared by the proponent, Table I of the Air Quality Analysis shows that the emissions of the pollutants on the peak day of construction are below the SCAQMD LST. In this table the proponent uses the emission estimates from the grading phase of the construction. The proponent inaccurately asserts that the emission levels will be below the LST values.

**Table 2:
 Construction LST Impacts from Air Quality Analysis**

Emission Sources	Pollutant Emissions, lbs/day			
	NOx	CO	PM ₁₀	PM _{2.5}
On-Site (grading) Emissions	104	55	8.4	6.3
LST Threshold	270	1,577	13	8
Significant Emissions?	No	No	No	No

A review of the CalEEMod analysis shows that the highest emission values are not associated with the grading phase. In Section 2.0 Emission Summary of the CalEEMod analysis presented in the Air Quality Analysis the construction impacts are listed as:

**Table 3:
 Construction LST Impacts from CalEEMod Output**

Emission Sources	Pollutant Emissions, lbs/day			
	NOx	CO	PM ₁₀	PM _{2.5}
Mitigated Construction Emissions	139.84	166.77	29.2	8.28
LST Threshold	270	1,577	13	8
Significant Emissions?	No	No	Yes	Yes

The Proponent's analysis of air quality impacts clearly fails to accurately describe the impacts of the emissions on the receptors closest to the project site. Based on my expert opinion, applicable significance thresholds, and the CalEEMod analysis performed by the proponent, I conclude that the Project will have significant adverse impacts from construction air emissions of fugitive dust, ROG, and diesel emissions. The lead agency must re-evaluate the construction emissions and incorporate a phased approach to estimate the true impacts of construction activities on air quality, and propose all feasible mitigation measures to reduce these significant emissions, in a RDEIR.

3. The DEIR Fails to Consider Health Risks From Contaminated Dust

According to Dr. Clark:

Residual contaminants in soils at the site may be entrained in dust generated during construction activities. The release of residual contamination is a potentially significant impact, given the past use of the site for agricultural production. According to the California Department of Toxic Substances Control August 2002 Interim Guidance for Sampling Agricultural Fields for School Sites (known sensitive receptors), “the most commonly detected pesticides have been DDT and its derivatives DDD and DDE, toxaphene, dieldrin, and aldrin. Of these pesticides, toxaphene has been the major pesticide driving unacceptable levels of risk requiring remediation by soil removal.” Given the volume of soils to be graded at each of the sites it is imperative to understand whether particulate matter generated at the sites will pose a potential health risk to sensitive receptors in the vicinity of each site.

According to DTSC, “the guidance is applicable to agricultural land that is currently under cultivation with row, fiber or food crops, orchards, or pasture. It is also applicable to fallow and former agricultural land that is no longer in production and has not been disturbed beyond normal disking and plowing practices. Each field of the same crop is assumed to have been watered, fertilized, and treated with agricultural chemicals to the same degree across the field. Because of this homogeneous application, contaminant levels are expected to be similar at any given location within the field.”

There is no indication of a sampling and analysis plan in the DEIR, or the Project documents provided by the lead agency, a serious deficiency in the documents. Prior to issuing a DEIR for the project, the Proponent should be required to complete a sampling and analysis plan to confirm or rule out the possibility of the presence of residual contaminants at the site. Identifying residual pesticides or other contaminants in soils at the site prior to construction activities will provide an opportunity for the Proponent to remove/mitigate the potential exposure of sensitive receptors within the vicinity of the sites. In the absence of any sampling or analysis, and given the past use of the Project site, I conclude that there is at least a fair argument that the Project may have significant impacts related to residual contaminants at the site.

4. The DEIR Fails to Properly Identify and Address the Project's Operational Air Quality Impacts

The DEIR states, without any evidentiary support, that the project's emissions of criteria pollutants will not result in a considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard. According to Dr. Clark,

During the operational phase of the project the project will have the potential to generate significant quantities of criteria pollutants (NO_x, SO_x, Ozone precursors, PM). According to Table 3-1 of the most recent BAAQMD CEQA guidance, a construction of a 259,000 square foot light industrial or warehouse operation will typically violate NO_x construction thresholds and GHG operational thresholds. The proposed Project's 2,000,000 square feet plus of warehouse and manufacturing buildings are nearly 8 times the size of the screening threshold, ensuring a violation of local air quality thresholds. I therefore conclude that the Project will have significant NO_x and GHG emissions during Project operations.

The air quality impacts from the traffic associated with a 2,000,000 square foot facility are significant. Typically the impacts are quantified by the number of vehicle trips per day. In the case of the proposed project, the primary concern will be the number of truck trips per day. A truck trip is one round trip (one trip segment to a site and one trip segment away from a site).

According to one source, Bluffstone and Ouderkirk²⁸, a 500,000 square feet facility on 50 acres, will on average have 350 truck trips per day (or 700 trip segments) associated with its development. This figure is proportionate to estimates for an AMB Property Corporation center in Redlands (1,000 truck trips for a 1.3 million square feet structure); Wal-Mart distribution centers in Pueblo, Colorado (700 truck trips per day for an 880,000 square feet facility), Connecticut, and Delaware (both 1,000 truck trips per day for 1.2 million square feet structures); and a grocery distribution center in New York (Boas, 2002; Gasiewski, 2004; Hernandez, 2005; Pueblo Chieftain, 2004; Sholl, 2004).

Estimates from other sources indicate approximately 1 truck per 1,000 square feet of the building, which means that the proposed project would require 1,000 trucks per day (or 1,000 trip segments per day) for the warehouse segment of the Project. The number of truck trips could be

²⁸Bluffstone and Ouderkirk. 2007. Warehouses, trucks, and [PM.sub.2.5]: human health and logistics industry growth in the eastern Inland Empire. Contemporary Economic Policy 25(1):

higher at a new, more efficient facility where more inventory is moved per day. Without proper modeling of the emissions from these additional vehicles the impacts on the environment and the citizens of Moreno Valley is unknown. It is clear that the size of the Project will have significant NOx and GHG emissions during Project operations.

A proper cumulative impact analysis is vital for an environmental analysis because the full environmental impact of a proposed project cannot be gauged in a vacuum. One of the most important environmental lessons that has been learned is that the environmental damage often occurs incrementally from a variety of small sources with which they interact. The increase in PM in the region, even for short periods of time, will only exacerbate the already serious air quality issues in the region.

5. The DEIR Fails to Disclose Impacts to Offsite Receptors

The Project is located in the South Coast Air Basin and Riverside County,²⁹ both of which are designated non-attainment for PM10 and ozone. (DEIR, p. 4.3-6). According to Mr. Hagemann,

[s]ignificant emissions of PM10 and ozone and contributing factors such as NOx and ROG will lead to a worsening of regional air quality. The Project's estimates of construction emissions need to be properly disclosed and mitigated to ensure that the Project has a less than significant impact on regional air quality.

Estimates and impacts of project's construction and operational emissions
Project construction and operation will result in significant emissions of ROG, NOx, and PM10 even after mitigation (DEIR, pp. 4.3-29, 4.3-34).

Construction emissions

The DEIR estimates that the Project's construction emissions of NOx and ROG will be significant as they exceed the SCAQMD thresholds of 100 lbs/day and 75 lbs/day, respectively (DEIR, p. 4.3-23) and identifies mitigation measures to reduce the Project's emissions (DEIR, pp. 4.3-23 – 4.3-29). Even with mitigation, the Project's emissions of NOx and ROG will still exceed SCAQMD thresholds and therefore are considered significant (DEIR, p. 4.3-29).

Operational emissions

The DEIR estimates that the Project's emissions of ROG, NOx, and PM10 from operational activities will be significant as they exceed the SCAQMD

²⁹ <http://www.epa.gov/oaqps001/greenbk/ancl.html>

thresholds of 55 lbs/day, 55 lbs/day, and 150 lbs/day, respectively (DEIR, p. 4.3-33). The DEIR proposes mitigation measures to reduce the Project's emissions (DEIR, pp. 4.3-33 – 4.3-34) but, even with mitigation, the Project's emissions will still exceed SCAQMD thresholds and therefore are considered significant (DEIR, p. 4.3-34).

Gaseous particles such as NOx can react in the atmosphere to form PM10.^{30,31} Because Riverside County and the South Coast Air Basin are both designated non-attainment for PM10, significant emissions of NOx can lead to a further degradation of regional air quality. NOx emissions can also react to produce ground-level ozone.³² Exposure to NOx emissions and its products (ozone and PM10) can lead to the airway inflammation and can cause or exacerbate conditions such as emphysema and bronchitis.³³

ROG can react to form ozone and contributes to smog formation.^{34,35} Exposure to ozone can result in coughing, throat irritation, and chest pain, burning, and discomfort.³⁶ Smog exposure can lead to sneezing, nausea, coughing, headaches, and chest constriction.³⁷ A study published in the New England Journal of Medicine concluded that the risk of dying from respiratory diseases is three times higher in areas of concentrated ozone.³⁸

Exposure to PM10 can cause bronchitis, increase the number and severity of asthma attacks, damage to lung tissue, and even premature death.³⁹ Research identifies that dust from construction is a major contributor to PM10 and that PM10 exposure is associated with asthma.⁴⁰ Inhalation of PM10 can exacerbate asthma especially in children who are susceptible to higher risks from PM10 exposure.⁴¹

³⁰ <http://www.fhwa.dot.gov/resourcecenter/teams/airquality/brochure/particulatebrochure.pdf>

³¹ <http://www.epa.gov/captrade/documents/power.pdf>

³² *Ibid.*

³³ <http://www.epa.gov/air/nitrogenoxides/health.html>

³⁴ <http://www.arb.ca.gov/research/health/fs/fs2/fs2.htm>

³⁵ <http://www.arb.ca.gov/html/gloss.htm#smog>

³⁶ <http://www.epa.gov/o3healthtraining/population.html>

³⁷ <http://are.berkeley.edu/courses/EEP101/spring03/AllThatSmog/extern.html>

³⁸ <http://www.nytimes.com/gwire/2009/03/12/12greenwire-study-links-smog-exposure-to-premature-death-10098.html>

³⁹ <http://www.epa.gov/airtrends/aqtrnd95/pm10.html> and <http://www.arb.ca.gov/html/brochure/pm10.htm>

⁴⁰ http://scerpfiles.org/cont_mgt/doc_files/EH-01-2.pdf

⁴¹ <http://www.co.imperial.ca.us/airpollution/attainment%20plans/final%20ic%202009%20pm10%20sip%20document.pdf>

The Project will have significant emissions of ROG, NO_x, and PM₁₀. Because Riverside County and the South Coast Air Basin are designated non-attainment areas for ozone and PM₁₀, Project construction and operation will further degrade regional air quality. Exposure to ROG, NO_x, and PM₁₀ has adverse health effects and can impact offsite receptors, especially children in the nearby residences – a significant and undisclosed public health impact that the DEIR does not consider.

A revised DEIR should be prepared to disclose impacts to offsite receptors from Project construction and operation. Additional mitigation measures must be implemented to ensure that Project emissions of ROG, NO_x, and PM₁₀ are reduced to the maximum extent feasible.

6. The DEIR Fails to Adequately Analyze Cumulative Impacts

1. Legal Standard

An EIR must discuss significant cumulative impacts. CEQA Guidelines section 15130(a). This requirement flows from CEQA section 21083, which requires a finding that a project may have a significant effect on the environment if “the possible effects of a project are individually limited but cumulatively considerable... ‘Cumulatively considerable’ means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.” “Cumulative impacts” are defined as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.” CEQA Guidelines section 15355(a). “[I]ndividual effects may be changes resulting from a single project or a number of separate projects.” (CEQA Guidelines section 15355(a)).

“The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.” (*Communities for a Better Environment v. Cal. Resources Agency* (“*CBE v. CRA*”), (2002) 103 Cal.App.4th 98, 117). A legally adequate cumulative impacts analysis views a particular project over time and in conjunction with other related past, present, and reasonably foreseeable probable future projects whose impacts might compound or interrelate with those of the project at hand. “Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.” (CEQA Guidelines § 15355(b)).

As the court stated in *CBE v. CRA*, 103 Cal. App. 4th at 114:

Cumulative impact analysis is necessary because the full environmental impact of a proposed project cannot be gauged in a vacuum. One of the most important environmental lessons that has been learned is that environmental damage often occurs incrementally from a variety of small sources. These sources appear insignificant when considered individually, but assume threatening dimensions when considered collectively with other sources with which they interact.

(Citations omitted).

In *Kings County Farm Bureau v. City of Hanford*, 221 Cal.App.3d at 718, the court concluded that an EIR inadequately considered an air pollution (ozone) cumulative impact. The court said: "The EIR concludes the project's contributions to ozone levels in the area would be immeasurable and, therefore, insignificant because the [cogeneration] plant would emit relatively minor amounts of [ozone] precursors compared to the total volume of [ozone] precursors emitted in Kings County. The EIR's analysis uses the magnitude of the current ozone problem in the air basin in order to trivialize the project's impact." The court concluded: "[t]he relevant question to be addressed in the EIR is not the relative amount of precursors emitted by the project when compared with preexisting emissions, but whether any additional amount of precursor emissions should be considered significant in light of the serious nature of the ozone problems in this air basin."⁴² The *Kings County* case was reaffirmed in *CBE v. CRA*, 103 Cal.App.4th at 116, where the court rejected cases with a narrower construction of "cumulative impacts."

Similarly, in *Friends of Eel River v. Sonoma County Water Agency*, (2003) 108 Cal. App. 4th 859, the court held that the EIR for a project that would divert water from the Eel River had to consider the cumulative impacts of the project together with other past, present and reasonably foreseeable future projects that also divert water from the same river system. The court held that the EIR even had to disclose and analyze projects that were merely proposed, but not yet approved. The court stated, CEQA requires "the Agency to consider 'past, present, and probable future projects producing related or cumulative impacts . . .'" (Guidelines, § 15130, subd. (b)(1)(A)). The Agency must interpret this requirement in such a way as to 'afford the fullest possible protection of the environment.'" (*Id.*, at 867, 869). The court held that the failure of the EIR to

⁴² *Los Angeles Unified v. City of Los Angeles*, 58 Cal.App.4th at 1024-1026 found an EIR inadequate for concluding that a project's additional increase in noise level of another 2.8 to 3.3 dBA was insignificant given that the existing noise level of 72 dBA already exceeded the regulatory recommended maximum of 70 dBA. The court concluded that this "ratio theory" trivialized the project's noise impact by focusing on individual inputs rather than their collective significance. The relevant issue was not the relative amount of traffic noise resulting from the project when compared to existing traffic noise, but whether any additional amount of traffic noise should be considered significant given the nature of the existing traffic noise problem.

analyze the impacts of the project together with other proposed projects rendered the document invalid. “The absence of this analysis makes the EIR an inadequate informational document.” (*Id.*, at 872).

The Court in *Citizens to Preserve the Ojai v. Bd. of Supervisors*, 176 Cal.App.3d 421 (1985), held that an EIR prepared to consider the expansion and modification of an oil refinery was inadequate because it failed to consider the cumulative air quality impacts of other oil refining and extraction activities combined with the project. The court held that the EIR’s use of an Air District Air Emissions Inventory did not constitute an adequate cumulative impacts analysis. The court ordered the agency to prepare a new EIR analyzing the combined impacts of the proposed refinery expansion together with the other oil extraction projects.

2. The DEIR Fails to Adequately Analyze Cumulative Construction Impacts

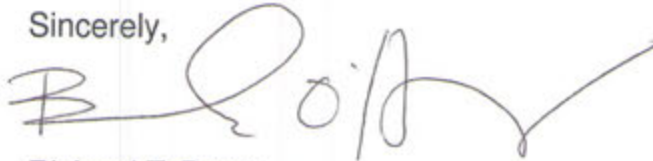
As part of its cumulative impact analysis, the DEIR identifies 13 proposed projects encompassing approximately 7.3 million square feet of space within five miles of the Project site (DEIR, p. 3-16). However, the DEIR does not identify the construction schedule of these projects except to state that “a number of individual projects may be under construction simultaneously with the proposed project.” (DEIR, p. 4.3-37). The WestRidge Commerce Center Project (which will be built adjacent to the proposed Project) is scheduled to be constructed in 2012, a schedule similar to the proposed Project. According to Mr. Hagemann,

[s]imultaneous construction of these projects, along with other potential projects, is likely to result in PM10, NOx, and ROG emissions that will have a cumulatively significant impact. The construction timetables of all projects within the vicinity of the Project site should be identified. Any cumulatively significant emissions should be disclosed and impacts to workers and nearby residents should be addressed in a revised DEIR.

VI. CONCLUSION

For the foregoing reasons, LIUNA Local Union No. 1184 urge the City to continue the matter for future consideration pending completion of a supplemental EIR addressing the Project's significant impacts and mitigation measures. Thank you for your attention to these comments. Please include this letter and all attachments hereto in the record of proceedings for this project.

Sincerely,

A handwritten signature in black ink, appearing to read "R. Drury", with a large, stylized flourish extending to the right.

Richard T. Drury
Christina M. Caro
Brooke C. O'Hanley
Lozeau Drury LLP
Attorneys for LIUNA Local Union No. 1184

Exhibit

Addressing Climate Change at the Project Level California Attorney General's Office

Addressing Climate Change at the Project Level California Attorney General's Office



Under the California Environmental Quality Act (CEQA), local agencies have a very important role to play in California's fight against global warming – one of the most serious environmental effects facing the State today. Local agencies can lead by example in undertaking their own projects, insuring that sustainability is considered at the earliest stages. Moreover, they can help shape private development. Where a project as proposed will have significant global warming related effects, local agencies can require feasible changes or alternatives, and impose enforceable, verifiable, feasible mitigation to substantially lessen those effects. By the sum of their actions and decisions, local agencies will help to move the State away from “business as usual” and toward a low-carbon future.

Included in this document are various measures that may reduce the global warming related impacts at the individual project level. (For more information on actions that local governments can take at the program and general plan level, please visit the Attorney General's webpage, “CEQA, Global Warming, and General Plans” at <http://ag.ca.gov/globalwarming/ceqa/generalplans.php>.)

As appropriate, the measures can be included as design features of a project, required as changes to the project, or imposed as mitigation (whether undertaken directly by the project proponent or funded by mitigation fees). The measures set forth in this package are examples; the list is not intended to be exhaustive. Moreover, the measures cited may not be appropriate for every project. The decision of whether to approve a project – as proposed or with required changes or mitigation – is for the local agency, exercising its informed judgment in compliance with the law and balancing a variety of public objectives.

Mitigation Measures by Category

Energy Efficiency

Incorporate green building practices and design elements.	The California Department of Housing and Community Development's Green Building & Sustainability Resources handbook provides extensive links to green building resources. The handbook is available at http://www.hcd.ca.gov/hpd/green_build.pdf . The American Institute of Architects (AIA) has compiled fifty readily available strategies for reducing fossil fuel use in buildings by fifty percent. AIA “50 to 50” plan is presented in both guidebook and wiki format at http://wiki.aia.org/Wiki%20Pages/Home.aspx .
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<p>Meet recognized green building and energy efficiency benchmarks.</p>	<p>For example, an ENERGY STAR-qualified building uses less energy, is less expensive to operate, and causes fewer greenhouse gas emissions than comparable, conventional buildings. http://www.energystar.gov/index.cfm?c=business.bus_index.</p> <p>California has over 1600 ENERGY STAR-qualified school, commercial and industrial buildings. View U.S. EPA's list of Energy Star non-residential buildings at http://www.energystar.gov/index.cfm?fuseaction=labeled_buildings_locator. Los Angeles and San Francisco top the list of U.S. cities with the most ENERGY STAR non-residential buildings. http://www.energystar.gov/ia/business/downloads/2008_Top_25_cities_chart.pdf.</p> <p>Qualified ENERGY STAR homes must surpass the state's Title 24 energy efficiency building code by at least 15%. Los Angeles, Sacramento, San Diego, and San Francisco-Oakland are among the top 20 markets for ENERGY STAR homes nationwide. http://www.energystar.gov/ia/new_homes/mil_homes/top_20_markets.html. Builders of ENERGY STAR homes can be more competitive in a tight market by providing a higher quality, more desirable product. See http://www.energystar.gov/ia/partners/manuf_res/Horton.pdf.</p> <p>There are a variety of private and non-profit green building certification programs in use in the U.S. See U.S. EPA's Green Building / Frequently Asked Questions website, http://www.epa.gov/greenbuilding/pubs/faqs.htm.</p> <p>Public-Private Partnership for Advancing Housing Technology maintains a list of national and state Green Building Certification Programs for housing. See http://www.pathnet.org/sp.asp?id=20978. These include the national Leadership in Energy and Environmental Design (LEED) program, and, at the state level, Build it Green's GreenPoint Rated system and the California Green Builder program.</p> <p>Other organizations may provide other relevant benchmarks.</p>
<p>Install energy efficient lighting (e.g., light emitting diodes (LEDs)), heating and cooling systems, appliances, equipment, and control systems.</p>	<p>Information about ENERGY STAR-certified products in over 60 categories is available at http://www.energystar.gov/index.cfm?fuseaction=find_a_product.</p> <p>The California Energy Commission maintains a database of all appliances meeting either federal efficiency standards or, where there are no federal efficiency standards, California's appliance efficiency standards. See http://www.appliances.energy.ca.gov/.</p> <p>The Electronic Product Environmental Assessment Tool (EPEAT) ranks computer products based on a set of environmental criteria, including energy efficiency. See http://www.epeat.net/AboutEPEAT.aspx.</p> <p>The nonprofit American Council for an Energy Efficient Economy maintains an Online Guide to Energy Efficient Commercial Equipment, available at http://www.aceee.org/ogeece/ch1_index.htm.</p> <p>Utilities offer many incentives for efficient appliances, lighting, heating and cooling. To search for available residential and commercial incentives, visit Flex Your Power's website at http://www.fypower.org/.</p>

<p>Use passive solar design, e.g., orient buildings and incorporate landscaping to maximize passive solar heating during cool seasons, minimize solar heat gain during hot seasons, and enhance natural ventilation. Design buildings to take advantage of sunlight.</p>	<p>See U.S. Department of Energy, Passive Solar Design (website) http://www.energysavers.gov/your_home/designing_remodeling/index.cfm/mytopic=10250.</p> <p>See also California Energy Commission, Consumer Energy Center, Passive Solar Design (website) http://www.consumerenergycenter.org/home/construction/solardesign/index.html.</p> <p>Lawrence Berkeley National Laboratories' Building Technologies Department is working to develop innovative building construction and design techniques. Information and publications on energy efficient buildings, including lighting, windows, and daylighting strategies, are available at the Department's website at http://btech.lbl.gov.</p>
<p>Install light colored "cool" roofs and cool pavements.</p>	<p>A white or light colored roof can reduce surface temperatures by up to 100 degrees Fahrenheit, which also reduces the heat transferred into the building below. This can reduce the building's cooling costs, save energy and reduce associated greenhouse gas emissions, and extend the life of the roof. Cool roofs can also reduce the temperature of surrounding areas, which can improve local air quality. See California Energy Commission, Consumer Energy Center, Cool Roofs (webpage) at http://www.consumerenergycenter.org/coolroof/.</p> <p>See also Lawrence Berkeley National Laboratories, Heat Island Group (webpage) at http://eetd.lbl.gov/HeatIsland/.</p>
<p>Install efficient lighting, (including LEDs) for traffic, street and other outdoor lighting.</p>	<p>LED lighting is substantially more energy efficient than conventional lighting and can save money. See http://www.energy.ca.gov/efficiency/partnership/case_studies/TechAsstCity.pdf (noting that installing LED traffic signals saved the City of Westlake about \$34,000 per year).</p> <p>As of 2005, only about a quarter of California's cities and counties were using 100% LEDs in traffic signals. See California Energy Commission (CEC), Light Emitting Diode Traffic Signal Survey (2005) at p. 15, available at http://www.energy.ca.gov/2005publications/CEC_400_2005_003/CEC_400_2005_003.PDF.</p> <p>The California Energy Commission's Energy Partnership Program can help local governments take advantage of energy saving technology, including, but not limited to, LED traffic signals. See http://www.energy.ca.gov/efficiency/partnership/.</p>
<p>Reduce unnecessary outdoor lighting.</p>	<p>See California Energy Commission, Reduction of Outdoor Lighting (webpage) at http://www.energy.ca.gov/efficiency/lighting/outdoor_reduction.html.</p>

<p>Use automatic covers, efficient pumps and motors, and solar heating for pools and spas.</p>	<p>During the summer, a traditional backyard California pool can use enough energy to power an entire home for three months. Efficiency measures can substantially reduce this waste of energy and money. See California Energy Commission, Consumer Energy Center, Pools and Spas (webpage) at http://www.consumerenergycenter.org/home/outside/pools_spas.html.</p> <p>See also Sacramento Municipal Utilities District, Pool and Spa Efficiency Program (webpage) at http://www.smud.org/en/residential/saving-energy/Pages/poolspa.aspx.</p>
<p>Provide education on energy efficiency to residents, customers and/or tenants.</p>	<p>Many cities and counties provide energy efficiency education. See, for example, the City of Stockton's Energy Efficiency website at http://www.stocktongov.com/energysaving/index.cfm. See also "Green County San Bernardino," http://www.greencountysb.com at pp. 4-6.</p> <p>Businesses and development projects may also provide education. For example, a homeowners' association (HOA) could provide information to residents on energy-efficient mortgages and energy saving measures. See The Villas of Calvera Hills, Easy Energy Saving Tips to Help Save Electricity at http://www.thevillashoa.org/green/energy/. An HOA might also consider providing energy audits to its residents on a regular basis.</p>

Renewable Energy and Energy Storage

<p>Meet "reach" goals for building energy efficiency and renewable energy use.</p>	<p>A "zero net energy" building combines building energy efficiency and renewable energy generation so that, on an annual basis, any purchases of electricity or natural gas are offset by clean, renewable energy generation, either on-site or nearby. Both the California Energy Commission (CEC) and the California Public Utilities Commission (CPUC) have stated that residential buildings should be zero net energy by 2020, and commercial buildings by 2030. See CEC, 2009 Integrated Energy Policy Report (Dec. 2009) at p. 226, available at http://www.energy.ca.gov/2009publications/CEC-100-2009-003/CEC-100-2009-003-CMF.PDF; CPUC, Long Term Energy Efficiency Strategic Plan (Sept. 2008), available at http://www.cpuc.ca.gov/PUC/blueprint/Energy+Efficiency/eesp/.</p>
<p>Install solar, wind, and geothermal power systems and solar hot water heaters.</p>	<p>The California Public Utilities Commission (CPUC) approved the California Solar Initiative on January 12, 2006. The initiative creates a \$3.3 billion, ten-year program to install solar panels on one million roofs in the State. Visit the one-stop GoSolar website at http://www.gosolarcalifornia.org/. As mitigation, a developer could, for example, agree to participate in the New Solar Homes program. See http://www.gosolarcalifornia.org/builders/index.html.</p> <p>The CPUC is in the process of establishing a program to provide solar water heating incentives under the California Solar Initiative. For more information, visit the CPUC's website at http://www.cpuc.ca.gov/puc/energy/solar/swh.htm.</p> <p>To search for available residential and commercial renewable energy incentives, visit Flex Your Power's website at http://www.fypower.org/.</p>

<p>Install solar panels on unused roof and ground space and over carports and parking areas.</p>	<p>In 2008 Southern California Edison (SCE) launched the nation's largest installation of photovoltaic power generation modules. The utility plans to cover 65 million square feet of unused commercial rooftops with 250 megawatts of solar technology – generating enough energy to meet the needs of approximately 162,000 homes. Learn more about SCE's Solar Rooftop Program at http://www.sce.com/solarleadership/solar-rooftop-program/general-faq.htm.</p> <p>In 2009, Walmart announced its commitment to expand the company's solar power program in California. The company plans to add solar panels on 10 to 20 additional Walmart facilities in the near term. These new systems will be in addition to the 18 solar arrays currently installed at Walmart facilities in California. See http://walmartstores.com/FactsNews/NewsRoom/9091.aspx.</p> <p>Alameda County has installed two solar tracking carports, each generating 250 kilowatts. By 2005, the County had installed eight photovoltaic systems totaling over 2.3 megawatts. The County is able to meet 6 percent of its electricity needs through solar power. See http://www.acgov.org/gsa/Alameda%20County%20-%20Solar%20Case%20Study.pdf.</p> <p>In 2007, California State University, Fresno installed a 1.1-megawatt photovoltaic (PV)-paneled parking installation. The University expects to save more than \$13 million in avoided utility costs over the project's 30-year lifespan. http://www.fresnostatenews.com/2007/11/solarwrapup2.htm.</p>
<p>Where solar systems cannot feasibly be incorporated into the project at the outset, build "solar ready" structures.</p>	<p>U.S. Department of Energy, A Homebuilder's Guide to Going Solar (brochure) (2008), available at http://www.eere.energy.gov/solar/pdfs/43076.pdf.</p>
<p>Incorporate wind and solar energy systems into agricultural projects where appropriate.</p>	<p>Wind energy can be a valuable crop for farmers and ranchers. Wind turbines can generate energy to be used on-site, reducing electricity bills, or they can yield lease revenues (as much as \$4000 per turbine per year). Wind turbines generally are compatible with rural land uses, since crops can be grown and livestock can be grazed up to the base of the turbine. See National Renewable Energy Laboratory, Wind Powering America Fact Sheet Series, Wind Energy Benefits, available at http://www.nrel.gov/docs/fy05osti/37602.pdf.</p> <p>Solar PV is not just for urban rooftops. For example, the Scott Brothers' dairy in San Jacinto, California, has installed a 55-kilowatt solar array on its commodity barn, with plans to do more in the coming years. See http://www.dairyherd.com/directories.asp?pgID=724&ed_id=8409 (additional California examples are included in article.)</p>

<p>Include energy storage where appropriate to optimize renewable energy generation systems and avoid peak energy use.</p>	<p>See National Renewable Energy Laboratory, Energy Storage Basics (webpage) at http://www.nrel.gov/learning/eds_energy_storage.html.</p> <p>California Energy Storage Alliance (webpage) at http://storagealliance.org/about.html.</p> <p>Storage is not just for large, utility scale projects, but can be part of smaller industrial, commercial and residential projects. For example, Ice Storage Air Conditioning (ISAC) systems, designed for residential and nonresidential buildings, produce ice at night and use it during peak periods for cooling. See California Energy Commission, Staff Report, Ice Storage Air Conditioners, Compliance Options Application (May 2006), available at http://www.energy.ca.gov/2006publications/CEC-400-2006-006/CEC-400-2006-006-SF.PDF.</p>
<p>Use on-site generated biogas, including methane, in appropriate applications.</p>	<p>At the Hilarides Dairy in Lindsay, California, an anaerobic-lagoon digester processes the run-off of nearly 10,000 cows, generating 226,000 cubic feet of biogas per day and enough fuel to run two heavy duty trucks. This has reduced the dairy's diesel consumption by 650 gallons a day, saving the dairy money and improving local air quality. See http://www.arb.ca.gov/newsrel/nr021109b.htm; see also Public Interest Energy Research Program, Dairy Power Production Program, Dairy Methane Digester System, 90-Day Evaluation Report, Eden Vale Dairy (Dec. 2006) at http://www.energy.ca.gov/2006publications/CEC_500_2006_083/CEC_500_2006_083.PDF.</p> <p>Landfill gas is a current and potential source of substantial energy in California. See Tom Frankiewicz, Program Manager, U.S. EPA Landfill Methane Outreach Program, Landfill Gas Energy Potential in California, available at http://www.energy.ca.gov/2009_energy/policy/documents/2009-04-21_workshop/presentations/05-SCS_Engineers_Presentation.pdf.</p> <p>There are many current and emerging technologies for converting landfill methane that would otherwise be released as a greenhouse gas into clean energy. See California Integrated Waste Management Board, Emerging Technologies, Landfill Gas-to-Energy (webpage) at http://www.ciwmb.ca.gov/LEACentral/TechServices/EmergingTech/default.htm.</p>

<p>Use combined heat and power (CHP) in appropriate applications.</p>	<p>Many commercial, industrial, and campus-type facilities (such as hospitals, universities and prisons) use fuel to produce steam and heat for their own operations and processes. Unless captured, much of this heat is wasted. CHP captures waste heat and re-uses it, e.g., for residential or commercial space heating or to generate electricity. See U.S. EPA, Catalog of CHP Technologies at http://www.epa.gov/chp/documents/catalog_of_%20chp_tech_entire.pdf and California Energy Commission, Distributed Energy Resource Guide, Combined Heat and Power (webpage) at http://www.energy.ca.gov/distgen/equipment/chp/chp.html.</p> <p>The average efficiency of fossil-fueled power plants in the United States is 33 percent. By using waste heat recovery technology, CHP systems typically achieve total system efficiencies of 60 to 80 percent. CHP can also substantially reduce emissions of carbon dioxide. http://www.epa.gov/chp/basic/efficiency.html.</p> <p>Currently, CHP in California has a capacity of over 9 million kilowatts. See list of California CHP facilities at http://www.eea-inc.com/chpdata/States/CA.html.</p> <p>The Waste Heat and Carbon Emissions Reduction Act (Assembly Bill 1613 (2007), amended by Assembly Bill 2791 (2008)) is designed to encourage the development of new CHP systems in California with a generating capacity of not more than 20 megawatts. Among other things, the Act requires the California Public Utilities Commission to establish (1) a standard tariff allowing CHP generators to sell electricity for delivery to the grid and (2) a "pay as you save" pilot program requiring electricity corporations to finance the installation of qualifying CHP systems by nonprofit and government entities. For more information, see http://www.energy.ca.gov/wasteheat/.</p>
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Water Conservation and Efficiency

<p>Incorporate water-reducing features into building and landscape design.</p>	<p>According to the California Energy Commission, water-related energy use – which includes conveyance, storage, treatment, distribution, wastewater collection, treatment, and discharge – consumes about 19 percent of the State's electricity, 30 percent of its natural gas, and 88 billion gallons of diesel fuel every year. See http://www.energy.ca.gov/2007publications/CEC_999_2007_008/CEC_999_2007_008.PDF. Reducing water use and improving water efficiency can help reduce energy use and greenhouse gas emissions.</p>
<p>Create water-efficient landscapes.</p>	<p>The California Department of Water Resources' updated Model Water Efficient Landscape Ordinance (Sept. 2009) is available at http://www.water.ca.gov/wateruseefficiency/landscapeordinance/technical.cfm.</p> <p>A landscape can be designed from the beginning to use little or no water, and to generate little or no waste. See California Integrated Waste Management Board, Xeriscaping (webpage) at http://www.ciwmb.ca.gov/organics/Xeriscaping/.</p>

<p>Install water-efficient irrigation systems and devices, such as soil moisture-based irrigation controls and use water-efficient irrigation methods.</p>	<p>U.S. Department of Energy, Best Management Practice: Water-Efficient Irrigation (webpage) at http://www1.eere.energy.gov/femp/program/waterefficiency_bmp5.html.</p> <p>California Department of Water Resources, Landscape Water Use Efficiency (webpage) at http://www.water.ca.gov/wateruseefficiency/landscape/.</p> <p>Pacific Institute, More with Less: Agricultural Water Conservation and Efficiency in California (2008), available at http://www.pacinst.org/reports/more_with_less_delta/index.htm.</p>
<p>Make effective use of graywater. (Graywater is untreated household waste water from bathtubs, showers, bathroom wash basins, and water from clothes washing machines. Graywater to be used for landscape irrigation.)</p>	<p>California Building Standards Commission, 2008 California Green Building Standards Code, Section 604, pp. 31-32, available at http://www.documents.dgs.ca.gov/bsc/2009/part11_2008_calgreen_code.pdf.</p> <p>California Department of Water Resources, Dual Plumbing Code (webpage) at http://www.water.ca.gov/recycling/DualPlumbingCode/.</p> <p>See also Ahwahnee Water Principles, Principle 6, at http://www.lgc.org/ahwahnee/h2o_principles.html. The Ahwahnee Water Principles have been adopted by City of Willits, Town of Windsor, Menlo Park, Morgan Hill, Palo Alto, Petaluma, Port Hueneme, Richmond, Rohnert Park, Rolling Hills Estates, San Luis Obispo, Santa Paula, Santa Rosa, City of Sunnyvale, City of Ukiah, Ventura, Marin County, Marin Municipal Water District, and Ventura County.</p>
<p>Implement low-impact development practices that maintain the existing hydrology of the site to manage storm water and protect the environment.</p>	<p>Retaining storm water runoff on-site can drastically reduce the need for energy-intensive imported water at the site. See U.S. EPA, Low Impact Development (webpage) at http://www.epa.gov/nps/lid/.</p> <p>Office of Environmental Health Hazard Assessment and the California Water and Land Use Partnership, Low Impact Development at http://www.coastal.ca.gov/nps/lid-factsheet.pdf.</p>
<p>Devise a comprehensive water conservation strategy appropriate for the project and location.</p>	<p>The strategy may include many of the specific items listed above, plus other innovative measures that are appropriate to the specific project.</p>
<p>Design buildings to be water-efficient. Install water-efficient fixtures and appliances.</p>	<p>Department of General Services, Best Practices Manual, Water-Efficient Fixtures and Appliances (website) at http://www.green.ca.gov/EPP/building/SaveH2O.htm.</p> <p>Many ENERGY STAR products have achieved their certification because of water efficiency. See California Energy Commission's database, available at http://www.appliances.energy.ca.gov/.</p>

<p>Offset water demand from new projects so that there is no net increase in water use.</p>	<p>For example, the City of Lompoc has a policy requiring new development to offset new water demand with savings from existing water users. See http://www.cityoflompoc.com/utilities/pdf/2005_uwmp_final.pdf at p. 29.</p>
<p>Provide education about water conservation and available programs and incentives.</p>	<p>See, for example, the City of Santa Cruz, Water Conservation Office at http://www.ci.santa-cruz.ca.us/index.aspx?page=395; Santa Clara Valley Water District, Water Conservation at http://www.valleywater.org/conservation/index.shtm; and Metropolitan Water District and the Family of Southern California Water Agencies, Be Water Wise at http://www.bewaterwise.com. Private projects may provide or fund similar education.</p>

Solid Waste Measures

<p>Reuse and recycle construction and demolition waste (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard).</p>	<p>Construction and demolition materials account for almost 22 percent of the waste stream in California. Reusing and recycling these materials not only conserves natural resources and energy, but can also save money. For a list of best practices and other resources, see California Integrated Waste Management Board, Construction and Demolition Debris Recycling (webpage) at http://www.ciwmb.ca.gov/condemo/.</p>
<p>Integrate reuse and recycling into residential industrial, institutional and commercial projects.</p>	<p>Tips on developing a successful recycling program, and opportunities for cost-effective recycling, are available on the California Integrated Waste Management Board's Zero Waste California website. See http://zerowaste.ca.gov/.</p> <p>The Institute for Local Government's Waste Reduction & Recycling webpage contains examples of "best practices" for reducing greenhouse gas emissions, organized around waste reduction and recycling goals and additional examples and resources. See http://www.ca-ilg.org/wastereduction.</p>
<p>Provide easy and convenient recycling opportunities for residents, the public, and tenant businesses.</p>	<p>Tips on developing a successful recycling program, and opportunities for cost effective recycling, are available on the California Integrated Waste Management Board's Zero Waste California website. See http://zerowaste.ca.gov/.</p>
<p>Provide education and publicity about reducing waste and available recycling services.</p>	<p>Many cities and counties provide information on waste reduction and recycling. See, for example, the Butte County Guide to Recycling at http://www.recyclebutte.net.</p> <p>The California Integrated Waste Management Board's website contains numerous publications on recycling and waste reduction that may be helpful in devising an education project. See http://www.ciwmb.ca.gov/Publications/default.asp?cat=13. Private projects may also provide waste and recycling education directly, or fund education.</p>

Land Use Measures

<p>Ensure consistency with “smart growth” principles – mixed-use, infill, and higher density projects that provide alternatives to individual vehicle travel and promote the efficient delivery of services and goods.</p>	<p>U.S. EPA maintains an extensive Smart Growth webpage with links to examples, literature and technical assistance, and financial resources. See http://www.epa.gov/smartgrowth/index.htm.</p> <p>The National Oceanic and Atmospheric Administration’s webpage provides smart growth recommendations for communities located near water. See Coastal & Waterfront Smart Growth (webpage) at http://coastalsmartgrowth.noaa.gov/. The webpage includes case studies from California.</p> <p>The California Energy Commission has recognized the important role that land use can play in meeting our greenhouse gas and energy efficiency goals. The agency’s website, Smart Growth & Land Use Planning, contains useful information and links to relevant studies, reports, and other resources. See http://www.energy.ca.gov/landuse/.</p> <p>The Metropolitan Transportation Commission’s webpage, Smart Growth / Transportation for Livable Communities, includes resources that may be useful to communities in the San Francisco Bay Area and beyond. See http://www.mtc.ca.gov/planning/smart_growth/.</p> <p>The Sacramento Area Council of Governments (SACOG) has published examples of smart growth in action in its region. See Examples from the Sacramento Region of the Seven Principles of Smart Growth / Better Ways to Grow, available at http://www.sacog.org/regionalfunding/betterways.pdf.</p>
<p>Meet recognized “smart growth” benchmarks.</p>	<p>For example, the LEED for Neighborhood Development (LEED-ND) rating system integrates the principles of smart growth, urbanism and green building into the first national system for neighborhood design. LEED-ND is a collaboration among the U.S. Green Building Council, Congress for the New Urbanism, and the Natural Resources Defense Council. For more information, see http://www.usgbc.org/DisplayPage.aspx?CMSPageID=148.</p>
<p>Educate the public about the many benefits of well-designed, higher density development.</p>	<p>See, for example, U.S. EPA, Growing Smarter, Living Healthier: A Guide to Smart Growth and Active Aging (webpage), discussing how compact, walkable communities can provide benefits to seniors. See http://www.epa.gov/aging/bhc/guide/index.html.</p> <p>U.S. EPA, Environmental Benefits of Smart Growth (webpage) at http://www.epa.gov/dced/topics/eb.htm (noting local air and water quality improvements).</p> <p>Centers for Disease Control and Prevention (CDC), Designing and Building Healthy Places (webpage), at http://www.cdc.gov/healthyplaces/. The CDC’s website discusses the links between walkable communities and public health and includes numerous links to educational materials.</p> <p>California Department of Housing and Community Development, Myths and Facts About Affordable and High Density Housing (2002), available at http://www.hcd.ca.gov/hpd/mythsnfacts.pdf.</p>

<p>Incorporate public transit into the project's design.</p>	<p>Federal Transit Administration, Transit-Oriented Development (TOD) (webpage) at http://www.fta.dot.gov/planning/planning_environment_6932.html (describing the benefits of TOD as “social, environmental, and fiscal.”)</p> <p>California Department of Transportation (Caltrans), Statewide Transit-Oriented Development Study: Factors for Success in California (2002), available at http://transitorienteddevelopment.dot.ca.gov/miscellaneous/StatewideTOD.htm</p> <p>Caltrans, California Transit-Oriented Development Searchable Database (includes detailed information on numerous TODs), available at http://transitorienteddevelopment.dot.ca.gov/miscellaneous/NewHome.jsp.</p> <p>California Department of Housing and Community Development, Transit Oriented Development (TOD) Resources (Aug. 2009), available at http://www.hcd.ca.gov/hpd/tod.pdf.</p>
<p>Preserve and create open space and parks. Preserve existing trees, and plant replacement trees at a set ratio.</p>	<p>U.S. EPA, Smart Growth and Open Space Conservation (webpage) at http://www.epa.gov/dced/openspace.htm.</p>
<p>Develop “brownfields” and other underused or defunct properties near existing public transportation and jobs.</p>	<p>U.S. EPA, Smart Growth and Brownfields (webpage) at http://www.epa.gov/dced/brownfields.htm.</p> <p>For example, as set forth in the Local Government Commission’s case study, the Town of Hercules, California reclaimed a 426-acre brownfield site, transforming it into a transit-friendly, walkable neighborhood. See http://www.lgc.org/freepub/docs/community_design/fact_sheets/er_case_studies.pdf.</p> <p>For financial resources that can assist in brownfield development, see Center for Creative Land Recycling, Financial Resources for California Brownfields (July 2008), available at http://www.cclr.org/media/publications/8-Financial_Resources_2008.pdf.</p>
<p>Include pedestrian and bicycle facilities within projects and ensure that existing non-motorized routes are maintained and enhanced.</p>	<p>See U.S. Department of Transportation, Federal Highway Administration, Bicycle and Pedestrian Program (webpage) at http://www.fhwa.dot.gov/environment/bikeped/.</p> <p>Caltrans, Pedestrian and Bicycle Facilities in California / A Technical Reference and Technology Transfer Synthesis for Caltrans Planners and Engineers (July 2005), available at http://www.dot.ca.gov/hq/traffops/survey/pedestrian/TR_MAY0405.pdf. This reference includes standard and innovative practices for pedestrian facilities and traffic calming.</p>

Transportation and Motor Vehicles

<p>Meet an identified transportation-related benchmark.</p>	<p>A logical benchmark might be related to vehicles miles traveled (VMT), e.g., average VMT per capita, per household, or per employee. As the California Energy Commission has noted, VMT by California residents increased “a rate of more than 3 percent a year between 1975 and 2004, markedly faster than the population growth rate over the same period, which was less than 2 percent. This increase in VMT correlates to an increase in petroleum use and GHG production and has led to the transportation sector being responsible for 41 percent of the state’s GHG emissions in 2004.” CEC, <i>The Role of Land Use in Meeting California’s Energy and Climate Change Goals</i> (Aug. 2007) at p. 9, available at http://www.energy.ca.gov/2007publications/CEC-600-2007-008/CEC-600-2007-008-SF.PDF.</p> <p>Even with regulations designed to increase vehicle efficiency and lower the carbon content of fuel, “reduced VMT growth will be required to meet GHG reductions goals.” <i>Id.</i> at p. 18.</p>
<p>Adopt a comprehensive parking policy that discourages private vehicle use and encourages the use of alternative transportation.</p>	<p>For example, reduce parking for private vehicles while increasing options for alternative transportation; eliminate minimum parking requirements for new buildings; “unbundle” parking (require that parking is paid for separately and is not included in rent for residential or commercial space); and set appropriate pricing for parking.</p> <p>See U.S. EPA, <i>Parking Spaces / Community Places, Finding the Balance Through Smart Growth Solutions</i> (Jan. 2006), available at http://www.epa.gov/dced/pdf/EPAParkingSpaces06.pdf.</p> <p>Reforming Parking Policies to Support Smart Growth, Metropolitan Transportation Commission (June 2007) at http://www.mtc.ca.gov/planning/smart_growth/parking_seminar/ToolboxHandbook.pdf.</p> <p>See also the City of Ventura’s Downtown Parking and Mobility Plan, available at http://www.cityofventura.net/community_development/resources/mobility_parking_plan.pdf, and Ventura’s Downtown Parking Management Program, available at http://www.ci.ventura.ca.us/depts/comm_dev/downtownplan/chapters.asp.</p>
<p>Build or fund a major transit stop within or near the development.</p>	<p>“Major transit stop’ means a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.” (Pub. Res. Code, § 21064.3.)</p> <p>Transit Oriented Development (TOD) is a moderate to higher density development located within an easy walk of a major transit stop. http://transitorienteddevelopment.dot.ca.gov/miscellaneous/NewWhatisTOD.htm.</p> <p>By building or funding a major transit stop, an otherwise ordinary development can become a TOD.</p>

<p>Provide public transit incentives such as free or low-cost monthly transit passes to employees, or free ride areas to residents and customers.</p>	<p>See U.S. Department of Transportation and U.S. EPA, Commuter Choice Primer / An Employer's Guide to Implementing Effective Commuter Choice Programs, available at http://www.its.dot.gov/JPODOCS/REPTS_PR/13669.html.</p> <p>The Emery Go Round shuttle is a private transportation service funded by commercial property owners in the citywide transportation business improvement district. The shuttle links a local shopping district to a Bay Area Rapid Transit stop. See http://www.emerygoround.com/.</p> <p>Seattle, Washington maintains a public transportation "ride free" zone in its downtown from 6:00 a.m. to 7:00 p.m. daily. See http://transit.metrokc.gov/tops/accessible/paccessible_map.html#fare.</p>
<p>Promote "least polluting" ways to connect people and goods to their destinations.</p>	<p>Promoting "least polluting" methods of moving people and goods is part of a larger, integrated "sustainable streets" strategy now being explored at U.C. Davis's Sustainable Transportation Center. Resources and links are available at the Center's website, http://stc.ucdavis.edu/outreach/ssp.php.</p>
<p>Incorporate bicycle lanes, routes and facilities into street systems, new subdivisions, and large developments.</p>	<p>Bicycling can have a profound impact on transportation choices and air pollution reduction. The City of Davis has the highest rate of bicycling in the nation. Among its 64,000 residents, 17 percent travel to work by bicycle and 41 percent consider the bicycle their primary mode of transportation. See Air Resources Board, Bicycle Awareness Program, Bicycle Fact Sheet, available at http://www.arb.ca.gov/planning/tsaq/bicycle/factsht.htm.</p> <p>For recommendations on best practices, see the many resources listed at the U.S. Department of Transportation, Federal Highway Administration's Bicycle and Pedestrian website at http://www.fhwa.dot.gov/environment/bikeped/publications.htm.</p> <p>See also Caltrans Division of Research and Innovation, Designing Highway Facilities To Encourage Walking, Biking and Transit (Preliminary Investigation) (March 2009), available at http://www.dot.ca.gov/research/researchreports/preliminary_investigations/docs/pi-design_for_walking_%20biking_and_transit%20final.pdf.</p>
<p>Require amenities for non-motorized transportation, such as secure and convenient bicycle parking.</p>	<p>According to local and national surveys of potential bicycle commuters, secure bicycle parking and workplace changing facilities are important complements to safe and convenient routes of travel. See Air Resources Board, Bicycle Awareness Program, Bicycle Fact Sheet, available at http://www.arb.ca.gov/planning/tsaq/bicycle/factsht.htm.</p>

<p>Ensure that the project enhances, and does not disrupt or create barriers to, non-motorized transportation.</p>	<p>See, e.g., U.S. EPA's list of transit-related "smart growth" publications at http://www.epa.gov/dced/publications.htm#air, including Pedestrian and Transit-Friendly Design: A Primer for Smart Growth (1999), available at www.epa.gov/dced/pdf/ptfd_primer.pdf.</p> <p>See also Toolkit for Improving Walkability in Alameda County, available at http://www.acta2002.com/ped_toolkit/ped_toolkit_print.pdf.</p> <p>Pursuant to the California Complete Streets Act of 2008 (AB 1358, Gov. Code, §§ 65040.2 and 65302), commencing January 1, 2011, upon any substantive revision of the circulation element of the general plan, a city or county will be required to modify the circulation element to plan for a balanced, multimodal transportation network that meets the needs of all users.</p>
<p>Connect parks and open space through shared pedestrian/bike paths and trails to encourage walking and bicycling. Create bicycle lanes and walking paths directed to the location of schools, parks and other destination points.</p>	<p>Walk Score ranks the "walkability" of neighborhoods in the largest 40 U.S. cities, including seven California cities. Scores are based on the distance to nearby amenities. Explore Walk Score at http://www.walkscore.com/.</p> <p>In many markets, homes in walkable neighborhoods are worth more than similar properties where walking is more difficult. See Hoak, <i>Walk appeal / Homes in walkable neighborhoods sell for more: study</i>, Wall Street Journal (Aug. 18, 2009), available at http://www.marketwatch.com/story/homes-in-walkable-neighborhoods-sell-for-more-2009-08-18.</p> <p>By creating walkable neighborhoods with more transportation choices, Californians could save \$31 million and cut greenhouse gas emissions by 34 percent, according to a study released by Transform, a coalition of unions and nonprofits. See <i>Windfall for All / How Connected, Convenient Neighborhoods Can Protect Our Climate and Safeguard California's Economy</i> (Nov. 2009), available at http://transformca.org/windfall-for-all#download-report.</p>
<p>Work with the school districts to improve pedestrian and bike access to schools and to restore or expand school bus service using lower-emitting vehicles.</p>	<p>In some communities, twenty to twenty-five percent of morning traffic is due to parents driving their children to school. Increased traffic congestion around schools in turn prompts even more parents to drive their children to school. Programs to create safe routes to schools can break this harmful cycle. See California Department of Public Health, <i>Safe Routes to School</i> (webpage) and associated links at http://www.cdph.ca.gov/HealthInfo/injviosaf/Pages/SafeRoutestoSchool.aspx.</p> <p>See also U.S. EPA, <i>Smart Growth and Schools</i> (webpage), available at http://www.epa.gov/dced/schools.htm.</p> <p>California Center for Physical Activity, <i>California Walk to School</i> (website) at http://www.cawalktoschool.com</p> <p>Regular school bus service (using lower-emitting buses) for children who cannot bike or walk to school could substantially reduce private vehicle congestion and air pollution around schools. See Air Resources Board, <i>Lower Emissions School Bus Program</i> (webpage) at http://www.arb.ca.gov/msprog/schoolbus/schoolbus.htm.</p>

<p>Institute teleconferencing, telecommute and/or flexible work hour programs to reduce unnecessary employee transportation.</p>	<p>There are numerous sites on the web with resources for employers seeking to establish telework or flexible work programs. These include U.S. EPA's Mobility Management Strategies: Commuter Programs website at http://www.epa.gov/otaq/stateresources/rellinks/mms_commprograms.htm; and Telework, the federal government's telework website, at http://www.telework.gov/.</p> <p>Through a continuing FlexWork Implementation Program, the Traffic Solutions division of the Santa Barbara County Association of Governments sponsors flexwork consulting, training and implementation services to a limited number of Santa Barbara County organizations that want to create or expand flexwork programs for the benefit of their organizations, employees and the community. See http://www.flexworks.com/read_more_about_the_fSBp.html. Other local government entities provide similar services.</p>
<p>Provide information on alternative transportation options for consumers, residents, tenants and employees to reduce transportation-related emissions.</p>	<p>Many types of projects may provide opportunities for delivering more tailored transportation information. For example, a homeowner's association could provide information on its website, or an employer might create a Transportation Coordinator position as part of a larger Employee Commute Reduction Program. See, e.g., South Coast Air Quality Management District, Transportation Coordinator training, at http://www.aqmd.gov/trans/training.html.</p>
<p>Educate consumers, residents, tenants and the public about options for reducing motor vehicle-related greenhouse gas emissions. Include information on trip reduction; trip linking; vehicle performance and efficiency (e.g., keeping tires inflated); and low or zero-emission vehicles.</p>	<p>See, for example U.S. EPA, SmartWay Transport Partnership: Innovative Carrier Strategies (webpage) at http://www.epa.gov/smartway/transport/what-smartway/carrier-strategies.htm. This webpage includes recommendations for actions that truck and rail fleets can take to make ground freight more efficient and cleaner.</p> <p>The Air Resources Board's Drive Clean website is a resource for car buyers to find clean and efficient vehicles. The web site is designed to educate Californians that pollution levels range greatly between vehicles. See http://www.driveclean.ca.gov/.</p> <p>The Oregon Department of Transportation and other public and private partners launched the Drive Less/Save More campaign. The comprehensive website contains fact sheets and educational materials to help people drive more efficiently. See http://www.driveless.savemore.com/.</p>
<p>Purchase, or create incentives for purchasing, low or zero-emission vehicles.</p>	<p>See Air Resources Board, Low-Emission Vehicle Program (webpage) at http://www.arb.ca.gov/msprog/levprog/levprog.htm.</p> <p>Air Resource Board, Zero Emission Vehicle Program (webpage) at http://www.arb.ca.gov/msprog/zevprog/zevprog.htm.</p> <p>All new cars sold in California are now required to display an Environmental Performance (EP) Label, which scores a vehicle's global warming and smog emissions from 1 (dirtiest) to 10 (cleanest). To search and compare vehicle EP Labels, visit www.DriveClean.ca.gov.</p>

<p>Create a ride sharing program. Promote existing ride sharing programs e.g., by designating a certain percentage of parking spaces for ride sharing vehicles, designating adequate passenger loading and unloading for ride sharing vehicles, and providing a web site or message board for coordinating rides.</p>	<p>For example, the 511 Regional Rideshare Program is operated by the Metropolitan Transportation Commission (MTC) and is funded by grants from the Federal Highway Administration, U.S. Department of Transportation, the Metropolitan Transportation Commission, the Bay Area Air Quality Management District and county congestion management agencies. For more information, see http://rideshare.511.org/.</p> <p>As another example, San Bernardino Associated Governments works directly with large and small employers, as well as providing support to commuters who wish to share rides or use alternative forms of transportation. See http://www.sanbag.ca.gov/commuter/rideshare.html.</p> <p>Valleyrides.com is a ridesharing resource available to anyone commuting to and from Fresno and Tulare Counties and surrounding communities. See http://www.valleyrides.com/. There are many other similar websites throughout the state.</p>
<p>Create or accommodate car sharing programs, e.g., provide parking spaces for car share vehicles at convenient locations accessible by public transportation.</p>	<p>There are many existing car sharing companies in California. These include City CarShare (San Francisco Bay Area), see http://www.citycarshare.org/; and Zipcar, see http://www.zipcar.com/. Car sharing programs are being successfully used on many California campuses.</p>
<p>Provide a vanpool for employees.</p>	<p>Many local Transportation Management Agencies can assist in forming vanpools. See, for example, Sacramento Transportation Management Association, Check out Vanpooling (webpage) at http://www.sacramento-tma.org/vanpool.html.</p>
<p>Create local "light vehicle" networks, such as neighborhood electric vehicle systems.</p>	<p>See California Energy Commission, Consumer Energy Center, Urban Options - Neighborhood Electric Vehicles (NEVs) (webpage) at http://www.consumerenergycenter.org/transportation/urban_options/nev.html.</p> <p>The City of Lincoln has an innovative NEV program. See http://www.lincolnev.com/index.html.</p>
<p>Enforce and follow limits idling time for commercial vehicles, including delivery and construction vehicles.</p>	<p>Under existing law, diesel-fueled motor vehicles with a gross vehicle weight rating greater than 10,000 pounds are prohibited from idling for more than 5 minutes at any location. The minimum penalty for an idling violation is now \$300 per violation. See http://www.arb.ca.gov/enf/complaints/idling_cv.htm.</p>
<p>Provide the necessary facilities and infrastructure to encourage the use of low or zero-emission vehicles.</p>	<p>For a list of existing alternative fuel stations in California, visit http://www.cleancarmaps.com/.</p> <p>See, e.g., Baker, <i>Charging-station network built along 101</i>, S.F. Chron. (9/23/09), available at http://articles.sfgate.com/2009-09-23/news/17207424_1_recharging-solar-array-tesla-motors.</p>

Agriculture and Forestry (additional strategies noted above)

<p>Require best management practices in agriculture and animal operations to reduce emissions, conserve energy and water, and utilize alternative energy sources, including biogas, wind and solar.</p>	<p>Air Resources Board (ARB), Economic Sectors Portal, Agriculture (webpage) at http://www.arb.ca.gov/cc/ghgsectors/ghgsectors.htm. ARB's webpage includes information on emissions from manure management, nitrogen fertilizer, agricultural offroad equipment, and agricultural engines.</p> <p>"A full 90% of an agricultural business' electricity bill is likely associated with water use. In addition, the 8 million acres in California devoted to crops consume 80% of the total water pumped in the state." See Flex Your Power, Agricultural Sector (webpage) at http://www.fypower.org/agri/.</p> <p>Flex Your Power, Best Practice Guide / Food and Beverage Growers and Processors, available at http://www.fypower.org/bpg/index.html?b=food_and_bev.</p> <p>Antle et al., Pew Center on Global Climate Change, Agriculture's Role in Greenhouse Gas Mitigation (2006), available at http://www.pewclimate.org/docUploads/Agriculture's%20Role%20in%20GHG%20Mitigation.pdf.</p>
<p>Preserve forested areas, agricultural lands, wildlife habitat and corridors, wetlands, watersheds, groundwater recharge areas and other open space that provide carbon sequestration benefits.</p>	<p>"There are three general means by which agricultural and forestry practices can reduce greenhouse gases: (1) avoiding emissions by maintaining existing carbon storage in trees and soils; (2) increasing carbon storage by, e.g., tree planting, conversion from conventional to conservation tillage practices on agricultural lands; (3) substituting bio-based fuels and products for fossil fuels, such as coal and oil, and energy-intensive products that generate greater quantities of CO₂ when used." U.S. EPA, Carbon Sequestration in Agriculture and Forestry, Frequently Asked Questions (webpage) at http://www.epa.gov/sequestration/faq.html.</p> <p>Air Resources Board, Economic Sectors Portal, Forestry (webpage) at http://www.arb.ca.gov/cc/ghgsectors/ghgsectors.htm.</p>
<p>Protect existing trees and encourage the planting of new trees. Adopt a tree protection and replacement ordinance.</p>	<p>Tree preservation and planting is not just for rural areas of the state; suburban and urban forests can also serve as carbon sinks. See Cal Fire, Urban and Community Forestry (webpage) at http://www.fire.ca.gov/resource_mgt/resource_mgt_urbanforestry.php.</p>

Off-Site Mitigation

If, after analyzing and requiring all reasonable and feasible on-site mitigation measures for avoiding or reducing greenhouse gas-related impacts, the lead agency determines that additional mitigation is required, the agency may consider additional off-site mitigation. The project proponent could, for example, fund off-site mitigation projects that will reduce carbon emissions, conduct an audit of its other existing operations and agree to retrofit, or purchase verifiable carbon "credits" from another entity that will undertake mitigation.

The topic of off-site mitigation can be complicated. A full discussion is outside the scope of this summary document. Issues that the lead agency should consider include:

- The location of the off-site mitigation. (If the off-site mitigation is far from the project, any additional, non-climate related co-benefits of the mitigation may be lost to the local community.)
- Whether the emissions reductions from off-site mitigation can be quantified and verified. (The California Registry has developed a number of protocols for calculating, reporting and verifying greenhouse gas emissions. Currently, industry-specific protocols are available for the cement sector, power/utility sector, forest sector and local government operations. For more information, visit the California Registry's website at <http://www.climateregistry.org/>.)
- Whether the mitigation ratio should be greater than 1:1 to reflect any uncertainty about the effectiveness of the off-site mitigation.

Offsite mitigation measures that could be funded through mitigation fees include, but are not limited to, the following:

- Energy efficiency audits of existing buildings.
- Energy efficiency upgrades to existing buildings not otherwise required by law, including heating, ventilation, air conditioning, lighting, water heating equipment, insulation and weatherization (perhaps targeted to specific communities, such as low-income or senior residents).
- Programs to encourage the purchase and use of energy efficient vehicles, appliances, equipment and lighting.
- Programs that create incentives to replace or retire polluting vehicles and engines.
- Programs to expand the use of renewable energy and energy storage.
- Preservation and/or enhancement of existing natural areas (e.g., forested areas, agricultural lands, wildlife habitat and corridors, wetlands, watersheds, and groundwater recharge areas) that provide carbon sequestration benefits.
- Improvement and expansion of public transit and low- and zero-carbon transportation alternatives.

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August 30, 2012

Brooke O'Hanley
Lozeau | Drury LLP
410 12th Street, Suite 250
Oakland, CA 94607

**Subject: Comments on the Prologis Eucalyptus Industrial Park Project, Riverside County,
California**

Dear Ms. O'Hanley:

We have reviewed the July 2012 Draft Environmental Impact Report (DEIR) for Prologis Eucalyptus Industrial Park Project ("Project"). The Project would construct six buildings encompassing approximately 2.3 million square feet (or 53 acres) of warehouse space. The Project site would be located on a 123-acre lot in the eastern portion of the City of Moreno Valley in Riverside County, California.

We have reviewed the DEIR for issues associated with hazards and hazardous materials, greenhouse gases, air quality, and cumulative impacts. Project construction will result in potentially significant impacts to construction workers and nearby residents that are not adequately disclosed in the DEIR. A revised DEIR needs to be prepared to fully disclose, evaluate, and mitigate these impacts.

Hazards and Hazardous Materials:

Construction workers and nearby residents may be at risk during construction from failure to disclose baseline soil conditions at the Project site.

Residual pesticides in soil may pose health risks to workers and nearby residents

Currently, 57 acres of the Project site are used to grow grapefruit and 36 acres of the Project site are used for hay and alfalfa production (DEIR, p. 4.2-1). The DEIR and supporting documents do not provide any specific details on the types of pesticides that have been used on the Project site in association with

these agricultural operations. Our review has shown known and potential pesticide use at the Project site as follows:

- Data available online from the California Department of Pesticide Regulation show that 2,4-D, 2-Ethylhexyl Ester was used on the Project site.^{1,2} Occupational exposure to 2,4-D, 2-Ethylhexyl Ester can occur via inhalation or dermal contact and can result in skin irritation, respiratory failure, hyperventilation, and pulmonary enemas.³
- Organochlorine pesticides DDE and DDT were detected in soil samples collected at the Project site⁴, indicating past use. Use of organochlorine pesticides in the area is common: review of the Department of Toxic Substances Control's (DTSC) Envirostor database shows that the surrounding lands have been surveyed for organochlorine pesticides, DDE and DDT.⁵ These pesticides can persist in soil for hundreds of years despite being banned in the 1970s.⁶ Exposure to DDT can result in headaches, nausea, and convulsions.⁷ The U.S. EPA identifies DDT and DDE as probable human carcinogens.⁸
- The EPA states that soils at fruit orchards, such as the grapefruit orchard on the Project site, may contain high levels of arsenic from application as a pesticide.⁹ Another chemical used on fruit orchards is lead arsenate, a very persistent pesticide.¹⁰ Arsenic is a known human carcinogen and even short-term inhalation of arsenic dust can cause gastrointestinal effects¹¹ while lead is known to cause neurotoxicological effects.¹²

Pesticide use at the Project site was not disclosed in the DEIR and the detection of pesticide residuals in soil were not described in the Hazards and Hazardous Materials section.

Failure to disclose the presence of pesticide residuals in Project site soils may pose significant health risks to construction workers. Construction of the Project requires grading and the disturbance of subsurface soils and removal of citrus groves (DEIR, p. 4.7-21). During earthmoving activities, construction workers will be exposed, via inhalation of dust and dermal contact, to Project site soils which may contain harmful levels of pesticide residuals associated with agricultural activities on the site. To protect worker safety, Project site soils must be sampled for pesticides. Sampling results should be

¹ http://cdpr.ca.gov/pub/outgoing/calpip/26814174623515_120824104149.html

² http://cdpr.ca.gov/pub/outgoing/calpip/26814174623515_120824104217.html

³ <http://toxnet.nlm.nih.gov/cgi-bin/sis/search/a?dbs+hsdb:@term+@DOCNO+7309>

⁴ Phase I Environmental Site Assessment, 84 acres. Near Intersection of Pittit Street and Highway 60, Moreno Valley, California, p. 9 and Phase I Environmental Site Assessment, 37 acres. Near Intersection of Pittit Street and Highway 60, Moreno Valley, California, p. 8

⁵ http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=60000825 and

http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=60000931

⁶ <http://www.atsdr.cdc.gov/toxprofiles/tp35.pdf>, p. 3

⁷ <http://www.epa.gov/ttn/atw/hlthef/dde.html>

⁸ <http://www.atsdr.cdc.gov/toxfaqs/tf.asp?id=80&tid=20>

⁹ <http://water.epa.gov/drink/info/well/health.cfm>

¹⁰ <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1551991/>

¹¹ <http://www.epa.gov/ttn/atw/hlthef/arsenic.html>

¹² <http://www.epa.gov/lead/pubs/learn-about-lead.html#effects>

compared to health-protective regulatory screening levels such as U.S. EPA Regional Screening Levels¹³ and California Human Health Screening Levels.¹⁴

Soil sampling results should also be evaluated for the protection of nearby residents, located 50 feet from the southern boundary and 200 feet from the northern boundary of the Project site (DEIR, p. 4.3-6). Inhalation of pesticides has been linked to asthma in recent research.^{15,16} A report prepared by the California Department of Health identifies pesticides as an asthma trigger.¹⁷ Offsite receptors, including any children living in the neighboring residences, may be exposed to pesticide residuals via dust generated during Project construction.

Construction activities, such as grading and excavation of soils, may generate dust that contains pesticides in concentrations that are harmful to the health of workers and nearby residents and which may act as an asthma trigger. Project site soils should be sampled and results should be compared to human health screening levels. A revised DEIR should be prepared to disclose the results of sampling and include any necessary mitigation to reduce impacts to the health of construction workers and nearby residents.

Phase I ESAs completed for the Project site are outdated and inadequate

The DEIR relies on the findings from two Phase I Environmental Site Assessments (ESAs) that were completed in October and November 2003, nearly nine years ago. The Phase I ESAs surveyed 121 acres of the 123-acre Project site. The Applicant purchased the Project site more than five years ago.¹⁸ A Phase I ESA, according to the U.S. EPA, must be conducted within one year of the acquisition of the property and on-site visual inspections must be completed within 180 days prior to acquiring ownership of the property.¹⁹

Because the Phase I ESAs are dated and omit two acres of the Project site, they cannot be used to evaluate conditions that are potentially hazardous to construction workers and future site personnel. Therefore, the DEIR's analysis of the Project site based on these Phase I ESAs is inadequate.

Review of Google Earth images shows that the Project site has been used for ongoing agricultural operations since the Phase I ESAs were completed in 2003. Limited pesticide sampling was conducted during the Phase I ESAs (a total of 8 soil samples for a 123-acre Project site) but because the samples were collected nine years ago and because they do not reflect continued agricultural use, the results are reflective of current site conditions.

¹³ <http://www.epa.gov/region9/superfund/prg/>

¹⁴ <http://www.calepa.ca.gov/brownfields/documents/2005/CHHSLsGuide.pdf>

¹⁵ <http://extension.psu.edu/ipm/resources/urbanphilly/partnerships/handouts/asthma-pests.pdf>

¹⁶ <http://www.ncbi.nlm.nih.gov/pubmed/21368619>

¹⁷ <http://www.cdph.ca.gov/programs/caphi/Documents/AsthmaStrategicPlan.5-5-08.pdf>, p. 22

¹⁸ <http://www.pe.com/local-news/riverside-county/moreno-valley/moreno-valley-headlines-index/20120726-moreno-valley-officials-seek-comments-on-prologis-project.ece>

¹⁹ <http://www.epa.gov/brownfields/aai/aaicerclafs.pdf>

The Phase I ESAs cover 121 acres of the 123-acre Project site. We have created a map to show the areas of the Project site surveyed by the two 2003 Phase I ESAs and the boundaries for the current Project site (Attachment A). As the map shows, not all areas of the current Project site were included in the 2003 Phase I ESAs' site assessments.

The Phase I ESAs are outdated and do not cover the entire Project site; therefore, they cannot be used to define baseline conditions for the DEIR's Hazards and Hazardous Materials section. A revised DEIR should be prepared to include a new Phase I ESA that evaluates current Project site conditions.

Status of an underground storage tank is uncertain

A 13,400 gallon underground storage tank (UST), abandoned in the 1950s, was removed from the Project site in 2004 (Appendix F, p. 3/191). The Phase I ESA recommended an additional investigation to be conducted in the area of the former UST (Appendix F, p. 10/191). Accordingly, a permit for removal of the UST was submitted to the Riverside County's Department of Environmental Health in December 2003 and soil samples around the area of the UST were analyzed in 2004. However, the DEIR and supporting documents did not include any documentation that that the UST was properly closed by the Riverside County Department of Environmental Health. If the UST removal was not approved, an Underground Storage Tank Closure Application and Permit²⁰, per the Riverside County Department of Environmental Health Guidelines,²¹ must be submitted. A revised DEIR should be prepared to disclose whether closure was granted by the Riverside County Department of Environmental Health.

Greenhouse Gas Emissions:

The Project's operational greenhouse gas (GHG) emissions, before mitigation, are estimated to be 79,000 metric tons of CO₂e/year (MT CO₂e/yr) which exceed the SCAQMD threshold of 10,000 MT CO₂e/yr and are therefore considered significant (DEIR, p. 4.13-19). After mitigation, the DEIR states that GHG emissions will be less than significant (DEIR, p. 4.13-21). However, the DEIR does not calculate what the Project's GHG emissions will be after the mitigation measures are implemented.

The Project's GHG emissions exceed the SCAQMD threshold by nearly eight times. The DEIR and its supporting documents, including a Greenhouse Gas Study attached as Appendix B, do not provide any evidence that the proposed mitigation measures will reduce GHG emissions by a factor of eight.

A revised DEIR should be prepared to show the efficiency of the Project's proposed mitigation measures in reducing greenhouse gases. If these measures do not account for an eight-fold reduction in the Project's estimated GHG levels, additional mitigation measures (listed below) that are routinely considered in other CEQA projects should be implemented:

- Require preparation of a traffic control plan;

²⁰ http://www.rivcoeh.org/opencms/system/galleries/download/Environmental-Health/HMM/UST_Closure_App.pdf

²¹ http://www.rivcoeh.org/opencms/system/galleries/download/Environmental-Health/HMM/Closure_by_removal_UST.pdf

- Demonstrate proper inspection and maintenance of construction equipment;
- Implement a carpool program for construction workers;
- Employ a construction site manager to verify that engines are properly maintained and keep a maintenance log;
- Configure construction parking to minimize traffic interference;
- Consolidate truck deliveries when possible;
- Provide dedicated turn lanes for movement of construction trucks and equipment on and off site;
- Suspend use of all construction equipment operations during second stage smog alerts;
- Establish a staging zone for trucks that are waiting to load or unload material at the work zone in a location where diesel emissions from the trucks will have minimum impact on abutters and the general public;
- Locate construction equipment away from sensitive receptors such as fresh air intakes to buildings, air conditioners and operable windows;
- Require all diesel trucks used by construction contractor(s) at the site, or for on-road hauling of construction material, to be post-1996 models; Diesel portable generators less than 50 hp shall not be allowed at the construction site;
- Use of hybrid and fuel efficient construction equipment and support vehicles (e.g., pick-up trucks);
- Use of grid electricity for smaller equipment such as saws, pumps, and welders;²²
- Reduction in vehicle miles travelled in construction crew commutes through trip carpooling, trip reduction, providing bus service for crews from work sites to carpool parking areas, and in providing incentives to carpool; and
- Use of a Heavy-Duty Off-Road Vehicle Plan to ensure compliances with construction mitigation measures (e.g., hourly meters on equipment, documenting the serial number, horsepower, manufacture age, fuel, etc. of all onsite equipment and daily logging of the operating hours of the equipment).²³

Air Quality:

The Project is located in the South Coast Air Basin and Riverside County²⁴, both of which are designated non-attainment for PM10 and ozone (DEIR, p. 4.3-6). Significant emissions of PM10 and ozone and contributing factors such as NOx and ROG will lead to a worsening of regional air quality. The Project's estimates of construction emissions need to be properly disclosed and mitigated to ensure that the Project has a less than significant impact on regional air quality.

Estimates and impacts of project's construction and operational emissions

²² <http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf>, p. 47

²³ Ibid., p. 431

²⁴ <http://www.epa.gov/oagps001/greenbk/ancl.html>

Project construction and operation will result in significant emissions of ROG, NOx, and PM10 even after mitigation (DEIR, pp. 4.3-29, 4.3-34).

Construction emissions

The DEIR estimates that the Project's construction emissions of NOx and ROG will be significant as they exceed the SCAQMD thresholds of 100 lbs/day and 75 lbs/day, respectively (DEIR, p. 4.3-23) and identifies mitigation measures to reduce the Project's emissions (DEIR, pp. 4.3-23 – 4.3-29). Even with mitigation, the Project's emissions of NOx and ROG will still exceed SCAQMD thresholds and therefore are considered significant (DEIR, p. 4.3-29).

Operational emissions

The DEIR estimates that the Project's emissions of ROG, NOx, and PM10 from operational activities will be significant as they exceed the SCAQMD thresholds of 55 lbs/day, 55 lbs/day, and 150 lbs/day, respectively (DEIR, p. 4.3-33). The DEIR proposes mitigation measures to reduce the Project's emissions (DEIR, pp. 4.3-33 – 4.3-34) but, even with mitigation, the Project's emissions will still exceed SCAQMD thresholds and therefore are considered significant (DEIR, p. 4.3-34).

Gaseous particles such as NOx can react in the atmosphere to form PM10.^{25,26} Because Riverside County and the South Coast Air Basin are both designated non-attainment for PM10, significant emissions of NOx can lead to a further degradation of regional air quality. NOx emissions can also react to produce ground-level ozone.²⁷ Exposure to NOx emissions and its products (ozone and PM10) can lead to the airway inflammation and can cause or exacerbate conditions such as emphysema and bronchitis.²⁸

ROG can react to form ozone and contributes to smog formation.^{29,30} Exposure to ozone can result in coughing, throat irritation, and chest pain, burning, and discomfort.³¹ Smog exposure can lead to sneezing, nausea, coughing, headaches, and chest constriction.³² A study published in the New England Journal of Medicine concluded that the risk of dying from respiratory diseases is three times higher in areas of concentrated ozone.³³

Exposure to PM10 can cause bronchitis, increase the number and severity of asthma attacks, damage to lung tissue, and even premature death.³⁴ Research identifies that dust from construction is a major

²⁵ <http://www.fhwa.dot.gov/resourcecenter/teams/airquality/brochure/particulatebrochure.pdf>

²⁶ <http://www.epa.gov/captrade/documents/power.pdf>

²⁷ *Ibid.*

²⁸ <http://www.epa.gov/air/nitrogenoxides/health.html>

²⁹ <http://www.arb.ca.gov/research/health/fs/fs2/fs2.htm>

³⁰ <http://www.arb.ca.gov/html/gloss.htm#smog>

³¹ <http://www.epa.gov/o3healthtraining/population.html>

³² <http://are.berkeley.edu/courses/EEP101/spring03/AllThatSmog/extern.html>

³³ <http://www.nytimes.com/gwire/2009/03/12/12greenwire-study-links-smog-exposure-to-premature-death-10098.html>

³⁴ <http://www.epa.gov/airtrends/aqtrnd95/pm10.html> and <http://www.arb.ca.gov/html/brochure/pm10.htm>

contributor to PM10 and that PM10 exposure is associated with asthma.³⁵ Inhalation of PM10 can exacerbate asthma especially in children who are susceptible to higher risks from PM10 exposure.³⁶

The Project will have significant emissions of ROG, NOx, and PM10. Because Riverside County and the South Coast Air Basin are designated non-attainment areas for ozone and PM10, Project construction and operation will further degrade regional air quality. Exposure to ROG, NOx, and PM10 has adverse health effects and can impact offsite receptors, especially children in the nearby residences – a significant and undisclosed public health impact that the DEIR does not consider.

A revised DEIR should be prepared to disclose impacts to offsite receptors from Project construction and operation. Additional mitigation measures must be implemented to ensure that Project emissions of ROG, NOx, and PM10 are reduced to the maximum extent feasible.

Cumulative Impacts:

The DEIR identifies 13 proposed projects encompassing approximately 7.3 million square feet of space within five miles of the Project site (DEIR, p. 3-16). The DEIR does not identify the construction schedule of these projects except to state that “a number of individual projects may be under construction simultaneously with the proposed project” (DEIR, p. 4.3-37). The WestRidge Commerce Center Project (which will be built adjacent to the proposed Project) is scheduled to be constructed in 2012, a schedule similar to the proposed Project. Simultaneous construction of these projects, along with other potential projects, is likely to result in PM10, NOx, and ROG emissions that will have a cumulatively significant impact.

The construction timetables of all projects within the vicinity of the Project site should be identified. Any cumulatively significant emissions should be disclosed and impacts to workers and nearby residents should be addressed in a revised DEIR.

Sincerely,



Uma Bhandaram



Matt Hagemann, P.G., C.Hg.

³⁵ http://scerpfiles.org/cont_mgt/doc_files/EH-01-2.pdf

³⁶ <http://www.co.imperial.ca.us/airpollution/attainment%20plans/final%20ic%202009%20pm10%20sip%20document.pdf>



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Matthew F. Hagemann, P.G., C.Hg., QSD, QSP

**Geologic and Hydrogeologic Characterization
Industrial Stormwater Compliance
CEQA Review
Investigation and Remediation Strategies
Litigation Support and Testifying Expert**

Education:

M.S. Degree, Geology, California State University Los Angeles, Los Angeles, CA, 1984.
B.A. Degree, Geology, Humboldt State University, Arcata, CA, 1982.

Professional Certification:

California Professional Geologist
California Certified Hydrogeologist
Qualified SWPPP Developer and Practitioner

Professional Experience:

Matt has 25 years of experience in environmental policy, assessment and remediation. He spent nine years with the U.S. EPA in the RCRA and Superfund programs and served as EPA's Senior Science Policy Advisor in the Western Regional Office where he identified emerging threats to groundwater from perchlorate and MTBE. While with EPA, Matt also served as a Senior Hydrogeologist in the oversight of the assessment of seven major military facilities undergoing base closure. He led numerous enforcement actions under provisions of the Resource Conservation and Recovery Act (RCRA) while also working with permit holders to improve hydrogeologic characterization and water quality monitoring.

Matt has worked closely with U.S. EPA legal counsel and the technical staff of several states in the application and enforcement of RCRA, Safe Drinking Water Act and Clean Water Act regulations. Matt has trained the technical staff in the States of California, Hawaii, Nevada, Arizona and the Territory of Guam in the conduct of investigations, groundwater fundamentals, and sampling techniques.

Positions Matt has held include:

- Founding Partner, Soil/Water/Air Protection Enterprise (SWAPE) (2003 – present);
- Geology Instructor, Golden West College, 2010 – present;
- Senior Environmental Analyst, Komex H2O Science, Inc (2000 -- 2003);

- Executive Director, Orange Coast Watch (2001 – 2004);
- Senior Science Policy Advisor and Hydrogeologist, U.S. Environmental Protection Agency (1989–1998);
- Hydrogeologist, National Park Service, Water Resources Division (1998 – 2000);
- Adjunct Faculty Member, San Francisco State University, Department of Geosciences (1993 – 1998);
- Instructor, College of Marin, Department of Science (1990 – 1995);
- Geologist, U.S. Forest Service (1986 – 1998); and
- Geologist, Dames & Moore (1984 – 1986).

Partner, SWAPE:

With SWAPE, Matt’s responsibilities have included:

- Lead analyst and testifying expert in the review of numerous environmental impact reports under CEQA that identify significant issues with regard to hazardous waste, water resources, water quality, air quality, greenhouse gas emissions and geologic hazards.
- Stormwater analysis, sampling and best management practice evaluation at industrial facilities.
- Lead analyst and testifying expert in the review of environmental issues in license applications for large solar power plants before the California Energy Commission.
- Technical assistance and litigation support for vapor intrusion concerns.
- Manager of a project to evaluate numerous formerly used military sites in the western U.S.
- Manager of a comprehensive evaluation of potential sources of perchlorate contamination in Southern California drinking water wells.
- Manager and designated expert for litigation support under provisions of Proposition 65 in the review of releases of gasoline to sources drinking water at major refineries and hundreds of gas stations throughout California.
- Expert witness on two cases involving MTBE litigation.
- Expert witness and litigation support on the impact of air toxins and hazards at a school.
- Expert witness in litigation at a former plywood plant.

With Komex H2O Science Inc., Matt’s duties included the following:

- Senior author of a report on the extent of perchlorate contamination that was used in testimony by the former U.S. EPA Administrator and General Counsel.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of MTBE use, research, and regulation.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of perchlorate use, research, and regulation.
- Senior researcher in a study that estimates nationwide costs for MTBE remediation and drinking water treatment, results of which were published in newspapers nationwide and in testimony against provisions of an energy bill that would limit liability for oil companies.
- Research to support litigation to restore drinking water supplies that have been contaminated by MTBE in California and New York.
- Expert witness testimony in a case of oil production-related contamination in Mississippi.
- Lead author for a multi-volume remedial investigation report for an operating school in Los Angeles that met strict regulatory requirements and rigorous deadlines.
- Development of strategic approaches for cleanup of contaminated sites in consultation with clients and regulators.

Executive Director:

As Executive Director with Orange Coast Watch, Matt led efforts to restore water quality at Orange County beaches from multiple sources of contamination including urban runoff and the discharge of wastewater. In reporting to a Board of Directors that included representatives from leading Orange County universities and businesses, Matt prepared issue papers in the areas of treatment and disinfection of wastewater and control of the discharge of grease to sewer systems. Matt actively participated in the development of countywide water quality permits for the control of urban runoff and permits for the discharge of wastewater. Matt worked with other nonprofits to protect and restore water quality, including Surfrider, Natural Resources Defense Council and Orange County CoastKeeper as well as with business institutions including the Orange County Business Council.

Hydrogeology:

As a Senior Hydrogeologist with the U.S. Environmental Protection Agency, Matt led investigations to characterize and cleanup closing military bases, including Mare Island Naval Shipyard, Hunters Point Naval Shipyard, Treasure Island Naval Station, Alameda Naval Station, Moffett Field, Mather Army Airfield, and Sacramento Army Depot. Specific activities were as follows:

- Led efforts to model groundwater flow and contaminant transport, ensured adequacy of monitoring networks, and assessed cleanup alternatives for contaminated sediment, soil, and groundwater.
- Initiated a regional program for evaluation of groundwater sampling practices and laboratory analysis at military bases.
- Identified emerging issues, wrote technical guidance, and assisted in policy and regulation development through work on four national U.S. EPA workgroups, including the Superfund Groundwater Technical Forum and the Federal Facilities Forum.

At the request of the State of Hawaii, Matt developed a methodology to determine the vulnerability of groundwater to contamination on the islands of Maui and Oahu. He used analytical models and a GIS to show zones of vulnerability, and the results were adopted and published by the State of Hawaii and County of Maui.

As a hydrogeologist with the EPA Groundwater Protection Section, Matt worked with provisions of the Safe Drinking Water Act and NEPA to prevent drinking water contamination. Specific activities included the following:

- Received an EPA Bronze Medal for his contribution to the development of national guidance for the protection of drinking water.
- Managed the Sole Source Aquifer Program and protected the drinking water of two communities through designation under the Safe Drinking Water Act. He prepared geologic reports, conducted public hearings, and responded to public comments from residents who were very concerned about the impact of designation.

- Reviewed a number of Environmental Impact Statements for planned major developments, including large hazardous and solid waste disposal facilities, mine reclamation, and water transfer.

Matt served as a hydrogeologist with the RCRA Hazardous Waste program. Duties were as follows:

- Supervised the hydrogeologic investigation of hazardous waste sites to determine compliance with Subtitle C requirements.
- Reviewed and wrote "part B" permits for the disposal of hazardous waste.
- Conducted RCRA Corrective Action investigations of waste sites and led inspections that formed the basis for significant enforcement actions that were developed in close coordination with U.S. EPA legal counsel.
- Wrote contract specifications and supervised contractor's investigations of waste sites.

With the National Park Service, Matt directed service-wide investigations of contaminant sources to prevent degradation of water quality, including the following tasks:

- Applied pertinent laws and regulations including CERCLA, RCRA, NEPA, NRDA, and the Clean Water Act to control military, mining, and landfill contaminants.
- Conducted watershed-scale investigations of contaminants at parks, including Yellowstone and Olympic National Park.
- Identified high-levels of perchlorate in soil adjacent to a national park in New Mexico and advised park superintendent on appropriate response actions under CERCLA.
- Served as a Park Service representative on the Interagency Perchlorate Steering Committee, a national workgroup.
- Developed a program to conduct environmental compliance audits of all National Parks while serving on a national workgroup.
- Co-authored two papers on the potential for water contamination from the operation of personal watercraft and snowmobiles, these papers serving as the basis for the development of nation-wide policy on the use of these vehicles in National Parks.
- Contributed to the Federal Multi-Agency Source Water Agreement under the Clean Water Action Plan.

Policy:

Served senior management as the Senior Science Policy Advisor with the U.S. Environmental Protection Agency, Region 9. Activities included the following:

- Advised the Regional Administrator and senior management on emerging issues such as the potential for the gasoline additive MTBE and ammonium perchlorate to contaminate drinking water supplies.
- Shaped EPA's national response to these threats by serving on workgroups and by contributing to guidance, including the Office of Research and Development publication, Oxygenates in Water: Critical Information and Research Needs.
- Improved the technical training of EPA's scientific and engineering staff.
- Earned an EPA Bronze Medal for representing the region's 300 scientists and engineers in negotiations with the Administrator and senior management to better integrate scientific principles into the policy-making process.
- Established national protocol for the peer review of scientific documents.

Geology:

With the U.S. Forest Service, Matt led investigations to determine hillslope stability of areas proposed for timber harvest in the central Oregon Coast Range. Specific activities were as follows:

- Mapped geology in the field, and used aerial photographic interpretation and mathematical models to determine slope stability.
- Coordinated his research with community members who were concerned with natural resource protection.
- Characterized the geology of an aquifer that serves as the sole source of drinking water for the city of Medford, Oregon.

As a consultant with Dames and Moore, Matt led geologic investigations of two contaminated sites (later listed on the Superfund NPL) in the Portland, Oregon, area and a large hazardous waste site in eastern Oregon. Duties included the following:

- Supervised year-long effort for soil and groundwater sampling.
- Conducted aquifer tests.
- Investigated active faults beneath sites proposed for hazardous waste disposal.

Teaching:

From 1990 to 1998, Matt taught at least one course per semester at the community college and university levels:

- At San Francisco State University, held an adjunct faculty position and taught courses in environmental geology, oceanography (lab and lecture), hydrogeology, and groundwater contamination.
- Served as a committee member for graduate and undergraduate students.
- Taught courses in environmental geology and oceanography at the College of Marin.

Matt currently teaches Physical Geology (lecture and lab) to students at Golden West College in Huntington Beach, California.

Invited Testimony, Reports, Papers and Presentations:

Hagemann, M.F., 2008. Disclosure of Hazardous Waste Issues under CEQA. Presentation to the Public Environmental Law Conference, Eugene, Oregon.

Hagemann, M.F., 2008. Disclosure of Hazardous Waste Issues under CEQA. Invited presentation to U.S. EPA Region 9, San Francisco, California.

Hagemann, M.F., 2005. Use of Electronic Databases in Environmental Regulation, Policy Making and Public Participation. Brownfields 2005, Denver, Colorado.

Hagemann, M.F., 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Nevada and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Las Vegas, NV (served on conference organizing committee).

Hagemann, M.F., 2004. Invited testimony to a California Senate committee hearing on air toxins at schools in Southern California, Los Angeles.

Brown, A., Farrow, J., Gray, A. and **Hagemann, M.**, 2004. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to the Ground Water and Environmental Law Conference, National Groundwater Association.

Hagemann, M.F., 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Arizona and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Phoenix, AZ (served on conference organizing committee).

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in the Southwestern U.S. Invited presentation to a special committee meeting of the National Academy of Sciences, Irvine, CA.

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a tribal EPA meeting, Pechanga, CA.

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a meeting of tribal representatives, Parker, AZ.

Hagemann, M.F., 2003. Impact of Perchlorate on the Colorado River and Associated Drinking Water Supplies. Invited presentation to the Inter-Tribal Meeting, Torres Martinez Tribe.

Hagemann, M.F., 2003. The Emergence of Perchlorate as a Widespread Drinking Water Contaminant. Invited presentation to the U.S. EPA Region 9.

Hagemann, M.F., 2003. A Deductive Approach to the Assessment of Perchlorate Contamination. Invited presentation to the California Assembly Natural Resources Committee.

Hagemann, M.F., 2003. Perchlorate: A Cold War Legacy in Drinking Water. Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. From Tank to Tap: A Chronology of MTBE in Groundwater. Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. A Chronology of MTBE in Groundwater and an Estimate of Costs to Address Impacts to Groundwater. Presentation to the annual meeting of the Society of Environmental Journalists.

Hagemann, M.F., 2002. An Estimate of the Cost to Address MTBE Contamination in Groundwater (and Who Will Pay). Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to a meeting of the U.S. EPA and State Underground Storage Tank Program managers.

Hagemann, M.F., 2001. From Tank to Tap: A Chronology of MTBE in Groundwater. Unpublished report.

Hagemann, M.F., 2001. Estimated Cleanup Cost for MTBE in Groundwater Used as Drinking Water. Unpublished report.

Hagemann, M.F., 2001. Estimated Costs to Address MTBE Releases from Leaking Underground Storage Tanks. Unpublished report.

Hagemann, M.F., and VanMouwerik, M., 1999. Potential Water Quality Concerns Related to Snowmobile Usage. Water Resources Division, National Park Service, Technical Report.

VanMouwerik, M. and **Hagemann, M.F.** 1999, Water Quality Concerns Related to Personal Watercraft Usage. Water Resources Division, National Park Service, Technical Report.

Hagemann, M.F., 1999, Is Dilution the Solution to Pollution in National Parks? The George Wright Society Biannual Meeting, Asheville, North Carolina.

Hagemann, M.F., 1997, The Potential for MTBE to Contaminate Groundwater. U.S. EPA Superfund Groundwater Technical Forum Annual Meeting, Las Vegas, Nevada.

Hagemann, M.F., and Gill, M., 1996, Impediments to Intrinsic Remediation, Moffett Field Naval Air Station, Conference on Intrinsic Remediation of Chlorinated Hydrocarbons, Salt Lake City.

Hagemann, M.F., Fukunaga, G.L., 1996, The Vulnerability of Groundwater to Anthropogenic Contaminants on the Island of Maui, Hawaii. Hawaii Water Works Association Annual Meeting, Maui, October 1996.

Hagemann, M. F., Fukanaga, G. L., 1996, Ranking Groundwater Vulnerability in Central Oahu, Hawaii. Proceedings, Geographic Information Systems in Environmental Resources Management, Air and Waste Management Association Publication VIP-61.

Hagemann, M.F., 1994. Groundwater Characterization and Cleanup at Closing Military Bases in California. Proceedings, California Groundwater Resources Association Meeting.

Hagemann, M.F. and Sabol, M.A., 1993. Role of the U.S. EPA in the High Plains States Groundwater Recharge Demonstration Program. Proceedings, Sixth Biennial Symposium on the Artificial Recharge of Groundwater.

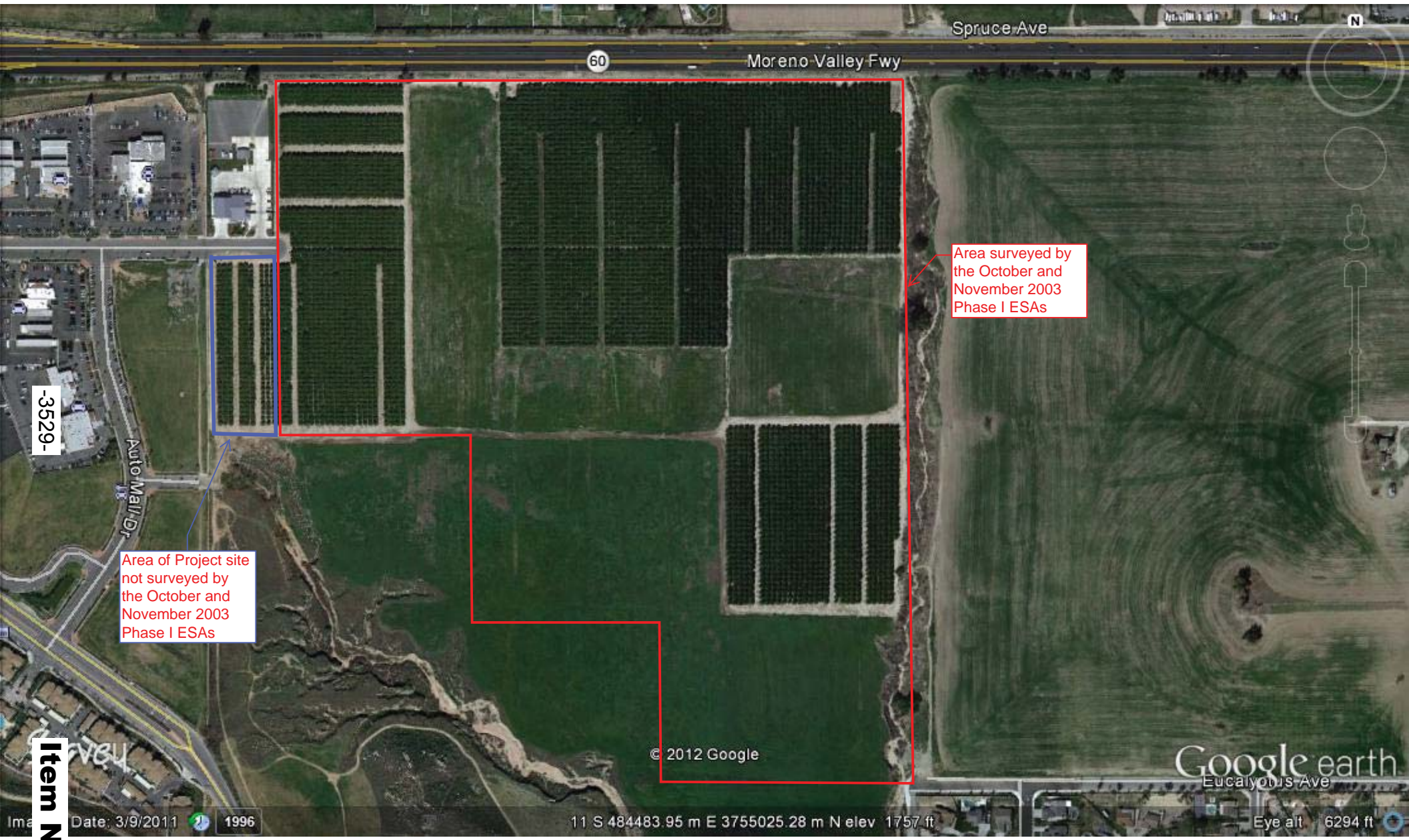
Hagemann, M.F., 1993. U.S. EPA Policy on the Technical Impracticability of the Cleanup of DNAPL-contaminated Groundwater. California Groundwater Resources Association Meeting.

Hagemann, M.F., 1992. Dense Nonaqueous Phase Liquid Contamination of Groundwater: An Ounce of Prevention... Proceedings, Association of Engineering Geologists Annual Meeting, v. 35.

Other Experience:

Selected as subject matter expert for the California Professional Geologist licensing examination, 2009-2011.

ATTACHMENT A



Spruce Ave

60

Moreno Valley Fwy

-3529-

Area of Project site not surveyed by the October and November 2003 Phase I ESAs

Area surveyed by the October and November 2003 Phase I ESAs

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Google earth
Eucalyptus Ave

Item No. E.3

Date: 3/9/2011 1996

11 S 484483.95 m E 3755025.28 m N elev 1757 ft

Eye alt 6294 ft

Selected References

Query returned the following data:

There are 4 records returned.

YEAR	DATE	COUNTY NAME	COMTRS	SITE NAME	PRODUCT NAME	POUNDS PRODUCT APPLIED	CHEMICAL NAME	POUNDS CHEMICAL APPLIED	AMOUNT TREATED	UNIT TREATED	AERIAL GROUND INDICATOR
2010	20-MAR-10	RIVERSIDE	33S03S03W02	WHEAT, GENERAL	NUFARM WEEDONE LV6 EC BROADLEAF HERBICIDE	56.4474	2,4-D, 2-ETHYLHEXYL ESTER	48.8834484	72	A	A
2010	20-MAR-10	RIVERSIDE	33S03S03W02	WHEAT, GENERAL	NUFARM WEEDONE LV6 EC BROADLEAF HERBICIDE	38.2196	2,4-D, 2-ETHYLHEXYL ESTER	33.0981736	65	A	A
2010	18-MAR-10	RIVERSIDE	33S03S03W02	WHEAT, GENERAL	NUFARM WEEDONE LV6 EC BROADLEAF HERBICIDE	104.6629	2,4-D, 2-ETHYLHEXYL ESTER	90.6380714	133	A	G
2010	20-MAR-10	RIVERSIDE	33S03S03W02	WHEAT, GENERAL	NUFARM WEEDONE LV6 EC BROADLEAF HERBICIDE	29.3997	2,4-D, 2-ETHYLHEXYL ESTER	25.4601402	37	A	A

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Query returned the following data:

There are 1 records returned.

YEAR	DATE	COUNTY NAME	COMTRS	SITE NAME	PRODUCT NAME	POUNDS PRODUCT APPLIED	CHEMICAL NAME	POUNDS CHEMICAL APPLIED	AMOUNT TREATED	UNIT TREATED	AERIAL GROUND INDICATOR
2008	01-MAR-08	RIVERSIDE	33S03S03W02	WHEAT, GENERAL	NUFARM WEEDONE LV6 EC BROADLEAF HERBICIDE	76.4392	2,4-D, 2-ETHYLHEXYL ESTER	66.1963472	65	A	G

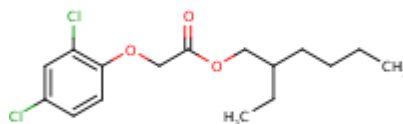
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2,4-D 2-ETHYLHEXYL ESTER

CASRN: 1928-43-4



For more information, search the NLM [HSDB](#) database.

Human Health Effects:

Probable Routes of Human Exposure:

Occupational exposure to 2,4-D, 2-ethylhexyl ester may occur through inhalation and dermal contact with this compound at workplaces where 2,4-D, 2-ethylhexyl ester is produced or used. (SRC)

****PEER REVIEWED****

Emergency Medical Treatment:

Emergency Medical Treatment:

EMT Copyright Disclaimer:

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The following Overview, ***** CHLOROPHENOXY COMPOUNDS *****, is relevant for this

HSDB record chemical.

Life Support:

- o This overview assumes that basic life support measures have been instituted.

Clinical Effects:

0.2.1 SUMMARY OF EXPOSURE

0.2.1.1 ACUTE EXPOSURE

A) WITH POISONING/EXPOSURE

- 1) ACUTE INGESTION - Miosis, coma, fever, hypotension, emesis, tachycardia, bradycardia, ECG abnormalities, muscle rigidity, possible respiratory failure, pulmonary edema, and rhabdomyolysis may occur. Deaths have resulted from cardiorespiratory arrest.
 - a) Concentrated formulations of 2,4-D-esters may contain petroleum solvents, contributing to the overall toxicity. Please refer to the HYDROCARBONS management for further information.
- 2) PATHOPHYSIOLOGY - These agents are primarily irritants, but one case of degenerative brain cell changes and CNS toxicity has been reported.

0.2.3 VITAL SIGNS

0.2.3.1 ACUTE EXPOSURE

A) WITH POISONING/EXPOSURE

- 1) Fever of sudden but delayed onset may occur following ingestion.

0.2.4 HEENT

0.2.4.1 ACUTE EXPOSURE

A) WITH POISONING/EXPOSURE

- 1) Eye, nose, and mouth irritation are possible with direct contact.

0.2.5 CARDIOVASCULAR

0.2.5.1 ACUTE EXPOSURE

A) WITH POISONING/EXPOSURE

- 1) Tachycardia, bradycardia, ECG abnormalities, asystole, other dysrhythmias, and hypotension have been reported with overdose. Deaths have resulted from cardiorespiratory arrest.

0.2.6 RESPIRATORY

0.2.6.1 ACUTE EXPOSURE

A) WITH POISONING/EXPOSURE

- 1) Ingestion of large amounts may cause bradypnea, respiratory failure, hyperventilation, or pulmonary edema.

0.2.7 NEUROLOGIC

0.2.7.1 ACUTE EXPOSURE

A) WITH POISONING/EXPOSURE

- 1) LOW DOSE EXPOSURES - Vertigo, headache, malaise, and paresthesias may occur depending on the specific compound involved.
- 2) HIGH DOSE EXPOSURES - Muscle twitching, spasms, profound weakness, polyneuritis, and unconsciousness may occur depending on the specific compound involved.
- 3) IDIOSYNCRATIC REACTIONS - Peripheral neuropathies

0.2.8 GASTROINTESTINAL

0.2.8.1 ACUTE EXPOSURE

A) WITH POISONING/EXPOSURE

- 1) Nausea, vomiting, and diarrhea have been reported. Necrosis of the gastrointestinal mucosa has been reported.

- 0.2.9 HEPATIC
 - 0.2.9.1 ACUTE EXPOSURE
 - A) WITH POISONING/EXPOSURE
 - 1) Elevated LDH, AST (SGOT), and ALT (SGPT) have been reported.
- 0.2.10 GENITOURINARY
 - 0.2.10.1 ACUTE EXPOSURE
 - A) WITH POISONING/EXPOSURE
 - 1) Albuminuria and porphyria may occur; renal failure due to rhabdomyolysis is also possible.
- 0.2.12 FLUID-ELECTROLYTE
 - 0.2.12.1 ACUTE EXPOSURE
 - A) WITH POISONING/EXPOSURE
 - 1) Ingestion of 2,4-D has produced hypocalcemia, hyperkalemia, and hypophosphatemia.
- 0.2.13 HEMATOLOGIC
 - 0.2.13.1 ACUTE EXPOSURE
 - A) WITH POISONING/EXPOSURE
 - 1) Thrombocytopenia is the primary hematologic effect. Leukopenia has also been reported.
- 0.2.14 DERMATOLOGIC
 - 0.2.14.1 ACUTE EXPOSURE
 - A) WITH POISONING/EXPOSURE
 - 1) Direct contact may cause skin irritation. Chlorodioxin contamination of products may produce chloracne with heavy exposure.
- 0.2.15 MUSCULOSKELETAL
 - 0.2.15.1 ACUTE EXPOSURE
 - A) WITH POISONING/EXPOSURE
 - 1) Muscle cramps, muscle rigidity, elevated creatine kinase, and rhabdomyolysis were reported after ingestion of MCP. EMG abnormalities, elevated creatine kinase, and proximal muscle weakness have been described following 2,4-D ester exposure.
- 0.2.16 ENDOCRINE
 - 0.2.16.1 ACUTE EXPOSURE
 - A) WITH POISONING/EXPOSURE
 - 1) Hypoglycemia has been reported in cases of acute 2,4-D poisoning. Animal studies showed decreased T3 and T4 levels, but this effect has not been reported in humans.
- 0.2.20 REPRODUCTIVE HAZARDS
 - A) 2,4-D and 2,4,5-T have caused adverse reproductive effects in experimental animals. Allegations of human birth defects due to these compounds have not been confirmed.
- 0.2.21 CARCINOGENICITY
 - 0.2.21.1 IARC CATEGORY
 - A) IARC Carcinogenicity Ratings for CAS94-75-7 (IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, 2006; IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, 2007; IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, 2010; IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, 2010a; IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, 2008; IARC, 2004):
 - 1) Not Listed
 - B) IARC Carcinogenicity Ratings for CAS93-76-5 (IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, 2006; IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, 2007; IARC Working

Group on the Evaluation of Carcinogenic Risks to Humans, 2010; IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, 2010a; IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, 2008; IARC, 2004):

1) Not Listed

C) IARC Carcinogenicity Ratings for CAS94-74-6 (IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, 2006; IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, 2007; IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, 2010; IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, 2010a; IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, 2008; IARC, 2004):

1) Not Listed

D) IARC Carcinogenicity Ratings for CAS93-65-2 (IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, 2006; IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, 2007; IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, 2010; IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, 2010a; IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, 2008; IARC, 2004):

1) Not Listed

0.2.21.2 HUMAN OVERVIEW

A) Human studies show conflicting results. Some studies have suggested a relationship between chlorophenoxy herbicides and both soft tissue sarcoma and non-Hodgkin's lymphoma, while others have not.

0.2.21.3 ANIMAL OVERVIEW

A) Animal studies are limited, but have generally been negative.

0.2.22 GENOTOXICITY

- A) The chlorophenoxy herbicides have produced mixed negative and positive responses in various genotoxicity test systems. A recent review found no evidence of genotoxic or mutagenic potential in vitro and in vivo for 2,4-D.
- B) One study was conducted to determine whether or not New Zealand Vietnam War veterans showed evidence of genetic disturbances arising as a consequence of their now confirmed exposure to chlorophenoxy herbicides. During 1965 to 1971, more than 76 million liters of phenoxylic herbicides were sprayed over parts of Southern Vietnam and Laos. A sample group of 24 New Zealand Vietnam War veterans and 23 control volunteers were compared using a sister chromatid exchange (SCE) analysis. The results showed a significant difference between the mean of the experimental group and the mean of the control group (11.05 vs 8.18; $p < 0.001$). The experimental group also had an extremely elevated proportion of cells with high SCE frequencies (HFCs) above the 95th percentile compared to the controls (11% and 0.07%, respectively) (Rowland et al, 2007).

Laboratory:

- A) These herbicides can be measured in the urine, but the values are not clinically useful. Plasma levels also appear to be poorly correlated with clinical effects.

- B) Erythrocyte cholinesterase is not affected by these herbicides.
- C) Obtain baseline CBC, platelet count, serum electrolytes, and renal/hepatic function tests. Monitor LDH, AST (SGOT), ALT (SGPT), alkaline phosphatase, CPK, arterial pH, and bicarbonate.
- D) Monitor urine for pH, protein, RBC's, myoglobin, and urinary output.
- E) Monitor the patient for at least 6 to 12 hours as there is a potential for delayed onset of symptoms.

Treatment Overview:

0.4.2 ORAL EXPOSURE

- A) Treat ingestions of greater than 40 mg/kg with gastric decontamination if within 4 hours of ingestion.
- B) ACTIVATED CHARCOAL: Administer charcoal as a slurry (240 mL water/30 g charcoal). Usual dose: 25 to 100 g in adults/adolescents, 25 to 50 g in children (1 to 12 years), and 1 g/kg in infants less than 1 year old.
- C) URINARY ALKALINIZATION: May enhance elimination. Should be considered with severe poisoning.
- D) VENTRICULAR DYSRHYTHMIAS/SUMMARY: Institute continuous cardiac monitoring, obtain an ECG, and administer oxygen. Evaluate for hypoxia, acidosis, and electrolyte disorders. Lidocaine and amiodarone are generally first line agents for stable monomorphic ventricular tachycardia, particularly in patients with underlying impaired cardiac function. Amiodarone should be used with caution if a substance that prolongs the QT interval and/or causes torsades de pointes is involved in the overdose. Unstable rhythms require immediate cardioversion.
- E) LIDOCAINE: ADULT: LOADING DOSE: 1 to 1.5 mg/kg IV push; for refractory VT/VF may give an additional bolus of 0.5 to 0.75 mg/kg over 3 to 5 min. Do not exceed 3 mg/kg or 200 to 300 mg over one hour. INFUSION: Once circulation restored begin infusion of 1 to 4 mg/min. PEDIATRIC: LOADING DOSE: 1 mg/kg; INFUSION: 20 to 50 mcg/kg/min. Monitor ECG continuously.

0.4.3 INHALATION EXPOSURE

- A) INHALATION: Move patient to fresh air. Monitor for respiratory distress. If cough or difficulty breathing develops, evaluate for respiratory tract irritation, bronchitis, or pneumonitis. Administer oxygen and assist ventilation as required. Treat bronchospasm with inhaled beta2 agonist and oral or parenteral corticosteroids.
- B) ACUTE LUNG INJURY: Maintain ventilation and oxygenation and evaluate with frequent arterial blood gas or pulse oximetry monitoring. Early use of PEEP and mechanical ventilation may be needed.

0.4.4 EYE EXPOSURE

- A) DECONTAMINATION: Irrigate exposed eyes with copious amounts of room temperature water for at least 15 minutes. If irritation, pain, swelling, lacrimation, or photophobia persist, the patient should be seen in a health care facility.

0.4.5 DERMAL EXPOSURE

- A) OVERVIEW
 - 1) DECONTAMINATION: Remove contaminated clothing and jewelry. Wash the skin, including hair and nails, vigorously; do repeated soap washings. Discard

contaminated clothing.

- 2) Treat dermal irritation or burns with standard topical therapy. Patients developing dermal hypersensitivity reactions may require treatment with systemic or topical corticosteroids or antihistamines.

Range of Toxicity:

- A) Limited data are available.
- B) Fatalities have been seen following ingestion of 80 mg/kg.
- C) Intravenous injection of 28 mg/kg of 2,4-D was tolerated; 50 mg/kg produced toxicity.

[Rumack BH POISINDEX(R) Information System Micromedex, Inc., Englewood, CO, 2012; CCIS Volume 154, edition expires Nov, 2012. Hall AH & Rumack BH (Eds): TOMES(R) Information System Micromedex, Inc., Englewood, CO, 2012; CCIS Volume 154, edition expires Nov, 2012.] **PEER REVIEWED**

Antidote and Emergency Treatment:

Skin decontamination: Flush contaminating chemicals from eyes with copious amounts of water for 10 to 15 minutes. If irritation persists, an ophthalmological examination should be performed. /Chlorophenoxy Herbicides/

[U.S. Environmental Protection Agency/Office of Prevention, Pesticides, and Toxic Substances. Reigart, J.R., Roberts, J.R. Recognition and Management of Pesticide Poisonings. 5th ed. 1999. EPA Document No. EPA 735-R-98-003, and available in electronic format at: <http://www.epa.gov/pesticides/safety/healthcare> p. 97] **PEER REVIEWED**

Ingestions of these herbicides are likely to be followed by vomiting and diarrhea due to the irritant properties. ... Activated charcoal is probably effective in limiting irritant effects and reducing absorption of most or all of these herbicides.

Aluminum hydroxide antacids may be useful in neutralizing the irritant actions of these acidic agents. Sorbitol should be given to induce catharsis if bowel sounds are present and if spontaneous diarrhea has not already commenced.

Dehydration and electrolyte disturbances may be severe enough to require intravenous fluids. There are no specific antidotes for poisoning by these herbicides. /Other Herbicides/

[U.S. Environmental Protection Agency/Office of Prevention, Pesticides, and Toxic Substances. Reigart, J.R., Roberts, J.R. Recognition and Management of Pesticide Poisonings. 5th ed. 1999. EPA Document No. EPA 735-R-98-003, and available in electronic format at: <http://www.epa.gov/pesticides/safety/healthcare> p. 123] **PEER REVIEWED**

Administer intravenous fluids to accelerate excretion of the chlorophenoxy compound, and to limit concentration of the toxicant in the kidney. A urine flow of 4-6 mL/minute is desirable. Intravenous saline/dextrose has sufficed to rescue comatose patients who drank 2,4-D and mecoprop several hours before hospital admission. CAUTION: Monitor urine protein, cells, BUN, serum creatine, serum electrolytes, and fluid intake/output carefully to insure that renal function remains unimpaired and that fluid overload does not occur. /Chlorophenoxy Herbicides/

[U.S. Environmental Protection Agency/Office of Prevention, Pesticides, and Toxic Substances. Reigart, J.R., Roberts, J.R. Recognition and Management of Pesticide Poisonings. 5th ed. 1999. EPA Document No. EPA 735-R-98-003, and available in electronic format at: <http://www.epa.gov/pesticides/safety/healthcare> p. 97] **PEER REVIEWED**

Forced alkaline diuresis has been used successfully in management of suicidal ingestions of chlorophenoxy compounds, especially when initiated early. Alkalinizing the urine by including sodium bicarbonate ... in the intravenous solution accelerates excretion of 2,4-D dramatically and mecoprop excretion substantially. Urine pH should be maintained between 7.6 and 8.8. Include potassium chloride to offset increased potassium losses. ... It is crucial to monitor serum electrolytes carefully, especially potassium and calcium. There may possibly be some hazard to the kidneys when urine concentrations of toxicant are very high, so the integrity of renal function and fluid balance should be monitored carefully as the chlorophenoxy compound is excreted. Renal failure has occurred in patients with severe intoxication during alkaline diuresis. /Chlorophenoxy Herbicides/

[U.S. Environmental Protection Agency/Office of Prevention, Pesticides, and Toxic Substances. Reigart, J.R., Roberts, J.R. Recognition and Management of Pesticide Poisonings. 5th ed. 1999. EPA Document No. EPA 735-R-98-003, and available in electronic format at: <http://www.epa.gov/pesticides/safety/healthcare> p. 97] **PEER REVIEWED**

Hemodialysis is not likely to be of significant benefit in poisonings by chlorophenoxy compounds. It has been used in four patients who survived intoxication. However, given the highly protein-bound nature of these herbicides and lack of any other evidence, hemodialysis is not recommended. /Chlorophenoxy Herbicides/

[U.S. Environmental Protection Agency/Office of Prevention, Pesticides, and Toxic Substances. Reigart, J.R., Roberts, J.R. Recognition and Management of Pesticide Poisonings. 5th ed. 1999. EPA Document No. EPA 735-R-98-003, and available in electronic format at: <http://www.epa.gov/pesticides/safety/healthcare> p. 97] **PEER REVIEWED**

Animal Toxicity Studies:

Non-Human Toxicity Excerpts:

/LABORATORY ANIMALS: Acute Exposure/ English pointer dogs dosed po with encapsulated 2,4-dichlorophenoxyacetic acid (2,4-D) at 1.3, 8.8, 43.7, 175 or 220 mg/kg body weight failed to exhibit abnormalities in hematologic, serum biochemical, urinalysis, or electrocardiographic parameters. At the 3 lowest doses, no changes were noted in electro-encephalograms (EEGs). In the dog given 175 mg/kg, at 24 h postdosing mild sedation was accompanied by excessive slowing in the EEG with loss of low voltage fast activity. In the dog given 220 mg/kg, nonspecific alterations in the EEG suggestive of irritation and mild seizure activity was detected 7 hr, but the EEG returned to normal by 24 hr. /2,4-D/

[Arnold EK et al; Vet Hum Toxicol 33 (5): 446-9 (1991)] **PEER REVIEWED** [PubMed Abstract](#)

/LABORATORY ANIMALS: Acute Exposure/ The acute toxicity of 2,4-dichlorophenoxyacetic acid (2,4-D), a herbicide, was studied in chicks dosed with 100, 300, 500, or 600 mg 2,4-D/kg BW, by the oral route. Clinical, laboratory, and histopathological methods were used as indicators of toxicity. After acute exposure, the herbicide decreased motor activity and induced muscular weakness and motor incoordination; decreased weight gain; increased serum creatine kinase (CK) and alkaline phosphatase (AP) activities and serum uric acid (UA), creatinine (CR), and total proteins (TP) levels; and did not change serum aspartate aminotransferase (AST) or alanine aminotransferase (ALT) activities. These changes were time- and dose-dependent and reversible. The LD50 (lethal dose 50%) calculated for oral 2,4-D in chicks was 420 mg/kg BW (385 to 483). Chromatographic analysis of the serum of the intoxicated chicks showed the presence of the herbicide; the amount found was dose- and time-dependent, increasing from 2 to 8 hr after exposure and decreasing afterwards. Histopathological post-mortem studies conducted on intoxicated chicks showed hepatic (vacuolar degeneration of the hepatocytes), renal (tubular nephrosis), and intestinal (hemorrhagic) lesions. /2,4-D/

[Morgulis MS, et al; Poult Sci 77 (4): 509-515 (1998)] **PEER REVIEWED** [PubMed Abstract](#)

/LABORATORY ANIMALS: Subchronic or Prechronic Exposure/ Forms of 2,4-dichlorophenoxyacetic acid (collectively known as 2,4-D) are herbicides used to control a wide variety of broadleaf and woody plants. Subchronic toxicity studies in rats were conducted on three forms of 2,4-D: the parent form, 2,4-D acid; 2,4-D dimethylamine salt (DMA); and 2,4-D 2-ethylhexyl ester (2-EHE). Doses in the subchronic studies (on an acid equivalent basis) were 0, 1, 15, 100, and 300 mg/kg/day. Major treatment related findings in the three studies included decreases in red cell mass, decreases in T3 and T4 levels, decreases in ovary and testes weights, increases in liver, kidney, and thyroid weights, and cataracts and retinal degeneration (high-dose females). These data demonstrated the comparable toxicities of 2,4-D acid, DMA, and 2-EHE and support a subchronic no-observed-effect level of 15 mg/kg/day for all three forms.

[Charles JM, et al; Fundam Appl Toxicol 33 (2): 161-165 (1996)] **PEER REVIEWED** [PubMed Abstract](#)

/LABORATORY ANIMALS: Subchronic or Prechronic Exposure/ The influence of sublethal doses of 2,4-dichlorophenoxyacetic acid (2,4-D) on serum T3 & T4 concns in Hsd Cpb: Wistar rats of both sexes was studied. The trial was performed on 24 males & females respectively, each divided into three groups of 8 animals (control, groups 1 & 2). Aqueous soln of the compound (11 mg/kg bw--group 1 & 110 mg/kg bw--group 2) or clean tap water (control group) was used. Aliquots of 2.4 mL/kg bw were administered with a stomach tube from the 1st-10th day of the experiment. Three days before the first treatment & on the 6th & 13th day of the experiment the serum T3 & T4 concns were determined by commercial radioimmunoassay kits (Byk-Sangtec Diagnostica), validated for rats. A significant decr of serum T4 (P<0.01) & T3 (P<0.001) was determined in males of groups 1 & 2 during the experiment. On the 6th day of experiment serum T4 & T3 values were significantly lower (P<0.001 & 0.01 respectively) in group 2 than in the controls & group 1 of both males & females. During the whole experiment serum T4 levels were lower in females than in males (P<0.05). /2,4-D/

[Kobal S, et al; Pflugers Arch 440 (5 Suppl): R171-172 (2000)] **PEER REVIEWED**

/LABORATORY ANIMALS: Chronic Exposure or Carcinogenicity/ Groups of 25 male & 25 female 3 wk old Osborne-Mendel rats were fed for 2 yrs on diets containing 0, 5, 25, 125, 625 or 1250 mg/kg of diet 2,4-D. 2,4-D was 96.7% pure & contained no detectable levels of 2,7-dichloro- or 2,3,7,8-tetrachlorodibenzo-p-dioxin Numbers of male & female rats with malignant tumors were 6 in controls & 8, 7, 7, 8 & 14 in the treated groups, respectively. Tumors were randomly distributed & were also found in aging rats of this strain. ... A statistical increase (p< 0.05) in number of treated rats with malignant tumors over controls were found only in males receiving ... 1250 mg/kg. /2,4-D/

[IARC. Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man. Geneva: World Health Organization, International Agency for Research on Cancer, 1972-PRESENT. (Multivolume work). Available at: <http://monographs.iarc.fr/index.php> p. V15 117 (1977)] **PEER REVIEWED**

/LABORATORY ANIMALS: Chronic Exposure or Carcinogenicity/ 6xC3H/Anf) F1 mice & 18 male & 18 female (C57BL/6xAKR)F1 mice received commercial 2,4-D (90%, mp 136-140 deg C) according to the following dose schedule: 46.4 mg/kg body wt in 0.5% gelatin by stomach tube at 7 days of age & the same amount (not adjusted for incr body wt) daily up to 28 days of age; subsequently, the mice were given 149 mg/kg of diet /feed/. ... The experiment was terminated when the mice were about 78 weeks of age ... Tumor incidences were compared with those observed among groups of ... control mice, which had been untreated or had received gelatin only: the incidences were not significantly greater (p> 0.05) when any group or combination of groups were considered. Similar results were obtained in groups of mice given 2,4-D isopropyl, butyl, or isooctyl esters (99%, 99%, and 97% pure) at doses of 46.6 mg/kg body wt from 7-28 days of age and, subsequently 111, 149, & 130 mg/kg of diet /feed/ respectively up to 78 weeks of age. /2,4-D/

[IARC. Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man. Geneva: World Health Organization, International Agency for Research on Cancer, 1972-PRESENT. (Multivolume work). Available at: <http://monographs.iarc.fr/index.php> p. V15 117 (1977)] **PEER REVIEWED**

/LABORATORY ANIMALS: Developmental or Reproductive Toxicity/ When 2,4-D was administered at a concentrations of 500 mg/kg of diet during entire pregnancy of a sow, anorexia was noted; newborn piglets were underdeveloped & apathetic & 10/15 died within 24 hr. Continued feeding of 50 mg/kg of diet to survivors until ... 8 months of age caused growth depression, persistent anemia, & moderate degenerative changes of liver & kidneys. /2,4-D/
[IARC. Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man. Geneva: World Health Organization, International Agency for Research on Cancer, 1972-PRESENT. (Multivolume work). Available at: <http://monographs.iarc.fr/index.php> p. V15 123 (1977)]
PEER REVIEWED

/LABORATORY ANIMALS: Developmental or Reproductive Toxicity/ The reproductive toxicity of 2,4-D has been studied at dietary doses of 0, 5, 20, and 80 mg/kg/day in a two generation reproductive study in Fischer 344 rats. The parental Fo group was treated with 2,4-D for 15 weeks prior to mating. No adverse effects on fertility were observed in the 5 and 20 mg/kg daily dose groups, although reduced pup weights were noted in the 20 mg/kg F2a litters. A daily NOAEL of 5 mg/kg for reproductive toxicity was established from this study. In addition to this reproduction study, recent subchronic and chronic studies in rats, mice and dogs produced no evidence of treatment related histopathological changes in the testes at any of the dose levels ... /2,4-D/
[Bingham, E.; Cochrssen, B.; Powell, C.H.; Patty's Toxicology Volumes 1-9 5th ed. John Wiley & Sons. New York, N.Y. (2001)., p. V4 493]
PEER REVIEWED

/LABORATORY ANIMALS: Developmental or Reproductive Toxicity/ The cytogenetic effect of 2,4-dichlorophenoxy acetic acid (2,4-D) & its metabolite 2,4-dichlorophenol (2,4-DCP) was studied in bone-marrow, germ cells & sperm head abnormalities in the treated mice. Swiss mice were treated orally by gavage with 2,4-D at 1.7, 3.3 and 33 mg kg(-1)BW (1/200, 1/100 and 1/10 of LD(50)). 2,4-DCP was intraperitoneally (i.p.) injected at 36, 72 and 180 mg kg(-1)BW (1/10, 1/5, 1/2 of LD(50)). A significant increase in the percentage of chromosome aberrations in bone-marrow and spermatocyte cells was observed after oral administration of 2,4-D at 3.3 mg kg(-1)BW for three and five consecutive days. This percentage increased and reached 10.8+/-0.87 (P<0.01) in bone-marrow and 9.8+/-0.45 (P<0.01) in spermatocyte cells after oral administration of 2,4-D at 33 mg kg(-1)BW for 24 hr. This percentage was, however, lower than that induced in bone-marrow and spermatocyte cells by mitomycin C (positive control). 2,4-D induced a dose-dependent increase in the percentage of sperm head abnormalities. The genotoxic effect of 2,4-DCP is weaker than that of 2,4-D, as indicated by the lower percentage of the induced chromosome aberrations (in bone-marrow and spermatocyte cells) and sperm head abnormalities. /2,4-D/
[Amer SM, Aly FA; Mutat Res 25; 494 (1-2): 1-12 (2001)] **PEER REVIEWED**

/LABORATORY ANIMALS: Neurotoxicity/ The acute effects of 2,4-dichlorophenoxyacetic acid (2,4-D) administered orally to female mongrel dogs in doses of 25, 50, 75, 100 or 125 mg/kg were investigated by means of neurological examinations, electromyography and motor nerve conduction velocity tests carried out at various times following treatment. On day one after treatment with 125 mg/kg, one of four dogs was lethargic but recovered by day three. Also on day one, myotonic dimpling was evident in one dog each in the groups treated with 50, 100, 125 mg/kg. Dogs treated with more than 50 mg/kg had generalized myotonic discharges which increased according to the dose and were resolved by day 14 but not day seven. Treatment failed to affect motor nerve conduction velocity. Pathologic changes in teased nerve fibers involved occasional fiber degeneration, paranodal demyelination and intercalated internodes. Transverse semi-thin sections showed mild focal fiber degeneration and eventual medial plantar nerve depletion in five dogs treated with 25, 100 and 125 mg/kg and in lateral plantar nerve of two dogs treated with 125 mg/kg and one control. A single exposure to sublethal oral doses of 2,4-D is not associated with evidence of polyneuropathy. /2,4-D/
[Steiss JE et al; J Neurol Sci 78 (3): 295-301 (1987)] **PEER REVIEWED** [PubMed Abstract](#)

/LABORATORY ANIMALS: Neurotoxicity/ Forms of 2,4-dichlorophenoxyacetic acid ... are herbicides used to control a wide variety of broadleaf and woody plants. Single-dose acute and 1-year chronic neurotoxicity screening studies in male and female Fischer 344 rats (10/sex/dose) were conducted on 2,4-D according to the U.S. EPA 1991 guidelines. The studies emphasized a Functional Observational Battery (which included grip performance and hindlimb splay tests), automated motor activity testing, and comprehensive neurohistopathology of perfused tissues. Dosages were up to 250 mg/kg by gavage for the single-dose study, and up to 150 mg/kg/day in the diet for 52 weeks in the repeated-dose study. In the acute study, gavage with 250 mg/kg test material caused slight transient gait and coordination changes and clearly decreased motor activity at the time of maximal effect on the day of treatment (day 1). Mild locomotor effects occurred in one mid-dose rat (75 mg/kg), on Day 1 only. No gait, coordination, or motor activity effects were noted by day 8. In the chronic study, the only finding of neurotoxicologic significance was retinal degeneration in females in the high-dose group (150 mg/kg/day). Body weights of both sexes were slightly less than controls in the mid-dose group, and 10% less than controls in the high-dose group. /2,4-D/
[Mattsson JL, et al; Fundam Appl Toxicol 40 (1): 111-119 (1997)] **PEER REVIEWED** [PubMed Abstract](#)

/GENOTOXICITY/ 2,4-D, 2-Ethylhexyl ester, 98.0% purity, at concentrations of 0 (DMSO), 0.501, 1.00, 2.50, 5.00, 10.0, or 25.0 ug/mL, was assayed with primary rat hepatocytes. The treatment period was 19 hours. 2,4-D, 2-Ethylhexyl ester, did not induce unscheduled DNA synthesis.
[California Environmental Protection Agency/Department of Pesticide Regulation; Toxicology Data Review Summaries. Available from: <http://www.cdpr.ca.gov/docs/toxsums/toxsumlist.htm> on 2,4-D as of February 1, 2005.] **PEER REVIEWED**

/GENOTOXICITY/ 2,4-D, 2-Ethylhexyl Ester [grouped with 2,4-D free acid as of 7/23/91], purity of 98.0%, at

concentrations of 0 (DMSO), 333, 667, 1000, 3330, 6670, or 10000 ug/plate without and with metabolic activation (Aroclor 1254-induced rat liver) was assayed with Salmonella typhimurium strains TA98, TA100, TA1535, TA1537 and TA1538. Incubation period was for 48 hours. 2,4-D,-2-Ethylhexyl Ester did not increase the number of revertants in either the initial or repeat assay.

[California Environmental Protection Agency/Department of Pesticide Regulation; Toxicology Data Review Summaries. Available from: <http://www.cdpr.ca.gov/docs/toxsums/toxsumlist.htm> on 2,4-D as of February 1, 2005.] **PEER REVIEWED**

/GENOTOXICITY/ 2,4-D, 2-Ethylhexyl Ester, purity 98.0%, LOT # 04KF54479, was administered as a single dose by gavage at 0 (corn oil), 50, 167, or 500 mg/kg to 5 ICR mice/sex/group. Bone marrow was harvested at 24, 48, and 72 hours after dosing. Polychromatic erythrocytes were scored for micronuclei and the PCE/NCE ratio determined. One thousand PCE's were scored per animal. The test substance did not induce a significant increase in micronuclei in bone marrow polychromatic erythrocytes.

[California Environmental Protection Agency/Department of Pesticide Regulation; Toxicology Data Review Summaries. Available from: <http://www.cdpr.ca.gov/docs/toxsums/toxsumlist.htm> on 2,4-D as of February 1, 2005.] **PEER REVIEWED**

/GENOTOXICITY/ Using the Curly-Lobe-Plum method in Drosophila melanogaster, this herbicide, manifested a significant mutagenic effect: frequency of the lethal recessive mutations was 6 times higher in the group of flies treated with the herbicide than in the untreated, control group.

[Coman N et al; Studia Universitatis Babes-Bolyai Biologia 37 (1): 65-70 (1992)] **PEER REVIEWED**

/OTHER TOXICITY INFORMATION/ The effects of daily dosing with the 2-ethyl hexyl ester of 2,4-D and its components at 250 mg/kg on blood urea nitrogen and plasma Mg:Ca ratios in cattle and sheep are tabulated. The formulation of the herbicide (emulsifiable concentrate or technical grade) showed no difference in the effects. Treatment with the compound resulted in a decrease in plasma Ca and an increase in plasma Mg significantly changing the ratio in the plasma of two sheep and a yearling heifer that died. In some cases, there was a 50% ratio decrease. Increased blood urea nitrogen (in one case increased from 4 to 40 mg/100 mL) was noted in the herbicide-treated animals. Kidney damage and swollen blood-engorged thyroids were commonly noted during the postmortem examinations.

[Hunt LM et al; Bull Environ Contam Toxicol 5 (1): 54-60 (1970)] **PEER REVIEWED**

Ecotoxicity Excerpts:

/AQUATIC SPECIES/ In studies conducted according to the guidelines of the US Environmental Protection Agency, 2,4-D acid and ethylhexyl ester had no effect on the early life stages, embryo hatch, larval weight, or larval length of the fathead minnow (*Pimephales promelas*) at concentrations of 12.6-102 mg/L for up to 32 days (acid). The 32-day NOEC for the acid was 63.4 mg/L, comparable to the 33-day NOEC for the diethanolamine salt of 29.1 mg/L. The ethylhexyl ester was more toxic, with a 32-day NOEC of 0.12 mg/L...

[FAO/WHO; Pesticide Residues in Food: Toxicological and Environmental Evaluations: 2,4-Dichlorophenoxyacetic acid (2,4-D), salts and esters (1997). Available from, as of February 1, 2005: <http://www.inchem.org/documents/jmpr/jmpmono/v097pr16.htm> **PEER REVIEWED**

/AQUATIC SPECIES/ The esters of 2,4-D are clearly more toxic to invertebrate species such as the tidewater silverside (*Menidia beryllina*), Atlantic silverside (*Menidia menidia*), grass shrimp (*Palaemonetes pugio*), pink shrimp (*Panaeus duorarum*), and Dungeness crab (*Cancer magister*) than is the dimethylamine salt or the acid. The same is true for formulated 2-ethylhexyl ester.

[FAO/WHO; Pesticide Residues in Food: Toxicological and Environmental Evaluations: 2,4-Dichlorophenoxyacetic acid (2,4-D), salts and esters (1997). Available from, as of February 2, 2005: <http://www.inchem.org/documents/jmpr/jmpmono/v097pr16.htm> **PEER REVIEWED**

Non-Human Toxicity Values:

LD50 Rat (male) oral 982 mg/kg

[European Chemicals Bureau; IUCLID Dataset, 2-ethylhexyl 2,4-dichlorophenoxyacetate (1928-43-4) (2000 CD-ROM edition). Available from, as of January 13, 2005: <http://esis.jrc.ec.europa.eu/> **PEER REVIEWED**

LD50 Rat (female) oral 864 mg/kg

[European Chemicals Bureau; IUCLID Dataset, 2-ethylhexyl 2,4-dichlorophenoxyacetate (1928-43-4) (2000 CD-ROM edition). Available from, as of January 13, 2005: <http://esis.jrc.ec.europa.eu/> **PEER REVIEWED**

LD50 Mouse oral 673 mg/kg

[European Chemicals Bureau; IUCLID Dataset, 2-ethylhexyl 2,4-dichlorophenoxyacetate (1928-43-4) (2000 CD-ROM edition). Available from, as of January 13, 2005: <http://esis.jrc.ec.europa.eu/> **PEER REVIEWED**

LD50 Rat oral 896 mg/kg

[Tomlin CDS, ed. 2,4-D-2-ethylhexyl (1928-43-4). In: The e-Pesticide Manual, 13th Edition Version 3.0 (2003-04). Surrey UK, British Crop Protection Council.] **PEER REVIEWED**

LD50 Rabbit dermal >2000 mg/kg

[Tomlin CDS, ed. 2,4-D-2-ethylhexyl (1928-43-4). In: The e-Pesticide Manual, 13th Edition Version 3.0 (2003-04). Surrey UK, British Crop Protection Council.] **PEER REVIEWED**

LC50 Rat inhalation >5.4 mg/L air/4 hr

[Tomlin CDS, ed. 2,4-D-2-ethylhexyl (1928-43-4). In: The e-Pesticide Manual, 13th Edition Version 3.0 (2003-04). Surrey UK, British

Crop Protection Council.] **PEER REVIEWED**

Ecotoxicity Values:LD50 *Anas platyrhynchos* (Mallard duck, juvenile) oral 663 mg/kg/14 days[USEPA, Office of Pesticide Programs; Pesticide Ecotoxicity Database (2000) on 2,4-D, 2-Ethylhexyl ester (1928-43-4). Available from, as of January 26, 2005: http://cfpub.epa.gov/ecotox/quick_query.htm **PEER REVIEWED**LD50 *Anas platyrhynchos* (Mallard duck, 14 day old) oral >4640 mg/kg/8 days[USEPA, Office of Pesticide Programs; Pesticide Ecotoxicity Database (2000) on 2,4-D, 2-Ethylhexyl ester (1928-43-4). Available from, as of January 26, 2005: http://cfpub.epa.gov/ecotox/quick_query.htm **PEER REVIEWED**LC50 *Anas platyrhynchos* (Mallard duck, juvenile) dietary >5620 ppm/8 days[USEPA, Office of Pesticide Programs; Pesticide Ecotoxicity Database (2000) on 2,4-D, 2-Ethylhexyl ester (1928-43-4). Available from, as of January 26, 2005: http://cfpub.epa.gov/ecotox/quick_query.htm **PEER REVIEWED**LC50 *Colinus virginianus* (Northern bobwhite, juvenile) dietary 7187 ppm/8 days[USEPA, Office of Pesticide Programs; Pesticide Ecotoxicity Database (2000) on 2,4-D, 2-Ethylhexyl ester (1928-43-4). Available from, as of January 26, 2005: http://cfpub.epa.gov/ecotox/quick_query.htm **PEER REVIEWED**EC50 *Anabaena flosaquae* (Blue-green algae; population abundance) >0.32 ppm/5 days; static /formulated product/[USEPA, Office of Pesticide Programs; Pesticide Ecotoxicity Database (2000) on 2,4-D, 2-Ethylhexyl ester (1928-43-4). Available from, as of January 26, 2005: http://cfpub.epa.gov/ecotox/quick_query.htm **PEER REVIEWED**EC50 *Selenastrum capricornutum* (Green algae; population abundance) >30.0 ppm/5 days; static /formulated product/[USEPA, Office of Pesticide Programs; Pesticide Ecotoxicity Database (2000) on 2,4-D, 2-Ethylhexyl ester (1928-43-4). Available from, as of January 26, 2005: http://cfpub.epa.gov/ecotox/quick_query.htm **PEER REVIEWED**EC50 *Crassostrea virginica* (American oyster; intoxication immobilization) >3.0 ppb/96 hr; flow-through /formulated product/[USEPA, Office of Pesticide Programs; Pesticide Ecotoxicity Database (2000) on 2,4-D, 2-Ethylhexyl ester (1928-43-4). Available from, as of January 26, 2005: http://cfpub.epa.gov/ecotox/quick_query.htm **PEER REVIEWED**LC50 *Gammarus fasciatus* (Scud) 2400 ppb/96 hr (95% confidence interval: 1900-3000 ppb); static /formulated product/[USEPA, Office of Pesticide Programs; Pesticide Ecotoxicity Database (2000) on 2,4-D, 2-Ethylhexyl ester (1928-43-4). Available from, as of January 26, 2005: http://cfpub.epa.gov/ecotox/quick_query.htm **PEER REVIEWED**LC50 *Oncorhynchus Mykiss* (Rainbow trout) 7.2 mg/L/96 hr; flow-through[European Chemicals Bureau; IUCLID Dataset, 2-ethylhexyl 2,4-dichlorophenoxyacetate (1928-43-4) (2000 CD-ROM edition). Available from, as of January 13, 2005: <http://esis.jrc.ec.europa.eu/> **PEER REVIEWED**EC50 *Navicula pelliculosa* (algae) 4.1 mg/L 5 days endpoint: growth rate; NOEC = 0.1875[European Chemicals Bureau; IUCLID Dataset, 2-ethylhexyl 2,4-dichlorophenoxyacetate (1928-43-4) (2000 CD-ROM edition). Available from, as of January 13, 2005: <http://esis.jrc.ec.europa.eu/> **PEER REVIEWED**EC50 *Skeletonema costatum* (Algae; growth inhibition) 0.23 mg/L/5 days; static /from table/[FAO/WHO; Pesticide Residues in Food: Toxicological and Environmental Evaluations: 2,4-Dichlorophenoxyacetic acid (2,4-D), salts and esters (1997). Available from, as of February 1, 2005: <http://www.inchem.org/documents/jmpr/jmpmono/v097pr16.htm> **PEER REVIEWED**LD50 Honeybee (*Apis mellifera*) oral or contact >100 mg/bee/72 hr[FAO/WHO; Pesticide Residues in Food: Toxicological and Environmental Evaluations: 2,4-Dichlorophenoxyacetic acid (2,4-D), salts and esters (1997). Available from, as of February 2, 2005: <http://www.inchem.org/documents/jmpr/jmpmono/v097pr16.htm> **PEER REVIEWED****Metabolism/Pharmacokinetics:****Metabolism/Metabolites:**

The pharmacokinetics of the 2-ethylhexyl ester of 2,4-D were investigated following a single oral administration of 130 mg/kg body weight dose to both male and female Fischer 344 rats. Blood samples were drawn from 24 rats per sex in serial groups of 3 at intervals of 0.25, 0.5, 1, 2, 4, 8, 24, and 72 hours post dosing and urine was collected from the 72 hours group at 12 hour intervals. The most significant finding from this evaluation was the absence of any 2-ethylhexyl ester of 2,4-D in either the blood or urine for either sex evaluated (limit of quantification 10 ppb). Conversely 2,4-D acid was detected in both blood and urine. The present data indicate that the 2-ethylhexyl ester of 2,4-D is converted very rapidly to 2,4-D acid, and that the acid is then excreted into the urine. A similarity exists in interval excretion data with that seen in previous investigations with 2,4-D acid. Indications are that the 2,4-D acid is probably derived via the hydrolysis of the 2-ethylhexyl ester moiety and is eliminated from the body in the same manner as the orally administered 2,4-D acid. It is therefore anticipated from these results that the 2-ethylhexyl ester of 2,4-D should be toxicologically comparable to 2,4-D acid itself.

[European Chemicals Bureau; IUCLID Dataset, 2-ethylhexyl 2,4-dichlorophenoxyacetate (1928-43-4) (2000 CD-ROM edition). Available from, as of January 13, 2005: <http://esis.jrc.ec.europa.eu/> **PEER REVIEWED**

2,4-D 2-ethylhexyl ester is hydrolysed to 2,4-D by esterase enzymes present in the gut wall, in blood plasma, in liver cells and in skin. Any 2,4-D /ethylhexyl ester/ absorbed orally or dermally is hydrolysed to 2,4-D, the acid ionic form. [European Chemicals Bureau; IUCLID Dataset, 2-ethylhexyl 2,4-dichlorophenoxyacetate (1928-43-4) (2000 CD-ROM edition). Available from, as of January 13, 2005: <http://esis.jrc.ec.europa.eu/> **PEER REVIEWED**

Absorption, Distribution & Excretion:

A maximum 2,4-D concentration in serum of 1075 ppm was detected 5 hr after /English pointer dogs were given a/ po dose of 220 mg/kg. A maximum 2,4-D, concentration in urine of 1792 ppm was detected 2 hr after a po dose of 175 mg/kg, while 25 hr after that dose kidney tissue contained 271 ppm. /2,4-D/ [Arnold EK et al; Vet Hum Toxicol 33 (5): 446-9 (1991)] **PEER REVIEWED** [PubMed Abstract](#)

Pharmacology:

Environmental Fate & Exposure:

Environmental Fate/Exposure Summary:

2,4-D, 2-ethylhexyl ester's production may result in its release to the environment through various waste streams; its use as a herbicide will result in its direct release to the environment. If released to air, a vapor pressure of 3.59×10^{-4} mm Hg at 25 deg C indicates 2,4-D, 2-ethylhexyl ester will exist solely as a vapor in the ambient atmosphere. Vapor-phase 2,4-D, 2-ethylhexyl ester will be degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 27 hours. If released to soil, 2,4-D, 2-ethylhexyl ester is expected to have no mobility based upon an estimated Koc of 33,000. Volatilization from moist soil surfaces is expected to be an important fate process based upon a Henry's Law constant of 1.8×10^{-5} atm-cu m/mole. If released into water, 2,4-D, 2-ethylhexyl ester is expected to adsorb to suspended solids and sediment based upon the estimated Koc. 2,4-D, 2-ethylhexyl ester is expected to hydrolyze and form the parent compound 2,4-D acid. The estimated hydrolysis half-lives of this reaction are 35 and 3.5 days at pH values of 7 and 8, respectively. Field studies have resulted in half-lives of 1 to 51 days when applied as a spray and 4-16 days when applied in granule form. These results are similar to those found in the parent compound, 2,4-D acid. Volatilization from water surfaces is expected to be an important fate process based upon this compound's Henry's Law constant. Estimated volatilization half-lives for a model river and model lake are 94 hours and 821 hours, respectively. However, volatilization from water surfaces is expected to be attenuated by adsorption to suspended solids and sediment in the water column. The estimated volatilization half-life from a model pond is 51 months if adsorption is considered. An estimated BCF of 5,600 suggests the potential for bioconcentration in aquatic organisms is very high. Occupational exposure to 2,4-D, 2-ethylhexyl ester may occur through inhalation and dermal contact with this compound at workplaces where 2,4-D, 2-ethylhexyl ester is produced or used. (SRC)

PEER REVIEWED

Probable Routes of Human Exposure:

Occupational exposure to 2,4-D, 2-ethylhexyl ester may occur through inhalation and dermal contact with this compound at workplaces where 2,4-D, 2-ethylhexyl ester is produced or used. (SRC)

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Artificial Pollution Sources:

2,4-D, 2-ethylhexyl ester production may result in its release to the environment through various waste streams; its use as a herbicide(1) will result in its direct release to the environment(SRC).

[(1) Tomlin CDS, ed; The e-Pesticide Manual. 2,4-D-2-ethylhexyl. 13th ed. PC CD-ROM, Version 3.0, 2003-04. Surrey, UK: British Crop Protection Council (2003)] **PEER REVIEWED**

Environmental Fate:

TERRESTRIAL FATE: Based on a classification scheme(1), an estimated Koc value of 33,000(SRC), determined from a log Kow of 5.78(2) and a regression-derived equation(3), indicates that 2,4-D, 2-ethylhexyl ester is expected to be immobile in soil(SRC). Volatilization of 2,4-D, 2-ethylhexyl ester from moist soil surfaces is expected to be an important fate process(SRC) given a Henry's Law constant of 1.8×10^{-5} atm-cu m/mole(2). However, adsorption to soil is expected to attenuate volatilization(SRC). 2,4-D, 2-ethylhexyl ester is not expected to volatilize from dry soil surfaces(SRC) based upon a vapor pressure of 3.59×10^{-4} mm Hg(2). Field studies have resulted in half-lives of 1 to 51 days when applied as a spray and 4-16 days when applied in granulate form(3).

[(1) Swann RL et al; Res Rev 85: 17-28 (1983) (2) Tomlin CDS, ed; The e-Pesticide Manual. 2,4-D-2-ethylhexyl. 13th ed. PC CD-ROM, Version 3.0, 2003-04. Surrey, UK: British Crop Protection Council (2003) (3) Wilson RD et al; Environ Tox Chem 16: 1239-1246 (1997)] **PEER REVIEWED**

AQUATIC FATE: Based on a classification scheme(1), an estimated Koc value of 33,000(SRC), determined from a log Kow of 5.78(2) and a regression-derived equation(3), indicates that 2,4-D, 2-ethylhexyl ester is expected to adsorb to suspended solids and sediment(SRC). Volatilization from water surfaces is expected(3) based upon a Henry's Law constant of 1.8×10^{-5} atm-cu m/mole(2). Using this Henry's Law constant and an estimation method(3), volatilization half-lives for a model river and model lake are 94 hours and 820 hours, respectively(SRC). However, volatilization from water surfaces is expected to be attenuated by adsorption to suspended solids and sediment in the water column(SRC). The estimated volatilization half-life from a model pond is 51 months if adsorption is considered(4). According to a classification scheme(5), an estimated BCF of 5,600(SRC), from its log Kow(2) and a regression-derived equation(6), suggests the potential for bioconcentration in aquatic organisms is very high(SRC). Hydrolysis of 2,4-D, 2-ethylhexyl ester is expected to yield the parent compound 2,4-D acid(SRC). A base-catalyzed second-order hydrolysis rate constant of 2.3 L/mole-sec(SRC) was estimated using a structure estimation method(7); this corresponds to half-lives of 35 and 3.5 days at pH values of 7 and 8, respectively(7). Biodegradation data were not available(SRC, 2005).

[(1) Swann RL et al; Res Rev 85: 17-28 (1983) (2) Tomlin CDS, ed; The e-Pesticide Manual. 2,4-D-2-ethylhexyl. 13th ed. PC CD-ROM, Version 3.0, 2003-04. Surrey, UK: British Crop Protection Council (2003) (3) Lyman WJ et al; Handbook of Chemical Property Estimation Methods. Washington, DC: Amer Chem Soc pp. 4-9, 15-1 to 15-29 (1990) (4) US EPA; EXAMS II Computer Simulation (1987) (5) Franke C et al; Chemosphere 29: 1501-14 (1994) (6) Meylan WM et al; Environ Toxicol Chem 18: 664-72 (1999) (7) Mill T et al; Environmental Fate and Exposure Studies Development of a PC-SAR for Hydrolysis: Esters, Alkyl Halides and Epoxides. EPA Contract No. 68-02-4254. Menlo Park, CA: SRI International (1987)] **PEER REVIEWED**

ATMOSPHERIC FATE: According to a model of gas/particle partitioning of semivolatile organic compounds in the atmosphere(1), 2,4-D, 2-ethylhexyl ester, which has a vapor pressure of 3.59×10^{-4} mm Hg at 25 deg C(2) is expected to exist solely as a vapor in the ambient atmosphere. Vapor-phase 2,4-D, 2-ethylhexyl ester is degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals(SRC); the half-life for this reaction in air is estimated to be 27 hrs(SRC), calculated from its rate constant of 15×10^{-12} cu cm/molecule-sec at 25 deg C(SRC) that was derived using a structure estimation method(3). 2,4-D, 2-ethylhexyl has been reported to be stable to light(2).

[(1) Bidleman TF; Environ Sci Technol 22: 361-367 (1988) (2) Tomlin CDS, ed; The e-Pesticide Manual. 2,4-D-2-ethylhexyl. 13th ed. PC CD-ROM, Version 3.0, 2003-04. Surrey, UK: British Crop Protection Council (2003) (3) Meylan WM, Howard PH; Chemosphere 26: 2293-99 (1993)] **PEER REVIEWED**

Environmental Abiotic Degradation:

The rate constant for the vapor-phase reaction of 2,4-D, 2-ethylhexyl ester with photochemically-produced hydroxyl radicals has been estimated 15×10^{-12} cu cm/molecule-sec at 25 deg C(SRC) using a structure estimation method(1). This corresponds to an atmospheric half-life of about 27 hours at an atmospheric concentration of 5×10^5 hydroxyl radicals per cu cm(1). Hydrolysis of 2,4-D, 2-ethylhexyl ester is expected to yield the parent compound 2,4-D acid(SRC). A base-catalyzed second-order hydrolysis rate constant of 2.3 L/mole-sec(SRC) was estimated using a structure estimation method(2); this corresponds to half-lives of 35 and 3.5 days at pH values of 7 and 8, respectively(2). 2,4-D, 2-ethylhexyl has been reported to be stable to light(3).

[(1) Meylan WM, Howard PH; Chemosphere 26: 2293-99 (1993) (2) Mill T et al; Environmental Fate and Exposure Studies Development of a PC-SAR for Hydrolysis: Esters, Alkyl Halides and Epoxides. EPA Contract No. 68-02-4254. Menlo Park, CA: SRI International (1987) (3) Tomlin CDS, ed; The e-Pesticide Manual. 2,4-D-2-ethylhexyl. 13th ed. PC CD-ROM, Version 3.0, 2003-04. Surrey, UK: British Crop Protection Council (2003)] **PEER REVIEWED**

Environmental Bioconcentration:

An estimated BCF of 5,600 was calculated for 2,4-D, 2-ethylhexyl ester(SRC), using a log Kow of 5.78(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is very high(SRC), provided the compound is not altered physically or chemically once released into the environment(SRP).

[(1) Tomlin CDS, ed; The e-Pesticide Manual. 2,4-D-2-ethylhexyl. 13th ed. PC CD-ROM, Version 3.0, 2003-04. Surrey, UK: British Crop Protection Council (2003) (2) Meylan WM et al; Environ Toxicol Chem 18: 664-72 (1999) (3) Franke C et al; Chemosphere 29: 1501-14 (1994)] **PEER REVIEWED**

Soil Adsorption/Mobility:

The Koc of 2,4-D, 2-ethylhexyl ester is estimated as 33,000(SRC), using a log Kow of 5.78(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that 2,4-D, 2-ethylhexyl ester is expected to be immobile in soil.

[(1) Tomlin CDS, ed; The e-Pesticide Manual. 2,4-D-2-ethylhexyl. 13th ed. PC CD-ROM, Version 3.0, 2003-04. Surrey, UK: British Crop Protection Council (2003) (2) Lyman WJ et al; Handbook of Chemical Property Estimation Methods. Washington, DC: Amer Chem Soc pp. 4-9 (1990) (3) Swann RL et al; Res Rev 85: 17-28 (1983)] **PEER REVIEWED**

Volatilization from Water/Soil:

The Henry's Law constant for 2,4-D, 2-ethylhexyl ester is 1.8×10^{-5} atm-cu m/mole(1). This Henry's Law constant indicates that 2,4-D, 2-ethylhexyl ester is expected to volatilize from water surfaces(2). Based on this Henry's Law constant, the volatilization half-life from a model river (1 m deep, flowing 1 m/sec, wind velocity of 3 m/sec)(2) is estimated as 94.4 hours(SRC). The volatilization half-life from a model lake (1 m deep, flowing 0.05 m/sec, wind velocity of 0.5 m/sec)(2) is

estimated as 34.2 days(SRC). However, volatilization from water surfaces is expected to be attenuated by adsorption to suspended solids and sediment in the water column. The estimated volatilization half-life from a model pond is 51 months when adsorption is considered(3). Volatilization of 2,4-D, 2-ethylhexyl ester from moist soil surfaces is expected to be an important fate process(SRC) given a Henry's Law constant of 1.8×10^{-5} atm-cu m/mole(1). However, adsorption to soil is expected to attenuate volatilization(SRC). 2,4-D, 2-ethylhexyl ester is not expected to volatilize from dry soil surfaces(SRC) based upon its vapor pressure of 3.59×10^{-4} mm Hg(1).

[(1) Tomlin CDS, ed; The e-Pesticide Manual. 2,4-D-2-ethylhexyl. 13th ed. PC CD-ROM, Version 3.0, 2003-04. Surrey, UK: British Crop Protection Council (2003) (2) Lyman WJ et al; Handbook of Chemical Property Estimation Methods. Washington, DC: Amer Chem Soc pp. 15-1 to 15-29 (1990) (3) US EPA; EXAMS II Computer Simulation (1987)] **PEER REVIEWED**

Environmental Standards & Regulations:

FIFRA Requirements:

Tolerances are established for residues of 2,4-D at: barley, grain; blueberry; corn, forage; corn, fresh, sweet, kernel plus cob with husk removed; corn, grain; corn, stover; cranberry; fruit, stone; grapes; grass hay; grasses, pasture; grasses, rangeland; millet, forage; millet, grain; millet, straw; nut; oat, forage; oat, grain; pistachio; rice, grain; rice, straw; rye, forage; rye, grain; sorghum, forage; sorghum, grain; sorghum, grain, stover; sugarcane, cane; sugarcane, forage; wheat, forage; and wheat, grain. (Residues on all the above may result from application of 2,4-D in acid form, or in the form of one or more of the following esters: amyl (pentyl), butoxyethoxypropyl, butoxyethyl, butoxypolyethylene glycol butyl ether, butoxypropyl, butyl, dipropylene glycol isobutyl ether, ethoxyethoxyethyl, ethoxyethoxypropyl, ethyl, ethoxypropyl, isobutyl, isooctyl (including, but not limited to, 2-ethylhexyl, 2-ethyl-4-methylpentyl, and 2-octyl), isopropyl, methyl, polyethylene glycol 200, polypropoxybutyl, polypropylene glycol, propylene glycol, propylene glycol butyl ether, propylene glycol isobutyl ether, tetrahydrofurfuryl, and tripropylene glycol isobutyl ether.)

[40 CFR 180.142(a)(2); U.S. National Archives and Records Administration's Electronic Code of Federal Regulations. Available from, as of February 1, 2005: <http://www.gpoaccess.gov/ecfr> **PEER REVIEWED**

As the federal pesticide law FIFRA directs, EPA is conducting a comprehensive review of older pesticides to consider their health and environmental effects and make decisions about their future use. Under this pesticide reregistration program, EPA examines health and safety data for pesticide active ingredients initially registered before November 1, 1984, and determines whether they are eligible for reregistration. In addition, all pesticides must meet the new safety standard of the Food Quality Protection Act of 1996. Isooctyl(2-ethylhexyl) 2,4-dichlorophenoxyacetate is found on List A, which contains most food use pesticides and consists of the 194 chemical cases (or 350 individual active ingredients) for which EPA issued registration standards prior to FIFRA '88. Case No: 0073; Pesticide type: fungicide, herbicide (growth regulator); Registration Standard Date: 9/1/88 PB89-102396; Case Status: OPP is reviewing data from the pesticide's producers regarding its human health and/or environmental effects, or OPP is determining the pesticide's eligibility for reregistration and developing the RED document.; Active ingredient (AI): isooctyl(2-ethylhexyl) 2,4-dichlorophenoxyacetate; Data Call-in (DCI) Date(s): 3/25/94; AI Status: The producers of the pesticide have made commitments to conduct the studies and pay the fees required for reregistration, and are meeting those commitments in a timely manner. /RED scheduled for May 2005/

[United States Environmental Protection Agency/ Prevention, Pesticides and Toxic Substances; Status of Pesticides in Registration, Reregistration, and Special Review. (1998) EPA 738-R-98-002, p. 71] **PEER REVIEWED**

Allowable Tolerances:

Tolerances are established for residues of 2,4-D at: barley, grain: 0.5 ppm; blueberry: 0.1 ppm; corn, forage: 20 ppm; corn, fresh, sweet, kernel plus cob with husk removed: 0.5 ppm; corn, grain: 0.5 ppm; corn, stover: 20 ppm; cranberry: 0.5 ppm; fruit, stone: 0.2 ppm; grapes: 0.5 ppm; grass hay: 300 ppm; grasses, pasture: 1,000 ppm; grasses, rangeland: 1,000 ppm; millet, forage: 20 ppm; millet, grain: 0.5 ppm; millet, straw: 20 ppm; nut: 0.2 ppm; oat, forage: 20 ppm; oat, grain: 0.5 ppm; pistachio: 0.2 ppm; rice, grain: 0.1 ppm; rice, straw: 20 ppm; rye, forage: 20 ppm; rye, grain: 0.5 ppm; sorghum, forage: 20 ppm; sorghum, grain: 0.5 ppm; sorghum, grain, stover: 20 ppm; sugarcane, cane: 2 ppm; sugarcane, forage: 20 ppm; wheat, forage: 20 ppm; and wheat, grain: 0.5 ppm. (Residues on all the above may result from application of 2,4-D in acid form, or in the form of one or more of the following esters: amyl (pentyl), butoxyethoxypropyl, butoxyethyl, butoxypolyethylene glycol butyl ether, butoxypropyl, butyl, dipropylene glycol isobutyl ether, ethoxyethoxyethyl, ethoxyethoxypropyl, ethyl, ethoxypropyl, isobutyl, isooctyl (including, but not limited to, 2-ethylhexyl, 2-ethyl-4-methylpentyl, and 2-octyl), isopropyl, methyl, polyethylene glycol 200, polypropoxybutyl, polypropylene glycol, propylene glycol, propylene glycol butyl ether, propylene glycol isobutyl ether, tetrahydrofurfuryl, and tripropylene glycol isobutyl ether.)

[40 CFR 180.142(a)(2); U.S. National Archives and Records Administration's Electronic Code of Federal Regulations. Available from, as of February 1, 2005: <http://www.gpoaccess.gov/ecfr> **PEER REVIEWED**

Chemical/Physical Properties:

Molecular Formula:

C16-H22-Cl2-O3

[National Library of Medicine, SIS; ChemIDplus Record for 2,4-D-2-ethylhexyl (1928-43-4). Available from, as of March 2, 2005:
<http://chem.sis.nlm.nih.gov/chemidplus/direct.jsp?regno=1928-43-4> **PEER REVIEWED**

Molecular Weight:

333.28

[Lewis, R.J. Sax's Dangerous Properties of Industrial Materials. 10th ed. Volumes 1-3 New York, NY: John Wiley & Sons Inc., 1999., p. V2: 1103] **PEER REVIEWED**

Color/Form:

Golden yellow, non viscous liquid

[Tomlin CDS, ed; The e-Pesticide Manual. 2,4-D-2-ethylhexyl. 13th ed. PC CD-ROM, Version 3.0, 2003-04. Surrey, UK: British Crop Protection Council (2003)] **PEER REVIEWED**

Odor:

Sweet slightly pungent odor

[Tomlin CDS, ed; The e-Pesticide Manual. 2,4-D-2-ethylhexyl. 13th ed. PC CD-ROM, Version 3.0, 2003-04. Surrey, UK: British Crop Protection Council (2003)] **PEER REVIEWED**

Boiling Point:

>300 deg C (decomp)

[Tomlin CDS, ed; The e-Pesticide Manual. 2,4-D-2-ethylhexyl. 13th ed. PC CD-ROM, Version 3.0, 2003-04. Surrey, UK: British Crop Protection Council (2003)] **PEER REVIEWED**

Melting Point:

<-37 deg C

[Tomlin CDS, ed; The e-Pesticide Manual. 2,4-D-2-ethylhexyl. 13th ed. PC CD-ROM, Version 3.0, 2003-04. Surrey, UK: British Crop Protection Council (2003)] **PEER REVIEWED**

Density/Specific Gravity:

1.148 at 20 deg C

[Tomlin CDS, ed; The e-Pesticide Manual. 2,4-D-2-ethylhexyl. 13th ed. PC CD-ROM, Version 3.0, 2003-04. Surrey, UK: British Crop Protection Council (2003)] **PEER REVIEWED**

Octanol/Water Partition Coefficient:

log Kow = 5.78 at 25 deg C

[Tomlin CDS, ed; The e-Pesticide Manual. 2,4-D-2-ethylhexyl. 13th ed. PC CD-ROM, Version 3.0, 2003-04. Surrey, UK: British Crop Protection Council (2003)] **PEER REVIEWED**

Solubilities:

In water, 0.086 mg/L at 25 deg C

[Tomlin CDS, ed; The e-Pesticide Manual. 2,4-D-2-ethylhexyl. 13th ed. PC CD-ROM, Version 3.0, 2003-04. Surrey, UK: British Crop Protection Council (2003)] **PEER REVIEWED**

Vapor Pressure:47.9 mPa /3.59X10⁻⁴ mm Hg/ at 25 deg C (Calculated)

[Tomlin CDS, ed; The e-Pesticide Manual. 2,4-D-2-ethylhexyl. 13th ed. PC CD-ROM, Version 3.0, 2003-04. Surrey, UK: British Crop Protection Council (2003)] **PEER REVIEWED**

Other Chemical/Physical Properties:

In water, 0.0324 mg/L

[Ahrens, W.H. Herbicide Handbook of the Weed Science Society of America. 7th ed. Champaign, IL: Weed Science Society of America, 1994., p. 79] **PEER REVIEWED**

Henry's Law constant = 1.8 Pa cu m/mol (1.8X10⁻⁵ atm-cu m/mol)

[Tomlin CDS, ed; The e-Pesticide Manual. 2,4-D-2-ethylhexyl. 13th ed. PC CD-ROM, Version 3.0, 2003-04. Surrey, UK: British Crop Protection Council (2003)] **PEER REVIEWED**

Hydroxyl radical reaction rate constant = 15X10⁻¹² cu cm/molec-sec at 25 deg C /Estimated/

[US EPA; Estimation Programs Interface (EPI). ver. 3.11. U.S. EPA version for Windows. Washington, DC: U.S. EPA (2003). Available from,

as of Dec 15, 2004: <http://www.epa.gov/oppt/exposure/pubs/episutedl.htm> **PEER REVIEWED**

Chemical Safety & Handling:

Flash Point:

171 deg C (Cleveland open cup)

[Tomlin CDS, ed. 2,4-D-2-ethylhexyl (1928-43-4). In: The e-Pesticide Manual, 13th Edition Version 3.0 (2003-04). Surrey UK, British Crop Protection Council.] **PEER REVIEWED**

Stability/Shelf Life:

Hydrolysis DT50 <1 hr. Stable to light, DT50 >100 days. Stable at 54 deg C.

[Tomlin CDS, ed. 2,4-D-2-ethylhexyl (1928-43-4). In: The e-Pesticide Manual, 13th Edition Version 3.0 (2003-04). Surrey UK, British Crop Protection Council.] **PEER REVIEWED**

Disposal Methods:

SRP: The most favorable course of action is to use an alternative chemical product with less inherent propensity for occupational exposure or environmental contamination. Recycle any unused portion of the material for its approved use or return it to the manufacturer or supplier. Ultimate disposal of the chemical must consider: the material's impact on air quality; potential migration in soil or water; effects on animal, aquatic, and plant life; and conformance with environmental and public health regulations.

PEER REVIEWED

Occupational Exposure Standards:

Manufacturing/Use Information:

Major Uses:

For 2,4-D, 2-ethylhexyl ester (USEPA/OPP Pesticide Code: 030063) ACTIVE products with label matches. /SRP: Registered for use in the U.S. but approved pesticide uses may change periodically and so federal, state and local authorities must be consulted for currently approved uses./

[U.S. Environmental Protection Agency/Office of Pesticide Program's Chemical Ingredients Database on 2,4-D, 2-Ethylhexyl Ester (1928-43-4). Available from, as of February 1, 2005: <http://ppis.ceris.purdue.edu/htbin/epachem.com> **PEER REVIEWED**

Manufacturers:

Dow Agrosciences LLC, 9330 Zionsville Rd., Indianapolis, IN 46268, (317) 337-3000; Production site: Midland, MI 48667 /2,4-D and esters and salts/

[SRI Consulting. 2004 Directory of Chemical Producers. SRI International, Menlo Park, CA 2004., p. 766] **PEER REVIEWED**

Nufarm, Inc., 1333 Burr Ridge Pkwy., Suite 125A, Burr Ridge, IL 60521-0866, (800) 345-3330; Production site: Burr Ridge, IL 60521-0866 /2,4-D and esters and salts/

[SRI Consulting. 2004 Directory of Chemical Producers. SRI International, Menlo Park, CA 2004., p. 766] **PEER REVIEWED**

Riverdale (a Nufarm Co.), 1333 Burr Ridge Pkwy., Suite 125A, Burr Ridge, IL 60521-0866, (800) 345-3330; Production site: Chicago Heights, IL 60411 /2,4-D and esters and salts/

[SRI Consulting. 2004 Directory of Chemical Producers. SRI International, Menlo Park, CA 2004., p. 766] **PEER REVIEWED**

AgriLiance LLC, 64089 St. Paul, MN 55164-0089, 712-234-2853 /Registrant/

[US EPA; USEPA/OPP Pesticide Related Database Queries. Chemical Ingredient Database on 2,4-D, 2-ethylhexyl ester. (1928-43-4). Available from, as of Dec 22, 2004: <http://ppis.ceris.purdue.edu/htbin/epachem.com> **PEER REVIEWED**

AgSCO, 13458, Grand Forks, ND 58208-3458, 701-775-532 /Registrant/

[US EPA; USEPA/OPP Pesticide Related Database Queries. Chemical Ingredient Database on 2,4-D, 2-ethylhexyl ester. (1928-43-4). Available from, as of Dec 22, 2004: <http://ppis.ceris.purdue.edu/htbin/epachem.com> **PEER REVIEWED**

Albaugh Inc., 2127, Valdosta, GA 31604-2127, 229-244-3288 /Registrant/

[US EPA; USEPA/OPP Pesticide Related Database Queries. Chemical Ingredient Database on 2,4-D, 2-ethylhexyl ester. (1928-43-4). Available from, as of Dec 22, 2004: <http://ppis.ceris.purdue.edu/htbin/epachem.com> **PEER REVIEWED**

AMREP Inc., 990 Industrial Dr., Marietta, GA 30062, 770-422-2071 /Registrant/

[US EPA; USEPA/OPP Pesticide Related Database Queries. Chemical Ingredient Database on 2,4-D, 2-ethylhexyl ester. (1928-43-4). Available from, as of Dec 22, 2004: <http://ppis.ceris.purdue.edu/htbin/epachem.com> **PEER REVIEWED**

AMVAC Chemical Corp., 4695 Macarthur Court, Suite 1250, Newport Beach, CA 92660-1706, 949-260-1212; Athea Laboratories Inc., 240014. Milwaukee, WI 53224, 800-743-6417 /Registrant/

[US EPA; USEPA/OPP Pesticide Related Database Queries. Chemical Ingredient Database on 2,4-D, 2-ethylhexyl ester. (1928-43-4). Available from, as of Dec 22, 2004: <http://ppis.ceris.purdue.edu/htbin/epachem.com> **PEER REVIEWED**

Atanor S.A., 2127 Valdosta, GA 31604-2127 229-244-3288 /Registrant/

[US EPA; USEPA/OPP Pesticide Related Database Queries. Chemical Ingredient Database on 2,4-D, 2-ethylhexyl ester. (1928-43-4). Available from, as of Dec 22, 2004: <http://ppis.ceris.purdue.edu/htbin/epachem.com> **PEER REVIEWED**

Bayer Cropscience LP, 2 T.W. Alexander Drive, Research Triangle Park, NC 27709, 919-549-2365 /Registrant/

[US EPA; USEPA/OPP Pesticide Related Database Queries. Chemical Ingredient Database on 2,4-D, 2-ethylhexyl ester. (1928-43-4). Available from, as of Dec 22, 2004: <http://ppis.ceris.purdue.edu/htbin/epachem.com> **PEER REVIEWED**

Helena Chemical Co., 225 Schilling Blvd., Suite 300, Collierville, TN 38017 901-752-4410 /Registrant/

[US EPA; USEPA/OPP Pesticide Related Database Queries. Chemical Ingredient Database on 2,4-D, 2-ethylhexyl ester. (1928-43-4). Available from, as of Dec 22, 2004: <http://ppis.ceris.purdue.edu/htbin/epachem.com> **PEER REVIEWED**

Hill Manufacturing Corp., 1500 Jonesboro Rd., SE Atlanta, GA 30315 /Registrant/

[US EPA; USEPA/OPP Pesticide Related Database Queries. Chemical Ingredient Database on 2,4-D, 2-ethylhexyl ester. (1928-43-4). Available from, as of Dec 22, 2004: <http://ppis.ceris.purdue.edu/htbin/epachem.com> **PEER REVIEWED**

Loveland Products Inc., 1286, Greeley, CO 80632, 970-347-1470 /Registrant/

[US EPA; USEPA/OPP Pesticide Related Database Queries. Chemical Ingredient Database on 2,4-D, 2-ethylhexyl ester. (1928-43-4). Available from, as of Dec 22, 2004: <http://ppis.ceris.purdue.edu/htbin/epachem.com> **PEER REVIEWED**

Lubar Chemical Co., 208 Iron North, Kansas City, MO 64116, 816-472-5515 /Registrant/

[US EPA; USEPA/OPP Pesticide Related Database Queries. Chemical Ingredient Database on 2,4-D, 2-ethylhexyl ester. (1928-43-4). Available from, as of Dec 22, 2004: <http://ppis.ceris.purdue.edu/htbin/epachem.com> **PEER REVIEWED**

Micro-Flo Co., LLC, 530 Oak Court Dr., Memphis TN 38117 901-432-5000 /Registrant/

[US EPA; USEPA/OPP Pesticide Related Database Queries. Chemical Ingredient Database on 2,4-D, 2-ethylhexyl ester. (1928-43-4). Available from, as of Dec 22, 2004: <http://ppis.ceris.purdue.edu/htbin/epachem.com> **PEER REVIEWED**

Nufarm Limited, 2300 Frederick Ave., Suite 208, St. Joseph, MO 64504, 816-676-9000 /Registrant/

[US EPA; USEPA/OPP Pesticide Related Database Queries. Chemical Ingredient Database on 2,4-D, 2-ethylhexyl ester. (1928-43-4). Available from, as of Dec 22, 2004: <http://ppis.ceris.purdue.edu/htbin/epachem.com> **PEER REVIEWED**

PBI/Gordon Corp., 014090, 1217 West 12th St., Kansas City, MO 64101-0090, 816-460-6292. /Registrant/

[US EPA; USEPA/OPP Pesticide Related Database Queries. Chemical Ingredient Database on 2,4-D, 2-ethylhexyl ester. (1928-43-4). Available from, as of Dec 22, 2004: <http://ppis.ceris.purdue.edu/htbin/epachem.com> **PEER REVIEWED**

Rockland Chemical Corp., 71 Carolyn Blvd., Farmingdale, NY 11735, 978-887-1424 /Registrant/

[US EPA; USEPA/OPP Pesticide Related Database Queries. Chemical Ingredient Database on 2,4-D, 2-ethylhexyl ester. (1928-43-4). Available from, as of Dec 22, 2004: <http://ppis.ceris.purdue.edu/htbin/epachem.com> **PEER REVIEWED**

Universal Cooperatives Inc., 1300 Corporate Center Curve, Eagan, MN 55121, 651-239-1128 /Registrant/

[US EPA; USEPA/OPP Pesticide Related Database Queries. Chemical Ingredient Database on 2,4-D, 2-ethylhexyl ester. (1928-43-4). Available from, as of Dec 22, 2004: <http://ppis.ceris.purdue.edu/htbin/epachem.com> **PEER REVIEWED**

Value Gardens Supply, 585, St. Joseph, MO 64502, 540-864-8100 /Registrant/

[US EPA; USEPA/OPP Pesticide Related Database Queries. Chemical Ingredient Database on 2,4-D, 2-ethylhexyl ester. (1928-43-4). Available from, as of Dec 22, 2004: <http://ppis.ceris.purdue.edu/htbin/epachem.com> **PEER REVIEWED**

Voluntary Purchasing Group Inc., 1806 Auburn Dr., Carrollton, TX 75007-1451, 972-939-8390 /Registrant/

[US EPA; USEPA/OPP Pesticide Related Database Queries. Chemical Ingredient Database on 2,4-D, 2-ethylhexyl ester. (1928-43-4). Available from, as of Dec 22, 2004: <http://ppis.ceris.purdue.edu/htbin/epachem.com> **PEER REVIEWED**

Formulations/Preparations:

Selected products: 'Esteron 6E'; 'Esteron 99C'; 'Lentemul'; ... 'Barrage'; 'Brush-Rhap'; 'Fivestar'; 'Low Vol 4 Ester'; 'Salvo'; 'Weed Rhap LV-4D'; 'Weedone LV4'; 'Weed-Rhap'. Mixtures: 'Adrenalin' (+ imazamox); 'B-4' (+bromoxynil heptanoate+ bromoxynil octanoate); 'Broadsword' (+dicamba+ triclopyr-butotyl) (dicamba as butotyl ester); 'Oasis' (+imazapic); 'Shotgun' (+atrazine); 'Tiller' (+fenoxaprop-P-ethyl+ MCPA-2-ethylhexyl); 'Weedone 638 Solventless' (+2,4-D).

[Tomlin CDS, ed. 2,4-D-2-ethylhexyl (1928-43-4). In: The e-Pesticide Manual, 13th Edition Version 3.0 (2003-04). Surrey UK, British Crop Protection Council.] **PEER REVIEWED**

Laboratory Methods:

Analytic Laboratory Methods:

Method: 8321A: Procedure: high performance liquid chromatography coupled with either thermospray-mass spectrometry and/or ultraviolet detection; Analyte: 2,4-D, ethylhexyl ester; Matrix: wastewater, ground water, and soil/sediment matrices; Detection Limit: 1.2 ng.

[[U.S. Environmental Protection Agency. Solid Waste Test Methods SW-846 with Update III. CD-ROM (ISO 9660, V381SW8). Solutions Software Corp (1998)]] **PEER REVIEWED**

Special References:**Synonyms and Identifiers:****Related HSDB Records:**

[202 \[2,4-D\] \(hydrolysis product\)](#)

Synonyms:

USEPA/OPP Pesticide Code: 030063

PEER REVIEWED

Isooctyl(2-ethylhexyl) 2,4-dichlorophenoxyacetate

PEER REVIEWED

2,4-D, 2-Ethylhexyl

PEER REVIEWED

2-Ethylhexyl (2,4-dichlorophenoxy)acetate

PEER REVIEWED

Acetic acid, (2,4-dichlorophenoxy)-, 2-ethylhexyl ester

PEER REVIEWED

(2,4-Dichlorophenoxy)acetic acid 2-ethylhexyl ester

PEER REVIEWED

Formulations/Preparations:

Selected products: 'Esteron 6E'; 'Esteron 99C'; 'Lentemul'; ...'Barrage'; 'Brush-Rhap'; 'Fivestar'; 'Low Vol 4 Ester'; 'Salvo'; 'Weed Rhap LV-4D'; 'Weedone LV4'; 'Weed-Rhap'. Mixtures: 'Adrenalin' (+ imazamox); 'B-4' (+bromoxynil heptanoate+ bromoxynil octanoate); 'Broadsword' (+dicamba+ triclopyr-butotyl) (dicamba as butotyl ester); 'Oasis' (+imazapic); 'Shotgun' (+atrazine); 'Tiller' (+fenoxaprop-P-ethyl+ MCPA-2-ethylhexyl); 'Weedone 638 Solventless' (+2,4-D).

[Tomlin CDS, ed. 2,4-D-2-ethylhexyl (1928-43-4). In: The e-Pesticide Manual, 13th Edition Version 3.0 (2003-04). Surrey UK, British Crop Protection Council.] **PEER REVIEWED**

Administrative Information:

Hazardous Substances Databank Number: 7309

Last Revision Date: 20051114

Last Review Date: Reviewed by SRP on 5/5/2005

Update History:

Field Update on 2012-04-07, 1 fields added/edited/deleted

Field Update on 2012-04-07, 1 fields added/edited/deleted

Field Update on 2012-04-07, 1 fields added/edited/deleted

Field Update on 2012-04-07, 1 fields added/edited/deleted

Complete Update on 2005-11-14, 36 fields added/edited/deleted

Created 20041213

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DEPARTMENT OF TOXIC SUBSTANCES CONTROL
ENVIROSTOR

MOUNTAIN VIEW MIDDLE SCHOOL EXPANSION (60000825)

[SIGN UP FOR EMAIL ALERTS](#)

13130 MORRISON AVENUE
 MORENO VALLEY, CA 92555
 RIVERSIDE COUNTY
SITE TYPE: SCHOOL

SUPERVISOR:

SHAHIR HADDAD

OFFICE:

SOUTHERN CALIFORNIA SCHOOLS & BROWNFIELDS OUTREACH

SCHOOL DISTRICT:

MORENO VALLEY UNIFIED SCHOOL DISTRICT

Site Information

CLEANUP STATUS

NO FURTHER ACTION AS OF 6/16/2008

SITE TYPE: SCHOOL

SCHOOL DISTRICT:

MORENO VALLEY UNIFIED SCHOOL DISTRICT

NATIONAL PRIORITIES LIST: NO

ENVIROSTOR ID:

60000825

ACRES: 0.42 ACRES

SITE CODE:

404779

APN: NONE SPECIFIED

SPECIAL PROGRAM:

CLEANUP OVERSIGHT AGENCIES:

FUNDING:

SCHOOL DISTRICT

DTSC - SITE CLEANUP PROGRAM - **LEAD**

ASSEMBLY DISTRICT:

61

SENATE DISTRICT:

31

Regulatory Profile

PAST USE(S) THAT CAUSED CONTAMINATION

AGRICULTURAL - ROW CROPS, SCHOOL - MIDDLE

POTENTIAL CONTAMINANTS OF CONCERN

ARSENIC

[ORGANOCHLORINE PESTICIDES \(8081 OCPS\)](#)

POTENTIAL MEDIA AFFECTED

SOIL

Site History

The Site comprises approximately 0.42-acres within the existing Mountain View Middle School property. The Site has been historically used for agricultural purposes from approximately 1938 to 1980. The school was constructed in 1980. Surrounding properties consist of Valley View High School to the east, and residential to the north, south, and west. To evaluate the impact from historical operations, the site was investigated for arsenic and organochlorine pesticides. DTSC concurred with the conclusion in the PEA that no further action is necessary for the Site.

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DEPARTMENT OF TOXIC SUBSTANCES CONTROL
ENVIROSTOR

PROPOSED HIGH SCHOOL (60000931)

[SIGN UP FOR EMAIL ALERTS](#)

IRONWOOD / QUINCY	SUPERVISOR:	SHAHIR HADDAD
MORENO VALLEY, CA 92555	OFFICE:	SOUTHERN CALIFORNIA SCHOOLS & BROWNFIELDS OUTREACH
RIVERSIDE COUNTY	SCHOOL DISTRICT:	MORENO VALLEY UNIFIED SCHOOL DISTRICT
SITE TYPE: SCHOOL		

Site Information

CLEANUP STATUS

NO FURTHER ACTION AS OF 10/23/2008

SITE TYPE: SCHOOL	SCHOOL DISTRICT:	MORENO VALLEY UNIFIED SCHOOL DISTRICT
NATIONAL PRIORITIES LIST: NO	ENVIROSTOR ID:	60000931
ACRES: 56 ACRES	SITE CODE:	404806
APN: NONE SPECIFIED	SPECIAL PROGRAM:	
CLEANUP OVERSIGHT AGENCIES:	FUNDING:	SCHOOL DISTRICT
DTSC - SITE CLEANUP PROGRAM - LEAD	ASSEMBLY DISTRICT:	61
	SENATE DISTRICT:	31

Regulatory Profile

PAST USE(S) THAT CAUSED CONTAMINATION

AGRICULTURAL - ROW CROPS

POTENTIAL CONTAMINANTS OF CONCERN

ARSENIC

[ORGANOCHLORINE PESTICIDES \(8081 OCPS\)](#)

POTENTIAL MEDIA AFFECTED

SOIL

Site History

The Site is approximately 55.6-acres and has historically been used for agricultural purposes since 1938. Surrounding properties consist of vacant land to the north, residential properties to the east, residential and agricultural properties to the west (across Quincy Wash), and residential and agricultural properties to the south (across Ironwood Avenue). To evaluate the impact from historical operations, the site was investigated for arsenic, copper and organochlorine pesticides. The PEA concludes that no further action is necessary for the Site. DTSC concurred with a No Further Action determination.

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**TOXICOLOGICAL PROFILE FOR
DDT, DDE, and DDD**

**U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Agency for Toxic Substances and Disease Registry**

September 2002

1. PUBLIC HEALTH STATEMENT

Large amounts of DDT were released into the air and on soil or water when it was sprayed on crops and forests to control insects. DDT was also sprayed in the environment to control mosquitos. Although the use of DDT is no longer permitted in the United States, DDT may be released into the atmosphere in other countries where it is still manufactured and used, including Mexico. DDT, DDE and DDD may also enter the air when they evaporate from contaminated water and soil. DDT, DDE, and DDD in the air will then be deposited on land or surface water. This cycle of evaporation and deposition may be repeated many times. As a result, DDT, DDE, and DDD can be carried long distances in the atmosphere. These chemicals have been found in bogs, snow, and animals in the Arctic and Antarctic regions, far from where they were ever used. Some DDT may have entered the soil from waste sites. DDT, DDE, and DDD may occur in the atmosphere as a vapor or be attached to solids in air. Vapor phase DDT, DDE, and DDD may break down in the atmosphere due to reactions caused by the sun. The half-life of these chemicals in the atmosphere as vapors (the time it takes for one-half of the chemical to turn into something else) has been calculated to be approximately 1.5–3 days. However, in reality, this half-life estimate is too short to account for the ability of DDT, DDE, and DDD to be carried long distances in the atmosphere.

DDT, DDE, and DDD last in the soil for a very long time, potentially for hundreds of years. Most DDT breaks down slowly into DDE and DDD, generally by the action of microorganisms. These chemicals may also evaporate into the air and be deposited in other places. They stick strongly to soil, and therefore generally remain in the surface layers of soil. Some soil particles with attached DDT, DDE, or DDD may get into rivers and lakes in runoff. Only a very small amount, if any, will seep into the ground and get into groundwater. The length of time that DDT will last in soil depends on many factors including temperature, type of soil, and whether the soil is wet. DDT lasts for a much shorter time in the tropics where the chemical evaporates faster and where microorganisms degrade it faster. DDT disappears faster when the soil is flooded or wet than when it is dry. DDT disappears faster when it initially enters the soil. Later on, evaporation slows down and some DDT moves into spaces in the soil that are so small that microorganisms cannot reach the DDT to break it down efficiently. In tropical areas, Σ DDT may disappear in much less than a year. In temperate areas, half of the Σ DDT initially present

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http://www.epa.gov/ttn/atw/hlthef/dde.html
Last updated on Tuesday, November 06, 2007

DDE

DDE (1,1-DICHLORO-2,2-BIS(p-CHLOROPHENYL) ETHYLENE) ^(A)

72-55-9

Hazard Summary-Created in April 1992; Revised in January 2000

1,1-Dichloro-2,2-bis(p-chlorophenyl) ethylene (DDE) is a breakdown product of DDT, which was used in the past as an insecticide. No information is available on the acute (short-term) or chronic (long-term) effects of DDE. Acute, oral exposure to high doses of DDT in humans results in central nervous system (CNS) effects, such as headaches, nausea, and convulsions. The only effect noted in epidemiologic studies of workers exposed to DDT and other pesticides was an increase in activity of liver enzymes. Animal studies have reported effects on the liver, immune system, and CNS from chronic oral exposure to DDT. Human studies are inconclusive regarding DDE and cancer. Animal studies have reported an increased incidence of liver tumors in mice and hamsters, and thyroid tumors in female rats from oral exposure to DDE. EPA has classified DDE as a Group B2, probable human carcinogen.

Please Note: The main source of information for this fact sheet is the Agency for Toxic Substances and Disease Registry's (ATSDR's) [Toxicological Profile for 4,4-DDT, 4,4-DDE, and 4,4-DDD](#) and EPA's [Integrated Risk Information System](#) (IRIS), which contains information on the carcinogenic effects of DDE including the unit cancer risk for oral exposure.

Uses

- DDT was extensively used in the past for the control of malaria, typhus, and other insect-transmitted diseases. It was banned for use in the United States in 1972, except in the case of a public health emergency. (1)
- DDE is a breakdown product of DDT and has no uses. (1)

Sources and Potential Exposure

- DDE is found in the environment as a result of the breakdown of DDT, an insecticide. (1)
- Human exposure to DDE appears to be primarily through food; in the United States in 1981, consumption of DDE in foods was estimated to be 0.001 parts per million per day (ppm/d). However, the levels of DDE in foods have been decreasing and are expected to continue to decrease. (1)
- Levels of DDE in air and water samples are very low. (1)
- DDE has been listed as a pollutant of concern to EPA's [Great Waters Program](#) due to its persistence in the environment, potential to bioaccumulate, and toxicity to humans and the environment (2).

Assessing Personal Exposure

- DDE can be detected in fat, blood, urine, semen, and breast milk. (1)

Health Hazard Information

Acute Effects:

- No studies are available on the acute effects of DDE in humans. (1)
- Acute oral exposure to high doses of DDT in humans results in CNS effects, such as headaches, nausea, and convulsions. (1)
- Case reports in humans have noted that doses as high as 285 milligrams DDT per kilogram body weight per day (mg/kg/d) have been ingested accidentally with no fatal results. (1)
- Tests involving acute exposure of rats, guinea pigs, and rabbits have shown DDT to have moderate acute toxicity from oral exposure. (3)

Chronic Effects (Noncancer):

- The only effect noted in epidemiologic studies of workers exposed to DDT and other pesticides was an increase in activity of liver enzymes. No adverse effects on the blood, liver, heart, or CNS were noted. (1)
- Animal studies have reported effects on the liver, immune system, and CNS from chronic oral administration of DDT. (1,4,9)
- EPA has not established a Reference Concentration (RfC) or a Reference Dose (RfD) for DDE. (5)
- EPA has established an RfD of 0.0005 milligrams per kilogram body weight per day (mg/kg/d) for DDT based on liver effects in rats. The RfD is an estimate (with uncertainty spanning perhaps an order of magnitude) of a continuous ingestion exposure to the human population (including sensitive subgroups), that is likely to be without appreciable risk of deleterious noncancer effects during a lifetime. It is not a direct estimator of risk but rather a reference point to gauge the potential effects. At exposures increasingly greater than the RfD, the potential for adverse health effects increases. Lifetime exposure above the RfD does not imply that an adverse health effect would necessarily occur. (5)

Reproductive/Developmental Effects:

- No information is available on the reproductive or developmental effects of DDT or DDE in humans via inhalation exposure. (1)
- No studies are available on the developmental effects in humans after oral exposure to DDT or DDE. However, DDT and DDE have been found in human blood, placental tissue, and umbilical cord blood. (1)
- Epidemiologic studies did not find an association between DDT maternal blood levels and miscarriages or premature rupture of fetal membranes in humans. (1)
- Oral animal studies have reported reproductive effects, such as reduced fertility, adverse effects on spermatogenesis, and decreased testicular and ovarian weights from DDT exposure. Developmental effects, such as embryotoxicity and fetotoxicity, but not teratogenicity (birth defects) have also been observed in oral animal studies. (1)
- DDT has been shown to elicit estrogenic activity in rats after oral exposure (1).

Cancer Risk:

- Studies of workers exposed to DDT have yielded conflicting results. Three studies reported that tissue levels of DDT and DDE were higher in cancer victims than in those dying of other diseases. In other studies, no such relationship was seen. (5,9)
- Animal studies have reported an increased incidence of liver tumors in mice and hamsters and thyroid tumors in female rats from oral exposure to DDE. (5)
- EPA has classified DDE as a Group B2, probable human carcinogen. (5)
- EPA uses mathematical models, based on animal studies to estimate the probability of a person developing cancer from ingesting water containing a specified concentration of a chemical. EPA has calculated an oral cancer slope factor of $0.34 \text{ (mg/kg/d)}^{-1}$ and a unit risk estimate of $9.7 \times 10^{-6} \text{ (}\mu\text{g/L)}^{-1}$. EPA estimates that, if an individual were to continuously ingest water containing an average of DDE at $0.1 \text{ }\mu\text{g/L}$ over his or her entire lifetime, that person would theoretically have no more than a one-in-a-million increased chance of developing cancer as a direct result of ingesting water containing this chemical. Similarly, EPA estimates that ingesting water containing $1.0 \text{ }\mu\text{g/L}$ would result in not greater than a one-in-a-hundred-thousand increased chance of developing cancer, and water containing $10.0 \text{ }\mu\text{g/L}$ would result in not greater than a one-in-ten thousand increased chance of developing cancer. For a detailed discussion of confidence in the potency estimates, please see IRIS. (5)

Physical Properties

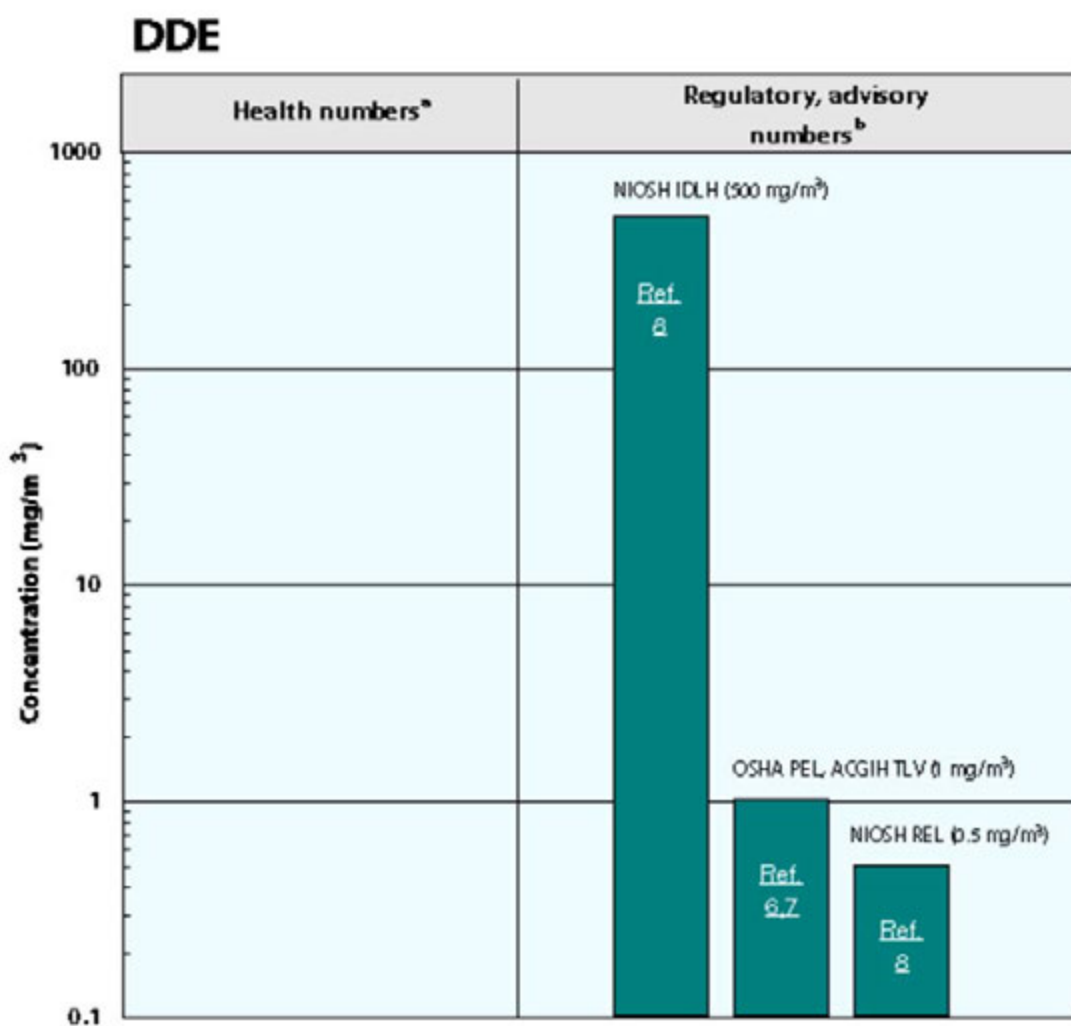
- DDE is also known as 1,1-dichloro-2,2-bis(p-chlorophenyl) ethylene and *p,p*-dichlorodiphenyldichloroethylene.

- DDE is a white crystalline solid. (1)
- The odor threshold for DDE is not available. (1)
- The chemical formula for DDE is $C_{14}H_8Cl_4$, and the molecular weight is 318.03 g/mol. (1)
- The vapor pressure for DDE is 6.5×10^{-6} torr at 20 °C, and it has a log octanol/water partition coefficient ($\log K_{ow}$) of 7.0. (1)

Conversion Factors:

To convert concentrations in air (at 25 °C) from ppm to mg/m^3 : $mg/m^3 = (ppm) \times (\text{molecular weight of the compound}) / (24.45)$. For DDE: 1 ppm = 13.0 mg/m^3 ; for DDT: 1 ppm = 14.5 mg/m^3 .

Health Data from Inhalation Exposure*



ACGIH TLV--American Conference of Governmental and Industrial Hygienists' threshold limit value expressed as a time-weighted average; the concentration of a substance to which most workers can be exposed without adverse effects.

NIOSH IDLH--National Institute of Occupational Safety and Health's immediately dangerous to life or health limit; NIOSH recommended exposure limit to ensure that a worker can escape from an exposure condition that is likely to cause death or immediate or delayed permanent adverse health effects or prevent escape from the environment.

NIOSH REL--NIOSH's recommended exposure limit; NIOSH-recommended exposure limit for an 8- or 10-h time-weighted-average exposure and/or ceiling.

OSHA PEL--Occupational Safety and Health Administration's permissible exposure limit expressed as a time-weighted average; the concentration of a substance to which most workers can be exposed without adverse effect averaged over a normal 8-h workday or a 40-h workweek.

* All health and regulatory numbers are for DDT.

The health and regulatory values cited in this fact sheet were obtained in December 1999.

^a Health numbers are toxicological numbers from animal testing or risk assessment values developed by EPA.

^b Regulatory numbers are values that have been incorporated in Government regulations, while advisory numbers are nonregulatory values provided by the Government or other groups as advice. OSHA numbers are regulatory, whereas NIOSH and ACGIH numbers are advisory.

References

1. Agency for Toxic Substances and Disease Registry (ATSDR). *Toxicological Profile for 4,4-DDT, 4,4-DDE, and 4,4-DDD*. Public Health Service, U.S. Department of Health and Human Services, Atlanta, GA. 1994.
2. U.S. Environmental Protection Agency. *Deposition of Air Pollutants to the Great Waters*. EPA-453/R-93-055. First Report to Congress. Office of Air Quality Planning and Standards, Research Triangle Park, NC. 1994.
3. U.S. Department of Health and Human Services. Registry of Toxic Effects of Chemical Substances (RTECS, online database). National Toxicology Information Program, National Library of Medicine, Bethesda, MD. 1993.
4. U.S. Department of Health and Human Services. Hazardous Substances Data Bank (HSDB, online database). National Toxicology Information Program, National Library of Medicine, Bethesda, MD. 1993.
5. U.S. Environmental Protection Agency. *Integrated Risk Information System (IRIS) on p,p-Dichlorodiphenyldichloroethylene*. National Center for Environmental Assessment, Office of Research and Development, Washington, DC. 1999.
6. Occupational Safety and Health Administration (OSHA). Occupational Safety and Health Standards, Toxic and Hazardous Substances. *Code of Federal Regulations*. 29 CFR 1910.1000. 1998.
7. American Conference of Governmental Industrial Hygienists (ACGIH). *1999 TLVs and BEIs. Threshold Limit Values for Chemical Substances and Physical Agents. Biological Exposure Indices*. Cincinnati, OH. 1999.
8. National Institute for Occupational Safety and Health (NIOSH). *Pocket Guide to Chemical Hazards*. U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention. Cincinnati, OH. 1997.
9. U.S. Environmental Protection Agency. *Integrated Risk Information System (IRIS) on p,p-Dichlorodiphenyltrichloroethane*. National Center for Environmental Assessment, Office of Research and Development, Washington, DC. 1999.

A. This fact sheet focuses on the health effects of DDE. However, since DDE is a breakdown product of DDT, in those cases where no information is available on DDE and there is information on DDT, the information on DDT is presented.

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Agency for Toxic Substances & Disease Registry

ToxFAQs™ for DDT, DDE, and DDD

([DDT, DDE y DDD \(/es/toxfaqs/es_tfacts35.html\)](/es/toxfaqs/es_tfacts35.html))

September 2002

CAS#: DDT 50-29-3; DDE 72-55-9; DDD 72-54-8

 (</tfacts35.pdf>) **PDF Version, 55 KB** (</tfacts35.pdf>)

This fact sheet answers the most frequently asked health questions about DDT, DDE, and DDD. For more information, you may call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. This information is important because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

Highlights

Exposure to DDT, DDE, and DDD occurs mostly from eating foods containing small amounts of these compounds, particularly meat, fish and poultry. High levels of DDT can affect the nervous system causing excitability, tremors and seizures. In women, DDE can cause a reduction in the duration of lactation and an increased chance of having a premature baby. DDT, DDE, and DDD have been found in at least 441 of the 1,613 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What are DDT, DDE, and DDD?

DDT (dichlorodiphenyltrichloroethane) is a pesticide once widely used to control insects in agriculture and insects that carry diseases such as malaria. DDT is a white, crystalline solid with no odor or taste. Its use in the U.S. was banned in 1972 because of damage to wildlife, but is still used in some countries.

DDE (dichlorodiphenyldichloroethylene) and DDD (dichlorodiphenyldichloroethane) are chemicals similar to DDT that contaminate commercial DDT preparations. DDE has no commercial use. DDD was also used to kill pests, but its use has also been banned. One form of DDD has been used medically to treat cancer of the adrenal gland.

What happens to DDT, DDE, and DDD when they enter the environment?

- DDT entered the environment when it was used as a pesticide; it still enters the environment due to current use in other countries.
- DDE enters the environment as contaminant or breakdown product of DDT; DDD also enters the environment as a breakdown product of DDT.
- DDT, DDE, and DDD in air are rapidly broken down by sunlight. Half of what's in air breaks down within 2 days.
- They stick strongly to soil; most DDT in soil is broken down slowly to DDE and DDD by microorganisms; half the DDT in soil will break down in 2-15 years, depending on the type of soil.
- Only a small amount will go through the soil into groundwater; they do not dissolve easily in

water.

- DDT, and especially DDE, build up in plants and in fatty tissues of fish, birds, and other animals.
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How might I be exposed to DDT, DDE, and DDD?

- Eating contaminated foods, such as root and leafy vegetable, fatty meat, fish, and poultry, but levels are very low.
 - Eating contaminated imported foods from countries that still allow the use of DDT to control pests.
 - Breathing contaminated air or drinking contaminated water near waste sites and landfills that may contain higher levels of these chemicals.
 - Infants fed on breast milk from mothers who have been exposed.
 - Breathing or swallowing soil particles near waste sites or landfills that contain these chemicals.
-

How can DDT, DDE, and DDD affect my health?

DDT affects the nervous system. People who accidentally swallowed large amounts of DDT became excitable and had tremors and seizures. These effects went away after the exposure stopped. No effects were seen in people who took small daily doses of DDT by capsule for 18 months.

A study in humans showed that women who had high amounts of a form of DDE in their breast milk were unable to breast feed their babies for as long as women who had little DDE in the breast milk. Another study in humans showed that women who had high amounts of DDE in breast milk had an increased chance of having premature babies.

In animals, short-term exposure to large amounts of DDT in food affected the nervous system, while long-term exposure to smaller amounts affected the liver. Also in animals, short-term oral exposure to small amounts of DDT or its breakdown products may also have harmful effects on reproduction.

How likely are DDT, DDE, and DDD to cause cancer?

Studies in DDT-exposed workers did not show increases in cancer. Studies in animals given DDT with the food have shown that DDT can cause liver cancer.

The Department of Health and Human Services (DHHS) determined that DDT may reasonable be anticipated to be a human carcinogen. The International Agency for Research on Cancer (IARC) determined that DDT may possibly cause cancer in humans. The EPA determined that DDT, DDE, and DDD are probable human carcinogens.

How can DDT, DDE, and DDD affect children?

There are no studies on the health effects of children exposed to DDT, DDE, or DDD. We can assume that children exposed to large amounts of DDT will have health effects similar to the effects seen in adults. However, we do not know whether children differ from adults in their susceptibility to these substances.

There is no evidence that DDT, DDE, or DDD cause birth defects in people. A study showed that teenage boys whose mothers had higher DDE amounts in the blood when they were pregnant were taller than those whose mothers had lower DDE levels. However, a different study found the opposite in preteen girls. The reason for the discrepancy between these studies is unknown.

Studies in rats have shown that DDT and DDE can mimic the action of natural hormones and in this way affect the development of the reproductive and nervous systems. Puberty was delayed in male

rats given high amounts of DDE as juveniles. This could possibly happen in humans. A study in mice showed that exposure to DDT during the first weeks of life may cause neurobehavioral problems later in life.

How can families reduce the risk of exposure to DDT, DDE, and DDD?

- Most families will be exposed to DDT by eating food or drinking liquids contaminated with small amounts of DDT.
 - Cooking will reduce the amount of DDT in fish.
 - Washing fruit and vegetables will remove most DDT from their surface.
 - Follow health advisories that tell you about consumption of fish and wildlife caught in contaminated areas.
-

Is there a medical test to show whether I've been exposed to DDT, DDE, and DDD?

Laboratory tests can detect DDT, DDE, and DDD in fat, blood, urine, semen, and breast milk. These tests may show low, moderate, or excessive exposure to these compounds, but cannot tell the exact amount you were exposed to, or whether you will experience adverse effects. These tests are not routinely available at the doctor's office because they require special equipment.

Has the federal government made recommendations to protect human health?

The Occupational Safety and Health Administration (OSHA) sets a limit of 1 milligram of DDT per cubic meter of air (1 mg/m³) in the workplace for an 8-hour shift, 40-hour workweek.

The Food and Drug Administration (FDA) has set limits for DDT, DDE, and DDD in foodstuff at or above which the agency will take legal action to remove the products from the market.

References

Agency for Toxic Substances and Disease Registry (ATSDR). 2002. Toxicological Profile for DDT, DDE, and DDD (/ToxProfiles/TP.asp?id=81&tid=20). *Update*. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

Where can I get more information?

If you have questions or concerns, please contact your community or state health or environmental quality department or:

For more information, contact:

Agency for Toxic Substances and Disease Registry
Division of Toxicology and Environmental Medicine
1600 Clifton Road NE, Mailstop F-62
Atlanta, GA 30333
Phone: 1-800-CDC-INFO · 888-232-6348 (TTY)
Fax: 1-770-488-4178
Email: cdcinfo@cdc.gov (<mailto:cdcinfo@cdc.gov>)

ATSDR can also tell you the location of occupational and environmental health clinics. These clinics specialize in recognizing, evaluating, and treating illnesses resulting from exposure to hazardous

substances.

Information line and technical assistance:

Phone: 888-422-8737

FAX: (770)-488-4178

To order toxicological profiles, contact:

National Technical Information Service

5285 Port Royal Road

Springfield, VA 22161

Phone: 800-553-6847 or 703-605-6000

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Water: Private Wells

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Human Health

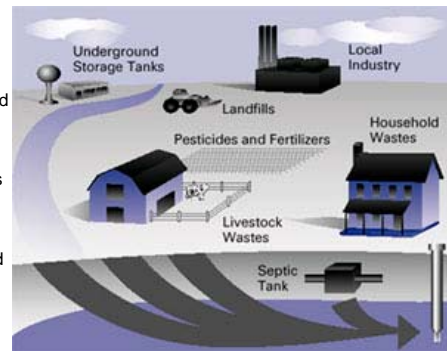
The first step to protect your health and the health of your family is learning about what may pollute your source of drinking water. Potential contamination may occur naturally, or as a result of human activity.

What are Some Naturally Occurring Sources of Pollution?

- **Microorganisms:** Bacteria, viruses, parasites and other microorganisms are sometimes found in water. Shallow wells — those with water close to ground level — are at most risk. Runoff, or water flowing over the land surface, may pick up these pollutants from wildlife and soils. This is often the case after flooding. Some of these organisms can cause a variety of illnesses. Symptoms include nausea and diarrhea. These can occur shortly after drinking contaminated water. The effects could be short-term yet severe (similar to food poisoning) or might recur frequently or develop slowly over a long time.
- **Radionuclides:** Radionuclides are radioactive elements such as uranium and radium. They may be present in underlying rock and ground water
- **Radon:** Radon is a gas that is a natural product of the breakdown of uranium in the soil — can also pose a threat. Radon is most dangerous when inhaled and contributes to lung cancer. Although soil is the primary source, using household water containing Radon contributes to elevated indoor Radon levels. Radon is less dangerous when consumed in water, but remains a risk to health.
- **Nitrates and Nitrites:** Although high nitrate levels are usually due to human activities (see below), they may be found naturally in ground water. They come from the breakdown of nitrogen compounds in the soil. Flowing ground water picks them up from the soil. Drinking large amounts of nitrates and nitrites is particularly threatening to infants (for example, when mixed in formula).
- **Heavy Metals:** Underground rocks and soils may contain arsenic, cadmium, chromium, lead, and selenium. However, these contaminants are not often found in household wells at dangerous levels from natural sources.
- **Fluoride:** Fluoride is helpful in dental health, so many water systems add small amounts to drinking water. However, excessive consumption of naturally occurring fluoride can damage bone tissue. High levels of fluoride occur naturally in some areas. It may discolor teeth, but this is not a health risk.

What Human Activities Can Pollute Ground Water?

- **Bacteria and Nitrates:** These pollutants are found in human and animal wastes. Septic tanks can cause bacterial and nitrate pollution. So can large numbers of farm animals. Both septic systems and animal manures must be carefully managed to prevent pollution. Sanitary landfills and garbage dumps are also sources. Children and some adults are at extra risk when exposed to water-borne bacteria. These include the elderly and people whose immune systems are weak due to AIDS or treatments for cancer. Fertilizers can add to nitrate problems. Nitrates cause a health threat in very young infants called “blue baby” syndrome. This condition disrupts oxygen flow in the blood.
- **Concentrated Animal Feeding Operations (CAFOs):** The number of CAFOs, often called “factory farms,” is growing. On these farms thousands of animals are raised in a small space. The large amounts of animal wastes/manures from these farms can threaten water supplies. Strict and careful manure management is needed to prevent pathogen and nutrient problems. Salts from high levels of manures can also pollute ground water.
- **Heavy Metals:** Activities such as mining and construction can release large amounts of heavy metals into nearby ground water sources. Some older fruit orchards may contain high levels of arsenic, once used as a pesticide. At high levels, these metals pose a health risk.
- **Fertilizers and Pesticides:** Farmers use fertilizers and pesticides to promote growth and reduce insect damage. These products are also used on golf courses and suburban lawns and gardens. The chemicals in these products may end up in ground water. Such pollution depends on the types and amounts of chemicals used and how they are applied. Local environmental conditions (soil types, seasonal snow and rainfall) also affect this pollution. Many fertilizers contain forms of nitrogen that can break down into harmful nitrates. This could add to other sources of nitrates mentioned above. Some underground agricultural drainage systems collect fertilizers and pesticides. This polluted water can pose problems to ground water and local streams and rivers. In addition, chemicals used to treat buildings and homes for termites or other pests may also pose a threat. Again, the possibility of problems depends on the amount and kind of chemicals. The types of soil and the amount of water moving through the soil also play a role.
- **Industrial Products and Wastes:** Many harmful chemicals are used widely in local business and industry. These can become drinking water pollutants if not well managed. The most common sources of such problems are:
 - **Local Businesses:** These include nearby factories, industrial plants, and even small businesses such as gas stations and dry cleaners. All handle a variety of hazardous chemicals that need careful management. Spills and improper disposal of these chemicals or of industrial wastes can threaten ground water supplies.
 - **Leaking Underground Tanks & Piping:** Petroleum products, chemicals, and wastes stored in underground storage tanks and pipes may end up in the ground water. Tanks and piping leak if they are constructed or installed improperly. Steel tanks and piping corrode with age. Tanks are often found on farms. The possibility of leaking tanks is great on old, abandoned farm sites. Farm tanks are exempt from the EPA rules for petroleum and chemical tanks.
 - **Landfills and Waste Dumps:** Modern landfills are designed to contain any leaking liquids. But floods can carry them over the barriers. Older dumpsites may have a wide variety of pollutants that can seep into ground water.
- **Household Wastes:** Improper disposal of many common products can pollute ground water. These include cleaning solvents, used motor oil, paints, and paint thinners. Even soaps and detergents can harm drinking water. These are often a problem from faulty septic tanks and septic leaching fields.
- **Lead & Copper:** Household plumbing materials are the most common source of lead and copper in home drinking water. Corrosive water may cause metals in pipes or soldered joints to leach into your tap water. Your water’s acidity or alkalinity (often measured as pH) greatly affects corrosion. Temperature and mineral content also affect how corrosive it is. They are often used in pipes, solder, or plumbing fixtures. Lead can cause serious damage to the brain, kidneys, nervous system, and red blood cells. The age of plumbing materials — in particular, copper pipes soldered with lead — is also important. Even in relatively low amounts these metals can be harmful. EPA rules under the Safe Drinking Water Act limit lead in drinking water to 15 parts per billion. Since 1988 the Act only allows “lead free” pipe, solder, and flux



Septic tanks are designed to have a “leach field” around them — an area where wastewater flows out of the tank. This wastewater can also move into the ground water.

in drinking water systems. The law covers both new installations and repairs of plumbing.

○ For more information on avoiding lead in drinking water, visit the EPA's [Lead in Drinking Water web site](#).

- **Water Treatment Chemicals:** Improper handling or storage of water-well treatment chemicals (disinfectants, corrosion inhibitors, etc.) close to your well can cause problems.
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The Apple Bites Back: Claiming Old Orchards for Residential Development

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As the U.S. population continues to grow, increasing demand for housing and related community resources means more land is being converted from agricultural uses to residential applications. According to the revised 1997 National Resources Inventory conducted by the USDA Natural Resources Conservation Service, more than 6 million acres of American farmland were converted to developed uses between 1992 and 1997. That is an annual conversion rate of roughly 1.2 million acres per year—a 51% increase over the average annual rate reported for the preceding decade.

Naturally, many of these areas were routinely treated with pesticides and other chemicals during their agricultural lifetimes. Although this legacy has been problematic in a wide variety of land conversion scenarios, one in particular seems to have attracted the attention and concern of environmental officials and property buyers in several states across the country: the residential development of historic orchard properties. In state after state, these old orchards (which most often produced apples, but also peaches, cherries, pears, and other tree crops) are metamorphosing into highly desirable subdivisions—desirable, that is, until it emerges that the soil beneath the feet of the proud new residents may be contaminated with lead and arsenic. These toxic by-products are left from the days before DDT and before organophosphates, when arsenical pesticides, particularly lead arsenate (LA), were the treatment of choice to prevent the ravages of insect damage.

They Loved LA

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LA was introduced in 1892 in Massachusetts for use against the gypsy moth. Two other arsenical pesticides (copper acetoarsenite, known as “Paris green,” and calcium arsenate) also were in use, although LA largely replaced them in the 1930s due to lower cost, greater efficacy, and lower phytotoxicity. Even though arsenic residue was recognized as a problem as early as 1919, LA was the most widely used pesticide in the nation—recommended by the USDA and applied to millions of acres of crops—until the late 1940s, when DDT (considered at the time to be safer and more effective) became available. LA continued to be used in some locations into the 1970s, and was ultimately banned in 1988.

LA was perhaps most commonly applied in apple orchards, due to its excellent control of the codling moth, a major apple pest. Today, apple orchard properties that were in production during the heyday of LA use are the focal point of environmental concerns; given the nature of the pests peculiar to orchard crops, growers tended to apply the chemicals frequently and in high concentrations, often over many years. “In some cases, they dusted the apple trees or peach trees every week, whereas most field crops may have had one or two applications during the growing season,” says Kevin Schick, a bureau chief with the Site Remediation and Waste Management Program in the New Jersey Department of Environmental Protection.

LA and the other arsenical pesticides were designed to be persistent, and it is that persistence that is causing environmental contamination problems decades after their use ended. “These chemicals have just tremendously long half-lives in the ground,” says North Carolina state toxicologist Ken Rudo. “They bind very tightly to the soil.”

Once LA reached the soil through over-spray, spillage, rainfall wash-off, or simply fallen fruit and leaves, the lead arsenate underwent hydrolysis, separating into lead and arsenic bound to organic particles in the soil. The lead, being poorly soluble, was immobilized, typically within the top 12 to 18 inches of topsoil. The fate of the arsenic was similar, but a bit more complicated. “Arsenic, as arsenate, even though somewhat sparingly soluble, *is* soluble, and it will move in water,” says Washington State University soil scientist Frank Peryea. “I’ve seen some sites where almost all of the arsenic is still in the topsoil, in the tillage zone, and I’ve seen sites where I’ve measured arsenic movement as deep as a meter or so.”

Carl Renshaw, a hydrogeologist at Dartmouth College, published a study in the January/February 2006 issue of the *Journal of Environmental Quality* showing that arsenate in the soil can be remobilized by being disturbed. He compared two fields in the same historic New Hampshire orchard. One field had never been disturbed, whereas the other had been tilled and replanted in the early 1990s. “What we found was that in the field that had been replanted, there was somewhat less arsenic on it than in the undisturbed field,” he says.

Given the assumption of virtually identical application rates over the years, the discrepancy apparently arose from a portion of the arsenic in the disturbed field having been mobilized and removed by surface water. Renshaw found arsenic in the sediment of a nearby stream in amounts that very closely matched the arsenic missing from the tilled field.

“The implication from our study,” says Renshaw, “is that if you’re not really careful about erosion, you’re going to end up sending a lot of arsenic down into the stream channel.” To date, researchers have seen no evidence of direct health effects in humans, animals, or plants exposed to this stream-bound arsenic. However, more study is needed to fully understand the ramifications—if any—of the mobilization.

How Dangerous?

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The potential danger posed to human health by lead and arsenic contamination in historic orchards is a complex issue, fraught with scientific uncertainties and competing interests. Arsenic is a known human carcinogen. Exposure to lead, especially prenatally and in childhood, can lead to neurological damage. There is no doubt that excessive exposure to either substance can adversely impact health, but in this case any risks are almost exclusively long-term—virtually no instances of acute adverse health effects have been documented in people living on historic orchard properties.

Regulatory agencies such as the EPA and state health and environmental departments determine allowable levels of chemicals in soils and water based upon formulas that take into account criteria such as toxicity, exposure, and naturally occurring background concentrations of the chemicals. For carcinogens such as arsenic, the calculations are based upon the amount of a chemical that is predicted to result in 1 additional cancer case occurring in 1 million people exposed over their lifetimes. But there is some flexibility in the standards based on local conditions and

practical considerations. In New Jersey, for example, where background arsenic concentrations are often high, the criterion for residential soil cleanup is set at 20 ppm—50 times the EPA's level of 0.4 ppm.

In historic orchard properties, cleanup action is often triggered when a so-called "hot spot" is discovered—typically an area where the pesticides had been mixed and loaded or stored, and where repeated spills or disposal of excess materials may have occurred. The contaminant concentrations in those hot spots can be significantly higher than in the tree crop areas. But locating hot spots after many decades can be very difficult.

The ATSDR is often called in to analyze the health risks at contaminated historic orchard properties. "We look at the contaminants, the concentrations, the pathway, how long [residents] are exposed to it—all of the different aspects of an exposure," says Robert Safay, an environmental health scientist with the agency. "For example, when you're looking at lead contamination in the soil, you're primarily concerned about young children playing out in the soil."

In all but the most extreme cases, the health risks of living atop contaminated historic orchard soil are ultimately characterized as very low and manageable. Exposure is the critical element. "The real issue here is direct contact—you want to limit the direct contact," says Lori Bowman, director of the Agrichemical Management Bureau in the Wisconsin Department of Agriculture, Trade, and Consumer Protection. As Safay explains, there must be a completed exposure pathway for there to be even the potential for health effects. Ultimately, the amount of risk depends on the level of contamination and the use of the land.

For the most part, residents are advised to limit their direct exposure to the soil if it's unremediated and to take simple measures such as wearing gardening gloves and wiping their feet before entering the house. Peryea says there is little risk from eating plants grown in this type of soil, but advises that home gardeners rinse off produce before bringing it into the home, then wash it again with a detergent and scrub brush to remove any remaining soil particles, paying particular attention to rough vegetables like broccoli and leafy vegetables like lettuce, which can trap and retain dust. He also advises paring root and tuber crops such as potatoes, carrots, and radishes, and not composting the peelings or other unused plant parts.

The risks involved may be modest and long-term in most cases, but low risk is not the same as no risk, and regulatory agencies across the country are finding themselves in a thorny situation as more and more contaminated historic orchard properties are developed. They are caught between their duty to protect public health and the environment, and the fact that the risks presented by most of these properties pale in comparison to those associated with other, more acute contamination sites, such as lands near smelters or toxic waste dumps. Naturally, budgets are limited, and priorities must be set. Yet the orchard situation cannot be ignored, and several states have been wrestling with how to deal with this issue for several years.

The sheer scope of the phenomenon adds another layer to the challenge of how to most effectively deal with it. "The magnitude of the problem is just staggering," says Peryea. Millions of acres across the nation are involved. In the state of Washington alone, Peryea says, some 188,000 acres are affected. In Wisconsin, 50,000 acres may be affected, and in New Jersey, up to 5% of the state's acreage is estimated to be impacted by the historical use of arsenical pesticides. Both New Jersey and Washington have had multistakeholder task forces examine the problem and issue recommendations and guidelines.

Wisconsin is likely to convene a similar task force later in 2006, according to Bowman. "We want to develop a protective, economical, and practical strategy to address potential residues of lead and arsenic in soils related to historic orchard use," she says. "The charge of the task force would be to evaluate the health and environmental impacts, and [also evaluate] what kind of alternatives and strategies we could put into place to limit exposure and to educate and provide outreach to homeowners and developers as to what types of precautions can be taken at these orchard sites to mitigate any risk."

What Can, Should, or Must Be Done

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Because contamination can be spread over large areas, remediation measures vary widely, depending upon the level of contamination, the current or intended use of the property, and state or local regulations. Each method has its advantages and its drawbacks, and each site has its own unique circumstances that will often dictate how, when, and even if the situation will be dealt with.

Excavation is the quickest and most thorough remediation method. This involves scraping up the contaminated topsoil, hauling it away to an approved landfill, and replacing it with clean dirt. Realistically, says Peryea, removal is the only way to eliminate risk, "but it's very expensive." Such total remediation can cost \$1 million per acre or more. And it's a huge undertaking. Peryea does the math for 1 acre: "If you have contamination down to three feet, you're looking at getting rid of three acre-feet of soil—that's twelve million pounds of soil."

Capping, which involves simply putting a 12- to 18-inch layer of clean soil over the contaminated soil, has been used in some locations. However, this requires enormous amounts of clean dirt. Further, capping cannot be considered a permanent solution—plants will grow on the soil caps, their roots will penetrate the contaminated soil, and the vegetation will eventually redistribute the lead and arsenic to the clean soil. Also, it is common for the soil caps to be disturbed by construction activities.

Soil blending is another alternative, and one that is growing in popularity, particularly when contaminant concentrations are only minimally in excess of actionable levels. This involves bringing clean soil to a site and mixing it with the existing topsoil, with the intent of reducing concentrations below levels that require health-protective actions. Although relatively effective, blending can be a hit-or-miss operation. The main reason is that operators can't always achieve 100% blending, and it very much matters where the subsequent samples are taken—even a few inches can make a difference. Sometimes it is necessary to repeat the procedure, which, of course, drives up costs. Also, disturbing the soil in this way could actually mobilize the arsenic, as Renshaw's research showed. Regardless of its shortcomings, however, blending is an option many states have chosen in recent years.

In some instances, a simple solution can be adequate. "What seems to do a good job of reducing exposure in areas where people aren't digging in the soil is just to keep turf on it, or keep it vegetated somehow," says Peryea. At some sites, simply moving the contaminated soil to another location on the site and capping it—for example, by burying it under a roadway—has been acceptable, although this option requires that a deed notice be executed, so that all of the records of the sampling and disposal of the contamination become part of the property's permanent title record.

Thus far, other remediation methods have proven to be ineffective, impractical, or counterproductive on these sites. Researchers such as David Butcher, a professor of analytical chemistry at Western Carolina University in Cullowhee, North Carolina, have explored the possibility of phytoremediation of these properties, in which plants are used to suck the contaminants out of the soil, after which the contaminated biomass is destroyed. But this method, though effective in certain remediation situations, doesn't appear to hold much promise in lead- and arsenic-contaminated orchard soils. Phytoremediation is quite slow, potentially taking decades or longer to effectively remove contaminants.

Butcher also was unable to discover a method of removing the lead from the soil without the addition of other chemicals (such as EDTA) to release the tightly bound element.

One way to release the lead is by adding phosphorus to the soil, but this also mobilizes the arsenic. "That creates an even bigger problem," Peryea says. "If you get the arsenic moving, and it moves down into the ground-water, cleanup becomes much more difficult than trying to keep it in the topsoil."

According to Peryea, you can scratch microbial volatilization as well. In that method, native soil microorganisms are stimulated to volatilize arsenic. The gaseous arsenic can then be trapped. But for this method to be effective, soils must be kept quite wet. Many of the historic orchard properties are well-drained, sloping sites, where it would be difficult to keep the soil adequately flooded. Plus, of course, as Peryea points out, "if you are evolving arsenic off your soil, and it flows down and contaminates your neighbor's property, that's going to create some problems."

Cleanup and real estate disclosure issues are usually handled at the state and local levels, where approaches vary considerably. As public awareness of the potential contamination of historic orchards increases in the affected areas, state agencies are fielding more and more calls from concerned property owners or prospective buyers. Chuck Warzecha, a risk assessor with the Wisconsin Department of Health and Family Services, fields 10 to 15 such calls a year. He tries to give concerned citizens a balanced message. "My first statement is that it's not a real scary issue and doesn't have to be a big problem on their property," he says. "It's something that now that they know about it, it's worth doing something about, but they shouldn't be concerned that past exposure is going to be a real serious issue for their families."

If callers haven't had their soil tested yet, Warzecha recommends that they do so. Then he advises them on how to manage the problem if there is one. If contamination hot spots are identified, cleanup may be required under Wisconsin's Agricultural Chemical Cleanup Program. In such cases the property owner would pay a 25% deductible, with the rest of the costs covered by the state, according to Bowman.

In Washington, the Model Toxics Control Act requires the reporting, study, and cleanup of sites where hazardous substances are above state-set cleanup levels. In residential developments, the state is working to increase awareness of the potential for contamination on historic orchard lands, particularly among developers. The goal is to get developers to incorporate that consideration at the outset of projects, when there are opportunities to deal with problems more easily than could be done once housing is in place. As in other states, several departments are involved in providing consultation, health assessment, and technical assistance on a case-by-case basis.

Washington has also chosen to be proactive in its cleanup efforts at sites where children are especially likely to be affected. "We have elected to focus on schools, child care facilities, and parks where groups of young children might be present, trying to take steps to reduce exposures for kids," says Dave Bradley, a toxicologist and risk assessor with the Toxics Cleanup Program in the Washington State Department of Ecology. "We've focused on a handful of counties, and have further focused on schools, trying to integrate with existing community processes such as school construction, and then trying to prioritize how we use either our authority or funds out of the state Superfund to actually perform some of the cleanup actions."

In New Jersey, the recommendations and guidelines put forth in the 1999 report of the Historic Pesticide Contamination Task Force set the agenda. Schick, whose department handles historic orchard contamination cases, says there's no excuse for ignorance on the part of New Jersey developers at this point, and it should be a standard element of their due diligence.

"It's common knowledge, the guidance is out there, it already involved the real estate agents, the bankers, the insurers, the farm bureau," Schick says. "It's been out there long enough that anyone making any kind of investment in developing farmland should have known about it, and they will be held at fault for not coming to the department or cleaning prior to development."

Paradise Lost, Paradise Regained?

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Today, Barber Orchard, a 500-acre subdivision located a few miles west of Waynesville, North Carolina, is "not a place where it looks like there are any problems," says Butcher. "It's not a place like where there's been a lot of mining and it looks like a moonscape. It looks beautiful up there." It may look beautiful, but that doesn't change the fact that Barber Orchard has had a troubled history.

Barber Orchard was a commercial apple orchard from 1903 until the mid-1980s, when the operation went bankrupt and the land was parceled off for development. In 1999, a pregnant resident heard rumors of birth defects from neighbors and friends in the area. She contacted Rudo, who, with the county health department, initiated an extensive investigation that included soil and water sampling and a series of public meetings with residents. In late 1999 through mid-2000, the federal EPA conducted a \$4 million emergency removal of a foot of topsoil from 28 residents' yards.

Reflecting the tremendous variation in contamination typical of historic orchard sites, the EPA found only trace amounts of lead and arsenic in some sampling locations, but several others were well in excess of the agency's cleanup goals of 40 ppm arsenic and 400 ppm lead. Samples came in as high as 400 ppm arsenic and 1,200 ppm lead. The highest levels were detected at spots where trees were still located, or had been cultivated in the past, reflecting the cumulative impact of long years of pesticide applications.

In 2001, the site was placed on the National Priorities List under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), an unusual step for a historic orchard. "CERCLA authority is hobbled when it comes to normal use of pesticides," says James Bateson, branch head of the Superfund Site Evaluation and Removal Branch of the North Carolina Department of Environment and Natural Resources. "In cases where [a pesticide has] been spilled or dumped in large quantities or misused, that's when CERCLA can have some authority. At Barber Orchard, the case was made that there was enough spillage associated with the way they handled things up there that it wasn't normal application of pesticide."

"The way they handled things" was by distributing the pesticides through a unique underground high-pressure piping system, with aboveground nozzles at the tree sites where sprayers were hooked up. The system left pesticide hot spots at several locations throughout the orchard property. "If there was spillage at a particular location above-ground where that particular distribution pipe was located, or if there was a fracture in the pipe, or a joint in the pipe that got a crack or leak in it, then we may have contamination locally at that one particular site, or along the connections along the way," explains Haywood County Health Department director Carmine Rocco. According to Bateson, the EPA has in fact found several places where pesticides had leaked into the soil because of poor maintenance of the piping system.

In 2004 the EPA issued a record of decision (a document specifying how the agency planned to clean up the site) for the orchard's soil, calling for much more removal of contaminated dirt, mainly from vacant lots on the property. "What we're doing right now is waiting

for funding to implement the cleanup for soil," says Jon Bornholm, the EPA's project manager for the Barber Orchard site. That phase of the cleanup, which should take less than a year, is projected to cost \$20 million, and there's no telling when the funds will be released by the EPA for it to take place.

The EPA is expected to render a record of decision for dealing with groundwater contamination on the site before the end of 2006. Bornholm expects that the agency will opt for "monitored natural attenuation"—in other words, let Mother Nature take care of the problem, and hope that contaminant concentrations will decrease over time through natural processes such as biodegradation and dispersion. He guesses that could take 30 to 50 years, with the EPA monitoring the situation continually. Residents have been advised to filter their well water since the problem was uncovered, and city water is now available to the site, although not all of the current homeowners have elected to hook up to the service.

Since the problem arose, the ATSDR has also been involved at Barber Orchard, evaluating the health situation. In April 2002, the agency released its official public health assessment for the site, which concluded that "current exposures to site contaminants are not likely to result in adverse health effects. . . . The exposure pathways for lead and arsenic were disrupted within a relatively short time frame, so past exposures are not likely to lead to health effects at this time."

Meanwhile, Barber Orchard's tax values have increased, and buying and selling of homes in the subdivision has not been hurt by the site's Superfund status. "The heat of the moment has passed, and I think we've gotten over the panic mode," says Ellis Morris, president of the Haywood County Board of Realtors. "Initially, people were tentative about buying in to that particular neighborhood, but that's been resolved, there's a comfort level now, and the real estate there is keeping pace with all of the other areas of Haywood County in terms of days on the market and selling price."

David Miller would agree with that assessment. He and his wife retired to Barber Orchard from Florida in 1997, and his 1.4-acre lot was one of the properties cleaned up by the EPA. He is unconcerned about the contamination at the site and thinks the whole situation has been overblown. "I haven't changed the way I live," he says. "I work in the garden just about every day, I've planted a vegetable garden and eaten the vegetables, I've planted some fruit and eaten the fruit. So it has not affected me or my wife in any way."

So it appears that Barber Orchard was paradise lost for a time, but is now paradise regained. Now, however, some neighbors just down the road may be facing a similar situation. In May 2006 residents of the Tan Woods and Orchard Estates subdivisions, built on what was once Francis Orchard, were notified that soil samples from a vacant lot at the site had tested positive for lead, arsenic, and other pesticides—a mix similar to that found at Barber Orchard. And like Barber Orchard, Francis Orchard was equipped with an underground pesticide piping system.

It's still early in the process, and the results of more thorough sampling and testing are not yet available, so it's too soon to predict whether Francis Orchard may eventually become a Superfund site. But this time around, according to Bateson, both residents and involved officials can benefit from the Barber Orchard experience. At Francis Orchard, he says, "the residents are well schooled after seeing what's gone on at Barber Orchard, and of course the county and state people have been around the block now too."

Questions Remain

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Despite the large scale scope of the problem, it appears that living on a historic orchard property contaminated by lead and arsenic does not constitute an immediate threat to human health. So it is still an open question whether it's really necessary to spend huge amounts of money, often from tax dollars, to ameliorate these sites.

Peryea thinks that what is needed is a solid epidemiologic study to document whether there really is a problem with people living on these arsenical pesticide-contaminated soils. "If that sort of study was done," he says, "and it was to show that there's no problem, or that the problem is controllable by setting up some sort of engineering controls or behavioral controls, like they do with urban lead nowadays, that would probably take care of a lot of the problem. The response—rather than trying to force a cleanup that would probably be wildly impractical, very expensive, and potentially ruin property values—would be that people would change their behavior a bit and end up minimizing the risk."

Online Resources

Go to:

New Jersey, Washington, and Wisconsin offer detailed advice to residents, developers, and other interested parties about what to do if they suspect or know their land is contaminated. Wisconsin has posted a variety of publications (http://www.datcp.state.wi.us/arm/agriculture/pestfert/pesticides/accp/lead_arsen_resources.jsp), including tips for safe gardening in lead- and arsenic-contaminated soil. Washington provides a comprehensive toolbox of resources stemming from its Area-Wide Soil Contamination Project, a task force that addressed not only historical orchard contamination, but also lead and arsenic contamination over widespread areas of the state from smelters and leaded gasoline combustion; see http://www.ecy.wa.gov/programs/tcp/area_wide/area_wide_hp.html. New Jersey offers the report of the Historic Pesticide Contamination Task Force (<http://www.state.nj.us/dep/special/hpctf/index.html>) and i-MapNJ, an environmental mapping tool that lets residents obtain detailed contamination information for specific locations (<http://www.state.nj.us/dep/gis/dep splash.htm>).



You spray, you pay?

A blooming problem?

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http://www.epa.gov/ttn/atw/hlthef/arsenic.html
Last updated on Tuesday, November 06, 2007

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Arsenic Compounds

ARSENIC COMPOUNDS^(A)

107-02-8

Hazard Summary-Created in April 1992; Revised in January 2000

Arsenic, a naturally occurring element, is found throughout the environment; for most people, food is the major source of exposure. Acute (short-term) high-level inhalation exposure to arsenic dust or fumes has resulted in gastrointestinal effects (nausea, diarrhea, abdominal pain); central and peripheral nervous system disorders have occurred in workers acutely exposed to inorganic arsenic. Chronic (long-term) inhalation exposure to inorganic arsenic in humans is associated with irritation of the skin and mucous membranes. Chronic oral exposure has resulted in gastrointestinal effects, anemia, peripheral neuropathy, skin lesions, hyperpigmentation, and liver or kidney damage in humans. Inorganic arsenic exposure in humans, by the inhalation route, has been shown to be strongly associated with lung cancer, while ingestion of inorganic arsenic in humans has been linked to a form of skin cancer and also to bladder, liver, and lung cancer. EPA has classified inorganic arsenic as a Group A, human carcinogen.

Arsine is a gas consisting of arsenic and hydrogen. It is extremely toxic to humans, with headaches, vomiting, and abdominal pains occurring within a few hours of exposure. EPA has not classified arsine for carcinogenicity.

Please Note: The main sources of information for this fact sheet are EPA's [Integrated Risk Information System](#) (IRIS), which contains information on inhalation chronic toxicity and the [RfC](#) for arsine, oral chronic toxicity and the [RfD](#) for inorganic arsenic, and the carcinogenic effects of inorganic arsenic including the unit cancer risk for inhalation exposure, and the Agency for Toxic Substances and Disease Registry's (ATSDR's) [Toxicological Profile for Arsenic](#).

Uses

- The major use for inorganic arsenic is in wood preservation; arsine is used in the microelectronics industry and in semiconductor manufacture. (2)
- Until the 1940s, inorganic arsenic solutions were widely used in the treatment of various diseases, such as syphilis and psoriasis. Inorganic arsenic is still used as an antiparasitic agent in veterinary medicine and in homeopathic and folk remedies in the United States and other countries. (2)

Sources and Potential Exposure

- Inorganic arsenic is found throughout the environment; it is released into the air by volcanoes, the weathering of arsenic-containing minerals and ores, and by commercial or industrial processes. (1,2)
- For most people, food is the largest source of arsenic exposure (about 25 to 50 micrograms per day [$\mu\text{g}/\text{d}$]), with lower amounts coming from drinking water and air. Among foods, some of the highest levels are found in fish and shellfish; however, this arsenic exists primarily as organic compounds, which are essentially nontoxic. (1)

- Elevated levels of inorganic arsenic may be present in soil, either from natural mineral deposits or contamination from human activities, which may lead to dermal or ingestion exposure. (1)
- Workers in metal smelters and nearby residents may be exposed to above-average inorganic arsenic levels from arsenic released into the air. (1)
- Other sources of inorganic arsenic exposure include burning plywood treated with an arsenic wood preservative or dermal contact with wood treated with arsenic. (2)
- Most arsenic poisoning incidents in industry have involved the production of arsine, a short-lived, extremely toxic gas. (3)

Assessing Personal Exposure

- Measurement of inorganic arsenic in the urine is the best way to determine recent exposure (within the last 1 to 2 days), while measuring inorganic arsenic in hair or fingernails may be used to detect high-level exposures that occurred over the past 6-12 months. (1)

Health Hazard Information

Acute Effects:

Inorganic Arsenic

- Acute inhalation exposure of workers to high levels of arsenic dusts or fumes has resulted in gastrointestinal effects (nausea, diarrhea, abdominal pain), while acute exposure of workers to inorganic arsenic has also resulted in central and peripheral nervous system disorders. (1)
- Acute oral exposure to inorganic arsenic, at doses of approximately 600 micrograms per kilogram body weight per day ($\mu\text{g}/\text{kg}/\text{d}$) or higher in humans, has resulted in death. Oral exposure to lower levels of inorganic arsenic has resulted in effects on the gastrointestinal tract (nausea, vomiting), central nervous system (CNS) (headaches, weakness, delirium), cardiovascular system (hypotension, shock), liver, kidney, and blood (anemia, leukopenia). (1,2)
- Acute animal tests in rats and mice have shown inorganic arsenic to have moderate to high acute toxicity. (5)

Arsine

- Acute inhalation exposure to arsine by humans has resulted in death; it has been reported that a half-hour exposure to 25 to 50 parts per million (ppm) can be lethal. (4)
- The major effects from acute arsine exposure in humans include headaches, vomiting, abdominal pains, hemolytic anemia, hemoglobinuria, and jaundice; these effects can lead to kidney failure. (4,8)
- Arsine has been shown to have extreme acute toxicity from acute animal tests. (5)

Chronic Effects (Noncancer):

Inorganic arsenic

- Chronic inhalation exposure to inorganic arsenic in humans is associated with irritation of the skin and mucous membranes (dermatitis, conjunctivitis, pharyngitis, and rhinitis). (1,2)
- Chronic oral exposure to inorganic arsenic in humans has resulted in gastrointestinal effects, anemia, peripheral neuropathy, skin lesions, hyperpigmentation, gangrene of the extremities, vascular lesions, and liver or kidney damage. (1,2)
- No chronic inhalation exposure studies have been performed in animals for any inorganic arsenic compound. (1)
- Some studies have suggested that inorganic arsenic is an essential dietary nutrient in goats, chicks, and rats. However, no comparable data are available for humans. EPA has concluded that essentiality, although not rigorously established, is plausible. (1,6)
- EPA has not established a Reference Concentration (RfC) for inorganic arsenic. (6)

- The California Environmental Protection Agency (CalEPA) has established a chronic inhalation reference level of 0.00003 milligrams per cubic meter (mg/m³) based on developmental effects in mice. The CalEPA reference exposure level is a concentration at or below which adverse health effects are not likely to occur. It is not a direct estimator of risk, but rather a reference point to gauge the potential effects. At lifetime exposures increasingly greater than the reference exposure level, the potential for adverse health effects increases. (7)
- The Reference Dose (RfD) for inorganic arsenic is 0.0003 milligrams per kilogram body weight per day (mg/kg/d) based on hyperpigmentation, keratosis, and possible vascular complications in humans. The RfD is an estimate (with uncertainty spanning perhaps an order of magnitude) of a daily oral exposure to the human population (including sensitive subgroups) that is likely to be without appreciable risk of deleterious noncancer effects during a lifetime. (6)
- EPA has medium confidence in the study on which the RfD for inorganic arsenic was based because, although an extremely large number of people were included in the assessment (>40,000), the doses were not well characterized and other contaminants were present. The supporting human toxicity database, while extensive, is somewhat flawed and, consequently, EPA has assigned medium confidence to the RfD. (6)

Arsine

- No information is available on the chronic effects of arsine in humans.
- The RfC for arsine is 0.00005 mg/m³ based on increased hemolysis, abnormal red blood cell morphology, and increased spleen weight in rats, mice, and hamsters. (4)
- EPA has medium confidence in the RfC based on: (1) high confidence in the studies on which the RfC for arsine was based because the sample sizes were adequate, statistical significance was reported, concentration dose-response relationships were documented, three species were investigated, and both a no-observed-adverse-effect level (NOAEL) and a lowest-observed-adverse-effect level (LOAEL) were identified, and (2) medium confidence in the database because while there were three inhalation animal studies and a developmental/reproductive study, there were no data available on human exposure. (4)

Reproductive/Developmental Effects:

Inorganic arsenic

- Several studies have suggested that women who work in, or live near, metal smelters may have higher than normal spontaneous abortion rates, and their children may exhibit lower than normal birthweights. However, these studies are limited because they were designed to evaluate the effects of smelter pollutants in general, and are not specific for inorganic arsenic. (1)
- Ingested inorganic arsenic can cross the placenta in humans, exposing the fetus to the chemical. (2)
- Oral animal studies have reported inorganic arsenic at very high doses to be fetotoxic and to cause birth defects. (1)

Arsine

- Human studies have indicated higher than expected spontaneous abortion rates in women in the microelectronics industry who were exposed to arsine. However, these studies have several limitations, including small sample size and exposure to other chemicals in addition to arsine. (4)

Cancer Risk:

Inorganic arsenic

- Human, inhalation studies have reported inorganic arsenic exposure to be strongly associated with lung cancer. (1,2,6)
- Ingestion of inorganic arsenic in humans has been associated with an increased risk of nonmelanoma skin cancer and also to an increased risk of bladder, liver, and lung cancer. (1,6)

- Animal studies have not associated inorganic arsenic exposure via the oral route with cancer, and no cancer inhalation studies have been performed in animals for inorganic arsenic. (1)
- EPA has classified inorganic arsenic as a Group A, human carcinogen. (6)
- EPA used a mathematical model, using data from an occupational study of arsenic-exposed copper smelter workers, to estimate the probability of a person developing cancer from continuously breathing air containing a specified concentration of inorganic arsenic. EPA calculated an inhalation unit risk estimate of $4.3 \times 10^{-3}(\mu\text{g}/\text{m}^3)^{-1}$. EPA estimates that, if an individual were to continuously breathe air containing inorganic arsenic at an average of $0.0002 \mu\text{g}/\text{m}^3$ ($2 \times 10^{-7} \text{mg}/\text{m}^3$) over his or her entire lifetime, that person would theoretically have no more than a one-in-a-million increased chance of developing cancer as a direct result of breathing air containing this chemical. Similarly, EPA estimates that continuously breathing air containing $0.002 \mu\text{g}/\text{m}^3$ ($2 \times 10^{-6} \text{mg}/\text{m}^3$) would result in not greater than a one-in-a-hundred thousand increased chance of developing cancer, and air containing $0.02 \mu\text{g}/\text{m}^3$ ($2 \times 10^{-5} \text{mg}/\text{m}^3$) would result in not greater than a one-in-ten thousand increased chance of developing cancer. For a detailed discussion of confidence in the potency estimates, please see IRIS. (6)
- EPA has calculated an oral cancer slope factor of $1.5 (\text{mg}/\text{kg}/\text{d})^{-1}$ for inorganic arsenic. (6)

Arsine

- No cancer inhalation studies in humans or animals are available for arsine. (1)
- EPA has not classified arsine for carcinogenicity. (4)

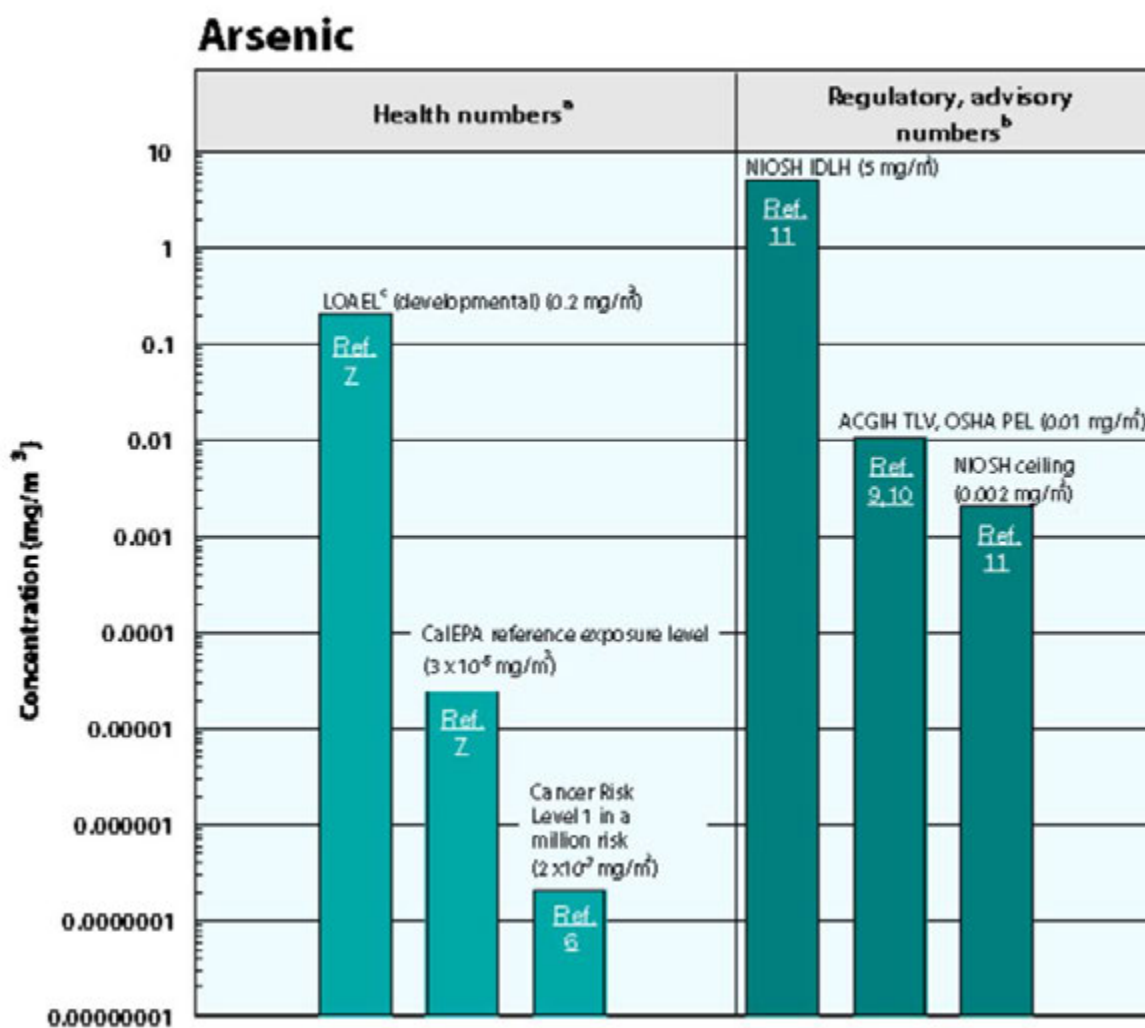
Physical Properties

- Inorganic arsenic is a naturally occurring element in the earth's crust. (1)
- Pure inorganic arsenic is a gray-colored metal, but inorganic arsenic is usually found combined with other elements such as oxygen, chlorine, and sulfur. (1)
- The chemical symbol for inorganic arsenic is As, and it has an atomic weight of 74.92 g/mol. (3)
- The chemical formula for arsine is AsH_3 , and it has a molecular weight of 77.95 g/mol. (8)
- Arsine is a colorless gas with a disagreeable garlic odor. (8)
- Arsenic combined with elements such as oxygen, chlorine, and sulfur forms inorganic arsenic; inorganic arsenic compounds include arsenic pentoxide, arsenic trioxide, and arsenic acid. Arsenic combined with carbon and hydrogen forms organic arsenic; organic arsenic compounds include arsanilic acid, arsenobetaine, and dimethylarsinic acid. (1)

Conversion Factors (only for the gaseous form):

To convert concentrations in air (at 25°C) from ppm to mg/m^3 : $\text{mg}/\text{m}^3 = (\text{ppm}) \times (\text{molecular weight of the compound})/(24.45)$. For inorganic arsenic: $1 \text{ ppm} = 3.06 \text{ mg}/\text{m}^3$. For arsine: $1 \text{ ppm} = 3.19 \text{ mg}/\text{m}^3$. To convert concentrations in air from $\mu\text{g}/\text{m}^3$ to mg/m^3 : $\text{mg}/\text{m}^3 = (\mu\text{g}/\text{m}^3) \times (1 \text{ mg}/1,000 \mu\text{g})$.

Health Data from Inhalation Exposure (Inorganic Arsenic)



ACGIH TLV--American Conference of Governmental and Industrial Hygienists' threshold limit value expressed as a time-weighted average; the concentration of a substance to which most workers can be exposed without adverse effects.

NIOSH IDLH--National Institute of Occupational Safety and Health's immediately dangerous to life or health concentration; NIOSH recommended exposure limit to ensure that a worker can escape from an exposure condition that is likely to cause death or immediate or delayed permanent adverse health effects or prevent escape from the environment.

NIOSH REL ceiling value--NIOSH's recommended exposure limit ceiling; the concentration that should not be exceeded at any time.

OSHA PEL--Occupational Safety and Health Administration's permissible exposure limit expressed as a time-weighted average; the concentration of a substance to which most workers can be exposed without adverse effect averaged over a normal 8-h workday or a 40-h workweek.

The health and regulatory values cited in this factsheet were obtained in December 1999.

^a Health numbers are toxicological numbers from animal testing or risk assessment values developed by EPA.

^b Regulatory numbers are values that have been incorporated in Government regulations, while advisory numbers are nonregulatory values provided by the Government or other groups as advice. OSHA numbers are regulatory, whereas NIOSH and ACGIH numbers are advisory.

^c The LOAEL is from the critical study used as the basis for the CalEPA chronic reference exposure level.

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A. * This fact sheet addresses the toxicity of the inorganic arsenic compounds as well as the toxicity of the gaseous arsenic trihydride: arsine.

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Lead

Learn about Lead

- [What is lead?](#)
- [Where is lead found?](#)
- [How can people be exposed to lead?](#)
- [Possible adverse health effects of exposures to lead](#)
- [Lead exposure data](#)

What is Lead?

Lead is a highly toxic metal and it is all around us. Lead was used for many years in paints and other products found in and around our homes. Lead-based paint and lead contaminated dust are the main sources of exposure for lead in U.S. children. Lead-based paints were banned for use in housing in 1978. There is a good chance that any home, building, school or day care center built before 1978 contains some lead paint.

One million children are affected by lead poisoning, but when you know what to look for and what to do, lead poisoning is entirely preventable.

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Where is Lead Found?

The most common source of lead is from paint in homes and buildings built before 1978. Lead also can be emitted into the air from industrial sources and leaded aviation gasoline, and lead can enter drinking water through plumbing materials.

It is also used in the production of batteries, ammunition, metal products (solder and pipes), and devices to shield X-rays. Because of health concerns, lead from paints and ceramic products, caulking, and pipe solder has been dramatically reduced in recent years. The use of lead as an additive to automobile gasoline was banned in 1996 in the United States.

Lead is also a naturally occurring element. Natural levels of lead in soil range between 50 parts per million (ppm) and 400 ppm. Mining, smelting, and refining activities have resulted in substantial increases in lead levels in the environment, especially near mining and smelting sites. For example, near some types of industrial and municipal facilities, and adjacent to highways ([Chaney et al., 1984](#); [Schacklette et al., 1984](#)) soil lead concentrations have been reported to be more than 11,000 ppm ([National Research Council, 1980](#)).

Read more about where lead can be found:

- [At home](#)
- [At schools and childcare facilities](#)
- [In products](#)
- [In drinking water](#)
- [In outdoor air](#)
- [In soil](#)

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How Can People Be Exposed to Lead?

Children

Lead is dangerous to children because babies and young children often put their hands and other objects that can have lead dust on them in their mouths. Also, children's growing bodies absorb more lead than adult bodies do, and their brains and nervous systems are more sensitive to the damaging effects of lead.

Children living at or below the poverty line who live in older housing are at greatest risk. Children of some racial and ethnic groups, and those living in older housing, are disproportionately affected by lead.

[Learn more about sources of lead exposure.](#)

Pregnant Women

Pregnant women can be exposed to lead by spending time in areas where lead-based paints are deteriorating into lead dust that they then breathe in. Likewise, eating and drinking from dishes or glasses that contain lead water, or using certain [folk remedies](#) to which lead is intentionally added can cause exposures to lead. In addition, working in a job or engaging in [hobbies](#) where lead is used, such as making stained glass, can increase exposure.

Adults

Adults are also susceptible to lead exposure. This may be from:

- Breathing in lead dust, especially during renovation or repair work that disturbs painted surfaces in older homes and buildings.
- Putting their hands or other objects covered with lead dust in their mouths.
- Eating or drinking contaminated food or water or using certain folk remedies.

- Working in a job or engaging in [hobbies](#) where lead is used.

[Learn more about sources of lead exposure.](#)

Lower Your Chances of Exposure to Lead

Simple steps like keeping your home clean and feeding your family a well-balanced diet will go a long way in preventing lead poisoning. You can lower the chances of exposure to lead in your home, both now and in the future, by taking these steps:

- Use only cold water to prepare food and drinks.
- Flush all water outlets used for drinking or food preparation.
- Clean debris out of all outlet screens or aerators on faucets on a regular basis.
- Keep your home clean and dust-free.
- Wipe up any paint chips or visible dust with a wet sponge or rag. Clean dust around areas where there is friction and dust can be generated, such as doors, windows, and drawers.
- Wash children's hands, bottles, pacifiers and toys often.
- Teach children to wipe and remove their shoes and wash hands after playing outdoors.
- Ensure that your family members eat well-balanced meals. Lead interferes with some of the body's basic functions. Our bodies can't tell the difference between lead and calcium, which is a mineral that strengthens bones. Children with healthy diets absorb less lead.
- Make sure your contractor is [Lead Safe Certified](#).

Determine if your family is at risk for lead poisoning with the [Lead Poisoning Home Checklist \(PDF\)](#) (1 pg, 47K, [About PDF](#)).

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Possible Adverse Health Effects of Exposures to Lead

Lead exposure affects the nervous system and can cause a range of health effects, from behavioral problems and learning disabilities, to seizures and death. Children six years old and younger are most at risk.

Children

If not detected early, children with high levels of lead in their bodies can suffer from:

- Damage to the brain and nervous system
- Behavior and learning problems, such as hyperactivity
- Slowed growth
- Hearing problems
- Headaches
- Anemia
- In rare cases of acute lead poisoning from ingestion of lead, seizures, coma and even death.

Pregnant Women

Lead can accumulate in our bodies over time, where it stores in bones along with calcium. During pregnancy, lead is released from bones as maternal calcium is used to help form the bones of the fetus. This is particularly true if a woman does not have enough dietary calcium. Lead can also be easily circulated from the mother's blood stream through the placenta to the fetus. Mothers with high levels of lead in their bodies can expose their developing fetuses, resulting in serious and developmental problems including:

- Miscarriages,
- Premature births or low birth weight,
- Brain damage, decreased mental abilities and learning difficulties, and/or
- Reduced growth in young children.

Find out more about lead's effects on pregnancy:

- [March of Dimes Healthy Pregnancy](#) [EXIT Disclaimer](#)
- [Effects of Workplace Hazards on Female Reproductive Health](#), National Institute for Occupational Safety and Health.

Adults

Lead is also harmful to adults. Adults can suffer from:

- Hearing and vision impairment,
- Reproductive problems (in both men and women),
- High blood pressure and hypertension,
- Nerve disorders,
- Memory and concentration problems,
- Poor muscle coordination, and
- Muscle and joint pain.

[Read more on the health effects of lead at the Agency for Toxic Substances and Disease Registry \(ATSDR\).](#)

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Lead Exposure Data

The Centers for Disease Control's National Center for Health Statistics monitors blood lead levels in the United States.

[National Center for Health Statistics](#)

[Get information on the number of children with elevated blood lead levels, and number and percentage of children tested for lead in your area.](#)

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Last updated on Thursday, May 17, 2012

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= IRIS; P = PPRTV; A = ATSDR; C = Cal EPA; X = PPRTV Appendix; H = HEAST; J = New Jersey; Y = New York; O = EPA Office of Water; E = Environmental Criteria and Assessment Office; S = see user guide Section 5; L = see user guide on lead; M = mutagen; V = volatile; F = See FAQ; c = cancer; * = where: n SL < 100X c SL; ** = where n SL < 10X c SL; n = noncancer; m = Concentration may exceed ceiling limit (See User Guide); s = Concentration may exceed Csat (See User Guide); SSL values are based on DAF=1

Table with columns: Toxicity and Chemical-specific Information, Contaminant, Screening Levels, and Protection of Ground Water SSLs. Rows include various chemical entries such as Formic Acid, Furans, Tetrahydrofuran, and various Hexachloro compounds.

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Use of California Human Health Screening Levels (CHHSLs) in Evaluation of Contaminated Properties

January 2005



California Environmental Protection Agency

DISCLAIMER

Use of California Human Health Screening Levels in Evaluation of Contaminated Properties has been prepared by the California Environmental Protection Agency (Cal/EPA). This document is not intended to establish policy or regulation. The Human Health Screening Levels presented here are not to serve as: 1) a stand-alone decision making tool, 2) a substitute for guidance for the preparation of baseline human health risk assessments, 3) a rule to determine if a waste is hazardous under the state or federal regulations, 4) a rule to determine when the release of hazardous chemicals must be reported to the overseeing regulatory agency, 5) set of final cleanup or action levels to be applied at contaminated sites or 6) a guarantee that an oversight regulatory agency will determine that a project is adequately studied or agree with the conclusions of the site investigation and risk assessment report.

The information presented in this document is not final Cal/EPA action. Cal/EPA may update this information as needed without public notice. This document is not intended, nor can it be relied upon, to create any rights enforceable by any party in litigation in the State of California. Staff in overseeing regulatory agencies may decide to follow the information provided herein or act at a variance with the information, based on an analysis of site-specific circumstances.

The CHHSLs should NOT be used to determine when impacts at a site should be reported to a regulatory agency. The list of CHHSLs is also not a comprehensive list of all potential chemicals of concern that may be found at a property. All releases of hazardous substances to the environment should be reported to the appropriate regulatory agency in accordance with governing regulations. Staff overseeing work at a specific site should be contacted prior to use of the information in this document to ensure that the document is applicable to the site and that the user has the most up-to-date version available.

This document is not copyrighted. Copies may be freely made and distributed. However, reference to or use of the screening levels presented in this document without adequate review of the accompanying narrative could result in misinterpretation and misuse of the information.

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APPENDICES

- 1 HUMAN-EXPOSURE-BASED SCREENING NUMBERS DEVELOPED TO AID ESTIMATION OF CLEANUP COSTS FOR CONTAMINATED SOIL, NOVEMBER 2004, JANUARY 2005 REVISION

Overview

What are the CHHSLs?

The California Human Health Screening Levels (CHHSLs or “Chisels”) are concentrations of 54 hazardous chemicals in soil or soil gas that the California Environmental Protection Agency (Cal/EPA) considers to be below thresholds of concern for risks to human health. The CHHSLs were developed by the Office of Environmental Health Hazard Assessment (OEHHA) on behalf of Cal/EPA, and are contained in their report entitled “Human-Exposure-Based Screening Numbers Developed to Aid Estimation of Cleanup Costs for Contaminated Soil” (Appendix 1). The thresholds of concern used to develop the CHHSLs are an excess lifetime cancer risk of one-in-a-million (10^{-6}) and a hazard quotient of 1.0 for noncancer health effects. The CHHSLs were developed using standard exposure assumptions and chemical toxicity values published by the U.S. Environmental Protection Agency (USEPA) and Cal/EPA.

How can the CHHSLs help facilitate restoration of contaminated properties?

The CHHSLs can be used to screen sites for potential human health concerns where releases of hazardous chemicals to soils have occurred. Under most circumstances, and within the limitations described in this document, the presence of a chemical in soil, soil gas or indoor air at concentrations below the corresponding CHHSLs can be assumed to not pose a significant health risk to people who may live (residential CHHSLs) or work (commercial/industrial CHHSLs) at the site. As discussed below, however, evaluation of other potential environmental concerns must also be addressed.

The presence of a chemical at concentrations in excess of a CHHSL does not indicate that adverse impacts to human health are occurring or will occur but suggests that further evaluation of potential human health concerns is warranted. Residential CHHSLs may be used in conjunction with the human health screening evaluation described in the Department of Toxic Substances Control (DTSC) Preliminary Endangerment Assessment (PEA) Guidance Manual to assist the risk manager in deciding whether further site characterization, risk assessment, or remediation is necessary (Cal/EPA 1994b). Further evaluation may include additional sampling at the site, consideration of ambient levels in the environment, or a reassessment of the assumptions used to calculate the CHHSLs

or PEA estimates. This stepwise approach expedites judgments about the degree of effort that may be necessary to remediate contaminated properties and restore the properties to productive use.

How do the CHHSLs differ from cleanup standards?

The CHHSLs presented in the lookup tables are NOT regulatory "cleanup standards". Use of the CHHSLs and this document is voluntary on the part of those who choose to use them. At sites where cleanup of contaminated soils to levels at or below the CHHSLs would be costly, the time and effort to develop more site-specific cleanup may be desired. At sites where the extent of contaminated soil is limited or the timeframe available to carry out cleanup actions is very short, use of the CHHSLs as final soil cleanup standards may be cost-beneficial. However, this would require the concurrence of both the responsible party and the overseeing regulatory agency and can only be done after a full evaluation of site conditions and other potential environmental concerns. Regulatory agencies cannot be compelled to use the CHHSLs as final cleanup standards for a contaminated property.

If contaminant concentrations are below the CHHSLs am I finished?

As discussed above, the CHHSLs cannot be used as a stand-alone tool for final cleanup and closure decisions. In addition, using only the CHHSLs may not be protective of groundwater resources or address other potential environmental concerns. Therefore, a thorough investigation of site conditions must also be performed to ensure that: 1) all potential human exposure pathways and exposure scenarios at the site are fully accounted for; 2) groundwater resources are protected; 3) terrestrial and aquatic habitats are protected, including the erosion of contaminated soils and subsequent runoff into a nearby wetland, stream or other aquatic habitat; and 4) that nuisance (e.g., odors and staining) and gross contamination concerns are addressed. These and other issues related to environmental contamination that are identified at the site must be evaluated separately. If a formal regulatory decision or determination is desired, additional assessment or cleanup of contaminated soils to address these concerns may ultimately be required.

How should the CHHSLs be integrated into the DTSC PEA process?

The human health screening evaluation presented in the DTSC Preliminary Endangerment Assessment (PEA) document is intended to provide a preliminary evaluation of potential risk and hazard to human health. The PEA process uses models and exposure assumptions similar to those used to develop the residential CHHSLs but does not provide actual risk-based screening levels based on these models. The PEA screening evaluation assumes that the land use of the site will be residential, regardless of the current use and zoning for the site. Therefore, residential CHHSLs for specific chemicals may be utilized in a PEA. Chemicals that do not have CHHSLs should be evaluated using the DTSC PEA methodology for their potential to pose human health risks. Chemicals found at a site should be evaluated separately for other potential environmental concerns, using the PEA guidance and other references as appropriate. The user should consult DTSC for additional information about use of the CHHSLs in the PEA process.

How are the CHHSLs related to the USEPA Preliminary Remediation Goals (PRGs) and to the San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels (ESLs)?

The soil and soil gas CHHSLs are modeled after the USEPA Region IX "Preliminary Remediation Goals (PRGs)" for these media (<http://www.epa.gov/region09/waste/sfund/prg/index.htm>). The primary difference between the CHHSLs and the PRGs is the use of Cal/EPA-specific "toxicity factors" (estimates of a chemical's toxicity to humans) in development of the CHHSLs, when available, rather than toxicity factors published by the USEPA. For volatile chemicals, soil gas CHHSLs were developed to evaluate the potential intrusion of subsurface vapors (soil gas) into buildings and subsequent impacts to indoor air quality.

The San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) Environmental Screening Levels (ESLs) are a compilation of screening levels for not only risk to human health but also a number of other environmental concerns. The ESLs are intended for use only at sites overseen by that agency. These ESLs may be found at the SFRWQCB web site at <http://www.waterboards.ca.gov/sanfranciscobay/esl.htm>. The SFBRWQCB refers to the comprehensive evaluation of all potential environmental concerns as an "Environmental Risk Assessment," as opposed to a more focused "Human Health Risk Assessment" reflected in development of the CHHSLs and this

document in general. The soil, soil gas and indoor air ESLs and CHHSLs for human health concerns were developed using similar methodology and are essentially identical. In addition, the SFBRWQCB document provides soil screening levels for leaching of contaminants into groundwater, toxicity to flora and fauna and nuisance or gross contamination concerns. These concerns are not addressed by the CHHSLs and must be evaluated separately.

Because many different sets of screening levels are now available, the overseeing regulatory agency should be consulted before using any screening levels in a human health screening evaluation. The regulatory agency may have specific recommendations with respect to which screening levels it prefers to use at sites under their jurisdiction.

If I am in the jurisdiction of the San Francisco Bay Regional Water Quality Control Board, can I continue to use that office's Environmental Screening Levels (ESLs) document?

At sites in the jurisdiction of and overseen by the SFBRWQCB, the reader should consult the SFBRWQCB regarding continued use of the ESLs versus use of the CHHSLs.

How often are the CHHSLs updated?

The CHHSLs will be updated as needed to incorporate new toxicity information of referenced chemicals as well as new information regarding the exposure or potential exposure of humans to potentially hazardous chemicals in soils. CHHSLs for additional chemicals will also be included as they become available.

Who can I contact for more information?

Refer to the CHHSL link posted on the Cal/EPA website (www.calepa.ca.gov) for further information and local contacts. The document will also be posted on the OEHHA web site (www.oehha.ca.gov), the DTSC web site (www.dtsc.ca.gov), the SWRCB web site (www.waterboards.ca.gov) and at the SFBRWQCB web site (www.waterboards.ca.gov/sanfranciscobay/), as well as other Regional Boards' web sites.

1 Introduction

1.1 Purpose and Development

The California Human Health Screening Levels (CHHSLs) were developed as a tool to assist in the evaluation of contaminated sites for potential adverse threats to human health. Residential and commercial/industrial land use screening levels for soil, soil gas and indoor air are provided in Tables 1 and 2. The screening levels in Table 1 pertain to direct exposure of humans to contaminants in soil via incidental soil ingestion, dermal contact and inhalation of vapors or dust in outdoor air. The soil gas and indoor air screening levels in Table 2 pertain to the emission of volatile chemicals from contaminated soil or groundwater and their potential intrusion into overlying buildings.

Preparation of the CHHSLs by the California Environmental Protection Agency (Cal/EPA) was required under the California Land Environmental Restoration and Reuse Act of 2001 (CLERRA 2001). CLERRA also required that a guidance document be prepared to explain how the CHHSLs may be used in California to aid in making judgments about the degree of effort (or costs) that might be necessary to remediate contaminated properties, facilitate the restoration and revitalization of contaminated properties, and assist local-level remediation programs in making more efficient and effective decisions.

Appendix 1 is the Office of Environmental Health Hazard Assessment's (OEHHA) report entitled "Human-Exposure-Based Screening Numbers Developed to Aid Estimation of Cleanup Costs for Contaminated Soil" which contains the CHHSLs, and describes the approach used to develop the human-health-risk-based screening levels, the comments received regarding the draft document and OEHHA's response to those comments. The approach reflected in OEHHA's report is based on the USEPA *Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part A)* (USEPA 1989) and is essentially equivalent to the approach used by USEPA Region IX in developing their *Preliminary Remediation Goals* (USEPA 2004), the San Francisco Bay Area Regional Water Quality Control Board (SFRWQCB) in developing their Environmental Screening Levels for human health (SFRWQCB 2003), and the Department of Toxic Substances Control (DTSC) in their Preliminary Endangerment Assessment (PEA) guidance (Cal/EPA 1994b).

Soil and soil gas data collected at a site can be directly compared to CHHSLs for each chemical of concern. Under most circumstances, and within the limitations described, the presence of a chemical in soil or soil gas at concentrations below the corresponding CHHSLs can be assumed to not pose a significant health risk to people who may live or work at the site. The presence of a chemical at concentrations in excess of a CHHSL does not necessarily indicate that adverse impacts to human health are occurring but indicates that a potential for adverse risk may exist and that additional evaluation is warranted.

Residential CHHSLs are appropriate for other types of sensitive property use, including hospitals, day care centers and schools. In order to assess the maximum, future beneficial use of a property, data collected at commercial or industrial sites should be compared to both residential and commercial sets of screening levels. A formal restriction to the deed may be required for sites that meet requirements for commercial/industrial use but not residential use. Regulatory agency oversight would be needed in this circumstance.

The scope of the CHHSLs is limited to human health concerns. For this reason, the CHHSLs cannot be used as a stand-alone tool to determine the extent of remedial actions needed at sites with contaminated soils. Depending on site conditions and the chemicals present, additional cleanup of contaminated soils may be required to protect groundwater resources, prevent toxicity to flora and fauna, address uptake in edible plants, and address nuisance and aesthetic concerns posed by odors and staining. A brief summary of these concerns and a list of references for evaluating these issues are provided at the end of the text.

1.2 Tiered Approach to Environmental Risk Assessments

Human health risk assessments for regulatory purposes are usually carried out using a step-wise or “tiered” approach. Comparison of site data to residential soil or soil gas CHHSLs (e.g., in a screening health risk evaluation performed using the DTSC PEA guidance) usually represents “Tier 1”. If multiple chemicals with similar health effects are present at a site then “forward mode,” cumulative health risks may also need to be calculated and compared to target Tier 1 goals before an evaluation of potential human health concerns can be completed (refer to Section 2.8).

If the results of the Tier 1 assessment indicate that further evaluation of human health risks is warranted, site-specific exposure assumptions, target risks, etc., can

be substituted for default parameter values used to develop the Tier 1 CHHSLs and alternative screening levels developed under a Tier 2 assessment. This assessment can be incorporated into the guidelines presented in the DTSC PEA document. Prior to modifying the Tier 1 default assumptions, concurrence from the appropriate regulatory agency should be obtained. Site data can then be compared to the revised screening levels. This provides an intermediate but still relatively rapid and cost-effective option for preparing more site-specific screening or cleanup levels. Cumulative health risks or hazards should also be presented under a Tier 2 assessment, as described in Section 2.8.

If exposure pathways of concern and conditions at the site do not match those taken into account by the CHHSL framework or PEA methodology, a Tier 3, baseline human health and ecological risk assessment should be performed. In a baseline human health and ecological risk assessment, alternative models and site-specific assumptions are used to quantify the risk/hazard posed to human and/or ecological receptors by the impacted media in the “forward” mode. After a baseline health risk assessment is accepted by the regulatory agency, the assessment may be used in the “backward” model to develop site-specific screening or cleanup levels. An understanding of the methodologies used to develop the CHHSLs is important to ensure consistency between all tiers of assessments and to expedite their preparation and review.

1.3 Chemicals Not Listed In CHHSL Lookup Tables

The lookup tables list 54 chemicals, including many that are commonly found at sites where releases of hazardous chemicals have occurred. Cal/EPA will incorporate CHHSLs for additional chemicals in future updates of this document as needed and practical. Prior to that time, the PEA methodology should be used to evaluate those chemicals for which CHHSLs do not exist. Toxicity factors published by Cal/EPA should be utilized in the PEA when available, unless otherwise instructed by the overseeing regulatory agency.

1.4 Limitations

The CHHSLs presented in this document are NOT regulatory "cleanup standards." Use of the CHHSLs as final cleanup levels to address human health concerns should be discussed with the overseeing regulatory agency and evaluated in terms of the cost/benefit of developing more site-specific cleanup levels through a risk assessment.

The CHHSLs presented in this document are NOT adequate to evaluate ALL environmental conditions at ALL contaminated sites. Other environmental concerns posed by the presence of contamination at a site may include:

- Leaching of contaminants from soil to groundwater and subsequent impacts to groundwater quality;
- Intrusion of subsurface vapors into basements or buildings with substandard ventilation systems and subsequent impacts to indoor air;
- Uptake of contaminants in edible fruit and vegetables and subsequent intake by humans;
- Exposure of children and teachers at school sites;
- Toxicity to terrestrial flora and fauna;
- Gross contamination, including nuisance (odors, etc.) and aesthetic concerns.

A summary of potential environmental concerns that may also be relevant at a site for a particular chemical is also provided in Table 1.

The CHHSLs specifically do not address contamination in groundwater, surface water or sediment or the erosion of contaminated soils and subsequent runoff into a nearby wetland, stream or other aquatic habitat. Contamination identified in these media or that may threaten these media must be considered separately. References for evaluation of contaminants in these media are provided in Chapter 4.

The soil gas CHHSLs for the intrusion of vapors into buildings may not be adequately conservative for estimating impacts to indoor air in poorly ventilated basements or buildings with substandard ventilation systems in general. Additional guidance on this subject is provided in Section 2.5.2.

The CHHSLs for direct-exposure to soils concerns are calculated assuming that specific exposure pathways are complete for the human receptor: incidental soil ingestion, dermal absorption of chemicals in soil, and inhalation of vapors or particulate matter in ambient (outdoor) air. For volatile chemicals, the soil gas CHHSLs are calculated assuming that the exposure pathway of inhalation of

indoor air contaminated with vapors intruding from the subsurface is complete. If these pathways are not congruent with site conditions, the CHHSLs should not be used. The PEA guidance should then be followed.

The CHHSLs for inorganic chemicals (metals) are based on human health risks. However, metals are naturally occurring in the soil. Therefore, metals concentrations should be compared to local background levels as discussed in Section 2.7.

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2 CHHSL Lookup Tables

2.1 Organization of Lookup Tables

CHHSLs for soil, soil gas and indoor air are presented in Tables 1 and 2. Soil CHHSLs address the potential direct exposure of residents and workers to contaminants in soil. Indoor air and soil gas screening levels address the potential intrusion of subsurface vapors into buildings and subsequent impacts to indoor air quality (and resulting potential exposure of residents and workers in those buildings).

Separate CHHSLs are presented for residential and commercial/industrial land uses. A summary of models and exposure assumptions used for each land use is in Appendix 1. The category "Residential Land Use" applies to sites where unrestricted land use is desired. This includes use for residences, hospitals, day-care centers and other sensitive purposes (Cal/EPA 2002). Residential CHHSLs incorporate conservative assumptions regarding the long-term, frequent exposure of children and adults to contaminated soils in a residential setting. In contrast, "Commercial/Industrial Use Only" assumes that only working age adults will be present at the site on a regular basis. Exposure assumptions incorporated into these CHHSLs are less conservative than assumptions used in the residential land-use scenario.

In a DTSC PEA, the land use of the site under a Tier 1 assessment is assumed to be residential, regardless of the current use and zoning for the site. Other regulatory agencies may evaluate land use with respect to the current and foreseeable future use of the site in question. Reference to adopted General Plan zoning maps and local redevelopment plans is an integral part of this evaluation.

If chemicals at a site exceed residential CHHSLs but are below CHHSLs for commercial/industrial land-use, restrictions on the use of affected property will likely be necessary (refer to Section 2.10). The need for such restrictions should be weighed against the cost-benefit of remediating the property to meet the CHHSLs for unrestricted land use.

Although schools may also be a sensitive land use, proposed school sites must be evaluated using the OEHHA Guidance for Assessing Exposures and Health Risks at Existing and Proposed School Sites (Cal/EPA 2004a) rather than the CHHSLs. Refer to Section 2.9 for a discussion of school-specific risk evaluations. Use of

the lookup tables for sites with other land uses (e.g., agriculture, parkland, etc.) should be discussed with and approved by the overseeing regulatory agency.

2.2 Developing a Conceptual Site Model

The primary condition for use of CHHSLs is that exposure pathways of concern and conditions at the site match those taken into account in the development of the CHHSLs. Thus, it is always necessary to develop a conceptual site model (CSM) to identify likely contaminant source areas, exposure pathways, and potential receptors to determine the applicability of CHHSLs at the site and the need for additional information. The conceptual site model summarizes information about site conditions in a schematic presentation in terms of: 1) primary sources (e.g., leaking tanks); 2) secondary sources (e.g., contaminated soil); 3) contaminant transport mechanisms (e.g., volatilization and intrusion into buildings); 4) contaminated exposure media (e.g., indoor air); and 5) potentially complete exposure pathways.

The CSM can be used to provide a rationale for additional site investigation, as a basis for a more detailed CSM, and/or to select screening levels or cleanup levels for specific environmental concerns. An example model is shown in Figure 2-1. The example model represents a hypothetical release of petroleum-based fuels and pesticides to soil and groundwater at a large housing redevelopment project with open spaces accessible to residents (direct exposure), enclosed buildings (vapor intrusion), wetlands (ecotoxicity) and communal garden areas where fruits and vegetables are grown (uptake in edible plants). Potential environmental concerns at the hypothetical site are identified by a check mark in the appropriate column. In addition, xylene and other compounds in petroleum often cause odor and aesthetic concerns (nuisances). Cleanup to address these and other gross contamination concerns may be required even after all other potential concerns have been adequately addressed.

If completed exposure pathways at a site match those pathways considered in the development of the CHHSLs, the appropriate soil and soil gas data can be directly compared to the CHHSLs to determine if the magnitude of exposure may pose a potential threat to human health. If the exposure pathways at a site do not match those pathways used in the development of the CHHSLs, these screening levels may not be used, and a site-specific human health risk evaluation should be performed.

Other potential environmental concerns must be evaluated separately, either through use of a comparable set of screening levels or through a more detailed, site-specific environmental risk assessment. Additional information regarding the preparation of conceptual site models is provided in the DTSC *Preliminary Endangerment Assessment Manual* (Cal/EPA 1994b), the USEPA Region IX *Preliminary Remediation Goals* document (USEPA 2004), the USEPA *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA*, Interim Final Document (USEPA 1988) and the Region 2 Environmental Screening Levels document (SFBRWQCB 2003).

2.3 Using the Lookup Tables

A step-by-step approach for using the CHHSLs is summarized below.

Step 1 – Check for CHHSL Updates and Applicability

Check with the overseeing regulatory agency to determine if the CHHSLs can be applied to the subject site. Ensure that the most up-to-date CHHSLs are being used.

Step 2 - Prepare a Conceptual Site Model

The purpose of the conceptual site model is to present information about site conditions and potential impacts to receptors. All potential environmental concerns at the site (e.g., contaminant sources, pathways, exposure routes and receptors) should be clearly identified in a conceptual site model (Section 2.2 and Chapter 4). Identification of these concerns helps to provide the rationale for the type and location for site sampling. The level of detail required in a conceptual site model will vary from site to site. The presentation and scope of the model should be discussed with the overseeing regulatory agency. The conceptual site model should be continually updated as additional data for the site is obtained.

Step 3 – Collect Data

An environmental risk assessment is based on the results of a thorough site investigation, where all chemicals of potential concern have been identified. The scope and type of site investigation will vary depending on the site specific history and the nature of the actual or suspected chemical release. Sampling objectives should be defined in advance of field activities. For example, the objective may be to document whether a release has occurred; to identify hot spots that may require an expedited removal action; to provide sufficient data to determine whether site remediation is necessary; or to evaluate whether site conditions would be consistent with proposed or potential land uses.

Steps 4 - Determine the Desired Land Use

Screening levels for residential land use are generally appropriate for other sensitive uses of the property (e.g., day-care centers, hospitals, etc.). If preparing a DTSC PEA, residential land use CHHSLs should be used. **For evaluation of commercial/industrial properties, it is highly recommended that site data be compared to CHHSLs for both unrestricted/residential and commercial/industrial land use.** Commercial/industrial CHHSLs should be used only under the oversight of a regulatory agency, as that agency will likely require a land use covenant that restricts use of the property to these purposes.

Steps 5 - Select CHHSLs

Based on the actual or proposed land use, select the appropriate soil and/or soil gas CHHSLs. Replace CHHSLs with naturally occurring, background concentrations of chemicals of concern (e.g., arsenic) or laboratory method reporting levels if appropriate (see Sections 2.6 and 2.7).

Step 6 - Compare Site Data To CHHSLs; calculate cumulative risks as necessary

Compare site data to CHHSLs to identify areas where concentrations of contaminants pose potential human health concerns. For sites where sample data are limited and/or if preparing a DTSC PEA, compare the maximum-detected concentrations of chemicals of concern to the CHHSLs.

For sites where an adequate number of data points are available, statistical methods can be used to estimate site-specific exposure point concentrations. The exposure point concentration is the lesser of the maximum-detected concentration and the 95% upper confidence limit (UCL) of the arithmetic mean of sample data (Cal/EPA 1996a). The USEPA guidance document *Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites* recommends evaluating the distribution of the data and choosing the best UCL estimate for the data set (USEPA 2002). Guidance for the estimation of exposure point concentrations, use of “non-detect” data, and other issues is also provided in the Cal/EPA documents *Preliminary Endangerment Assessment Guidance Manual* (Cal/EPA 1994b), *Supplemental Guidance For Human Health Multimedia Risk Assessments of Hazardous Waste Sites and Permitted Facilities* (Cal/EPA 1996a), among other sources. As discussed in these documents, sample data collected outside of impacted areas should generally not be included in estimation of exposure point concentrations.

For residential land use scenarios, soil sample data should be averaged over no more than a 1,000 ft² area (assumed area of a typical, urban area back yard and footprint area of typical residence). For commercial/industrial properties, soil sample data can be averaged within affected areas of open spaces.

Use the maximum soil gas concentration over an area of the footprint of existing or assumed future buildings to compensate for potentially isolated rooms within a building and the uncertainties in soil gas collection.

If multiple chemicals with similar health effects are present at a site, the cumulative excess cancer risk and/or noncancer hazard index should be calculated before final consideration of the site for closure. This will be of particular concern at sites where residual concentrations of chemicals with similar noncancer health effects may approach CHHSLs following the proposed, final cleanup of contaminated soil. Calculation of cumulative risks and hazard indices is discussed in Section 2.8. The need to include calculation of cumulative health risks in final closure reports should be discussed with the overseeing regulatory agency.

Steps 7 - Evaluate the Need for Additional Investigation or Actions to Address Human Health Concerns

Based on a comparison of available site data to the CHHSLs, the objectives identified in Step 3 should be evaluated. For example, comparison to CHHSLs may show that a site does not pose an unacceptable health risk to residential users, or it may show that additional investigation is warranted. Summarize the results of this evaluation in the Tier 1 Human Health Risk Assessment report (or preliminary endangerment assessment), and include recommendations for additional investigations or remediation as needed. Decisions for or against additional actions should always be made in coordination with the overseeing regulatory agency.

Step 8 - Evaluate Other Potential Environmental Concerns

The soil CHHSLs presented in Table 1 are limited to human health concerns associated with direct exposure to contaminated soil. In many instances, the presence of a potential hazardous chemical in soil may pose other environmental concerns that outweigh the risk to human health through direct exposure (see Sections 1.4 and 2.2, Chapter 4 and Table 1). The purpose of the Conceptual Site Model (Step 2) is to assist the user in identifying these concerns early in the process. For example, many metals and pesticides are significantly more toxic to flora and fauna than they are to humans (e.g., copper and nickel). Chemicals that easily leach from soils (e.g., MTBE) may pose a threat to shallow groundwater

resources even though direct exposure to the soils does not pose a significant health risk. Since the CHHSLs do not address impacts to groundwater, surface water or sediment, these and other potential environmental concerns should be addressed as part of a comprehensive environmental risk assessment.

2.4 Screening For Soil Direct-Exposure Concerns

The soil screening levels presented in Table 1 address potential exposure of humans to contaminants in soil through incidental soil ingestion, dermal absorption and inhalation of dust or vapors in outdoor air. These soil screening levels are given in milligrams (mg) of chemical per kilogram (kg) of dry soil. Therefore, the analytical laboratory must be instructed to report their results accordingly. Models and assumptions used to develop the soil CHHSLs are summarized in Appendix 1. The CHHSLs represent a combination of standard assumptions regarding exposure of residents and workers to contaminants in soil and outdoor air and toxicity factors for each of the specific chemicals listed. CHHSLs for chemicals that are known or suspected carcinogens were calculated using a target excess lifetime cancer risk of one-in-one-million (10^{-6}). A target hazard quotient of 1.0 was used to calculate CHHSLs for noncancer health effects.

The presence of a chemical in soil at concentrations below its corresponding CHHSL can be assumed to not pose a significant health risk to people who may live or work at the site. Since sites usually have multiple contaminants, the cumulative, or total risk and hazards posed by all the hazardous chemicals a site should also be estimated using the approach described in Section 2.8.

Residential and commercial/industrial soil CHHSLs are applicable to soils that are at the ground surface or could be brought to the ground surface at some time in the future, with subsequent potential exposure by human receptors. A depth of more than three meters (approximately 10 feet) is generally used to delineate "deep" soils that are likely to remain isolated in the subsurface versus "shallow" soils that may be exposed during future redevelopment activities (Cal/EPA 1996a). Exposure of workers to deeper soils could still occur during periodic construction and utility maintenance work. Even if deep soil contamination does not present a human health risk, the overseeing regulatory agency may require preparation of a formal land-use covenant in order to allow such contamination to remain on site.

2.4.1 Evaluating Lead

In Table 1, the Commercial/Industrial Soil CHHSL for lead is listed as 3,500 mg/kg. This number was calculated using the methods described in Appendix 1. It should be noted, however, that this screening number is above the Total Threshold Limit Concentration for lead (1,000 mg/kg) as defined in Title 22 of the California Code of Regulations. It is also above the USEPA Region IX Preliminary Remediation Goal (PRG) of 800 mg/kg for commercial land use.

OEHHA is evaluating the method it used to derive its health-based screening number for a commercial/industrial scenario. Until this evaluation is complete, the commercial/industrial Soil CHHSL for lead in Table 1 should be considered an interim value, and the overseeing regulatory agency should be consulted on the appropriate screening number to be used at a site under investigation.

2.5 Screening of Volatile Organic Chemicals

2.5.1 Soil Screening Levels for Direct Exposure Concerns

Screening levels for direct exposure to volatile organic compounds (VOCs) in soil were not developed by OEHHA and are not included in this edition of the CHHSLs document. Direct-exposure models such as those used by USEPA Region IX do not take into account the total amount (mass) of a volatile chemical that might be present at a site (refer to Appendix 2). This is important, since the direct-exposure models assume a continuous off-gassing of vapors throughout a 30-year exposure period. In addition, the models assume exposure both via inhalation of vapors emitted to outdoor air and via incidental ingestion of volatile chemicals in soil. These assumptions may be overly conservative for highly volatile chemicals that are not expected to remain at significant concentrations in the soil over time following off-gassing to the outdoor air.

Bulk soil screening levels (i.e. concentrations measured in soil) for volatile chemicals are not presented in this document. The restricted size of soil samples limits the ability to use soil data to evaluate vapor intrusion concerns except at sites with very minor releases. At sites where significant releases of volatile chemicals have occurred, the collection of soil gas data in conjunction with bulk soil data is strongly recommended. For sites characterized by only minor releases of volatile chemicals and limited impacts to soil (e.g., minor spills around the fill ports of underground storage tanks), cleanup of soils to meet direct-exposure

concerns should generally be adequate to address vapor intrusion concerns (see also Table 1).

2.5.2 Soil Gas Screening Levels for Vapor Intrusion Concerns

The indoor air and soil gas screening levels presented in Table 2 address the potential emission of volatile chemicals from contaminated soil or groundwater and subsequent intrusion into the indoor air of overlying buildings. A full discussion of the development of the soil gas screening levels, and the models and assumptions used, is discussed in Appendix 1.

The soil gas CHHSLs for the intrusion of vapors into buildings were developed assuming that buildings have a “slab on grade” construction. The screening levels are also considered to be adequately conservative for buildings with crawl space or underground parking construction. These reflect the most common type of building designs in California. The soil gas screening levels may not be adequately conservative for estimating impacts to indoor air in structures with basements, however, or buildings with substandard ventilation systems in general. Field data suggest that attenuation of vapors in such scenarios may be an order of magnitude below that expected in rooms or buildings with normal ventilation systems. Therefore, at sites where significant vapor intrusion concerns may exist, the collection and evaluation of samples from both basement areas and overlying living spaces may be warranted.

Additional information on subsurface vapor intrusion into buildings is provided the USEPA document *User's Guide for the Johnson and Ettinger (1991) Model for Subsurface Vapor Intrusion into Buildings* (USEPA 2003) and in the following section.

2.5.3 Evaluating Vapor Intrusion Concerns

If the concentration of a volatile chemical in soil gas at a site exceeds its CHHSL, the exposure pathway of soil vapor intrusion into indoor air should be further evaluated using the Cal/EPA *Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air* (Cal/EPA 2004b). The investigation of this pathway can be complex. The identification of sources of indoor air contaminants is often complicated by the presence of the same or similar chemicals products found and used in many households and industrial buildings (e.g., aerosol sprays, dry-cleaned clothing, cleaners, and tobacco smoke). Elevated levels of the same chemicals in ambient, outdoor air also pose a

problem. Plumes of groundwater contaminated with volatile chemicals can also serve as the source of volatile chemicals found in soil gas and extend over significant areas. If there is strong evidence that the intrusion of vapors into buildings may exceed levels of potential concern, the collection and analysis of indoor air samples may be necessary. The inevitable effect of indoor air studies on the personal lives of residents and building workers will further require that risk issues be carefully communicated.

Guidance on the collection of soil gas and indoor air samples is provided in the following documents, among other sources:

- *Soil Gas Advisory* (January 2003): Department of Toxic Substances Control and Los Angeles Regional Water Quality Control Board; http://www.dtsc.ca.gov/policyAndProcedures/SiteCleanup/SMBR_ADV_activesoilgasinvst.pdf.
- *Indoor Air Sampling And Evaluation Guide* (2002): Massachusetts Department of Environmental Protection, Office of Research and Standards, WSC Policy #02-430; <http://www.state.ma.us/dep/bwsc/finalpol.htm>.

Properly collected indoor air sample data may be compared to the indoor air screening levels. Averaging of indoor air data within a single building may not be appropriate beyond the specific room being tested. Screening levels for indoor air (Table 2) are based on standard exposure models for long-term inhalation of contaminants in air at a target excess cancer risk of 10^{-6} and a target hazard quotient of 1.0. The indoor air CHHSLs do not account for potential cumulative effects posed by the presence of multiple contaminants in air (see Section 2.8).

2.6 Substitution of Laboratory Reporting Limits for CHHSLs

The overseeing regulatory agency should review and agree to the analytical methods used to quantify chemicals in soil samples to make sure that the methods are sensitive enough to detect low concentrations of chemicals of potential concern. The attainment of detection limits that are at or below the screening levels should be part of the Data Quality Objectives. If all agreed-upon methods have been used, the overseeing regulatory agency may allow the use of the method reporting limit in place of the screening level in cases where a CHHSL for a specific chemical is less than its laboratory method reporting limit. Potential

examples include the soil direct-exposure CHHSL for dioxin (e.g., 0.0000046 mg/kg for residential exposure).

2.7 Substitution of Naturally Occurring Concentrations for CHHSLs

Naturally occurring background concentrations of arsenic, beryllium, cadmium, chromium and other metals in soils may exceed their respective soil CHHSLs. Cal/EPA generally does not require cleanup of soil to below background levels. This issue is frequently encountered with arsenic. Natural background concentrations of arsenic in California are often well above the health-based, direct-exposure goals in soil of 0.07 mg/kg for residential land use and 0.24 mg/kg for commercial/industrial land use (e.g., Bradford et. al, 1996; LBNL 2002). Background concentration of arsenic or other metals of potential concern at a site should be determined from analysis of site-specific samples in uncontaminated areas using guidance published by Cal/EPA and/or reference to published data for nearby sites (Cal/EPA 1997). However, background data for nearby sites may only be used as a surrogate for uncontaminated site data if those data are obtained from soil of the same lithology as that found on-site.

2.8 Cumulative Risks at Sites with Multiple Contaminants

Risks posed by exposure to multiple chemicals with similar health affects are considered to be additive or "cumulative." For example, the total excess lifetime risk of cancer posed by the presence of several carcinogenic chemicals in all exposure media is the sum of the risk posed by each individual chemical. The same is true for chemicals that cause noncarcinogenic health effects.

A stepwise approach for screening of sites with multiple contaminants is suggested (after USEPA 2004):

Step 1: Identify potential chemicals of concern.

Step 2: Record CHHSLs for each chemical separated by media type (soil, soil gas and/or indoor air). Include CHHSLs for both cancer and noncancer effects, if available (refer to Appendix 1). If CHHSLs are not available for specific chemicals, evaluate those chemicals using the approaches discussed in Appendix 1 and in the PEA manual.

Step 3: Calculate cumulative cancer risk estimates by taking the assumed exposure point concentration for each chemical (maximum or approved 95% UCL) and divide by the respective CHHSL concentration designated for cancer evaluation. Multiply the ratio by 10^{-6} (the target risk used to develop the CHHSLs) to calculate the estimated cancer risk for that specific chemical for a reasonable maximum exposure (RME).

$$Risk = \left[\left(\frac{conc_x}{CHHSL_x} \right) + \left(\frac{conc_y}{CHHSL_y} \right) + \left(\frac{conc_z}{CHHSL_z} \right) \right] \times 10E - 06$$

For multiple chemicals, simply add the risks for individual chemicals or sum individual ratios and multiply the total by a factor of 10^{-6} :

Step 4: Calculate cumulative noncancer hazard estimates by taking the assumed exposure point concentration for each chemical (maximum or approved 95% UCL) and divide by the respective CHHSL concentration designated for noncancer effects. This generates an individual Hazard Quotient for that chemical. Calculate a cumulative Hazard Index by adding the individual Hazard Quotients. A Hazard Index of one or less is generally considered “safe”. A ratio that is greater than one suggests that further evaluation is necessary. (Note that carcinogens may have CHHSLs for both cancer effects as well as noncancer effects. Refer to Appendix 1).

For more information, refer to the USEPA Preliminary Remediation Goals

$$HazardIndex = \left[\left(\frac{conc_x}{CHHSL_x} \right) + \left(\frac{conc_y}{CHHSL_y} \right) + \left(\frac{conc_z}{CHHSL_z} \right) \right]$$

document (USEPA 2002). OEHHA has also developed a spread sheet tool for calculating cumulative risk. This spread sheet is available on Cal/EPA’s, DTSC’s, the State Board’s and OEHHA’s web pages.

2.9 Evaluation of School Sites

DTSC’s Schools Property Evaluation and Cleanup Division is the lead agency for the environmental assessment of potential contamination at new, expanding, or existing schools. Since January 2000, school districts have been required to conduct an environmental assessment under the oversight and approval of DTSC prior to the construction of new schools. By law, DTSC uses specific guidance and protocols for school projects. Because of this, the CHHSLs may not be applicable for these sites. Contact DTSC for further information and direction for

the evaluation of potential contamination on school properties and the application of the CHHSLs.

2.10 Use of CHHSLs as Cleanup Levels and Land Use Restrictions

As stated earlier in this guidance, these CHHSLs are not stand-alone decision making tools, a set of final cleanup or action levels to be applied at contaminated sites or a guarantee that an oversight regulatory agency will determine that a project is adequately studied or agree with the conclusions of the site investigation and risk assessment report. Cleanup decisions are at the discretion of the overseeing regulatory agency and can only be made after a full evaluation of site conditions and potential human health and environmental concerns.

While regulatory agencies cannot be compelled to use the CHHSLs as final cleanup standards for a contaminated property, there may be circumstances where the residential CHHSLs would be sufficiently protective and considered as appropriate cleanup levels with the following caveats.

- The overseeing regulatory agency has determined that the site has been adequately characterized and agrees that the use of CHHSLs is appropriate.
- The potentially complete exposure pathways at the site match the exposure pathways used to develop the CHHSLs and no additional completed exposure pathways or receptors were identified.
- All other environmental concerns have been addressed to the satisfaction of the overseeing regulatory agency (refer to Section 1.4 and Table 1).

In a similar manner, there may be circumstances where the Commercial/Industrial CHHSLs would be sufficiently protective and considered as appropriate cleanup goals under regulatory agency oversight. Their use at a site in this context must also be coupled with the understanding that such a use of these CHHSLs may be subject to existing regulations and land-use covenants. In addition, the following should also be considered:

- **Concentrations of chemicals in soils left in place at a commercial/industrial site should always be compared to both commercial/industrial AND residential CHHSLs.** If the soils meet

CHHSLs for residential land use after cleanup then this should be clearly stated in the site closure report. This point may prove important should the site unexpectedly become desirable for other uses in the future (e.g., residential, day care, health care, etc.).

- Sites cleaned up to commercial CHHSLs only are not suitable for unrestricted land use without further evaluation. The appropriate regulatory agency should be consulted to determine actions necessary to remove land-use restrictions.

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3 Conditions Warranting Site Specific Human Health Risk Assessments

3.1 Site Considerations

Use of the CHHSLs is optional and a standard human health risk assessment may be undertaken for any site. Site conditions may prevent the full use of the CHHSLs and require preparation of a more site-specific, health risk evaluation or baseline risk assessment (refer to Section 1.2). Examples of site conditions that may warrant site-specific or detailed human health risk assessment include:

- Sites that have a high public profile and need a detailed, fully documented human health risk assessment for public review;
- Sites where multiple contaminants with similar health effects are present and cumulative health risks (or hazards) must be calculated;
- Sites with contaminants for which CHHSLs have not been developed.
- Sites where alternative target risk levels or chemical-specific toxicity factors may be acceptable to the regulatory agency (Appendix 1);
- Sites where direct-exposure concerns for residents and workers may not need to be considered (Section 2.4);
- Sites where site conditions may be engineered to eliminate or reduce specific exposure pathways;
- Sites where field observations or site conditions indicate that the CHHSLs may not be adequately protective or may be excessively conservative.

Additional considerations should be evaluated on a site-by-site basis and discussed with the overseeing regulatory agency.

3.2 Tier 2 Human Health Risk Assessments

3.2.1 Purpose

The Tier 1 CHHSLs were developed with default or generic assumptions that are not specific to any particular site condition. If site soil concentrations exceed CHHSLs, site-specific exposure assumptions may be used in the standard risk models described in Appendix 1 or the PEA guidance to estimate risk and/or develop site-specific CHHSLs. Using alternative exposure assumptions in these standard risk models could reduce the time and cost incurred by both the regulated business and the overseeing responsible party in finalizing the risk assessment. Modifications to the default assumptions must be described and justified in the text of the report, presented with the revised set of screening or cleanup levels, and agreed to beforehand with the regulatory agency.

3.2.2 Examples of Site-Specific Adjustments

Potential site-specific modifications include:

- Use of alternative target risk levels, and/or alternative exposure assumptions;
- Elimination of direct-exposure concerns through imposition of institutional controls;
- Inclusion of potential exposure of construction and trench workers to contaminated soil not likely to be exposed at the ground surface in the future (e.g., capped soils or soils isolated at depth);
- Consideration of method reporting limits or natural background or ambient concentrations of a chemical in place of the CHHSL.

After incorporating site-specific parameter values into the Tier 1 direct-exposure models, alternative human-health-based screening levels can be calculated and re-compared to site data.

3.3 Tier 3 (Baseline) Human Health Risk Assessments

3.3.1 Purpose

In a site-specific baseline human health risk assessment, alternative models and assumptions are used and fully justified to develop a detailed, comprehensive

human health risk assessment. Portions of the models and assumptions used to develop the CHHSLs may still be retained for some components of the risk assessment. Any baseline human health risk assessment should be carried out under the oversight of the regulatory agency.

Detailed guidance on the preparation of and information for use in site-specific baseline environmental risk assessments is provided in the following references:

Human Health Risk Assessment:

- *Risk Assessment Guidance for Superfund. Volume I, Human Health Evaluation Manual (Part A)* (USEPA 1989a);
- *Soil Screening Guidance: Technical Background Document* (USEPA 1996);
- *CalTOX, A Multimedia Total Exposure Model For Hazardous-Waste Sites* (Cal/EPA 1994a);
- *Preliminary Endangerment Assessment Guidance Manual* (Cal/EPA 1994b);
- *Supplemental Guidance For Human Health Multimedia Risk Assessments of Hazardous Waste Sites and Permitted Facilities* (Cal/EPA 1996a);
- *Exposure Factors Handbook* (USEPA 1997a); and
- *Assessing the Significance of Subsurface Contaminant Vapor Migration to Enclosed Spaces* (Johnson et. al, 1998).

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4 Evaluation of Other Potential Environmental Concerns

The importance of identifying all environmental concerns at sites where releases of hazardous chemicals have occurred is discussed in Sections 1.4 and 2.2. The CHHSLs provided in Tables 1 and 2 specifically address risks to human health posed by exposure to contaminated soil and indoor air. At sites affected by highly toxic but relatively immobile chemicals (e.g., PCBs, DDT, arsenic, etc.), cleanup of contaminated soils to address human health concerns will generally be sufficient to address other potential environmental concerns provided that sensitive ecological habitats are not threatened. In other cases or for other chemicals, additional environmental concerns may still be present even after impacted soils have been remediated to levels sufficient to address risks to human health. This could include leaching of contaminants from soil and subsequent impacts on groundwater resources, toxicity to terrestrial biota, uptake of contaminants in edible fruits or vegetables and nuisance or gross contamination concerns.

A summary of other environmental concerns potentially posed by contaminants in soil is incorporated into Table 1. This summary compares the CHHSLs to the SFBRWQCB's ESLs for leaching, ecotoxicity and nuisance concerns. The ESLs can be found at <http://www.waterboards.ca.gov/sanfranciscobay/esl.htm>.

For example, the residential CHHSL for endrin in soil (21 mg/kg) is much higher than the corresponding ESL for ecotoxicity concerns (0.06 mg/kg). This means that ecotoxicity concerns may outweigh human health concerns at sites where potentially sensitive habitats are present (designated by an "X" in the Table 1). This is not surprising, since endrin, a pesticide, was specifically formulated to be highly toxic to terrestrial biota.

Additional evaluation should be carried out at sites where the basic conceptual site model indicates that the presence of contaminated soils may pose other environmental concerns or where potential impacts to groundwater, surface water or sediment are identified. It is beyond the scope of this document to present guidance on the proper evaluation of these additional concerns. However, useful references are provided in Figure 4-1. Additional risk assessment guidance should be consulted as needed.

5 References

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FIGURES

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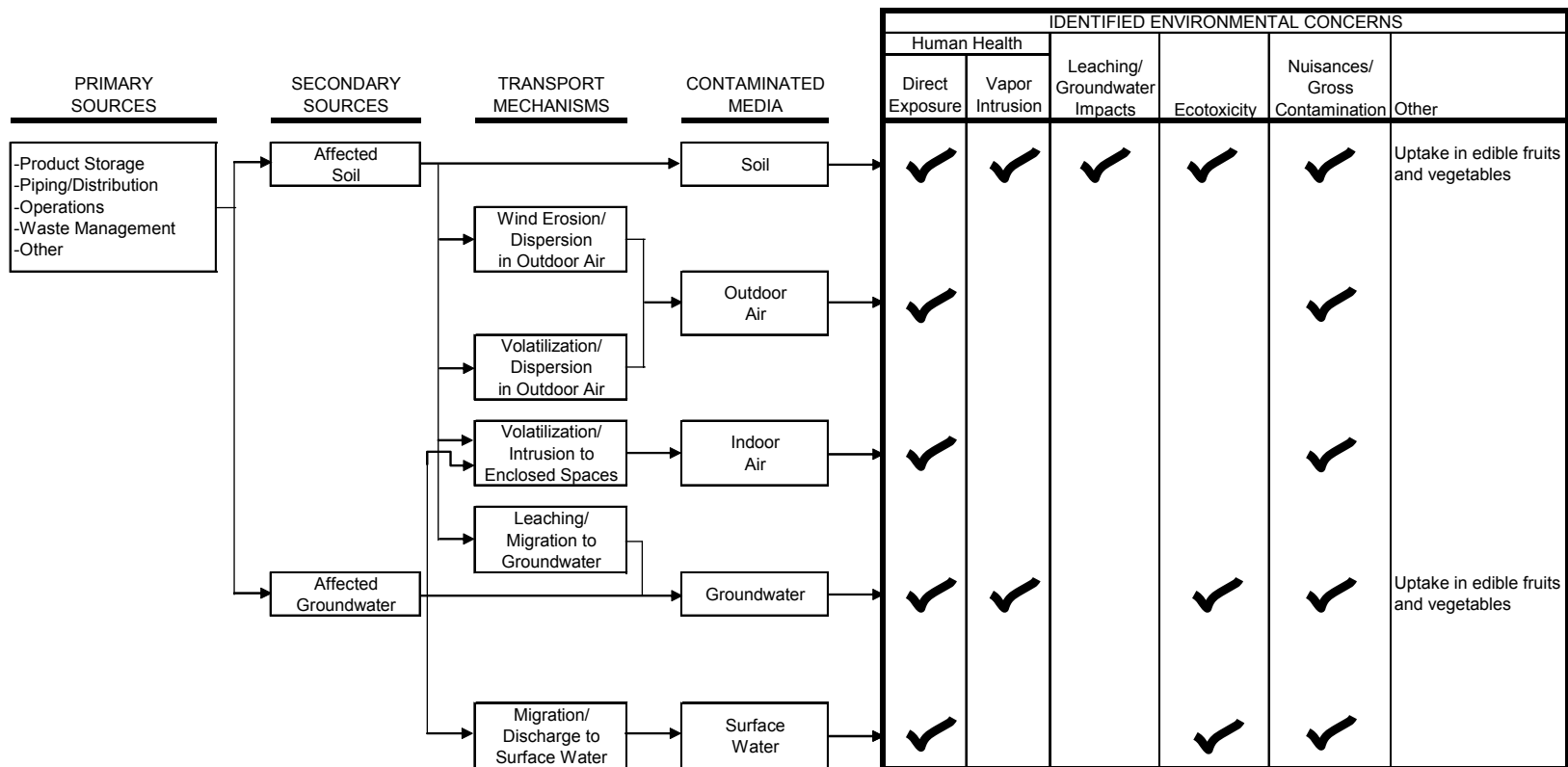


Figure 2-1. Example conceptual site model depicting environmental concerns identified at a site where hazardous chemicals were released to soil and groundwater. See Section 2.2.

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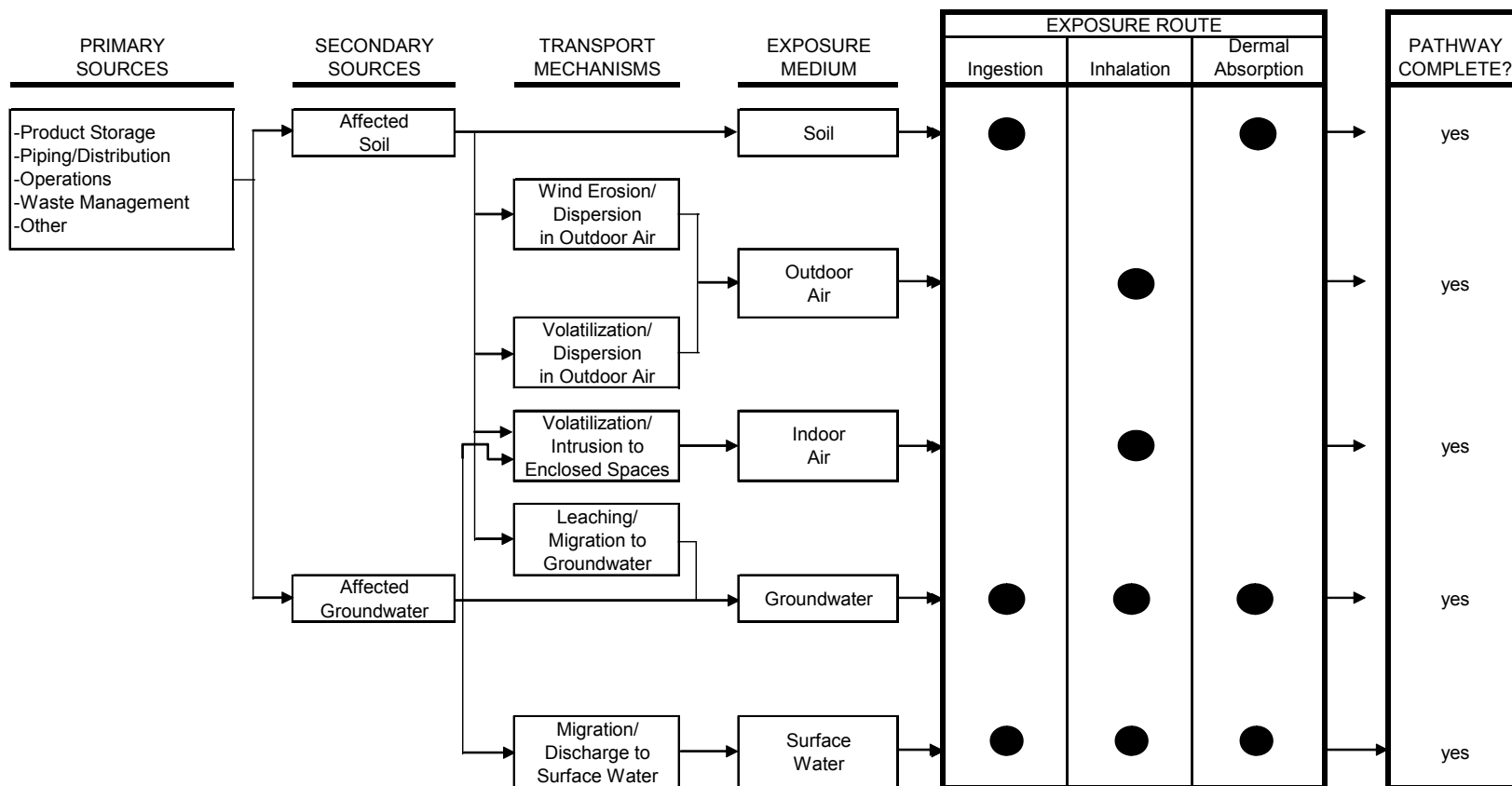


Figure 2-2. Example focused conceptual site model of human health concerns identified at a site where hazardous chemicals were released to soil and groundwater. See Section 2.2.

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Environmental Concern	Reference/Website
Leaching and migration of contaminants to groundwater	USEPA Soil Screening Guidance (USEPA 1996): http://www.epa.gov/superfund/resources/soil/index.htm SFBRWQCB ESL Document (SFBRWQCB 2003): http://www.waterboards.ca.gov/sanfranciscobay/esl.htm USEPA Synthetic Precipitation Leaching Procedure (USEPA 1994): http://www.epa.gov/epaoswer/hazwaste/test/main.htm Commonly Used Models: SESOIL, VLEACH
Ecotoxicity	USEPA Ecological Soil Screening Guidance (USEPA 1996): http://www.epa.gov/superfund/programs/risk/ecorisk/ecossl.htm Risk Assessment Guidance for Superfund: Volume II Environmental Evaluation Manual (USEPA 1989b); Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments (USEPA 1997b) Guidance for Ecological Risk Assessments at Hazardous Waste Sites and Permitted Facilities (CalEPA 1996a,b) Ontario MOEE Rational for the Development and Application of Generic Soil, Groundwater and Sediment Criteria for Use at Contaminated Sites in Ontario (MOEE 1996): http://www.ene.gov.on.ca/ SFBRWQCB ESL Document (SFBRWQCB 2003): http://www.waterboards.ca.gov/sanfranciscobay/esl.htm NOAA Sediment Screening Table (NOAA 1999): http://response.restoration.noaa.gov/cpr/sediment/squirt/squirt.html
Ingestion via plant uptake	USEPA Soil Screening Guidance (USEPA 1996): http://www.epa.gov/superfund/resources/soil/index.htm USEPA Fertilizer Risk Assessment (USEPA 1999): http://www.epa.gov/epaoswer/hazwaste/recycle/fertiliz/risk/ CalEPA CALTOX model (CalEPA 1994a): http://www.dtsc.ca.gov/ Massachusetts DEP Guidance for Disposal Site Risk Characterization (MADEP 1995): http://www.state.ma.us/dep/ors/orspubs.htm
Nuisance/Gross Contamination	Massachusetts DEP Background Documentation for the Development of the MCP Numerical Standards (MADEP 1994): http://www.state.ma.us/dep/ors/orspubs.htm SFBRWQCB ESL Document (SFBRWQCB 2003): http://www.waterboards.ca.gov/sanfranciscobay/esl.htm

Figure 4-1. Suggested references for evaluation of environmental concerns not currently addressed by the CalEPA CHHSLs.

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TABLE 1: California Human Health Screening Levels for Soil and Comparison to Other Potential Environmental Concerns

Notes:

Always compare soil data for commercial/industrial sites to residential CHHSLs and evaluate need for formal land-use restrictions (see Section 2.10).

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Table 1. California Human Health Screening Levels for Soil And Comparison To Other Potential Environmental Concerns

Chemical	¹ Soil Human Health Screening Levels (mg/kg of dry soil)		² Other Potential Environmental Concerns Posed By Contaminated Soil			
	Residential Land Use	Commercial/Industrial Land Use Only	³ Leaching	⁴ Ecotoxicity	⁵ Nuisance/Aesthetic Concerns	⁶ Other
Organic Acidic Chemicals						
2,4-D	6.9E+02	7.7E+03	X	X	o	
2,4,5-T	5.5E+02	6.1E+03	X	X	o	
Pentachlorophenol	4.4E+00	1.3E+01	X	X	o	
Organic Neutral Chemicals						
Aldrin	3.3E-02	1.3E-01	o	X	o	
Benzo(a)pyrene	3.8E-02	1.3E-01	o	X	o	TPH
Chlordane	4.3E-01	1.7E+00	o	X	o	
DDD	2.3E+00	9.0E+00	o	X	o	
DDE	1.6E+00	6.3E+00	o	X	o	
DDT	1.6E+00	6.3E+00	o	X	o	
Dieldrin	3.5E-02	1.3E-01	X	X	o	
1,4 Dioxane	1.8E+01	6.4E+01	X	o	o	
Dioxin (2,3,7,8-TCDD)	4.6E-06	1.9E-05	o	o	o	
Endrin	2.1E+01	2.3E+02	X	X	o	
Heptachlor	1.3E-01	5.2E-01	X	X	o	
Lindane	5.0E-01	2.0E+00	X	X	o	
Kepone	3.5E-02	1.3E-01	X	o	o	
Methoxychlor	3.4E+02	3.8E+03	o	X	o	
Mirex	3.1E-02	1.2E-01	X	X	o	
PCBs	8.9E-02	3.0E-01	o	X	o	
Toxaphene	4.6E-01	1.8E+00	X	X	o	

Table 1. California Human Health Screening Levels for Soil And Comparison To Other Potential Environmental Concerns

Chemical	¹ Soil Human Health Screening Levels (mg/kg of dry soil)		² Other Potential Environmental Concerns Posed By Contaminated Soil			
	Residential Land Use	Commercial/Industrial Land Use Only	³ Leaching	⁴ Ecotoxicity	⁵ Nuisance/Aesthetic Concerns	⁶ Other
Inorganic Chemicals						
Antimony and compounds	3.0E+01	3.8E+02	site specific	o	o	
Arsenic	7.0E-02	2.4E-01	site specific	X	o	Ambient background
Barium and compounds	5.2E+03	6.3E+04	site specific	X	o	Construction workers
Beryllium and compounds	1.5E+02	1.7E+03	site specific	X	o	
Beryllium oxide ⁷	9.1E-02	4.1E-01	o	o	o	Construction workers
Beryllium sulfate ⁷	2.1E-04	9.5E-04	o	o	o	
Cadmium and compounds	1.7E+00	7.5E+00	site specific	X	o	Ambient background
Chromium III	1.0E+05	1.0E+05	site specific	X	X	
Chromium VI	1.7E+01	3.7E+01	site specific	X	o	Construction workers
Cobalt	6.6E+02	3.2E+03	site specific	X	o	Construction workers
Copper and compounds	3.0E+03	3.8E+04	site specific	X	X	
Fluoride	4.6E+03	5.7E+04	site specific	o	o	
Lead and lead compounds	1.5E+02	3.5E+03 ⁹	site specific	X	o	Uptake in fruits and vegetables
Lead acetate ⁷	2.3E+00	1.0E+01	X	o	o	
Mercury and compounds	1.8E+01	1.8E+02	site specific	X	o	
Molybdenum	3.8E+02	4.8E+03	site specific	X	X	
Nickel and compounds	1.6E+03	1.6E+04	site specific	X	X	Construction workers
Nickel subsulfide ⁷	3.8E-01	1.1E+04	site specific	o	o	
Perchlorate ⁸	pp ⁸	pp ⁸	X	o	o	
Selenium	3.8E+02	4.8E+03	site specific	X	X	
Silver and compounds	3.8E+02	4.8E+03	site specific	X	X	
Thallium and compounds	5.0E+00	6.3E+01	site specific	o	o	Ambient background
Vanadium and compounds	5.3E+02	6.7E+03	site specific	X	X	

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Table 1. California Human Health Screening Levels for Soil And Comparison To Other Potential Environmental Concerns

Chemical	¹ Soil Human Health Screening Levels (mg/kg of dry soil)		² Other Potential Environmental Concerns Posed By Contaminated Soil			
	Residential Land Use	Commercial/Industrial Land Use Only	³ Leaching	⁴ Ecotoxicity	⁵ Nuisance/Aesthetic Concerns	⁶ Other
Zinc	2.3E+04	1.0E+05	site specific	X	X	
Notes:						
<p>1. Direct-exposure screening levels address human exposure to chemicals in soil via incidental ingestion, dermal absorption and inhalation of vapors and particulates emitted to outdoor air (refer to Appendix 1). Assumes impacted soil is situated at or near the ground surface or could be at some time in the future. Volatile chemicals not included at this time (refer to Section 2.5). "Residential Land Use" screening levels generally considered appropriate for other sensitive uses (e.g., day-care centers, hospitals, etc.). Commercial/industrial properties should be evaluated using both residential and commercial/industrial CHHSLs. A deed restriction that prohibits use of the property for sensitive purposes may be required at sites that are evaluated and/or remediated under a commercial/industrial land use scenario only. Carcinogens: CHHSLs based on target cancer risk of 10⁻⁶. Cal/EPA cancer slope factors used when available. Noncarcinogens: CHHSLs based on target hazard quotient of 1.0. Calculation of cumulative risk may be required at sites where multiple contaminants with similar health effects are present (see Section 2.8). Residential and C/I soil CHHSLs for arsenic below background for most sites in California (0.07 mg/kg and 0.24 mg/kg, respectively - see Appendix 1). Use identified or anticipated background as screening level (see Section 2.7).</p> <p>2. Environmental concerns in addition to direct exposure that may need to be considered in evaluation of contaminated soil. Based on a comparison of soil CHHSLs to soil screening levels for noted concerns compiled by the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB 2003). The need to address other environmental concerns must be evaluated separately in coordination with the lead regulatory agency (See Sections 1.4, 2.2 and Chapter 4). "X": Noted concern may outweigh direct-exposure risks at many sites and drive decisions for cleanup actions. "o": Potential concern but generally will be addressed if cleanup of contaminated soils to meet direct-exposure CHHSLs is carried out. "site specific": Potential concern, but evaluation as to whether this factor is a potential concern must be done on a site specific basis.</p> <p>3. Leaching of chemicals from soil and subsequent impacts to groundwater. Soil ESLs consider of impacts to drinking water resources, re-emission of volatile chemicals from groundwater into overlying buildings and discharges of contaminated groundwater to surface water. Leaching of metals from soil should be evaluated on a site-specific basis, depending on the potential mobility of the metal species present. Laboratory-based leaching studies are generally preferred over model-derived screening levels.</p> <p>4. Toxicity to terrestrial flora and fauna. Need to consider ecotoxicity concerns generally determined on a site-by-site basis.</p> <p>5. Nuisance and gross contamination concerns address odors and aesthetic concerns as well as general resource degradation and presence of potentially mobile free product.</p> <p>6. Other pertinent environmental concerns and considerations as determined on a site-specific basis. Health risk to construction workers may outweigh risk to residents or commercial/industrial workers for chemicals that are carcinogenic due to increased exposure to airborne dust particles and incidental ingestion of soil. Uptake of chemicals in edible fruits and vegetables from soil may need to be considered in some cases for noted chemicals.</p> <p>7. These metal salts are significantly (greater than 10-fold) more toxic than the values for the metals in general. If it is known that this chemical was used at the site, the screening number for this chemical should be used instead of the screening number for the metal and its compounds.</p> <p>8. Calculation of a screening number for the chemical has been postponed (pp) until the toxicity criterion currently being developed by OEHHA is published as a final document.</p> <p>9. This screening number is above the Total Threshold Limit Concentration for lead of 1000 mg/kg, as defined in Title 22, California Code of Regulations. It is also above the US EPA Region IX PRG of 800 mg/kg.</p>						

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January 2005

CHHSL

TABLE 2: California Human Health Screening Levels for Indoor Air and Soil Gas

Notes:

Always compare soil data for commercial/industrial sites to residential CHHSLs and evaluate need for formal land-use restrictions (see Section 2.10).

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Table 2. California Human Health Screening Levels for Indoor Air and Soil Gas

Chemical	¹ Indoor Air Human Health Screening Levels (µg/m ³)		² Shallow Soil Gas Human Health Screening Levels (Vapor Intrusion) (µg/m ³)	
	Residential Land Use	Commercial/Industrial Land Use Only	Residential Land Use	Commercial/Industrial Land Use Only
Benzene	8.40 E-02	1.41 E-01	3.62 E+01	1.22 E+02
Carbon Tetrachloride	5.79 E-02	9.73 E-02	2.51 E+01	8.46 E+01
1,2-Dichloroethane	1.16 E-01	1.95 E-01	4.96 E+01	1.67 E+02
<i>cis</i> -1,2-Dichloroethylene	3.65 E+01	5.11 E+01	1.59 E+04	4.44 E+04
<i>trans</i> -1,2-Dichloroethylene	7.30 E+01	1.02 E+02	3.19 E+04	8.87 E+04
Ethylbenzene	Postponed ³	Postponed ³	Postponed ³	Postponed ³
Mercury, elemental	9.40 E-02	1.31 E-01	4.45 E+01	1.25 E+02
Methyl tert-Butyl Ether	9.35 E+00	1.57 E+01	4.00 E+03	1.34 E+04
Naphthalene	7.20 E-02	1.20 E-01	3.19 E+01	1.06 E+02
Tetrachloroethylene	4.12 E-01	6.93 E-01	1.80 E+02	6.03 E+02
Tetraethyl Lead	3.65 E-04	5.11 E-04	2.06 E-01	5.78 E-01
Toluene	3.13 E+02	4.38 E+02	1.35 E+05	3.78 E+05
1,1,1-Trichloroethane	2.29 E+03	3.21 E+03	9.91 E+05	2.79 E+06
Trichloroethylene	1.22 E+00	2.04 E+00	5.28 E+02	1.77 E+03
Vinyl Chloride	3.11 E-02	5.24 E-02	1.33 E+01	4.48 E+01
<i>m</i> -Xylene	7.30 E+02	1.02 E+03	3.19 E+05	8.87 E+05
<i>o</i> -Xylene	7.30 E+02	1.02 E+03	3.15 E+05 ⁴	8.79 E+05 ⁴
<i>p</i> -Xylene	7.30 E+02	1.02 E+03	3.17 E+05	8.87 E+05

Reference: Appendix 1, OEHHA Target Indoor Air Concentrations and Soil-Gas Screening Numbers for Existing Buildings under Residential and Industrial/Commercial land uses.

Notes:

- "Residential Land Use" screening levels generally considered adequate for other sensitive uses (e.g., day-care centers, hospitals, etc.). Commercial/industrial properties should be evaluated using both residential and commercial/industrial CHHSLs. A deed restriction that prohibits use of the property for sensitive purposes may be required at sites that are evaluated and/or remediated under a commercial/industrial land use scenario only. Calculation of cumulative risk may be required at sites where multiple contaminants with similar health effects are present. Carcinogens: CHHSLs based on target cancer risk of 10⁻⁶. Cal/EPA cancer slope factors used when available. Noncarcinogens: CHHSLs based on target hazard quotient of 1.0.
- Soil Gas: Screening levels based on soil gas data collected <1.5 meters (five feet) below a building foundation or the ground surface. Intended for evaluation of potential vapor intrusion into buildings and subsequent impacts to indoor-air. Soil gas data should be collected and evaluated at all sites with significant areas of VOC-impacted soil. Screening levels also apply to sites that overlie plumes of VOC-impacted groundwater.
- Calculation of a screening number for the chemical has been postponed (pp) until the toxicity criterion currently being developed by OEHHA is published as a final document.
- Representative Screening Numbers for mixed xylenes. The representative value for mixed xylenes is based on the calculated lowest one amongst the three isomers.

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**Appendix 1: Human-Exposure-Based Screening
Numbers Developed To Aid Estimation of
Cleanup Costs for Contaminated Soil**

OEHHA (November 2004)

(Revised January 2005)

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**APPENDIX 2: Comparison of CHHSLs to Existing
Screening Levels and Standards**

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Comparison of CHHSLs to Existing Screening Levels and Standards

The U.S. Environmental Protection Agency Region IX office in San Francisco publishes "Preliminary Remediation Goals (PRGs)" for soil, drinking water and ambient air with a focus on risks to human health (USEPA 2004). The San Francisco Bay Area Regional Water Quality Control Board (SFBRWQCB) publishes Environmental Screening Levels (ESLs) for soil, groundwater, surface water and air that provide screening levels for other common environmental concerns as well (SFBRWQCB 2003).

Methods used by the USEPA and the SFBRWQCB to assess potential human exposure to contaminants in soil and air are very similar. The resulting screening levels are therefore almost identical. Similarities and differences between the CHHSLs and these suites of screening levels are summarized below. In addition, federal and state agencies publish screening levels or regulatory standards for hazardous waste that are sometimes confused with environmental screening levels. The applicability of these criteria to contaminated sites is also briefly described.

USEPA Region IX PRGs

The USEPA Region IX "Preliminary Remediation Goals" or "PRGs" address the direct exposure of residents and commercial workers to contaminants found in soil, drinking water and air (USEPA 2004). These PRGs may be found at <http://www.epa.gov/region09/waste/sfund/prg/index.htm>. Equations and assumptions used to develop the PRGs are consistent with the human health risk assessment guidance prepared by Cal/EPA, including the CalTOX model (Cal/EPA 1994a) and the *Preliminary Endangerment Assessment Guidance Manual* (Cal/EPA 1994b) and *Supplemental Guidance for Human Health Multimedia Risk Assessments of Hazardous Waste Sites and Permitted Facilities* (Cal/EPA 1996a).

The USEPA approach for developing the PRGs was adopted to develop the CHHSLs with minor modifications. The CHHSLs are an adjustment of soil and ambient air PRGs by using Cal/EPA-specific toxicity factors. For the majority of the chemicals listed, Cal/EPA toxicity factors are slightly more stringent or equal to those used by the USEPA to develop the PRGs. Some CHHSLs are significantly more restrictive.

A detailed discussion of the USEPA Region IX PRGs models is provided in Appendix 1. As discussed in the USEPA Region IX document, the PRGs are intended to address human direct-exposure with impacted soil and "...do not consider impact to groundwater or address ecological concerns" and cannot be used

as a stand-alone tool for the evaluation of contaminated sites (USEPA 2004). The same is true for the CHHSLs.

USEPA Soil Screening Levels

The USEPA Office of Emergency and Remedial Response document *Soil Screening Guidance: Technical Background Document* presents methodologies and related soil screening levels for evaluation of direct-exposure concerns, leaching of contaminants from soil and subsequent impacts to groundwater, uptake of contaminants into plants and the intrusion of volatile chemicals into buildings (USEPA 1996). Although subsequent guidance documents on specific topics have since been prepared by USEPA and other agencies (USEPA PRGs, USEPA vapor intrusion guidance document, etc.), the Soil Screening Guidance nonetheless provides a valuable resource for evaluation of these environmental concerns.

Soil screening levels for direct exposure concerns are based on USEPA toxicity factors and similar exposure models used to develop the USEPA Region IX PRGs and the Cal/EPA CHHSLs. Screening levels are presented for specific pathways (e.g., ingestion, inhalation of outdoor air, etc.), rather than for combined exposure routes as now presented in the PRGs and the CHHSLs. Dermal absorption was not considered in calculation of the direct-exposure screening levels. This pathway was included in calculation of the PRGs and CHHSLs, however. The ultimate difference in screening levels is in most cases minimal.

Soil screening levels for leaching concerns are based on a simplistic contaminant equilibrium partitioning model. The model uses USEPA maximum contaminant levels (MCLs) for drinking water as target groundwater impact goals. Generic dilution factors of “1” and “20” are presented for mixing of leachate in groundwater and subsequent dilution of contaminant concentrations. The leaching based soil screening levels are presented in the USEPA Region IX PRG document.

The Soil Screening Guidance model does not take into account fate and transport of leachate in the vadose zone and can be excessively conservative for highly volatile or highly sorptive chemicals or for use at sites where groundwater is greater than ten meters or more below the base of contaminated soil. The document also presents leaching based screening levels for inorganic (contaminants, primarily metals). Leaching of metals from soil is highly dependent on the actual species of the metal present and site-specific soil factors. Laboratory-based studies are generally preferable over model-based approaches for evaluation of leaching of metals and other inorganic chemicals from soil.

The uptake of contaminants in edible plants is briefly discussed in the Soil Screening Guidance document. Screening levels are presented for a limited number of inorganic contaminants. The report concludes that uptake of contaminants into plants may be of particular concern for arsenic and cadmium. With the exception of these compounds, the report notes that inorganic contaminants in soil are likely to be toxic to the plants themselves at levels far lower than would be of concern for uptake and consumption of the plants by humans. (DTSC also considers the uptake of lead in edible plants. Refer to Table 1 of the main document).

A brief discussion of the Johnson and Ettinger model for vapor intrusion from contaminated soils into buildings is provided in the Soil Screening Guidance document. Soil screening levels for this concern are not presented, however, due to concerns that the soil model significantly overestimates potential impacts to indoor air. The document instead recommends that soil gas data be used to evaluate this concern, although screening levels are likewise not provided. Soil gas CHHSLs presented in Table 2 of this document reflect more up-to-date USEPA methods for evaluation of vapor intrusion concerns (see Appendix 1). The USEPA is currently developing additional guidance on this subject.

SFBRWQCB Environmental Screening Levels (ESLs)

The SFBRWQCB ESLs are a compilation of screening levels specific for use at sites overseen by that agency in the San Francisco bay area for a number of different environmental concerns, including risk to human health. The July 2003 edition (updated February 2004) of the SFBRWQCB ESLs includes screening levels for the following exposure pathways and/or environmental concerns:

Soil:

- Protection of human health
- Direct/indirect exposure to impacted soil (ingestion, dermal absorption, inhalation of vapors and dust in outdoor air);
- Emission of subsurface vapors to building interiors;
- Protection of groundwater quality (leaching of chemicals from soil);
- Protection of terrestrial (nonhuman) biota;
- Protection against nuisance concerns (odors, etc.) and general resource degradation;

Indoor Air:

- Protection of human health;

Shallow Soil Gas:

- Emission of subsurface vapors to building indoor air.

Similar ESLs are also provided for the environmental media of groundwater and surface water. In the ESL document, soil screening levels for individual environmental concerns are compared and the lowest of these levels (i.e., the concentration of the chemical at which all other environmental concerns would likewise be addressed) is presented in the ESL summary lookup tables.

By comparison, the CHHSLs reflect a subset of the screening levels considered in the ESL document specific to human health concerns. CHHSLs were developed for the follow concerns only:

Soil:

- Direct/indirect exposure to impacted soil (nonvolatile chemicals only - ingestion, dermal absorption, inhalation of vapors and dust in outdoor air);

Indoor Air:

- Protection of human health;

Shallow Soil Gas:

- Emission of subsurface vapors to building indoor air.

For comparative purposes, the most current ESLs may be found at <http://www.waterboards.ca.gov/sanfranciscobay/esl.htm>. The soil direct exposure CHHSLs and ESLs for nonvolatile chemicals and soil gas CHHSLs and ESLs for volatile chemicals are essentially identical. Soil and indoor air ESLs for human health concerns were developed by incorporating Cal/EPA toxicity factors into the USEPA PRG models for direct exposure to contaminated soil and USEPA models for the intrusion of soil gas into buildings. Since this mimics the approach used to develop the CHHSLs, the resulting screening levels are very similar.

The primary difference is the assumption in the ESL soil and indoor air screening levels for human health that up to five chemicals with similar noncancer health effects may be present at a given site. This allows potential cumulative health risks to be conservatively taken into account at most sites without requiring that the screening levels be adjusted on a site-by-site basis (see Section 2.8). This was done by simply dividing the initial screening level based on a hazard quotient of 1.0 by a factor of five (adjusting the target Hazard Quotient to 0.2). Future editions of the ESL document will directly incorporate the Cal/EPA CHHSLs for soil and indoor air as part of that document, again adjusted to address cumulative risk concerns at a Tier 1 level.

Hazardous Waste Regulations

California Total Threshold Limit Concentrations (TTLC) criteria for solids and Soluble Threshold Limit Concentration (STLC) are used to determine whether a waste is a hazardous waste (Title 22, California Code of Regulations, section 66261.24(a)(2)(A) and (B)). If a waste is determined to be a hazardous waste, specific regulations and statutes regarding the management, storage, transportation and disposal must be met.

In most cases, TTLC values exceed the most conservative environmental screening levels presented in this document. In the case of Endrin and DDT/DDE/DDD, however, the TTLC is somewhat lower than the screening levels for human health concerns. The TTLC for combined DDT/DDE/DDD is 1.0 mg/kg while the residential, direct-exposure soil screening for each compound ranges from 1.6 mg/kg to 2.3 mg/kg, for a sum of 5.5 mg/kg (see Table 1).

In practice, the extent of soil contaminated above 1.0 mg/kg versus 5.5 mg/kg total DDT/DDE/DDD may not be significant in the field following cleanup to the risk-based CHHSLs. However, it may be prudent to use TTLCs as final cleanup values for residential sites where the TTLC is less than cleanup values that were based on actual risk to human health and the environment. This may help to avoid potential future problems with soil management and disposal.

TSCA Cleanup Levels for PCBs

The treatment, storage and disposal of polychlorinated biphenyls (PCBs) are regulated under the federal Toxics Substance Control Act (TSCA), as described in 40 CFR Part 761 (revised 7/1/99), which is administered by the USEPA Toxics Section. If PCBs are found at a site, the regulation should be consulted to determine its applicability and to ensure that the appropriate notifications are provided to and approvals are obtained from USEPA (refer also to *Guidance on remedial Actions for Superfund Sites with PCB Contamination*, USEPA 1990). To obtain more information regarding regulations and guidance, the USEPA's PCB web page can be accessed at: <http://www.epa.gov/opptintr/pcb/>

Within each USEPA Region, the Regional Administrator has designated Regional PCB Coordinators to oversee the development of PCB efforts. The staff of the Region IX PCB Program is available to members of the regulated community and others who have questions concerning the manufacture, processing, distribution in commerce, use, cleanup, storage and disposal of PCBs and PCB articles. The Region IX PCB web page can be accessed at: <http://www.epa.gov/region09/toxic/pcb/index.html>

USEPA Region IX staff can be contacted at:

U.S. EPA Region 9
Mail Code CMD-4-2
75 Hawthorne Street
San Francisco, CA 94105

Max Weintraub	415-947-4163	weintraub.max@epa.gov
Christopher Rollins	415-947-4166	rollins.christopher@epa.gov

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The Pennsylvania Integrated Pest Management Program /
Philadelphia School & Community IPM Partnership

Asthma, Pests, and Pesticides

Asthma

Asthma is a long-term condition causing inflammation of the lung's airways. Symptoms of asthma include wheezing, coughing, feeling of tightness in the chest, difficulty breathing, and itching neck, throat and ears. While the causes of asthma are not fully understood, a combination of genetic susceptibility and environmental factors are involved. Although we cannot control our genetic make-up, we *can* help prevent asthma attacks by paying attention to the environmental conditions that irritate lungs and set off an attack.

Why be Concerned?

Approximately 20 million Americans have asthma and it is the most common chronic childhood disease – afflicting over 6 million children nationally and over 100,000 children in Southeastern Pennsylvania. In Philadelphia, the asthma rates among school-aged children are more than twice the rates for Pennsylvania and the nation as a whole. Asthma is the leading cause of school absences. Parents, in turn, must miss work to stay home with their sick children. In Philadelphia, 16,000 children visit emergency rooms each year. African-American and Hispanic/Latino children have asthma rates 2-3 times that of white children. A bad asthma attack can be fatal.

Asthma Triggers

Asthma attacks are usually started by exposure to certain substances called *triggers*. Triggers are either allergens or lung irritants. Airborne allergens are substances such as pollen, animal dander, cigarette smoke, aerosols, or mold that cause an allergic reaction. Chemical lung irritants include pesticides, perfumes, air fresheners and household and industrial cleaning products. Repeated exposure to allergens or irritants, such as cockroach and/or mouse allergens, can “sensitize” people - making them more likely to experience allergic reactions. Awareness of asthma triggers can help you take steps to reduce them, and thereby preventing asthma symptoms or attacks.

Pests Trigger Asthma

Pests are unwanted creatures that invade our homes. Once they have gotten inside, some of these pests, notably, mice, rats and cockroaches, can contribute to an asthma attack. In fact, research is going on to determine whether or not these pests can actually cause asthma to develop.

The **single major factor** contributing to asthma in urban-dwelling children in the Northeastern US has been found to be **exposure to cockroach allergens**. Cockroaches shed skins, leave behind feces, and when cockroaches are dead, their bodies turn into dust – all things that can trigger an asthma attack. To make matters worse, when pesticide sprays or “bug bombs” are used to combat roaches, they can also irritate lungs and potentially cause an attack. Rodents, such as

rats and mice, can trigger asthma as well. These rodents shed dead skin cells and produce waste products that can trigger attacks if someone with asthma breathes them in.

Pesticides and Human Health

Pesticides are substances designed to kill, control or repel pests, including insects, rodents, weeds, and molds. The US Environmental Protection Agency lists pesticides as one of four environmental pollutants that may influence the induction and exacerbation of asthma symptoms. Pesticides do this by irritating the lungs as they are breathed in. In laboratory tests with animals, commonly used pesticides have been linked to cancer, birth defects, reproductive disorders, and neurological, kidney and liver damage. To be safe, it is important to limit children's exposures to toxins of all kinds, including pesticides.

What Can You Do to Safely Control Pests?

Integrated Pest Management (IPM) is an approach to pest control that focuses on *eliminating the root causes of pest problems* and *using the safest, most effective methods available* to get rid of active infestations. IPM prevents pest by using a combination of physical and chemical methods. Because **IPM focuses on prevention**, it is more effective than reactive, spray-based approach to pest control and reduces the need to use pesticides.

Pest Prevention

These methods are at the heart of an IPM program:

- **Keeping watch:** Certain areas of the house are more susceptible to pests such as the kitchen, basement or bathroom. Small sticky traps or glue boards can be used in these areas as an “early warning” system. The goal is to quickly find any pests and how they are getting in, *before* they become a big problem.
- **Prevent pest access:** Caulk the cracks and crevices pests may use to move or hide in. For larger holes, use stainless steel or copper mesh to plug the holes, and then use a silicone caulk to seal it. Pay special attention to areas where pipes and wires come in through the wall. Make sure to use window screens and that they are in good repair.
- **Prevent harborage:** Reduce clutter – get rid of the things you do not need such as old clothes, newspapers, magazines and cardboard boxes where pests can easily hide.
- **Prevent food sources:** Store food in plastic or glass containers with tight-fitting lids to prevent pests from eating it. Keep dirty dishes in soapy water so that pests cannot eat the scraps. Clean thoroughly, with particular attention to the floor under the refrigerator, stove/oven and other places where food crumbs and spills may be collecting. Remove and store pet foods in pest-proof containers at night. Use a trash can with a tight-fitting lid and empty regularly.
- **Prevent water sources:** Fix any water leaks, wipe up spills and remove pet's water dishes at night.

Physical Controls

Sticky traps for insects and snap-traps for rodents are safe and good tools for catching the occasional invader. Be sure they are placed correctly for maximum benefit. Roaches and rodents run along the wall in concealed spaces, so make sure the traps are flush with the wall. Snap traps should snap toward the wall.

Chemical Controls: Less-Risky Pesticides

After using all of the above methods, you may need to consider using a pesticide. Try to select products that limit human exposures to the product. Aerosols, liquid sprays, mothballs or “bug bombs” all pose *more* risk of chemical exposure and cause lung irritation. Instead, look for pesticides in tamper-resistant bait stations or a “gel” formula. Boric acid dust can be used, if *carefully* puffed gently and in small amounts behind wall voids and socket covers to eliminate insects hiding behind these areas. Avoid spreading any kind of pesticidal dust in and around the rooms of the home.

Safety First!

ALWAYS read the entire label on any pesticide product before you buy and use them in your home. Ask yourself: does this product control the pest I have? Can I use this product without exposing myself and/or my family to the pesticide? If pesticides are stored in the home, store in a **locked** cabinet at least 4 feet up and out of the reach of children.

NEVER buy pesticides in unmarked containers or that do not have an EPA registration number on the container. These products are **illegal** and potentially very dangerous to your family.

Eliminating pests *safely* will help reduce the number one asthma trigger in the home!

For more information and assistance, contact:

www.paipm.org

The Pennsylvania Integrated Pest Management Program

Phone: (814) 863-8884

Philadelphia School & Community IPM Partnership

Phone: 215-471-2200 Ext. 109

Email: pscip@psu.edu



This fact sheet adapted from the original by Safer Pest Control Project

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Curr Opin Allergy Clin Immunol. 2011 Apr;11(2):90-6.

Pesticides and asthma.

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Abstract

PURPOSE OF REVIEW: Several clinical and epidemiological studies have reported an association between exposure to pesticides, bronchial hyper-reactivity and asthma symptoms. This article reviews the mechanistic evidence lending support to the concept that either acute or chronic low-level inhalation of pesticides may trigger asthma attacks, exacerbate asthma or increase the risk of developing asthma.

RECENT FINDINGS: Pesticide aerosols or gases, like other respiratory irritants, can lead to asthma through interaction with functional irritant receptors in the airway and promoting neurogenic inflammation. Cross-talk between airway nerves and inflammatory cells helps to maintain chronic inflammation that eventually damages the bronchial epithelium. Certain organophosphorus insecticides cause airway hyper-reactivity via a common mechanism of disrupting negative feedback control of cholinergic regulation in the lungs. These pesticides may interact synergistically with allergen sensitization rendering individuals more susceptible for developing asthma.

SUMMARY: Many pesticides are sensitizers or irritants capable of directly damaging the bronchial mucosa, thus making the airway very sensitive to allergens or other stimuli. However, most pesticides are weakly immunogenic so that their potential to sensitize airways in exposed populations is limited. Pesticides may increase the risk of developing asthma, exacerbate a previous asthmatic condition or even trigger asthma attacks by increasing bronchial hyper-responsiveness.

PMID: 21368619 [PubMed - indexed for MEDLINE]

Publication Types, MeSH Terms, Substances

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Strategic Plan for Asthma in California

2008–2012



February 2008

- d. Asthma management strategies that lead to a reduction in asthma morbidity and mortality.
 - e. Identification, translation, and implementation of evidence-based best practices in health care service delivery, at the levels of the individual practitioner, group practice and insurance plan.
- 2.4.2. CDPH will convene an asthma research symposium every two years to summarize recent important research findings, to assess their implications and to address current interests, and research questions as suggested by stakeholders. The symposium will provide an opportunity to track etiologic research and foster communication among researchers to increase the chances of crosscutting research (Figure 5. Possible Research Areas for Future Research Symposia).

Sample Performance Indicator

An asthma research symposium is convened every two years starting in 2008.

2.5. Policy regarding asthma in California will be informed by analysis and interpretation of data.

- 2.5.1. The determination of priority data to be collected will be guided by both availability and the need for developing and evaluating specific policies and interventions.
- 2.5.2. Data analysis, reports, and key findings will be disseminated to policy makers, health care providers, employers, community based organizations and the public.
- 2.5.3. Data will be identified, analyzed, and interpreted to support policy development for goals 1–5 of this *Plan*.
- 2.5.4. When data is limited or unavailable, expert opinion and the best available evidence will be used to assess policy proposals and to guide policy development.

Sample Performance Indicator

Data is considered in policy decisions and policy is considered in setting data priorities.

Figure 4. Potential Indoor and Outdoor Research Areas

- Research related to air pollution (e.g., traffic and industrial facilities); link data from the Air Resources Board and the Air Quality Management Districts.
- Research on the pathways, drift patterns, and exposure levels of second hand smoke and the health effects associated with this trigger in multi-unit housing settings.
- Research on the connections between global warming, air pollution, and asthma.
- Research on specific asthma triggers, sensitizers, and irritants such as cleaning chemicals, pesticides, pollens, landscaping practices, and fragrances.

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MORENO VALLEY: Officials seek comments on ProLogis project

BY LORA HINES
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Public comments are being accepted on a draft environmental impact

A Text Size  

report for a proposed 2.2 million square-foot warehouse project in Moreno Valley that officials began discussing about five years ago.

City planning officials recently released the report for the proposed ProLogis Eucalyptus Industrial Park Project, which would consist of six warehouses south of Highway 60 and east of the Moreno Valley Auto Mall. Residents, state and local agencies and community and environmental groups have until Sept. 4 to submit comments on the report.

ProLogis, a San Francisco-based international warehouse developer, bought more than 125 acres in the 28000 block of Eucalyptus Avenue more than five years ago. Almost all of it will be used for the project, which will require amendments to the city's general plan and zoning requirements.

When it was initially proposed, ProLogis officials estimated the project could cost as much as \$150 million to develop and would create between 1,000 and 1,500 jobs. No one from the corporation could be reached Thursday, July 26, to offer a cost or job update or comment on the project.

According to the draft environmental impact report, the poor economy in 2008 stalled the project. ProLogis recently decided to pursue the process, the report states.

City planning official John Terell said there is nothing unusual about the project or its potential impacts that have delayed it.

In March 2008, city planning officials received 25 responses from state and local agencies, residents and environmental groups about concerns with the proposed project, including increased traffic, pollution and its proximity to schools.

The report states the project could affect areas such as air and water quality, animal habitat, Native American prehistoric sites, drainage and traffic.

Resident Marti Orth was among those who submitted comment about the proposed project in 2008. She said she is as opposed to it now as she was then, but she believes her opinion will have little effect on the City Council, which will decide whether to approve the project later this year.

"I think it's a forgone conclusion," said Orth, a resident of more than 40 years. "First, decisions are made. Then they ask for opinions."

Moreno Valley Headlines

[MORENO VALLEY: Prison time, payback for Sutton](#)

[MORENO VALLEY: Home invasion slaying has four defendants](#)

[MORENO VALLEY: Proposed Harbor Freight project moves forward](#)

[MORENO VALLEY: City spending nearly \\$2 million for surveillance cameras](#)

Today's Poll [What's this?](#)

Beaumont is reducing the number of cats residents are allowed to have at home without getting a cattery license, from nine to four. How many cats do you have at home?

- Zero
- One
- Two
- 3-4
- 5-9
- 10 or more
- No comment

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On Wednesday, July 25, city manager Henry Garcia told hundreds of Inland area officials and business owners that warehouse development and health care will be Moreno Valley's job growth focus areas because they have the most potential to employ the city's primarily blue-collar workforce.

Orth said residents have little reason to believe that the proposed project will bring as many jobs as officials claimed because the Skechers warehouse didn't.

"I don't know why (ProLogis) would be any better," she said.


Skechers had employed about 1,000 people in five smaller warehouses in Ontario before consolidating and moving to Moreno Valley. Moreno Valley officials and project supporters promised that Skechers warehouse would bring more than 1,000 jobs. It employs about 600 people.

City officials have said they expect the number of employees to increase as the economy improves.

Comments about the ProLogis project are to be sent to associate city planner Jeff Bradshaw, Moreno Valley Planning Division, 14177 Frederick St., Moreno Valley 92553 or send e-mail to jeffreyb@moval.org.

Comments

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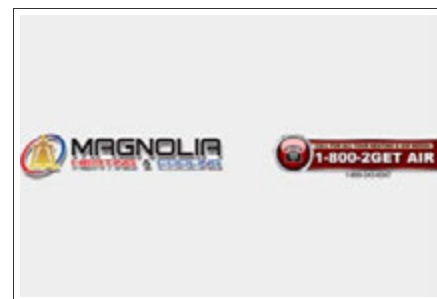
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EPA Brownfields Grants, CERCLA Liability, and All Appropriate Inquiries



To be eligible for an EPA brownfields grant to address contamination at brownfields properties, eligible entities must demonstrate that they are not liable under CERCLA for the contamination at the site. Accordingly, eligible entities who may be considered “potentially responsible parties” under CERCLA must demonstrate they meet one of the liability protections or defenses set forth in CERCLA by establishing that they are (1) an innocent landowner, (2) a contiguous property owner, (3) a bona fide prospective purchaser, or (4) a government entity that acquired the property involuntarily through bankruptcy, tax delinquency, or abandonment, or by exercising its power of eminent domain.

To claim protection from liability as an innocent landowner, contiguous property owner, or bona fide prospective purchaser, property owners, including state and local governments, must conduct all appropriate inquiries prior to acquiring the property.

What is CERCLA?

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), also known as “Superfund,” was established to address abandoned hazardous waste sites. Among other things, CERCLA establishes a liability scheme for determining who can be held accountable for releases of hazardous substances. CERCLA also establishes the authority for EPA’s Brownfields Program and sets forth which entities and properties are eligible for brownfields grants.

Can state and local governments be found liable for contamination at brownfields?

Yes. Under CERCLA, persons (including state and local governments) can be liable by virtue of property ownership, or by virtue of their actions with respect to a particular site. For sites from which there is a release or threatened release of hazardous substances, the categories of “potentially responsible parties” include any person or party who:

- Currently owns or operates the property, or owned or operated the property at the time of disposal of hazardous substances;
- Arranged for hazardous substances to be disposed of or transported to the site for disposal; or
- Transported hazardous substances to the site.

Applicants should note that CERCLA employs a “strict liability” scheme—that means it is without regard to fault. Accordingly, a person who owns a property from which there is a release of hazardous substances can be held liable just by virtue of ownership.

If I am applying for a brownfields grant, do I have to worry about CERCLA liability?

Yes. Brownfields grantees are prohibited from using grant money to pay response costs at a brownfield site for which the grantee is potentially liable under CERCLA.

Therefore, all brownfields grantees who may be potentially liable at the site for which they are seeking funds must demonstrate that they are not liable for the contamination that will be addressed by the grant, subgrant, or loan. Applicants who own or operate the property for which they are seeking funding, or who may have owned or operated the property at the time of disposal of hazardous substances, must demonstrate they fall within one of the liability protections.

Cleanup grant applicants in particular should take note of this prohibition. Because cleanup grantees are required to own a site to receive brownfields funding—and because owners of contaminated property are liable under CERCLA—cleanup grant applicants **must** demonstrate they meet one of the liability protections described above. Some grant applicants who do not own the property for which they are seeking funding, or who are not seeking site-specific grant funds, may not fall within one of the categories of “potentially responsible parties,” and thus may not have to demonstrate they meet a liability protection.

Please contact your Regional Brownfields representative if you are not sure whether you will need to demonstrate a liability protection to be eligible for a grant.

Who may be protected from liability under CERCLA?

The CERCLA statute provides protection from liability for certain parties, provided they comply with specific criteria outlined in the statute. Parties provided protection from CERCLA liability include:

- Innocent landowners (CERCLA §101(35)(A))
- Contiguous property owners (CERCLA §107(q))
- Bona fide prospective purchasers (CERCLA §§101(40) and 107(r))
- Units of state or local government that acquire ownership or control involuntarily through bankruptcy, tax delinquency, or abandonment (CERCLA §101(20)(D))

Government entities that acquire property by eminent domain (CERCLA §101(35)(A)(ii))

- Not be affiliated with any liable party through any familial relationship or any contractual, corporate or financial relationship (other than a relationship created by the instrument by which title to the property is conveyed or financed).

NOTE: Property acquisition includes properties acquired by gifts and zero price transactions.

How can a state or local government demonstrate that it is not liable for contamination at a brownfield?

All state and local governments that may be potentially liable at a site for which they are applying for funding (including site-specific assessment grants, cleanup grants, or subgrants or loans from revolving loan funds), **must** demonstrate that they qualify for one of the CERCLA liability protections. All non-profit entities applying for brownfields cleanup grants also must make this demonstration.



Eastern Manufacturer Brewer, Maine, prior to cleanup (above) and after (right)



What are the conditions for attaining liability protection under CERCLA?

To be eligible for liability protection under CERCLA as an innocent landowner, contiguous property owner or bona fide prospective purchaser, prospective property owners must:

- Conduct All Appropriate Inquiries in compliance with 40 CFR Part 312, prior to acquiring the property;
- Comply with all Continuing Obligations after acquiring the property. (CERCLA §§101(40)(C – G) and §§107(q)(A) (iii – viii)); and

To demonstrate that it qualifies as an innocent landowner, contiguous landowner, or bona fide prospective purchaser, the applicant must:

- Conduct All Appropriate Inquiries prior to acquiring the property, **and**
- Comply with all Continuing Obligations after acquiring the property.

State and local governments that acquired a property involuntarily through bankruptcy, tax delinquency, or abandonment, or by exercising their power of eminent domain, do not have

to conduct all appropriate inquiries prior to acquiring the property, but must exercise “due care” after acquiring the property (CERCLA §101(35)(A) and §§107(b)(3)(a – b)). [Note: One threshold criteria for applicants seeking cleanup grant funding is that a Phase I must be conducted prior to application submission. Accordingly, although state and local governments that acquired property involuntarily are not required to conduct all appropriate inquiries for purposes of establishing a liability protection, they may have to conduct all appropriate inquiries anyway to be eligible for a cleanup grant.]

What is “All Appropriate Inquiries”?

“All Appropriate Inquiries,” or AAI is the process of conducting due diligence or a Phase I Environmental Site Assessment to determine prior uses and ownership of a property and assess conditions at the property that may be indicative of releases or threatened releases of hazardous substances at, on, in, or to the property.

The standards and practices established as comprising “All Appropriate Inquiries” are set forth in regulations promulgated at 40 CFR Part 312.

EPA recognizes two ASTM International Standards as compliant with the AAI requirements: ASTM E1527-05 “Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process” and E2247-08 “Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process for Forestland or Rural Property.”

When must All Appropriate Inquiries be conducted?

- All Appropriate Inquiries must be conducted or updated within one year **prior to acquiring ownership of a property.**
- Certain aspects or provisions of All Appropriate Inquiries (i.e., interviews of current and past owners, the review

of government records, the on-site visual inspection, and searches for environmental cleanup liens) must be conducted or updated **within 180 days prior to acquiring ownership of a property.**

Who can perform All Appropriate Inquiries?

The individual who supervises or oversees the conduct of the AAI investigation and signs the final report required in the AAI regulation must meet the definition of an “Environmental Professional” provided in the AAI Final Rule (40 CFR §312.10).

A person that does not qualify as an “Environmental Professional” as defined in 40 CFR §312.10, may assist in the conduct of the investigation if he or she is under the responsible charge of a person meeting the definition.

What are “Continuing Obligations?”

After acquiring a property, to maintain the liability protections, landowners must comply with “continuing obligations” during their property ownership. The continuing obligations include:

1. Provide all legally required notices with respect to the discovery or release of a hazardous substance;
2. Exercise appropriate care with respect to the hazardous substances by taking reasonable steps to stop or prevent continuing or threatened future releases and exposures, and prevent or limit human and environmental exposure to previous releases;
3. Provide full cooperation, assistance, and access to persons authorized to conduct response actions or natural resource restoration;
4. Comply with land use restrictions and not impede the effectiveness of institutional controls; and
5. Comply with information requests and subpoenas.

Where can I get additional information?

For general information, see the EPA Brownfields website at: www.epa.gov/brownfields

For more information on the AAI requirements, see: <http://www.epa.gov/brownfields/regneg.htm>

For more information on continuing obligations, see:

<http://www.epa.gov/compliance/resources/policies/cleanup/superfund/common-elem-guide.pdf>

Contact Patricia Overmeyer at: Overmeyer.patricia@epa.gov

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**COUNTY OF RIVERSIDE COMMUNITY HEALTH AGENCY
DEPARTMENT OF ENVIRONMENTAL HEALTH**

**Underground Storage Tank Closure
Application and Permit**

A permit will be issued for closure or abandonment in place of UST when a work plan is submitted. In addition to this permit, all applicable permits required by the local fire department, building department, and the Air Quality Management District must be obtained and should be available for review at the closure site. **A WORK PLAN MUST BE SUBMITTED TO OBTAIN A PERMIT.** All tank closures must, at a minimum, comply with the California Underground Storage Tank Regulations and the appropriate section of the California Health and Safety Code.

FACILITY NUMBER

PLAN CHECK NUMBER

NAME OF FACILITY	ADDRESS OF FACILITY	CITY	ZIP	PHONE NUMBER
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NAME OF OWNER/OPERATOR	ADDRESS OWNER/OPERATOR	CITY	ZIP	PHONE NUMBER
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NAME OF CONTRACTOR/APPLICANT	ADDRESS CONTRACTOR/APPLICANT	CITY	ZIP	PHONE NUMBER
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CONTRACTOR'S LICENSE TYPE AND NUMBER (Including Hazardous Materials Certification)

ANSWER THE FOLLOWING QUESTIONS DESCRIBING THE TANK(S) TO BE CLOSED OR ABANDONED. IF YOU HAVE MORE THAN FOUR (4) TANKS, PROVIDE INFORMATION ON AN ADDITIONAL FORM.

TANK INFORMATION:	TANK 1	TANK 2	TANK 3	TANK 4
SINGLE/DOUBLE WALLED TANK/AGE				
SIZE OF TANK/TANK MATERIAL				
SUBSTANCE STORED/ SUSPECTED OF LEAKING				

CIRCLE THE METHOD OF CLOSURE: **REMOVAL** **ABANDONMENT IN PLACE** **TEMPORARY CLOSURE**

UNDERGROUND TANK CLOSURE INSPECTIONS MUST BE SCHEDULED AT LEAST FIVE (5) BUSINESS DAYS IN ADVANCE.

RIVERSIDE (951) 358-5055

INDIO (760) 863-8976

HEMET (951) 766-6524

CONTRACTOR/APPLICANT SIGNATURE: _____ DATE: _____

PERMIT APPROVED BY (**Ensure Workplan is Attached**) : _____ DATE: _____

Please Make Your Check Payable To The County Of Riverside

AMOUNT ATTACHED \$ _____ TRANSACTION/OCR NO. _____ CHECK NO. _____

WORK PLAN SUBMITTED _____

****THIS PERMIT FOR CLOSURE IS VALID FOR 90 DAYS FROM THE DATE OF ISSUE.**

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UNDERGROUND STORAGE TANK GUIDELINES TO CLOSURE BY REMOVAL

NOTE: This Division strongly urges applicants to contact the local Fire Department Jurisdiction prior to the removal of any Underground Storage Tank (UST) as local fire restrictions may be more stringent.

A. General Information

1. A completed permit application must be submitted to the Division. Permit fees for UST closure are required.
2. The State Contractors License Board requires contractors who install or remove USTs and piping to have the **Hazardous Substance Certification** and one of the following licenses: General Engineering "A"; Limited Specialty C-61/D-40 for UST's and pipelines; Pipeline Contractor C-34 for pipelines only; or General Building "B" (limited).
3. It is the responsibility of the UST owner or duly authorized representative, to notify other governmental agencies that may have applicable permit requirements. This includes, but is not limited to, the following: Local Fire Agency; Local Building Department; and Air Quality Management District (AQMD).
4. Between cessation of use/storage and the actual closure, monitoring shall be continued as required by the operating permit.
5. The permitted (i.e. UST owner, contractor) shall be responsible for site safety.

B. Closure Requirements

1. A completed UST closure application and four (4) copies of a UST removal work plan must be submitted and applicable closure fees paid. A closure permit, valid for ninety (90) days, will be issued upon **RECEIPT** of the work plan. If closure is not completed within ninety (90) day, the closure permit shall expire. Additional fees will be assessed for a new closure permit.
2. A UST closure inspection must be scheduled with the Division at least **FIVE (5) WORKING DAYS IN ADVANCE** of the proposed closure.
3. All liquids, solids, and sludge shall be removed and handled according to the provisions of Chapter 6.5, Division 20 of the Health and Safety Code and Title 22, Chapter 32, Section 67383.1 of the California Code of Regulations. The UST shall be properly cleaned, which usually requires the pressure washing/rinsing of the UST and removal of the contents via a vacuum type pump system that is designed to safely handle flammable liquids. The Division can provide a list of licensed hazardous waste haulers/tank rinsing companies.
4. Flammable vapors must be purged from the UST and the UST must be inerted to prevent an explosion or fire. The Division must verify LEL is < 10% prior to the inerting of the UST with 22.2 lbs. of dry ice per 1,000 gallons of UST capacity. The UST must then promptly be removed and transported to its final destination accompanied by the UST Closure Certification Form. The local fire and AQMD regulations may be more restrictive.

Corona	Hemet	Indio	Riverside
2275 S Main St Suite 204	800 S. Sanderson	47-950 Arabia St Suite A	4065 County Cir
(951) 273-9143	(951) 766-6524	(760) 863-8976	(951) 358-5055
Fax (951) 520-8319	Fax (951) 791-1778	Fax (760) 863-8303	Fax (951) 358-5017

Department Web Site – www.rivcoeh.org

CLOSURE BY REMOVAL GUIDELINES (page 2 of 3)

5. All associated piping must be removed. Product or residue spillage must be prevented.
6. Proper UST disposal documentation, in accordance with the requirements of Chapter 6.5, Division 20 of the Health and Safety Code, shall be provided to the Division.
7. Applicant must demonstrate to the satisfaction of the Division whether or not an unauthorized release has occurred. Demonstration will be based upon results of soil/water samples obtained during UST closure activities.
8. The sample analysis must be performed by a California state certified laboratory. The sample analysis, along with the Division Sample Receipt form and a chain of custody must be received by the Division within thirty (30) days.
9. Soil samples shall be taken below the UST/piping system at the time of UST removal. At a minimum, samples are required 2' (feet) and 6' (feet) below the fill end of the tank, with a separate 2' sample taken at the opposite end of the tank. A separate sample for each 20 lineal feet of piping and at each dispenser shall be taken. (It is strongly recommended that 6' samples be taken at each piping and dispenser sampling location.) Division personnel may require additional sampling.
10. The soil samples shall be analyzed for all constituents of the previously stored hazardous substances and their breakdown constituents or transformation products according to the Table titled "Laboratory Analysis for Samples Collected at UST Sites".
11. The Division will evaluate all sample results and determine if any further corrective action is required.
12. The detection limit, in accordance with the table titled "Laboratory Analysis for Samples Collected at UST Sites", shall be reported to the Division in accordance with Article 5 of the California Underground Storage Tank Regulations, Title 23, Division 3, Chapter 16, California Code of Regulations.

C. Work Plan Guidelines

1. A work plan must be submitted (with permit application) to the Division prior to UST removal.
2. The work plan should include the following information:
 - A. Site Description: the physical address along with a site plot plan.
 - B. On-Site Security: indicate who will be on site (what agencies, contractors, etc.), and how site security will be maintained.
 - C. Contacts: Indicate the responsible party's name and phone number, contractor's name and phone number.
 - D. Treatment of USTs prior to removal—indicate the following:
 - 1) How the USTs will be cleaned. Indicate name and credential of certified UST cleaner, as well as final destination of rinsate.
 - 2) How you will inert the UST. Indicate the quantity of dry ice to be used, and that it will not be placed into the UST until the Division representative is on site.
 - 3) If the USTs are to be saw cut. If so, this needs to be detailed.
 - 4) Destination of UST—indicate where the USTs are going and how they will be transported. All openings in the UST shall be plugged, except for a 1/8" inch vent hole.
 - 5) Air/vapor monitoring—type of monitoring equipment to be used and date of last calibration.

Corona 2275 S Main St Suite 204 (951) 273-9143 Fax (951) 520-8319	Hemet 800 S. Sanderson (951) 766-6524 Fax (951) 791-1778	Indio 47-950 Arabia St Suite A (760) 863-8976 Fax (760) 863-8303	Riverside 4065 County Cir (951) 358-5055 Fax (951) 358-5017
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CLOSURE BY REMOVAL GUIDELINES (page 3 of 3)

- E. Depth to groundwater: region specific. If tank is in ground water, indicate safety precautions that will be taken.
- F. Equipment to be used on site:
 - 1) Heavy equipment: indicate the type of equipment to be used to physically remove the USTs from the excavation. Ensure the equipment is rated to handle the weight of the UST.
 - 2) Sampling: indicate the type of equipment to be used to gather the soil/water samples. Ensure equipment is able to reach at least 6' below the bottom of the UST, piping, and dispensers. Indicate the type of container that will be used to hold the samples. Demonstrate how contamination of samples is to be avoided. Provide the name of the California certified lab that will be analyzing the samples. Indicate when the samples will be analyzed and how you will hold the samples in the interim. Ensure a chain of custody accompanies the samples to the lab.
- G. Excavation status: indicate the disposition of the excavation upon removal of the tank (i.e. open and fenced, backfilled with new and excavated soil, etc.)
- H. Safety—indicate the following:
 - 1) The type of personal protective equipment to be required for all persons on site.
 - 2) The safety items that will be available on site (fire extinguisher, first aid, etc.).
 - 3) The nearest emergency medical facility to be used in the event of an accident or emergency.
 - 4) That all tools to be used to clean the exterior of the tank will be non-sparking. Give examples and be specific.
 - 5) Whether shoring is necessary/required.
 - 6) The person who will be responsible for safety (Safety Officer).
 - 7) The presence of any overhead hazards (electrical lines, etc.). Indicate how the hazard will be addressed/mitigated.
 - 8) The presence of any underground hazards (gas pipes, sewer lines, water mains, etc.) and how the hazard will be addressed/mitigated.

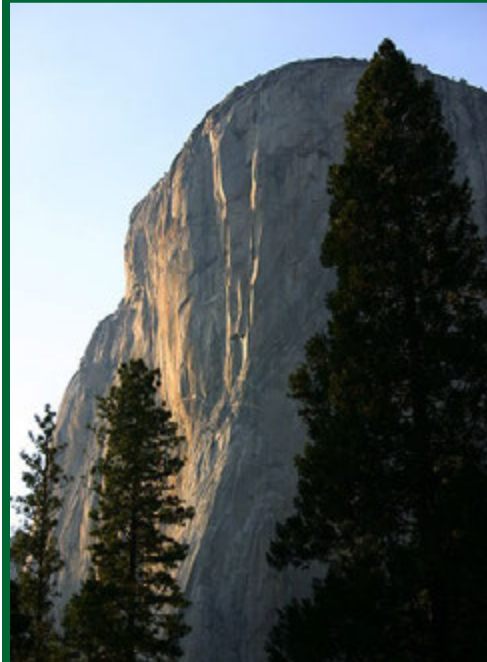
NOTE: THIS DOCUMENT IS FOR GUIDANCE ONLY AND IS NOT INTENDED TO SUPERSEDE ANY SAFETY OR OTHER LEGAL REQUIREMENTS. OWNER / CONTRACTOR RETAINS ALL RESPONSIBILITY ASSOCIATED WITH ACTIVITIES SURROUNDING THE SAFE AND LEGAL REMOVAL OF THE TANK(S).

Revised 8/06

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Quantifying Greenhouse Gas Mitigation Measures

A Resource for Local Government
to Assess Emission Reductions from
Greenhouse Gas Mitigation Measures

August, 2010



Quantifying Greenhouse Gas Mitigation Measures

**A Resource for Local Government to Assess
Emission Reductions from Greenhouse Gas
Mitigation Measures**

August, 2010

**California Air Pollution Control Officers
Association**

with

**Northeast States for
Coordinated Air Use Management**

**National Association of
Clean Air Agencies**

Environ

Fehr & Peers

the land types. A third way to increase sequestration is by planting new trees on either developed or undeveloped land.

The increase in carbon sequestration capacity is determined by calculating the total sequestration capacity of converted land, new vegetated land and trees; and then subtracting the combined capacity of vegetated land or trees that are removed. Carbon sequestration capacities for different land types (e.g. cropland, forest land) and for different tree species classes are available from IPCC guidelines, and summarized in Table E-2, in Appendix E.

Construction Equipment

Construction equipment typically uses diesel fuel and releases emissions based on the amount of fuel combusted and emission factor of the equipment. Emissions can be reduced by using equipment that emits fewer pollutants for the same amount of work.



This is typically equipment powered through grid electricity or hybrid technology. The exclusive use of grid electricity eliminates the diesel emissions at the site but would increase indirect electricity emissions. However, grid-based emissions are typically small compared to the emissions from the diesel-fueled equipment (depending on the source of grid power). Hybrid-powered equipment would decrease but not completely eliminate fuel use. The electricity for hybrid

equipment is self-generated unless the equipment has plug-in capability, so it would not increase grid-based electrical generation and the associated emissions there.

The emissions reductions in this category are determined by finding the difference between the estimated mitigation emissions and the baseline emissions for construction equipment. Emissions for the mitigated scenario may consist of direct emissions from combustion fuel use, and/or indirect emissions from grid electricity. These would be calculated using resources described previously, such as the OFFROAD database and literature-based methodologies and values.

Transportation

Transportation emissions can be reduced by improving the emissions profile of the vehicle fleet that travels the roads, or by reducing the vehicle miles traveled by the fleet. The majority of the measures quantified for this report focus on the reduction of VMT. This can be accomplished by optimizing the location and types of land uses in the project and its immediate vicinity, and by site enhancements to roads, and to bike and pedestrian networks to encourage the use of alternative modes of transportation. Mode shifts are also encouraged by implementing parking policies, transit system improvements, and trip reduction coordination or incentive programs.

Construction

MP# TR-6.2, EE-1

C-4

Construction Equipment

8.1.4 Institute a Heavy-Duty Off-Road Vehicle Plan

Range of Effectiveness:

Not applicable on its own. This measure ensures compliances with other mitigation measures.

Measure Description:

The Project Applicant should provide a detailed plan that discusses a construction vehicle inventory tracking system to ensure compliances with construction mitigation measures. The system should include strategies such as requiring hour meters on equipment, documenting the serial number, horsepower, manufacture age, fuel, etc. of all onsite equipment and daily logging of the operating hours of the equipment.

Measure Applicability:

- This measure ensures compliances with other mitigation measures.
- Construction vehicles.

Preferred Literature:

None

Alternative Literature:

None

Literature References:

None

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Green Book

You are here: [EPA Home](#) [Green Book](#) Currently Designated Nonattainment Areas for All Criteria Pollutants

<http://www.epa.gov/oaqps001/greenbk/ancl.html>

Last updated on Friday, July 20, 2012

Currently Designated Nonattainment Areas for All Criteria Pollutants

As of July 20, 2012

Listed by State, County then Pollutant

[View Notes](#)

State, County, Pollutant, * Part County NAA, NAA Area Name - Classification Standard

ALABAMA

Jackson Co

PM-2.5 1997 * Chattanooga, AL-TN-GA - (Nonattainment)

Jefferson Co

PM-2.5 1997 Birmingham, AL - (Nonattainment)

PM-2.5 2006 Birmingham, AL - (Nonattainment)

Pike Co

Lead 2008 * Troy, AL - (Nonattainment)

Shelby Co

PM-2.5 1997 Birmingham, AL - (Nonattainment)

PM-2.5 2006 Birmingham, AL - (Nonattainment)

Walker Co

PM-2.5 1997 * Birmingham, AL - (Nonattainment)

PM-2.5 2006 * Birmingham, AL - (Nonattainment)

State, County, Pollutant, * Part County NAA, NAA Area Name - Classification Standard

ALASKA

Anchorage Municipality

PM-10 * Eagle River, AK - (Moderate)

Fairbanks North Star Borough

PM-2.5 2006 * Fairbanks, AK - (Nonattainment)

Juneau City and Borough

PM-10 * Juneau, AK - (Moderate)

State, County, Pollutant, * Part County NAA, NAA Area Name - Classification Standard

ARIZONA

Cochise Co

PM-10 * Paul Spur/Douglas (Cochise County), AZ - (Moderate)

Gila Co

PM-10 * Hayden AZ - (Moderate)

PM-10 * Miami, AZ - (Moderate)

Maricopa Co

8-Hr Ozone 1997 * Phoenix-Mesa, AZ - (Marginal)

PM-10 * Phoenix, AZ - (Serious)

<i>8-Hr Ozone</i> 2008	* Phoenix-Mesa, AZ - (Marginal)
Pima Co	
<i>PM-10</i>	* Ajo (Pima County), AZ - (Moderate)
<i>PM-10</i>	* Rillito, AZ - (Moderate)
Pinal Co	
<i>8-Hr Ozone</i> 1997	* Phoenix-Mesa, AZ - (Marginal)
<i>PM-10</i>	* Hayden AZ - (Moderate)
<i>PM-10</i>	* Phoenix, AZ - (Serious)
<i>PM-10</i>	* West Pinal, AZ - (Moderate)
<i>PM-2.5 2006</i>	* West Central Pinal, AZ - (Nonattainment)
<i>SO2</i>	* Hayden (Pinal County), AZ - (Primary)
<i>8-Hr Ozone</i> 2008	* Phoenix-Mesa, AZ - (Marginal)
Santa Cruz Co	
<i>PM-10</i>	* Nogales, AZ - (Moderate)
<i>PM-2.5 2006</i>	* Nogales, AZ - (Nonattainment)
Yuma Co	
<i>PM-10</i>	* Yuma, AZ - (Moderate)

State, County, Pollutant, * Part County NAA, NAA Area Name - Classification Standard

ARKANSAS

Crittenden Co	
<i>8-Hr Ozone</i> 2008	Memphis, TN-MS-AR - (Marginal)

State, County, Pollutant, * Part County NAA, NAA Area Name - Classification Standard

CALIFORNIA

Alameda Co	
<i>8-Hr Ozone</i> 1997	San Francisco Bay Area, CA - (Marginal)
<i>PM-2.5 2006</i>	San Francisco Bay Area, CA - (Nonattainment)
<i>8-Hr Ozone</i> 2008	San Francisco Bay Area, CA - (Marginal)
Amador Co	
<i>8-Hr Ozone</i> 1997	Amador and Calaveras Cos (Central Mtn), CA - (Moderate)
Areas of Indian Country	
<i>8-Hr Ozone</i> 2008	Morongo Band of Mission Indians - (Serious)
<i>8-Hr Ozone</i> 2008	Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation - (Moderate)
Butte Co	
<i>8-Hr Ozone</i> 1997	Chico, CA - (Marginal)
<i>PM-2.5 2006</i>	* Chico, CA - (Nonattainment)
<i>8-Hr Ozone</i> 2008	Chico (Butte County), CA - (Marginal)
Calaveras Co	
<i>8-Hr Ozone</i> 1997	Amador and Calaveras Cos (Central Mtn), CA - (Moderate)

<i>8-Hr Ozone</i> 2008	Calaveras County, CA - (Marginal)
Contra Costa Co	
<i>8-Hr Ozone</i> 1997	San Francisco Bay Area, CA - (Marginal)
<i>PM-2.5</i> 2006	San Francisco Bay Area, CA - (Nonattainment)
<i>8-Hr Ozone</i> 2008	San Francisco Bay Area, CA - (Marginal)
El Dorado Co	
<i>8-Hr Ozone</i> 1997	* Sacramento Metro, CA - (Severe 15)
<i>PM-2.5</i> 2006	* Sacramento, CA - (Nonattainment)
<i>8-Hr Ozone</i> 2008	* Sacramento Metro, CA - (Severe 15)
Fresno Co	
<i>8-Hr Ozone</i> 1997	San Joaquin Valley, CA - (Extreme)
<i>PM-2.5</i> 1997	San Joaquin Valley, CA - (Nonattainment)
<i>PM-2.5</i> 2006	San Joaquin Valley, CA - (Nonattainment)
<i>8-Hr Ozone</i> 2008	San Joaquin Valley, CA - (Extreme)
Imperial Co	
<i>8-Hr Ozone</i> 1997	Imperial Co, CA - (Moderate)
<i>PM-10</i>	* Imperial Valley, CA - (Serious)
<i>PM-2.5</i> 2006	* Imperial Co, CA - (Nonattainment)
<i>8-Hr Ozone</i> 2008	Imperial County, CA - (Marginal)
Inyo Co	
<i>PM-10</i>	* Owens Valley, CA - (Serious)
Kern Co	
<i>8-Hr Ozone</i> 1997	* Kern Co (Eastern Kern), CA - (Moderate)
<i>8-Hr Ozone</i> 1997	* San Joaquin Valley, CA - (Extreme)
<i>PM-10</i>	* East Kern Co, CA - (Serious)
<i>PM-2.5</i> 1997	* San Joaquin Valley, CA - (Nonattainment)
<i>PM-2.5</i> 2006	* San Joaquin Valley, CA - (Nonattainment)
<i>8-Hr Ozone</i> 2008	* Kern Co (Eastern Kern), CA - (Marginal)
<i>8-Hr Ozone</i> 2008	* San Joaquin Valley, CA - (Extreme)
Kings Co	
<i>8-Hr Ozone</i> 1997	San Joaquin Valley, CA - (Extreme)
<i>PM-2.5</i> 1997	San Joaquin Valley, CA - (Nonattainment)
<i>PM-2.5</i> 2006	San Joaquin Valley, CA - (Nonattainment)
<i>8-Hr Ozone</i> 2008	San Joaquin Valley, CA - (Extreme)
Los Angeles Co	
<i>8-Hr Ozone</i> 1997	* Los Angeles South Coast Air Basin, CA - (Extreme)
<i>8-Hr Ozone</i> 1997	* Los Angeles-San Bernardino Cos. (W Mojave Desert), CA - (Severe 15)

<i>Lead 2008</i>	* Los Angeles County-South Coast Air Basin, CA - (Nonattainment)
<i>PM-10</i>	* Los Angeles South Coast Air Basin, CA - (Serious)
<i>PM-2.5 1997</i>	* Los Angeles-South Coast Air Basin, CA - (Nonattainment)
<i>PM-2.5 2006</i>	* Los Angeles-South Coast Air Basin, CA - (Nonattainment)
<i>8-Hr Ozone 2008</i>	* Los Angeles-San Bernardino Counties (West Mojave Desert), CA - (Severe 15)
<i>8-Hr Ozone 2008</i>	* Los Angeles-South Coast Air Basin, CA - (Extreme)
Madera Co	
<i>8-Hr Ozone 1997</i>	San Joaquin Valley, CA - (Extreme)
<i>PM-2.5 1997</i>	San Joaquin Valley, CA - (Nonattainment)
<i>PM-2.5 2006</i>	San Joaquin Valley, CA - (Nonattainment)
<i>8-Hr Ozone 2008</i>	San Joaquin Valley, CA - (Extreme)
Marin Co	
<i>8-Hr Ozone 1997</i>	San Francisco Bay Area, CA - (Marginal)
<i>PM-2.5 2006</i>	San Francisco Bay Area, CA - (Nonattainment)
<i>8-Hr Ozone 2008</i>	San Francisco Bay Area, CA - (Marginal)
Mariposa Co	
<i>8-Hr Ozone 1997</i>	Mariposa and Tuolumne Cos (Southern Mtn), CA - (Moderate)
<i>8-Hr Ozone 2008</i>	Mariposa County, CA - (Marginal)
Merced Co	
<i>8-Hr Ozone 1997</i>	San Joaquin Valley, CA - (Extreme)
<i>PM-2.5 1997</i>	San Joaquin Valley, CA - (Nonattainment)
<i>PM-2.5 2006</i>	San Joaquin Valley, CA - (Nonattainment)
<i>8-Hr Ozone 2008</i>	San Joaquin Valley, CA - (Extreme)
Mono Co	
<i>PM-10</i>	* Mammoth Lake, CA - (Moderate)
<i>PM-10</i>	* Mono Basin, CA - (Moderate)
Napa Co	
<i>8-Hr Ozone 1997</i>	San Francisco Bay Area, CA - (Marginal)
<i>PM-2.5 2006</i>	San Francisco Bay Area, CA - (Nonattainment)
<i>8-Hr Ozone 2008</i>	San Francisco Bay Area, CA - (Marginal)
Nevada Co	
<i>8-Hr Ozone 1997</i>	* Nevada Co. (Western Part), CA - (Moderate)
<i>8-Hr Ozone 2008</i>	* Nevada Co. (Western Part), CA - (Marginal)
Orange Co	
<i>8-Hr Ozone 1997</i>	Los Angeles South Coast Air Basin, CA - (Extreme)
<i>PM-10</i>	Los Angeles South Coast Air Basin, CA - (Serious)
<i>PM-2.5 1997</i>	Los Angeles-South Coast Air Basin, CA - (Nonattainment)
<i>PM-2.5 2006</i>	Los Angeles-South Coast Air Basin, CA - (Nonattainment)

<i>8-Hr Ozone</i> 2008	Los Angeles-South Coast Air Basin, CA - (Extreme)
Placer Co	
<i>8-Hr Ozone</i> 1997	* Sacramento Metro, CA - (Severe 15)
<i>PM-2.5</i> 2006	* Sacramento, CA - (Nonattainment)
<i>8-Hr Ozone</i> 2008	* Sacramento Metro, CA - (Severe 15)
Riverside Co	
<i>8-Hr Ozone</i> 1997	* Los Angeles South Coast Air Basin, CA - (Extreme)
<i>8-Hr Ozone</i> 1997	* Riverside Co, (Coachella Valley), CA - (Severe 15)
<i>PM-10</i>	* Coachella Valley, CA - (Serious)
<i>PM-10</i>	* Los Angeles South Coast Air Basin, CA - (Serious)
<i>PM-2.5</i> 1997	* Los Angeles-South Coast Air Basin, CA - (Nonattainment)
<i>PM-2.5</i> 2006	* Los Angeles-South Coast Air Basin, CA - (Nonattainment)
<i>8-Hr Ozone</i> 2008	* Los Angeles-South Coast Air Basin, CA - (Extreme)
<i>8-Hr Ozone</i> 2008	* Riverside Co, (Coachella Valley), CA - (Severe 15)
Sacramento Co	
<i>8-Hr Ozone</i> 1997	Sacramento Metro, CA - (Severe 15)
<i>PM-10</i>	Sacramento Co, CA - (Moderate)
<i>PM-2.5</i> 2006	Sacramento, CA - (Nonattainment)
<i>8-Hr Ozone</i> 2008	Sacramento Metro, CA - (Severe 15)
San Bernardino Co	
<i>8-Hr Ozone</i> 1997	* Los Angeles South Coast Air Basin, CA - (Extreme)
<i>8-Hr Ozone</i> 1997	* Los Angeles-San Bernardino Cos. (W Mojave Desert), CA - (Severe 15)
<i>PM-10</i>	* Los Angeles South Coast Air Basin, CA - (Serious)
<i>PM-10</i>	* San Bernardino Co, CA - (Moderate)
<i>PM-10</i>	* Trona, CA - (Moderate)
<i>PM-2.5</i> 1997	* Los Angeles-South Coast Air Basin, CA - (Nonattainment)
<i>PM-2.5</i> 2006	* Los Angeles-South Coast Air Basin, CA - (Nonattainment)
<i>8-Hr Ozone</i> 2008	* Los Angeles-San Bernardino Counties (West Mojave Desert), CA - (Severe 15)
<i>8-Hr Ozone</i> 2008	* Los Angeles-South Coast Air Basin, CA - (Extreme)
San Diego Co	
<i>8-Hr Ozone</i> 1997	* San Diego, CA - (Moderate)
<i>8-Hr Ozone</i> 2008	San Diego County, CA - (Marginal)
San Francisco Co	
<i>8-Hr Ozone</i> 1997	San Francisco Bay Area, CA - (Marginal)
<i>PM-2.5</i> 2006	San Francisco Bay Area, CA - (Nonattainment)
<i>8-Hr Ozone</i> 2008	San Francisco Bay Area, CA - (Marginal)
San Joaquin Co	

<i>8-Hr Ozone</i> <i>1997</i>	San Joaquin Valley, CA - (Extreme)
<i>PM-2.5 1997</i>	San Joaquin Valley, CA - (Nonattainment)
<i>PM-2.5 2006</i>	San Joaquin Valley, CA - (Nonattainment)
<i>8-Hr Ozone</i> <i>2008</i>	San Joaquin Valley, CA - (Extreme)
San Luis Obispo Co	
<i>8-Hr Ozone</i> <i>2008</i>	* San Luis Obispo (Eastern San Luis Obispo), CA - (Marginal)
San Mateo Co	
<i>8-Hr Ozone</i> <i>1997</i>	San Francisco Bay Area, CA - (Marginal)
<i>PM-2.5 2006</i>	San Francisco Bay Area, CA - (Nonattainment)
<i>8-Hr Ozone</i> <i>2008</i>	San Francisco Bay Area, CA - (Marginal)
Santa Clara Co	
<i>8-Hr Ozone</i> <i>1997</i>	San Francisco Bay Area, CA - (Marginal)
<i>PM-2.5 2006</i>	San Francisco Bay Area, CA - (Nonattainment)
<i>8-Hr Ozone</i> <i>2008</i>	San Francisco Bay Area, CA - (Marginal)
Solano Co	
<i>8-Hr Ozone</i> <i>1997</i>	* Sacramento Metro, CA - (Severe 15)
<i>8-Hr Ozone</i> <i>1997</i>	* San Francisco Bay Area, CA - (Marginal)
<i>PM-2.5 2006</i>	* Sacramento, CA - (Nonattainment)
<i>PM-2.5 2006</i>	* San Francisco Bay Area, CA - (Nonattainment)
<i>8-Hr Ozone</i> <i>2008</i>	* Sacramento Metro, CA - (Severe 15)
<i>8-Hr Ozone</i> <i>2008</i>	* San Francisco Bay Area, CA - (Marginal)
Sonoma Co	
<i>8-Hr Ozone</i> <i>1997</i>	* San Francisco Bay Area, CA - (Marginal)
<i>PM-2.5 2006</i>	* San Francisco Bay Area, CA - (Nonattainment)
<i>8-Hr Ozone</i> <i>2008</i>	* San Francisco Bay Area, CA - (Marginal)
Stanislaus Co	
<i>8-Hr Ozone</i> <i>1997</i>	San Joaquin Valley, CA - (Extreme)
<i>PM-2.5 1997</i>	San Joaquin Valley, CA - (Nonattainment)
<i>PM-2.5 2006</i>	San Joaquin Valley, CA - (Nonattainment)
<i>8-Hr Ozone</i> <i>2008</i>	San Joaquin Valley, CA - (Extreme)
Sutter Co	
<i>8-Hr Ozone</i> <i>1997</i>	* Sacramento Metro, CA - (Severe 15)
<i>8-Hr Ozone</i> <i>1997</i>	* Sutter Co (Sutter Buttes), CA - (Marginal)
<i>PM-2.5 2006</i>	Yuba City-Marysville, CA - (Nonattainment)
<i>8-Hr Ozone</i> <i>2008</i>	* Sacramento Metro, CA - (Severe 15)
Tehama Co	

<i>8-Hr Ozone</i> 2008	* Tuscan Buttes, CA - (Marginal)
Tulare Co	
<i>8-Hr Ozone</i> 1997	San Joaquin Valley, CA - (Extreme)
<i>PM-2.5</i> 1997	San Joaquin Valley, CA - (Nonattainment)
<i>PM-2.5</i> 2006	San Joaquin Valley, CA - (Nonattainment)
<i>8-Hr Ozone</i> 2008	San Joaquin Valley, CA - (Extreme)
Tuolumne Co	
<i>8-Hr Ozone</i> 1997	Mariposa and Tuolumne Cos (Southern Mtn), CA - (Moderate)
Ventura Co	
<i>8-Hr Ozone</i> 1997	* Ventura Co, CA - (Serious)
<i>8-Hr Ozone</i> 2008	* Ventura County, CA - (Serious)
Yolo Co	
<i>8-Hr Ozone</i> 1997	Sacramento Metro, CA - (Severe 15)
<i>PM-2.5</i> 2006	* Sacramento, CA - (Nonattainment)
<i>8-Hr Ozone</i> 2008	Sacramento Metro, CA - (Severe 15)
Yuba Co	
<i>PM-2.5</i> 2006	* Yuba City-Marysville, CA - (Nonattainment)

State, County, Pollutant, * Part County NAA, NAA Area Name - Classification Standard

COLORADO

Adams Co	
<i>8-Hr Ozone</i> 1997	Denver-Boulder-Greeley-Ft Collins-Loveland, CO - (Marginal)
<i>8-Hr Ozone</i> 2008	Denver-Boulder-Greeley-Ft. Collins-Loveland, CO - (Marginal)
Arapahoe Co	
<i>8-Hr Ozone</i> 1997	Denver-Boulder-Greeley-Ft Collins-Loveland, CO - (Marginal)
<i>8-Hr Ozone</i> 2008	Denver-Boulder-Greeley-Ft. Collins-Loveland, CO - (Marginal)
Boulder Co	
<i>8-Hr Ozone</i> 1997	Denver-Boulder-Greeley-Ft Collins-Loveland, CO - (Marginal)
<i>8-Hr Ozone</i> 2008	Denver-Boulder-Greeley-Ft. Collins-Loveland, CO - (Marginal)
Broomfield Co	
<i>8-Hr Ozone</i> 1997	Denver-Boulder-Greeley-Ft Collins-Loveland, CO - (Marginal)
<i>8-Hr Ozone</i> 2008	Denver-Boulder-Greeley-Ft. Collins-Loveland, CO - (Marginal)
Denver Co	
<i>8-Hr Ozone</i> 1997	Denver-Boulder-Greeley-Ft Collins-Loveland, CO - (Marginal)
<i>8-Hr Ozone</i> 2008	Denver-Boulder-Greeley-Ft. Collins-Loveland, CO - (Marginal)
Douglas Co	

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Human Health and Environmental



Effects of Emissions from Power Generation

Power generation is a significant source of pollutants that can impair human health and the environment, including sulfur dioxide (SO₂), nitrogen oxide (NO_x), and mercury. The Clean Air Act has been successful in reducing these emissions, but power generation still contributes approximately 70% of SO₂, 20% of NO_x, and 40% of mercury emissions into the environment. These emissions from power generation contribute to a range of human health and environmental problems, and interstate and long range transport of emissions continue to play significant roles in these problems. Cap and trade programs benefit human health and the environment and address transport by significantly reducing emissions over large geographic areas.

When emitted into the atmosphere, SO₂ and NO_x react with water and other compounds to form various acidic compounds, fine particles, and ozone. These pollutants can remain in the air for days or even years. Prevailing winds can transport them hundreds of miles, often across state and national borders. The pollutants then fall to the earth in either a wet form (rain, snow, and fog) or a dry form (gases and particles). Impacts include impaired air quality; damage to public health; degradation of visibility; acidification of lakes and streams; harm to sensitive forest and coastal ecosystems; and accelerated decay of materials, paints, and cultural artifacts such as buildings, statues, and sculptures nationwide.

Mercury, a product of coal-burning, can be deposited locally or it can be transported through the atmosphere for days to years before being deposited into water bodies. Once mercury reaches lakes, rivers and oceans, it can be transformed into methylmercury and bioaccumulate in the food chain. This results in predatory fish and fish-eating birds and mammals accumulating mercury concentrations millions of times higher than what is found in the water or air.

How Do Power Plant Emissions Impact Human Health?

SO₂ and NO_x emissions form fine particles in the atmosphere. Particulate matter is the term used for a mixture of solid particles and liquid droplets found in the air; fine particles (PM_{2.5}) are smaller than 2.5 microns (millionths of a meter) in diameter. Power plants emit particles directly into the air, but their major contribution to particulate matter air pollution is emissions of SO₂ and NO_x, which are converted into

sulfate and nitrate particles in the atmosphere. These particles make up a large proportion of the fine particle pollution in most parts of the country. A substantial body of published scientific literature recognizes a correlation between elevated fine particulate matter and increased incidence of illness and premature mortality. The health effects of PM_{2.5} include:

- Increased incidence of premature death, primarily in the elderly and those with heart or lung disease;
- Aggravation of respiratory and cardiovascular illness, leading to hospitalizations and emergency room visits for children and individuals with heart or lung disease;
- Decreased lung function and symptomatic effects, including acute bronchitis, particularly in children and asthmatics;
- New cases of chronic bronchitis;
- Increased work loss days, school absences, and emergency room visits.

Emissions from power generation contribute to a range of human health and environmental concerns.

NO_x emissions react in the atmosphere to form ozone.

NO_x and volatile organic compounds react in the atmosphere in the presence of sunlight to form ground-level ozone. Ground-level ozone is a major component of smog in our cities and in many rural

areas as well. Though naturally occurring ozone in the stratosphere provides a protective layer high above the earth, the ozone that we breathe at ground level has been linked to respiratory illness and other health problems, including:

- Decreases in lung function, resulting in difficulty breathing, shortness of breath, and other symptoms;
- Respiratory symptoms, including bronchitis, aggravated coughing, and chest pain;
- Increased incidence/severity of respiratory problems (e.g. aggravation of asthma, susceptibility to respiratory infection) resulting in more hospital admissions and emergency room visits;
- Chronic inflammation and irreversible structural changes in the lungs, that, with repeated exposure, can lead to premature aging of the lungs and other respiratory illness.

Mercury emissions are deposited in watersheds and transformed into methylmercury, which contaminates fish.

In the U.S., human exposure to mercury is primarily the result of consumption of fish contaminated with methylmercury. Other fish-eating

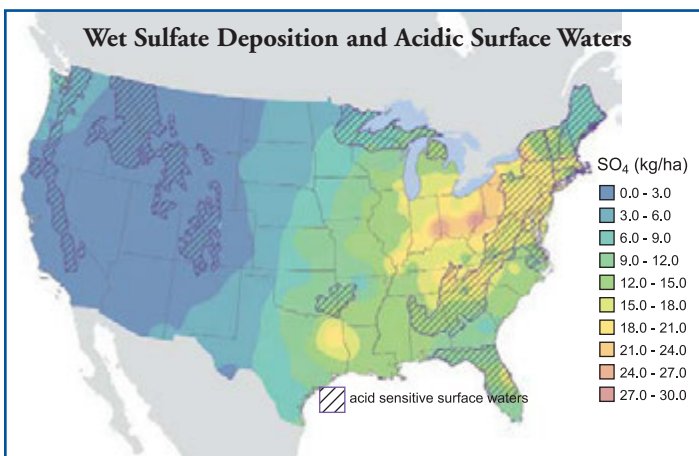


mammals and birds are also exposed in this manner. The primary symptoms of mercury exposure are neurological, including brain damage, lack of motor skills, impaired cognitive skills, and difficulty speaking and hearing. These effects are most pronounced on those exposed during the development of the nervous system, such as fetuses and young children. Forty-four states have advisories warning the public to restrict eating fish from their lakes, rivers, streams, and/or coastal waters due to methylmercury. EPA estimates that 12 million acres of lakes and 475,000 miles of rivers, as well as the coastal waters of 11 states, are impaired by mercury.

How Do Power Plant Emissions Impact the Environment?

SO₂ and NO_x emissions react in the atmosphere to form acidic compounds that harm lakes and streams.

When the acidic compounds that are formed as a result of SO₂ and NO_x emissions are deposited to the earth's surface, they can acidify lakes and streams. Acidification (low pH) and the chemical changes that result, including higher aluminum levels, make it difficult for some fish and other aquatic species to survive, grow, and reproduce. In the 1980s, acid rain was found to be the dominant cause of acidification in 75% of acidic lakes and 50% of acidic streams. Areas especially sensitive to acidification include portions of the Northeast (particularly the Adirondack and Catskill Mountains, portions of New England, and streams in the mid-Appalachian highlands) and Southeastern streams. Today in the Adirondack Mountains, Appalachian plateau, and upper Midwest regions, there are 25-30% fewer chronically acidic lakes and streams than in the early 1990s, although these waterbodies remain sensitive to acid rain. Lakes and streams in New England and the Southeast showed little decrease in acidification throughout the 1990s.



Wet Sulfate deposition is highest in many acid sensitive regions.
Source: National Atmospheric Deposition Program.

Acid deposition harms forests and trees. Acid rain can harm forest ecosystems by directly damaging plant tissues. One of the best examples of direct damage involves the leaching of nutrients from the needles of red spruce, which reduces the ability of the trees to tolerate cold winter temperatures and has contributed to the decline of red spruce forests throughout the mountains of the eastern U.S. In other cases, acid rain can combine with other pollutants, such as

pests, which cause mortality. Acid deposition can also affect forest ecosystems indirectly by changing the chemistry of forest soils, including the leaching of plant nutrients from soils. It can also elevate levels of aluminum in soil water, which impairs the ability of trees to use soil nutrients and can be directly toxic to plant roots.

Nitrogen deposition contributes to impaired coastal water quality.

Nitrogen deposited from the atmosphere is a substantial source of nitrogen in many estuaries and coastal waters. Large amounts of nitrogen in estuaries and coastal waters can have significant ecological impacts, including massive die-offs of estuarine and marine plants and animals, loss of biological diversity, and degradation of essential coastal ecosystem habitat such as seagrass beds. For many species of fish and shellfish, these seagrass beds are essential nurseries and places to escape from predators. Excessive amounts of nitrogen in coastal waters from atmospheric deposition are thought to be a contributor to harmful algal blooms, such as red tides, that kill millions of fish each year and can be toxic to humans as well.

Fine particles impair visibility and increase regional haze. Fine particles formed in the atmosphere by the conversion of SO₂ and NO_x emissions scatter light and create hazy conditions, decreasing visibility and contributing to regional haze. Visibility impairment spoils scenic vistas across broad regions of the country, including in many National Parks and wilderness areas. Regional haze is also responsible for impaired urban vistas nationwide. In the western U.S., the level of visibility impairment for the worst days remained unchanged through the 1990s. Visibility in the eastern U.S. improved in some areas during the 1990s, but remains significantly impaired overall.

Acid deposition and particles damage materials and cultural resources. A significant number of properties of aesthetic and historical value in the United States, including monuments, buildings, and statues, are potentially at risk for damage from air pollution. Structures made of limestone and marble are particularly sensitive to acid deposition. Acid particles and deposition increase the rate of weathering for these materials, eventually resulting in aesthetic and/or structural damage.



Modeled visibility conditions on the National Mall, Washington, D.C.
Left image: poor visibility, 5 mile visual range. Right image: clear day, 90 mile visual range.

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Nitrogen Dioxide Health

Current scientific evidence links short-term NO₂ exposures, ranging from 30 minutes to 24 hours, with adverse respiratory effects including airway inflammation in healthy people and increased respiratory symptoms in people with asthma.

Also, studies show a connection between breathing elevated short-term NO₂ concentrations, and increased visits to emergency departments and hospital admissions for respiratory issues, especially asthma.

NO₂ concentrations in vehicles and near roadways are appreciably higher than those measured at monitors in the current network. In fact, in-vehicle concentrations can be 2-3 times higher than measured at nearby area-wide monitors. Near-roadway (within about 50 meters) concentrations of NO₂ have been measured to be approximately 30 to 100% higher than concentrations away from roadways.

Individuals who spend time on or near major roadways can experience short-term NO₂ exposures considerably higher than measured by the current network. Approximately 16% of U.S. housing units are located within 300 ft of a major highway, railroad, or airport (approximately 48 million people). This population likely includes a higher proportion of non-white and economically-disadvantaged people.

NO₂ exposure concentrations near roadways are of particular concern for susceptible individuals, including people with asthma, children, and the elderly.

The sum of nitric oxide (NO) and NO₂ is commonly called nitrogen oxides or NOx. Other oxides of nitrogen including nitrous acid and nitric acid are part of the nitrogen oxide family. While EPA's National Ambient Air Quality Standard (NAAQS) covers this entire family, NO₂ is the component of greatest interest and the indicator for the larger group of nitrogen oxides.

NOx react with ammonia, moisture, and other compounds to form small particles. These small particles penetrate deeply into sensitive parts of the lungs and can cause or worsen respiratory disease, such as emphysema and bronchitis, and can aggravate existing heart disease, leading to increased hospital admissions and premature death.

Ozone is formed when NOx and volatile organic compounds react in the presence of heat and sunlight. Children, the elderly, people with lung diseases such as asthma, and people who work or exercise outside are at risk for adverse effects from ozone. These include reduction in lung function and increased respiratory symptoms as well as respiratory-related emergency department visits, hospital admissions, and possibly premature deaths.

Emissions that lead to the formation of NO₂ generally also lead to the formation of other NOx. Emissions control measures leading to reductions in NO₂ can generally be expected to reduce population exposures to all gaseous NOx. This may have the important co-benefit of reducing the formation of ozone and fine particles both of which pose significant public health threats.

Last updated on Thursday, March 22, 2012

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ARB Fact Sheet: Air Pollution Sources, Effects and Control

This page reviewed December 2, 2009.

Where does air pollution come from? How does it effect people and the environment? How can we control, or better yet, prevent it? The following table summarizes the sources, effects and prevention and control methods for ten of the most important air pollutants in California.

Pollutant	Sources	Effects	Prevention and Control
Ozone (O3)	Formed when reactive organic gases (ROG) and nitrogen oxides react in the presence of sunlight. ROG sources include any source that burns fuels, (e.g., gasoline, natural gas, wood, oil) solvents, petroleum processing and storage and pesticides.	Breathing Difficulties, Lung Tissue Damage, Damage to Rubber and Some Plastics	Reduce motor vehicle reactive organic gas (ROG) and nitrogen oxide emissions through emissions standards, reformulated fuels, inspections programs and reduced vehicle use. Limit ROG emissions from commercial operations and consumer products. Limit ROG and NOx emissions from industrial sources such as power plants and refineries. Conserve energy.
Respirable Particulate	Road Dust, Windblown	Increased Respiratory	Control Dust Sources,

Matter (PM10)	Dust (Agriculture) and Construction (Fireplaces) Also formed from other pollutants (acid rain, NOx, SOx, organics). Incomplete combustion of any fuel.	Disease, Lung Damage, Cancer, Premature Death, Reduced Visibility, Surface Soiling	Industrial Particulate Emissions, Wood Burning Stoves and Fireplaces Reduce secondary pollutants which react to form PM10. Conserve energy.
Fine Particulate Matter (PM2.5)	Fuel Combustion in Motor Vehicles, Equipment and Industrial Sources, Residential and Agricultural Burning. Also formed from reaction of other pollutants (acid rain, NOx, SOx, organics).	Increases Respiratory Disease, Lung Damage, Cancer, Premature Death, Reduced Visibility, Surface Soiling	Reduces Combustion Emissions from Motor Vehicles, Equipment, Industries and Agriculture and Residential Burning. Precursor controls, like those for ozone, reduce fine particle formation in the atmosphere.
Carbon Monoxide (CO)	Any source that burns fuel such as automobiles, trucks, heavy construction equipment, farming equipment and residential heating.	Chest Pain in Heart Patients, Headaches, Reduced Mental Alertness	Control motor vehicle and industrial emissions. Use oxygenated gasoline during winter months. Conserve energy.
Nitrogen Dioxide (NO2)	See Carbon Monoxide	Lung Irritation and Damage. Reacts in the atmosphere to form ozone and acid rain	Controls motor vehicle and industrial combustion emissions. Conserve energy.
Lead	Metal Smelters, Resource Recovery, Leaded Gasoline,	Learning Disabilities, Brain and Kidney Damage	Control metal smelters, no lead in gasoline. Replace leaded paint with non-lead

	Deterioration of Lead Paint		substitutes.
Sulfur Dioxide (SO₂)	Coal or Oil Burning Power Plants and Industries, Refineries, Diesel Engines	Increases lung disease and breathing problems for asthmatics. Reacts in the atmosphere to form acid rain.	Reduces the use of high sulfur fuels (e.g., use low sulfur reformulated diesel or natural gas). Conserve energy.
Visibility Reducing Particles	See PM _{2.5}	Reduces visibility (e.g., obscures mountains and other scenery), reduced airport safety, lower real estate value, discourages tourism.	See PM _{2.5}
Sulfates	Produced by the reaction in the air of SO ₂ (see SO ₂ sources), a component of acid rain.	Breathing Difficulties, Aggravates Asthma, Reduced Visibility	See SO ₂
Hydrogen Sulfide	Geothermal Power Plants, Petroleum Production and Refining, Sewer Gas	Nuisance Odor (Rotten Egg Smell), Headache and Breathing Difficulties (Higher Concentrations)	Control emissions from geothermal power plants, petroleum production and refining, sewers, sewage treatment plants.

If you have questions or comments regarding this web page, please contact Barbara Weller at (916) 445-1324 or via email at blweller@arb.ca.gov.

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GLOSSARY OF AIR POLLUTION TERMS

Have you ever wondered what a baghouse is or what NMOG stands for? That cold ironing is not a new way to get wrinkles out of a shirt or that a SIP isn't a beverage taste-test? You're not alone. ARB has updated its glossary of air pollution terms and lists of [acronyms](#) to help.

Keep in mind that we are not trying to create an exhaustive list, nor are we giving legal terminology. This glossary is simply a resource for the general public.

[A](#) | [B](#) | [C](#) | [D](#) | [E](#) | [F](#) | [G](#) | [H](#) | [I](#) | [J](#) | [K](#) | [L](#) | [M](#) | [N](#) | [O](#) | [P](#) | [Q](#) | [R](#) | [S](#) | [T](#) | [U](#) | [V](#) | [W](#) | [X](#) | [Y](#) | [Z](#)

A

AB 1807 (Tanner)

A California state law (Health and Safety Code section 39650 et seq.) that became effective in January of 1984 and established the framework for California's [toxic air contaminant](#) identification and control program. For more information, please see our [toxics summary](#).

AB 998

Assembly Bill 998 established the Non-Toxic Dry Cleaning Incentive Program to provide the dry cleaning industry with \$10,000 grant funds to switch from systems using perchloroethylene (Perc), an identified toxic air contaminant and potential human carcinogen, to non-toxic and non-smog forming alternatives. The legislation also requires ARB to establish a demonstration program to showcase these non-toxic and non-smog forming technologies.

AB 2588 (Connelly) Air Toxics "Hot Spots" Information and Assessment Program

A California program (Health and Safety Code Section 44300 et seq.) that requires certain [stationary sources](#) to report the type and quantity of specific toxic substances they routinely release into the air. The program identifies high priority facilities and requires facilities posing significant risks to notify all exposed individuals. For more information, visit our [AB 2588](#) website.

AB 2766 (Sher) Motor Vehicle Fee Program

A program that permits [air districts](#) and local governments to allocate vehicle registration surcharge fees to projects that reduce motor vehicle emissions such as [zero-emission vehicles](#), bike lanes and trip reduction programs.

AB 32(The Global Warming Solutions Act of 2006)

The Legislature passed and Governor Schwarzenegger signed AB 32, which set the 2020 greenhouse gas emissions reduction goal into law. It directed ARB to develop discrete early actions to reduce greenhouse gases while also preparing a scoping plan to identify how best to reach the 2020 limit on greenhouse gas emissions.

Abatement

The reduction or elimination of pollution.

Acceptable Daily Intake (ADI)

The highest daily amount of a substance that may be consumed over a lifetime without adverse effects.

Acid Deposition

A workshop held by a public agency for the purpose of informing the public and obtaining its input on the development of a regulatory action or control measure by that agency.

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R

Radon

A colorless, naturally occurring, radioactive, inert gaseous element formed by radioactive decay of radium atoms in soil or rocks.

Reactive Organic Gas (ROG)

A photochemically reactive chemical gas, composed of [non-methane hydrocarbons](#), that may contribute to the formation of [smog](#). Also sometimes referred to as [Non-Methane Organic Gases \(NMOGs\)](#). (See also [Volatile Organic Compounds](#) and [Hydrocarbons](#).)

Reactivity (or Hydrocarbon Photochemical Reactivity)

A term used in the context of air quality management to describe a hydrocarbon's ability to react (participate in photochemical reactions) to form [ozone](#) in the [atmosphere](#). Different hydrocarbons react at different rates. The more reactive a hydrocarbon, the greater potential it has to form ozone.

Reasonably Available Control Measures (RACM)

A broadly defined term referring to technologies and other measures that can be used to control pollution. They include [Reasonably Available Control Technology](#) and other measures. In the case of [PM10](#), RACM refers to approaches for controlling small or dispersed source categories such as road dust, woodstoves and open burning.

Reasonably Available Control Technology (RACT)

Control techniques defined in [U.S. EPA](#) guidelines for limiting emissions from existing sources in [nonattainment](#) areas. RACTs are adopted and implemented by states. For more information, visit our [RACT](#) website.

Reasonably Available Retrofit Control Technology (RARCT)

(See also [Best Available Control Technology](#).)

Reciprocating Internal Combustion Engine

An engine in which air and fuel are introduced into cylinders, compressed by pistons and ignited by a spark plug or by compression. Combustion in the cylinders pushes the pistons sequentially, transferring energy to the crankshaft, causing it to rotate.

Reference Dose (RfD)

An estimate delivered by the [U.S. EPA](#) (with uncertainty spanning perhaps an order of magnitude) of the daily [exposure](#) to the human population, (including sensitive subpopulations) that is likely to be without deleterious effects during a lifetime. The RfD is reported in units of mg of substance/kg body weight/day for oral exposures.

Reference Exposure Concentration (RfC)

An estimate, derived by the [U.S. EPA](#) with an uncertainty spanning perhaps an order of magnitude) of a daily [exposure](#) to the human population, (including sensitive subgroups) that is likely to be without

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Ozone and Your Patients' Health

Training for Health Care Providers
 Institute Ozone and Your Patients' Health Health Effects of Ozone in the General Population

Health Effects of Ozone in the General Population

- [Introduction](#)
- [How are people exposed to ozone?](#)
- [How does ozone react in the respiratory tract?](#)
- [What are ozone's acute physiological and symptom effects?](#)
- [What effects does ozone have at the cellular level?](#)
- [How does response vary among individuals?](#)
- [What are the effects of ozone on mortality?](#)
- [What are other potential effects of short-term ozone exposure?](#)
- [At what exposure levels are effects observed?](#)
- [What are the effects of recurrent or long-term exposure to ozone?](#)

Review Key Points

Introduction

Breathing ground-level ozone can result in a number of health effects that are observed in broad segments of the population. Some of these effects include:

- Induction of respiratory symptoms
- Decrements in lung function
- Inflammation of airways

Respiratory symptoms can include:

- Coughing
- Throat irritation
- Pain, burning, or discomfort in the chest when taking a deep breath
- Chest tightness, wheezing, or shortness of breath

In addition to these effects, evidence from observational studies strongly indicates that higher daily ozone concentrations are associated with increased asthma attacks, increased hospital admissions, increased daily mortality, and other markers of morbidity. The consistency and coherence of the evidence for effects upon asthmatics suggests that ozone can make asthma symptoms worse and can increase sensitivity to asthma triggers.

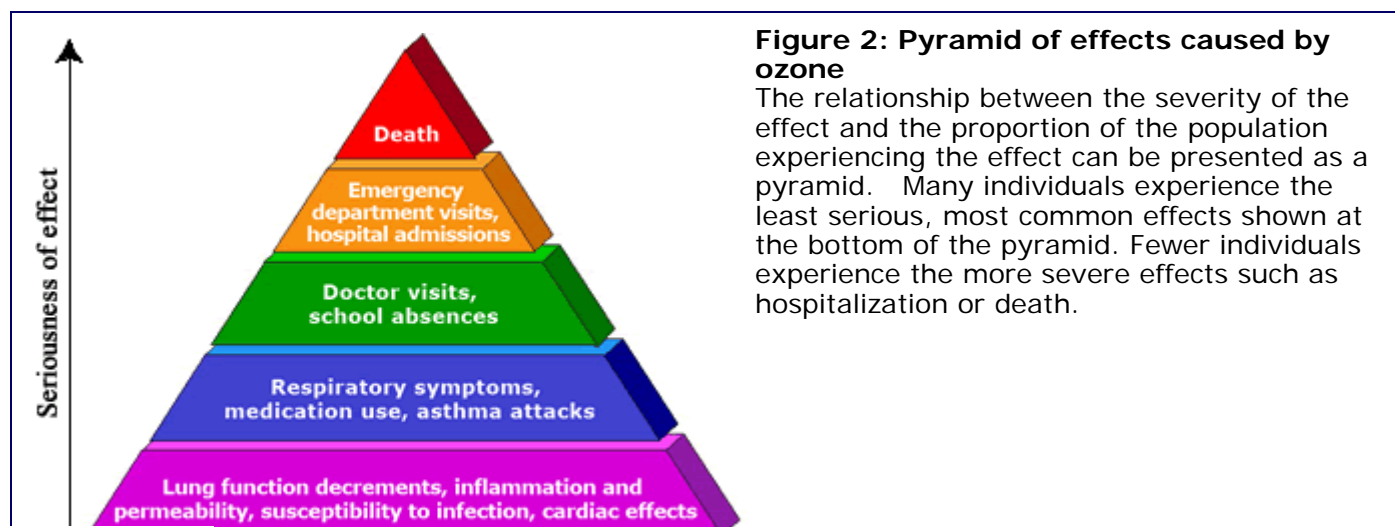
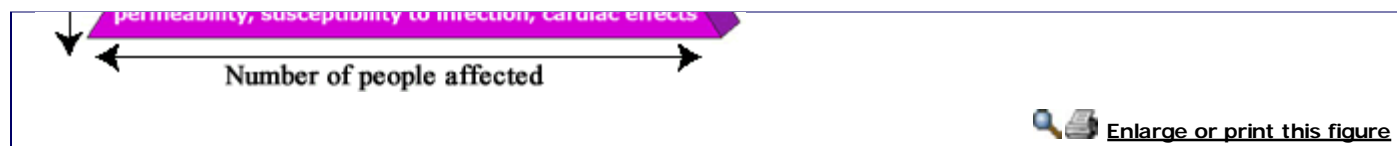


Figure 2: Pyramid of effects caused by ozone

The relationship between the severity of the effect and the proportion of the population experiencing the effect can be presented as a pyramid. Many individuals experience the least serious, most common effects shown at the bottom of the pyramid. Fewer individuals experience the more severe effects such as hospitalization or death.



This section of the course addresses exposure and health effects issues common to all people. The next section of the course, [Health Effects in Patients with Asthma and Other Chronic Respiratory Disease](#), addresses those issues specific to people with asthma and other chronic lung disease.

How are people exposed to ozone?

Primary exposure occurs when people breathe ambient air containing ozone. The rate of exposure for a given individual is related to the concentration of ozone in the surrounding air and the amount of air the individual is breathing per minute (minute ventilation). The cumulative amount of exposure is a function of both the rate and duration of exposure.

Although ozone concentrations in the outside (ambient) air are generally similar across many locations in a particular airshed, a number of factors can affect ozone concentration in "microenvironments" within the larger airshed (e.g., inside a residence, inside a vehicle, along a roadway). Ozone concentrations indoors typically vary between 20% and 80% of outdoor levels depending upon whether windows are open or closed, air conditioning is used, or other factors such as indoor sources. People with the greatest cumulative exposure are those heavily exercising outdoors for long periods of time when ozone concentrations are high. In addition, during exercise people breathe more deeply, and ozone uptake may shift from the upper airways to deeper areas of the respiratory tract, increasing the possibility of adverse health effects. People with the lowest cumulative exposure are those resting for most of the day in an air-conditioned building with little air turnover.

Ozone levels may also affect indoor levels of some aldehydes formed as reaction products of ozone with indoor substances (Apte et al 2008). This provides a potential pathway for people indoors to experience respiratory effects mediated by ozone reaction products. Further research is needed to test the importance of these exposures on health effects.

How does ozone react in the respiratory tract?

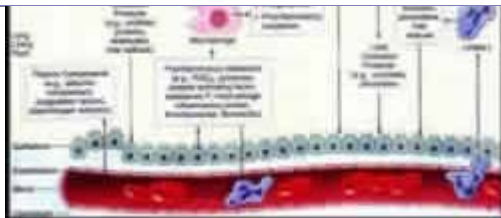
Because ozone has limited solubility in water, the upper respiratory tract is not as effective in scrubbing ozone from inhaled air as it is for more water soluble pollutants such as sulfur dioxide (SO_2) or chlorine gas (Cl_2). Consequently, the majority of inhaled ozone reaches the lower respiratory tract and dissolves in the thin layer of epithelial lining fluid (ELF) throughout the conducting airways of the lung.

In the lungs, ozone reacts rapidly with a number of biomolecules, particularly those containing thiol or amine groups or unsaturated carbon-carbon bonds. These reactions and their products are poorly characterized, but it is thought that the ultimate effects of ozone exposure are mediated by free radicals and other oxidant species in the ELF that then react with underlying epithelial cells, with immune cells, and with neural receptors in the airway wall. In some cases, ozone itself may react directly with these structures. Several effects with distinct mechanisms occur simultaneously following a short-term ozone exposure and will be described below.



Figure 3: Ozone is highly reactive in the respiratory tract

When breathed into the airways, ozone



interacts with proteins and lipids on the surface of cells or present in the lung lining fluid, which decreases in depth from 10 μm in the large airways to 0.2 μm in the alveolar region.

Epithelial cells lining the respiratory tract are the main target of ozone and its products.

These cells become injured and leak

intracellular enzymes such as lactate dehydrogenase into the airway lumen, as well as plasma components. Epithelial cells also release a variety of inflammatory mediators that can attract polymorphonuclear leukocytes (PMNs) into the lung, activate alveolar macrophages, and initiate a train of events leading to lung inflammation. Antioxidants present in cells and lining fluid may protect the epithelial barrier against damage by ozone or its reaction products.

Source: Devlin et al., (1997)



[Enlarge or print this figure](#)

What are ozone's acute physiological and symptom effects?

The predominant physiological effect of short-term ozone exposure is being unable to inhale to total lung capacity. Controlled human exposure studies have demonstrated that short-term exposure - up to 8 hours - causes lung function decrements such as reductions in forced expiratory volume in one second (FEV1), and the following respiratory symptoms:

- Cough
- Throat irritation
- Pain, burning, or discomfort in the chest when taking a deep breath
- Chest tightness, wheezing, or shortness of breath

The effects are reversible, with improvement and recovery to baseline varying from a few hours to 48 hours after an elevated ozone exposure.

Current thinking is that changes in symptoms and lung function are due to stimulation of airway neural receptors (probably airway C-fibers) and transmission to the central nervous system via afferent vagal nerve pathways. Although ozone exposure results in some airway narrowing, neural inhibition of inhalation effort at high lung volumes is believed to be the primary cause of being unable to inhale to total lung capacity.

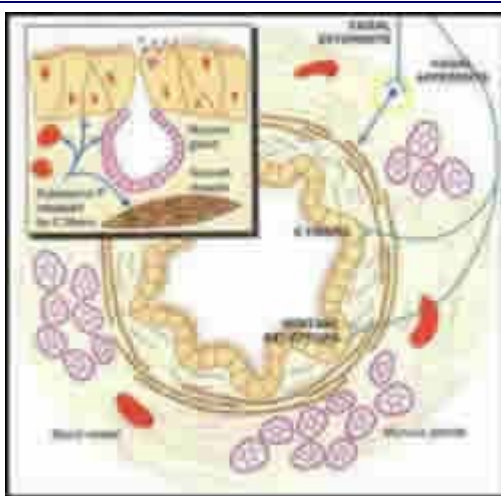


Figure 4: Ozone induces neurally mediated responses in the bronchial airways

Stimulation of nociceptive interepithelial nerve fibers by ozone leads to reflex cough and a decrease in maximal inspiration that is relieved by opioid agonists, which block sensory pathways. Two possible mechanisms are involved: (1) stimulation of irritant receptors contributes to cough and induces a vagally mediated reflex that increases airway resistance, probably via airway smooth muscle contraction that is blocked by atropine; (2) C fiber stimulation releases neurokinins such as substance P that dilate nearby capillaries, activate mucous glands, and contract airway smooth muscle via neurokinin receptors.

Prostaglandin E2 released by epithelial cells

exposed to ozone or to ozone reaction products also sensitizes C fibers.

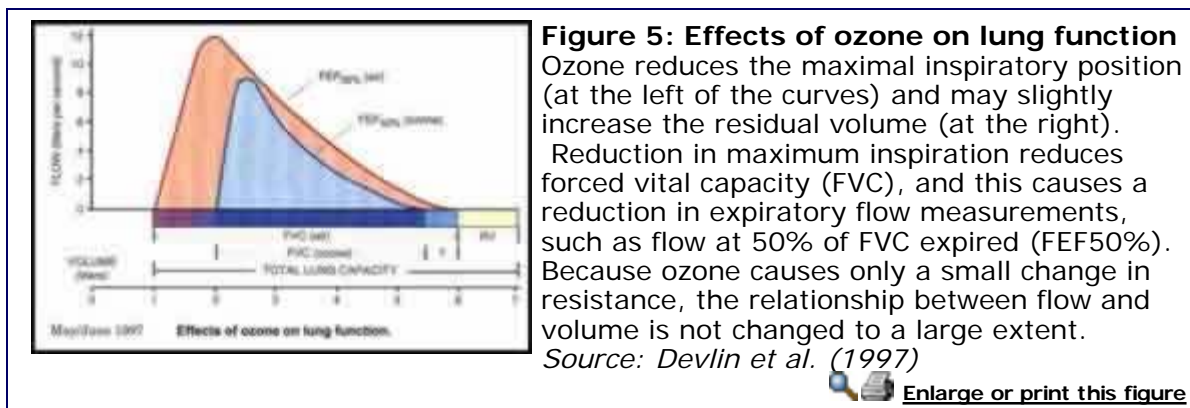
Source: Devlin et al. (1997)



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The overall effect is thus primarily restrictive in nature with a smaller obstructive component that reflects itself in decreases in forced vital capacity (FVC), FEV1 and other spirometric measures that require a full inspiration. It is likely that these lung function changes and respiratory symptoms are responsible for observations that short-term ozone exposure limits maximal exercise capability.

Ozone-induced changes in breathing pattern to more rapid shallow breathing may also be a manifestation of C-fiber stimulation and may be a protective response to limit penetration of ozone deep into the respiratory tract. Such effects may also contribute to changes in deposition pattern and retention of other inhaled substances such as allergens and particle pollution (also called particulate matter).



What effects does ozone have at the cellular level?

As a result of short-term exposure, ozone and/or its reactive intermediates cause injury to airway epithelial cells followed by a cascade of other effects. These effects can be measured by a technique known as bronchoalveolar lavage (BAL), in which samples of epithelial lining fluid (ELF) are collected during bronchoscopy on volunteers experimentally exposed to ozone. Cells and biochemical markers in the lavage fluid and in the blood can be analyzed to provide insight into the effects of exposure.

Evidence for airway inflammation following ozone exposure includes visible redness of the airway seen during bronchoscopy as well as an increase in the numbers of neutrophils in the lavage fluid. Cellular injury is suggested by an increase in the concentration of lactate dehydrogenase (LDH), an enzyme released from the cytoplasm of injured epithelial cells, in the ELF. Mediators (e.g., cytokines, prostaglandins, leukotrienes) that are released by injured cells include a number that attract inflammatory cells resulting in a neutrophilic inflammatory response in the airway. In addition, ozone reaction products as well as some mediators produced in the lung can be detected in the blood providing a possible mechanism for extrapulmonary effects of ozone exposure.



Other documented ozone-induced effects that may be related to the underlying injury and

inflammatory response are:

- An increase in small airway obstruction
- A decrease in the integrity of the airway epithelium
- An increase in nonspecific airway reactivity
- A decrease in phagocytic activity of alveolar macrophages

The decrease in epithelial integrity can be measured by an increase in the concentration of plasma proteins appearing in the ELF following exposure and by more rapid clearance of inhaled radio-labeled markers from the lung to the blood. This has the potential for allowing increased movement of inhaled substances (e.g. allergens or particulate air pollution) from the airway to the interstitium or the blood and could modify the known effects of inhaled allergen on asthma and particulate matter on mortality.

Although the significance of increased nonspecific airway reactivity to substances such as methacholine or histamine is not understood in healthy individuals, it is clearly of concern for people with asthma, as increased airway reactivity is a predictor for asthma exacerbations. (See section entitled How does ozone affect people with asthma?).

A decrease in macrophage function has the potential to interfere with host defense. Over a period of several days following a single short-term exposure, inflammation, small airway obstruction, and increased epithelial permeability resolve; damaged ciliated airway epithelial cells are replaced by underlying cells; and damaged type I alveolar epithelial cells are replaced by more ozone-resistant type II cells. Over a period of weeks, the type II cells differentiate into type I cells, and following this single exposure, the airway appears to return to the pre-exposure state.

How does response vary among individuals?

One striking characteristic of the acute responses to short-term ozone exposure is the large amount of variability that exists among individuals. For example, for a 2-hour exposure to 40 ppb ozone (note: 40 ppb is equal to .04 ppm) that includes 1 hour of heavy exercise, the least responsive individual may experience no symptom or lung function changes while the most responsive individual may experience a 50% decrement in FEV₁ and have severe coughing, shortness of breath, or pain on deep inspiration. A similar range of response is evident for a 6.6-hour exposure to 80 ppb with 5 hours of moderate activity. Other individual responses fall into what appears to be a unimodal distribution between these two extremes. Those with large responses following exposure on one day also tend to have large responses upon re-exposure. Similarly, those with small responses following exposure on one day tend to have small responses upon re-exposure. A small fraction of the observed variability in lung function and symptom responsiveness can be explained by differences in age and in body mass index (BMI) with young adults (teens to thirties) and those with high BMI being much more responsive than older adults (fifties to eighties) and those with low BMI. Results similar to those in Figure 8 are also seen with longer duration exposures to concentrations more relevant to ambient levels (e.g. over a range of 60 to 120 ppb).

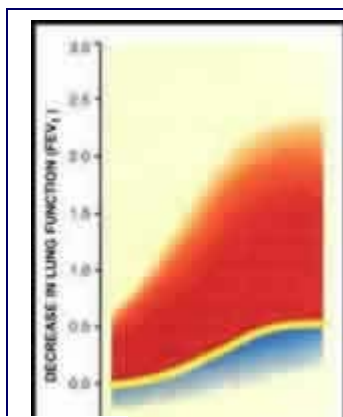


Figure 7:
Variability of
response to
ozone exposure
Source: Devlin et
al. (1997)

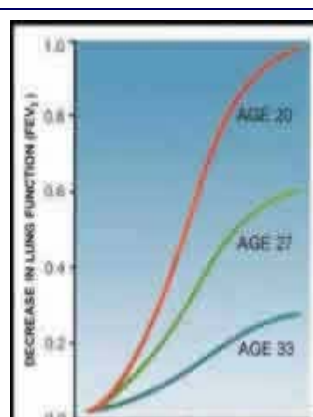


Figure 8:
Sensitivity to
ozone exposure
is age related
Source: Devlin et
al. (1997)



Individual differences in the intensity of the inflammatory response also exist, and it appears that these differences in response are also stable over time. The magnitude of the neurally-mediated lung function response, however, is not related to the degree of cell injury and inflammation for a given individual suggesting that these two effects are the result of different mechanisms of action. Further evidence for multiple mechanisms of action is provided by drug intervention studies. There is some evidence that Vitamin C and E supplements may slightly reduce the lung function effects of ozone but not the inflammatory or symptom responses. Pre-treatment with non-steroidal anti-inflammatory drugs (NSAID) reduces lung function and symptom responses but not the inflammatory responses in non-asthmatics. In asthmatic volunteers NSAID pretreatment did not block the restrictive lung function changes seen in nonasthmatics, but did blunt some of the changes due to airway obstruction. Pre-treatment with high doses of inhaled steroids has been shown to reduce the neutrophil influx following ozone exposure in people with asthma, but not in those without asthma.

True differences in individual responsiveness to ozone can be the result of either environmental or genetic factors. Research has demonstrated that genetic differences among strains of mice can explain the large range of inflammatory responses seen. Some preliminary evidence suggests that genetic polymorphisms for antioxidant enzymes and for genes regulating the inflammatory response may modulate the effect of ozone exposure on pulmonary function and airway inflammation.

What are the effects of ozone on mortality?

Studies show:

- Ozone is associated with increased mortality
- The absolute effect of ozone on mortality is considerably higher in older adults
- The ozone-mortality relationship is most prominent during the warm season

Recent epidemiologic research has clearly demonstrated that both short-term and longer-term exposures to low concentrations of particle pollution, a common air pollutant, are associated with increased mortality. Re-examination of the data upon which those findings are based as well as new studies indicate that short-term exposure to ozone is also associated with increased daily mortality.

The study most representative of the U.S. population (Bell et al 2004) evaluated the relationships between daily mortality counts and ambient ozone concentration for 95 large U.S. communities over the period of 1987-2000. Although there was considerable heterogeneity in the magnitude of effect among the various communities, a 0.5 % overall excess risk in non-accidental daily mortality was observed for each 20 ppb increase in the 24-hour average ozone concentration (approximately equal to a 30 ppb increase in the 8-hour average) on the same day. There was evidence that the effect was greatest on the day of exposure with smaller residual effects being evident for several days. A cumulative 1.04% excess risk was observed for each 20 ppb increase in the 24-hour average concentration during the previous week. The ozone-mortality relationship was robust even after controlling for possible effects of particulate matter and other air pollutants.

Although ozone mortality risk estimates tend to be only slightly higher for the older population compared to the younger population (based predominantly on Medicare studies of people 65 and older), the absolute effect of ozone on mortality is considerably higher in older adults due to their

higher baseline death rates. Even for older adults, however, the risk of dying on any given day as a result of ozone exposure is quite small. However, because of the large number of individuals at risk across the country, an effect of this magnitude has meaningful public health implications.

A preponderance of other time series studies supports the existence of an ozone-mortality relationship although with a wider range of effect estimates primarily due to the smaller sizes of the studies. An independent review of this literature by the National Research Council concludes that short-term ozone is likely to be associated with premature mortality.

Other observations made in these studies include the finding that the ozone-mortality relationship is most prominent during the warm season, with few or smaller effects in the winter. It also appears that the ozone-mortality association persists when deaths are limited to those caused by either cardiac or pulmonary disease or to those caused by cardiovascular disease alone. Risk estimates for other causes of death are generally inconsistent across studies probably reflecting the lower statistical power associated with smaller daily death rates. In the Bell study of 95 cities, the observed city-specific effect rates varied widely. The degree to which this variability reflects different ozone-mortality relationships in the different cities is not clear, but it does raise the question as to whether a single average 0.5% increase in daily mortality rates should be applied to all cities. Other unanswered questions pertain to the lowest concentrations at which these effects occur and the possible mechanisms of action responsible for increased mortality among many who spend much of their time indoors where ozone levels are generally quite low. Bell et al. divided days into those with a 24-hour average ozone concentration above and below 60 ppb and found that the relationship was similar for both subsets suggesting that the relationship is present at even very low levels of ozone. Biological mechanisms responsible for the ozone-mortality relationship are largely unknown although effects of ozone on the autonomic control of the cardiovascular system, on coagulation mechanisms, and on vasoactive substances in the blood are being actively investigated.

What are the other potential effects of short-term ozone exposure?

Other potential effects of short-term ozone exposure include:

- hospital admissions and emergency room visits for respiratory causes
- school absences

There is consistent epidemiologic evidence that ambient ozone levels are associated with other markers of respiratory morbidity, particularly during the warm season. In general, studies have reported positive relationships between short-term ozone concentrations and hospital admissions and emergency room visits for respiratory causes. Although not all studies have found significant effects, risk estimates for the majority of studies are positive. It is likely that those most at risk of serious respiratory morbidity are those with underlying respiratory disease. The evidence indicates that some of the increase in hospital visits for respiratory morbidity is due to exacerbations of asthma and possibly chronic obstructive pulmonary disease (COPD). Because of the small numbers of daily hospital admissions, the effects of ozone on other subcategories of respiratory disease are not clear.

A relationship has also been observed between ozone and school absences in two studies. However, in one case the absences were related to a measure of longer-term exposure, and in the other case absences were not limited to those due to illness. Although these latter results are consistent with increased infections secondary to impaired host defense, more research needs to be done before reaching any conclusion regarding any effect of ozone exposure on respiratory infection.

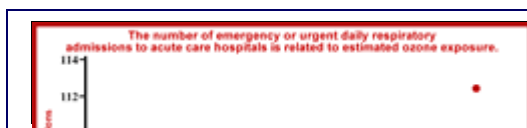
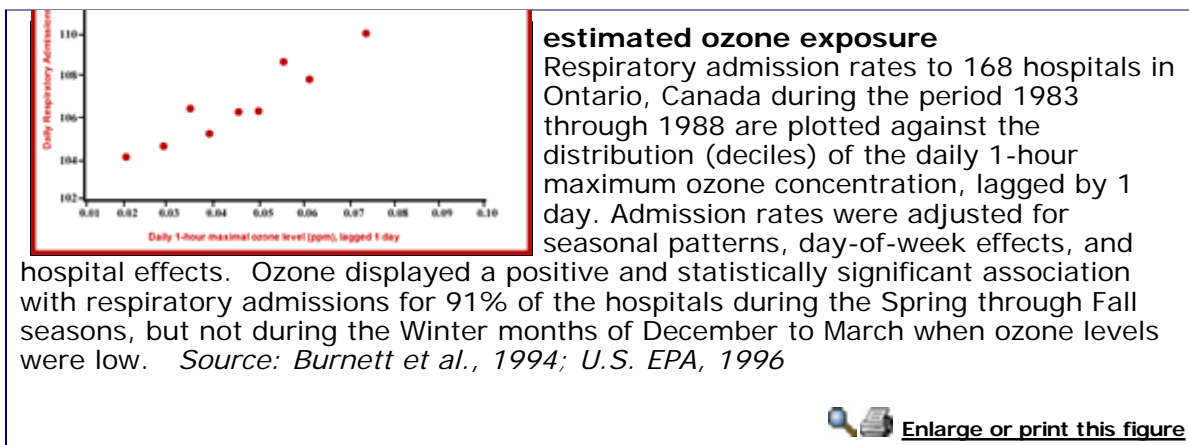


Figure 9: The number of emergency or urgent daily respiratory admissions to acute care hospitals is related to



Ozone has been associated with daily hospitalizations for cardiovascular disease in some studies but it is not a consistent finding. A number of studies have explored the relationships between ozone and various other aspects of cardiovascular pathophysiology including heart rate variability, acute myocardial infarction, and tachyarrhythmias in those with implanted cardiac devices. Although some data are suggestive of a relationship, the results at this time do not fully substantiate a relationship between ozone exposure and adverse cardiovascular events.

At what exposure levels are effects observed?

The concentration of ozone at which effects are first observed depends upon the level of sensitivity of the individual as well as the dose delivered to the respiratory tract. The dose, in turn, is a function of the ambient concentration, the minute ventilation, and the duration of exposure. This can be expressed as a rough formula:

Dose = Ambient concentration X Level of exertion (minute ventilation) X Duration of exposure.

Thus individuals performing strenuous activity (higher minute ventilation) for several hours are likely to respond to lower concentrations than when exposed at rest (lower minute ventilation) for a shorter time. The following examples illustrate this point:

- An average young adult playing an active sport such as soccer or full court basketball outdoors for 2 hours would be expected to experience small to moderate lung function and symptom effects as well as lung injury and inflammation following exposure to 120 ppb ozone.
- If the same average young adult is at rest outdoors for the two hours, such effects would not be expected until exposures reach 300-400 ppb.
- An average outdoor laborer doing intermittent work might experience similar small to moderate lung function and symptom effects as well as lung injury and inflammation following an 8-hour exposure to 60 to 70 ppb ozone.

More sensitive individuals will experience such effects at lower concentrations while less sensitive individuals will experience these effects only at higher concentrations.

Children without asthma experience lung function decrements similar to those of young adults. But children often do not report respiratory symptoms at the lowest ozone concentrations. It is not clear whether this is the result of reduced sensitivity with regard to symptoms or whether children are less likely to recognize and report symptoms.

There are chamber studies and field studies that look at the ozone exposure level at which effects are first observed. It is not surprising that field studies show effects at much lower levels than chamber studies. This is because field studies can look at sensitive populations (including children), include exposure to all oxidant species of pollution, and may include longer exposure times. For

example, field studies of agricultural workers and hikers suggest that lung function changes may be associated with prolonged ozone exposures at lower levels than those observed in chamber studies. Below are findings from key field and observational studies.

Although the results vary somewhat, several field studies suggest that the lung function of highly active asthmatic and ozone sensitive children and the exercise performance of endurance athletes may be affected on days when the 8-hour maximum ozone concentration is less than 80 ppb ozone.

Emergency room data from one study indicate that asthma attacks in the most sensitive population (e.g., children with asthma or reactive airway disease) increase following days on which the 1-hour maximum ozone concentrations exceeded 110 ppb (approximately equivalent to an 8-hour average of 82 ppb). (White et al., 1994) Another study observed increased emergency room visits for asthma on days following those when 7-hour averages exceeded 60 ppb compared to those with lower ozone concentrations. (Weisel et. al., 1995).

For effects measured in some other types of observational studies, the lowest levels at which effects are expected to occur are more difficult to identify for a number of reasons. Effects of ozone on daily mortality have been detected even when study days are restricted to those with a 24-hour average ozone concentration below 60 ppb (approximately equivalent to an 8-hour average below 90 ppb). In one study, hospital admissions for respiratory causes appear to follow a linear relationship down to background levels. (Figure 9). Limited exposure-response modeling suggests that if a population threshold for these ozone effects exists, it is likely near the lower limit of ambient ozone concentrations in the United States.

What are the effects of recurrent or long-term exposure to ozone?

One of the major unanswered questions about the health effects of ozone is whether repeated episodes of damage, inflammation, and repair induced by years of recurrent short-term ozone exposures result in adverse health effects beyond the acute effects themselves.

Daily ozone exposure for a period of 4 days results in an attenuation of some of the acute, neurally-mediated effects (e.g., lung function changes and symptoms) for subsequent exposures occurring within 1 to 2 weeks. Some health experts have, therefore, suggested that individuals living in high ozone areas may be protected from any harmful effects of long-term ozone exposure. Others suggest, however, that the attenuation of the ozone-induced tendency to take rapid and shallow breaths may blunt a protective mechanism, resulting in greater delivery and deposition of ozone deeper in the respiratory tract and other airway responses described below.

Studies including bronchoalveolar lavage and bronchial mucosal biopsies indicate that, unlike the neurally-mediated lung function changes, the processes of airway injury, inflammation, and repair continue to occur during repeated exposure. After either 4 or 5 days of exposure, markers of cell injury and increased epithelial permeability remain elevated, and an increase in airway mucosal PMN, which was not present following a single exposure, has been noted. Also, unlike the neurally-mediated effects, small airway function has been observed to remain depressed over the course of exposures and is thought to be related to the ongoing inflammation.

Studies of laboratory animals have consistently demonstrated that long-term exposure to ozone concentrations above ambient levels results in persistent morphological changes that could be a marker of chronic respiratory disease. Exposed animals experience mucous cell metaplasia and epithelial cell hyperplasia in the upper airway as well as structural changes in the lower airway including an increase in fibrous tissue in the basement membrane area and a remodeling of the distal conducting airways. In addition to airway remodeling and basement membrane changes, concurrent long-term exposure of very young primates to ozone and house dust mite allergen has been observed to result in changes in the innervation of the airways as well as an accumulation of

eosinophils in the distal airways suggesting induction of an allergic phenotype. Other studies indicate that sensitization of animals to antigen occurs more easily during ongoing ozone exposures. Based on traditional measures, there is little evidence that long-term exposure in animals results in substantial changes in airway function. However, these morphological findings suggest that long-term ozone exposure might play a role in the development or progression of chronic lung disease and/or asthma.

The epidemiologic evidence is inconclusive with regard to whether long-term exposure of humans is related to chronic respiratory health effects in humans. Several cross-sectional studies have found that young adults who spent their childhoods in locales with high ozone concentrations had lower measures of lung function than those from locales with lower ozone. Similar results have not been observed, however, in a recent well-conducted longitudinal study of lung function in children or in other cross-sectional studies. Two longitudinal studies have observed associations between development of asthma and long-term ozone concentrations in subgroups of the population. These findings have not been confirmed in other longitudinal or cross-sectional studies, but they are consistent with the animal toxicological literature. Part of the difficulty in evaluating such associations has been the small number of longitudinal epidemiologic studies specifically designed to evaluate respiratory health in samples with differing ozone exposures. The mobility of the population as well as the inability to precisely estimate exposure to ozone and other potential confounders over a period of many years degrades the power of, and leads to bias in, both longitudinal and cross-sectional studies.

In spite of the inconclusive nature of the epidemiologic literature, the repeated cycles of damage, inflammation, and repair in humans and the morphological findings from the animal toxicological studies suggest that it would be prudent to avoid repeated short-term exposures, particularly in young children, until more is known about the effects of long-term ozone exposure.

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University of California at Berkeley
 Environmental Economics & Policy 101
 Spring 2002



All That Smog

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Negative Externality
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We often do not drive a car thinking of all the hazardous emissions we would release. Nor do we turn on the light with thought as to how that energy was generated. Yet, when we do all these activities subconsciously, we indirectly contribute to the growing amounts of hazardous air pollutants in our atmosphere that are responsible for many adversities.

Smog as a Negative Externality

Depending upon various factors, including location, season, and source of generation, the price an entity pays for a given amount of energy can vary. Typically, the price would account for all costs incurred within the value chain—research and development, design, production, marketing, distribution, and customer services—plus a markup. Unfortunately, this price, the cost charged to consumers, is what is known as the market price, and therefore may not accurately reflect the total costs inflicted upon society as a whole (Baird). In such a case as where the actions of one party directly affecting another are not accounted for, an externality arises.

In the case of energy, both productive and consumptive activities result in smog, a negative externality imposed on the environment and the welfare of society. The production of an output of energy through the process of burning coal or other fossil fuels, for example, releases two main air pollutants: sulfur dioxide and nitrogen oxides. Similarly, the consumption of energy—either for self-consumptive or other productive purposes—releases primary pollutants VOCs and nitrogen dioxides, which in turn can undergo chemical reactions to yield secondary pollutants such as ground level ozone and PAN. All these air pollutants are responsible for adverse effects in both humans and plants and on materials and aesthetics, as well as the negative impacts on the environment, namely acid rain. In whichever case, the stated price of either energy or an intermediate form of energy, such as gas, or a finished output that uses energy as an input, rarely reflects the complete burden placed upon society. This neglect of externalities, in turn, often results in an over-production or over-consumption of energy and other related goods. Here, we take a closer look at these externalities as to see what costs to society the market fails to account for.



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Smog and its Effects on Human Health

We, as humans, can live a few days without food and water, but can only live a few minutes without air. The fact that an active adult inhales 10,000 to 20,000 liters of air each day, or 7 to 14 liters every minute, highlights a critical point in the fight for clean air (Elsom 30).

While the effects of smog vary according to factors such as age, state of health, time of exposure, and dosage, the general symptoms include coughing, sneezing, headaches, tiredness, irritation, nausea, and hoarseness of the throat, nose, and eyes, and constrictions of the chest (Lewis 37; Elsom 31).

Additionally, nitrogen dioxide and ground-level ozone were found to cause reductions in the immune system's ability to fight bacteria and viruses in the respiratory system (Nebel and Wright 530; EPA, "Smog-Who Does it Hurt?" 3). These effects are all considered to be short-term in that once exposure ceases, the symptoms are no longer present. However, in most cases, it is the long-term effects of air pollutants that bring the greatest concerns, since these effects are often the most severe.

Unsurprisingly, most acute effects of smog are related to the respiratory system. Some components of smog such as nitrogen dioxide, sulfur dioxide, and ground-level ozone are found to have caused damages to the mucociliary system responsible for cleaning the air tracts (Elsom 56). As a result, the lung's ability to resist disease is reduced, and illnesses, such as bronchitis and emphysema, can be aggravated (Gow and Pidwirny; Elsom 56). Likewise, while some VOCs were found to be carcinogenic, the main problem with VOCs was its role in the formation of ground-level ozone. Present in ambient concentrations, ground-level ozone can cause inflammation and fibrosis to the lungs, resulting in permanent morphological changes to the lungs (Nebel and Wright 530; EPA, "Smog-Who Does it Hurt?" 3). Consequently, these air pollutants can not only decrease lung function, elasticity, and capacity by as much as 5%, but can also lead to the premature aging of the lungs (Elsom 33, 63; "Smog").



While continuous research is being made as to link the long-term effects of smog to human health, scientists in general have agreed on several findings. By and large, children, asthmatics, people with chronic respiratory or pulmonary and heart disease, and the elderly are the most susceptible to air pollutants (Nebel and Wright 530). Because the lungs of children are not yet fully developed and because children inhale more air per unit of body weight than adults, they are prone to greater health effects as well as long-term damage to the lungs (Elsom 42). Similarly, because asthmatics and those suffering from chronic diseases are already in a weakened state, smog adds stress to their bodies

(Nebel and Wright 532). For the elderly, smog increases their susceptibility to viral and bacterial attacks, as both lung and immune system functions decrease with age (Elsom 42). Healthy adults who work actively outdoors or who have higher levels of exposure to air pollutant are also considered, by the EPA, to be in a "sensitive group" (EPA, "Smog-Who Does it Hurt?" 3).

In all these cases, it is important to note that contrary to popular belief, death as a result of a smog siege is often not a result of air pollutant poisoning, but rather, a result of increasing susceptibility to diseases. Equally important, however, is the fact that a great level of uncertainty exists in identifying a cause-and-effect relationship between smog and smog-related illnesses. At most, we can often only say that pollutants are contributing factors to related illnesses. Consequently, this makes the exact measurements of externalities difficult, if not impossible.

Estimates have been made, however, to provide a monetary value of the costs and benefits of smog. In several studies conducted by the American Lung Association, the costs of premature deaths, hospital stays and emergency room visits, productivity loss as a result of missing work or school, and other air pollutant related health effects were an indication of inefficiency within the economy ("Air"). The reports went so far as to argue that economic growth was correlated with environmental protection by demonstrating that human health benefits of cleaner air outweighed the costs industries would have to incur as a result of higher standards (ibid). It was estimated that enforcement of all parts of the Clean Air Act between 1970 and 1990 would result in minimum benefits of \$23 trillion over the twenty years, an average of over \$1 trillion annually (ibid).

In a similar study conducted by the EPA for United States Congress in 1999, it was estimated that if the Clean Air Act Amendments were enforced in the 48 contingent states for the twenty-year period between 1990 and 2010, the total human health benefits in 2000 would be \$68 billion and \$118 billion in 2010 (EPA, "The Benefits and Costs" H-27). These benefits represent underestimates, since, in the words of the EPA itself, "there is insufficient information from both the medical and the economic sciences to satisfactorily resolve these issues from a theoretically/analytical standpoint" (ibid. H-36).

Apparently, smog is a costly externality from a human health perspective alone.

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Smog and its Effects on Agriculture and Forests

The adverse effects of smog are not limited to humans alone. As it turns out, plants are perhaps more sensitive to air pollutants than humans. In particular, acid rain has left areas barren or with severely damaged vegetation (Nebel and Wright 533). Yet, perhaps the greatest damage has been from ground-level ozone and PAN. Entering leaves of plants from the stomata during normal gas exchange, both ground-level ozone and PAN can cause discoloration, damage, and loss of leaves-reducing photosynthesis by as much as 50% (Munster; Gow and Pidwirny). Plants also become more vulnerable to attacks by pests, disease, and other environmental disasters (Shaw). Consequently, the plant's ability to store food, grow, and reproduce is hindered (ibid).

In numerical terms, ground-level ozone, alone, has been estimated to cause 10% to 40% growth loss, premature aging, and a decrease in pollen lifespan resulting in an estimable cost in agriculture of \$2 billion to \$6 billion per year (Nebel and Wright 533; "Smog"). Losses in crop yields were estimated to be 20% to 30% between 1989 and 1992 (Nebel and Wright 533). In Ontario alone, smog was attributed to reduce crop yields equivalent to \$70 million per year ("Smog"). In a study conducted by the EPA to Congress, continuous implementation of a Clean Air Act Amendments over the period 1990 to 2010 would accumulate a minimum 1999 net present value of agricultural benefits of at least \$4 billion (EPA, "The Benefits and Costs" F-8). Along with the fact that 60% of the world's food is produced in countries that also produce 60% of the world's air pollution, the significance of clean air is clearly seen (Nebel and Wright 533).



In a forestry aspect, smog incurs a cost on the existence value of trees and wild plants. In Los Angeles, smog was attributed to the deaths of 50% of trees in nearby areas (ibid.). Similarly, ground-level ozone from the Central Valley and San Francisco-Oakland metropolitan areas was responsible for increasing stress and vulnerability on the ponderosa and Jeffrey pines in the Sierra Nevada (ibid.). An attack by western pine beetles subsequently diminished the number of these trees.

As it perhaps can be predicted, the monetary costs of the loss of forests are difficult to measure, if measurable at all. Yet, it may still be worthwhile to keep in mind the option value benefits, non-consumptive use benefits, and existence value of forests, when making a balance sheet of costs and benefits of reducing smog. In another aspect, the damage to trees can have direct economic costs-as Canada discovered when it was found that ground-level ozone was the cause of damage to its sugar maple trees and other trees in its forestry industry ("Smog").

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Smog and its Effects on Materials and Aesthetics

It is said that cleaning is just as destructive as it is costly. Perhaps this is even more so when considering the material and aesthetic aspects of smog. Besides the fact that most people derive a psychological benefit of seeing a clear sky and a clean surrounding, the costs of smog can be millions of dollars.



The most visible characteristic of cities smothered by smog is perhaps the black and soot-covered windows, walls, drapes and curtains, and other exposed surfaces. Yet, other damages can be seen. Sulfur dioxide corrodes metal and stone-damaging machinery and industrial instruments, as well as destroying buildings, statues, and monuments (Lewis 33; EPA, "The Plain English"). Ground-level ozone, destroying synthetic materials, can cause leather to become brittle and rubber to lose its elasticity, resulting in



cracks (Lewis 33). Moreover, ground-level ozone has been found to damage cotton, acetate, nylon, polyester, and other textiles, while bleaching dyes, paints, and coatings ("Smog").

While it is uncertain as to how much is exactly spent on the cleaning or replacement of materials, a couple of million dollars is considered to be a reasonable estimate. Canada, alone, estimates that the increase in ground-level ozone from the United States has cost it up to one billion dollars in material damages ("Smog"). Considering that cleaning and replacement costs do not include materials that are irreplaceable and the observation that people have actually spent more to move further away from cities, these costs of pollution most likely will be underestimates (Nebel and Wright 534).

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Smog and its Effects on Ecological Systems

Sulfur dioxide and nitrogen oxides are largely responsible for the sources of acid precipitation. Because it results in acid rain with a pH of 5.5 or less, smog can have serious widespread ecological impacts on aquatic systems, forests, and on humans far away from its point of origin.

As a basic biology course will explain, slight deviations from pH values in the environment can be critical to the proper functioning of enzymes, hormones, and other proteins. In aquatic systems with a normal pH of 6 to 8, a slight deviation in most cases will pose no threat, as organisms adapt (Nebel and Wright 541). However, an organism's ability to successfully reproduce may be hindered, and in more extreme cases, a population of an organism may actually become extinct (ibid.). In forests, acid precipitation not only damages trees and plants, but also affects soil contents, which can thwart growth towards acid-tolerant species (ibid. 542). For humans, the effects of acid rain may vary from aesthetic values to the issue of clean water and air. In all of these cases, no exact monetary value can be assigned.



The fact that everyone and everything in the environment is interlinked in a chain demonstrates the difficulty in measuring an externality such as smog. Yet the simple recognition that such externalities exist can work wonders in policies attempting to ensure a more sustainable and healthier future.

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March 12, 2009

Study links smog exposure to premature death

By **ROBIN BRAVENDER**, [Greenwire](#)

Long-term exposure to concentrated smog significantly raises the risk of dying from lung disease, a new study shows.

The [study \(pdf\)](#), published today in the *New England Journal of Medicine*, found that the risk of dying from respiratory disease is more than three times higher in metropolitan areas with the most concentrated ozone -- a precursor of smog -- than in those with the lowest ozone concentrations.

The report is the first nationwide study to evaluate the effects of long-term impacts of ozone on human health and the first to separate the effects of ozone pollution from those of fine particle pollution, or soot, according to a statement from New York University's Langone Medical Center.

"Many studies have shown that a high ozone day leads to an increase in risk of acute health effects the next day, for example, asthma attacks and heart attacks," said co-author George Thurston, a professor at NYU's Department of Environmental Medicine, in the statement.

"What this study says is that to protect the public's health, we can't just reduce the peaks, we must also reduce long-term, cumulative exposure."

The study was co-authored by scientists from Health Canada, Brigham Young University, New York University's School of Medicine, the University of Ottawa, the American Cancer Society and the University of California, Berkeley.

Ozone is formed by a chemical reaction between nitrogen oxides and volatile organic compounds in the presence of sunlight. It is considered beneficial in the earth's stratosphere, where it forms a shield that blocks the sun's harmful rays. But ground-level ozone -- which can come from tailpipes, coal-fired utilities and other industries -- can trigger health problems including chest pain, coughing, throat irritation and congestion, according to U.S. EPA. It can also damage vegetation and ecosystems.

'Substantial risk' under EPA limits

Thurston said the study shows that EPA's current standards for airborne ozone -- measured over eight-hour periods -- do not protect against the long-term effects of ozone exposure.

"It seems clear that even in cities that are approaching meeting the existing standard, you still have a substantial risk from the cumulative long-term exposure that's not addressed by the acute standard," he said.

New York City's air, for example, is nearly in compliance with EPA's short-term ozone standard of 75 parts

per billion, he said. Still, New Yorkers face a 25 percent increased risk of respiratory death as a result of their ozone exposures, he said.

Yesterday, the Obama administration asked a federal appeals court to stall a pending court case over EPA's current smog standards to give the agency more time to consider whether to revise the controversial Bush-era air quality standards (*E&ENews PM*, March 11). Environmental groups have blasted the Bush-era standard for being too weak, while industry groups have argued that the current standard is too stringent.

Frank O'Donnell, president of the advocacy group Clean Air Watch, said the study adds fuel to clean air advocates' argument that the federal standards should be stricter.

"There's certainly a great weight of evidence to document that tougher ozone standards are needed," O'Donnell said.

[Click here](#) (pdf) to read the report.

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AIRtrends 1995 Summary

You are here: [EPA Home](#) [Air & Radiation](#) [Air Trends](#) [Reports](#) [1995 Summary](#) [Particulate Matter](#)

<http://www.epa.gov/airtrends/aqtrnd95/pm10.html>

Last updated on Thursday, January 05, 2012

Particulate Matter (PM-10)

Note: EPA no longer updates this information, but it may be useful as a reference or resource.

Please see www.epa.gov/airtrends for the latest information on Air Quality Trends.

Nature and Sources of the Pollutant:

Particulate matter is the term for solid or liquid particles found in the air. Some particles are large or dark enough to be seen as soot or smoke. Others are so small they can be detected only with an electron microscope.

Because particles originate from a variety of mobile and stationary sources (diesel trucks, woodstoves, power plants, etc.), their chemical and physical compositions vary widely. Particulate matter can be directly emitted or can be formed in the atmosphere when gaseous pollutants such as SO₂ and NO_x react to form fine particles.



Health and Environmental Effects: In 1987, EPA replaced the earlier Total Suspended Particulate (TSP) air quality standard with a PM-10 standard. The new standard focuses on smaller particles that are likely responsible for adverse health effects because of their ability to reach the lower regions of the respiratory tract. The PM-10 standard includes particles with a diameter of 10 micrometers or less (0.0004 inches or one-seventh the width of a human hair). EPA's health-based national air quality standard for PM-10 is 50 µg/m³ (measured as an annual mean) and 150 µg/m³ (measured as a daily concentration). Major concerns for human health from exposure to PM-10 include: effects on breathing and respiratory systems, damage to lung tissue, cancer, and premature death. The elderly, children, and people with chronic lung disease, influenza, or asthma, are especially sensitive to the effects of particulate matter. Acidic PM-10 can also damage human-made materials and is a major cause of reduced visibility in many parts of the U.S. New scientific studies suggest that fine particles (smaller than 2.5 micrometers in diameter) may cause serious adverse health effects. As a result, EPA is considering setting a new standard for PM-2.5. In addition, EPA is reviewing whether revisions to the current PM-10 standards are warranted.

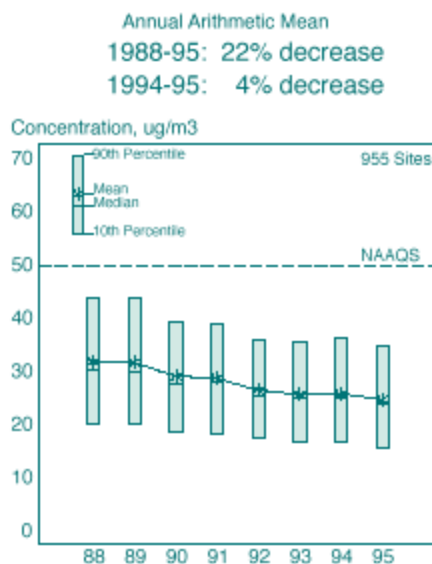
Trends in PM-10 Levels: Air monitoring networks were changed in 1987 to measure PM-10 (replacing the earlier TSP monitors).

Between 1988 and 1995, average PM-10 concentrations decreased 22 percent. Short-term trends between 1994 and 1995 showed a decrease of 4 percent in monitored PM-10 concentration levels.

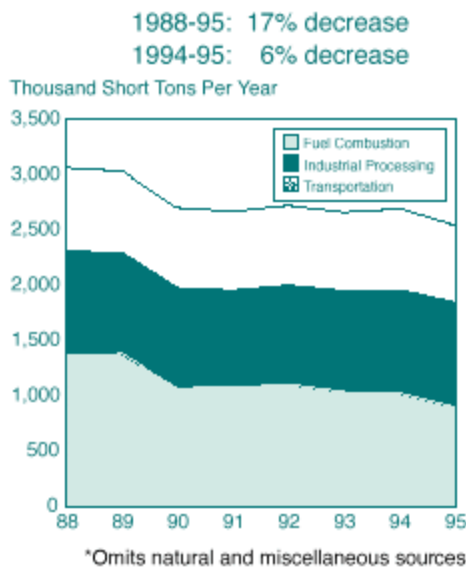
Emissions of PM-10 shown in the chart are based on estimates from fuel combustion sources, industrial processes, and transportation sources, which account for only 6 percent of the total PM-10 emissions nationwide. Between 1988 and 1995, PM-10 emissions for these sources decreased 17 percent. Short-term emissions trends between 1994 and 1995 showed a 6 percent decrease.

The emissions estimates presented below do not include emissions from natural and miscellaneous sources which are fugitive dust (unpaved and paved roads), agricultural and forestry activities, wind erosion, wildfires and managed burning. These emissions estimates also do not account for particulate matter that is secondarily formed in the atmosphere from gaseous pollutants (e.g., SO₂ and NO_x).

PM-10 Concentrations, 1988-95



PM-10 Emissions, 1988-95*



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Air Pollution - Particulate Matter Brochure

This page last reviewed May 6, 2009

What is Particulate Matter (PM10)?

Particulate matter (PM10) pollution consists of very small liquid and solid particles floating in the air. Of greatest concern to public health are the particles small enough to be inhaled into the deepest parts of the lung. These particles are less than 10 microns in diameter - about 1/7th the thickness of the a human hair - and are known as PM10. This includes fine particulate matter known as PM2.5.

PM10 is a major component of air pollution that threatens both our health and our environment.

Where does PM10 come from?

In the western United States, there are sources of PM10 in both urban and rural areas, major sources include:

1. Motor vehicles.
2. Wood burning stoves and fireplaces.
3. Dust from construction, landfills, and agriculture.
4. Wildfires and brush/waste burning.
5. Industrial sources.
6. Windblown dust from open lands.

PM10 is a mixture of materials that can include smoke, soot, dust, salt, acids, and metals. Particulate matter also forms when gases emitted from motor vehicles and industry undergo chemical reactions in the atmosphere.

How does PM10 affect our health?

PM10 is among the most harmful of all air pollutants. When inhaled these particles evade the respiratory system's natural defenses and lodge deep in the lungs.

Health problems begin as the body reacts to these foreign particles. PM10 can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections.

Although particulate matter can cause health problems for everyone, certain people are especially vulnerable to PM10's adverse health effects. These "sensitive populations" include children, the elderly, exercising adults, and those suffering from asthma or bronchitis.

Of greatest concern are recent studies that link PM10 exposure to the premature death of people who already have heart and lung disease, especially the elderly.

Does PM10 affect our view?

PM10 is often responsible for much of the haze that we think of as smog. This is a problem in our cities, rural areas and pristine areas - such as national parks and forests.

What is being done to reduce PM10 pollution?

The United States Environmental Protection Agency has set air quality standards for PM10. Based on health research, these identify acceptable levels of PM10. Currently, these standards are violated in many parts of the western United States.

Air quality agencies in several states have developed, or are now developing, air quality plans to bring PM10 concentrations down to healthful levels. These plans include a variety of programs to reduce emissions, including:

1. Dust control for roads, construction, and landfills.
2. Landscaping, barrier, and fencing to reduce windblown dust.
3. Programs to reduce emission from wood stoves and fireplaces.
4. Cleaner - burning gasoline and diesel fuels.
5. Emission control devices for motor vehicles.
6. Controls for industrial facilities.

What can you do?

Here are a few things individuals, business, and other organizations can do immediately to reduce the threat of PM10:

1. Reduce travel on days with poor air quality.
2. Avoid vigorous physical activity on days that have poor air quality.
3. Avoid using your wood stove and fireplace on days that have poor air quality.
4. Avoid using leaf blowers and other dust - producing equipment.
5. Drive slowly on unpaved roads and other dirt surfaces.
6. Get involved with air quality improvement programs in your community.
7. If you own or operate an industrial source of PM10, comply with local rules that apply to your operation. Work with local agencies to develop strategies that will further reduce PM10 emissions.

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**2009 IMPERIAL COUNTY
STATE IMPLEMENTATION PLAN FOR
PARTICULATE MATTER LESS THAN
10 MICRONS IN AERODYNAMIC DIAMETER**

FINAL

Prepared for

Imperial County Air Pollution Control District
150 South 9th Street
El Centro, CA. 92243-2801

Prepared by

ENVIRON International Corporation
707 Wilshire Blvd., Suite 4950
Los Angeles, CA 90017

August 11, 2009

PM₁₀ is respirable, with fine and ultrafine particles reaching the alveoli deep in the lungs, and larger particles depositing principally in the nose and throat area. PM₁₀ deposition in the lungs results in irritation that triggers a range of inflammation responses, such as mucus secretion and bronchoconstriction, and exacerbates pulmonary dysfunctions, such as asthma, emphysema, and chronic bronchitis. Sufficiently small particles may penetrate into the bloodstream and impact functions such as blood coagulation, cardiac autonomic control, and mobilization of inflammatory cells from the bone marrow. Individuals susceptible to higher health risks from exposure to PM₁₀ airborne pollution include children, the elderly, smokers, and people of all ages with low pulmonary/cardiovascular function. For these individuals in particular, adverse health effects of PM₁₀ pollution include coughing, wheezing, shortness of breath, phlegm, bronchitis, and aggravation of lung or heart disease, leading for example to increased risks of hospitalization and mortality from asthma attacks and heart attacks.¹

1.2 Imperial County

1.2.1 Geography, Population, and Land Use

Imperial County extends over 4,597 square miles² in the southeastern portion of California, bordering Mexico to the south, Riverside County to the north, San Diego County to the west, and the State of Arizona to the east. The Imperial Valley runs approximately north-to-south through the center of the county and extends into Mexico. The terrain elevation varies from as low as 230 feet below sea level at the Salton Sea to the north to more than 2,800 feet above sea level at the mountain summits to the east.

Imperial County's population is about 173,000 people,³ and its principal industries are farming and retail trade. Most of the population, farming, and retail trade exist in a band of land that, on average, comprises less than one-fourth the width of the county, stretching from the south shore of the Salton Sea to the Mexican border. The road network is densest within this strip, as shown in Figure 1.1. The rest of Imperial County is the Salton Sea and mostly dry, barren desert area with little or no human population. Imperial County's population distribution and population growth in recent years are reported in Appendix V.

Imperial County's agricultural industry⁴ grew to \$1.37 billion in 2007, led by cattle farming at \$334 million. More than 40 types of crops and commodities are grown in the county, ranking Imperial County 11th among California counties.⁵ The total acreage of farmed land has remained fairly constant at ~500,000 acres over the last decade, and nearly 25% of the county's labor force works in the Agricultural Sector during the high season.

¹ Additional details regarding the adverse health effects of PM can be found in the San Joaquin Valley 2006 PM₁₀ Plan (Chapter 1, Section 1.5), available at http://www.valleyair.org/Air_Quality_Plans/06PM10.htm.

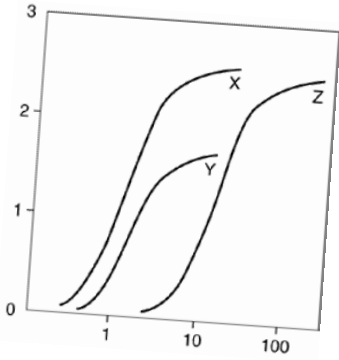
² Official website of Imperial County, <http://www.co.imperial.ca.us/>.

³ Southern California Association of Governments, http://www.scag.ca.gov/publications/pdf/2007/SOTR07/SOTR07_Population.pdf

⁴ Imperial County Agricultural Commissioners Office, *Imperial County 2007 Agricultural Crop and Livestock Report*, available at <http://imperialcounty.net/ag/Crop%20&%20Livestock%20Reports/Crop%20&%20Livestock%20Report%202007%20Color.pdf>

⁵ California Farm Bureau Federation, <http://www.cfbf.com/counties/index.cfm?id=13>

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August 31, 2012

Lozeau | Drury LLP
410 12th Street, Suite 250
Oakland, CA 94607

Attn: Mr. Michael Lozeau

Subject: Comment Letter on the Draft Environmental Impact Report for the Prologis Eucalyptus Industrial Park, SCH No. 2008021002.

Dear Mr. Lozeau:

At the request of Lozeau | Drury LLP (Lozeau Drury), Clark and Associates (Clark) has reviewed materials related to the above referenced project, including the Draft Environmental Impact Report¹ (DEIR) for the Prologis Eucalyptus Industrial Park (hereafter called the Project), SCH No. 2008021002 and its appendices. The proposed project site is located in the eastern portion of the City of Moreno Valley, in Riverside County, California. The 122.8-acre project site is located south of State Route 60 (SR-60) east of the Moreno Valley Auto Mall, and adjacent to and west of the Quincy Channel. According to the DEIR the proposed project would result in the construction and operation of a warehouse facility, consisting of approximately 2,244,638 square feet (sq ft).

Currently the site is used undeveloped for commercial uses and has two citrus groves in the northeastern and northwestern portions of the site, while the central and southern portions are vacant and support mainly weedy vegetation. According to a March, 2012 Memo from LSA

¹ LSA. 2012. Draft Environmental Impact Report, State Clearinghouse No. 2008021002, Prologis Eucalyptus Industrial Park (formerly Prologis Park Moreno Valley Eucalyptus Project), City of Moreno Valley, Riverside County, California. LSA Associates, Inc. 1500 Iowa Ave, Suite 200, Riverside, CA LAS Project No. PLO1101. Prepared July 2012 pg. 1-2

Associates², the project site contains 57-acres of citrus (Grapefruit) trees with the rest of the site vacant. The surrounding area has been dry-farmed in the past, and the eastern end of the City has historically supported a variety of crops, including citrus, melon, potatoes, etc³. There are three small natural drainage features on site, two ephemeral channels in the southwestern portion of the site and the larger Quincy Channel along the eastern edge of the property. According to the DEIR⁴, there is some minor amount of refuse is present in the southwest and southeast corners of the site from unauthorized dumping.

Land adjacent to the project site includes vacant land east and south of the proposed project site, SR- 60 to the north, and the Moreno Valley Auto Mall and the City of Moreno Valley Fire Station No. 58 northwest of the project site. Existing single-family residential uses are located approximately 50 feet southeast of the southeastern corner of the project site⁵.

The proposed project has had and will have significant impacts on the community prior to the approval of the DEIR. The proposed project will require significant changes in the local zoning ordinances (General Plan for the City of Moreno Valley) including:

² LSA. 2012. Project Memorandum: Agricultural Use of ProLogis Industrial Property. Memorandum from Kent Norton, LSA Riverside Office to Jeff Bradshaw, City of Moreno Valley. Dated March 21, 2012.

³ LSA. 2012. Project Memorandum: Agricultural Use of ProLogis Industrial Property. Memorandum from Kent Norton, LSA Riverside Office to Jeff Bradshaw, City of Moreno Valley. Dated March 21, 2012.

⁴ LSA. 2012. Draft Environmental Impact Report, State Clearinghouse No. 2008021002, Prologis Eucalyptus Industrial Park (formerly Prologis Park Moreno Valley Eucalyptus Project), City of Moreno Valley, Riverside County, California. LSA Associates, Inc. 1500 Iowa Ave, Suite 200, Riverside, CA LAS Project No. PLO1101. Prepared July 2012 pg 3-1

⁵ LSA. 2012. Draft Environmental Impact Report, State Clearinghouse No. 2008021002, Prologis Eucalyptus Industrial Park (formerly Prologis Park Moreno Valley Eucalyptus Project), City of Moreno Valley, Riverside County, California. LSA Associates, Inc. 1500 Iowa Ave, Suite 200, Riverside, CA LAS Project No. PLO1101. Prepared July 2012 pg 3-1

- Approval of a General Plan Amendment to change the land use designation of 71.3 acres of the project site from Residential (R15, R5, and R2) to Business Park (BP) so the entire site would then be designated Business Park (BP).
- Approval of a Zone Change of the entire 122.8 acres from its current zoning designations of Business Park (BP), Business Park/Mixed Use (BPX), Residential 15 District (R15), Residential 5 District (R5), and Residential Agriculture 2 (RA-2) to all Light Industrial (LI).
- Zone Change will also be used to redraw the boundary of the Primary Animal Keeping Overlay (PAKO) district.
- Approval of an amendment to the City’s Master Plan of Trails to relocate the Eucalyptus Avenue Trail to the north side of future Eucalyptus Avenue and eliminate the planned trail segment on Quincy Avenue from SR-60 to Fir Avenue (future Eucalyptus Avenue), based on discussion with the City Trails Commission.
- Approval of an amendment to the Circulation Element of the General Plan. These changes include the following:
 - Eliminate the undeveloped Quincy Street from Eucalyptus Avenue south to Encilia Avenue;
 - Realign Encilia Avenue from its current alignment such that its westerly terminus is located at Moreno Beach Drive instead of the current General Plan westerly terminus at Eucalyptus Avenue; and
 - The segment between Quincy Channel and Moreno Beach Drive would be classified as a Collector.

In addition, to the changes above, the proposal of the project has forced the Moreno Valley Unified School District (MVUSD) to abandon plans to locate an elementary school (MVUSD Elementary School #24), a middle school (MVUSD Middle School #7), and a high school (MVUSD

High School #5) in the vicinity of Redlands Boulevard and future Eucalyptus Avenue, in close proximity to the proposed. After the Notice of Preparation (NOP) for the proposed project was released, MVUSD decided to abandon plans for these school sites and relocate the future school facilities in a different area of the City⁶. Students who live in the area to be serviced by the proposed schools will now have to travel farther to attend schools.

The DEIR for the Project, determined that the proposed project's construction and operational phases would have impacts on air quality that would be less than significant with mitigation incorporated. These conclusions are premature and based upon a flawed analysis of the potential emissions at the site. The proponents should re-evaluate the impacts of the project and present them in a revised draft environmental impact report (RDEIR).

Clark's review of the materials in no way constitutes a validation of the conclusions or materials contained within the plan. If we do not comment on a specific item this does not constitute acceptance of the item.

This DEIR was issued prematurely without considering the serious flaws in the Proponent's analysis of the project. The flaws include:

1. The proponent's use of the CalEEMod ensures an underestimation of the potential particulate emission for the construction phase of the proposed project.
2. Failure of the proponent to compare construction emissions to daily construction significance thresholds;
3. Failure to consider health risks from contaminated dust; and
4. Failure to properly identify and address the Project's operational air quality impacts.

⁶ LSA. 2012. Draft Environmental Impact Report, State Clearinghouse No. 2008021002, Prologis Eucalyptus Industrial Park (formerly Prologis Park Moreno Valley Eucalyptus Project), City of Moreno Valley, Riverside County, California. LSA Associates, Inc. 1500 Iowa Ave, Suite 200, Riverside, CA LAS Project No. PLO1101. Prepared July 2012 pg 4.3-6.

COMMENTS

1. The Proponent's Use Of The CalEEMod Ensures An Underestimation Of The Potential Particulate Emission For The Construction Phase Of The Proposed Project.

The California Air Resource Board's (CARB's) Urban Emission (URBEMIS) model and the California Emissions Estimator Model (CalEEMod) are computer models designed to estimate emissions of criteria pollutants during construction and operational phases of projects. Currently, South Coast Air Quality Management District (SCAQMD) accepts the outputs from both models in their air quality analyses. Significant differences in the models must be highlighted in the DEIR. The changes in the method used to estimate construction impacts from the proposed project by using the CalEEMod model instead of the URBEMIS model include:

- Failure to account for wind-blown fugitive dust⁷. According to the July, 2011 CalEEMod Technical Paper, wind-blown fugitive dust is not calculated in CalEEMod. For sites as large as the proposed project site, this can result in significant quantities of particulate matter being released.
- SCAQMD's surveys of construction sites were limited to sites of 35 acres or less. For projects larger than 35-acres the data was extrapolated by increasing the number of construction days but not increasing the number of construction equipment pieces used on a given day. The impact is to reduce the construction PM estimates for the site as compared to URBEMIS⁸.

⁷ CalEEMod. Technical Paper: Methodology Reasoning and Policy Development of the California Emission Estimator Model. July, 2011. Pg 4.

⁸ CalEEMod. Technical Paper: Methodology Reasoning and Policy Development of the California Emission Estimator Model. July, 2011. Pg 5.

- Grading in URBEMIS is based upon 25% of total project acreage in one day. Grading in CalEEMod is based upon Walker's Building Estimator's Reference Book. The impact of this change is to decrease PM emissions from grading in the CalEEMod⁹ by tying the emissions to the number of pieces of equipment present at the site.

The proponent's must include an analysis of these impacts in a revised DEIR (RDEIR) to ensure that an accurate analysis of the potential impacts from the proposed project are presented as required by CEQA.

2. Failure To Accurately Compare Construction Emissions To Daily Construction Significance Thresholds.

Unlike the operational emissions from most projects, which are typically more or less continuous, emissions from construction sites are highly variable depending on the type of construction that is being performed. For example, grading results in large quantities of fugitive dust and combustion emissions from diesel-powered equipment. Short-term emissions during the various construction phases can be considerable and may result in degradation of local and regional air quality and severe health effects.

To determine whether short-term emissions may result in degradation of local and regional air quality and severe health effects, it is common practice for lead agencies to compare project emissions to quantitative significance thresholds developed by local air districts as a screening tool for CEQA review. Thresholds of significance for construction emissions are typically expressed on a short-term basis, *i.e.* daily or hourly basis to adequately capture impacts due to the high variability of emissions during different construction stages.

⁹ CalEEMod. Technical Paper: Methodology Reasoning and Policy Development of the California Emission Estimator Model. July, 2011. Pg 5.

Table 1 presents a summary of short-term emissions thresholds developed by SCAQMD and other air districts for assessing impacts on air quality from construction projects.

Table 1:
CEQA significance thresholds for construction emissions from various air districts

Air district construction thresholds*	NO _x (lbs/day)	ROG (lbs/day)	PM ₁₀ (lbs/day)	DPM (lbs/day)	PM _{2.5} (lbs/day)	CO (lbs/day)
SCAQMD	100	75	150		55	550
BAAQMD	54	54	82		54	
EDCAPCD	82	82				
SLOCAPCD				7		
MBUAPCD			82			550
FRAQMD	25	25	80			
SMAQMD	85					
YSAQMD	82	82	150			

SCAQMD = South Coast Air Quality Management District, CEAQ Handbook, 1993;
 BAAQMD = Bay Area Air Quality Management District, CEQA Guidelines 2009;
 EDCAPCD = El Dorado County Air Pollution Control District, CEQA Guide, February 2002;
 SLOCAPCD = San Louis Obispo County Air Pollution Control District, CEQA Air Quality Handbook, December 2009.
 MBUAPCD = Monterey Bay Unified Air Pollution Control District, CEQA Air Quality Guidelines, June 2004,
 FRAQMD = Feather River Air Quality Management District,
http://www.fraqmd.org/CEQA_Thresholds.htm;
 SMAQMD Sacramento Metropolitan Air Quality Management District, Guide to Air Quality Assessment, July 2004;
 YSAQMD, Yolo-Solano Air Quality Management District, Air Quality Handbook, Guidelines for Determining Air Quality Thresholds of Significance and Mitigation Measures for Proposed Development Projects that Generate Emissions from Motor Vehicles, revised 2002

According to the DEIR¹⁰, “criteria pollutant emissions during project construction would exceed the SCAQMD emission thresholds for oxides of nitrogen (NO_x) and reactive organic gases (ROG). Compliance with SCAQMD Rules and Regulations during construction will minimize construction-related air quality impacts from fugitive dust emissions and construction equipment emissions. Mitigation is required. The proposed

¹⁰ LSA. 2012. Draft Environmental Impact Report, State Clearinghouse No. 2008021002, Prologis Eucalyptus Industrial Park (formerly Prologis Park Moreno Valley Eucalyptus Project), City of Moreno Valley, Riverside County, California. LSA Associates, Inc. 1500 Iowa Ave, Suite 200, Riverside, CA LAS Project No. PLO1101. Prepared July 2012 pg 1.

project would not exceed any of the localized significance thresholds (LSTs) during construction periods.” This statement is incorrect and misleading.

A review of the CalEEMod analysis for the project shows that the mitigated construction emissions of ROG and particulate matter less than 2.5 microns (PM_{2.5}) exhaust (a surrogate for diesel particulate emissions) are in excess of the CEQA significance thresholds listed above. During Year 2013, ROG and PM_{2.5} exhaust emissions are estimated to be 368.03 lbs/day and 7.95 lbs/day, respectively.

In addition to the Significant Thresholds above, SCAQMD recommends the use of LSTs to determine potential impacts to receptors near projects. According to the Air Quality Analysis prepared by the proponent, Table I of the Air Quality Analysis (Table 2 below) shows that the emissions of the pollutants on the peak day of construction are below the SCAQMD LST. In this table the proponent uses the emission estimates from the grading phase of the construction. The proponent inaccurately asserts that the emission levels will be below the LST values.

Table 2:

Construction LST Impacts from Air Quality Analysis

Emission Sources	Pollutant Emissions, lbs/day			
	NOx	CO	PM ₁₀	PM _{2.5}
On-Site (grading) Emissions	104	55	8.4	6.3
LST Threshold	270	1,577	13	8
Significant Emissions?	No	No	No	No

A review of the CalEEMod analysis shows that the highest emission values are not associated with the grading phase. In Section 2.0 Emission Summary of the CalEEMod analysis presented in the Air Quality Analysis the construction impacts are listed as:

**Table 3:
Construction LST Impacts from CalEEMod Output**

Emission Sources	Pollutant Emissions, lbs/day			
	NOx	CO	PM ₁₀	PM _{2.5}
Mitigated Construction Emissions	139.84	166.77	29.2	8.28
LST Threshold	270	1,577	13	8
Significant Emissions?	No	No	Yes	Yes

The Proponent’s analysis of air quality impacts clearly fails to accurately describe the impacts of the emissions on the receptors closest to the project site (homes within 50 feet of the site boundary and the fire station immediately adjacent to the site boundary). Emissions of PM_{2.5} (surrogate for diesel exhaust) and PM₁₀ from the construction site may have lasting impacts on the receptors nearby.

Diesel exhaust contains nearly 40 toxic substances including toxic air contaminants (TACs) and may pose a serious public health risk for residents in the vicinity of the facility. TACs are airborne substances that are capable of causing short-term (acute) and/or long-term (chronic or carcinogenic, i.e., cancer causing) adverse human health effects (i.e., injury or illness). TACs include both organic and inorganic chemical substances. The current California list of TACs¹¹ includes approximately 200 compounds, including particulate emissions from diesel-fueled engines.

DPM and TAC emissions may affect numerous sensitive receptors in the region including onsite construction workers, fire personnel at the station adjacent to the site and the single-family residences located near the site. Evidence exists that clouds of soot emitted by heavy-duty

¹¹ URS. 2012. Impacts to Air Quality from the Construction and Operation of the Brannon Solar, LLC Solar Energy Generation Project. Dated Febraury 7, 2012. Table A-7

construction equipment can travel downwind for miles, then drift into heavily populated areas. For example, health impact studies from the SCAQMD¹² have documented that diesel emissions travel miles from the sources impacting residents.

Diesel exhaust has been linked to a range of serious health problems including an increase in respiratory disease, lung damage, cancer, and premature death^{13,14,15}. Fine diesel particles are deposited deep in the lungs in the smallest airways and can result in increased respiratory symptoms and disease; decreased lung function, particularly in children and individuals with asthma; alterations in lung tissue and respiratory tract defense mechanisms; and premature death.¹⁶ Exposure to diesel exhaust increases the risk of lung cancer. It also causes non-cancer effects including chronic bronchitis, inflammation of lung tissue, thickening of the alveolar walls, immunological allergic reactions, and airway constriction.¹⁷

¹² SCAQMD MATES I, II, and III have documented the impacts for DPM in the SCAB.

¹³ California Air Resources Board, Initial Statement of Reasons for Rulemaking, Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant, Staff Report, June 1998.

¹⁴ U.S. EPA, Health Assessment Document for Diesel Engine Exhaust, Report EPA/600/8-90/057F, May 2002.

¹⁵ Environmental Defense Fund, Cleaner Diesel Handbook, Bring Cleaner Fuel and Diesel Retrofits into Your Neighborhood, April 2005; http://www.edf.org/documents/4941_cleanerdieselhandbook.pdf, accessed March 27, 2008.

¹⁶ California Air Resources Board, Initial Statement of Reasons for Rulemaking, Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant, Staff Report, June 1998.

¹⁷ Findings of the Scientific Review Panel on The Report on Diesel Exhaust as adopted at the Panel's April 22, 1998 Meeting.

A recent analysis found that air pollution from diesel construction equipment is already taking a heavy toll on the health and economic well-being of Californians^{18,19}.

PM₁₀ emissions from the construction phase of the proposed project may be extremely troublesome for receptors near the site (i.e., homes near the site boundary and the fire station next to the site) since they will act as carriers for residual pesticides/herbicides from the site (see comment below). The project site currently contains 57-acres of citrus (Grapefruit) trees and the surrounding area has been dry-farmed in the past, and the eastern end of the City of Moreno Valley historically supported a variety of other crops²⁰. Given the proximity of receptors to the site and the estimated emission rates of particulate matter from the site after mitigation, it is clear that construction activities at the project site will adversely impact the previously identified receptors.

Based on my expert opinion, applicable significance thresholds, and the CalEEMod analysis performed by the proponent, I conclude that the Project will have significant adverse impacts from construction air emissions of fugitive dust, ROG, and diesel emissions. The lead agency must re-evaluate the construction emissions and incorporate a phased approach to estimate the true impacts of construction activities on air quality, and propose all feasible mitigation measures to reduce these significant emissions, in a RDEIR.

¹⁸ These estimates are conservative because they do not include emissions from a large number of small construction projects (residential and commercial and projects smaller than 1 acre in size). Further, John Hakel, vice president of the Associated General Contractors, which represents construction equipment fleet owners and general contractors, indicated that the report appeared to underestimate the sheer volume of construction equipment.

¹⁹ Union of Concerned Scientists, Digging up Trouble: Construction Pollution in the Bay Area; http://www.ucsusa.org/assets/documents/clean_vehicles/Bay-Area-Fact-Sheet.pdf, accessed March 27, 2008.

²⁰ LSA. 2012. Project Memorandum: Agricultural Use of ProLogis Industrial Property. Memorandum from Kent Norton, LSA Riverside Office to Jeff Bradshaw, City of Moreno Valley. Dated March 21, 2012.

3. Failure To Consider Health Risks From Contaminated Dust.

Residual contaminants in soils at the site may be entrained in dust generated during construction activities. The release of residual contamination is a potentially significant impact, given the past use of the site for agricultural production. According to the California Department of Toxic Substances Control August 2002 Interim Guidance for Sampling Agricultural Fields for School Sites (known sensitive receptors), “the most commonly detected pesticides have been DDT and its derivatives DDD and DDE, toxaphene, dieldrin, and aldrin. Of these pesticides, toxaphene has been the major pesticide driving unacceptable levels of risk requiring remediation by soil removal.” Given the volume of soils to be graded at each of the sites it is imperative to understand whether particulate matter generated at the sites will pose a potential health risk to sensitive receptors in the vicinity of each site.

According to DTSC, “the guidance is applicable to agricultural land that is currently under cultivation with row, fiber or food crops, orchards, or pasture. It is also applicable to fallow and former agricultural land that is no longer in production and has not been disturbed beyond normal disking and plowing practices. Each field of the same crop is assumed to have been watered, fertilized, and treated with agricultural chemicals to the same degree across the field. Because of this homogeneous application, contaminant levels are expected to be similar at any given location within the field.”

There is no indication of a sampling and analysis plan in the DEIR, or the Project documents provided by the lead agency, which is a serious deficiency. Prior to issuing a DEIR for the project, the Proponent should be required to complete a sampling and analysis plan to confirm or rule out the possibility of the presence of residual contaminants at the site. Identifying residual pesticides or other contaminants in soils at the site

prior to construction activities will provide an opportunity for the Proponent to remove/mitigate the potential exposure of sensitive receptors within the vicinity of the sites. In the absence of any sampling or analysis, and given the past use of the Project site, I conclude that there is at least a fair argument that the Project may have significant impacts related to residual contaminants at the site.

4. Failure To Properly Identify and Address the Project's Operational Air Quality Impacts.

The DEIR asserts with no analysis whatsoever that the project's emissions of criteria pollutants will not result in a considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard.

During the operational phase of the project the project will have the potential to generate significant quantities of criteria pollutants (NO_x, SO_x, Ozone precursors, PM). According to Table 3-1 of the most recent BAAQMD CEQA guidance, a construction of a 259,000 square foot light industrial or warehouse operation will typically violate NO_x construction thresholds and GHG operational thresholds. The proposed Project's 2,000,000 square feet plus of warehouse and manufacturing buildings are nearly 8 times the size of the screening threshold, ensuring a violation of local air quality thresholds. I therefore conclude that the Project will have significant NO_x and GHG emissions during Project operations.

The air quality impacts from the traffic associated with a 2,000,000 square foot facility are significant. Typically the impacts are quantified by the number of vehicle trips per day. In the case of the proposed project, the primary concern will be the number of truck trips per day. A truck trip is one round trip (one trip segment to a site and one trip segment away from a site).

According to one source, Bluffstone and Ouderkirk²¹, a 500,000 square feet facility on 50 acres, will on average have 350 truck trips per day (or 700 trip segments) associated with its development. This figure is proportionate to estimates for an AMB Property Corporation center in Redlands (1,000 truck trips for a 1.3 million square feet structure); Wal-Mart distribution centers in Pueblo, Colorado (700 truck trips per day for an 880,000 square feet facility), Connecticut, and Delaware (both 1,000 truck trips per day for 1.2 million square feet structures); and a grocery distribution center in New York (Boas, 2002; Gasiewski, 2004; Hernandez, 2005; Pueblo Chieftain, 2004; Sholl, 2004).

Estimates from other sources indicate approximately 1 truck per 1,000 square feet of the building, which means that the proposed project would require 1,000 trucks per day (or 1,000 trip segments per day) for the warehouse segment of the Project. The number of truck trips could be higher at a new, more efficient facility where more inventory is moved per day. Without proper modeling of the emissions from these additional vehicles the impacts on the environment and the citizens of Moreno Valley is unknown. It is clear that the size of the Project will have significant NOx and GHG emissions during Project operations.

A proper operational impact analysis is vital for an environmental analysis because the full environmental impact of a proposed project cannot be gauged in a vacuum. One of the most important environmental lessons that has been learned is that the environmental damage often occurs incrementally from a variety of small sources with which they interact. The increase in PM in the region, even for short periods of time, will only exacerbate the already serious air quality issues in the region.

²¹Bluffstone and Ouderkirk. 2007. Warehouses, trucks, and [PM.sub.2.5]: human health and logistics industry growth in the eastern Inland Empire. Contemporary Economic Policy 25(1):

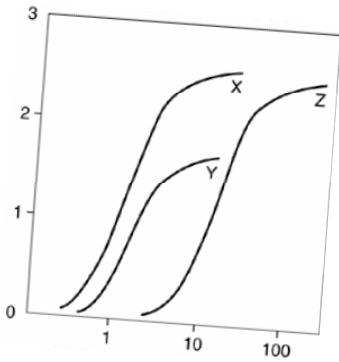
Conclusion

The facts identified and referenced in this comment letter lead me to reasonably conclude that the Project will result in significant adverse impacts that were not identified in the DEIR and that are not adequately mitigated. Many of the DEIR's conclusions that environmental impacts are not significant or less than significant with mitigation are unsupported or contradicted by the evidence. As a result, several analyses presented in the DEIR, including impacts on air quality fail to identify or disclose the magnitude of significant adverse impacts. To protect air quality and public health the Proponent must prepare a RDEIR for the Project.

Sincerely,

A handwritten signature in blue ink, appearing to read "James Clark".

James Clark, Ph.D.



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James J. J. Clark, Ph.D.

Principal Toxicologist

Toxicology/Exposure Assessment Modeling
Risk Assessment/Analysis/Dispersion Modeling

Education:

Ph.D., Environmental Health Science, University of California, 1995
M.S., Environmental Health Science, University of California, 1993
B.S., Biophysical and Biochemical Sciences, University of Houston, 1987

Professional Experience:

Dr. Clark is a well recognized toxicologist, air modeler, and health scientist. He has 20 years of experience in researching the effects of environmental contaminants on human health including environmental fate and transport modeling (SCREEN3, AEROMOD, ISCST3, Johnson-Ettinger Vapor Intrusion Modeling); exposure assessment modeling (partitioning of contaminants in the environment as well as PBPK modeling); conducting and managing human health risk assessments for regulatory compliance and risk-based clean-up levels; and toxicological and medical literature research.

Significant projects performed by Dr. Clark include the following:

LITIGATION SUPPORT

Case: James Harold Caygle, et al, v. Drummond Company, Inc. Circuit Court for the Tenth Judicial Circuit, Jefferson County, Alabama. Civil Action. CV-2009

Client: Environmental Litigation Group, Birmingham, Alabama

Dr. Clark performed an air quality assessment of emissions from a coke factory located in Tarrant, Alabama. The assessment reviewed include a comprehensive review of air quality standards, measured concentrations of pollutants from factory, an inspection of the facility and detailed assessment of the impacts on the community. The results of the assessment and literature have been provided in a declaration to the court.

Case Result: Settlement in favor of plaintiff.

Case: Rose Roper V. Nissan North America, et al. Superior Court of the State Of California for the County Of Los Angeles – Central Civil West. Civil Action. NC041739

Client: Rose, Klein, Marias, LLP, Long Beach, California

Dr. Clark performed a toxicological assessment of an individual occupationally exposed to multiple chemicals, including benzene, who later developed a respiratory distress. A review of the individual's medical and occupational history was performed to prepare an exposure assessment. The exposure assessment was evaluated against the known outcomes in published literature to exposure to respiratory irritants. The results of the assessment and literature have been provided in a declaration to the court.

Case Result: Settlement in favor of plaintiff.

Case: O'Neil V. Sherwin Williams, et al. United States District Court Central District of California

Client: Rose, Klein, Marias, LLP, Long Beach, California

Dr. Clark performed a toxicological assessment of an individual occupationally exposed to petroleum distillates who later developed a bladder cancer. A review of the individual's medical and occupational history was performed to prepare a quantitative exposure assessment. The results of the assessment and literature have been provided in a declaration to the court.

Case Result: Summary judgment for defendants.

Case: Moore V., Shell Oil Company, et al. Superior Court of the State Of California for the County Of Los Angeles

Client: Rose, Klein, Marias, LLP, Long Beach, California

Dr. Clark performed a toxicological assessment of an individual occupationally exposed to chemicals while benzene who later developed a leukogenic disease. A review of the individual's medical and occupational history was performed to prepare a quantitative exposure assessment. The exposure assessment was evaluated against the known outcomes in published literature to exposure to refined petroleum hydrocarbons. The results of the assessment and literature have been provided in a declaration to the court.

Case Result: Settlement in favor of plaintiff.

Case: Raymond Saltonstall V. Fuller O'Brien, KILZ, and Zinsser, et al. United States District Court Central District of California

Client: Rose, Klein, Marias, LLP, Long Beach, California

Dr. Clark performed a toxicological assessment of an individual occupationally exposed to benzene who later developed a leukogenic disease. A review of the individual's medical and occupational history was performed to prepare a quantitative exposure assessment. The exposure assessment was evaluated against the known outcomes in published literature to exposure to refined petroleum hydrocarbons. The results of the assessment and literature have been provided in a declaration to the court.

Case Result: Settlement in favor of plaintiff.

Case: Richard Boyer and Elizabeth Boyer, husband and wife, V. DESCO Corporation, et al. Circuit Court of Brooke County, West Virginia. Civil Action Number 04-C-7G.

Client: Frankovitch, Anetakis, Colantonio & Simon, Morgantown, West Virginia.

Dr. Clark performed a toxicological assessment of a family exposed to chlorinated solvents released from the defendant's facility into local drinking water supplies. A review of the individual's medical and occupational history was performed to prepare a qualitative exposure assessment. The exposure assessment was evaluated against the known outcomes in published literature to exposure to chlorinated solvents. The results of the assessment and literature have been provided in a declaration to the court.

Case Result: Settlement in favor of plaintiff.

Case: JoAnne R. Cook, V. DESCO Corporation, et al. Circuit Court of Brooke County, West Virginia. Civil Action Number 04-C-9R

Client: Frankovitch, Anetakis, Colantonio & Simon, Morgantown, West Virginia.

Dr. Clark performed a toxicological assessment of an individual exposed to chlorinated solvents released from the defendant's facility into local drinking water supplies. A review of the individual's medical and occupational history was performed to prepare a qualitative exposure assessment. The exposure assessment was evaluated against the known outcomes in published literature to exposure to chlorinated solvents. The results of the assessment and literature have been provided in a declaration to the court.

Case Result: Settlement in favor of plaintiff.

Case: Patrick Allen And Susan Allen, husband and wife, and Andrew Allen, a minor, V. DESCO Corporation, et al. Circuit Court of Brooke County, West Virginia. Civil Action Number 04-C-W

Client: Frankovitch, Anetakis, Colantonio & Simon, Morgantown, West Virginia.

Dr. Clark performed a toxicological assessment of a family exposed to chlorinated solvents released from the defendant's facility into local drinking water supplies. A review of the individual's medical and occupational history was performed to prepare a qualitative exposure assessment. The exposure assessment was evaluated against the known outcomes in published literature to exposure to chlorinated solvents. The results of the assessment and literature have been provided in a declaration to the court.

Case Result: Settlement in favor of plaintiff.

Case: Michael Fahey, Susan Fahey V. Atlantic Richfield Company, et al. United States District Court Central District of California Civil Action Number CV-06 7109 JCL.

Client: Rose, Klein, Marias, LLP, Long Beach, California

Dr. Clark performed a toxicological assessment of an individual occupationally exposed to refined petroleum hydrocarbons who later developed a leukogenic disease. A review of the individual's medical and occupational history was performed to prepare a qualitative exposure assessment. The exposure assessment was evaluated against the known outcomes in published literature to exposure to refined petroleum hydrocarbons. The results of the assessment and literature have been provided in a declaration to the court.

Case Result: Settlement in favor of plaintiff.

Case: Constance Acevedo, et al., V. California Spray-Chemical Company, et al., Superior Court of the State Of California, County Of Santa Cruz. Case No. CV 146344

Dr. Clark performed a comprehensive exposure assessment of community members exposed to toxic metals from a former lead arsenate manufacturing facility. The former manufacturing site had undergone a DTSC mandated removal action/remediation for the presence of the toxic metals at the site. Opinions were presented regarding the elevated levels of arsenic and lead (in attic dust and soils) found throughout the community and the potential for harm to the plaintiffs in question.

Case Result: Settlement in favor of defendant.

Case: Michael Nawrocki V. The Coastal Corporation, Kurk Fuel Company, Pautler Oil Service, State of New York Supreme Court, County of Erie, Index Number I2001-11247

Client: Richard G. Berger Attorney At Law, Buffalo, New York

Dr. Clark performed a toxicological assessment of an individual occupationally exposed to refined petroleum hydrocarbons who later developed a leukogenic disease. A review of the individual's medical and occupational history was performed to prepare a qualitative exposure assessment. The exposure assessment was evaluated against the

known outcomes in published literature to exposure to refined petroleum hydrocarbons. The results of the assessment and literature have been provided in a declaration to the court.

Case Result: Judgement in favor of defendant.

SELECTED AIR MODELING RESEARCH/PROJECTS

Client – Confidential

Dr. Clark performed a comprehensive evaluation of criteria pollutants, air toxins, and particulate matter emissions from a carbon black production facility to determine the impacts on the surrounding communities. The results of the dispersion model will be used to estimate acute and chronic exposure concentrations to multiple contaminants and will be incorporated into a comprehensive risk evaluation.

Client – Confidential

Dr. Clark performed a comprehensive evaluation of air toxins and particulate matter emissions from a railroad tie manufacturing facility to determine the impacts on the surrounding communities. The results of the dispersion model have been used to estimate acute and chronic exposure concentrations to multiple contaminants and have been incorporated into a comprehensive risk evaluation.

Client – Los Angeles Alliance for a New Economy (LAANE), Los Angeles, California

Dr. Clark is advising the LAANE on air quality issues related to current flight operations at the Los Angeles International Airport (LAX) operated by the Los Angeles World Airport (LAWA) Authority. He is working with the LAANE and LAX staff to develop a comprehensive strategy for meeting local community concerns over emissions from flight operations and to engage federal agencies on the issue of local impacts of community airports.

Client – City of Santa Monica, Santa Monica, California

Dr. Clark is advising the City of Santa Monica on air quality issues related to current flight operations at the facility. He is working with the City staff to develop a comprehensive strategy for meeting local community concerns over emissions from flight operations and to engage federal agencies on the issue of local impacts of community airports.

Client: Omnitrans, San Bernardino, California

Dr. Clark managed a public health survey of three communities near transit fueling facilities in San Bernardino and Montclair California in compliance with California Senate Bill 1927. The survey included an epidemiological survey of the effected communities, emission surveys of local businesses, dispersion modeling to determine potential emission concentrations within the communities, and a comprehensive risk assessment of each community. The results of the study were presented to the Governor as mandated by Senate Bill 1927.

Client: Confidential, San Francisco, California

Summarized cancer types associated with exposure to metals and smoking. Researched the specific types of cancers associated with exposure to metals and smoking. Provided causation analysis of the association between cancer types and exposure for use by non-public health professionals.

Client: Confidential, Minneapolis, Minnesota

Prepared human health risk assessment of workers exposed to VOCs from neighboring petroleum storage/transport facility. Reviewed the systems in place for distribution of petroleum hydrocarbons to identify chemicals of concern (COCs), prepared comprehensive toxicological summaries of COCs, and quantified potential risks from carcinogens and non-carcinogens to receptors at or adjacent to site. This evaluation was used in the support of litigation.

Client – United Kingdom Environmental Agency

Dr. Clark is part of team that performed comprehensive evaluation of soil vapor intrusion of VOCs from former landfill adjacent residences for the United Kingdom's Environment

Agency. The evaluation included collection of liquid and soil vapor samples at site, modeling of vapor migration using the Johnson Ettinger Vapor Intrusion model, and calculation of site-specific health based vapor thresholds for chlorinated solvents, aromatic hydrocarbons, and semi-volatile organic compounds. The evaluation also included a detailed evaluation of the use, chemical characteristics, fate and transport, and toxicology of chemicals of concern (COC). The results of the evaluation have been used as a briefing tool for public health professionals.

EMERGING/PERSISTENT CONTAMINANT RESEARCH/PROJECTS

Client: Ameren Services, St. Louis, Missouri

Managed the preparation of a comprehensive human health risk assessment of workers and residents at or near an NPL site in Missouri. The former operations at the Property included the servicing and repair of electrical transformers, which resulted in soils and groundwater beneath the Property and adjacent land becoming impacted with PCB and chlorinated solvent compounds. The results were submitted to U.S. EPA for evaluation and will be used in the final ROD.

Client: City of Santa Clarita, Santa Clarita, California

Dr. Clark is managing the oversight of the characterization, remediation and development activities of a former 1,000 acre munitions manufacturing facility for the City of Santa Clarita. The site is impacted with a number of contaminants including perchlorate, unexploded ordinance, and volatile organic compounds (VOCs). The site is currently under a number of regulatory consent orders, including an Imminent and Substantial Endangerment Order. Dr. Clark is assisting the impacted municipality with the development of remediation strategies, interaction with the responsible parties and stakeholders, as well as interfacing with the regulatory agency responsible for oversight of the site cleanup.

Client: Confidential, Los Angeles, California

Prepared comprehensive evaluation of perchlorate in environment. Dr. Clark evaluated the production, use, chemical characteristics, fate and transport, toxicology, and remediation of perchlorate. Perchlorates form the basis of solid rocket fuels and have recently been detected in water supplies in the United States. The results of this research

were presented to the USEPA, National GroundWater, and ultimately published in a recent book entitled *Perchlorate in the Environment*.

Client – Confidential, Los Angeles, California

Dr. Clark is performing a comprehensive review of the potential for pharmaceuticals and their by-products to impact groundwater and surface water supplies. This evaluation will include a review if available data on the history of pharmaceutical production in the United States; the chemical characteristics of various pharmaceuticals; environmental fate and transport; uptake by xenobiotics; the potential effects of pharmaceuticals on water treatment systems; and the potential threat to public health. The results of the evaluation may be used as a briefing tool for non-public health professionals.

PUBLIC HEALTH/TOXICOLOGY

Client: Brayton Purcell, Novato, California

Dr. Clark performed a toxicological assessment of residents exposed to methyl-tertiary butyl ether (MTBE) from leaking underground storage tanks (LUSTs) adjacent to the subject property. The symptomology of residents and guests of the subject property were evaluated against the known outcomes in published literature to exposure to MTBE. The study found that residents had been exposed to MTBE in their drinking water; that concentrations of MTBE detected at the site were above regulatory guidelines; and, that the symptoms and outcomes expressed by residents and guests were consistent with symptoms and outcomes documented in published literature.

Client: Confidential, San Francisco, California

Identified and analyzed fifty years of epidemiological literature on workplace exposures to heavy metals. This research resulted in a summary of the types of cancer and non-cancer diseases associated with occupational exposure to chromium as well as the mortality and morbidity rates.

Client: Confidential, San Francisco, California

Summarized major public health research in United States. Identified major public health research efforts within United States over last twenty years. Results were used as a briefing tool for non-public health professionals.

Client: Confidential, San Francisco, California

Quantified the potential multi-pathway dose received by humans from a pesticide applied indoors. Part of team that developed exposure model and evaluated exposure concentrations in a comprehensive report on the plausible range of doses received by a specific person. This evaluation was used in the support of litigation.

Client: Covanta Energy, Westwood, California

Evaluated health risk from metals in biosolids applied as soil amendment on agricultural lands. The biosolids were created at a forest waste cogeneration facility using 96% whole tree wood chips and 4 percent green waste. Mass loading calculations were used to estimate Cr(VI) concentrations in agricultural soils based on a maximum loading rate of 40 tons of biomass per acre of agricultural soil. The results of the study were used by the Regulatory agency to determine that the application of biosolids did not constitute a health risk to workers applying the biosolids or to residences near the agricultural lands.

Client – United Kingdom Environmental Agency

Oversaw a comprehensive toxicological evaluation of methyl-*tertiary* butyl ether (MtBE) for the United Kingdom's Environment Agency. The evaluation included available data on the production, use, chemical characteristics, fate and transport, toxicology, and remediation of MtBE. The results of the evaluation have been used as a briefing tool for public health professionals.

Client – Confidential, Los Angeles, California

Prepared comprehensive evaluation of *tertiary* butyl alcohol (TBA) in municipal drinking water system. TBA is the primary breakdown product of MtBE, and is suspected to be the primary cause of MtBE toxicity. This evaluation will include available information on the production, use, chemical characteristics, fate and transport in the environment, absorption, distribution, routes of detoxification, metabolites, carcinogenic potential, and remediation of TBA. The results of the evaluation were used as a briefing tool for non-public health professionals.

Client – Confidential, Los Angeles, California

Prepared comprehensive evaluation of methyl *tertiary* butyl ether (MTBE) in municipal drinking water system. MTBE is a chemical added to gasoline to increase the octane

rating and to meet Federally mandated emission criteria. The evaluation included available data on the production, use, chemical characteristics, fate and transport, toxicology, and remediation of MTBE. The results of the evaluation have been used as a briefing tool for non-public health professionals.

Client – Ministry of Environment, Lands & Parks, British Columbia

Dr. Clark assisted in the development of water quality guidelines for methyl tertiary-butyl ether (MTBE) to protect water uses in British Columbia (BC). The water uses to be considered includes freshwater and marine life, wildlife, industrial, and agricultural (e.g., irrigation and livestock watering) water uses. Guidelines from other jurisdictions for the protection of drinking water, recreation and aesthetics were to be identified.

Client: Confidential, Los Angeles, California

Prepared physiologically based pharmacokinetic (PBPK) assessment of lead risk of receptors at middle school built over former industrial facility. This evaluation is being used to determine cleanup goals and will be basis for regulatory closure of site.

Client: Kaiser Venture Incorporated, Fontana, California

Prepared PBPK assessment of lead risk of receptors at a 1,100-acre former steel mill. This evaluation was used as the basis for granting closure of the site by lead regulatory agency.

RISK ASSESSMENTS/REMEDIAL INVESTIGATIONS

Client: Confidential, Atlanta, Georgia

Researched potential exposure and health risks to community members potentially exposed to creosote, polycyclic aromatic hydrocarbons, pentachlorophenol, and dioxin compounds used at a former wood treatment facility. Prepared a comprehensive toxicological summary of the chemicals of concern, including the chemical characteristics, absorption, distribution, and carcinogenic potential. Prepared risk characterization of the carcinogenic and non-carcinogenic chemicals based on the exposure assessment to quantify the potential risk to members of the surrounding community. This evaluation was used to help settle class-action tort.

Client: Confidential, Escondido, California

Prepared comprehensive Preliminary Endangerment Assessment (PEA) of dense non-aqueous liquid phase hydrocarbon (chlorinated solvents) contamination at a former printed circuit board manufacturing facility. This evaluation was used for litigation support and may be used as the basis for reaching closure of the site with the lead regulatory agency.

Client: Confidential, San Francisco, California

Summarized epidemiological evidence for connective tissue and autoimmune diseases for product liability litigation. Identified epidemiological research efforts on the health effects of medical prostheses. This research was used in a meta-analysis of the health effects and as a briefing tool for non-public health professionals.

Client: Confidential, Bogotá, Columbia

Prepared comprehensive evaluation of the potential health risks associated with the redevelopment of a 13.7 hectares plastic manufacturing facility in Bogotá, Colombia. The risk assessment was used as the basis for the remedial goals and closure of the site.

Client: Confidential, Los Angeles, California

Prepared comprehensive human health risk assessment of students, staff, and residents potentially exposed to heavy metals (principally cadmium) and VOCs from soil and soil vapor at 12-acre former crude oilfield and municipal landfill. The site is currently used as a middle school housing approximately 3,000 children. The evaluation determined that the site was safe for the current and future uses and was used as the basis for regulatory closure of site.

Client: Confidential, Los Angeles, California

Managed remedial investigation (RI) of heavy metals and volatile organic chemicals (VOCs) for a 15-acre former manufacturing facility. The RI investigation of the site included over 800 different sampling locations and the collection of soil, soil gas, and groundwater samples. The site is currently used as a year round school housing approximately 3,000 children. The Remedial Investigation was performed in a manner

that did not interrupt school activities and met the time restrictions placed on the project by the overseeing regulatory agency. The RI Report identified the off-site source of metals that impacted groundwater beneath the site and the sources of VOCs in soil gas and groundwater. The RI included a numerical model of vapor intrusion into the buildings at the site from the vadose zone to determine exposure concentrations and an air dispersion model of VOCs from the proposed soil vapor treatment system. The Feasibility Study for the Site is currently being drafted and may be used as the basis for granting closure of the site by DTSC.

Client: Confidential, Los Angeles, California

Prepared comprehensive human health risk assessment of students, staff, and residents potentially exposed to heavy metals (principally lead), VOCs, SVOCs, and PCBs from soil, soil vapor, and groundwater at 15-acre former manufacturing facility. The site is currently used as a year round school housing approximately 3,000 children. The evaluation determined that the site was safe for the current and future uses and will be basis for regulatory closure of site.

Client: Confidential, Los Angeles, California

Prepared comprehensive evaluation of VOC vapor intrusion into classrooms of middle school that was former 15-acre industrial facility. Using the Johnson-Ettinger Vapor Intrusion model, the evaluation determined acceptable soil gas concentrations at the site that did not pose health threat to students, staff, and residents. This evaluation is being used to determine cleanup goals and will be basis for regulatory closure of site.

Client –Dominguez Energy, Carson, California

Prepared comprehensive evaluation of the potential health risks associated with the redevelopment of 6-acre portion of a 500-acre oil and natural gas production facility in Carson, California. The risk assessment was used as the basis for closure of the site.

Kaiser Ventures Incorporated, Fontana, California

Prepared health risk assessment of semi-volatile organic chemicals and metals for a fifty-year old wastewater treatment facility used at a 1,100-acre former steel mill. This evaluation was used as the basis for granting closure of the site by lead regulatory agency.

ANR Freight - Los Angeles, California

Prepared a comprehensive Preliminary Endangerment Assessment (PEA) of petroleum hydrocarbon and metal contamination of a former freight depot. This evaluation was as the basis for reaching closure of the site with lead regulatory agency.

Kaiser Ventures Incorporated, Fontana, California

Prepared comprehensive health risk assessment of semi-volatile organic chemicals and metals for 23-acre parcel of a 1,100-acre former steel mill. The health risk assessment was used to determine clean up goals and as the basis for granting closure of the site by lead regulatory agency. Air dispersion modeling using ISCST3 was performed to determine downwind exposure point concentrations at sensitive receptors within a 1 kilometer radius of the site. The results of the health risk assessment were presented at a public meeting sponsored by the Department of Toxic Substances Control (DTSC) in the community potentially affected by the site.

Unocal Corporation - Los Angeles, California

Prepared comprehensive assessment of petroleum hydrocarbons and metals for a former petroleum service station located next to sensitive population center (elementary school). The assessment used a probabilistic approach to estimate risks to the community and was used as the basis for granting closure of the site by lead regulatory agency.

Client: Confidential, Los Angeles, California

Managed oversight of remedial investigation most contaminated heavy metal site in California. Lead concentrations in soil excess of 68,000,000 parts per billion (ppb) have been measured at the site. This State Superfund Site was a former hard chrome plating operation that operated for approximately 40-years.

Client: Confidential, San Francisco, California

Coordinator of regional monitoring program to determine background concentrations of metals in air. Acted as liaison with SCAQMD and CARB to perform co-location sampling and comparison of accepted regulatory method with ASTM methodology.

Client: Confidential, San Francisco, California

Analyzed historical air monitoring data for South Coast Air Basin in Southern California and potential health risks related to ambient concentrations of carcinogenic metals and volatile organic compounds. Identified and reviewed the available literature and calculated risks from toxins in South Coast Air Basin.

IT Corporation, North Carolina

Prepared comprehensive evaluation of potential exposure of workers to air-borne VOCs at hazardous waste storage facility under SUPERFUND cleanup decree. Assessment used in developing health based clean-up levels.

Professional Associations

American Public Health Association (APHA)
Association for Environmental Health and Sciences (AEHS)
American Chemical Society (ACS)
California Redevelopment Association (CRA)
International Society of Environmental Forensics (ISEF)
Society of Environmental Toxicology and Chemistry (SETAC)

Publications and Presentations:

Books and Book Chapters

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Sullivan, P.J., Agardy, F.J., **Clark, J.J.J.** 2002. *America's Threatened Drinking Water: Hazards and Solutions*. Trafford Publishing, Victoria B.C.

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- Tam L. K., Wu C. D., Clark J. J. and **Rosenfeld, P.E.** (2008) Methods For Collect Samples For Assessing Dioxins And Other Environmental Contaminants In Attic Dust: A Review. *Organohalogen Compounds*, Volume 70 (2008) page 000527
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Technical Paper

Methodology Reasoning and Policy Development of the California Emission Estimator Model
July 2011

South Coast Air Quality Management District
Bay Area Air Quality Management District
Sacramento Metropolitan Air Quality Management District
San Joaquin Valley Air Pollution Control District
Santa Barbara County Air Pollution Control District
San Luis Obispo Air Pollution Control District

The following sections discuss the three primary emission source sectors (construction, area, and operational), the factors and methodology used in CalEEMod that were different from other models such as URBEMIS, and the justification if different from the URBEMIS model, which has been widely used in the past for calculating criteria pollutant emissions from land use development projects.

Construction

A construction schedule is critical in determining the appropriate CARB OFFROAD emission factors for construction equipment because the emission factors change each year. In addition, the peak daily emissions will be different if the schedule between construction phases (e.g., site preparation, grading, building construction, etc.) overlaps. CalEEMod was developed using a construction survey to determine the construction profile (equipment type, number of equipment, hours of activity, etc.) for each construction phase. When changing the construction schedule, the model does not automatically change the default construction equipment type. The equipment type dictates construction phase activity, such as acres graded per day. Fugitive dust is generated when material (e.g., from demolition objects) and soil (e.g., from site preparation and grading) are transported to and from the site.

For non-residential land uses, the default lot acreage value corresponds to the building footprint. The lot acreage is used to calculate grading values. Therefore, any additional graded area must be entered separately as “other paved surfaces” or other land use to ensure an accurate grading calculation. For residential land uses, the default lot acreage value is greater than the default square footage value because the values are derived from different sources. The default lot acreage per residential dwelling unit is from the ITE Trip Generation and the square footage per dwelling unit is from the California Energy Commission’s Residential Appliance Saturation Survey (RASS). Thus, the lot acreage includes building footprint, paved areas and undeveloped areas, so no additional grading area need to be entered separately.

Wind-blown fugitive dust is not calculated in CalEEMod because of the number of input parameters required such as soil type, moisture content, wind speed, etc. This limitation could result in underestimated fugitive dust emissions if high wind and loose soil are substantial characteristics for a given land use/construction scenario.

Construction activity also involves on-road mobile source emissions from vehicles driven to and from the construction site by workers, vendors (e.g., water trucks, product deliveries, etc.), and haulers. In addition, fugitive dust is generated by these vehicles.

Finally, volatile organic compound (VOC) emissions are generated when the interior and exterior surface walls of the structures are painted.

Differences in methodology between CalEEMod and URBEMIS for the construction emissions sector are summarized in the following table.

Table 1 – Updated/New Features in CalEEMod during Construction Phase

CalEEMod Updated/New Feature	Justification for Change in Methodology	General Trends in CalEEMod as compared to URBEMS
<p>Uses a construction profile (equipment type, hours of activity) based on SCAQMD construction survey</p>	<p>Uses documented data (URBEMIS survey data is not well documented). During the development of its localized significance thresholds, SCAQMD staff worked with construction and building industries to conduct a construction site survey gathering accurate information to better estimate emissions from construction equipment based on their typical operations. The SCAQMD hired a consultant to conduct construction site surveys throughout the South Coast Air Basin. The consultant surveyed approximately 50 construction sites and compiled information on the various construction phases including demolition, site preparation, construction of structures, etc. The survey was limited to 35 acres or less. For those projects sized larger, the data was extrapolated by increasing the number of construction phase days but not increasing the number of construction equipment on a given day.</p>	<ul style="list-style-type: none"> • Increase in construction ROG, NOx, CO and SO2 • Decrease in construction PM (see grading activity)
<p>Revises amount of acres graded</p>	<p>Acres graded based on construction equipment ability (i.e., maximum acres a piece of equipment can pass over land in an 8-hr day) from Walker's Building Estimator's Reference Book. Grading in URBEMIS is based on 25% of total project acreage in one day.</p>	<ul style="list-style-type: none"> • Decrease in PM emissions from grading
<p>Modifies calculation methodology from material hauling</p>	<p>Provides a more specific calculation based on actual construction equipment and amount of material hauled. Although the user inputs the amount of material hauled, the model calculates exhaust and fugitive dust emissions based on 16 cubic yards per truck (an industry average). The model credits "phased" trips (i.e., the truck enters and leaves with a load, thus reducing the total number of trips in half).</p>	<ul style="list-style-type: none"> • PM emissions increase or decrease depending upon user input

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California Environmental Protection Agency



Air Resources Board

INITIAL STATEMENT OF REASONS
FOR RULEMAKING

STAFF REPORT

PROPOSED IDENTIFICATION OF DIESEL EXHAUST
AS A TOXIC AIR CONTAMINANT

Prepared by the Staff of
the Air Resources Board and
the Office of Environmental Health Hazard Assessment

June 1998

specific compounds emitted from a variety of engine technologies, operating cycles, and fuel to characterize better any differences between old and new fuels and technologies and the potential impact on the toxicity of diesel exhaust.

HEALTH EFFECTS OF DIESEL EXHAUST EXPOSURE

The OEHHA reviewed and evaluated the potential for diesel exhaust to affect human health, and the associated scientific uncertainties. The OEHHA considered acute and chronic noncancer health impacts, and potential cancer health impacts. The SRP approved the OEHHA's health assessment at its April 22, 1998, meeting.

A number of adverse short-term (acute) health effects have been associated with exposures to diesel exhaust. Occupational exposures to diesel exhaust particles have been associated with significant cross-shift decreases in lung function. Increased cough, labored breathing, chest tightness, and wheezing have been associated with exposure to diesel exhaust in bus garage workers. A significant increase in airway resistance and increases in eye and nasal irritation were observed in human volunteers following one-hour chamber exposure to diesel exhaust. In acute and subchronic animal studies, exposure to diesel exhaust particles induced inflammatory airway changes, lung function changes, and increased the animals' susceptibility to infection.

A number of adverse long-term (chronic) noncancer effects have been associated with exposures to diesel exhaust. Occupational studies have shown that there may be a greater incidence of cough, phlegm and chronic bronchitis among those exposed to diesel exhaust than among those not exposed. Histopathological changes in the lung of diesel-exposed test animals reflect inflammation of the lung tissue. Reduced pulmonary function was noted in monkeys during long-term exposure. Reductions in pulmonary function have also been reported following occupational exposures in chronic studies.

Diesel exhaust particles can induce immunological allergic reactions and localized inflammatory responses in humans, as well as acting as an adjuvant for pollen allergy. Intranasal challenge with diesel exhaust particles in human volunteers resulted in an immunological response. Co-exposure to diesel exhaust particles and ragweed pollen resulted in an immune response greater than that following pollen or diesel exhaust particles alone. Effects of intratracheal, intranasal, and inhalation exposures of laboratory animals are supportive of the findings in humans. These effects include allergic reactions and inflammation, increased mucus secretion and respiratory resistance, and airway constriction.

The World Health Organization and the OEHHA have conducted further analyses of the dose-response relationships for several of the non-cancer, adverse effects of chronic exposures to diesel exhaust on the rat lung. These analyses gave a range of health risk guidance values of 2 to 21 $\mu\text{g}/\text{m}^3$ and support the adoption of 5 $\mu\text{g}/\text{m}^3$ which is also the 1993 U.S. EPA Reference Concentration. A U.S. EPA Reference Concentration or California Reference Exposure Level (REL) of a chemical is an estimate, with uncertainty spanning perhaps an order of magnitude, of the air concentration below which no noncancer adverse health effects are likely to occur from

lifetime exposure. This estimate takes into consideration persons who may be more sensitive than others to the effects of a chemical. The OEHHA concurs with the U.S. EPA in recommending 5 $\mu\text{g}/\text{m}^3$ as the chronic REL for diesel exhaust.

Diesel exhaust contains genotoxic compounds in both the vapor phase and the particle phase. Diesel exhaust particles or extracts of diesel exhaust particles are mutagenic in bacteria and in mammalian cell systems, and can induce adverse chromosomal changes. DNA adducts (representing genotoxins bound chemically to DNA) have been shown to increase following inhalation exposure of rodents and monkeys to whole diesel exhaust and have been found in mammalian cells following treatment with diesel exhaust particle extract. Elevated levels of DNA adducts have been associated with occupational exposure to diesel exhaust.

Over 30 human epidemiological studies have investigated the potential carcinogenicity of diesel exhaust. These epidemiological studies provide evidence consistent with a causal relationship between occupational diesel exhaust exposure and lung cancer. These studies, on average, found that long-term occupational exposures to diesel exhaust were associated with a 40 percent increase in the relative risk of lung cancer. The OEHHA analyzed the lung cancer findings for consistency and found that the association was unlikely to be due to bias or chance. Results of inhalation bioassays in the rat, and with less certainty in mice, have demonstrated the carcinogenic potential of diesel exhaust in animals, although the mechanisms by which diesel exhaust induces lung tumors in animals remain uncertain.

Other agencies or scientific bodies have studied the health effects of diesel exhaust. The National Institute of Occupational Safety and Health first recommended that whole diesel exhaust be regarded as a potential occupational carcinogen based upon animal and human evidence in 1988. The IARC concluded that diesel engine exhaust is probably carcinogenic to humans (Group 2A). Based upon the IARC findings, in 1990, the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) identified diesel exhaust as a chemical “known to the State to cause cancer.” (Title 22, California Code of Regulations, section 12000.) The 1998 draft U.S. EPA document (Health Assessment Document for Diesel Emissions, Review Draft, February 1998) similarly concluded that diesel exhaust be considered a “probable” human carcinogen (category B1). This conclusion evolves from positive yet “limited” evidence in the human studies, a “sufficient” level of evidence in bioassays, and consideration of the supporting information from mutagenicity and genotoxicity data.

Risk assessments can use carcinogenicity data from either animal or human studies. For diesel exhaust, there are data from human epidemiological studies of occupationally exposed populations which are useful for quantitative risk assessment. On balance, the OEHHA concluded that available human data lend more confidence in the prediction of human risks than the data from the available animal studies because of the uncertainties in the animal studies and of extrapolating from animals to humans. Thus, the OEHHA preferred to derive the range of human risk estimates based only upon the epidemiological findings and not the animal data. Using data from a case-control study and a cohort study, the OEHHA estimated the risk (95 percent upper confidence limit) of lung cancer in the general population due to diesel exhaust. Because of

uncertainties in the actual workplace exposures, the OEHHA developed a variety of exposure scenarios to bracket the exposures that were plausible. Based on these exposure estimates, presented in Table 1-1, the range of resulting estimates of cancer unit risk is 1.3×10^{-4} to $2.4 \times 10^{-3} (\mu\text{g}/\text{m}^3)^{-1}$. The unit risk represents the 95 percent upper confidence limit of cancer risk per million people exposed per microgram of diesel exhaust particulate in a cubic meter of air over a 70-year lifetime. The SRP approved the range of risk estimated by the OEHHA. In addition, the SRP concluded that a value of $3 \times 10^{-4} (\mu\text{g}/\text{m}^3)^{-1}$ is a reasonable estimate of unit risk expressed in terms of diesel particulate (see Appendix II).

The OEHHA and ARB staffs recognize that the limited exposure information available contributes to the uncertainty of the dose response risk assessment based on the human studies. However, the overall magnitude of uncertainty is not atypical of the types of uncertainty encountered when the Board identified other TACs. The greater than usual uncertainty in the exposure estimates is substantially offset by the much smaller than usual range of extrapolation from the occupational exposures to the ambient air concentrations. Interspecies extrapolation uncertainty is not an issue in this diesel exhaust risk assessment. In addition, there are more than 30 human studies of more than one occupation that show overall an increase in lung cancer from diesel exhaust exposure.

Based on available scientific evidence, a level of diesel exhaust exposure below which no carcinogenic effects are anticipated has not been identified. This finding was approved by the SRP at its meeting on April 22, 1998.

As with other substances evaluated by the SRP and after reviewing the field of published peer reviewed research studies on diesel exhaust, the SRP indicated that additional research is appropriate to further clarify the health effects of diesel exhaust. The OEHHA and ARB staffs recognize that diesel exhaust health studies will continue. For example, the HEI, which is jointly funded by industry and the U.S. EPA, has started a five-year study to review key epidemiologic studies and make recommendations for the design of new studies. The OEHHA and ARB staffs will follow these efforts closely, and will provide support to the extent resources are available. If the outcome of this, or other future health studies, ultimately reduces uncertainties or improves the scientific basis for estimating diesel exhaust risk, the OEHHA and ARB staffs would consider such information. When research results become available, the TAC program has a process in place for further evaluation of new scientific evidence pertaining to a previously completed TAC risk assessment. The process specifically addresses the evaluation and response to submittals of new scientific information as evidence for review of a TAC risk assessment.

Table 1-1. Summary of Cancer Unit Risks According to Study, Exposure Assumptions, and Modeling Approaches.

	95% UCL Cancer Unit Risk ($\mu\text{g}/\text{m}^3$) ⁻¹	95% Upper Confidence Limit of Cancer Risk per Million per Microgram of Diesel Exhaust Particulate in a Cubic Meter of Air Exposure Over a 70-year Lifetime
Garshick <i>et al.</i> (1987a) Case Control ¹		
Scenario ²		
A	2.4×10^{-3}	2400
B	1.8×10^{-3}	1800
C	1.0×10^{-3}	1000
D	6.6×10^{-4}	660
E	3.6×10^{-4}	360
Garshick <i>et al.</i> (1988) Cohort Study (Chapter 7) ³		
Scenario		
A	1.8×10^{-3}	1800
B	1.4×10^{-3}	1400
C	8.2×10^{-4}	820
D	5.1×10^{-4}	510
E	2.8×10^{-4}	280
Garshick <i>et al.</i> (1988) Cohort Study (Appendix D) ⁴		
Scenario A		
general multiplicative model	1.9×10^{-3}	1900
biologically based ⁵	3.8×10^{-4}	380
Scenario C		
general multiplicative model	7.2×10^{-4}	720
biologically based ⁵	1.3×10^{-4}	130
biologically based ⁶	1.5×10^{-4}	150

EVALUATION OF NEED AND APPROPRIATE DEGREE OF CONTROL FOR DIESEL

¹ Using published slope coefficient for hazard on years to diesel exhaust as described in Appendix III (Part B, Section 7.3.3).

² A Ramp pattern of exposure plateauing in 1959 at the 1980 exposure level of $50 \mu\text{g}/\text{m}^3$
 B Roof pattern of exposure peaking in 1959 at twice the 1980 exposure level of $40 \mu\text{g}/\text{m}^3$
 C Roof pattern of exposure peaking in 1959 at 3-fold the 1980 exposure level of $50 \mu\text{g}/\text{m}^3$
 D Roof pattern of exposure peaking in 1959 at 3-fold the 1980 exposure level of $80 \mu\text{g}/\text{m}^3$
 E Roof pattern of exposure peaking in 1959 at 10-fold the 1980 exposure level of $50 \mu\text{g}/\text{m}^3$

³ Using individual data to obtain a slope for hazard on years of exposure to diesel exhaust as described in Appendix III (Part B, Section 7.3.4).

⁴ Applying time varying concentrations to individual data to obtain a slope of hazard on exposure as described in Appendix III (Part B, Appendix D).

⁵ 6th/7 stage model.

⁶ 7th/7 stage model.

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United States
Environmental Protection
Agency

Health Assessment Document For Diesel Engine Exhaust

Health Assessment Document for Diesel Engine Exhaust

National Center for Environmental Assessment
Office of Research and Development
U.S. Environmental Protection Agency
Washington, DC

atmosphere. It is not clear what the overall toxicological consequences of DE's transformations are because some compounds in the DE mixture are altered to more toxic forms while others are made less toxic.

1.5. EXPOSURE TO DIESEL EXHAUST

DPM mass (expressed as $\mu\text{g DPM}/\text{m}^3$) has historically been used as a surrogate measure of exposure for whole DE. Although uncertainty exists as to whether DPM is the most appropriate parameter to correlate with human health effects, it is considered a reasonable choice until more definitive information about the mechanisms of toxicity or mode(s) of action of DE becomes available. In the ambient environment, human exposure to DE comes from both on-road and nonroad engine exhaust. A large percentage of the U.S. population also is exposed to ambient $\text{PM}_{2.5}$, of which DPM is typically a significant constituent. Although this document does not provide an exposure assessment, DE exposure information is included to provide a context for the health effects information. Exposure estimates for the early to mid-1990s suggest that national annual average DE exposure from on-road engines alone was in the range of about 0.5 to 0.8 $\mu\text{g DPM}/\text{m}^3$ of inhaled air in many rural and urban areas, respectively. Exposures could be higher if there is a nonroad DE source that adds to the exposure from on-road vehicles. For example, preliminary estimates show that, on a national average basis, accounting for nonroad DE emissions adds another twofold to the on-road exposure. For localized urban areas where people spend a large portion of their time outdoors, the exposures are higher and, for example, may range up to 4.0 $\mu\text{g DPM}/\text{m}^3$ of inhaled air.

1.6. HEALTH EFFECTS OF DIESEL EXHAUST

Available evidence indicates that there are human health hazards associated with exposure to DE. The hazards include acute exposure-related symptoms, chronic exposure-related noncancer respiratory effects, and lung cancer. The health hazard conclusions are based on exhaust emissions from diesel engines built prior to the mid-1990s. With current engine use including some new and many more older engines (engines typically stay in service for a long time), the health hazard conclusions, in general, are applicable to engines currently in use. As new and cleaner diesel engines, together with different diesel fuels, replace a substantial number of existing engines, the general applicability of the health hazard conclusions will need to be re-evaluated. With new engine and fuel technology expected to produce significantly cleaner engine exhaust by 2007 (e.g., in response to new federal heavy duty engine regulations), significant reductions in public health hazards are expected for those engine uses affected by the regulations.

1.6.1. Acute (Short-Term Exposure) Effects

Information is limited for characterizing the potential health effects associated with acute or short-term exposure. However, on the basis of available human and animal evidence, it is concluded that acute or short-term (e.g., episodic) exposure to DE can cause acute irritation (e.g., eye, throat, bronchial), neurophysiological symptoms (e.g., lightheadedness, nausea), and respiratory symptoms (cough, phlegm). There also is evidence for an immunologic effect—the exacerbation of allergenic responses to known allergens and asthma-like symptoms. The lack of adequate exposure-response information in the acute health effect studies precludes the development of recommendations about levels of exposure that would be presumed safe for these effects.

1.6.2. Chronic (Long-Term Exposure) Noncancer Respiratory Effects

Information from the available human studies is inadequate for a definitive evaluation of possible noncancer health effects from chronic exposure to DE. However, on the basis of extensive animal evidence, DE is judged to pose a chronic respiratory hazard to humans. Chronic-exposure, animal inhalation studies show a spectrum of dose-dependent inflammation and histopathological changes in the lung in several animal species including rats, mice, hamsters, and monkeys.

This assessment provides an estimate of inhalation exposure of DE (as measured by DPM) to which humans may be exposed throughout their lifetime without being likely to experience adverse noncancer respiratory effects. This exposure level, known as the reference concentration (RfC) for DE of $5 \mu\text{g}/\text{m}^3$ of DPM was derived on the basis of dose-response data on inflammatory and histopathological changes in the lung from rat inhalation studies. In recognition of the presence of DPM in ambient $\text{PM}_{2.5}$, it also is appropriate to consider the wealth of $\text{PM}_{2.5}$ human health effects data. In this regard, the 1997 National Ambient Air Quality Standard for $\text{PM}_{2.5}$ of $15 \mu\text{g}/\text{m}^3$ (annual average concentration) also would be expected to provide a measure of protection from DPM, reflecting DPM's current approximate proportion to $\text{PM}_{2.5}$.

1.6.3. Chronic (Long-Term Exposure) Carcinogenic Effects

This assessment concludes that DE is “likely to be carcinogenic to humans by inhalation” and that this hazard applies to environmental exposures. This conclusion is based on the totality of evidence from human, animal, and other supporting studies. There is considerable evidence demonstrating an association between DE exposure and increased lung cancer risk among workers in varied occupations where diesel engines historically have been used. The human evidence from occupational studies is considered strongly supportive of a finding that DE

exposure is causally associated with lung cancer, though the evidence is less than that needed to definitively conclude that DE is carcinogenic to humans. There is some uncertainty about the degree to which confounders are having an influence on the observed cancer risk in the occupational studies, and there is uncertainty evolving from the lack of actual DE exposure data for the workers. In addition to the human evidence, there is supporting evidence of DPM's carcinogenicity and associated DPM organic compound extracts in rats and mice by noninhalation routes of exposure. Other supporting evidence includes the demonstrated mutagenic and chromosomal effects of DE and its organic constituents, and the suggestive evidence for bioavailability of the DPM organics in humans and animals. Although high-exposure chronic rat inhalation studies show a significant lung cancer response, this is not thought predictive of a human hazard at lower environmental exposures. The rat response is considered to result from an overload of particles in the lung resulting from the high exposure, and such an overload is not expected to occur in humans at environmental exposures.

Although the available human evidence shows a lung cancer hazard to be present at occupational exposures that are generally higher than environmental levels, it is reasonable to presume that the hazard extends to environmental exposure levels. While there is an incomplete understanding of the mode of action for DE-induced lung cancer that may occur in humans, there is the potential for a nonthreshold mutagenic mode of action stemming from the organics in the DE mixture. A case for an environmental hazard also is shown by the simple observation that the estimated higher environmental exposure levels are close to, if not overlapping, the lower range of occupational exposures for which lung cancer increases are reported. These considerations taken together support the prudent public health choice of presuming a cancer hazard for DE at environmental levels of exposure. Overall, the evidence for a potential cancer hazard to humans resulting from chronic inhalation exposure to DE is persuasive, even though assumptions and uncertainties are involved. While the hazard evidence is persuasive, this does not lead to similar confidence in understanding the exposure/dose-response relationship.

Given a carcinogenicity hazard, EPA typically performs a dose-response assessment of the human or animal data to develop a cancer unit risk estimate that can be used with exposure information to characterize the potential cancer disease impact on an exposed population. The DE human exposure-response data are considered too uncertain to derive a confident quantitative estimate of cancer unit risk, and with the chronic rat inhalation studies not being predictive for environmental levels of exposure, EPA has not developed a quantitative estimate of cancer unit risk.

In the absence of a cancer unit risk, simple exploratory analyses were used to provide a perspective of the range of possible lung cancer risk from environmental exposure to DE. The analyses make use of reported lung cancer risk increases in occupational epidemiologic studies,

and the differences between occupational and environmental exposure. The purpose of having a risk perspective is to illustrate and have a sense of the possible significance of the lung cancer hazard from environmental exposure. The risk perspective cannot be viewed as a definitive quantitative characterization of cancer risk nor is it suitable for estimation of exposure-specific population risks.

1.7. SOURCES OF UNCERTAINTY

Even though the overall evidence for potential human health effects of DE is persuasive, many uncertainties exist because of the use of assumptions to bridge data and knowledge gaps about human exposures to DE and the general lack of understanding about underlying mechanisms by which DE causes observed toxicities in humans and animals. A notable uncertainty of this assessment is whether the health hazards identified from studies using emissions from older engines can be applied to present-day environmental emissions and related exposures, as some physical and chemical characteristics of the emissions from certain sources have changed over time. Available data are not sufficient to provide definitive answers to this question because changes in DE composition over time cannot be confidently quantified, and the relationship between the DE components and the mode(s) of action for DE toxicity is/are unclear. While recognizing the uncertainty, for this assessment a judgment is made that prior-year toxicologic and epidemiologic findings can be applied to more current exposures, both of which use DPM mass in air as the measure of DE exposure.

Other uncertainties include the assumptions that health effects observed at high doses may be applicable to low doses, and that toxicologic findings in laboratory animals generally are predictive of human responses. In the absence of a more complete understanding of how DE may cause adverse health effects in humans and laboratory animals, related assumptions (i.e., the presence of a biological threshold for chronic respiratory effects based on cumulative dosage and absence of a threshold for lung cancer stemming from subtle and irreversible effects) are considered reasonable and prudent.

Although parts of this assessment, particularly the noncancer RfC estimate, have been derived with a generic consideration of sensitive subgroups within the population, the actual spectrum of the population that may have a greater susceptibility to DE is unknown and cannot be better characterized until more information is available regarding the adverse effects of DPM in humans. Increased susceptibility, for example, could result from above-average increases in DE deposition and retention in the respiratory system or intrinsic differences in respiratory system tissue sensitivity. There is no DE-specific information that provides direct insight to the question of differential human susceptibility. Given the nature of DE's noncancer effects on the respiratory system it would be reasonable, for example, to consider possible vulnerable

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The Report on Diesel Exhaust

This page last reviewed July 29, 2008

Findings of the Scientific Review Panel On

The Report on Diesel Exhaust

As Adopted at the Panel's April 22, 1998 Meeting

Pursuant to Health and Safety Code section 39661, the Scientific Review Panel (SRP / Panel) has reviewed the report *Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant* by the staffs of the California Air Resources Board (ARB or Board) and the Office of Environmental Health Hazard Assessment (OEHHA) describing the public exposure to, and health effects of, diesel exhaust. The Panel members also reviewed the public comments received on this report.

Panel members participated in workshops devoted to discussion of the exposure and health issues associated with diesel exhaust in September 1994, January 1996, July 1997, and March 1998. The SRP reviewed the issues at its meetings in October 1997 and April 1998. A special meeting of the SRP was held on March 11, 1998, to hear testimony on health issues including the quantitative risk assessment from highly respected scientists invited by the Panel. Based on these reviews and information provided at scientific workshops and meetings, the SRP makes the following findings pursuant to Health and Safety Code section 39661:

Exposure Related Conclusions:

1. Diesel exhaust is a complex mixture of gases and fine particles emitted by a diesel-fueled internal combustion engine.
2. The gaseous fraction is composed of typical combustion gases such as nitrogen, oxygen, carbon dioxide, and water vapor. However, as a result of incomplete combustion, the gaseous fraction also contains air pollutants such as carbon monoxide, sulfur oxides, nitrogen oxides, volatile organics, alkenes, aromatic hydrocarbons, and aldehydes, such as formaldehyde and 1,3-butadiene and low-molecular weight polycyclic aromatic hydrocarbons (PAH) and PAH-derivatives.
3. One of the main characteristics of diesel exhaust is the release of particles at a markedly greater rate than from gasoline-fueled vehicles, on an equivalent fuel energy basis. The particles are mainly aggregates of spherical carbon particles coated with inorganic and organic substances. The inorganic fraction primarily consists of small solid carbon (or elemental carbon) particles ranging from 0.01 to 0.08 microns in diameter. The organic fraction consists of soluble organic compounds such as aldehydes, alkanes and alkenes, and high-molecular weight PAH and PAH-derivatives, such as nitro-PAHs. Many of these PAHs and PAH-derivatives, especially nitro-PAHs, have been found to be potent mutagens and carcinogens. Nitro-PAH compounds can also be formed during transport through the

atmosphere by reactions of adsorbed PAH with nitric acid and by gas-phase radical-initiated reactions in the presence of oxides of nitrogen.

4. Diesel exhaust includes over 40 substances that are listed by the United States Environmental Protection Agency (U.S. EPA) as hazardous air pollutants and by the ARB as toxic air contaminants. Fifteen of these substances are listed by the International Agency for Research on Cancer (IARC) as carcinogenic to humans, or as a probable or possible human carcinogen. Some of these substances are: acetaldehyde; antimony compounds; arsenic; benzene; beryllium compounds; bis(2-ethylhexyl)phthalate; dioxins and dibenzofurans; formaldehyde; inorganic lead; mercury compounds; nickel; POM (including PAHs); and styrene.
5. Almost all of the diesel particle mass is in the fine particle range of 10 microns or less in diameter (PM₁₀). Approximately 94 percent of the mass of these particles are less than 2.5 microns in diameter. Because of their small size, these particles can be inhaled and a portion will eventually become trapped within the small airways and alveolar regions of the lung.
6. The estimated population-weighted average outdoor diesel exhaust PM₁₀ concentration in California for 1995 is 2.2 microgram per cubic meter ($\mu\text{g}/\text{m}^3$). Several independent studies have reported similar outdoor air diesel exhaust PM₁₀ concentrations. The 1995 estimated average indoor exposure concentration is approximately $1.5 \mu\text{g}/\text{m}^3$.
7. The population time-weighted average total air exposure to diesel exhaust particle concentrations across all environments (including outdoors) is estimated to be $1.5 \mu\text{g}/\text{m}^3$ in 1995. This total exposure estimate may underestimate many Californians' actual total exposure because it excludes elevated exposures near roadways, railroad tracks, and inside vehicles. Near-source exposures to diesel exhaust may be as much as five times higher than the 1995 population time-weighted average total air exposure. It also excludes other routes of exposure to diesel exhaust, such as ingestion and dermal absorption.
8. Diesel engine exhaust contains small carbonaceous particles and a large number of chemicals that are adsorbed onto these particles or present as vapors. These particles have been the subject of many studies because of their adverse effects on human health and the environment. A recent study conducted for the Health Effects Institute showed that, despite a substantial reduction in the weight of the total particulate matter, the total number of particles from a 1991-model engine was 15 to 35 times greater than the number of particles from a 1988 engine when both engines were operated without emission control devices. This suggests that more fine particles, a potential health concern, could be formed as a result of new technologies. Further study is needed since the extent of these findings only measured exhaust from two engines and engine technologies.
9. The major sources of diesel exhaust in ambient outdoor air are estimated to emit approximately 27,000 tons per year in 1995. On-road mobile sources (heavy-duty trucks, buses, light-duty cars and trucks) contribute the majority of total diesel exhaust PM₁₀ emissions in California. Other mobile sources (mobile equipment, ships, trains, and boats) and stationary sources contribute the remaining emissions.
10. Significant progress has been made as a result of federal and state regulations that have addressed particulate matter levels from diesel engines. Emissions of on-road mobile source diesel exhaust PM₁₀ in California are expected to decline by approximately 85 percent from 1990 to 2010 as a result of mobile source regulations already adopted by the ARB.
11. The results of a study funded by the ARB at the University of California, Riverside, indicate that the diesel exhaust from the new fuel tested contained the same toxic air contaminants as the old fuel, although their concentrations and other components may differ. Further research would be helpful to quantify the amounts of specific compounds emitted from a variety of

engine technologies, operating cycles, and fuel to characterize better any differences between old and new fuels and technologies.

Health Effects Associated with Diesel Exhaust:

12. A number of adverse short-term health effects have been associated with exposures to diesel exhaust. Occupational exposures to diesel exhaust particles have been associated with significant cross-shift decreases in lung function. Increased cough, labored breathing, chest tightness, and wheezing have been associated with exposure to diesel exhaust in bus garage workers. A significant increase in airway resistance and increases in eye and nasal irritation were observed in human volunteers following one-hour chamber exposure to diesel exhaust. In acute or subchronic animal studies, exposure to diesel exhaust particles induced inflammatory airway changes, lung function changes, and increased the animals' susceptibility to infection.
13. A number of adverse long-term noncancer effects have been associated with exposure to diesel exhaust. Occupational studies have shown that there may be a greater incidence of cough, phlegm and chronic bronchitis among those exposed to diesel exhaust than among those not exposed. Reductions in pulmonary function have also been reported following occupational exposures in chronic studies. Reduced pulmonary function was noted in monkeys during long-term exposure. Histopathological changes in the lung of diesel-exposed test animals reflect inflammation of the lung tissue. These changes include dose-dependent proliferations of Type II epithelial cells, marked infiltration of macrophages, plasma cells and fibroblasts into the alveolar septa, thickening of the alveolar walls, alveolar proteinosis, and focal fibrosis.
14. Studies have shown that diesel exhaust particles can induce immunological reactions and localized inflammatory responses in humans, as well as acting as an adjuvant for pollen allergy. Intranasal challenge with diesel exhaust particles in human volunteers resulted in increased nasal IgE antibody production and a significant increase in mRNA for pro-inflammatory cytokines. Co-exposure to diesel exhaust particles and ragweed pollen resulted in a nasal IgE response greater than that following pollen or diesel exhaust particles alone. Effects of intratracheal, intranasal, and inhalation exposures of laboratory animals are supportive of the findings in humans. These effects include eosinophilic infiltration into bronchi and bronchioles, elevated IgE response, increased mucus secretion and respiratory resistance, and airway constriction.
15. Based on the animal studies, the U.S. EPA determined a chronic inhalation Reference Concentration value of $5 \mu\text{g}/\text{m}^3$ for noncancer effects of diesel exhaust. This estimate takes into consideration persons who may be more sensitive than others to the effects of diesel exhaust. The report supports the recommendation of $5 \mu\text{g}/\text{m}^3$ as the California Reference Exposure Level (REL) (Table 1). It should be noted that this REL may need to be lowered further as more data emerge on potential adverse noncancer effects from diesel exhaust.
16. Diesel exhaust contains genotoxic compounds in both the vapor phase and the particle phase. Diesel exhaust particles or extracts of diesel exhaust particles are mutagenic in bacteria and in mammalian cell systems, and can induce chromosomal aberrations, aneuploidy, and sister chromatid exchange in rodents and in human cells *in vitro*. Diesel exhaust particles induced unscheduled DNA synthesis *in vitro* in mammalian cells. DNA adducts have been isolated from calf thymus DNA *in vitro* following treatment with diesel exhaust particle extracts. DNA adducts have been shown to increase following inhalation exposure of rodents and monkeys to whole diesel exhaust. Elevated levels of DNA adducts have been associated with occupational exposure to diesel exhaust. Results of inhalation bioassays in the rat, and with lesser certainty in mice, have demonstrated the carcinogenicity of diesel exhaust in test animals, although the mechanisms by which diesel exhaust induces lung tumors in animals

remains uncertain.

17. Over 30 human epidemiological studies have investigated the potential carcinogenicity of diesel exhaust. These studies, on average, found that long-term occupational exposures to diesel exhaust were associated with a 40 percent increase in the relative risk of lung cancer. The lung cancer findings are consistent and the association is unlikely to be due to chance. These epidemiological studies strongly suggest a causal relationship between occupational diesel exhaust exposure and lung cancer.
18. Other agencies or scientific bodies have evaluated the health effects of diesel exhaust. The National Institute of Occupational Safety and Health first recommended in 1988 that whole diesel exhaust be regarded as a potential occupational carcinogen based upon animal and human evidence. The International Agency for Research on Cancer (IARC) concluded that diesel engine exhaust is probably carcinogenic to humans and classified diesel exhaust in Group 2A. Based upon the IARC findings, in 1990, the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) identified diesel exhaust as a chemical "known to the State to cause cancer." The U.S. EPA has proposed a conclusion similar to IARC in their draft documents. The 1998 draft U.S. EPA document concluded similarly that there was sufficient animal evidence of carcinogenicity and that the human evidence was limited.
19. There are data from human epidemiological studies of occupationally exposed populations which are useful for quantitative risk assessment. The estimated range of lung cancer risk (upper 95% confidence interval) based on human epidemiological data is 1.3×10^{-4} to $2.4 \times 10^{-3} (\mu\text{g}/\text{m}^3)^{-1}$ (Table 2). After considering the results of the meta-analysis of human studies, as well as the detailed analysis of railroad workers, the SRP concludes that $3 \times 10^{-4} (\mu\text{g}/\text{m}^3)^{-1}$ is a reasonable estimate of unit risk expressed in terms of diesel particulate. Thus this unit risk value was derived from two separate approaches which yield similar results. A comparison of estimates of risk can be found in Table 3.
20. Based on available scientific information, a level of diesel exhaust exposure below which no carcinogenic effects are anticipated has not been identified.
21. Based on available scientific evidence, as well as the results of the risk assessment, we conclude that diesel exhaust be identified as a Toxic Air Contaminant.
22. As with other substances evaluated by this Panel and after reviewing the field of published peer reviewed research studies on diesel exhaust, additional research is appropriate to clarify further the health effects of diesel exhaust. This research may have significance for estimating the unit risk value.
23. The Panel, after careful review of the February 1998 draft SRP version of the ARB report, *Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant*, as well as the scientific procedures and methods used to support the data, the data itself, and the conclusions and assessments on which the Report is based, finds this report with the changes specified during our October 16, 1997, meeting and as a result of comments made at the March 11, 1998, meeting, is based upon sound scientific knowledge, methods, and practices and represents a complete and balanced assessment of our current scientific understanding.

For these reasons, we agree with the science presented in Part A by ARB and Part B by OEHHA in the report on diesel exhaust and the ARB staff recommendation to its Board that diesel exhaust be listed by the ARB as a Toxic Air Contaminant.

I certify that the above is a true and correct copy
of the findings adopted by the Scientific Review

Panel on April 22, 1998.

Sincerely,
 /s/
 John R. Froines, Ph.D.
 Acting Chairman
 Scientific Review Panel

TABLE 1
NONCANCER HEALTH VALUES APPROVED BY THE
SCIENTIFIC REVIEW PANEL
1998

Compound	Health Value	End Point
Acetaldehyde	9 $\mu\text{g}/\text{m}^3$	Respiratory System
Diesel Exhaust	5 $\mu\text{g}/\text{m}^3$	Respiratory System
Inorganic Lead	$4.6 \times 10^{-4} (\mu\text{g}/\text{m}^3)^{-1}$	Cardiovascular Mortality
Perchloroethylene	35 $\mu\text{g}/\text{m}^3$	Alimentary System (Liver)
$\mu\text{g}/\text{m}^3$: Microgram Per Cubic Meter		

TABLE 2
CANCER POTENCIES APPROVED BY THE SCIENTIFIC REVIEW PANEL
FROM 1984 TO 1998
(In Order of Cancer Potency)

Compound	Unit Risk $(\mu\text{g}/\text{m}^3)^{-1}$	Range $(\mu\text{g}/\text{m}^3)^{-1}$
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TABLE 3

COMPARISON OF OTHER ORGANIZATIONS' ESTIMATED 95 PERCENT UPPER CONFIDENCE LIMITS
OF LIFETIME RISK PER $\mu\text{g}/\text{m}^3$ DIESEL PARTICULATE MATTER FROM RISK ASSESSMENTS
BASED ON EPIDEMIOLOGIC DATA WITH OEHHA ESTIMATES

Method	Unit Risk / Range	Basis of Assessment	Reference
Epidemiologic Analysis	3×10^{-4}	Based on Smoking-Adjusted Pooled RR	Smith, 1998
Epidemiologic Analysis ^b	3.6×10^{-4} to 2.4×10^{-3}	Case-Control Study of Garshick et al., 1987	OEHHA, Part B, Section 7.3.3
Epidemiologic Analysis	2.8×10^{-4} to 1.8×10^{-3}	Cohort Study of Garshick et al., 1988	OEHHA, Part B, Section 7.3.4
Epidemiologic Analysis	1.3 to 7.2×10^{-4}	Cohort Study, Time Varying Conc., Roof (3,50) Pattern	OEHHA, Part B, Appendix D
Epidemiologic Analysis	3.8×10^{-4} to 1.9×10^{-3}	Cohort Study, Time Varying Conc., Ramp (1,50) Pattern	OEHHA, Part B, Appendix D
Epidemiologic Analysis	1.4×10^{-3}	London Transport Study ^c	Harris, 1983
Epidemiologic Analysis	2×10^{-3}	Epidemiologic Data of Garshick (Top End of U.S. EPA's Range)	U.S. EPA, 1998
Epidemiologic Analysis	1.3×10^{-4} to 1.3×10^{-2}	Using Smoking-Adjusted RR and Exposures of 5 or $500 \mu\text{g}/\text{m}^3$	OEHHA, Part B, Section 7.3; Bracketed Risk Bounds
a) Bolded values are included in OEHHA's range of risk.			
b) Obtained by applying Harris' slope of $5 \times 10^{-4} (\mu\text{g}/\text{m}^3 \times \text{yr})^{-1}$ to California life table.			

Air Toxics Program
Particulate Emissions from Diesel-Fueled Engines as a TAC
Toxic Emissions from Diesel-Fueled Engines

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Interim Guidance for Sampling Agricultural Fields for School Sites (Second Revision)

California Department of Toxic Substances Control
California Environmental Protection Agency

August 26, 2002

Preface

Effective January 1, 2000, new California Department of Education statutes require the Department of Toxic Substances Control (DTSC) of the California Environmental Protection Agency (CalEPA) to review environmental assessments for proposed new school sites and/or new construction school expansion projects. Some of these sites are situated on agriculture land where residual agricultural chemicals may remain in the soil. In June 2000, DTSC issued "Interim Guidance for Sampling Agricultural Soils" to provide a uniform approach for evaluating former agricultural properties where pesticides have been applied. Since this guidance was issued, over 75 agricultural sites have been evaluated across California with the majority in the Sacramento-San Joaquin Valley, Oxnard Plains, and Imperial Valley. The most commonly detected pesticides have been DDT and its derivatives DDD and DDE, toxaphene, dieldrin, and aldrin. Of these pesticides, toxaphene has been the major pesticide driving unacceptable levels of risk requiring remediation by soil removal. These results and the experience of working with the guidance has allowed for refinement of the original guidance. The revised guidance contained in this document reflects these refinements.

**This guidance is intended to supplement the DTSC Preliminary
Endangerment Assessment (PEA) Guidance Manual (Manual), CalEPA 1994**

(Second Printing, June 1999). Data obtained from the investigations should be evaluated for potential health risks according the PEA Manual. This guidance is not intended to diminish the need to take focused, authoritative samples at site locations commonly associated with hazardous substances releases nor replace guidance provided by the PEA Guidance Manual. This guidance is not applicable to areas where pesticides were mixed, stored, disposed, or areas where pesticides may have accumulated, such as ponds and drainage ditches.

The scope of this document is limited to evaluating only agricultural fields during a PEA or other initial sampling investigation related to proposed new and/or expanded school sites. These are properties (or portions of properties) where pesticides were uniformly applied for agricultural purposes consistent with normal application practices, and where other non-agriculturally related activities have been absent. The data obtained from the sampling analyses will be incorporated into the PEA Report, including performing a risk analysis in accordance with the guidance in the PEA Manual.

This guidance does not apply to disturbed land, such as, land that has been graded in preparation for construction, areas where imported soil has been brought in, or any other activity that would redistribute or impact the soil, other than normal disking and plowing.

This guidance is an on-going effort to streamline the characterization of agricultural sites. As additional knowledge and experience is obtained, DTSC may modify this guidance, as appropriate.

1.0 PURPOSE

This guidance was prepared for use in evaluating soil at proposed new school sites and/or new school construction expansion projects that are currently, or were previously used for certain types of agricultural activities where residual agricultural chemicals may pose a threat to human health and the environment. This guidance is intended to supplement the DTSC Preliminary Endangerment Assessment (PEA) Guidance Manual (Manual), CalEPA 1994 (Second Printing, June 1999), and provide a uniform and streamlined approach for evaluating agricultural soils. It is intended to assist environmental assessors in designing initial investigations or developing Preliminary Endangerment Assessment (PEA) Work Plans for sites with certain historical agricultural uses. The analytical data obtained are to be incorporated into a risk analysis and PEA Report performed in accordance with the guidance in the PEA Manual.

2.0 IDENTIFYING ELIGIBLE AGRICULTURAL SITES

2.1 Eligible Sites

This guidance is specific to agricultural lands where pesticides and/or fertilizers were presumably applied, more or less uniformly, for agricultural purposes consistent with normal application practices. It is applicable to agricultural land that is currently under cultivation with row, fiber or food crops, orchards, or pasture. It is also applicable to fallow and former agricultural land that is no longer in production and has not been disturbed beyond normal disking and plowing practices. Each field of the same crop is assumed to have been watered, fertilized and treated with agricultural chemicals to the same degree across the field. Because of this homogeneous application, contaminant levels are expected to be similar at any given location within the field. This is the underlying premise of the guidance, and one that must be verified at the scoping stage of the PEA process.

2.2 Sites To Which The Guidance Does Not Apply

This guidance is not applicable to agricultural land under or adjacent to structures such as residences, barns, or other outbuildings. Pesticide mixing/loading areas, fence lines, ditches, canals, berms, and other areas that may have been treated differently from an agricultural field are not considered in this guidance. Also excluded are animal facilities such as cattle and poultry barns, settling ponds, and manure piles. This guidance does not apply to former agricultural land that has been graded for construction or other purposes, that has received fill, or has had parking lots or structures placed on it following active use as an agricultural field. An urban residential area that was agricultural land in the past does not qualify for this guidance since the construction of the residences would have resulted in the disturbance and redistribution of potential agricultural contaminants in the soil. These excluded areas require biased, discrete sampling as opposed to the sampling for agricultural fields discussed in this document.

3.0 SAMPLING STRATEGIES

3.1 Sampling Frequency

Sampling frequency may vary depending on the size of the site and conditions found. When the site has been uniformly used for a single agricultural crop, the presumption is that agricultural chemicals were applied equally to the site in any given year and that their distribution will be relatively uniform. **When differing agricultural crops were produced on different areas of the site, each area should be**

addressed separately and the sampling rate should be sufficient to characterize each area.

The sampling pattern should be sufficient to characterize the site. Recommended numbers of sampling locations are provided in Table 1. For sites two acres or less, discrete samples should be collected on ¼ acre centers. For sites between two and four acres, a total of eight locations, evenly spaced across the site, should be sampled. For sites greater than four acres and up to 20 acres, discrete samples should be collected on ½ acre centers, and for sites between 21 and 100 acres, on 1-acre centers. For sites greater than 100 acres, DTSC should be consulted for the appropriate number of sampling locations. Compositing of samples is discussed in Section 4.5.

Table 1: Recommended Number of Sampling Locations

Land Size	Suggested Minimum Sampling Locations
One (1) to two (2) acres	Discrete samples taken on ¼ acre centers
Greater than two (2) up to four (4) acres	Discrete samples taken from eight (8) locations evenly spaced across the site
Greater than four (4) up to twenty (20) acres	Eight (8) composite samples from discrete samples taken on half-acre centers.
Twenty-one (21) to sixty (60) acres	Fifteen (15) composite samples from discrete samples taken on one (1) acre centers.
Sixty-one (61) to one hundred (100) acres	Twenty five (25) composite samples from discrete samples taken on one (1) acre centers
Greater than one hundred (100) acres	Consult with DTSC

3.2 Sampling Depth

Each location should be sampled to include one surface sample (0 to 6 inches) and one subsurface sample (2 to 3 foot range). [Note: 0 inches means first encountered soil. Thick mats of vegetable material, roots, and other extraneous material should not be sampled.]

3.3 Sample Collection

Sampling both the furrows and beds of existing rows will detect the greatest variability in the residuals. Some methods of pesticide application will favor residuals in the beds while others favor the furrows. In fields where rows remain, roughly half of the samples should be gathered from the furrows and half from the beds in an alternating pattern. Orchards should have the sampling locations placed at the current drip line for the trees, under the canopy, between the tree rows, and between the trees within a row. For sites with slopes, swales, or other uneven topography, sampling from centers should be modified to include samples from those areas where surface water would be expected to flow and accumulate.

3.4 Offsite Background Samples

A minimum of four offsite locations must be sampled at the surface (0 to 6 inches) to determine background or ambient levels of heavy metals in the area. The samples must be collected near the site, preferably one from each of the four sides. The soil type of the offsite samples should be the same as the site samples, and if possible, the offsite samples should be collected from areas that have not been impacted by agricultural or industrial chemicals. If other properties in the area have gone through the PEA process, it may be possible to use data from these sites for establishing background metal concentrations providing that soil types are compatible. This may only be done in consultation with the DTSC Project Manager.

4.0 ANALYSES

4.1 Identifying Agricultural Chemicals Used on the Site

When the land is under active agricultural production, the grower should be interviewed to determine the types and amounts of pesticides historically used at the site. The County Agricultural Commissioner should also be consulted to verify pesticide usage on the property. The Agricultural Commissioner is required to maintain this information for three years, but often will have extensive knowledge of the farming practices over many years. A local or specialized farm advisor such as the University of California Cooperative Extension Agent is another source of information for farming practices in the area. These consultations should occur during the scoping phase of the investigation. For those sites that have not been actively farmed in the past three years, obtaining accurate information is more difficult. Information from surrounding or neighboring agricultural operations on the types of crops grown in the area during the time of active farming can provide clues on what chemicals may have been applied.

4.2 Chemicals of Potential Concern (COPC): Pesticides

The chemicals of greatest concern are those that persist in the environment. For the majority of newer pesticides persistence is limited to a few days; however, organochlorine pesticides (OCPs) can still persist in soil at levels of health concern for many years following application. Unless it can be documented that OCPs were not used on the property, they must be considered COPC. Paraquat also has a relatively long persistence in the soil. Paraquat should also be considered a COPC if there is a history of its use on the property. Under certain conditions, such as in rice growing fields, near surface conditions exist that establish anaerobic soil over an extended time. For these situations, anaerobically stable pesticides such as ametryn, cryomazine, and thiabendazole should also be considered as COPC. The selection of COPCs should be done in consultation with the DTSC project manager and toxicologist assigned to the project.

4.3 Chemicals of Potential Concern (COPC): Metals (Inorganic Elements)

Heavy metals have been applied to agricultural fields, both as pesticides and fertilizers. To ensure that the concentrations of these metals in site soils do not pose a potential health risk or hazard, the CAM 17 metals must be considered as COPC. Heavy metals are also evaluated to detect natural mineral deposits that may pose an unacceptable risk.

4.4 Discrete Samples

For sites four acres or less, each of the surface discrete samples must be analyzed for OCPs and CAM 17 metals. Analysis for other pesticides may be necessary, depending on the history of agricultural activities at the site. Offsite background samples should be analyzed for CAM 17 metals only. Subsurface samples should be frozen and held for analysis pending the outcome of the surface sampling results. No deterioration is expected during the time period required to complete the PEA.

4.5 Composite Samples

While the analysis of discrete samples is preferred, it is recognized that for large sites this may not be practical. Since this guidance assumes a relatively even distribution of chemicals across the site, compositing of discrete samples may be considered when the area to be sampled is greater than four acres.

4.5.1 Number of Composite Samples

The minimum number of composite samples analyzed is dependent on the size of the site (see Table 1). Compositing is not applicable for sites four acres or less. For sites greater than four acres and up to 20 acres, a minimum of eight composite samples is required. For sites 21 to 60 acres, a minimum of 15 composite samples is required. For sites between 61 and 100 acres, the minimum number of composite samples is 25. For sites over 100 acres, DTSC should be consulted for the appropriate number of composite samples.

4.5.2 Makeup of Composite Samples

Composite surface samples may be made up of a maximum of four discrete surface samples. The discrete samples must be from adjacent sampling locations. In cases where two crops were grown on the site, only discrete samples from within the same crop area may be composited.

4.5.3 Preparation of Composite Samples

The discrete samples should be individually mixed and uniformly split by the laboratory or trained field staff prior to compositing. Mixing and compositing should be performed under uniform, controlled conditions. The unused portion of each discrete sample should be frozen and archived in case additional analysis is warranted from the composite results. The samples may be discarded when the PEA process has been completed and approved by the DTSC.

4.6 Laboratory Analyses

4.6.1 Methods

The analytes of primary concern are OCPs and some of the CAM 17 metals. Depending on the site history, analysis of other types of pesticides may be required. OCPs should be analyzed using U.S. EPA 8081A or equivalent. Metals must be analyzed using the U.S. EPA 6000/7000 series. If the site history indicates other classes of persistent pesticides should be evaluated, DTSC should be consulted for the acceptable method of analysis and appropriate detection limits.

4.6.2 Detection Limits

The actual detection limits obtained will vary depending on the particular analyte. For OCPs, the analytes typically causing detection limit concerns in agricultural fields

are aldrin, dieldrin, and toxaphene. The detection limits should be 0.005 mg/kg for aldrin, dieldrin, and 0.100 mg/kg for toxaphene. Table 3 lists the detection limits for several OCPs and paraquat.

In samples with elevated DDT, the detected concentration may be above the range of calibration. This can result in the analytical laboratory diluting the sample for reanalysis, and then reporting only the final result. In these cases, the reported detection limits for aldrin, dieldrin, and toxaphene may exceed the detection limits needed for determining potential health effects. Ideally the laboratory should be asked to report if those three analytes were detected in the first analysis prior to dilution. Multiple analyses of the same samples may be required to obtain the data necessary for risk assessment purposes.

Table 2. Analytical Methods and Detection Limits for Selected OCPs and Paraquat

Pesticide	Methods	CAS No.¹	DL² mg/kg
ALDRIN	8081A, 8270C	309-00-2	0.005
CHLORDANE	8081A	57-74-9	0.10
CHLORONEB	8081A (R)	2675-77-6	100
DBCP	8081A	96-12-8	0.01
DDD	8081A	72-54-8	0.10
DDE	8081A	72-55-9	0.10
DDT	8081A	50-29-3	0.10
DIELDRIN	8081A	60-57-1	0.005
HEPTACHLOR	8081A, 8270C	76-44-8	0.10
HEXACHLOROBENZENE	8081A, 8121, 8270C, 8275, 8410	118-74-1	0.30
LINDANE	8081A	58-89-9	0.10
METHOXYCHLOR	8081A	72-43-5	0.40
MIREX	8081A(R), 8270C	2385-85-5	0.10
PARAQUAT_DICHLORIDE	Zeneca SOP RAM 272/01; Chevron RM 8- 10; 549.1*	4685-14-7	270
TOXAPHENE	8081A, 8270C	8001-35-2	0.1
TRIFLURALIN	8091, 8081A(R), 8270C	1582-09-8	63
<p>*Water and Wastewater Methods. Soil must be extracted and the method validated by the laboratory for a soil matrix. (R) = must be requested for inclusion in the method CAS No¹ = Chemical Abstract Service registry number DL² = Detection Limit recommended for risk assessment purposes</p>			

4.6.3 Pesticide Analyses

Each of the surface samples, discrete or composite, must be analyzed for OCPs. Analysis for other classes of persistent pesticides may be required as indicated by the agricultural history of the site. When using composites, each discrete sample associated with the composite sample having the highest detected concentration of OCPs must be analyzed.

4.6.4 Metal Analyses (Inorganic Elements)

Each of the background and a minimum of four (4) on-site surface samples must be analyzed for the CAM 17 metals. In addition, each of the on-site discrete surface samples must be analyzed for arsenic. When samples are composited, one (1) discrete sample from each composite must be analyzed for arsenic. The number of discrete samples analyzed for arsenic does not need to be greater than the number of total composite samples used for OCP analysis. The subsurface samples need only be analyzed for CAM 17 metals and arsenic if the concentration of an element detected is above the background concentration for that element. Analysis of additional subsurface samples may be requested by DTSC.

4.6.5 Quality Control

Quality control procedures specified in SW-846 must be followed. A matrix spike/matrix spike duplicate on one soil sample per batch of samples must be performed to demonstrate that the targeted pesticide(s) can be recovered from the soil investigated. Highly organic topsoil may interfere with proper extraction of pesticides. The laboratory data package must include a summary of the quality control sample results: blanks, matrix spike/matrix spike duplicate, surrogate recoveries, laboratory control samples, etc., as specified by the method. The laboratory should provide a signed narrative stating whether the QC was met and listing any discrepancies.

5.0 REPORTING

5.1 Format

The results of the sampling effort are to be reported in a Preliminary Endangerment Assessment (PEA) as described in the DTSC Preliminary Endangerment Assessment (PEA) Guidance Manual (Manual), CalEPA 1994 (Second Printing, June 1999).

5.2 Evaluating Metals (Inorganic Elements) Data

Using a robust statistical procedure to determine if on-site metal concentrations are indicative of background conditions or the result of site-related activities can be problematic because of the limited number of background samples collected at any one site. DTSC is in the process of establishing background metals concentrations for specific school districts. If the site is in a school district for which DTSC background levels have been established, those values should be used. If DTSC background levels are not available, then a defensible procedure for comparing on-site with background metals should be used. The Staff Toxicologist assigned to the project should be consulted on the most appropriate method of comparison.

5.3 Data Interpretation

All detected pesticides, and any onsite metals above background must be evaluated in a risk assessment as described in the DTSC PEA Guidance Manual. In the initial screening analysis, the highest concentration of each detected pesticide and metal above background must be used as the exposure point concentration in the risk assessment. If the maximum concentrations detected on site pose an unacceptable risk or hazard, a spatial analysis should be conducted to determine if the elevated levels represent a “hot spot”, or are representative of concentrations across the site. In those cases where the elevated concentrations are determined to be one or more “hot spots”, risk or concentration isopleths should be constructed to differentiate between those areas of the site in need of further action, and those where no further action is required. Any deviations from these analyses must be approved by the Staff Toxicologist assigned to the project. For sites with elevated levels of chlordane, it may be necessary to determine if the concentrations detected would pose an unacceptable risk from indoor air exposures, as evaluated with the Johnson and Ettinger Indoor Air Model. The DTSC Staff Toxicologist assigned to the project should be consulted for further guidance if necessary.

6.0 ADDITIONAL SOURCES OF INFORMATION

6.1 Pesticide Physical Properties and Half-Lives

<http://ace.orst.edu/info/extoxnet/pips/ghindex.html>
<http://www.arsusda.gov/rsml/ppdb1.html>

6.2 Active Pesticide Ingredient by Brand Name

<http://www.cdpr.ca.gov/docs/label/prodnam.htm>
<http://www.cdpr.ca.gov/> - see databases
Farm Chemicals Handbook, current edition, Meister Publishing Company, Willoughby, Ohio.

6.3 Maximum Application Rates

<http://ace.orst.edu/info/extoxnet/>
Agricultural Chemicals – Thomas Publications, Fresno, CA

6.4 Pesticide Usage by Year, County, and Crop

<http://www.ipm.ucdavis.edu/PUSE/puse1.html>
<http://www.cdpr.ca.gov/> - see databases

6.5 Test Methods

<http://www.epa.gov/epaoswer/hazwaste/test/>
SW-846: USEPA, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, Current Revision*

6.6 Pesticide Toxicology Information

<http://ace.orst.edu/info/extoxnet/ghindex.html>
<http://www.state.nj.us/health/eoh/rtkweb/rtkhsfs.htm>

9.4 PARKS, RECREATION AND OPEN SPACE ELEMENT GOALS, OBJECTIVES, POLICIES AND PROGRAMS

9.4.1 PARKS RECREATION AND OPEN SPACE ELEMENT GOALS

Goal 4.1

To enhance Moreno Valley as a desirable place in which to live, work, shop, and do business.

Goal 4.2

To retain an open space system that will conserve natural resources, preserve scenic beauty, promote a healthful atmosphere, provide space for outdoor recreation, and protect the public safety.

9.4.2 PARKS, RECREATION AND OPEN SPACE ELEMENT OBJECTIVES AND POLICIES

Objective 4.1

Retain agricultural open space as long as agricultural activities can be economically conducted, and are desired by agricultural interests, and provide for an orderly transition of agricultural lands to other urban and rural uses.

Policies:

4.1.1 Encourage grazing and crop production as a compatible part of a rural residential atmosphere.

Objective 4.2

Provide safe, affordable and accessible recreation facilities and programs to meet the current and future needs of Moreno Valley's various age and interest groups and promote the provision of private recreational facilities.

Policies:

4.2.1 Neighborhood parks shall serve as the day-to-day recreational areas of the City, Neighborhood parks should be within a reasonable walking distance of the population served. Community parks may also serve day-to-day recreation needs. That portion of the community and/or regional facilities that provide similar amenities to those found in neighborhood parks shall also be considered as meeting this objective.

4.2.2 Community parks shall provide opportunities for participation in sports and related athletic activities, water-oriented recreation and other special interest activities (e.g. golf, tennis, equestrian, etc).

4.2.3 Employ a multifaceted approach in the financing and acquisition, development and maintenance of parkland, including the financing of parklands through development fees, state and federal grant-in-aid programs, gifts and donations, and other sources.

4.2.4 Encourage special events (tournaments, festivals, celebrations) that reflect the uniqueness of Moreno Valley and contribute to community identity, cohesiveness and stability.

4.2.5 Work in conjunction with private and public school districts and other public agencies to facilitate the public use of school grounds and facilities for recreational activities. The City shall also encourage the development of park sites adjacent to school facilities to maximize recreational opportunities in Moreno Valley.

4.2.6 The City shall use cost effectiveness, demand and need for service and potential return on investment as

also reduce automobile travel.

Reducing residential street width can affect microclimates and reduce the summer cooling needs of adjacent homes. The orientation of buildings can be arranged to affect the amount of heat gain. Shade trees can also cool microclimates and aid in energy conservation.

Building construction options are available to reduce energy consumption. Building construction methods include, but are not limited to, insulation of walls and ceilings, insulated windows and solar water heating systems. Many building energy conservation measures have been incorporated into Title 24 of the California Administrative Code and are required of all residential structures.

AGRICULTURAL RESOURCES

7.7.1 Background

Open space devoted to agriculture encompasses a minor portion of the City's total land area. The area devoted to agricultural production diminished over time as urban development encroached on agricultural lands.

Agricultural land within the study area is generally leased to farm operators. Few, if any of the farms within the valley are owner-operated. Four major types of agriculture take place in Moreno Valley: grazing, fruit orchards, dry grain farming, potato and fruit crop farming and poultry production. Nearly all of the remaining agricultural use occurs in the rural eastern portion of Moreno Valley.

To provide an economic incentive to preserve agricultural lands, the State of California passed the California Land Conservation Act, commonly referred to as the Williamson Act, in 1965. Under this act, agricultural lands are taxed at their agricultural value rather than their value for higher valued uses. In exchange, the

landowner enters into a contract to retain the land in agricultural use for at least 10 years. The contract is automatically renewed annually for one year at the end of the term; therefore, once a "Notice of Nonrenewal" is filed, it is ten years until the contract expires. A Notice of Nonrenewal was filed for the land within the city limits that was under Williamson Act contract and the contract has since expired. There is a Williamson Act contract in effect on a site within the City's sphere of influence, located on the south side of Gilman Springs Road, east of Jack Rabbit Trail.

For many years the major agricultural enterprise within the study area was the University of California Field Station, located between Lasselle and Nason Streets and south of Brodiaea Avenue. Since the 1960's, the Field Station was used to raise experimental crops suited to dry and semi-dry climates.

The University decided to replace the Field Station with a research station in the Coachella Valley. The Moreno Valley Field Station Specific Plan, a mixed-use plan, was adopted for the property in 1999.

7.7.2. Issues and Opportunities

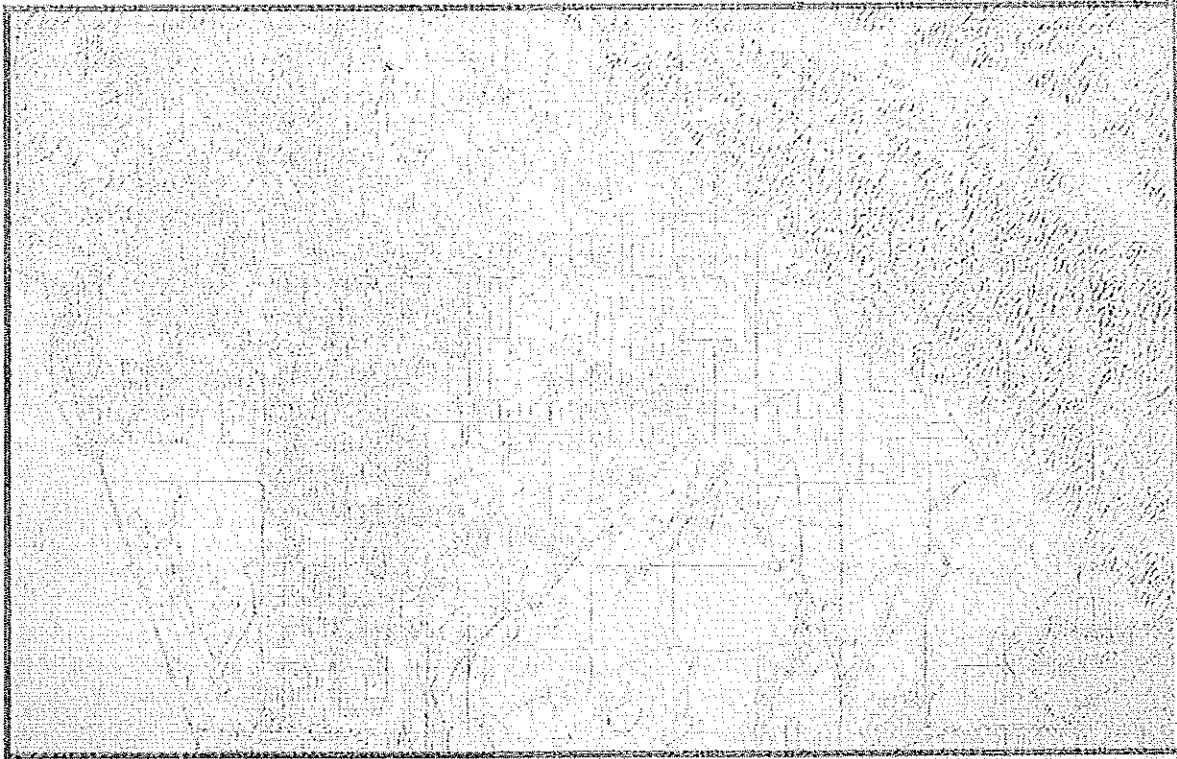
Preservation of prime agricultural land is an important state and national goal and many of the soils in Moreno Valley are well suited for agricultural production. However, soil alone does not guarantee the success of an agricultural enterprise. The high cost of land, the high cost of water and energy, fragmented ownership patterns and market conditions limit the potential return on investment. These economic factors are a disincentive to continued farming in Moreno Valley. It is, however, a viable interim use.

Sometimes nearby residents are affected by the dust, spray drift and odors associated with agricultural production. The ability to farm in close proximity to residential land

FINAL

ENVIRONMENTAL IMPACT REPORT
CITY OF MORENO VALLEY
GENERAL PLAN

VOLUME I



JULY 2006

SCH# 200091075

TABLE 2-2 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES		
POTENTIAL IMPACTS	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE AFTER MITIGATION
5.7 HYDROLOGY AND WATER QUALITY		
A significant impact associated with surface water quality may occur under all of the proposed alternatives.	<p>HW1. The City shall implement National Pollutant Discharge Elimination System Best Management Practices relating to construction of roadways to control runoff contamination from affecting the water resources (Policy 5.4.2).</p> <p>HW2. All components of the City's storm drain system shall conform to Riverside County Flood Control and Water Conservation District master drainage plans and the requirements of the Federal Emergency Management Agency (Policy 6.2.5).</p> <p>HW3. The City shall comply with the provisions of its permit(s) issued by the Regional Water Quality Control Board for the protection of water quality pursuant to the National Pollutant Discharge Elimination System (Policy 7.2.2).</p>	Less than significant.
A significant impact associated with drainage may occur under all of the proposed alternatives.	Mitigation Measure HW2 above.	Less than significant.
A significant impact associated with groundwater may occur under all of the proposed alternatives.	Mitigation Measures H1 and H3 above.	Less than significant.
5.8 AGRICULTURAL RESOURCES		
A significant impact associated with agricultural resources may occur under all of the proposed alternatives.	No feasible mitigation measure consistent with the General Plan Land Use Alternatives 1, 2, and 3 project objectives and/or land uses has been identified. As a result, no feasible mitigation measure has been identified.	Significant and unavoidable.

5.8 AGRICULTURAL RESOURCES

ENVIRONMENTAL SETTING

Existing Activities

The planning area has a long history of agricultural use, including grazing, groves, dry grain, and truck crop production. Lands currently used for agriculture are concentrated in the eastern portion of the City. Agricultural land within the City is generally leased to farm operators. Few, if any of the farms within the valley are owner-operated. As of year 2002, four major types of agriculture took place in Moreno Valley: grazing, fruit orchards, dry grain farming, potato and fruit crop farming and poultry production. The poultry operations have since closed. Nearly all of the remaining agricultural use occurs in the rural eastern portion of the City.

Preservation of prime agricultural land is an important state and national goal and many of the soils in Moreno Valley are well suited in agricultural production. However, soil alone does not guarantee the success of an agricultural enterprise. The high cost of land, the high cost of water and energy, fragmented ownership patterns, and market conditions limit the potential return on investment. These economic factors are a disincentive to continued farming in Moreno Valley.

Important Farmland Categories

Through its Farming Mapping and Monitoring Program (FMMP), the California Department of Conservation produces agricultural resource inventories and maps based on soil quality and land use within California. These inventories and maps are updated every two years. Figure 5.8-1 depicts the location of the important farmlands within the planning area. Table 5.8-1 depicts the acreage for each category.

**TABLE 5.8-1
PLANNING AREA AGRICULTURAL RESOURCES**

Agricultural Classifications	Approximate Acreage
Prime Farmland	1,639
Farmland of Statewide Importance	330
Unique Farmland	60
Farmland of Local Importance	10,781
Grazing Land	1,269
Other Land	12,109
Water	632

Source: California Department of Conservation, Division of Land Resources 2002.

Prime Farmland

Prime Farmland is defined by the California Department of Conservation as: "Land with the best combination of physical and chemical features able to sustain long term production of agricultural crops. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for production of irrigated crops at sometime during the [past four years]."

As shown in **Figure 5.8-1**, the majority of the Prime Farmland in the planning area is located in the center of the planning area, north and south of Highway 60, with a few parcels scattered in the southern portion of the planning area. According to the State's 2002 data, there are approximately 1,639 acres of Prime Farmland in the planning area. Some of this land may have been developed or taken out of production in preparation of development, since the last State agricultural survey.

Farmland of Statewide Importance

Farmland of Statewide Importance is defined by the California Department of Conservation as: "Land similar to Prime Farmland that has a good combination of physical and chemical characteristics for the production of agricultural crops. This land has minor shortcomings, such as greater slopes or less ability to store soil moisture than Prime Farmland. Land must have been used for production of irrigated crops at sometime during the past four years."

Compared to the other farmland categories, Farmland of Statewide Importance comprises a small portion (approximately 330 acres) of the total farmland acreage in the planning area. These areas are limited to the southwestern most portion of the planning area and a few parcels south of Highway 60 in the center of the planning area. Some of this land may have been developed, or taken out of production in preparation of development, since the last State agricultural survey.

Unique Farmland

Unique Farmland is defined by the California Department of Conservation as: "Lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated, but may include non-irrigated orchards or vineyards as found in some climatic zones in California."

Unique Farmland comprises the smallest segment of agricultural production in the planning area, with 60 acres. This land is located in the central portion of the planning area. Some of this land may have been developed, or taken out of production in preparation for development, since the last State agricultural survey.

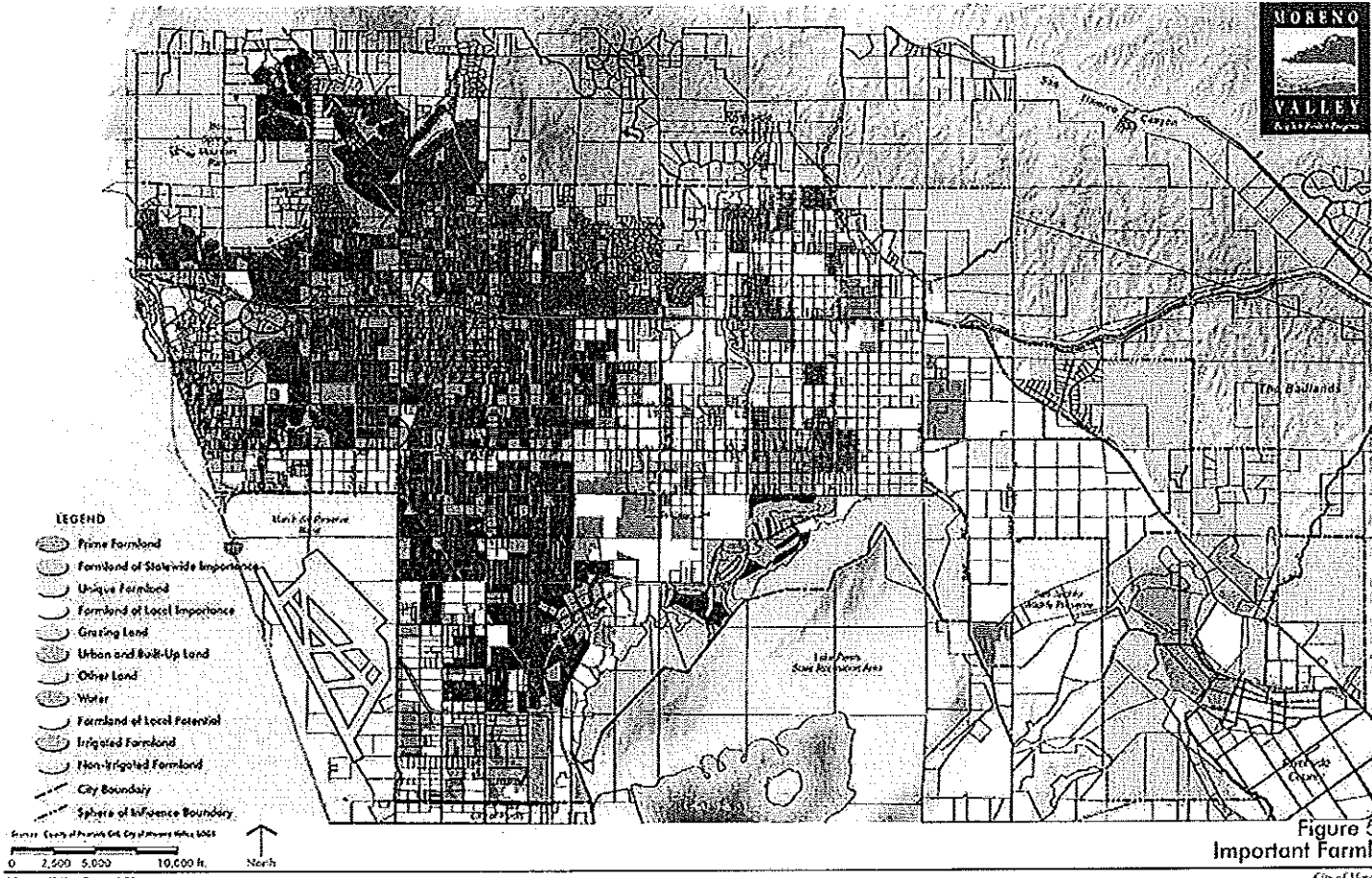


Figure 5.8-1
Important Farmlands

City of Morone Valley
July 2005

Farmland of Local Importance

Farmland of Local Importance for the County of Riverside is defined by the California Department of Conservation as:

- “Soils that would be classified as Prime and Statewide, but lack irrigation water. Lands planted to dryland crops of barley, oats, and wheat.”
- “Lands producing major crops for Riverside County, but that are not listed as Unique crops. These crops are identified as returning \$1 million or more dollars on the Riverside County Agricultural Report. Crops identified are permanent pasture (irrigated), summer squash, okra, eggplant, radishes, and watermelons.”
- “Dairylands, including corrals, pasture, milking facilities, hay and manure storage areas if accompanied with permanent pasture of hayland of 10 acres or more.”
- “Lands identified by city or county ordinance as Agricultural Zones or Contracts. Lands planted to jojoba, which are under cultivation and are of producing age.”

Farmland of Local Importance comprises the largest portion of farmland within the planning area (approximately 10,800 acres). This category of farmland is mainly located along the edges of the planning area, with the largest portion located in the eastern portion of the planning area. Some of this land may have been developed, or taken out of production in preparation of development, since the last State agricultural survey.

Other Categories

Other portions of the planning area are classified as Urban and Built-up Land, Grazing Land, Other Land and Water.

Surrounding Agricultural Lands

As shown in **Figure 5.8-1**, significant amounts of important agricultural lands are located to the south of the planning area, including Prime Farmland, Farmland of Statewide Importance, and Farmland of Local Importance. Patches of Farmland of Local Importance are also located to the west, across Interstate 215, as well as to the northeast, along San Timoteo Canyon. Additional Prime Farmland is also located along San Timoteo Canyon.

Riverside County Agriculture Conversion

Table 5.8-2 depicts the conversion of agricultural land to non-agricultural uses within Riverside County from 2000 to 2002. As depicted in this table, the County experienced a net decrease of 15,339 acres of important farmland during this period. This trend is expected to continue as the increase in population continues to create pressure for new housing and other land uses.

**TABLE 5.8-2
RIVERSIDE COUNTY
CHANGE IN LAND USE SUMMARY**

Land Use Category	Total Acreage Inventoried		2000-2002 Acreage Changes			
	2000	2002	Acres Lost (-)	Acres Gained (+)	Total Acreage Changed	Net Acreage Changed
Prime Farmland	151,011	141,715	14,506	5,210	19,716	-9,296
Farmland of Statewide Importance	49,446	48,046	3,472	2,072	5,544	-1,400
Unique Farmland	40,950	39,049	6,441	4,540	10,981	-1,901
Farmland of Local Importance	243,414	240,672	20,044	17,302	37,346	-2,742
<i>Important Farmland Subtotal</i>	<i>484,821</i>	<i>469,482</i>	<i>44,463</i>	<i>29,124</i>	<i>73,587</i>	<i>-15,339</i>
Grazing Land	124,714	126,887	2,256	4,429	6,685	2,173
<i>Agricultural Land Subtotal</i>	<i>609,535</i>	<i>596,369</i>	<i>46,719</i>	<i>33,553</i>	<i>80,272</i>	<i>-13,166</i>
Urban and Built-up Land	254,816	262,866	13,145	21,195	34,340	8,050
Other Land	1,007,724	1,012,840	17,185	22,301	39,486	5,116
Water Area	62,541	62,541	0	0	0	0
Total Area Inventoried	1,934,616	1,934,616	77,049	77,049	154,098	0

Source: Farmland Conversion Report 20002002 (Department of Conservation, 2004).

Williamson Act

The Williamson Act (California Land Conservation Act, California Government Code, Section 51200 et.seq.) is a statewide mechanism for the preservation of agricultural land and open space land. The Act provides a comprehensive method for local governments to protect farmland and open space by allowing lands in agricultural use to be placed under contract (agricultural preserve) between a local governmental and land owner. Under this act, agricultural lands are taxed at their agricultural value rather than their value for higher valued uses. In exchange, the landowner enters into a contract to retain his or her land in agricultural use for at least 10 years. Once a "Notice of Nonrenewal" is filed, it is ten years until the contract expires. At the time that the first General Plan was adopted, hundreds of acres within the planning area were under Williamson Act contracts. Notices of Nonrenewal have since been filed for these areas. No land within the planning area is currently under a Williamson Act contract.

Moreno Valley General Plan

The General Plan policies support agriculture as an interim use; however, no land in the planning area is designated for agricultural preservation. To allow for the interim use of land for agricultural uses, the City identifies agricultural crops as an allowable use for all of its zoning categories. The proposed General Plan Parks, Recreation, and Open Space Element contains the following objective:

Objective 4.1: Retain agricultural open space as long as agricultural activities can be economically conducted, and are desired by agricultural interests (with some agriculture retained in long-term use), and provide for an orderly transition of agricultural lands to other urban and rural uses.

To support this objective, the City identifies policies to encourage grazing and crop production as a compatible part of a rural residential atmosphere. Additionally, where practical, the City plans to incorporate existing groves into the design of future development projects. These groves can help retain the agricultural character of the area as well as provide a buffer between different land uses.

THRESHOLD FOR DETERMINING SIGNIFICANCE

For the purposes of this EIR, a significant impact would occur if implementation of General Plan Alternatives 1, 2, or 3 would:

- *Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) to non-agricultural use;*
- *Conflict with existing zoning for agricultural use, or a Williamson Act contract;*
or
- *Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use.*

ENVIRONMENTAL IMPACT

General Plan Land Use Alternatives 1, 2, and 3

Planning Area Farmland Conversion

Implementation of General Plan Alternatives 1, 2, or 3 will result in the eventual conversion of the majority of the agricultural uses within the planning area to urban uses. None of the General Plan Land Use alternatives proposes a land use designation that would provide for the permanent preservation of agricultural land. While majority of the planning area will eventually be converted to non-agricultural urban uses, some of the existing agricultural activities will continue as interim uses, as allowed under the City's existing Development Code for all zoning categories. Due to market factors, implementation of the various General Plan alternatives may result in different rates of conversion of agricultural land to urban uses since one land use alternative may be more economically desirable than the others. Since market forces change over time, it is not possible to determine with certainty which of the three General Plan Land Use alternatives would result in a quicker conversion of agricultural land.

While the three General Plan Land Use Alternatives allow for long-term agricultural production in areas designated for Open Space, the areas proposed for Open Space are not currently identified as important farmland by the state. As a result, this policy will not result in the preservation of existing important farmland.

The conversion of agricultural land to urban uses is a long and continuing trend within the planning area. Although it is difficult to quantify the amount of agricultural land that is under development pressure, such pressure exists and will continue with or without implementation of any of the three proposed General Plan Alternatives.

With the continuing urbanization of the planning area, the value of land for the remainder of the planning area will increase, which will in turn encourage the sale of farmland for conversion to urban uses. The increased value of land will make it difficult for farmers to buy or lease agricultural land in the area. Additionally, a net decrease in farmland under cultivation may have an indirect consequent increase in agricultural production costs such as transportation and labor. Agricultural activities tend to be incompatible with urban and suburban neighbors because of factors such as fugitive dust, chemical drift, odors, pesticide use, and machinery noise associated with normal farming operations. Some other factors which make agriculture economically infeasible in urbanized areas are increased incidences of theft and vandalism and increased distances to support services and processing facilities.

As a result, while there are existing pressures that would result in the conversion of agriculture within and adjacent to the planning area with or without implementation of any of the three proposed General Plan Alternatives, the General Plan will result in a significant and unavoidable impact associated with the conversion of existing agricultural land to non-agricultural uses.

Potential mitigation measures exist which would reduce the impact related to the loss of agricultural resources within the planning area. These potential mitigation measures include:

- Enrolling productive agricultural land, not presently under contract, under a Williamson Act contract;
- Providing protection to on-going agricultural operations from complaints and nuisance complaints from adjacent new development;
- Protecting productive agricultural land subject to conversion through the purchase or transfer of its development rights;
- Purchasing conservation easements on existing agricultural land to ensure that the land is never converted to urban uses; and
- Donating funds to a regional or statewide program that promotes and implements the use of agricultural land conservation easements.

As stated above, General Plan Land Use Alternatives 1, 2, and 3 contain policies to encourage the interim use of land for agricultural activities. However, even with these measures, there are existing pressures that would result in the conversion of agriculture within and adjacent to the planning area with or without implementation of any of the three proposed General Plan Alternatives. Therefore, a significant and unavoidable impact to agriculture as a result of the implementation of General Plan Land Use Alternatives 1, 2, or 3 will remain.

Since the Williamson Act program is a voluntary program for private property owners, the City can only encourage owners of agricultural land to enter into contracts. While encouraging property owners to enter into Williamson Act contracts will result in the short-term preservation of the farmland, property owners have the option of non-renewal of their contract at any time, and after the ten year contract period ends, the agricultural land will be available for conversion to urban uses. Providing protection for on-going agricultural activities from new development, such as requiring buffers between agricultural operations and new development or requiring disclosure to the purchasers of adjacent property of the potential impacts of agricultural activities on residential uses, will not result in the permanent preservation of the farmland. These potential mitigation measures only serve to provide farmers with the option to continue farming as long as they desire without fear of complaints and nuisance suits from new adjacent residents.

Since the use of Williamson Act contracts and regulations protecting interim agricultural activities will not result in the permanent preservation of farmland, the purchase or transfer of development rights, purchase of conservation easements, or donation of funds to assist in the conservation of farmland would need to be implemented to ensure the permanent preservation of farmland. These measures are economically infeasible and not consistent with the objectives and land uses of General Plan Land Use Alternative 1, 2, or 3. As there is no feasible mitigation measure consistent with the objectives and land uses of General Plan Land Use Alternative 1, 2, or 3, no mitigation measure is proposed and the impact will be significant and unavoidable.

Williamson Act

The planning area contains no land under a Williamson Act contract; therefore, implementation of any of the three General Plan alternatives could not result in significant impact associated with this issue.

Conversion of Agricultural Lands Due to Environmental Changes

As discussed above, by reducing the amount of land in the planning area in agricultural production, the project would have the indirect effect of increasing development pressure and accelerating the loss of the remainder of existing agricultural land, including adjacent agricultural lands. A net decrease in farmland under cultivation in an area has a consequent increase in agricultural production costs such as transportation and labor. Agricultural activities tend to be incompatible with urban and suburban neighbors

because of factors such as dust, odors, pesticide use and machinery noise associated with normal farming operations.

While implementation of General Plan Land Use Alternatives 1, 2, and 3 will increase development pressures on adjacent farmland, resulting in its conversion to urban uses, this conversion will be a continuation of an existing trend in the planning area and county, as described above and shown in **Table 5.8-2**. Based on this current trend and land use planning, development pressures will continue to affect adjacent agricultural lands whether or not General Plan Land Use Alternative 1, 2, or 3 is adopted and implemented.

Since adjacent agricultural land outside of the planning area is not under the jurisdiction of the City of Moreno Valley, the City is limited as to the control it has in reducing the potential impact to agricultural resources resulting from the implementation of General Plan Land Use Alternatives 1, 2, or 3. Mitigation measures, such as encouraging Williamson Act participation, transfer of development rights, or imposing fees on new development to be used for the preservation of existing agricultural lands, can not be imposed by the City on adjacent land outside of the City limits. As a result, the only way the City can mitigate the impact of implementing General Plan Alternatives 1, 2, or 3 is to mitigate for the loss of farmland within the planning area, as discussed above, thereby reducing development pressure on adjacent farmlands. Since the feasible mitigation measures that are available to reduce the impact to loss of farmland within the planning area are not consistent with the project objectives and land uses of the General Plan alternatives, no mitigation measure is proposed and the impact will be significant and unavoidable.

MITIGATION MEASURES

No feasible mitigation measure consistent with the General Plan Land Use Alternatives 1, 2, and 3 project objectives and land uses has been identified. As a result, no feasible mitigation measures have been identified.

IMPACT AFTER MITIGATION

Significant and unavoidable.

NOTES AND REFERENCES

None.

Table A- Trip Generation Comparison

Land Uses	Units	A.M. Peak Hour			P.M. Peak Hour			Daily
		In	Out	Total	In	Out	Total	
Proposed Project								
Warehousing/High-Cube Warehousing ¹	2244.6 TSF							
Trip Generation (Cars)		131	45	176	43	156	199	2,420
Trip Generation (Trucks)		64	69	133	98	59	157	1,989
Total Trip Generation		195	114	309	141	215	356	4,409
Trip Generation (Cars)		131	45	176	43	156	199	2,420
Trip Generation (Truck PCE)		168	178	346	252	153	405	5,107
PCE Trip Generation (Total)		299	223	522	295	309	604	7,527
Alternative 2 (Existing Zoning)								
Business Park ²	622.0 TSF							
Trip Generation (Cars)		496	87	583	137	388	525	6,158
Trip Generation (Trucks)		245	42	287	68	191	259	1,580
Total Trip Generation		741	129	870	205	579	784	7,738
Trip Generation (Cars)		496	87	583	137	388	525	6,158
Trip Generation (Truck PCE)		687	119	806	190	536	726	3,981
PCE Trip Generation (Total)		1,183	206	1,389	327	924	1,251	10,139
Single Family Housing (R5 & RA-2) ³	133 d.u.							
Trips/Unit (Cars)		0.19	0.56	0.75	0.63	0.37	1.00	9.52
Trip Generation (Cars)		25	75	100	84	49	133	1,266
Multi Family Housing (R15) ⁴	548 d.u.							
Trips/Unit (Cars)		0.07	0.37	0.44	0.35	0.17	0.52	5.81
Trip Generation (Cars)		38	203	241	192	93	285	3,184
Trip Generation (Cars)		559	365	924	413	530	943	10,608
Trip Generation (Truck PCE)		687	119	806	190	536	726	3,981
PCE Trip Generation (Total)		1,246	484	1,730	603	1,066	1,669	14,589
Alternative 3 (Reduced Intensity)								
Warehousing/High-Cube Warehousing ¹	1529.5 TSF							
Trip Generation (Cars)		109	30	139	33	123	156	1,864
Trip Generation (Trucks)		44	47	91	65	42	107	1,337
Total Trip Generation		153	77	230	98	165	263	3,201
Trip Generation (Cars)		109	30	139	33	123	156	1,864
Trip Generation (Truck PCE)		115	122	237	168	108	276	3,428
PCE Trip Generation (Total)		224	152	376	201	231	432	5,292

Table A- Trip Generation Comparison

Land Uses	Units	A.M. Peak Hour			P.M. Peak Hour			Daily
		In	Out	Total	In	Out	Total	
Alternative 3 (Reduced Intensity) + Residential Use								
Warehousing/High-Cube Warehousing ¹	1529.5 TSF							
Trip Generation (Cars)		109	30	139	33	123	156	1,864
Trip Generation (Trucks)		44	47	91	65	42	107	1,337
Total Trip Generation		153	77	230	98	165	263	3,201
Trip Generation (Cars)		109	30	139	33	123	156	1,864
Trip Generation (Truck PCE)		115	122	237	168	108	276	3,428
PCE Trip Generation (Total)		224	152	376	201	231	432	5,292
Single Family Housing (R5 & RA-2) ³	126 d.u.							
Trips/Unit (Cars)		0.19	0.56	0.75	0.63	0.37	1.00	9.52
Trip Generation (Cars)		24	71	95	79	47	126	1,200
Trip Generation (Cars)		133	101	234	112	170	282	3,064
Trip Generation (Truck PCE)		115	122	237	168	108	276	3,428
PCE Trip Generation (Total)		248	223	471	280	278	558	6,492
Alternative 2 (Existing Zoning with 30% BP Coverage)								
Business Park ²	444.3 TSF							
Trip Generation (Cars)		355	62	417	98	277	375	4,398
Trip Generation (Trucks)		175	30	205	49	136	185	1,129
Total Trip Generation		530	92	622	147	413	560	5,527
Trip Generation (Cars)		355	62	417	98	277	375	4,398
Trip Generation (Truck PCE)		491	85	576	137	381	518	2,845
PCE Trip Generation (Total)		846	147	993	235	658	893	7,243
Single Family Housing (R5 & RA-2) ³	133 d.u.							
Trips/Unit (Cars)		0.19	0.56	0.75	0.63	0.37	1.00	9.52
Trip Generation (Cars)		25	75	100	84	49	133	1,266
Multi Family Housing (R15) ⁴	548 d.u.							
Trips/Unit (Cars)		0.07	0.37	0.44	0.35	0.17	0.52	5.81
Trip Generation (Cars)		38	203	241	192	93	285	3,184
Trip Generation (Cars)		418	340	758	374	419	793	8,848
Trip Generation (Truck PCE)		491	85	576	137	381	518	2,845
PCE Trip Generation (Total)		909	425	1,334	511	800	1,311	11,693

TSF = thousand square-feet

- 1 Rates from Institute of Transportation Engineers (ITE) Trip Generation (7th Edition) rates for Land Use 150 - Warehousing and Land Use 152 - High-Cube Warehousing. All trip generation rates converted to car and truck trips using vehicle mix and enter/exit splits from Fontana Truck Trip Generation Study Truck trips converted to PCEs based on the SANBAG PCE values.
- 2 Rates from ITE Trip Generation (9th Edition) rates for Land Use 770 - Business Park. All trip generation rates converted to car and truck trips using vehicle mix and enter/exit splits from Fontana Truck Trip Generation Study Truck trips converted to PCEs based on the SANBAG PCE values. Rates were used using 70% of Truck volumes compared to Industrial Park Splits based on Land Use description included in the ITE Trip Generation
- 3 Rates from ITE Trip Generation (9th Edition) rates for Land Use 210 - Single Family Detached Housing
- 4 Rates from ITE Trip Generation (9th Edition) rates for Land Use 230 - Residential Condominium/Townhouse

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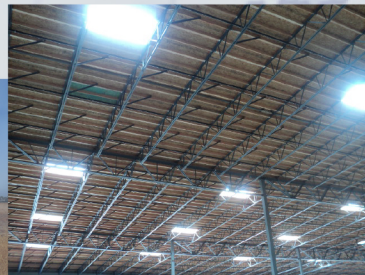
ProLogis Eucalyptus Industrial Park

JULY 2012



DRAFT ENVIRONMENTAL IMPACT REPORT

CITY OF MORENO VALLEY
RIVERSIDE COUNTY, CALIFORNIA



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DRAFT

**ENVIRONMENTAL IMPACT REPORT
STATE CLEARINGHOUSE NO. 2008021002**

PROLOGIS EUCALYPTUS INDUSTRIAL PARK

(formerly PROLOGIS PARK MORENO VALLEY EUCALYPTUS PROJECT)

**CITY OF MORENO VALLEY
RIVERSIDE COUNTY, CALIFORNIA**

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July 2012

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1.0 EXECUTIVE SUMMARY

1.1 INTRODUCTION

The Draft Environmental Impact Report (EIR) (State of California Clearinghouse No. 2008021002) for the Eucalyptus Industrial Park, formerly known as the “ProLogis Park Moreno Valley Eucalyptus Project” (proposed project or project) has been prepared by LSA Associates, Inc. on behalf of the City of Moreno Valley (City) to: 1) identify the proposed project’s impacts on the environment; 2) to discuss alternatives to the proposed project; and 3) to propose mitigation measures that will offset, minimize or otherwise avoid significant environmental impacts. This EIR has been prepared in accordance with the California Environmental Quality Act¹ (CEQA) and Sections 15120 through 15131 and 15161 of the *Guidelines for California Environmental Quality Act*,² both of which regulate the preparation of EIRs. Based on the potential impacts of the proposed project, including cumulative impacts, and the comments received during the public review of the Initial Study (IS) and public scoping meeting, the City determined that an EIR should be prepared to analyze potential impacts of the proposed project with respect to the following environmental issues:

- Aesthetics;
- Agricultural Resources;
- Air Quality;
- Biological Resources;
- Cultural Resources;
- Hazards and Hazardous Materials;
- Hydrology, Drainage, and Water Quality;
- Land Use;
- Noise;
- Population and Housing;
- Traffic and Circulation;
- Utilities and Service Systems; and
- Greenhouse Gas Emissions and Global Climate Change.

These thirteen environmental issues are individually addressed in Section 4.0 (Environmental Analysis). Based on the analysis provided in the IS (contained in Appendix A) for the proposed project, all impacts associated with the following five environmental issues were determined to be “Effects Not Found to be Significant” according to Section 15128 of the *CEQA Guidelines* and are not addressed in detail in Section 4 of this EIR:

- Forest Resources;
- Geology and Soils;
- Mineral Resources;
- Public Services; and
- Recreation.

¹ *California Environmental Quality Act*, as of January 1, 2011, §§21000–21178, Public Resources Code, State of California.
² *Guidelines for California Environmental Quality Act*, as amended January 1, 2008, §§15000–15387, California Code of Regulations, Title 14, Chapter 3, State of California.

The site does not contain forest or mineral resources, so there is no need for the EIR to evaluate these resources. The project is industrial in nature, will provide appropriate development impact fees, and there are adequate existing services to the surrounding area, so there is no need for the EIR to evaluate public services and recreation. Finally, there are no earthquake faults or unusual geologic or soil conditions in the project area, the project would experience ground shaking similar to the region as a whole, and the project will have to comply with City and State seismic guidelines, so the EIR does not need to evaluate geological and soil impacts. Additional discussion of these issues is provided in the IS (Appendix A).

1.2 PROPOSED PROJECT

The proposed project site is located in the eastern portion of the City of Moreno Valley, Riverside County (Figure 1.1). The 122.8-acre project site is generally located south of State Route 60 (SR-60), east of Moreno Valley Auto Mall, and adjacent to and west of the Quincy Channel.

The proposed development would result in the construction and operation of a warehouse facility comprising six buildings consisting of approximately 2,244,638 square feet. As indicated in Figure 1.2, the project site is divided into northern and southern areas. The northern area, north of Fir Avenue/future Eucalyptus Avenue would contain approximately 1,030,377 square feet of warehouse uses divided between two buildings (Building One = approximately 168,342 square feet; Building Two = approximately 862,035 square feet). Development in the southern portion of the site, south of Fir Avenue/future Eucalyptus Avenue would consist of approximately 1,214,261 square feet of warehouse uses divided among four buildings (Building Three = approximately 160,106 square feet; Building Four = approximately 339,015 square feet; Building Five = approximately 390,102 square feet; and Building Six = approximately 325,038 square feet). Since the proposed uses are not consistent with the current General Plan and zoning, implementation of the project would require amendments to the City's General Plan and zoning designations for the project site. The EIR evaluated "worst-case" conditions of the project operating 24 hours per day, 7 days per week.

It is important to note that the proposed project would require and proposes the following changes:

- Approval of a General Plan Amendment to change the land use designation of 71.2 acres of the project site from Residential (R15, R5, and R2) to Business Park.
- Approval of a Zone Change of the entire 122.8 acres from its current zoning of Business Park (BP), Business Park/Mixed Use (BPX), Multi-Family Residential (R15), Suburban Residential (R5), and Residential Agriculture (RA-2) to Light Industrial (LI).
- Approval of an amendment to the Circulation Element of the General Plan that would be consistent with the proposed site plan as identified in Figure 3.3 (q.v.):
 - Eliminate the undeveloped Quincy Street from State Route 60 (SR-60) south to Cottonwood Avenue; and
 - Eliminate the undeveloped portion of Encilia Avenue between the Quincy Street Channel and Eucalyptus Avenue to the north, and an unnamed connection between Encilia and Moreno Beach Drive to the west.
- Approval of an amendment to the Master Plan of Trails to relocate the Eucalyptus Avenue Trail to the north side of Eucalyptus Avenue and/or eliminate the planned trail segment on Quincy Avenue from SR-60 to Fir Avenue.

The proposed project is designed to be consistent with a recent Municipal Code Amendment that establishes a minimum clearance or setback of 250 feet between any residential zoning district and a truck court or primary truck circulation driveway of an adjacent industrial use (Ordinance #830).

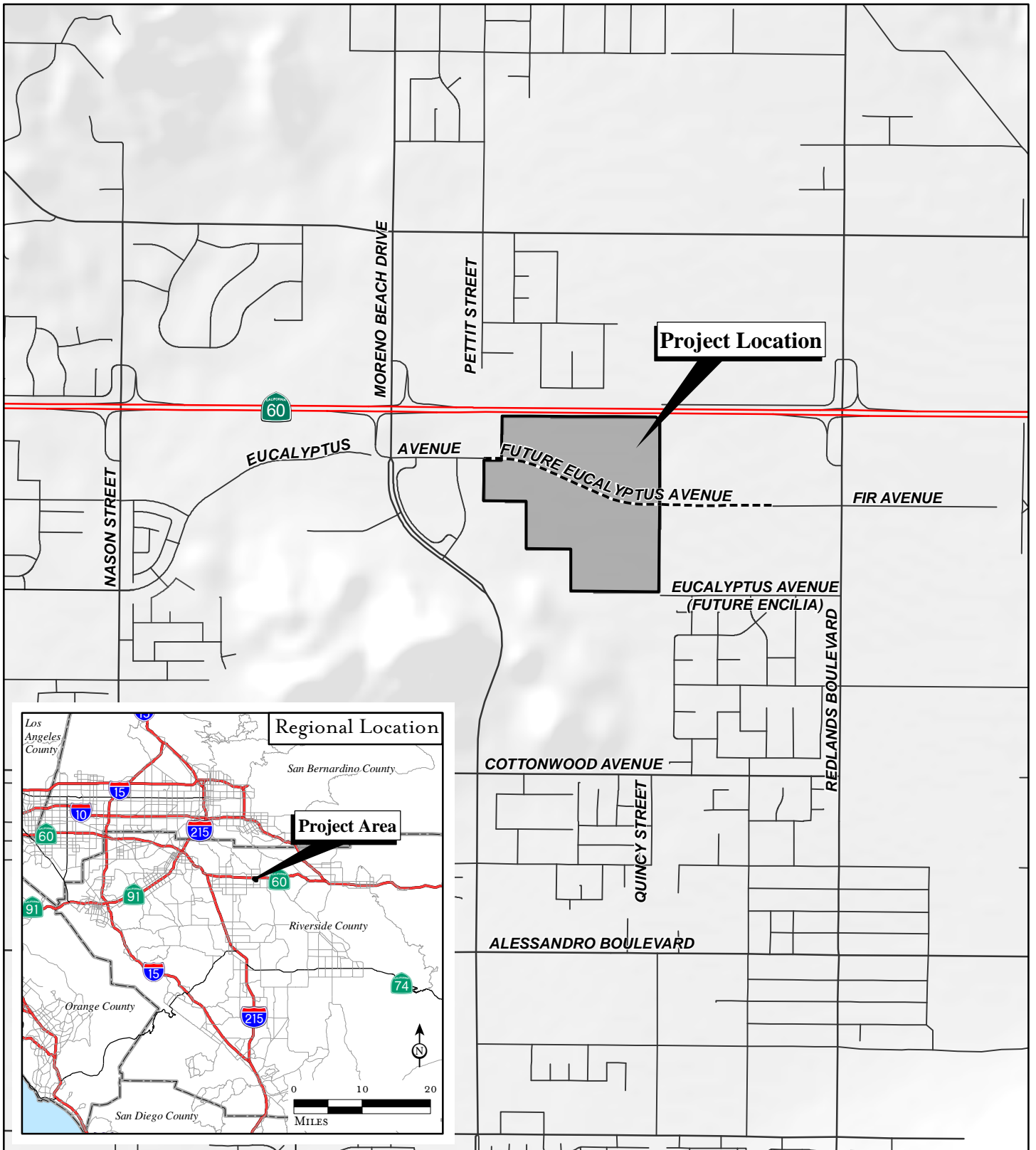
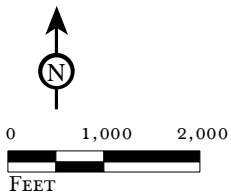


FIGURE 1.1

LSA



SOURCE: County of Riverside, 2011.

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*Eucalyptus Industrial Park
Environmental Impact Report*

Regional and Project Location

Item No. E.3

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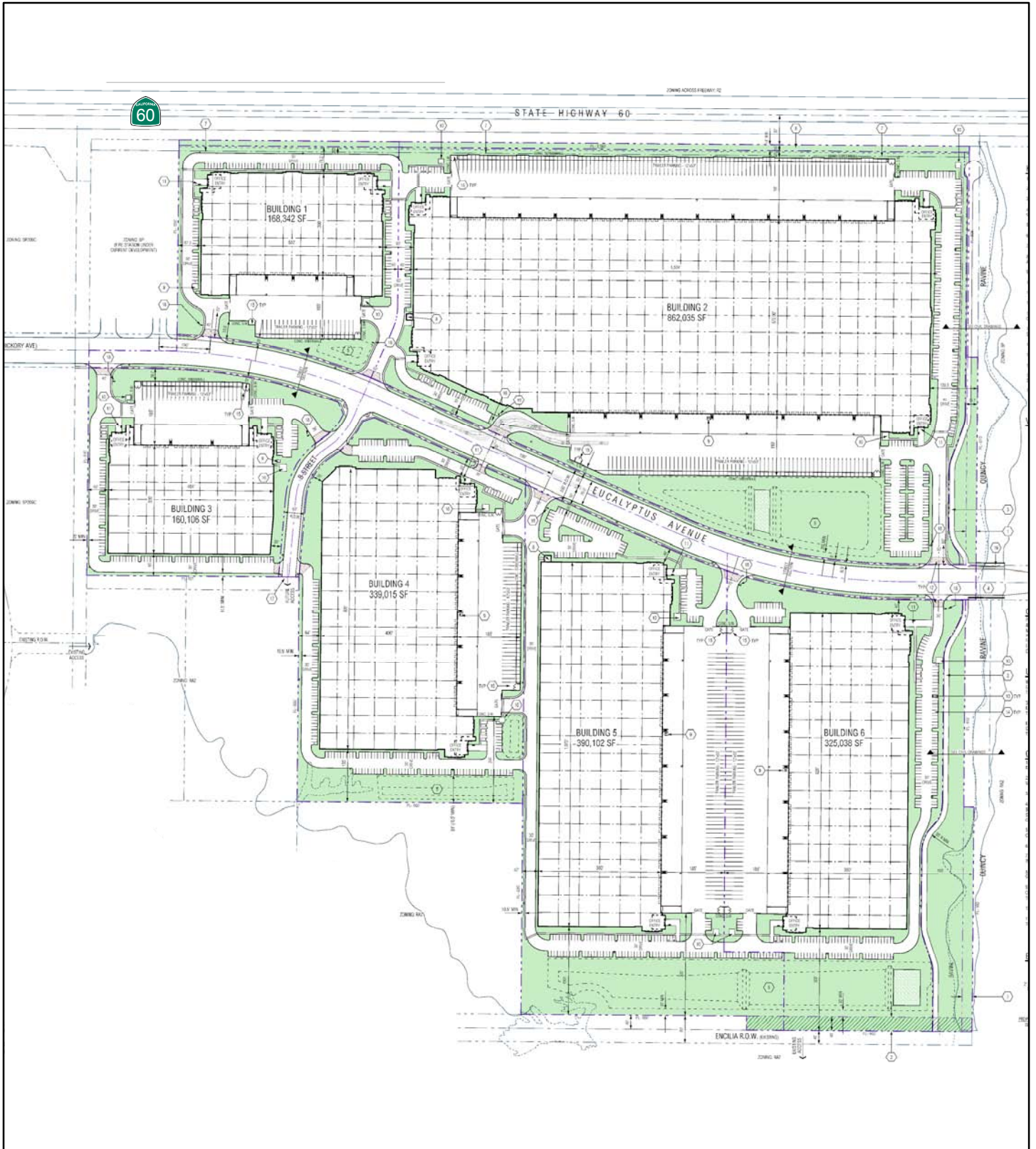
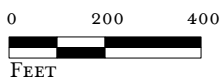


FIGURE 1.2

LSA



SOURCE: RGA, 2011

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*Eucalyptus Industrial Park
Environmental Impact Report*

Site Plan

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1.3 AREAS OF CONTROVERSY AND ISSUES TO BE RESOLVED

The EIR discusses impacts that would occur to on-site and off-site uses as a result of implementation of the proposed project. This EIR also includes proposed mitigation measures that have been identified to reduce or avoid significant effects that would result from the construction and operation of the proposed on-site uses. *CEQA Guidelines* Section 15123(b)(2) requires that areas of controversy known to the Lead Agency (City of Moreno Valley) be stated in the EIR summary. The following discussion identifies issues raised by other agencies and the public during the 30-day public comment period of the IS and Notice of Preparation (NOP), as well as comments received during the public scoping meeting that was held for the proposed project at the City of Moreno Valley City Council Chambers on February 13, 2008, at 6:00 p.m.

Local residents indicated they understand the desire of the City to add employment during these economic times, but also expressed strong concerns about the following potential impacts associated with the new industrial uses in the general area, including the proposed project:

- Change in use from established General Plan and zoning designations. This issue is discussed in Section 4.1, *Aesthetics*, and Section 4.8, *Land Use*, of this EIR;
- Short-term and long-term air pollutant emissions including dust and diesel particulates from truck exhaust that could negatively affect nearby residential uses. This issue is discussed in Section 4.3, *Air Quality*, of this EIR;
- Short-term and long-term noise impacts that could affect nearby residential uses. These issues are discussed in Section 4.9, *Noise*, of this EIR;
- Potential impacts to future planned school sites are addressed in Section 4.8, *Land Use*, of this EIR;
- Potential water-related impacts (drainage, water quality of runoff from the project) are addressed in Section 4.7, *Hydrology and Water Quality*, in the EIR;
- Project truck traffic causing congestion on local roads, intersections, and freeway ramps, primarily on Redlands Boulevard, and impacts to vehicular, bicycle, and pedestrian safety. These issues are discussed in Section 4.11, *Transportation*, of this EIR;
- Impacts to aesthetics from loss of views, loss of neighborhood character, and increased night lighting as this area transitions from previously planned residential and business park uses to industrial uses along the south side of SR-60. These issues are discussed in Section 4.1, *Aesthetics*, and 4.8, *Land Use*, of this EIR; and
- Potential loss of biological or cultural (archaeological) resources by grading and development of the site, and suggestions to consult with local Native American tribes per SB 18. These issues are discussed in Section 4.4, *Biological Resources*, and 4.5, *Cultural Resources*, of this EIR.

1.3.1 Notice of Preparation

The objective of distributing an NOP is to solicit public comment in order to identify and determine the full range and scope of issues of concern so that these issues might be fully examined in the EIR. An IS was distributed in tandem with the NOP. The NOP was distributed to the State Clearinghouse, as well as to the organizations and persons considered likely to be interested in the project and its potential impacts. Comments received regarding the NOP were used to help identify impacts that could result from implementation of the proposed project. An NOP for the Draft EIR was distributed to state, regional, and local agencies on February 4, 2008, for a 30-day review period ending on March 4, 2008. Some time has passed since circulation of the NOP, mainly due to poor economic conditions since that time. However, the applicant recently decided to continue the EIR process for this project.

The IS, NOP, distribution list, Notice of Public Scoping Meeting, and response letters are included in Appendix A of the Draft EIR. As of the close of the 30-day NOP public review period, 22 responses to

the NOP had been received. Table 1.A summarizes the comments received regarding the NOP. An additional three responses were received after the close of the 30-day NOP public review period. Although received after the close of the NOP public review period, these three responses are included in Table 1.B.

Table 1.A: Notice of Preparation Comment Letters Received

Agency/Organization	Date	Comments
Moreno Valley Unified School District	February 24, 2008	Request to discuss overall cumulative impacts associated with long-term warehousing development on the community and schools; conflicts with existing agricultural zoning; the transport, use, and handling of hazardous materials around school sites; air quality associated with truck traffic and impacts to schools; mobile and stationary noise impacts to nearby schools; change of land use and impacts to nearby schools; increase in traffic impacts to nearby schools; storm water impacts to nearby schools.
Riverside County Transportation Commission	March 5, 2008	Recommendation of coordination with Caltrans District 8 for project's local traffic and circulation impacts. Identifies concern regarding potential impacts to SR-60 interchanges at Moreno Beach Drive and Redlands Boulevard.
South Coast Air Quality Management District	February 6, 2008	Request to discuss air pollutant emissions for construction and operational phases; calculation of PM _{2.5} emissions using PM _{2.5} significance thresholds; calculation of localized significance thresholds; and inclusion of a mobile source health risk assessment.
State of California Governor's Office of Planning and Research	February 1, 2008	Explanation of Notice of Preparation procedures.
Riverside County Flood Control and Water Conservation District	February 14, 2008	Request to address impacts to the Moreno Master Drainage Plan within the proposed project area.
Native American Heritage Commission	February 13, 2008	Explanation of SB18 Consultation Process (e.g. sacred lands file search and associated mitigation measures).
Pechanga, Temecula Band of Luiseño Mission Indians	March 4, 2008	Explanation of SB18 Consultation Process; request for mitigation measures associated with uncovered cultural resources; request that Pechanga tribal monitors be present during ground-disturbing activities. Native American Heritage Commission procedures (e.g., sacred lands file search and mitigation measures).
Morongo Band of Mission Indians	February 26, 2008	Request the contact of Tribe in the event that Native American cultural resources are found on site.
Pala Band of Mission Indians	February 7, 2008	Explanation that the project site is not within the recognized Pala Indian Traditional Use Area.
Soboba Band of Luiseño Indians	February 12, 2008	Explanation of SB18 Consultation Process; explanation that the project site is within the recognized Soboba Traditional Use Area. Request for a Native American monitor to be present during any and all grounding-disturbing activities.
Southern California Edison	March 4, 2008	Explanation of California Public Utilities Commission CEQA requirements; request for analysis in the event that the project requires relocation of existing SCE facilities.
Sierra Club, San Geronio Chapter	February 29, 2008	Request more information pertaining to City Master Plan of Trails; changes to General Plan; aesthetic impacts; green building standards; discussion of hazardous waste and impacts to nearby schools; truck traffic patterns; discussion of PM ₁₀ and PM _{2.5} ; storm water impacts; traffic impacts; global warming discussion; request for cumulative impact discussion.
Center for Community Action and Environmental Justice	March 3, 2008	Concerns about proximity to schools and diesel sources; request discussion of cumulative impacts; green building standards; and type of hazardous materials that would be present at the project.

Table 1.A: Notice of Preparation Comment Letters Received

Agency/Organization	Date	Comments
Friends of the Northern San Jacinto Valley	February 27, 2008	Explanation of proposed project's potential impacts to the San Jacinto Wildlife Area; discussion of MSHCP and biological impacts; discussion of loss of night-sky; and concern regarding the loss of agricultural land and the loss of raptor foraging habitat.
Jan Beyers	March 4, 2008	Request to discuss General Plan changes; discussion of air quality impacts with emphasis on diesel trucks; discussion of traffic impacts; request to analyze alternative off-site location; discussion of cumulative impacts.
Margie Breitzkreuz	February 29, 2008	Request to discuss change in zoning; increased traffic; freeway congestion; truck traffic impacts; alternative fuels; diesel exhaust; socio/economic impacts of project; proximity to future schools.
Melody Lardner	February 13, 2008	Request for a discussion about air quality impacts; diesel trucks and associated truck traffic patterns; cumulative impacts; change in General Plan zoning and land use designation; aesthetics of the proposed project.
Bob and Marti Orth	March 2, 2008	Concerns about proximity to school; air quality impacts to surrounding land uses; zoning changes and impacts associated with zoning changes; traffic on SR-60 and surrounding roadways.
Martha Orth	March 1, 2008	Concerns about industrial uses and proximity to schools; changes in zoning and General Plan land uses; air quality impacts; noise impacts; diesel trucks and associated truck traffic; traffic impacts on SR-60; cumulative projects and cumulative impacts; land use impacts.
Charles Hale	February 19, 2008	Concerns about existing land uses versus proposed land uses; truck related traffic on surface streets and highways; changes in General Plan.
Suthep Charoonratana	February 20, 2008	Statement of benefits coming from increased job opportunities, greater tax revenues, and stimulation of City's economy.
Susan Gilchrist	February 26, 2008	Concerns about aesthetics; air quality; biological resources; hydrology and water quality; existing versus proposed land use; traffic impacts; and job opportunities.

Note: All NOP response letters (along with the Initial Study) are included in Appendix A of the Draft EIR.

Table 1.B: Late-Arriving Notice of Preparation Comment Letters Received

Agency/Organization	Date	Comments
California Department of Transportation, District 8	April 1, 2008	Recommendation of conducting a traffic impact study to determine the proposed project's near-term and long-term impacts to the regional transportation system.
California Department of Transportation, District 8	April 15, 2008	Recommendation of providing mitigation measures for impacts freeway interchanges; the provision of a traffic impact study that identifies near-term and long-term impacts to the regional transportation system; a analysis of ramp metering and cumulative impacts to State Route 60.
County of Riverside Transportation and Land Management Agency	April 24, 2008	Concerns of increases in traffic volumes in the area. Recommendation for the traffic study to include analysis of impacts and identification of mitigation measures on any County roadways in the area and cumulative traffic impacts.

Note: All NOP response letters (along with the Initial Study) are included in Appendix A of the Draft EIR.

It should be noted that subsequent to circulation of the NOP, the State added "forest resources" and "greenhouse gas emissions" as issues to be considered on the standard environmental checklist (Initial Study form). The proposed project and the existing conditions of the site and surrounding area have not changed since the NOP was issued in 2008, so there is no need to revise and recirculate

the NOP. Section 1.1 explains that the EIR will address greenhouse gas emissions and why forest resources do not need to be evaluated for this project site.

1.3.2 Public Scoping Meeting

In compliance with *State CEQA Guidelines*, the City of Moreno Valley has taken steps to maximize opportunities for individuals, parties, and agencies to participate in the environmental process. During circulation of the NOP, various federal, state, regional, and local government agencies, and other interested parties were contacted to solicit comments and to inform the public of the proposed project. A public scoping meeting was held to solicit public comment on direction and scope of the analysis necessary for the Draft EIR. The public scoping meeting was held on February 13, 2008, at 6:00 p.m., at the City of Moreno Valley City Council Chambers, Moreno Valley California. Copies of the IS, NOP, and the conceptual site plan were available to the public for review. City staff, the project applicant, and the EIR consultant (LSA Associates, Inc.) were present to provide information regarding the project and collect public comment. The proposed project and the existing conditions of the site and surrounding area are similar to those when the scoping meeting was held in 2008, except that the large Skechers industrial warehouse project has been completed east of Redlands Boulevard, and the West Ridge industrial warehouse project has been approved just east of the proposed project. The City determined there was no need to conduct another scoping meeting, and input from the scoping meeting in 2008 will be used to prepare the Draft EIR prior to circulation for public comment.

1.4 ALTERNATIVES TO THE PROPOSED PROJECT

In compliance with *CEQA Guidelines* (Section 15126.6), an EIR must describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the project objectives, and would avoid or substantially lessen significant effects of the project. The EIR need not consider every conceivable alternative; rather it must consider a reasonable range of potentially feasible alternatives. This EIR evaluates a “No Project – No Build” as well as a “No Project” alternative (i.e., development according to the General Plan and zoning) in order to allow decision-makers to compare the effect of approving the project to the effect of not approving the project. A more detailed description of each project alternative as well as an analysis of the potential environmental impacts associated with the construction and operation of each is provided in Section 6.0.

1.4.1 No Project Alternative

Pursuant to CEQA (§15126.6[e][2]), the No Project Alternative should discuss what would reasonably be expected to occur on the site based on current plans and consistent with available infrastructure and community services, in the foreseeable future. The project site is currently zoned Business Park (BP) on the northern portion of the site, Medium-High Residential (R15) on the western portion of the project site, Suburban Residential (R5) on the eastern portion of the project site, and Residential Agricultural (RA-2) on the southernmost section of the project site. The project site is currently designated by the General Plan for Business Park/Light Industrial uses on the northern portion of the site and Residential uses on the southern portion of the site. Given the goals and objectives of the City of Moreno Valley, it is highly reasonable in the event the proposed project were not approved that the site would be developed with some type of business park and residential uses. For analysis purposes, it is assumed that the No Project Alternative would be developed with approximately 665,300 square feet of business park uses, 548 multiple-family residential units, and 138 single-family residential units as would be allowed under the existing zoning designation.

1.4.2 No Project, Previously Approved Tentative Tract Map 32255

Given the goals and objectives of the City of Moreno Valley, in the event the proposed project was not approved, it is reasonable to expect that the site would be developed with some type of business park and residential uses. For analysis purposes, this alternative assumes that the project site would be developed with a previously approved Tentative Tract Map for a business park and single-family residential development. The City Planning Commission approved Tentative Tract Map No. 32255 on February 13, 2007, which consisted of a subdivision of the project site into 83 single-family lots in the R5 zone, 16 single-family lots in the RA-2 zone, two R15 zoned lots, a BP zoned lot, and a Business Park Mixed Use (BPX) zoned lot. Under this alternative, it is anticipated that approximately 101 single-family residential units, 548 multi-family residential units, and up to 574,000 square feet of business park uses¹ would be developed.

1.4.3 Reduced Intensity Alternative

With the intent of avoiding or substantially reducing significant impacts created by the project traffic, air quality, and noise, the City has considered a Reduced Intensity Warehouse Alternative. This alternative includes four warehouse buildings covering approximately 1,683,314 square feet on approximately 92 acres of the site. Under this alternative, the proposed warehouse uses would represent a net decrease of approximately 25 percent (561,105 square feet) of building area compared with the proposed project. This alternative would also allow continued or expanded agriculture on 31 acres in the south eastern portion of the site to eliminate significant impacts to agriculture.

1.4.4 Mixed Commercial/Office/Residential Alternative

The Mixed Commercial/Office/Residential Alternative would result in the development of commercial, office, and residential uses on the project site. The existing residential zoning of the project site (71.3 acres) would be retained and the development of 548 multiple-family residential units and 138 single-family residential units would occur. The balance of the site (33.75 acres) would be developed with up to approximately 441,000 square feet of commercial uses and 441,000 square feet of office uses for a total of approximately 882,000 square feet of commercial and office uses. The commercial component of this alternative would require a zone change similar to the proposed project.

1.4.5 Off-Site Location Alternative

This alternative would result in the development of approximately 2.2 million square feet of warehouse uses on a approximately 123 acres. The alternative project site identified by the City is bounded by Grove View Road on the north, Perris Boulevard to the east, Oleander Avenue to the south, and Indian Avenue on the west. The off-site location is currently zoned Industrial Specific Plan 208 (SP 208 I) and is designated Business Park/Light Industrial (BP) in the City's General Plan. Since the proposed uses are consistent with the uses identified for the off-site location, no zone change or General Plan Amendment would be required. It should be noted that the VIP Moreno Valley project (PA09-0004 Plot Plan and PA09-0012 [TPM 36162]) is a 1,616,133-square foot warehouse that has been proposed on 80 acres at the same location as the off-site alternative. This project currently has a DEIR in review.

1.4.6 Summary of Impacts of Alternatives

The No Project-No Development Alternative would eliminate any development-related impacts of the project. The No Project, TTM32255 Alternative reduces the significant aesthetic, land use, and population/housing impacts to less than significant levels. The Reduced Intensity Alternative would

¹ Based on a 30.94-acre BP zoned lot, a 2.02-acre BPX zoned lot, and 60% coverage of site.

reduce but not eliminate aesthetic, air quality, and land use impacts, and reduce the agricultural impacts to less than significant levels. The Mixed-Use Alternative reduces the aesthetic and population/housing impacts to less than significant, but increases the already significant air quality and traffic impacts. The Off-Site Location Alternative would reduce aesthetic, land use, and population and housing impacts to less than significant levels compared to the proposed project, but significant agricultural, air quality, and traffic impacts would remain.

1.5 IMPACTS, MITIGATION, AND LEVEL OF IMPACTS SUMMARY TABLE

Table 1.C provides a summary of the proposed project impacts, proposed mitigation measures, and the level of significance of each impact following the application of identified mitigation measures.

Table 1.C: Eucalyptus Industrial Park Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
4.1 AESTHETICS		
Less than Significant Impacts		
<p>Light and Glare: While the proposed project would add new lighting sources to the project area, City standards for the design of outdoor lighting require the design of lighting to reflect away from residential areas and public roadways. The review and approval of lighting fixtures would occur during the City's design review. Since all development in the City is required to adhere to these lighting requirements contained in the City's Zoning Code, impacts associated with light or glare impacts would be less than significant.</p>	No mitigation required	Less than Significant
Significant Impacts		
<p>Impact 4.1.6.1 Existing Visual Character or Quality of Site and Its Surroundings: Implementation of the proposed project would replace the undeveloped character of the project site with an urban setting containing warehouse uses. Therefore, the change in the character of the site would be recognizable and would constitute a permanent alteration of the existing visual character of the project site. Although the visual characteristic of the project site would change, the proposed project would replace the existing vacant parcel with an attractive, well designed development through the use of architectural elements, landscaping, and design of the project site. In addition, the proposed project would be designed and constructed per applicable City Municipal Code and General Plan standards. A less than significant impact related to this issue would occur.</p>	No feasible mitigation is available	Significant and Unavoidable
<p>Impact 4.1.6.2 Scenic Vistas: Implementation of the proposed project would obstruct or partially obstruct existing background views of the distant Box Springs Mountains for residences southeast of the project and existing background views of the Mount Russell Range for residences north of SR-60 and along Pettit Street. This is a significant impact requiring mitigation.</p>	No feasible mitigation is available	Significant and Unavoidable.
<p>Impact 4.1.6.3 Scenic Resources and Scenic Highways: The proposed project would result in the obstruction of most of the Mount Russell Range for motorists traveling on SR-</p>	No feasible mitigation is available	Significant and Unavoidable.

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Table 1.C: Eucalyptus Industrial Park Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
<p>60. Although the incorporation of project façades and landscaping design features would soften the visual appearance of the proposed buildings from SR-60, the obstruction of the Mount Russell Range is considered significant.</p>		
<p>Impact 4.1.6.4 Cumulative Impacts: Changes in the visual character of the site resulting from the development of the proposed project, in combination with existing and planned development in the project vicinity, would include similar distribution uses. Therefore, it can be anticipated that such uses would have a similar design and massing as the proposed project. Since the proposed project would obstruct views of the surrounding mountains, it is reasonable to conclude that similar warehouse distribution uses would also obstruct views of the surrounding mountains. Therefore, the proposed project in combination with other cumulative projects in the eastern portion of the City and along SR-60 would have a cumulatively significant and unavoidable impact on scenic viewsheds. Cumulative lighting-related impacts would be reduced through the adherence to applicable City lighting standards. No cumulatively significant lighting impact would result from implementation of the proposed project.</p>	<p>No feasible mitigation is available</p>	<p>Significant Contribution to Cumulatively Considerable Impact.</p>
<p>4.2 AGRICULTURAL RESOURCES</p>		
<p>Less than Significant Impacts</p>		
<p>None</p>		
<p>Significant Impacts</p>		
<p>Impact 4.2.6.1 Conflict with an Existing Agricultural Zone: The proposed project would not conflict with an existing agricultural zone. An approximately 12-acre portion of the project site is zoned Residential Agriculture (R-A-2) located near the southern border. With the development of the project, this portion of the site would be rezoned to Light Industrial to allow for the proposed warehouse distribution uses. While this zone change would conflict with the existing zone for this area of the project site, this type of change is expected and planned for within the City and is consistent with the City's overall vision. Impacts are less than</p>	<p>No feasible mitigation is available</p>	<p>Significant and Unavoidable</p>

Table 1.C: Eucalyptus Industrial Park Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
significant.		
<p>Impact 4.2.6.2 Conversion of State Designated Farmland: The project site is designated as 67 percent Prime Farmland (82.5 acres) and 12 percent (39.8 acres) as Farmland of Local Importance (5.3 acres). While farmland conservation measures have been implemented in other areas of the State, neither the City of Moreno Valley nor Riverside County maintains a program that developers and property owners can participate in to offset agricultural resource impacts; therefore, the conversion of State designated Prime Farmland is a significant impact.</p>	No feasible mitigation is available	Significant and Unavoidable
<p>Impact 4.2.6.3 Conversion of an Agricultural Operation to a Non-Agricultural Use: The northern portion of the project site currently has active orange groves. Based on the proposed project's LESA score of 83 out of 100 points, impacts associated with conversion of agricultural operations to a non-agricultural use is a significant impact on agricultural resources.</p>	No feasible mitigation is available	Significant and Unavoidable
<p>Cumulative Impacts: The cumulative area for agricultural resource impacts is Riverside County. No local or regional program to mitigate for the cumulative impacts to agricultural resources is available. Because agricultural land, including Prime Farmland is a finite resource, and because neither the City of Moreno Valley nor the County of Riverside maintains a program to offset agricultural resource impacts, the conversion of the project site to warehouse uses, in conjunction with planned and future development in the City and region, would contribute to a further reduction in the amount of land available for agricultural uses. This reduction in agricultural land represents a significant impact.</p>	No feasible mitigation is available	Significant Contribution to Cumulatively Considerable Impact
4.3 AIR QUALITY		
Less than Significant Impacts		
<p>Impact 4.3.5.1 Construction-Chronic Health Risk Impacts: The estimated construction-related health risk is below the cancer threshold of 10 in 1 million and the chronic threshold of 1.0; therefore, both health risks would be less than significant and no mitigation is required.</p>	No mitigation is required	Less than Significant

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Table 1.C: Eucalyptus Industrial Park Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
<p>Impact 4.3.5.2 Operational-Acute Health Risk Impacts: The only air pollution emissions in any significant quantity associated with the operation of the project occur from diesel-powered equipment exhaust. Currently, the health risk associated with diesel exhaust PM₁₀ only has a carcinogenic and chronic effect; no short-term acute effect is recognized. Therefore, the potential for short-term acute exposure from project-related toxic emissions will be less than significant.</p>	No mitigation is required	Less than Significant
<p>Impact 4.3.5.3 Operational-Chronic Health Risk Impacts: Long-term operational emissions would result from the operation of diesel-powered trucks delivering and removing supplies and materials to and from the project site. The primary health risk from heavy-duty truck emissions is diesel particulate exhaust. The nearest existing residence to the south east would be exposed to an unmitigated inhalation cancer risk of no more than 1.1 in 1 million, which is below the threshold of 1.0 in 1 million. In addition, the chronic health risk index for the closest existing residences is 0.003, which is less than the threshold of 1.0. The nearest sensitive receptor would experience a non-cancer risk less than the threshold of 1.0. No significant health risk from project-related truck traffic would occur.</p>	No mitigation is required	Less than Significant
<p>Impact 4.3.5.4 Air Quality Impacts to Adjacent Future Development: The future residential units south of the project site would be exposed to an unmitigated inhalation cancer risk of approximately 3 in 1 million, which is less than the threshold of 10 in 1 million. The corresponding chronic and acute hazard indices would be approximately 0.002 and 0.000018, which is less than the threshold of 1.0 for the chronic hazard index and acute hazard index. Since overall project health risks are below the threshold, a less than significant impact to future uses would occur. No mitigation is required.</p>	No mitigation is required	Less than Significant
<p>Impact 4.3.5.5 Long-Term Microscale (CO Hotspot) Impacts: Under the existing year (2012), opening year (2013) and future year (2030) scenarios, none of the intersections analyzed would exceed either the State or Federal one-hour or the eight-hour CO standard. The</p>	No mitigation is required	Less than Significant

Table 1.C: Eucalyptus Industrial Park Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
<p>proposed project would contribute, at most, a 0.2 ppm increase to the one-hour CO concentrations and an increase in 0.1 ppm to the eight-hour CO concentrations at these intersections, which is below the one-hour and eight-hour thresholds of 20.0 ppm and 9.0 ppm, respectively. Because no CO hot spots would occur at intersections with the highest potential for CO hotspot formation, impacts associated with issue are less than significant.</p>		
<p>Impact 4.3.5.6 Odors: During construction, various diesel-powered vehicles and equipment in use on the site would create odors. With the exception of short-term construction-related odors, the proposed uses do not include uses that are generally considered to generate offensive odors. Solid waste generated by the proposed on-site uses will be collected by a contracted waste hauler, ensuring that any odors resulting from on-site would be adequately managed. No significant impact related to this issue would occur.</p>	<p>No mitigation is required</p>	<p>Less than Significant</p>
<p>Significant Impacts</p>		
<p>Impact 4.3.6.1 Air Quality Management Plan Consistency: The project was not considered when the General Plan was prepared and therefore is inconsistent with the AQMP. Amendments to the City of Moreno Valley General Plan, zoning reclassification, and plan approval are required before the affected portion of the proposed project can be implemented. This is a significant impact requiring mitigation.</p>	<p>Please refer to Mitigation Measures 4.3.6.2A through 4.3.6.2M and Mitigation Measures 4.3.6.3A through 4.3.6.3C</p>	<p>Significant and unavoidable until the proposed project is included in the next SCAG and SCAQMD AQMP projections.</p>
<p>Impact 4.3.6.2 Equipment Exhaust Emissions From Construction Activities Impacts: Grading and other construction activities would result in combustion emissions from heavy-duty construction vehicles, haul trucks, utility engines, and vehicles transporting the construction crew. Construction equipment/vehicle emissions during proposed on-site grading periods would exceed the SCAQMD daily thresholds for CO and NO_x. This remains a significant impact requiring mitigation.</p>	<p>4.3.6.2A. Prior to the issuance of a grading permit, the project developer shall require by contract specifications that contractors shall place construction equipment staging areas at least 200 feet away from sensitive receptors. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the City.</p> <p>4.3.6.2B. Prior to the issuance of a grading permit, the project developer shall require by contract specifications that contractors shall utilize power sources (e.g., power poles) or clean-fuel generators.</p>	<p>Implementation of identified mitigation measures would reduce construction-related emissions; however, it is not possible to quantify emission reductions for all pollutants, so impact remains significant and unavoidable.</p>

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<p>Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the City.</p> <p>4.3.6.2C. Prior to the issuance of a grading permit, the project developer shall require by contract specifications that contractors shall utilize California Air Resources Board (CARB) Tier II Certified equipment or better during the rough/mass grading phase for the following pieces of equipment: rubber-tired dozers and scrapers. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the City.</p> <p>4.3.6.2D. All clearing, grading, earthmoving, or excavation activities shall cease when winds exceed 25 mph per SCAQMD guidelines in order to limit fugitive dust emissions.</p> <p>4.3.6.2E. The contractor shall ensure that all disturbed unpaved roads and disturbed areas within the project are watered at least three times daily during dry weather. Watering, with complete coverage of disturbed areas, shall occur at least three times a day, preferably in the mid-morning, afternoon, and after work is done for the day.</p> <p>4.3.6.2F. The contractor shall ensure that traffic speeds on unpaved roads and project site areas are reduced to 15 miles per hour or less to reduce PM₁₀ and PM_{2.5} fugitive dust haul road emissions. Speed limit signs (15 mph maximum) shall be posted at entry points to the project site, and along any unpaved roads providing access to or within the project site and/or any unpaved designated on-site travel routes.</p> <p>4.3.6.2G. Groundcover shall be replaced, and/or non-toxic soil stabilizers shall be applied (according to manufacturers' specifications) to any inactive construction areas (previously graded areas inactive</p>	

Table 1.C: Eucalyptus Industrial Park Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<p>for ten days or more).</p> <p>4.3.6.2H. The contractor shall minimize pollutant emissions by maintaining equipment engines in good condition and in proper tune according to manufacturer's specifications and during smog season (May through October) by not allowing construction equipment to be left idling for more than five minutes (per California law).</p> <p>4.3.6.2I. The contractor shall ensure use of low-sulfur diesel fuel in construction equipment as required by the California Air Resources Board (CARB) (diesel fuel with sulfur content of 15 ppm by weight or less).</p> <p>4.3.6.2J. Grading plans, construction specifications and bid documents shall also include the following notations:</p> <ul style="list-style-type: none"> • Off-road construction equipment shall utilize alternative fuels where feasible e.g., biodiesel fuel (a minimum of B20), natural gas (CNG), liquefied natural gas (LNG), propane, except for equipment where use of such fuels would void the equipment warranty; • Gravel pads shall be provided at all access points to prevent tracking of mud onto public roads; • Install and maintain trackout control devices at all access points where paved and unpaved access or travel routes intersect; • The contractor or builder shall designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust off site; • The contractor or builders shall post a publicly visible sign with the telephone number and person to contact regarding dust complaints. The contact person shall take corrective action 	

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<p>within 24 hours;</p> <ul style="list-style-type: none"> • High-pressure injectors shall be provided on diesel construction equipment where feasible; • Engine size of construction equipment shall be limited to the minimum practical size; • Substitute gasoline-powered for diesel powered construction equipment where feasible; • Use electric construction equipment where feasible; • Install catalytic converters on gasoline-powered equipment where feasible; • Ride-sharing program for the construction crew shall be encouraged and shall be supported by contractor(s) via incentives or other inducement; • Documentation shall be provided to the City of Moreno Valley indicating that construction workers have been encouraged to carpool or otherwise reduce VMT to the greatest extent practical, including providing information on available park and ride programs; • Lunch vendor services shall be provided on site during construction to minimize the need for off-site vehicle trips; and • All forklifts used during construction and in subsequent operation of the project shall be electric or natural gas powered. <p>4.3.6.2K. Throughout project construction, a construction relations officer/community liaison, appointed by the Applicant, shall be retained on site. In coordination and cooperation with the City, the construction relations officer/community liaison shall respond to any concerns related to PM₁₀ (fugitive dust) generation or other construction-related air</p>	

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<p>quality issues.</p> <p>4.3.6.2L. All project entrances shall be posted with signs which state:</p> <ul style="list-style-type: none"> • Truck drivers shall turn off engines when not in use; • Diesel delivery trucks servicing the project shall not idle for more than three (3) minutes; and • Telephone numbers of the building facilities manager and CARB, to report violations. <p>These measures shall be enforced by the on-site facilities manager (or equivalent).</p> <p>4.3.6.2M. During project grading and construction, the various project contractors shall adhere to the control measures listed in Tables 1.D and 1.E.</p>	
<p>Impact 4.3.6.3 Localized Construction Equipment Exhaust Emissions Impacts: Emissions of PM₁₀ and PM_{2.5} exceed the localized threshold that would occur for construction activity. PM₁₀ and PM_{2.5} emissions are a significant impact requiring mitigation.</p>	<p>4.3.6.3A. Prior to the issuance of grading permits, the project applicant shall require bery contract specifications that all trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least 2 feet of freeboard in accordance with the requirements of California Vehicle Code (CVC) Section 23114 (freeboard means vertical space between the top of the load and top of the trailer).</p> <p>4.3.6.3B. Prior to the issuance of grading permits, the project applicant shall provide evidence to the City that construction access roads shall be paved at least 100 feet onto the site from the main road.</p> <p>4.3.6.3C. Prior to the issuance of grading permits, the project applicant shall require bery contract specifications that all streets within the construction site shall be swept on a per day if visible soil materials are carried to adjacent streets.</p>	<p>Although Mitigation Measures 4.3.6.3A through 4.3.6.3C would reduce localized emission rates up to 50 percent, the localized construction thresholds are exceeded at the nearest residences for PM₁₀ and PM_{2.5}. Therefore, even with implementation of Mitigation Measures 4.3.6.3A through 4.3.6.3C, impacts associated with localized construction emissions for PM₁₀ and PM_{2.5} would remain significant and unavoidable.</p>
<p>Impact 4.3.6.4 Architectural Coating Impacts: The amount of VOC generated per day (591 pounds) during the</p>	<p>4.3.6.4A. The project applicant shall use "Low-Volatile Organic Compounds" paints, coatings, and</p>	<p>Adherence to Mitigation Measure 4.3.6.4A would reduce the project's</p>

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
<p>application of architectural coatings would exceed the SCAQMD VOC threshold of 75 lbs/day. This is a significant impact requiring mitigation.</p>	<p>solvents with a VOC content lower than required under Rule 1113 (not to exceed 150 grams/liter; 1.25 pounds/gallon). High Pressure Low Volume (HPLV) applications of paints, coatings, and solvents shall be consistent with South Coast Air Quality Management District Rule 1113. Alternatively, the project applicant shall use materials that do not require painting or are pre-painted.</p>	<p>architectural coatings emissions impact. However, even with adherence to Mitigation Measure 4.3.6.4A, the SQAQMD VOC threshold would still be exceeded. Therefore, impacts associated with this issue would remain significant and unavoidable</p>
<p>Impact 4.3.6.5 Long-Term Project-Related Emissions Impacts: Project-related emissions for CO, ROG, NO_x, PM₁₀, and PM_{2.5} would exceed the SCAQMD daily emissions thresholds during the operational phase of the project. This is a significant impact requiring mitigation.</p>	<p>4.3.6.5A. Prior to issuance of building permits, the project applicant shall provide evidence to the City that applicable (as determined by the City) Transportation Demand Management (TDM)/Transportation Control Measure (TCM) strategies such as preferential parking for employee vanpooling/carpooling, bicycle parking facilities (such as bicycle lockers and racks), bus turnouts, and other strategies are incorporated into the design of the proposed project.</p> <p>4.3.6.5B. Prior to issuance of building permits, the project applicant shall provide evidence to the City that energy-efficient and low-emission methods and features of building construction shall be incorporated into the project design. These methods and features may include (but are not limited to) the following:</p> <ul style="list-style-type: none"> • Construction of buildings that exceed statewide energy requirements beyond 20 percent of that identified in Title 24: <ul style="list-style-type: none"> ○ Use of low-emissions water heaters; ○ Use of central water-heating systems; ○ Use of energy-efficient appliances; ○ Use of increased insulation; ○ Use of automated controls for air conditioners; ○ Use of energy-efficient parking lot lighting; 	<p>Although implementation of Mitigation Measures 4.3.6.5A through 4.3.6.5B may reduce vehicle trips associated with the proposed project, it is not possible to quantify the reduction in the amount of emissions that may occur. In the absence of mitigation to reduce the proposed project's emission of contribution of ROG and NO_x to below SCAQMD thresholds, long-term air quality impacts resulting from the operation of the proposed project would remain significant and unavoidable.</p>

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<p>and</p> <ul style="list-style-type: none"> ○ Use of lighting controls and energy-efficient lighting. • Utilize low-VOC interior and exterior coatings during project repainting. • Provide on-site improvements such as sidewalks or pedestrian walkways to promote pedestrian activity and reduce the number of vehicle trips. • Installation of skylights and energy-efficient lighting that exceeds California Title 24 standards where feasible, including electronic dimming ballasts and dc computer-controlled daylight sensors in the buildings. • Shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and building shall be planted at the proposed project site. These strategies will minimize the heat island effect and thereby reduce the amount of air conditioning required. • Strategies to be considered include fans to assist natural ventilation, centralized water and space conditioning systems, high efficiency individual heating and cooling units, and automatic setback thermostats. • Reduction of energy demand associated with potable water conveyance through the following methods: <ul style="list-style-type: none"> ○ Incorporating drought-tolerant plants into the landscaping palette; and ○ Use of water-efficient irrigation techniques. • Energy-efficient low-pressure sodium parking lot lights or equivalent as determined by the 	

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<p>City shall be used;</p> <ul style="list-style-type: none"> • Buildings shall be oriented north-south where feasible; • Implement an on-site circulation plan in parking lots to reduce vehicle queuing; • Develop a trip reduction plan to achieve 1.5 average vehicle ridership (AVR) for businesses with fewer than 100 employees or multi-tenant worksites; • Include bicycle parking facilities such as bicycle lockers and racks; • Include showers for bicycling employees use; and • Construct on-site pedestrian facility improvements such as building access that is physically separated from street and parking lot traffic and walk paths. 	
<p>Impact 4.3.6.6: Localized Project Operational Emissions. All localized operational emissions for the proposed project, with the exception of PM₁₀ and PM_{2.5} emissions, are below the localized significance threshold. Since PM₁₀ and PM_{2.5} emissions exceed the localized significance thresholds, operational activities associated with the proposed project may cause long-term localized air quality impacts and mitigation is required.</p>	<p>4.3.6.6A. Prior to issuance of the first building permit, building and site plan designs shall ensure that the project's energy efficiencies surpass applicable 2008 California Title 24, Part 6 Energy Efficiency Standards by a minimum of 20 percent. Verification of increased energy efficiencies shall be documented in Title 24 Compliance Reports provided by the Applicant, and review and approved by the City. Any combination of design features, including but not limited to the following list, may be used to fulfill this requirement provided that the total increase in energy efficiency meets or exceeds 20 percent:</p> <ul style="list-style-type: none"> • Buildings shall exceed California Title 24 Energy Efficiency performance standards for water heating and space heating and cooling, as deemed acceptable by the City. • Increase in insulation such that heat transfer and 	

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<p>thermal bridging is minimized.</p> <ul style="list-style-type: none"> • Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption. • Incorporate dual-paned or other energy-efficient windows. • Incorporate energy-efficient space heating and cooling equipment. • Interior and exterior energy-efficient lighting which exceeds the California Title 24 Energy Efficiency performance standards shall be installed, as deemed acceptable by the City. Automatic devices to turn off lights when they are not needed shall be implemented. • To the extent that they are compatible with landscaping guidelines established by the City, shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and buildings shall be planted at the project site. • Paint and surface color palette for the project shall emphasize light and off-white colors which reflect heat away from the buildings. • All buildings shall be designed to accommodate renewable energy sources, such as photovoltaic solar electricity systems, appropriate to their architectural design. • To reduce energy demand associated with potable water conveyance, the project shall implement the following: <ul style="list-style-type: none"> ○ Landscaping palette emphasizing drought-tolerant plants; ○ Use of water-efficient irrigation techniques; 	

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<p>and,</p> <ul style="list-style-type: none"> ○ EPA Certified WaterSense labeled for equivalent faucets, high-efficiency toilets (HETs), and water-conserving shower heads. • The project shall provide secure, weather-protected, on-site bicycle storage/parking. • The project shall provide on-site showers (one for males and one for females). Lockers for employees shall be provided. • The project will establish a Transportation Management Association (TMA). The TMA will coordinate with other TMAs within the City to encourage and coordinate carpooling among building occupants. The TMA will advertise its services to building occupants, and offer transit and/or other incentives to reduce GHG emissions. A plan will be submitted by the TMA to the City within two months of project completion that outlines the measures implemented by the TMA, as well as contact information. • The project shall provide preferential parking for carpools and vanpools. Locations and configurations of proposed preferential parking for carpools and vanpools are subject to review and approval by the City. Prior to final site plan approval, preferential parking for carpools and vanpools shall be delineated on the project site plan. • The project shall provide at least two electric vehicle charging stations. Locations and configurations of proposed charging stations are subject to review and approval by the City. Prior to issuance of the first building permit, stub outs for charging stations shall be indicated on the 	

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<p>project building plans.</p> <ul style="list-style-type: none"> • Lease/purchase documents shall identify that tenants are encouraged to promote the following: <ul style="list-style-type: none"> ○ Implementation of compressed workweek schedules. ○ SmartWay partnership; ○ Achievement of at least 20 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of consolidated trips carried by SmartWay carriers until it reaches a minimum of 90 percent of all long haul trips carried by SmartWay 1.0 or greater carriers. ○ Achievement of at least 15 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of long haul trips carried by SmartWay carriers until it reaches a minimum of 85 percent of all consolidated trips carried by SmartWay 1.0 or greater carriers. ○ Use of fleet vehicles conforming to 2010 air quality standards or better. ○ Installation of catalytic converters on gasoline-powered equipment. ○ Inclusion of electric powered and/or compressed natural gas fueled trucks and/or vehicles in fleets. ○ Establishment and use of carpool/vanpool programs, complemented by parking fees for single-occupancy vehicles. ○ Provision of preferential parking for EV and 	

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<p>CNG vehicles.</p> <ul style="list-style-type: none"> ○ Use of electrical equipment (instead of gasoline-powered equipment) for landscape maintenance. ○ Use of electric (instead of diesel or gasoline-powered) yard trucks. ○ Use of SmartWay 1.25 rated trucks. <p>4.3.6.6B. The project shall be designed to facilitate the reduction of waste generated by building occupants that is hauled to and disposed of in landfills by providing easily accessible areas that are dedicated to the collection and storage of recyclable materials including: paper, cardboard, glass, plastics, and metals. Locations of proposed recyclable materials collection areas are subject to review and approval by the City. Prior to Final Site Plan approval, locations of proposed recyclable materials collection areas shall be delineated on the project site plan.</p>	
<p>Cumulative Impacts: The cumulative area for air quality impacts is the Basin. The project would contribute criteria pollutants to the area during project construction. Depending on construction schedules and actual implementation of projects in the area, generation of fugitive dust and pollutant emissions during construction would result in substantial short-term increases in air pollutants. This would be a contribution to short-term cumulatively significant air quality impacts. The Basin is in nonattainment for PM₁₀ and ozone at the present time; therefore, the construction and operation of the proposed project would exacerbate nonattainment of air quality standards within the Basin and contribute to adverse cumulative air quality impacts. Implementation of the proposed project would unavoidably contribute to significant cumulative air quality impacts.</p> <p>The health risk assessment conducted for the proposed</p>	<p>The project-specific measures will help reduce project-related air pollutants; however, no feasible mitigation is available to reduce cumulative air quality impacts to a less than significant level.</p>	<p>Significant Contribution to a Cumulatively Considerable Impact</p>

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
<p>project identified the increase in health risks to the nearby sensitive receptors from the proposed project's air emissions. The CARB web site "Maps of Estimated Cancer Risk From Air Toxics" identifies a carcinogenic risk of over 250 in 1 million for the Riverside area. This HRA identified that the project's incremental increase is only a very small fraction of the ambient condition. Therefore, the concentration of diesel particulates at the project site is below the established risk threshold. Individuals living and working in southern California may be exposed to levels of diesel emissions that are cumulatively significant; however, that circumstance is not created by the project.</p> <p>It is reasonable to anticipate that advancements in truck / transportation technology would reduce the amount of particulate matter in future years. However, a determination of the amount and extent of that reduction in diesel particulate matter from these types of activities is not available at this time. Therefore, in an overabundance of caution, because other cumulative projects in the area would also contribute diesel particulates in the area and because the Riverside area has a level of particulate matter that is above the SCAQMD's recommended cancer risk threshold of 10 in one million, cumulative impacts associated with diesel particulate matter are considered significant and unavoidable.</p>		
<p>4.4 BIOLOGICAL RESOURCES</p>		
<p>Less than Significant Impacts</p>		
<p>Endangered and Threatened Species: No species listed by the State and/or Federal government as endangered or threatened was identified on site during the field surveys, but Swainson's hawk, a State-listed species, and Stephens' kangaroo rat, a federally and State-listed species, have a low potential to occur on the site. Impacts to Swainson's hawk would, at most, consist of impacts to foraging habitat of migrating individuals. Impacts to Swainson's hawk are covered by the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) and no mitigation would be required other than participation in the MSHCP.</p>	<p>No mitigation is required</p>	<p>Less than Significant</p>

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
<p>The project site is within the Stephens' Kangaroo R at Habitat Conservation Plan (SKR HCP) fee area, but is not within an SKR Core Area. The SKR HCP provides Take Authorization for the SKR within its boundaries, and no surveys or additional measures are required for potential impacts to SKR other than paying a development fee prior to issuance of a grading permit by the City.</p> <p>The project may affect one or more non-listed special status species. However, the species potentially affected are all relatively widespread and the site does not contain high quality habitat for any of them. Therefore, any impacts to these species by the project would not be considered significant. Neither additional surveys nor additional conservation measures for these species will be required for the proposed project.</p>		
<p>Habitat Fragmentation/Wildlife Movement: The project site does not serve as a wildlife nursery site (e.g., no bat roosting sites or bird rookeries were identified on or adjacent to the project site). Due to its location and condition, the development of the proposed project would not fragment habitat or interfere with wildlife movement. No impact related to this issue would occur.</p>	No mitigation is required	Less than Significant
<p>Adopted Policies and/or Ordinances: The project is generally consistent with County and local policies and ordinances protecting biological resources, including implementation of the County's MSHCP and SKR HCP by payment of impact fees. The project also provides a buffer along the riparian corridor (Quincy Channel) consistent with City General Plan requirements. Therefore, less than significant impacts would occur from implementation of the project.</p>	No mitigation is required	Less than Significant
<p>Adopted Habitat Conservation Plans: While the project site is located within the MSHCP, the project site is not within any MSHCP criteria cell or habitat linkage. Furthermore, the project site is not located within an MSHCP mammal or amphibian survey area, a Narron Endemic Plant Species Survey Area, or a Criteria Area Plant Species Survey Area, and the site does not contain</p>	No mitigation is required	Less than Significant

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
<p>habitat that would require surveys for sensitive vernal pool or riparian species. Development of the proposed project will require payment of the MSHCP fee prior to issuance of a building permit, and the project will not conflict with the provisions of the MSHCP. The project will also pay an SKR HCP impact fee prior to issuance of a grading permit to mitigate regional impacts to that species. A less than significant impact would occur and no mitigation is required.</p>		
<p>Cumulative Impacts: The proposed project would not make a cumulatively considerable contribution to impacts on endangered or threatened species, riparian habitat or natural plant communities, jurisdictional waters, habitat fragmentation, wildlife movement, local policies and ordinances, or habitat conservation plans. There are no projects that would, in combination with the proposed project, produce a significant impact to non-listed sensitive species. Therefore, there are no significant cumulative impacts anticipated to occur that are associated with biological resources. With implementation of project-level Mitigation Measures 4.4.6.1 through 4.4.6.3, the project's contribution to cumulative biological impacts will not be cumulatively considerable.</p>	<p>No additional mitigation is required</p>	<p>Less than Significant with project mitigation</p>
<p>Significant Impacts</p>		
<p>Impact 4.4.6.1 Candidate, Non-listed Sensitive, or Special Interest Species: Although no burrowing owl were observed during site reconnaissance, the project site contains habitat suitable to support the burrowing owl. This species requires additional surveys by the MSHCP since the burrowing owl is a highly mobile species and may occupy the site in the future. This is a potentially significant impact requiring mitigation.</p>	<p>4.4.6.1A. If tree removal or clearing and grubbing activities must take place during the general nesting season (February 1 through August 31), a nesting bird survey shall be conducted within seven (7) days prior to any vegetation disturbance activities. If passerine birds are found to be nesting or there is evidence of nesting behavior inside the impact area, an exclusion buffer, to be determined by the appropriate agency (e.g. the City, County, and/or CDFG), shall be set in place around the nest where no vegetation disturbance will be permitted. For raptor species, such as hawks and owls, this buffer may be as large as 500 feet. A qualified biologist shall closely monitor nests until it is determined that they are no longer active, at which time construction</p>	<p>Less than Significant with Mitigation</p>

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<p>activity in the vicinity of nests may continue.</p> <p>4.4.6.1B. Prior to site grading, a pre-construction survey shall be required for the burrowing owl to confirm the presence/absence of this species from the site. The survey shall be conducted by a qualified biologist within 30 days prior to ground disturbance, and in accordance with MSHCP survey requirements, to avoid direct take of burrowing owls. If burrowing owls are determined to occupy the project site or immediate vicinity, the City of Moreno Valley Planning Department shall be notified and avoidance measures as identified in Mitigation Measure 4.4.6.1C, shall be implemented. Implementation of avoidance measures shall be executed pursuant to the MSHCP, the California Fish and Game Code, and the MBTA, and according to the <i>Burrowing Owl Survey Protocol and Mitigation Guidelines</i> (California Burrowing Owl Consortium 1993) and reviewed by the City of Moreno Valley, the County of Riverside, and/or by the CDFG.</p> <p>4.4.6.1C. As recommended in the <i>BUOW Survey and Mitigation Guidelines</i> prepared by the California BUOW Consortium, no disturbance to an occupied burrow shall occur within approximately 160 feet of an occupied burrow during the non-breeding season (September 1 through January 31), or within approximately 250 feet of an occupied burrow during the breeding season (February 1 through August 31). For unavoidable impacts, passive relocation of burrowing owls shall be implemented. Passive relocation shall be conducted by a qualified biologist in accordance with procedures set forth by the MSHCP and California Burrowing Owl Consortium. Passive relocation of occupied burrows supporting a breeding pair of burrowing owls shall be conducted outside of the breeding season pursuant to the California Fish and Game Code and the MBTA.</p>	
Impact 4.4.6.2 Riparian Habitat or Other Sensitive	4.4.6.2A. As outlined in the project's Determination of	Less than Significant with Mitigation

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
<p>Natural Communities: The three on-site drainages, including the Quincy Channel, contain riparian/riverine area. While the proposed project would incorporate the design standards identified in the City's Municipal Code, the development of the proposed project may result in the elimination of habitat for special-status plant species (mule fat scrub) or reduce population size of sensitive plant species below self-sustaining levels. Therefore, a potentially significant impact would occur and mitigation is required.</p>	<p>a Biologically Equivalent or Superior Preservation (DBESP) report, the project applicant shall compensate for the permanent impact on and loss of jurisdictional waters and streambeds by providing a minimum 2:1 off-site replacement of equivalent riverine/riparian habitat (0.36 acre impact = 0.72 acre replacement). This off-site replacement shall be accomplished through the contribution of in-lieu fees to the Santa Ana Watershed Association (SAWA) for its efforts in removal of invasive plants and restoration of riparian habitat adjacent to the tributaries of the San Jacinto River or within the Santa Ana River watershed. Documentation of acceptance of the SAWA contribution shall be provided to the City prior to issuance of a grading permit.</p> <p>4.4.6.2B. The project applicant shall retain qualified personnel to prepare and implement a Habitat Mitigation and Monitoring Plan (HMMP) to oversee restoration of temporarily affected areas (0.35 acre of riverine/riparian habitat) to their pre-construction contours and vegetation. The HMMP will be approved by USACE and CDFG prior to the City issuing any occupancy permits.</p>	
<p>Impact 4.4.6.3 Jurisdictional Waters/Wetlands: Implementation of the proposed project would result in permanent impacts to 0.051 acre (354 linear feet) of non-wetland waters of the United States and waters of the State and 0.362 acre (440 linear feet) of State streambed associated with the eastern, southern, and western drainages. In addition to permanent impacts, the proposed project would result in temporary impacts to 0.054 acre (332 linear feet) of non-wetland waters of the United States and waters of the State and 0.33 acre (547 linear feet) of State streambed associated with construction activities. This is a significant impact requiring mitigation.</p>	<p>4.4.6.3A. The project applicant shall obtain a Section 404 Nationwide or Individual Permit, as appropriate, from the USACE and a Section 1602 Streambed Alteration Agreement from the CDFG. Direct temporary impacts to more than 0.1 acre of jurisdictional area that are regulated by the USACE, CDFG, and RWQCB shall be mitigated at a 2:1 ratio, including enhancement and/or creation of wetlands or the contribution of in-lieu fees to the Santa Ana Watershed Association (SAWA) for its efforts in removal of invasive plants and restoration of offsite riparian habitat, as outlined in Mitigation Measure 4.4.6.2A.</p>	<p>Less than Significant with Mitigation</p>

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
4.5 CULTURAL RESOURCES		
Less than Significant Impacts		
<p>Historic Structures and Features: No evidence of past structures or unique features was identified, nor was evidence of such structures identified during the on-site cultural resource survey. As no evidence has been identified to suggest the presence of past or current structures on site, potential impacts related to historic structures or features will not occur and further mitigation is not needed.</p>	No mitigation is required	Less than Significant
<p>Human Remains: Adherence to provisions of Health and Safety Code §7050.5 is required of all development projects; therefore, adherence to the requirements in State law sufficiently mitigates for potential impacts to human remains, no significant impact related to this issue will occur.</p>	No mitigation is required	Less than Significant
<p>Cumulative Impacts: The cumulative area for cultural resources is the City of Moreno Valley. There is no existing evidence of pre-European contact or usage of the project site. Implementation of the proposed project will require measures to identify, recover, and/or record any cultural resource that may occur within the project limits. There are no projects that would, in combination with the proposed project, result in any significant cumulative impacts on historical, archaeological, or paleontological resources, or in impacts to human remains. Therefore, the proposed project would have no significant cumulative impacts associated with cultural resources.</p>	No mitigation is required	Less than Significant
Significant Impacts		
<p>Impact 4.5.6.1 Prehistoric Cultural Resources: The cultural resources survey indicates there are no recorded cultural sites or surface evidence that cultural resources are present on the project site. Correspondence from Native American groups represents appropriate consultation under SB 18. The site's location within the Moreno Hills Complex indicates a potential exists that excavation and construction activities may uncover previously undetected prehistoric or historic cultural resources. This is a significant impact requiring mitigation.</p>	<p>4.5.6.1A. If cultural resources are found during grading, the applicant shall immediately retain a qualified archaeological monitor to oversee subsequent ground-altering activities (e.g., removal of debris, dev egetation, and grading). This monitor shall ensure that any buried or previously unidentified resources are adequately identified, recorded, and evaluated in accordance with applicable standards. The archaeological monitors shall be trained in both prehistoric and historic archaeology and have the</p>	Less than Significant with Mitigation

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<p>authority to temporarily redirect any ground-disturbing activities affecting potentially significant cultural resources.</p> <p>4.5.6.1B. Prior to the issuance of a grading permit, the local Native American representatives (Soboba, Morongo, and Pechanga) shall be notified in writing of the pending activities. If any evidence of Native American resources is discovered during grading, the archaeological monitor identified in Mitigation Measure 4.5.6.1A shall invite one or more Native American monitors to participate in the monitoring program. The Native American monitors shall work with the archaeological monitor to aid in the identification of resources and assist in the preliminary evaluation of any Native American resources.</p> <p>4.5.6.1C. If cultural artifacts and resources are discovered during ground disturbance activities and are historic in nature (not Native American in origin), the archaeological monitor/consultant shall make recommendations for the appropriate handling and evaluation of the resources. If cultural artifacts and resources are discovered during ground disturbance activities are determined to be of Native American origin (but not involving burials or grave goods), the archaeological monitor/consultant shall notify the applicant, City, and local Native American representatives and complete consultation for the handling of the resources. All archaeological decisions shall be at the discretion of the professional archaeologist, taking the Native American concerns into account. Work may continue on other parts of the project site while historic or unique archaeological mitigation takes place (14 Cal. Code Regs. 15065.5(f)).</p> <p>4.5.6.1D. As a condition of approval, the property owner shall make all cultural resources (e.g., artifacts) discovered on site available for curation at a</p>	

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	<p>curation facility identified by the City (e.g., the UC R Archaeological Research Unit, the Western Center for Archaeology and Paleontology, or the Ya'i Hek'i Regional Indian Museum). All artifacts shall be inventoried and prepared for curation per standard professional requirements. If neither repository is available to accept the collections, the cultural resources shall be temporarily curated at a facility identified through consultation with all stakeholders.</p> <p>4.5.6.1E. Should resources determined to be of sacred or religious significance to Native Americans be identified within the project area, the resources shall be protected from adverse impacts until consultation among the Applicant, City, the Most Likely Descendant (MLD) as determined by the Native American Heritage Commission, and the archaeological consultant, occurs at which time the responsibility for the care and disposition of the cultural resources shall be determined and recorded to the satisfaction of all parties involved.</p>	
<p>Impact 4.5.6.2 Paleontological Resources: The project site is located in an area identified as having a "high sensitivity" for paleontological resources. Construction of the proposed project has the potential to result in significant impacts to nonrenewable paleontological resources, requiring mitigation.</p>	<p>4.5.6.2A. Prior to the issuance of grading permits, the project applicant shall submit to and receive approval from the City, a Paleontological Resource Impact Mitigation Program (PRIMP). The PRIMP shall include the provision of a trained paleontological monitoring on-site soil disturbance activities. The monitoring for paleontological resources shall be conducted during the rough-grading phase of the project. In the event that paleontological resources are unearthed or discovered during excavation, Mitigation Measure 4.5.6.2Cs shall apply. Conversely, if no paleontological resources are unearthed or discovered on site during excavation, no additional action is required.</p> <p>4.5.6.2B. The paleontological monitor shall be equipped to rapidly remove any large fossil specimens encountered during excavation. During</p>	<p>Less than Significant with Mitigation</p>

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<p>monitoring, samples of soil shall be collected and processed to recover microvertebrate fossils. Processing shall include wet screen washing and microscopic examination of the residual materials to identify small vertebrate remains.</p> <p>4.5.6.2C. If paleontological resources are unearthed or discovered during excavation of the project site, the monitoring for paleontological resources shall be conducted on a full-time basis for the duration of the rough-grading of the project site. The following recovery processes shall apply:</p> <ul style="list-style-type: none"> • Upon encountering a large deposit of bone, salvage of all bone in the area shall be conducted with additional field staff and in accordance with modern paleontological techniques. • All fossils collected during the project shall be prepared to a reasonable point of identification. Excess sediment or matrix shall be removed from the specimens to reduce the bulk and cost of storage. Itemized catalogs of all material collected and identified shall be provided to the museum repository along with the specimens. • A report documenting the results of the monitoring and salvage activities and the significance of the fossils shall be prepared. • All fossils collected during this work, along with the itemized inventory of these specimens, shall be deposited in a museum repository for permanent curation and storage. 	
4.6 HAZARDS AND HAZARDOUS MATERIALS		
Less than Significant Impacts		
<p><u>Routine Transport, Use, and Disposal of Hazardous Materials and Reasonable Foreseeable Accident Conditions Impacts:</u> During construction activities, the project will require limited transport of potentially hazardous</p>	<p>No mitigation is required</p>	<p>Less than Significant</p>

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
<p>materials (e.g., fuels, lubricants, solvents, cleansers, paints) to and from the project site. Additionally, operation of the project could involve the temporary storage and handling of potentially hazardous materials such as petroleum products, pesticides, fertilizer, and other household hazardous products such as paint products, solvents, and cleaning products that are pre-packaged for distribution and use. This type of storage, transfer, use, and disposal of potentially hazardous materials is extensively regulated at the local, State, and Federal levels. It is not anticipated that the development of the project would result in conditions that are not currently addressed by existing regulations. On this basis, potential impacts due to routine transport, use, or disposal of hazardous materials are considered less than significant.</p>		
<p>Located on a List of Hazardous Materials Sites: The project site has not been identified by the Department of Toxic Substance Site (DTSC) as being on or within a site on its Hazardous Waste and Substance Site (Cortese) list. In addition, the results of the site investigations performed by RM Environmental indicate that no significant amount of any hazardous material exists on site. Therefore, impacts associated with this issue are less than significant and no mitigation would be required.</p>	<p>No mitigation is required</p>	<p>Less than Significant</p>
<p>Existing or Proposed School: At the time the NOP for the proposed project was released, the Moreno Valley Unified School District (MVUSD) had identified three potential school sites within the project vicinity. These potential school sites were for High School #5, Elementary School #24, and Middle School #7. Of these potential school sites, High School #5 was the closest planned school to the project site as it was to be located on the adjacent parcel east of the project site. Due to MVUSD concerns regarding the placement of schools in areas that may be rezoned with warehousing uses, MVUSD has made a decision to abandon the development of these school facility projects on the previously identified sites. No planned school facilities would be located within 0.25 mile of the project site, and there are no existing schools within 0.25 mile of the</p>	<p>No mitigation is required</p>	<p>Less than Significant</p>

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
project site. Therefore, no impacts would occur.		
<p>Emergency Response Plan: The proposed project would not have any direct effect on an adopted emergency response plan, or emergency evacuation plan. The City's emergency plans are also consistent with the General Plan. The proposed project will be designed and conditioned to provide required circulation and fire access to allow for ingress and emergency vehicles and egress of employees and patrons. Therefore, the proposed project would not be in conflict in any way with the City's emergency response or emergency evacuation plans.</p>	No mitigation is required	Less than Significant
<p>Wildland Fires: The project site is not located within or adjacent to a City-designated "High Fire Hazard Area" as indicated in the City's General Plan EIR Figure 5.5-2. Due to the location of the fire station adjacent to the project in the northwest corner and the low probability that the project site would be subject or susceptible to wildland fires, no significant impact related to this issue would occur. No mitigation is required.</p>	No mitigation is required	Less than Significant
<p>Cumulative Impacts: Significant cumulative impacts associated with the routine transport, use, and disposal of hazardous materials would not occur as these risks are largely site-specific and localized and therefore limited to the project site. Since site-specific investigations would be conducted at sites where hazardous materials are released and since accidental spills and leaks are unplanned occurrences, it is impossible to predict the occurrences of such events. As with the proposed project, it is anticipated that future development projects will be required to adhere to applicable local, State, and Federal requirements that regulate the use, release, storage, sale, and transport of hazardous materials. Such compliance would ensure that cumulative impacts are less than significant.</p>	No mitigation is required	Less than Significant
4.7 HYDROLOGY, DRAINAGE, AND WATER QUALITY		
Less than Significant Impacts		
<p>Groundwater: It is anticipated that the proposed project would primarily utilize imported water purchased from Metropolitan. This imported water would be supplemented</p>	No mitigation is required	Less than Significant

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
<p>by local groundwater sources. The implementation of the existing West San Jacinto Groundwater Basin Management Plan would ensure that local groundwater resources are conserved and groundwater overdraft does not occur. The proposed project would not interfere with groundwater recharge as the project site is not identified as a groundwater recharge area. The development of the proposed project would reduce the amount of pervious surfaces that could facilitate percolation on site. However, the proposed project would consist of other project design features such as detention basins that would be designed to offset the conversion of pervious surfaces to impervious surfaces. Therefore, the proposed project would not interfere with groundwater recharge activities. Impacts associated with this issue are less than significant and no mitigation is required.</p>		
<p>Flooding-Related Impacts: Based on FIRM maps, the project site does not fall within a 100-year floodplain. Because the project site does not lie within a 100-year floodplain and does not include housing, impacts related to this issue are less than significant and no mitigation would be required.</p>	<p>No mitigation is required</p>	<p>Less than Significant</p>
<p>Drainage Pattern-Related Impacts: Development of the project site would result in an increase in the amount of impervious surfaces in the form of roadways, parking lots, and buildings. To reduce the flows leaving the project site to below or equal to pre-development conditions, the anticipated on-site flows must be routed to basins to reduce flows leaving the site to pre-development flow rates. Because the proposed project would maintain existing drainage patterns on site, impacts associated with this issue are less than significant and no mitigation measures are required.</p>	<p>No mitigation is required</p>	<p>Less than Significant</p>
<p>Cumulative Impacts: Cumulatively, development within the watershed would result in an increase in impervious surfaces in addition to changes in land use and associated pollutant runoff characteristics. Increased impervious surfaces are likely to alter existing hydrology and increase potential pollutant loads. However, all proposed and future</p>	<p>No mitigation is required</p>	<p>Less than Significant</p>

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
<p>development in the City and throughout the Santa Ana RWQCB jurisdiction must comply with the NPDES permit program requirements. Each new development is required to mitigate its own specific impacts on water quality and drainage. Therefore, there would be no significant cumulative impacts to water quality.</p>		
Significant Impacts		
<p>Impact 4.7.6.1 Construction-Related Water Quality Impacts: The construction and grading phases of the project site would require temporary disturbance of surface soils and removal of vegetative cover which could potentially result in erosion and sedimentation on site. This is a significant impact requiring mitigation.</p>	<p>4.7.6.1A. Prior to grading plan approval and the issuance of a grading permit by the City, the project applicant shall provide evidence to the City that a Notice of Intent (NOI) has been filed with the Regional Water Quality Control Board for coverage under the State NPDES General Construction Permit for discharge of storm water associated with construction activities.</p> <p>4.7.6.1B. Prior to grading plan approval and the issuance of a grading permit by the City, the project applicant shall submit to the State Water Quality Control Board a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP shall include a surface water control plan and erosion control planning specific measures to control on-site and off-site erosion during the entire grading and construction period. Additionally, the SWPPP shall identify structural and nonstructural BMPs to control sediment and nonvisible discharges from the site. BMPs to be implemented in the SWPPP may include, but shall not be limited to, the following:</p> <ul style="list-style-type: none"> • Sediment discharges from the site may be controlled by the following: gravel bags, silt fences, straw wattles and temporary debris basins (if deemed necessary), and other discharge control devices. The construction and condition of the BMPs will be periodically inspected during construction, and repairs will be made when necessary as required by the SWPPP. 	<p>Less than Significant with Mitigation</p>

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<ul style="list-style-type: none"> • No materials of any kind shall be placed in drainage ways. • Materials that could contribute non-visible pollutants to storm water must be contained, elevated, and placed in temporary storage containment areas. • All loose piles of soil, silt, clay, sand, debris, and other earth material shall be protected per RWQCB standards to eliminate any discharge from the site. Stockpiles will be surrounded by silt fences. • The SWPPP will include inspection forms for routine monitoring of the site during the construction phase to ensure NPDES compliance. • Additional BMPs and erosion control measures will be documented in the SWPPP and utilized if necessary. • The SWPPP will be kept on site for the entire duration of project construction and will also be available to the local RWQCB for inspection at any time. <p>In the event that it is not feasible to implement the above BMPs, the City of Moreno Valley can make a determination that other BMPs will provide equivalent or superior treatment either on or off site.</p> <p>4.7.6.1C. Prior to the issuance of grading permits, the project applicant shall provide evidence to the City that the following provisions have been added to construction contracts for the project:</p> <ul style="list-style-type: none"> • The Construction Contractor shall be responsible for performing and documenting the application of BMPs identified in the SWPPP. Weekly inspections shall be performed on sediment control measures called for in the SWPPP. 	

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<p>Monthly reports shall be maintained by the Contractor and submitted to the City for inspection. In addition, the Contractor will also be required to maintain an inspection log and have the log on site to be reviewed by the City of Moreno Valley and their representatives of the Regional Water Quality Control Board.</p>	
<p>Impact 4.7.6.2 Operational-Related Water Quality Impacts: The proposed project would result in the conversion of permeable surfaces to impermeable surfaces. During the operational phase of the proposed project, the major source of pollution in storm water runoff would be contaminants that have accumulated on the land surface over which runoff passes. This is a significant impact requiring mitigation.</p>	<p>4.7.6.2A. Prior to grading plan approval and the issuance of a grading permit by the City, the project applicant shall receive approval from the City of Moreno Valley for a Final Water Quality Management Plan (F-WQMP). The F-WQMP shall specifically identify pollution prevention, site design, source control, and treatment control BMPs that shall be used on site to control predictable pollutant runoff in order to reduce impacts to water quality to the maximum extent practicable. BMPs to be implemented in the F-WQMP may include (but shall not be limited to) the following:</p> <ul style="list-style-type: none"> • Required landscaped areas shall not use decorative concrete or impervious surfaces. • Landscape plans shall incorporate native and drought-tolerant plants, trees, and shrubs. Landscaping shall be maintained weekly and maintenance contractor will properly dispose of all landscape wastes. • Irrigation systems shall be inspected monthly by the landscape contractor to check for over-watering, leaks, or excessive runoff to paved areas. Timers will be used to prevent over-watering. • Signage will be inspected and maintained twice a year for legibility. • Outdoor Loading/Unloading truck docks shall be kept in a clean and orderly condition with weekly inspections, continuous monitoring, and 	<p>Less than Significant with Mitigation</p>

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<p>immediate clean up of spills.</p> <ul style="list-style-type: none"> • Parking area maintenance shall be swept or vacuumed at least quarterly, if there is any trash or debris in between the routine sweeping, it shall be swept or vacuumed immediately. • Trash enclosures will be inspected and maintained weekly or as needed by maintenance contractor. • On-site extended detention/sedimentation basins and sand filters will treat all of the site's runoff via vegetated swales and will be maintained and inspected at least twice a year and prior to October 1. • Additional BMPs will be documented in the WQMP and utilized if necessary. <p>In the event that it is not feasible to implement the above BMPs, the City of Moreno Valley can make a determination that other BMPs will provide equivalent or superior treatment either on or off site.</p>	
<p>Impact 4.7.6.3 Drainage Capacity-Related Impacts: Because the development of the site would introduce a greater percentage of impervious surfaces, the post-development flows that would be generated on site are anticipated to be significantly higher than the pre-development flows. To avoid significant impacts to existing storm drain facilities and water quality, on-site storm drain facilities must be sized to accept and handle site drainage flows that would result from the development of the project including any detention necessary. To ensure the implementation of drainage improvements and the corresponding reduction in the significance of drainage related impact, mitigation is required.</p>	<p>4.7.6.3A. Prior to grading plan approval, the project proponent shall receive approval on a project-specific Final Hydrology Study, with supporting engineering calculations, from the City Engineer. The Final Hydrology Study shall incorporate relevant requirements identified by the City, and/or site-specific geotechnical investigations. A Preliminary Hydrology Study will be required prior to approval of the associated project tentative tract map.</p>	<p>Less than Significant with Mitigation</p>
<p>4.8 LAND USE AND PLANNING</p>		
<p>Less than Significant Impacts</p>		
<p>Physically Divide an Established Community: The</p>	<p>No mitigation is required</p>	<p>Less than Significant</p>

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
<p>project site does not contain any existing housing, nor does the site constitute part of an established community or neighborhood. The site is just south of SR-60 and the area has built and approved industrial warehouse uses. The construction and operation of the proposed project would neither displace residents nor divide an existing established community. No impact related to this issue would occur.</p>		
<p><u>Conflict with Any Applicable Habitat or Natural Community Conservation Plan:</u> While the project site is not within any conservation area delineated in the MSHCP or SKR HCP, the project is still subject to provisions of these plans. The payment of the mitigation fees and compliance provisions of the MSHCP and SKR HCP provides full mitigation under the CEQA, FESA, and CESA for impacts to the species and habitats covered by these plans; therefore, no significant impact related to this issue would occur.</p>	No mitigation is required	Less than Significant
<p><u>Cumulative Impacts:</u> The project is not consistent with existing on-site General Plan or zoning designations and a General Plan Amendment and Zone Change are required to achieve consistency. It is also not consistent with the zoning of land adjacent to the east (RA-2). Other development projects in the surrounding area, including recently built (Skechers) or approved (West Ridge) industrial warehouse projects, would have cumulatively considerable land use impacts for the project area, and the proposed project will make a significant contribution to that cumulative impact.</p>	No mitigation is required	Less than Significant
<p><u>Significant Impacts</u></p>		
<p><u>Impact 4.8.6.1 Conflict with Applicable Land Use Plans, Policies, or Regulations:</u> Based on a review of regional SCAG, SCAQMD, UWP, and Basin Plan policies, the proposed project is generally consistent with these regional plans, except for some population/housing projections in the SCAG Regional Transportation Plan, growth management policies in the SCAG Compass Blueprint Plan, and the Air Quality Management Plan. The project would remove 12.1 acres of RA-2 zoned land within the Primary Animal Keeping Overlay (PAKO) designation, which represents 0.4</p>	No feasible mitigation available	Significant

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
<p>percent of the PAKO-designated land in the City.</p> <p>The project is not consistent with existing General Plan land use or zoning designations. A General Plan Amendment (GPA) is required so the proposed project will be consistent with the land use designations and policies in the General Plan. The project would remove the potential for a maximum of 681 multifamily residential units on the property, 80 percent of which could contribute to the City's affordable housing goals, so the project is not consistent with the City's Housing Element. Since the project cannot replace the loss of MF R zoning elsewhere in the City, these land use impacts are considered significant and no feasible mitigation is available to reduce them to less than significant levels.</p>		
4.9 NOISE		
Less than Significant Impacts		
<p>Airport Noise Impacts: The proposed project site is located approximately 5 miles northeast of the March Air Reserve Base. However, the proposed project is not identified as being within the noise or safety contours delineated for the March Air Reserve Base Airport. The proposed project is not located within two miles of a public or private airport; therefore, it would not have the potential to expose people to excessive noise levels from airport operations and no impact regarding this issue would occur with implementation of the proposed project.</p>	No mitigation is required	Less than Significant
<p>Groundborne Vibration: While heavy-duty earthmoving equipment would be used during the construction phase of the project, the level of vibration would not be excessive or permanent, nor would it exceed the level at which building damage typically occurs. Therefore, impacts from construction-related groundborne vibration construction would be less than significant and no mitigation is required.</p>	No mitigation is required	Less than Significant
<p>Long-Term Traffic-Related Noise Impacts: The largest project-related increase in traffic noise would be along Eucalyptus Avenue between Auto Mall Drive and Redlands Boulevard. This segment would experience a 13.3 dB A increase over the baseline (without the project) scenario in</p>	No mitigation is required	Less than Significant

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
<p>the Opening Year (2016). However, no noise-sensitive uses exist or are planned in the vicinity of this roadway segment. All other roadway segments would have an increase in noise of less than 3.0 dBA, which would not be perceptible to the human ear in an outdoor environment.</p>		
<p>Long-Term Operational Noise Impacts: Potential long-term stationary noise impacts would primarily be associated with operations at the proposed warehouse and the light industrial uses. The proposed on-site warehouses and light industrial uses would generate noise from truck delivery, loading/unloading activities at the loading areas, and other noise-producing activities within the parking lots. Most of these noise events are intermittent in nature and are typically short in duration. However, since these noise generators would generate noise that is below the City identified thresholds at the nearest existing sensitive receptor, impacts associated with this issue are less than significant.</p>	<p>No mitigation is required</p>	<p>Less than Significant</p>
<p>Noise Impacts to Adjacent Future Development: Future development would result in the occupation of residential units in close proximity to noise-generating industrial uses located on the proposed project site. However, it is anticipated that the proposed project site would be fully developed prior to the occupation of any new dwelling units; therefore, no construction-related noise impacts to future adjacent sensitive receptors would result from development of the proposed project. Operational noise at the nearest future sensitive receptors is anticipated to be below City identified thresholds. Therefore, noise impacts associated with this issue would be less than significant.</p>	<p>No mitigation is required</p>	<p>Less than Significant</p>
<p>Cumulative Noise Impacts: It is not possible to predict if contiguous properties may be constructed at the same time and create cumulative noise impacts that would be greater than if developed at separate times. However, in the event that adjacent properties are developed at the same time as the proposed project, implementation of the required mitigation at each development site would reduce the cumulative impacts of the proposed project to less than</p>	<p>No mitigation is required</p>	<p>Less than Significant</p>

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
<p>significant levels.</p> <p>The increases over existing traffic volume are attributable to cumulative development projects in the project vicinity and region. Cumulative noise impacts associated with roadway noise have been addressed based on the projected future traffic volumes. Comparing cumulative noise levels that would occur both with and without the project, the proposed project would not expose sensitive uses located adjacent to area roadways to excessive noise levels. Therefore, the proposed project's contribution to cumulative noise impacts at sensitive uses would not be significant.</p>		
Significant Impacts		
<p>Impact 4.9.6.1: Short-Term Construction Noise Impacts: Construction activities would include grading, excavation, and installation activities generating noise levels up to 91 dBA L_{max} at 50 feet from an active construction area. These noise levels would diminish rapidly with distance from the construction site at a rate of approximately 6 dBA per doubling of distance. The worst-case scenario during construction would be a noise level of 91 dBA L_{max} at a distance of 50 feet from the noise source to the nearest existing sensitive receptor. However, compliance with the construction hours specified in the City's Municipal Code would result in construction noise impacts that are less than significant. While impacts would be considered less than significant as long as construction activities occur within the designated hours identified in the City's Municipal Code, mitigation measures have been identified to reduce the noise levels that would expose nearby sensitive receptors to noise levels in excess of the City's noise standards.</p>	<p>4.9.6.1A. During all project site excavation and grading on site, the project contractor shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards.</p> <p>4.9.6.1B. The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest to the project site.</p> <p>4.9.6.1C. The construction contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise sources and noise-sensitive receptors nearest to the project site during all project construction.</p> <p>4.9.6.1D. During all project site construction activities, the construction contractor shall limit all construction-related activities that would result in high noise levels to between the hours of 6:00 a.m. and 8:00 p.m. on weekdays and between the hours of 7:00 a.m. to 8:00 p.m. on weekends and holidays, unless written approval is obtained from the City Building Official or City Engineer.</p>	<p>Less than Significant with Mitigation</p>

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Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
4.10 POPULATION AND HOUSING		
Less than Significant Impacts		
<p>Population Growth: Development of the proposed on-site uses would increase the number of jobs in the City by 1,532 positions based on data from a regional marketing study. The new employment opportunities resulting from development of the proposed industrial uses will improve the City's current jobs-to-housing ratio by providing jobs to local residents. While the place of residence of the persons accepting employment provided by the proposed uses is uncertain, due to the City's projected jobs/housing ratio, it is reasonable that a large percentage of these jobs would be filled by persons already living within the City or project area; therefore, no significant increase in population of the City would result from the development or operation of the proposed on-site uses. In the absence of a significant impact, no mitigation is required.</p>	<p>No mitigation is required</p>	<p>Less than Significant</p>
Significant Impacts		
<p>Displace Substantial Housing/People: No residential structures are currently located within the project limits. The construction and operation of the proposed on-site uses would not either displace existing housing or residents, nor require the construction of replacement housing elsewhere in the City. No significant impact related to this issue would occur and no mitigation is required.</p> <p>However, the project would eliminate 71.2 acres of multifamily residential uses planned for the site, which could result in as many as 681 units of which 80 percent are at a density sufficient for affordable housing programs (R15), which results in a significant housing impact. This impact is also evaluated in Section 4.8.6.1, <i>Consistency with Regional and Local Land Use Plans</i>.</p>	<p>No feasible mitigation is available</p>	<p>Significant</p>
<p>Cumulative Impacts: The project proposes development of industrial uses on a portion of the site that was planned for residential uses. Industrial uses would contribute jobs to the local some of which may be employment opportunities for the citizens of Moreno Valley. Loss of 681 units of potential</p>	<p>No feasible mitigation available</p>	<p>Contributes to a cumulatively considerable impact on local housing</p>

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<p>future housing will result in a cumulatively considerable housing impact, but it would not induce significant growth in areas where growth was not previously anticipated.</p>		
<p>4.11 TRANSPORTATION</p>		
<p>Less than Significant Impacts</p>		
<p>Air Traffic Pattern Impacts: The proposed project does not consist of any uses that would cause changes to air traffic volumes or otherwise affect air traffic patterns. Additionally, the proposed project does not include any visual, electronic, or physical hazards to aircraft in flight and is not anticipated to disrupt or alter air traffic patterns, including either an increase in traffic levels or a change in location. As such, no impacts associated with this issue would occur.</p>	<p>No mitigation is required</p>	<p>Less than Significant</p>
<p>Design Features or Incompatible Uses: Roadway improvements in and around the project site would be designed and constructed to satisfy all City requirements for street widths, corner radii, intersection control as well as incorporate design standards tailored specifically to site access requirements. Adherence to applicable existing requirements of the City of Moreno Valley and other agencies would reduce impacts associated with this issue to a less than significant level.</p> <p>Since no proposed schools would be located next to the proposed project, there would not be a non-compatible use associated with the proposed project and the traffic associated with the proposed project on school facilities in the area. Similarly, for the existing residences to the southeast, it is anticipated that there would not be a non-compatible use associated with traffic generated by the proposed project since there would be no truck or vehicle access to the project site on Encilia Avenue. Therefore, impacts associated with this issue are less than significant.</p>	<p>No mitigation is required</p>	<p>Less than Significant</p>
<p>Inadequate Emergency Access: The developers of the proposed project would be required to design, construct, and maintain structures, roadways, and facilities to provide for adequate emergency access and evacuation. Adherence to applicable existing requirements of the City of</p>	<p>No mitigation is required</p>	<p>Less than Significant</p>

Table 1.C: Eucalyptus Industrial Park Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
<p>Moreno Valley and other agencies would reduce impacts associated with this issue to a less than significant level.</p>		
<p>Inadequate Parking Capacity: The preliminary site plan indicates that 1,091 automobile parking spaces are provided, which includes spaces for employees, drivers, and handicap spaces, and is well above the minimum requirement of 562 spaces. Adherence to parking standards contained in the <i>Zoning Code</i> would ensure that the proposed project would not result in inadequate parking capacity. Impacts associated with parking capacity are less than significant.</p>	<p>No mitigation is required</p>	<p>Less than Significant</p>
<p>Alternative Transportation: The design of the proposed project would be required to adhere to applicable City of Moreno Valley standards that support and/or facilitate alternative modes of transportation. Through the City's project review process, policies, plans, and/or programs supporting alternative transportation would be reviewed and incorporated as applicable. Consequently, a less than significant impact would occur.</p>	<p>No mitigation is required</p>	<p>Less than Significant</p>
<p>Significant Impacts</p>		
<p>Impact 4.11.6.1A Existing (2011) with project Conditions (Intersection) Traffic and Level of Service Impacts: The addition of project traffic to this scenario would result in conditions exceeding the established LOS standard at the following intersections:</p> <ul style="list-style-type: none"> • Redlands Boulevard/SR-60 Westbound Ramps (a.m. and p.m. peak hours); and • Redlands Boulevard/Eucalyptus Avenue-Fir Avenue (p.m. peak hour). <p>The project would contribute to ward the worsening of the already unsatisfactory LOS at the intersection of Redlands Boulevard/SR-60 Westbound Ramps and would create a significant impact at the intersection of Redlands Boulevard/Eucalyptus Avenue-Fir Avenue. Therefore, mitigation is required at both intersections.</p>	<p>4.11.6.4A. Prior to issuance of building permits, the project applicant shall pay the fair-share contribution toward the following traffic improvements through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program:</p> <ul style="list-style-type: none"> • Redlands Boulevard/SR-60 Westbound Ramps. Install a traffic signal. This improvement is listed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the significant impact at this location. • Redlands Boulevard/Fir Avenue/Eucalyptus Avenue. Install a traffic signal. This improvement is listed in the City's DIF program. Add a northbound left-turn lane and a southbound left-turn lane. These improvements are listed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the 	<p>With the implementation of the recommended improvements, the minimum level of service standards would be maintained for the Existing (2011) with project condition and impacts would be reduced to a less than significant level for all identified intersections. However, improvements to free way facilities are under the authority of Caltrans. Since the City has no control over when and how the improvements will be in place, impacts associated with SR-60 ramp intersections would remain significant and unavoidable until such improvement is constructed.</p>

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Table 1.C: Eucalyptus Industrial Park Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
<p>Impact 4.11.6.4B Opening Year (2016) with project conditions (Intersection) Traffic and Level of Service Impacts: The addition of project traffic to this scenario would result in conditions exceeding the established LOS standard at the following intersections:</p> <ul style="list-style-type: none"> • Moreno Beach Drive/SR- 60 WB Ramps (p.m. peak hour) • Redlands Boulevard/SR-60 WB Ramps (a.m. and p.m. peak hours) • Redlands Boulevard/Eucalyptus Avenue-Fir Avenue (p.m. peak hour). <p>The project would have a significant impact at all three intersections, and therefore mitigation would be required.</p>	<p>significant impact at this location.</p> <p>4.11.6.4B. Prior to issuance of building permits, the project applicant shall pay the fair-share contribution toward the following traffic improvements through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program:</p> <ul style="list-style-type: none"> • Moreno Beach Drive/SR-60 Eastbound Ramps. The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF fee would mitigate the significant impact at this location. • Redlands Boulevard/SR-60 Westbound Ramps. Install a traffic signal. This improvement is listed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the significant impact at this location. • Redlands Boulevard/Fir Avenue/Eucalyptus Avenue. Install a traffic signal. This improvement is listed in the City's DIF program. Add a northbound left-turn lane and a southbound left-turn lane. These improvements are listed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location. 	<p>With the implementation of the recommended improvements, the minimum level of service standards would be maintained for the Opening Year (2016) with project condition and impacts would be reduced to a less than significant level for all identified intersections. In addition to the signalization of the Redlands Boulevard/SR-60 Westbound ramp intersection included in the City's DIF program, reconstruction of the Redlands Boulevard/SR-60 interchange is programmed in the TUMF program. As a result, there are programmed improvements at the deficient free way ramp intersection identified in Mitigation Measure 4.11.6.1B in both the DIF and TUMF programs.</p> <p>Improvements to free way facilities are under the authority of Caltrans. Although the City would collect fees that would be utilized for improvements to the Moreno Beach Drive/SR-60 Eastbound Ramps and Redlands Boulevard/SR-60 Westbound Ramps, improvements to these intersections are outside the City's jurisdiction. Since the City has no control over when and how the improvements will be in place, impacts associated with these identified intersections would remain significant and unavoidable until such improvements are constructed.</p>
<p>Impact 4.11.6.4C: Opening Year (2016) cumulative with project conditions (Intersection) Traffic and Level of Service Impacts: The addition of project traffic to this scenario would result in conditions exceeding the established LOS standard at the following intersections:</p>	<p>4.11.6.4C. Prior to issuance of building permits, the project applicant shall pay the fair-share contribution toward the following traffic improvements through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program:</p>	<p>With the implementation of the recommended improvements, the minimum level of service standards would be maintained for the opening year (2016) cumulative with project and impacts would</p>

Table 1.C: Eucalyptus Industrial Park Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
<ul style="list-style-type: none"> • Moreno Beach Drive/SR-60 Eastbound Ramps (p.m. peak hour); • Moreno Beach Drive/Cottonwood Avenue (p.m. peak hour); • Moreno Beach Drive/Alessandro Avenue (p.m. peak hour); • Redlands Boulevard/SR-60 Westbound Ramps (a.m. and p.m. peak hours); • Redlands Boulevard/SR-60 Eastbound Ramps (a.m. and p.m. peak hours); • Redlands Boulevard/Fir Avenue-Eucalyptus Avenue (a.m. and p.m. peak hours); • Redlands Boulevard/Encilia Avenue-Eucalyptus Avenue (p.m. peak hour); and • Redlands Boulevard/Alessandro Boulevard (p.m. peak hour). <p>These intersections are forecast to exceed satisfactory levels of service in opening year (2016) cumulative without-project conditions, with the exception of the intersection of Redlands Boulevard/Eucalyptus Avenue-Fir Avenue and Redlands Boulevard/Encilia Avenue-Eucalyptus Avenue; these intersections already exceeded established LOS standards in the opening year (2016) cumulative without-project condition. Because the proposed project would contribute to and would cause intersections to operate at unsatisfactory levels, mitigation is required.</p>	<ul style="list-style-type: none"> • Moreno Beach Drive/SR-60 Eastbound Ramps. The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF fee would mitigate the significant impact at this location. • Moreno Beach Drive/Cottonwood Avenue. Add a southbound through lane. This improvement is listed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the significant impact at this location. • Moreno Beach Drive/Alessandro Boulevard. Add a southbound through lane. This improvement is listed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the significant impact at this location. • Redlands Boulevard/SR-60 Westbound Ramps. Install a traffic signal. This improvement is listed in the City's DIF program. Add a northbound through lane. The Redlands Boulevard/SR-60 Interchange reconstruction would implement the northbound through lane. The interchange reconstruction project is programmed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location. • Redlands Boulevard/SR-60 Eastbound Ramps. The Redlands Boulevard/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF. Therefore, payment of the TUMF fee would mitigate the significant impact at this location. 	<p>be reduced to a less than significant level for all identified intersections.</p> <p>In addition, reconstruction of the interchanges at the location of the deficient freeway ramp intersections identified in Mitigation Measure 4.11.6.1C are already programmed into the TUMF program. However, as noted previously, improvements to freeway facilities are under the authority of Caltrans. Although the City would collect fees that would be utilized for improvements to the Moreno Beach Drive/SR-60 Eastbound Ramps, Redlands Boulevard/SR-60 Westbound Ramps, and Redlands Boulevard/SR-60 Eastbound Ramps intersections, improvements to these intersections are outside the City's jurisdiction. Since the City has no control over when and how these improvements will be in place, impacts associated with these identified intersections would remain significant and unavoidable until such improvements are constructed.</p>

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Table 1.C: Eucalyptus Industrial Park Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<ul style="list-style-type: none"> • Redlands Boulevard/Fir Avenue/Eucalyptus Avenue. Install a traffic signal. Add a westbound right-turn lane and provide overlapping for the westbound right turns. Add a westbound left-turn lane and an eastbound left-turn lane. These improvements are programmed in the City's DIF program. Add a northbound left-turn lane, a southbound through lane, and a southbound left-turn lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location. • Redlands Boulevard/Eucalyptus Avenue. Add a southbound right-turn lane. This improvement is programmed in the TUMF. Therefore, payment of the TUMF fees would mitigate the significant impact at this location. • Redlands Boulevard/Alessandro Boulevard. Add a southbound left-turn lane. This improvement is programmed in the TUMF. Therefore, payment of the TUMF fees would mitigate the significant impact at this location. 	
<p>Impact 4.11.6.4D: Future Year (2035) with project conditions (Intersection) Traffic and Level of Service Impacts: The addition of project traffic to this scenario would result in conditions exceeding the established LOS standard at the following intersections:</p> <ul style="list-style-type: none"> • Nason Street/Eucalyptus Avenue (a.m. and p.m. peak hours); • Nason Street/Alessandro Boulevard (a.m. and p.m. peak hours); • Moreno Beach Drive/SR-60 Westbound Ramps (a.m. peak hour); • Moreno Beach Drive/SR-60 Eastbound Ramps (p.m. peak hour); 	<p>4.11.6.4D. Prior to issuance of building permits, the project applicant shall pay the fair-share contribution toward the following traffic improvements through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program. At some locations, the DIF and TUMF fees would not fully mitigate the project's impact. For these locations, additional improvements shall be implemented by the project applicant prior to the issuance of a certificate of occupancy for the project:</p> <ul style="list-style-type: none"> • Nason Street/Eucalyptus Avenue. Add a northbound right turn lane. This improvement is programmed in the City's DIF; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In 	<p>With the implementation of the recommended improvements, the minimum level of service standards would be maintained for the future year (2035) with project scenario and impacts would be reduced to a less than significant level for all identified intersections. In addition, reconstruction of the interchanges at the location of the efficient free way ramp intersections identified in Mitigation Measure 4.11.6.2D are already programmed into the TUMF program. It is anticipated that by future year (2035) improvement to the identified free way ramps and intersections would be built through the TUMF process and</p>

Table 1.C: Eucalyptus Industrial Park Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
<ul style="list-style-type: none"> • Moreno Beach Drive/Eucalyptus Avenue (p.m. peak hour); • Moreno Beach Drive/Cottonwood Avenue (p.m. peak hour); • Moreno Beach Drive/Alessandro Avenue (a.m. and p.m. peak hours); • Redlands Boulevard/SR-60 Westbound Ramps (a.m. and p.m. peak hours); • Redlands Boulevard/SR-60 Eastbound Ramps (a.m. and p.m. peak hours); • Redlands Boulevard/Fir Avenue-Eucalyptus Avenue (a.m. and p.m. peak hours); • Redlands Boulevard/Encilia Avenue-Eucalyptus Avenue (a.m. and p.m. peak hours); and • Redlands Boulevard/Alessandro Boulevard (a.m. and p.m. peak hours). <p>All of the intersections that are forecast to experience a deficient LOS with the proposed project would also operate with a deficient LOS without the proposed project. Although the proposed project does not cause these intersections to operate at an unsatisfactory LOS, it does contribute to the worsening of the intersections' LOS and therefore mitigation would be required to offset the cumulative impact of the project.</p>	<p>In addition, the project shall contribute a fair share (calculated to be 1.76 %) toward restriping the westbound approach to provide dual left-turn lanes.</p> <ul style="list-style-type: none"> • Nason Street/Alessandro Boulevard. Add an eastbound through lane and a westbound through lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, the project shall contribute a fair share (calculated to be 1.4%) toward modification of the traffic signal to provide overlap phasing for the eastbound right-turn lane. • Moreno Beach Drive/SR-60 Westbound Ramps. The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF fee would mitigate the significant impact at this location. • Moreno Beach Drive/SR-60 Eastbound Ramps. The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF fee would mitigate the significant impact at this location. • Moreno Beach Drive/Eucalyptus Avenue. Convert the existing eastbound through lane to a left-turn lane and the eastbound right-turn lane to a shared through/right-turn lane. These 	<p>coordination by Caltrans, WRCOG, and the City of Moreno Valley. Because the project would pay its fair-share cost associated with these improvements and because such improvements are anticipated to be constructed by the future year (2035), impacts associated with this issue are less than significant after the identified mitigation measures have been implemented.</p>

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Table 1.C: Eucalyptus Industrial Park Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<p>improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, the project shall contribute a fair share (calculated to be 8.63%) toward modification of the traffic signal to provide right-turn overlap phasing for the westbound right-turn lane.</p> <ul style="list-style-type: none"> • Moreno Beach Drive/Cottonwood Avenue. Add a southbound through lane. This improvement is programmed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the significant impact at this location. • Moreno Beach Drive/Alessandro Boulevard. Add 2 southbound through lanes, 2 northbound through lanes, an eastbound through lane, and a westbound through lane. These improvements are programmed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the significant impact at this location. • Redlands Boulevard/SR-60 Westbound Ramps. Install a traffic signal. This improvement is programmed in the City's DIF program and will be installed before building occupancy since it was identified as a direct project impact. • Redlands Boulevard/SR-60 Eastbound Ramps. The Redlands Boulevard/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF. Therefore, payment of the TUMF fee would mitigate the significant impact at this location. • Redlands Boulevard/Fir Avenue-Eucalyptus Avenue. Install a traffic signal and add a westbound left-turn lane, eastbound through 	

Table 1.C: Eucalyptus Industrial Park Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<p>lane, eastbound left-turn lane, and a westbound right-turn lane with over lap phasing. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, add a southbound through lane, south bound left-turn lane, northbound through lane, and northbound left-turn lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location.</p> <ul style="list-style-type: none"> • Redlands Boulevard/Eucalyptus Avenue. Install a traffic signal and add a westbound left-turn lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, add a north bound left-turn lane and a southbound left-turn lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location. • Redlands Boulevard/Alessandro Boulevard. Install a traffic signal. This improvement is programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, add a southbound left-turn lane, a north bound left-turn lane, a westbound left-turn lane, an eastbound left-turn lane, a westbound right-turn lane, and a southbound through lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location. 	
<p><u>Impact 4.11.6.4E: General Plan Build Out with project conditions (Intersection) Traffic and Level of Service</u></p>	<p>4.11.6.4E. Prior to issuance of building permits, the project applicant shall pay the fair-share contribution</p>	<p>With the implementation of the recommended improvements, the</p>

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Table 1.C: Eucalyptus Industrial Park Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
<p>Impacts: The addition of project traffic to this scenario would result in conditions exceeding the established LOS standard at the following intersections:</p> <ul style="list-style-type: none"> • Nason Street/Eucalyptus Avenue (a.m. and p.m. peak hours); • Nason Street/Alessandro Boulevard (a.m. and p.m. peak hours); • Moreno Beach Drive/SR-60 Westbound Ramps (a.m. and p.m. peak hours); • Moreno Beach Drive/SR-60 Eastbound Ramps (a.m. and p.m. peak hours); • Moreno Beach Drive/Eucalyptus Avenue (a.m. and p.m. peak hours); • Moreno Beach Drive/Cottonwood Avenue (a.m. and p.m. peak hours); • Moreno Beach Drive/Alessandro Avenue (a.m. and p.m. peak hours); • Redlands Boulevard/SR-60 Westbound Ramps (a.m. and p.m. peak hours); • Redlands Boulevard/SR-60 Eastbound Ramps (a.m. and p.m. peak hours); • Redlands Boulevard/Fir Avenue-Eucalyptus Avenue (a.m. and p.m. peak hours); • Redlands Boulevard/Encilia Avenue-Eucalyptus Avenue (a.m. and p.m. peak hours); • Redlands Boulevard/Cottonwood Avenue (a.m. and p.m. peak hours); and • Redlands Boulevard/Alessandro Boulevard (a.m. and p.m. peak hours). <p>All of the intersections that are forecast to experience a deficient LOS with the proposed project would also operate</p>	<p>toward the following traffic improvements through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program, or through a fair-share contribution to the City of Moreno Valley as noted below:</p> <ul style="list-style-type: none"> • Nason Street/Eucalyptus Avenue. Add a northbound right-turn lane and a northbound right-turn lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. Implementation of the improvements identified for this intersection in Mitigation Measure 4.11.6.4D would also partially mitigate the significant impact at this intersection. In addition, the project shall pay a fair share (calculated to be 1.6%) toward modification of the traffic signal to provide right-turn overlap phasing for the eastbound and northbound right turns. • Nason Street/Alessandro Boulevard. Add an eastbound through lane and westbound through lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. Implementation of the improvements identified for this intersection in Mitigation Measure 4.11.6.4D would also partially mitigate the significant impact at this intersection. In addition, the project shall pay a fair share (calculated to be 1.35%) toward the addition of an eastbound left-turn lane and modification of the traffic signal to provide overlap phasing for the westbound right-turn lane. • Moreno Beach Drive/SR-60 Westbound Ramps. The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate 	<p>minimum level of service standards would be maintained for the General Plan Build Out with project condition and impacts would be reduced to a less than significant level for all identified intersections. However, improvements to free way facilities are under the authority of Caltrans. Since the City has no control over when and how the improvements will be in place, impacts associated with freeway ramp intersections would remain significant and unavoidable until such improvement is constructed.</p>

Table 1.C: Eucalyptus Industrial Park Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
<p>with a deficient LOS without the proposed project. Although the proposed project does not cause these intersections to operate at an unsatisfactory LOS, it does contribute to the worsening of the intersections' LOS and therefore mitigation would be required to offset the cumulative impact of the project.</p>	<p>the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF fee would mitigate the significant impact at this location.</p> <ul style="list-style-type: none"> • Moreno Beach Drive/SR-60 Eastbound Ramps. The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF fee would mitigate the significant impact at this location. • Moreno Beach Drive/Eucalyptus Avenue. Restripe eastbound approach to dual left-turn lanes and add a northbound through lane, a westbound through lane, and a southbound right-turn lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. Implementation of the improvements identified for this intersection in Mitigation Measure 4.11.6.4D would also partially mitigate the significant impact at this intersection. In addition, the project shall pay a fair share (calculated to be 5.17%) toward modification of the traffic signal to provide right-turn overlap phasing for the southbound right-turn lane. • Moreno Beach Drive/Cottonwood Avenue. Add a southbound through lane, a northbound through lane, an eastbound left-turn lane, an eastbound through lane, a westbound through lane, and a westbound left-turn lane. These improvements are programmed in the City's DIF 	

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Table 1.C: Eucalyptus Industrial Park Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<p>program. Therefore, payment of the DIF fee would mitigate the significant impact at this location.</p> <ul style="list-style-type: none"> • Moreno Beach Drive/Alessandro Boulevard. Add 2 southbound through lanes, 2 northbound through lanes, an eastbound through lane, and a westbound through lane. These improvements are programmed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the significant impact at this location. • Auto Mall Drive/Eucalyptus Avenue. Install a traffic signal. This improvement is programmed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the significant impact at this location. • Redlands Boulevard/SR-60 Westbound Ramps. Install a traffic signal. This improvement is programmed in the City's DIF program and will be installed before building occupancy since it was identified as a direct project impact. Therefore, payment of the DIF fee would mitigate the significant impact at this location. • Redlands Boulevard/SR-60 Eastbound Ramps. The Redlands Boulevard/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF. Therefore, payment of the TUMF fee would mitigate the significant impact at this location. • Redlands Boulevard/Fir Avenue-Eucalyptus Avenue. Install a traffic signal and add a westbound left-turn lane, eastbound through lane, eastbound left-turn lane, a westbound right-turn lane with overlap phasing, and a southbound right-turn lane with overlap phasing. These improvements are programmed in the 	

Table 1.C: Eucalyptus Industrial Park Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<p>City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, add a southbound through lane, a southbound left-turn lane, a northbound through lane, a northbound left-turn lane, and a northbound right-turn lane. These improvements are programmed in the TUMF. Therefore, payment of the TUMF fee would also partially mitigate the significant impact at this location. In addition, the project shall pay a fair share (calculated to be 10.4%) of the cost of adding a southbound left-turn lane.</p> <ul style="list-style-type: none"> • Redlands Boulevard/Eucalyptus Avenue. Install a traffic signal and add a westbound left-turn lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, add a northbound left-turn lane, a northbound through lane, a southbound left-turn lane, and a southbound through lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location. • Redlands Boulevard/Cottonwood Avenue. Add an eastbound through lane and westbound through lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, add a northbound through lane and a southbound through lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location. • Redlands Boulevard/Alessandro Boulevard. Install a traffic signal. This improvement is 	

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Table 1.C: Eucalyptus Industrial Park Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<p>programmed in the City's DIF program; therefore, payment of the DIF fee would partially mitigate the significant impact at this intersection. In addition, add a southbound left-turn lane, a northbound left-turn lane, a westbound left-turn lane, an eastbound left-turn lane, a westbound right-turn lane, a southbound through lane, a westbound through lane, and an eastbound through lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF fees would mitigate the significant impact at this location.</p>	
<p>Impact 4.11.6.4F General Plan Build Out conditions with the Quincy Street and Encilia Avenue connections (Intersection) Traffic and Level of Service Impacts: The addition of project traffic to this scenario would result in conditions exceeding the established LOS standard at the following intersections:</p> <ul style="list-style-type: none"> • Moreno Beach Drive/SR-60 Westbound Ramps (a.m. and p.m. peak hours); • Moreno Beach Drive/SR-60 Eastbound Ramps (a.m. and p.m. peak hours); • Moreno Beach Drive/Eucalyptus Avenue (a.m. and p.m. peak hours); • Redlands Boulevard/SR-60 Westbound Ramps (a.m. and p.m. peak hours); • Redlands Boulevard/SR-60 Eastbound Ramps (a.m. and p.m. peak hours); • Redlands Boulevard/Eucalyptus Avenue-Fir Avenue (a.m. and p.m. peak hours); • Redlands Boulevard/Encilia Avenue-Eucalyptus Avenue (a.m. and p.m. peak hours); • Moreno Beach Drive/Encilia Avenue (a.m. and p.m. peak hours); and 	<p>4.11.6.4F. If the Encilia Avenue and Quincy Street Connection plan is implemented as part of the proposed project, then prior to issuance of building permits, the applicant shall implement the following improvements, in addition to those identified in Mitigation Measure 4.11.6.4.E, either through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program:</p> <ul style="list-style-type: none"> • Moreno Beach Drive/Eucalyptus Avenue. Restripe the southbound shared through/right-turn lane to a southbound through lane. This improvement is programmed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the impacts of the project at this intersection. • Redlands Boulevard/Fir Avenue-Eucalyptus Avenue. Pay the fair share (calculated to be 10.84%) to add a southbound right-turn lane. • Redlands Boulevard/Encilia Avenue-Eucalyptus Avenue. Install a traffic signal and add a westbound left-turn lane. These improvements are programmed in the City's DIF program. In addition, add a northbound left-turn lane, northbound through lane, southbound left- 	<p>With the implementation of the recommended improvements, the minimum level of service standards would be maintained for the General Plan Build Out with the Quincy Street and Encilia Avenue connections with project conditions and impacts would be reduced to a less than significant level for all identified intersections. However, improvements to freeway facilities are under the authority of Caltrans. Since the City has no control over when and how the improvements will be in place, impacts associated with freeway ramp intersections would remain significant and unavoidable until such improvement is constructed.</p>

Table 1.C: Eucalyptus Industrial Park Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
<ul style="list-style-type: none"> Quincy Street/Encilia Avenue-Eucalyptus Avenue (p.m. peak hour). <p>All of the intersections that are forecast to experience a deficient LOS with the proposed project would also operate with a deficient LOS without the proposed project. Although the proposed project does not cause these intersections to operate at an unsatisfactory LOS, it does contribute to the worsening of the intersections' LOS and therefore mitigation would be required to offset the cumulative impact of the project.</p>	<p>turn lane, and a southbound through lane. These improvements are programmed in the TUMF program. Therefore, payment of the DIF and TUMF fees would fully mitigate the impact of the project at this intersection.</p> <ul style="list-style-type: none"> Moreno Beach Drive/Encilia Avenue. Install a traffic signal and add a northbound through lane, southbound left-turn lane, and a southbound through lane. This improvement is programmed in the City's DIF program. Therefore, payment of the DIF fee would mitigate the impacts of the project at this intersection. 	

4.12 UTILITIES AND SERVICE SYSTEMS

Less than Significant Impacts

<p>Solid Waste Facility Facilities: Because solid waste generated represents substantially less than one percent of the surplus daily capacity, and because the payment of fees would offset operation costs associated with solid waste collection and disposal, no significant solid waste impacts would result from the development of the proposed on-site uses and no mitigation would be required.</p>	<p>No mitigation is required</p>	<p>Less than Significant</p>
<p>Solid Waste Regulations: Solid waste disposal needs of the proposed project have been incorporated into local and regional waste management planning. Because the proposed project would be required to coordinate with the waste hauler to develop collection of recyclable materials for the project on a common schedule as set forth in applicable local, regional, and State programs, a less than significant impact related to this issue would occur.</p>	<p>No mitigation is required</p>	<p>Less than Significant</p>
<p>Cumulative Impacts to Solid Waste Services: With the implementation of AB 939 provisions, the amount of solid waste disposed of in landfills by County build out is projected to be 3.3 million tons per year. With planned expansion activities of County landfills and projected growth rates contained with a Landfill System Capacity Study prepared for the County, the Riverside County Integrated Project EIR concluded sufficient landfill capacity would exist</p>	<p>No mitigation is required</p>	<p>Less than Significant</p>

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Table 1.C: Eucalyptus Industrial Park Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
<p>to accommodate future disposal needs through County build out in 2040 (including the City of Moreno Valley). Therefore, build out of the County General Plan would not create demands for solid waste services that exceed the capabilities of the County's waste management system. Consequently, cumulative impacts associated with solid waste within the County would be considered less than significant.</p>		
<p>Construction of Expansion of Water Treatment Facilities: The proposed project would not require the construction of new water treatment facilities or expansion of existing facilities, which could cause significant environmental effects; and impacts related to this issue would be less than significant.</p>	No mitigation is required	Less than Significant
<p>Adequate Water Supply: According to the project's Water Supply Assessment (EMWD 2012), project water consumption represents substantially less than one percent of the consumption yearly capacity. In addition, the EMWD indicates that water to service the project's proposed industrial uses is available, so no significant water supply impacts would occur with implementation of the proposed industrial uses.</p>	No mitigation is required	Less than Significant
<p>Cumulative Water Supply Impacts: The cumulative area for water supply-related issues is the EMWD service area. Increases in population, square footage, and intensity of uses would contribute to increases in the overall regional water demand. Because the EWMD will have water supplies for projected growth through 2030 in wet, dry, and multiple-dry years, cumulative impacts to water supply would be less than significant. Because the proposed project will connect to existing conveyance infrastructure and adequate treatment capacity is available, no cumulatively significant effect on water infrastructure will result from the development of the proposed project.</p>	No mitigation is required	Less than Significant
<p>Wastewater Treatment Requirements: Compliance with condition or permit requirements established by the City, and waste discharge requirements at the MVRWRF and PVRWRF would ensure that discharges into the wastewater</p>	No mitigation is required	Less than Significant

Table 1.C: Eucalyptus Industrial Park Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
<p>treatment facility system from the operation of the proposed project would not exceed applicable Santa Ana Regional Water Quality Control Board wastewater treatment requirements. Therefore, no significant impact related to this issue would occur.</p>		
<p>Wastewater Treatment Capacity: The amount of wastewater generated by the proposed project would be within the existing surplus treatment capacity at the MVRWRF. In addition, planned expansion of the MVRWRF would occur prior to the project's opening year, thus increasing capacity further. Therefore, the proposed project would not require the construction of new wastewater treatment facilities or expansion of existing facilities, which could cause significant environmental effects; impacts associated with wastewater facilities would be less than significant.</p>	No mitigation is required	Less than Significant
<p>Cumulative Impacts to Wastewater Services: Because the combined project wastewater generation of the proposed project represents one percent of the average wastewater surplus capacity, and because there are no projects that would, in combination with the proposed industrial uses, result in a any significant impact related to wastewater treatment or cause significant environmental effects, no significant cumulative impacts associated with wastewater would occur with payment of adequate development impact fees.</p>	No mitigation is required	Less than Significant
Significant Impacts		
<p>Impact 4.12.2.6.1 Storm water Drainage Requirements: Due to the installation of impervious surfaces on the project site, the post-development flows that would be generated on the project site are higher than the pre-development flows. To avoid a significant impact to the existing drainage capacity, the post-development flows coming from the proposed project site are required to not be greater than pre-development flows. This is a significant impact requiring mitigation.</p>	Previously referenced Mitigation Measure 4.7.6.3A	Less than Significant

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Table 1.C: Eucalyptus Industrial Park Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
4.13 GLOBAL CLIMATE CHANGE		
Less than Significant Impacts		
<p>Energy Consumption: The proposed project would utilize approximately 14.6 million kilowatt-hours of electricity per year and 4.5 million cubic feet of natural gas per year. The supply of natural gas and electricity is demand responsive. Because the proposed project would be required to adhere to standards contained in Title 24 in addition to requirements set forth by the respective utility providers, development of the proposed project would not result in the wasteful, inefficient, or unnecessary consumption of energy. Consequently, impacts associated with this issue are considered to be less than significant.</p>	<p>No mitigation is required</p>	<p>Less than Significant</p>
<p>Greenhouse Gas Emissions and Climate Change: Construction of the project would emit approximately 37.5 tons per day of CO₂ equivalent emissions, while occupancy of the project will emit 61,000 tons of CO₂ equivalent emissions per year. The carbon dioxide, methane, and nitrous oxide emissions that would be associated with the proposed project is approximately 0.0024 percent of California's 2004 total emissions for carbon dioxide, methane, and nitrous oxide (492 Tg CO₂ Eq).</p> <p>The proposed project would be consistent with all feasible and applicable strategies to reduce greenhouse gas emissions in California. Therefore, the impact of the proposed project, based on these specifications, would be less than significant. The SCAQMD currently recommends that potential GHG emissions be addressed through energy efficiency.</p>	<p>4.13.6.1A. Prior to the issuance of building permits, the project applicant shall provide evidence to the City of Moreno Valley that building features have been incorporated in building plans as required by Title 24 of the California Code of Regulations. These features include but are not limited to the following:</p> <ul style="list-style-type: none"> • Exterior windows shall utilize window treatments for efficient energy conservation. • Per CALGreen Code requirements, water-efficient fixtures and appliances, including but not limited to low-flow faucets, dual-flush toilets minimizing water consumption by 20 percent from the Building Standards Code baseline water consumption shall be used. • Per CALGreen Code requirements, a Commissioning Plan shall be prepared and all building systems (e.g., heating, ventilation, and air-conditioning [HVAC], irrigation systems, lighting, and water heating) shall be commissioned by the Commissioning Authority. • Per CALGreen Code, restrict watering methods (e.g., prohibit systems that apply water to non-vegetated surfaces) and control runoff. 	<p>Less than Significant with Mitigation</p> <p>Since the project is consistent with the strategies to reduce California's emissions to the levels proposed by Executive Order S-3-05, the project's incremental contribution to climate change at the project level is less than significant.</p>

Table 1.C: Eucalyptus Industrial Park Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<p>4.13.6.1B. Prior to the issuance of building permits, the project applicant shall provide evidence to the City of Moreno Valley that the following measures have been incorporated into the design and construction of the project:</p> <ul style="list-style-type: none"> • Use of locally produced and/or manufactured building materials for at least 10 percent of the construction materials used for the project. • Use of “Green Building Materials,” such as those materials that are resource efficient, and recycled and manufactured in an environmentally friendly way, for at least 10 percent of the project. • Limit unnecessary idling of construction equipment. A reduction in equipment idling would reduce fuel consumption, and therefore, GHG emissions. • Maximize the use of electricity from the power grid by replacing diesel- or gasoline-powered equipment. This would reduce GHG emissions because electricity can be produced more efficiently at centralized power plants. • Design the project building to exceed the California Building Code’s (CBC) Title 24 energy standard, including, but not limited to, any combination of the following: <ul style="list-style-type: none"> ○ Increase insulation such that heat transfer and thermal bridging is minimized. ○ Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption. ○ Incorporate ENERGY STAR or better rated windows, space heating and cooling equipment, light fixtures, appliances, or 	

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Table 1.C: Eucalyptus Industrial Park Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<p>other applicable electrical equipment.</p> <ul style="list-style-type: none"> • Provide a landscape and development plan for the project that takes advantage of shade, prevailing winds, and landscaping. • Install efficient lighting and lighting control systems. Use daylight as an integral part of the lighting systems in buildings. • Install light-colored "cool" roof and cool pavements. • Install energy-efficient heating and cooling systems, appliances and equipment, and control systems. • Install solar or light-emitting diodes (LEDs) for outdoor lighting. <p>4.13.6.1C. Prior to the issuance of occupancy permits, the project applicant shall provide evidence to the City of Moreno Valley that the following measures have been incorporated into the operation of the project:</p> <ul style="list-style-type: none"> • The project applicant shall use less than 3,900 Global Warming Potential (GWP) hydrofluorocarbon (HFC) refrigerants or natural refrigerants (ammonia, propane, carbon dioxide [CO₂]) for refrigeration and fire suppression equipment. • Provide vegetative or man-made exterior wall shading devices for east-, south-, and west-facing walls with windows. • Devise a comprehensive water conservation strategy appropriate for the project and its location. The strategy may include the following, plus other innovative measures that may be appropriate: 	

Table 1.C: Eucalyptus Industrial Park Environmental Summary

Issues/Impacts	Mitigation Measures	Level of Significance after Mitigation
	<ul style="list-style-type: none"> ○ Install drought-tolerant plants for landscaping. ○ Use reclaimed water for landscape irrigation within the project. Install the infrastructure to deliver and use reclaimed water. ○ Install water-efficient irrigation systems, such as weather-based and soil-moisture-based irrigation controllers and sensors for landscaping according to the California Department of Water Resources Model Efficient Landscape Ordinance. <ul style="list-style-type: none"> ● Provide employee education about reducing waste and available recycling services. 	
<p>Cumulative Greenhouse Gas Emissions and Climate Change: The proposed project would contribute 0.012 Tg CO₂ Eq, which is 0.0024 percent of California's 2004 total emissions for carbon dioxide, methane, and nitrous oxide (492 Tg CO₂ Eq). Without mitigation, the project's emissions of greenhouse gases may be considered cumulatively considerable, within the meaning of <i>CEQA Guidelines</i> Sections 15065(a)(3) and 15130.</p>	<p>Implementation of Mitigation Measures 4.13.6.1A through 4.13.6.1C are consistent with the CARB's Scoping Plan measures and will effectively reduce the potential impact of the project's greenhouse gases relative to global (cumulative) climate change.</p>	<p>Less than Significant with Mitigation</p> <p>Given the findings of AB 32 and the requirements of CEQA, the Lead Agency must determine whether a project will or will not have a cumulatively considerable contribution. Due to the lack of guidance for determining the significance of cumulative impacts to climate change from projects, and out of an overabundance of caution, the project has been evaluated to determine whether emissions of greenhouse gases have been minimized to the extent feasible with current technology and measures. Based on the threshold of the project's consistency with these measures contained in Executive Order S-3-05, the project has a less than significant impact as it does comply with these measures. Inherently, the issue of climate change is cumulative in nature. Therefore, although the project would contribute some GHG emissions to existing conditions, its contribution to climate change is cumulatively less than significant.</p>

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Table 1.D: Air Quality Measure 4.3.6.2M Best Available Control Measures for Fugitive Dust (Apply to All Construction Activities)

Source Category	Control Measures	Guidance
Backfilling	<ul style="list-style-type: none"> Stabilize backfill material when not actively handling; and Stabilize backfill material during handling; and Stabilize soil at completion of activity. 	<ul style="list-style-type: none"> Mix backfill soil with water prior to moving; and Dedicate water truck or high capacity hose to backfilling equipment; and Empty loader bucket slowly so that no dust plumes are generated; and Minimize drop height from loader bucket.
Clearing and grubbing	<ul style="list-style-type: none"> Maintain stability of soil through pre-watering of site prior to clearing and grubbing; and Stabilize soil during clearing and grubbing activities; and Stabilize soil immediately after clearing and grubbing activities. 	<ul style="list-style-type: none"> Maintain live perennial vegetation where possible; and Apply water in sufficient quantity to prevent generation of dust plumes.
Clearing forms	<ul style="list-style-type: none"> Use water spray to clear forms; or Use sweeping and water spray to clear forms; or Use vacuum system to clear forms. 	<ul style="list-style-type: none"> Use of high pressure air to clear forms may cause exceedance of Rule requirements.
Crushing	<ul style="list-style-type: none"> Stabilize surface soils prior to operation of support equipment; and Stabilize material after crushing. 	<ul style="list-style-type: none"> Follow permit conditions for crushing equipment; and Pre-water material prior to loading into crusher; and Monitor crusher emissions opacity; and Apply water to crushed material to prevent dust plumes.
Cut and fill	<ul style="list-style-type: none"> Pre-water soils prior to cut and fill activities; and Stabilize soil during and after cut and fill activities. 	<ul style="list-style-type: none"> For large sites, pre-water with sprinklers or water trucks and allow time for penetration; and Use water trucks/pulls to water soils to depth of cut prior to subsequent cuts.
Demolition – mechanical/manual	<ul style="list-style-type: none"> Stabilize wind erodible surfaces to reduce dust; and Stabilize surface soil where support equipment and vehicles will operate; and Stabilize loose soil and demolition debris; and Comply with AQMD Rule 1403. 	<ul style="list-style-type: none"> Apply water in sufficient quantities to prevent the generation of visible dust plumes.
Disturbed soil	<ul style="list-style-type: none"> Stabilize disturbed soil throughout the construction site; and Stabilize disturbed soil between structures. 	<ul style="list-style-type: none"> Limit vehicular traffic and disturbances on soils where possible; and If interior block walls are planned, install as early as possible; and Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes.

Table 1.D: Air Quality Measure 4.3.6.2M Best Available Control Measures for Fugitive Dust (Apply to All Construction Activities)

Source Category	Control Measures	Guidance
Earthmoving activities	<ul style="list-style-type: none"> • Pre-apply water to depth of proposed cuts; and • Re-apply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 100 ft in any direction; and • Stabilize soils once earth-moving activities are complete. 	<ul style="list-style-type: none"> • Grade each Project phase separately, timed to coincide with construction phase; and • Upwind fencing can prevent material movement on site; and • Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes.
Importing/exporting of bulk materials	<ul style="list-style-type: none"> • Stabilize material while loading to reduce fugitive dust emissions; and • Maintain at least 6 inches of freeboard on haul vehicles; and • Stabilize material while transporting to reduce fugitive dust emissions; and • Stabilize material while unloading to reduce fugitive dust emissions; and • Comply with CVC Section 23114. 	<ul style="list-style-type: none"> • Use tarps or other suitable enclosures on haul trucks; and • Check belly-dump truck seals regularly and remove any trapped rocks to prevent spillage; and • Comply with track-out prevention/mitigation requirements; and • Provide water while loading and unloading to reduce visible dust plumes.
Landscaping	<ul style="list-style-type: none"> • Stabilize soils, materials, slopes 	<ul style="list-style-type: none"> • Apply water to materials to stabilize; and • Maintain materials in a crusted condition; and • Maintain effective cover over materials; and • Stabilize sloping surfaces using soil binders until vegetation or ground cover can effectively stabilize the slopes; and Hydroseed prior to rain season.
Road shoulder maintenance	<ul style="list-style-type: none"> • Apply water to unpaved shoulders prior to clearing; and • Apply chemical dust suppressants and/or washed gravel to maintain a stabilized surface after completing road shoulder maintenance. 	<ul style="list-style-type: none"> • Installation of curbing and/or paving of road shoulders can reduce recurring maintenance costs; and • Use of chemical dust suppressants can inhibit vegetation growth and reduce future road shoulder maintenance costs.
Screening	<ul style="list-style-type: none"> • Pre-water material prior to screening; and • Limit fugitive dust emissions to opacity and plume length standards; and • Stabilize material immediately after screening. 	<ul style="list-style-type: none"> • Dedicate water truck or high capacity hose to screening operation; and • Drop material through the screen slowly and minimize drop height; and • Install wind barrier with a porosity of no more than 50 percent upwind of screen to the height of the drop point.

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Table 1.D: Air Quality Measure 4.3.6.2M Best Available Control Measures for Fugitive Dust (Apply to All Construction Activities)

Source Category	Control Measures	Guidance
Staging areas	<ul style="list-style-type: none"> Stabilize staging areas during use; and Stabilize staging area soils at project completion. 	<ul style="list-style-type: none"> Limit size of staging area; and Limit vehicle speeds to 15 miles per hour; and Limit number and size of staging area entrances/exits.
Stockpiles/bulk material handling	<ul style="list-style-type: none"> Stabilize stock piled materials, and stockpiles within 100 yards of off-site occupied buildings must not be greater than 8 ft in height; or must have a road bladed to the top to allow water truck access or must have a non-operational water irrigation system that is capable of complete stockpile coverage. 	<ul style="list-style-type: none"> Add or remove material from the downwind portion of the storage pile; and Maintain storage piles to avoid steep sides or faces.
Traffic areas for construction activities	<ul style="list-style-type: none"> Stabilize all off-road traffic and parking areas; and Stabilize all haul routes; and Direct construction traffic over established haul routes. 	<ul style="list-style-type: none"> Apply gravel/paving to all haul routes as soon as possible to all future roadway areas; and Barriers can be used to ensure vehicles are only used on established parking areas/haul routes.
Trenching	<ul style="list-style-type: none"> Stabilize surface soils where trencher or excavator and support equipment will operate; and Stabilize soils at the completion of trenching activities. 	<ul style="list-style-type: none"> Pre-watering of soils prior to trenching is an effective preventive measure. For deep trenching activities, pre-trench to 18 inches, soak soils via the pre-trench and resuming trenching; and Washing mud and soils from equipment at the conclusion of trenching activities can prevent crusts and drying of soil on equipment.
Truck loading	<ul style="list-style-type: none"> Pre-water material prior to loading; and Ensure that freeboard exceeds 6 inches (CVC 23114). 	<ul style="list-style-type: none"> Empty loader bucket such that no visible dust plumes are created; and Ensure that the loader bucket is close to the truck to minimize drop height while loading.
Turf overseeding	<ul style="list-style-type: none"> Apply sufficient water immediately prior to conducting turf vacuuming activities to meet opacity and plume length standards; and Cover haul vehicles prior to exiting the site. 	<ul style="list-style-type: none"> Haul waste material immediately off site.
Unpaved roads/parking lots	<ul style="list-style-type: none"> Stabilize soils to meet the applicable performance standards; and Limit vehicular travel to established unpaved roads (haul routes) and unpaved parking lots. 	<ul style="list-style-type: none"> Restricting vehicular access to established unpaved travel paths and parking lots can reduce stabilization requirements.
Vacant land	<ul style="list-style-type: none"> In instances where vacant lots are 0.10 acre or larger and have a cumulative area of 500 sf or more that are driven over and/or used by motor vehicles and/or off-road vehicles, prevent motor vehicle and/or off-road vehicle trespassing, parking and/or access by installing barriers, curbs, fences, gates, posts, signs, shrubs, trees, or other effective control measures. 	

ac = acre(s) AQMD = Air Quality Management District CVC = California Vehicle Code ft = feet sf = square feet

Table 1.E: Air Quality Measure 4.3.6.2M Contingency Control Measures for Fugitive Dust (During High Winds in Excess of 25 MPH)

Fugitive Dust Source Category	Control Measures
Earthmoving	<ul style="list-style-type: none"> • Cease all active operations; or • Apply water to soil not more than 15 minutes prior to moving such soil.
Disturbed surface areas	<ul style="list-style-type: none"> • On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than 4 consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than $1/20$ of the concentration required to maintain a stabilized surface for a period of 6 months; or • Apply chemical stabilizers prior to wind event; or • Apply water to all unstabilized disturbed areas 3 times per day. If there is any evidence of wind driven fugitive dust, watering frequency is increased to a minimum of 4 times per day; or • Establish a vegetative ground cover within 21 days after active operations have ceased. Ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter; or • Utilize any combination of these control actions such that, in total, these actions apply to all disturbed surface areas.
Unpaved roads	<ul style="list-style-type: none"> • Apply chemical stabilizers prior to wind event; or • Apply water 2 times per hour during active operation; or • Stop all vehicular traffic.
Open storage piles	<ul style="list-style-type: none"> • Apply water 2 times per hour; or • Install temporary coverings.
Paved road track-out	<ul style="list-style-type: none"> • Cover all haul vehicles; or • Comply with the vehicle freeboard requirements of Section 23114 of the CVC for both public and private roads.
All categories	<ul style="list-style-type: none"> • Executive Officer and the USEPA as equivalent to the methods specified in this table may be used.

CVC = California Vehicle Code
USEPA = United States Environmental Protection Agency

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2.0 INTRODUCTION AND PURPOSE

This section of the Draft EIR describes the purpose and type of EIR, the intended uses of the EIR, documents incorporated by reference, and the process and procedures governing the preparation of the environmental document. Included in this section is a discussion of issues determined to be less than significant. This section also identifies topic areas of discussion and analysis in the Draft EIR and provides an outline of the document format.

2.1 DOCUMENT FORMAT

To assist the reader's review of the document, the following describes the format of this EIR.

Section 1.0 Executive Summary provides a summary of the EIR document and (in Table 1.C) the proposed project impacts, proposed mitigation measures, and the level of significance of each impact following the application of identified mitigation measures.

Section 2.0 Introduction and Purpose provides a discussion of the EIR's purpose, focus, legal requirements, and an outline of the document's format and content.

Section 3.0 Project Description provides a detailed description of the proposed project, discretionary actions required to implement the project, and objectives of the proposed project.

Section 4.0 Existing Setting, Impacts, and Mitigation Measures evaluates the impacts associated with the proposed project. This section is organized by issue area and follows the following framework:

- *Existing Setting.* Information in the existing setting contains a discussion of the local and regional environment conditions (environmental and man-made) in existence at the time the NOP was circulated for public review. Existing setting information provides the reader with the "baseline" from which future impacts are analyzed, and provides a standard against which to measure these impacts.
- *Existing Policies and Regulations.* Regulatory requirements and policies (Federal, State, and local) applicable to the issue area are summarized.
- *Methodology.* Identification of methods and techniques utilized for analysis.
- *Thresholds of Significance.* Determinations regarding the significance of potential impacts resulting from implementation of the proposed project are provided. These thresholds represent the criteria used in this EIR to determine whether identified impacts are significant.
- *Impacts.* Potential impacts are identified based on implementation of the proposed project. An analysis of potential impacts of the proposed project is presented in this section. This discussion focuses on the impacts of implementation of the proposed project, and includes potential short-term/long-term and direct/indirect project impacts, and consistency with applicable planning documents or regulations.
 - *Mitigation Measures.* The measures proposed to mitigate any potential impacts of the proposed project.
 - *Level of Significance after Mitigation.* Discussion that provides a conclusion as to whether implementation of the proposed project will reduce the project-related and cumulative impacts to a level that is less than significant.

- o *Cumulative Impacts.* This discussion focuses on the potential environmental effect of the proposed project combined with the effects of reasonably foreseeable development within the project study area.

Section 5.0 Additional Topics Required by CEQA contains discussions of additional topics required by CEQA, including unavoidable effects of the proposed project and significant irreversible environmental changes.

Section 6.0 Alternatives contains discussion of alternatives to development of the proposed project. As allowed by CEQA, the impacts of these alternatives are evaluated at a more general level than the analyses of the proposed project that is contained in Section 4.0. This section also evaluates the proposed effects of the No Project Alternative and identifies the environmentally superior alternative.

Sections 7.0-9.0 contain listings of organizations and persons consulted in preparation of the EIR, references cited, a list of the EIR preparers, and acronyms used in the document.

The *Appendices* contain a copy of the NOP, NOP mailing list, NOP comment letters and responses, public scoping meeting information, technical reports, and other relevant correspondence received during the course of the analysis of the proposed project.

2.2 PURPOSE OF THE DRAFT ENVIRONMENTAL IMPACT REPORT

Approval of the proposed project requires the following discretionary actions by the City:

- Approval of a General Plan Amendment;
- Approval of a Zone Change;
- Approval of an amendment to the City's Master Plan of Trails;
- Approval of a Master Plot Plan application and five related Plot Plan applications;
- Approval of a Tentative Parcel Map; and
- Certification of the EIR.

Because of these discretionary actions to be considered by the City, CEQA requires that the proposed project be reviewed to determine the environmental effects that would result if the project is approved and implemented. The City is the Lead Agency and has the responsibility for preparing and certifying this EIR prior to consideration of the proposed project. The City has the authority to make decisions regarding discretionary actions relating to implementation of the proposed project. Ministerial actions include approval of a Preliminary Water Quality Management Plan (P-WQMP) and Final WQMP (F-WQMP), Preliminary and Final Drainage Studies, Grading Plans, and Improvement Plans.

The objective of the Draft EIR is to inform City decision-makers, representatives of other affected/responsible agencies, the public, and other interested parties of the potential environmental consequences that may be associated with the approval and implementation of the proposed project. The Draft EIR also examines various alternatives to the proposed project and describes potential impacts relating to a variety of environmental issues and methods in which these impacts would be mitigated or avoided. This Draft EIR has been prepared in accordance with CEQA, California Public Resources Code Section 21000 *et seq.*; the *Guidelines for California Environmental Quality Act* (California Code of Regulations, Title 14, Chapter 3); and the rules, regulations, and procedures for implementing CEQA as adopted by the City.

2.2.1 Purpose of the California Environmental Quality Act

According to Section 15002 of *CEQA Guidelines*, the basic purposes of CEQA are to:

- Inform government decision-makers and the public about the potential significant environmental effects of proposed activities;
- Identify ways that environmental damage can be avoided or significantly reduced;
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governing agency finds the changes to be feasible; and
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

2.2.2 Intended Use of This EIR

The City, as the Lead Agency, has the responsibility for reviewing and approving the project-related actions. Under contract to the City and as permitted under *CEQA Guidelines* (§ 15084[d-e]), LSA Associates, Inc. (LSA), an independent environmental consulting firm, has prepared the Draft EIR. Prior to certification, this EIR must be subjected to the City's independent review and analysis. The information and conclusions must represent the City's independent judgment. This Draft EIR has been prepared utilizing information from City planning and environmental documents, applicant-provided technical studies; and other publicly available data. This Draft EIR is intended to provide the City with relevant information to use in considering approval of the proposed project by the City, and will serve as an informational document to assess the environmental effects of the proposed project and mitigation measures recommended to avoid or minimize identified significant impacts. As a public disclosure document, the Draft EIR has been made available to public agencies and the public for review prior to the City's consideration of the discretionary actions required for project approval.

2.2.3 Incorporated Documents

CEQA¹ permits the incorporation by reference of all or portions of other documents that are generally available to the public. Any document incorporated by reference shall be made available to the public for inspection at a public place or public building and requires that the EIR state where the incorporated documents will be made available for public inspection. The following documents have been incorporated by reference:

- *City of Moreno Valley General Plan*, adopted June 11, 2006.
- *City of Moreno Valley General Plan Final Environmental Impact Report – SCH#: 2000091075*, July 2006.

Information from these documents relates to the condition of the natural and built environment; the type and level of services provided; City objectives, goals, and policies; thresholds for the evaluation of potential environmental impacts; and mitigation measures incorporated into the analysis contained in this Draft EIR.

¹ CEQA Section 15150.

All of the project-related documents are available for review at the following locations:

City of Moreno Valley

Community Development Department
Planning Division
14177 Frederick Street
Moreno Valley, California 92553
(951) 413-3206
Hours:
Monday through Thursday: 7:30 a.m. to 5:30 p.m.
(closed Fridays)

Moreno Valley Main Library

25480 Alessandro Boulevard
Moreno Valley, California 92553
(951) 413-3880
Hours:
Monday–Thursday: 9:00 a.m. to 8:00 p.m.
Saturday: 9:00 a.m. to 6:00 p.m.
Friday and Sunday: closed

The Draft EIR and technical studies is available online at the City's website: <http://www.moval.org/>.

2.2.4 Technical Reports

Various technical reports have been prepared to assess specific issues that may result from the construction and operation of the proposed project. As relevant, information from the selected technical reports has been incorporated into the Draft EIR. The technical reports and other information included as appendices to this EIR include the following:

- Appendix B: *Air Quality Impact Analysis*, LSA Associates, Inc., September 2011.
- Appendix C: 3 Biological Resource Reports:
 - *MSHCP Consistency Analysis and Burrowing Owl Habitat Assessment and Focused Survey for the Eucalyptus Industrial Project*, Jones & Stokes, original July 2011, updated January 2012.
 - *Jurisdictional Delineation Report for the ProLogis Eucalyptus Project Site*, Jones & Stokes, original July 2011, updated January 2012.
 - *Determination of Biologically Equivalent or Superior Preservation Report*, Jones & Stokes, original July 2011, updated January 2012.
- Appendix D: *Eucalyptus Industrial Park Cultural Resources Assessment*, LSA Associates, Inc., August 2011.
- Appendix E: *Eucalyptus Industrial Park Paleontological Resources Assessment*, LSA Associates, Inc., August 2011.
- Appendix F: 3 Separate Environmental Evaluations of the Site or portions thereof:
 - *Phase I Preliminary Environmental Site Assessment prepared for APN 477-120-001 and 477-120-006*, RM Environmental, Inc., October 20, 2003.
 - *Phase I Preliminary Environmental Site Assessment prepared for APN 477-120-007, 008, 014, 015*, RM Environmental, Inc., November 25, 2003.
 - *Report for Removal of Abandoned 13,400 Gallon Diesel Underground Storage Tank, APN 477-120-001*, RM Environmental, Inc., January 28, 2004.
- Appendix G: 2 Separate Environmental Evaluations of the Site:
 - *Preliminary Hydrology Calculations for Moreno Valley Eucalyptus*, Thienes Engineering, July 2011.
 - *Preliminary Water Quality Management Plan for Moreno Valley-Eucalyptus*, Thienes Engineering, Inc., approved 2009.
- Appendix H: *Noise Study*, LSA Associates, Inc., August 2011.

- Appendix I: *Traffic Impact Analysis*, L SA Associates, Inc., original August 2011, updated January 2012.
- Appendix J: *Water Supply Assessment*, Eastern Municipal Water District, original June 4, 2008, updated February 23, 2012.

In addition to these technical studies, this Draft EIR includes the Initial Study, NOP, Distribution List, and public responses to the NOP, which are included as Appendix A.

2.3 PUBLIC REVIEW OF THE DRAFT ENVIRONMENTAL IMPACT REPORT

This Draft EIR will be distributed to responsible and trustee agencies, other affected agencies, and interested parties. Additionally, in accordance with Public Resources Code 21092(b)(3), the Draft EIR will be provided to all parties who have previously requested copies. Notice of Completion and Availability of the Draft EIR will be distributed as required by CEQA. During the 45-day public review period, the Draft EIR and technical appendices will be made available for review.

Written comments regarding this Draft EIR should be addressed to:

Jeff Bradshaw, Associate Planner
City of Moreno Valley, Planning Division
14177 Frederick Street • Post Office Box 88005
Moreno Valley, California 92553
Phone: (951) 413-3224 • Email: jeffreyb@moval.org

After the 45-day public review period, written responses to all significant environmental issues raised will be prepared. These responses will be available for review for a minimum of 10 days prior to the public hearing before the City Council, at which time the certification of the Final EIR will be considered. The Final EIR, which includes the Draft EIR, the public comments and responses to the Draft EIR, Mitigation Monitoring and Reporting Plan, and findings will be included as part of the environmental record for consideration by the City decision-makers.

2.3.1 Initial Study and Notice of Preparation

The City formally initiated the environmental process with circulation of an NOP, which it sent to responsible agencies and interested individuals for a 30-day review period from February 4 to March 4, 2008. At the close of the public review period, the City had received 22 letters on the NOP. An additional three NOP letters were received after the close of the 30-day review period. Summaries of the comments received during the NOP comment period have been identified in Section 1.3.1 of this Draft EIR. The NOP and the responses to the NOP from agencies and individuals are included in Appendix A of this EIR. Since the proposed project and project site conditions have not changed appreciably since 2008, the NOP will not be recirculated.

2.3.2 Public Scoping Meeting

A public scoping meeting was held to solicit public comment as to the scope of the EIR. This meeting was held on February 13, 2008, at 6:00 p.m. at the City of Moreno Valley City Council Chambers. Since the proposed project and project site conditions have not changed appreciably since 2008, an additional scoping meeting will not be held.

2.4 POTENTIAL SIGNIFICANT IMPACTS OF THE PROPOSED PROJECT DISCUSSED IN THE EIR

As identified in the NOP, this Draft EIR includes an analysis of potential environmental effects associated with the following issues:

- Aesthetics
- Agricultural and Forest Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use
- Noise
- Population and Housing
- Transportation
- Utilities and Service Systems
- Greenhouse Gases and Global Climate Change

2.5 EFFECTS FOUND NOT TO BE SIGNIFICANT

As required under CEQA (§ 15128), an EIR is to contain a statement supporting the Lead Agency's determination that some of the possible effects of a project are not significant and, therefore, are not discussed in detail in the EIR. The City has determined that that potential impacts related to the following issue areas are less than significant.

2.5.1 Geology and Soils

The proposed project site is not located within the boundaries of an earthquake fault zone for fault rupture hazard as defined by the Alquist-Priolo Earthquake Fault Zoning Act. The nearest fault is the San Jacinto Fault Zone,¹ located approximately 1.7 miles from the project site. The maximum event on the San Jacinto Fault zone affecting the project site would measure magnitude 7.2.² The maximum credible earthquake (MCE) is generally less than or equal to design levels as defined by the Uniform Building Code (UBC). The California Building Code (California Code of Regulations, Title 24) established engineering standards appropriate for the seismic zone in which development may occur. Adherence to the Uniform Building Code (UBC) and the California Building Code standards would ensure potential ground shaking impacts are reduced to a less than significant level and therefore no mitigation is required.

2.5.2 Mineral Resources

The project site is not located within an area identified by the California Department of Mines and Geology (CDMG) as having substantial mineral resources. Consequently, impacts to State wide or regional mineral resources would not occur. Additionally, there are no identified Mineral Resource Zones (MRZ) located within the General Plan Study Area.³ The project site has been historically and is currently being utilized for agricultural production and does not harbor any known mineral resource. Implementation of the proposed project would not result in the loss of availability of a known mineral resource. Therefore, no impact associated with mineral resources would occur.

2.5.3 Public Services

2.5.3.1 Fire Protection

The fire station nearest the project site is Station No. 58, located at 28 040 Eucalyptus Avenue,, adjacent to and northwest of the proposed project site. The proximity of Station No. 58 to the project

¹ California Geological Survey, 2002 and 2005.

² Table 5.6-1 Potential Earthquake Scenarios for Moreno Valley, Moreno Valley General Plan Final Program EIR, July 2006.

³ Section 5.14 Mineral Resources, City of Moreno Valley General Plan EIR, July 2006.

site is sufficient to meet the City's General Plan performance standard requiring a response time of five minutes or less.¹ As with any new development, the proposed project would increase the need for fire protection services within the City. However, the proposed project would be required to adhere to all standards and conditions required by the City and the Riverside County Fire Department including, but not limited to, restrictions on project design and the imposition of construction standards. Adherence to the set standards would reduce potential impacts related to the provision of fire protection services and the need for the construction of new facilities that would result in adverse physical impacts to a less than significant level and no mitigation is required.

2.5.3.2 Police Protection

The Moreno Valley Police Department (MVPD) operates out of the Central Police Station, located at 22850 Calle San Juan de Los Lagos. As with any new development, the proposed project would increase the need for police protection services within the City. The proposed project would be required to adhere to all standards and conditions required by the City and the MVPD, including the payment of fees, and result in a less than significant impact associated with police services.

2.5.3.3 Schools

The proposed project site is located within the Moreno Valley Unified School District (MVUSD). The nearest elementary school is Moreno Elementary located at 26700 Cottonwood Avenue, approximately 1.5 miles west of the project site. The nearest middle school is Mountain View Middle School located at 13130 Morrison Street, approximately 1.6 of a miles west of the project site. The nearest high school is Valley View High School located at 13135 Nason Street, approximately 1.2 miles west of the project site. The proposed project does not include the construction of residential dwelling units. Future proposed school sites in vicinity of the project and potential impacts associated with these future sites are discussed in respective technical sections of this EIR. During the NOP process, the MVUSD identified several potential future school sites in the vicinity of the project site, but subsequently moved or eliminated the sites proximate to the project site.

Per California Government Code (§ 65995[h]), "The payment or satisfaction of a fee, charge, or other requirement levied or imposed ... are hereby deemed to be full and complete mitigation of the impacts ... on the provision of adequate school facilities." Upon payment of required fees, a less than significant impact to school services and/or facilities would occur.

2.5.3.4 Parks

The proposed project does not include a residential component and would not contribute to a direct increase in population. As there is no direct increase in population resulting from the proposed project, no new significant demand on existing park facilities would occur. Therefore, impacts associated with an increased use of existing park facilities are considered to be less than significant.

2.5.3.5 Other Public Facilities

The proposed project does not include a residential component and would not contribute to a direct increase in population. As there is no direct increase in population resulting from the proposed project, no new significant demand on library or medical facilities would occur. In the absence of a significant impact, the construction of new facilities that would result in a significant environmental impact would not occur. All on-site access, parking areas, utilities, and structures would be maintained by the project applicant or operator of the proposed facility. Maintenance of public facilities and infrastructure would not be significantly altered by the development of the proposed project. The applicant would pay all developmental fees required by the City of Moreno Valley.

¹ Section 5.13 Public Services and Utilities, The City of Moreno Valley General Plan Final EIR, July 2006.

Additionally, as with any commercial or industrial operation, the proposed project would be required to provide revenue to the City in the form of fees, property taxes, etc. It is anticipated that the payment of such monies would offset any increased maintenance burden associated with the development of project site; therefore, potential impacts associated with this issue are anticipated to be less than significant.

2.5.4 Recreation

The proposed project would develop a multi-use trail along the east side of Building #6 on the west side of Quincy Channel. This multi-use trail would continue over Quincy Channel on the north side of Eucalyptus Avenue enabling the proposed trail to connect to the Fir Avenue/future Eucalyptus Avenue trail segment. The City's Master Plan of Trails references a proposed trail segment and freeway crossing at proposed Quincy Street. However, since the adoption of the City's Master Plan of Trails, the adoption of an updated General Plan has occurred. The updated General Plan Circulation Element no longer identifies a freeway crossing and therefore a proposed trail segment at this location may not be needed. Construction of the trail would be required to adhere to the City's standards, which include California Code of Regulations Title 24 and the City's Park and Community Services Specification Guide. Adherence to these standards would result in a less than significant impact associated with the construction of the multi-use trail.

2.5.5 Forest Resources

Since the NOP and Initial Study were circulated in 2008, the State added Forest Resources to the Agricultural Resources category of the Initial Study Checklist form. However, the proposed project site does not contain any forest resources, so this issue does not need to be evaluated in the EIR.

2.6 MITIGATION MONITORING AND REPORTING PROGRAM

A Mitigation Monitoring and Reporting Program (MMRP) will be prepared to comply with the requirements of State law (Public Resources Code, Section 21081.6). State law requires the adoption of an MMRP when mitigation measures are required to avoid significant impacts or reduce impacts to a less than significant level. The MMRP is intended to ensure compliance with mitigation measures during implementation of the proposed project. The MMRP will be adopted by the City Council concurrent with certification of the Final EIR for the proposed project.

3.0 PROJECT DESCRIPTION

The project description is provided in this section of the EIR in accordance with *CEQA Guidelines* Section 15124. It provides the location and boundaries and environmental setting of the project, the objectives of the project, and a description of the project, which is used as the basis for analysis in Section 4.0 of the EIR.

3.1 GEOGRAPHICAL SETTING

The proposed project site is located within Section 2, Township 3 South, and Range 3 West of the U.S. Geological Survey (USGS) 7.5-minute *Sunnymead, California* quadrangle in the City of Moreno Valley in Riverside County, California. The project site is located within the Perris Block area of the Peninsular Ranges geomorphic province of southern California.¹ The Perris Block is bounded on the northeast by the San Jacinto Fault, on the north by the Cucamonga Fault and the San Gabriel Mountains, and on the southwest by the Elsinore Fault and the Santa Ana Mountains. The proposed project site is located in the City of Moreno Valley, south of State Route 60 (SR-60). The Cities of Riverside and Perris border Moreno Valley to the northwest and south, respectively. The County of Riverside borders the City of Moreno Valley to the north, northeast, and southeast.

3.2 PROJECT LOCATION

The proposed project site is located in the eastern portion of the City of Moreno Valley. The 122.8-acre project site is generally located south of and adjacent to SR-60, east of Moreno Valley Auto Mall, and adjacent to and west of the Quincy Channel. The project site consists of ten parcels (Assessor's Parcel Numbers [APNs] 488-330-011, 488-330-012, 488-330-013, 488-330-017, 488-330-018, 488-330-019, 488-330-022, 488-330-023, 488-330-024, and 488-330-025). Previously referenced Figure 1.1 illustrates the location of the proposed project.

3.3 EXISTING SITE CONDITIONS

The proposed project site is bounded by SR-60 on the north, the Moreno Valley Auto Mall on the northwest, residential uses to the southeast, and vacant land to the west, east and south. The site has two citrus groves in the northeastern and northwestern portions of the site, while the central and southern portions are vacant and support mainly weedy vegetation. Elevations on site range from 1,795 feet above mean sea level (amsl) near the northeast corner of the site down to 1,720 feet amsl at the southeast corner of the site. There are three small natural drainage features on site, two ephemeral channels in the southwestern portion of the site and the larger Quincy Channel along the eastern edge of the property. Some minor amount of refuse is present in the southwest and southeast corners of the site from unauthorized dumping. The site is visible from the freeway and surrounding properties to the east, west, and south. The project area enjoys views of nearby hills to the southwest and northeast.

Land adjacent to the project site includes vacant land east and south of the proposed project site, SR-60 to the north, and the Moreno Valley Auto Mall and the City of Moreno Valley Fire Station No. 58 northwest of the project site. Existing single-family residential uses are located approximately 50 feet southeast of the southeastern corner of the project site. Table 3.A summarizes on-site and adjacent land uses.

¹ Section 4.0 Environmental Setting, *Moreno Valley General Plan Final Program EIR*, City of Moreno Valley, July 2006.

Table 3.A: On-site and Adjacent Land Uses and Land Use Designations

Location	Current Land Use	General Plan Land Use Designation	Zoning
On site	Undeveloped on south, citrus groves on north	Business Park/Light Industrial and Residential R15, R5, and R2	BP; BPX, R15; R5 and RA-2
North	State Route 60 and residential uses farther to the north (north of the freeway)	Residential R2 (north of the freeway)	R2 and RA-2 (north of the freeway)
South	Undeveloped	Residential R2, Hillside Residential HR	RA-2 and HR
East	Former agriculture (currently fallow)	Business Park/Light Industrial and Residential R2	BP and RA-2
West	Moreno Valley Auto Mall, City of Moreno Valley Fire Station 58, and vacant land	Commercial	SP209-CC

Notes: BP = Business Park; BPX = Business Park Mixed Use; SP209-CC = Specific Plan Area 209-Community Commercial; HR = Hillside Residential; R15 = Residential R15 District; R5 = Residential 5 District; R2 = Residential 2 District; and RA-2 = Residential Agriculture 2.

Source: Moreno Valley General Plan Land Use Map, August 2010; Moreno Valley Zoning Map, November 7, 2011

3.4 CITY GENERAL PLAN AND ZONING DESIGNATIONS

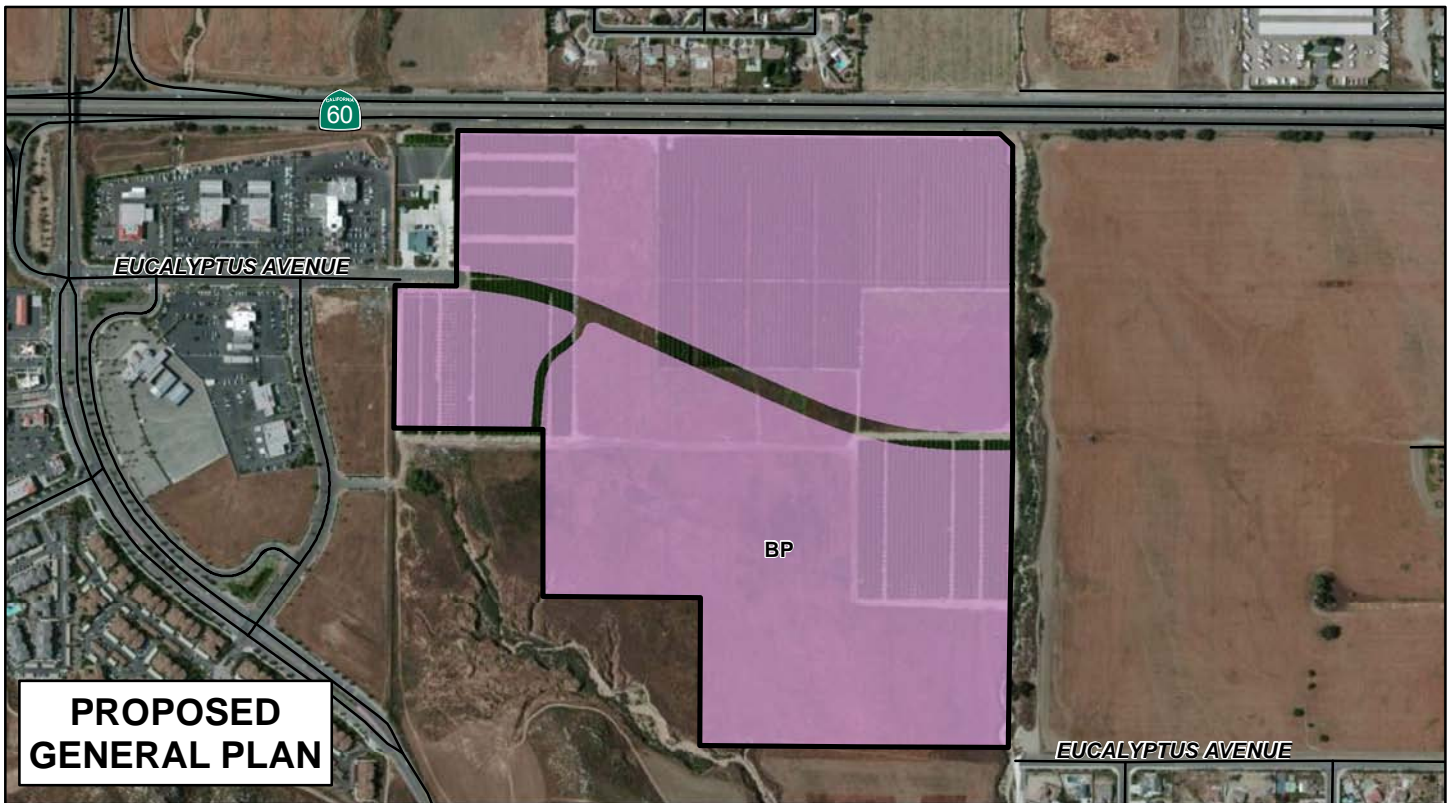
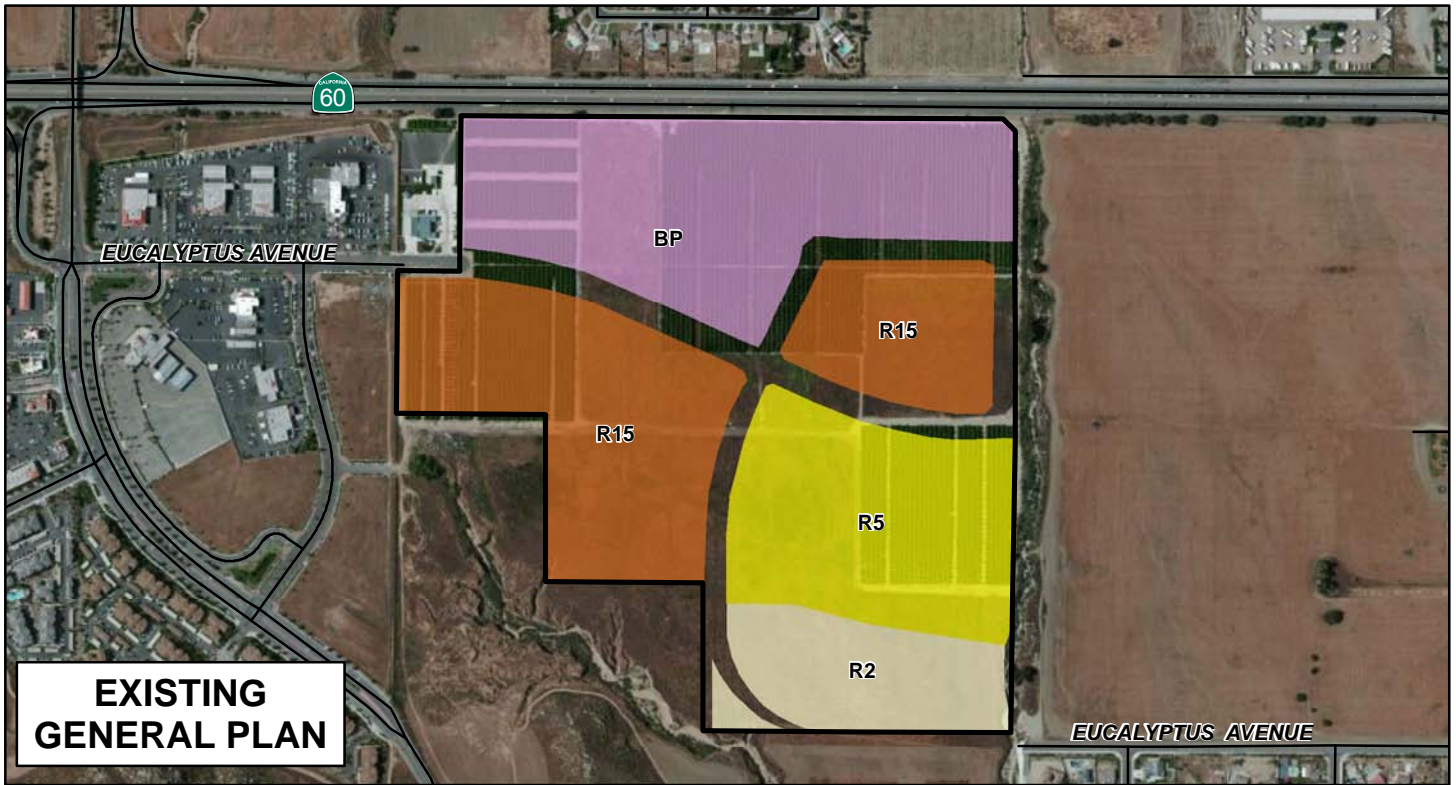
As identified in the City of Moreno Valley General Plan, the City designates the northern portion (50 acres) of the project site as Business Park/Light Industrial (BP) and the southern portion (71.3 acres) of the project site as Residential. The northern portion of the site is zoned Business Park (BP) and Business Park Mixed Use (BPX) in a small center portion of the project site, Residential 15 District (R15) in the western portion of the project site, Residential 5 District (R5) in the eastern portion of the project site, and Residential Agriculture (RA-2) on the southernmost section of the project site. Figure 3.1 illustrates existing and proposed zoning designations while Figure 3.2 illustrates the existing and proposed land uses. Previously referenced Table 3.A identifies General Plan/Zoning designations on the project site and on adjacent properties.

3.5 PROJECT CHARACTERISTICS

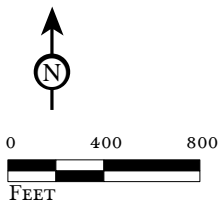
The project site is approximately 122.8 acres in size. The proposed project includes the construction and operation of a warehouse facility comprising six buildings consisting of a total of approximately 2,244,638 square feet. The project site is divided into northern and southern areas. The northern area, north of the future Eucalyptus Avenue, would contain approximately 1,030,377 square feet of warehouse uses divided between two buildings (No. 1 and 2). Development in the southern area, south of the future Eucalyptus Avenue, would consist of approximately 1,214,261 square feet of warehouse uses divided among four separate buildings (No. 3 through 6). The proposed conceptual site plan is illustrated in the previously referenced Figure 1.2. The master and individual building plans, including grading, landscaping, elevations, and selected line of sight plans are provided in Appendix K and exhibits at the end of this chapter.

All traffic and passenger vehicles will be accommodated by nine driveways onto Eucalyptus Avenue. The proposed project would also construct a roadway ("B" Street) between Buildings 3 and 4 to provide future access to the vacant parcel south of the project. The proposed project includes the construction of asphalt/concrete surfaces in parking and driving areas, and landscaping along the perimeter and roadway frontages (see Appendix K). It is important to note that the proposed project would also require the following changes:

- Approval of a General Plan Amendment to change the land use designation of 71.3 acres of the project site from Residential (R15, R5, and R2) to Business Park (BP) so the entire site would then be designated Business Park (BP).



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□ Project Boundary

General Plan Designations

- BP, Business Park/Light Industrial
- R15, Residential (15 units/ac)
- R2, Residential (2 units/ac)
- R5, Residential (5 units/ac)

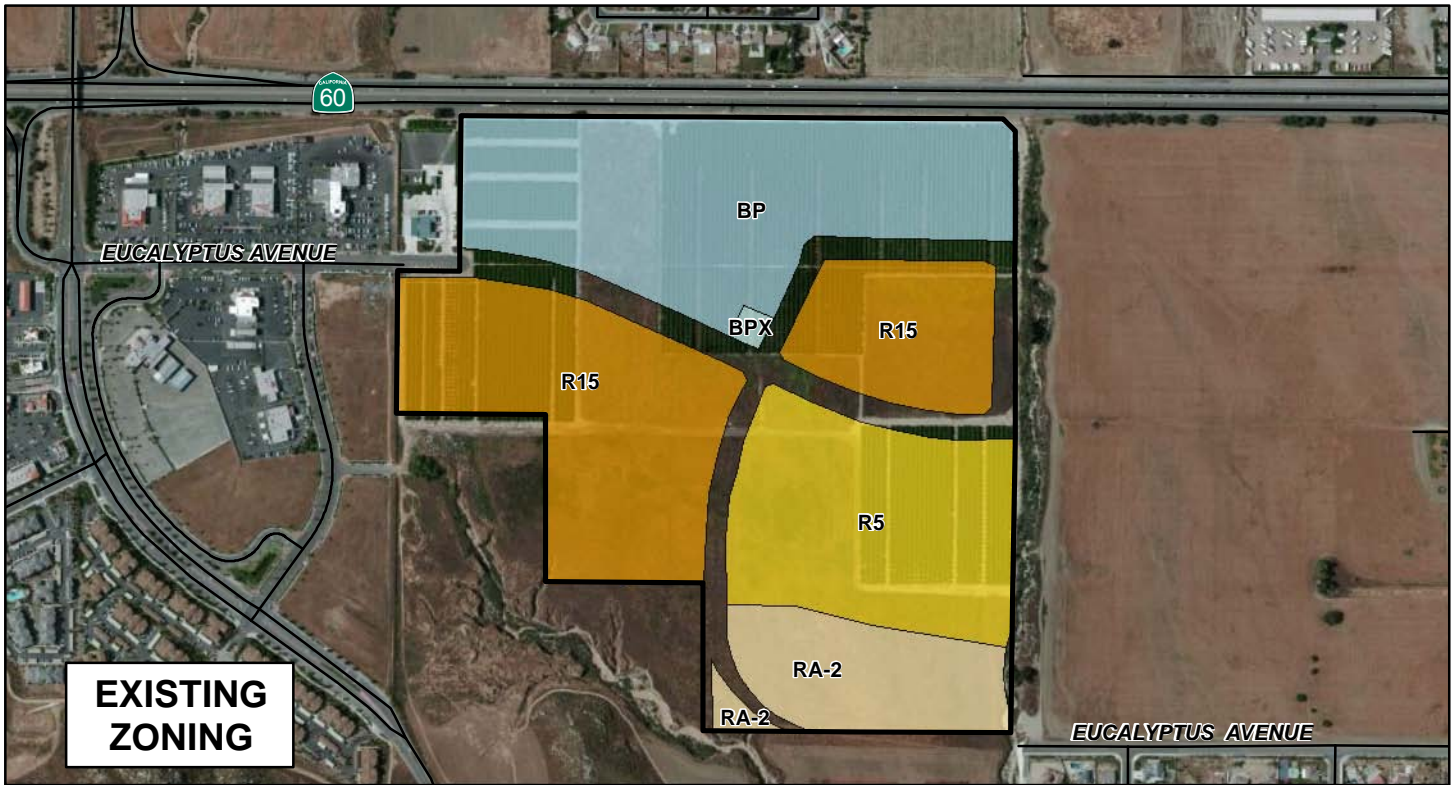
FIGURE 3.1A

*Eucalyptus Industrial Park
Environmental Impact Report*
General Plan and Zoning

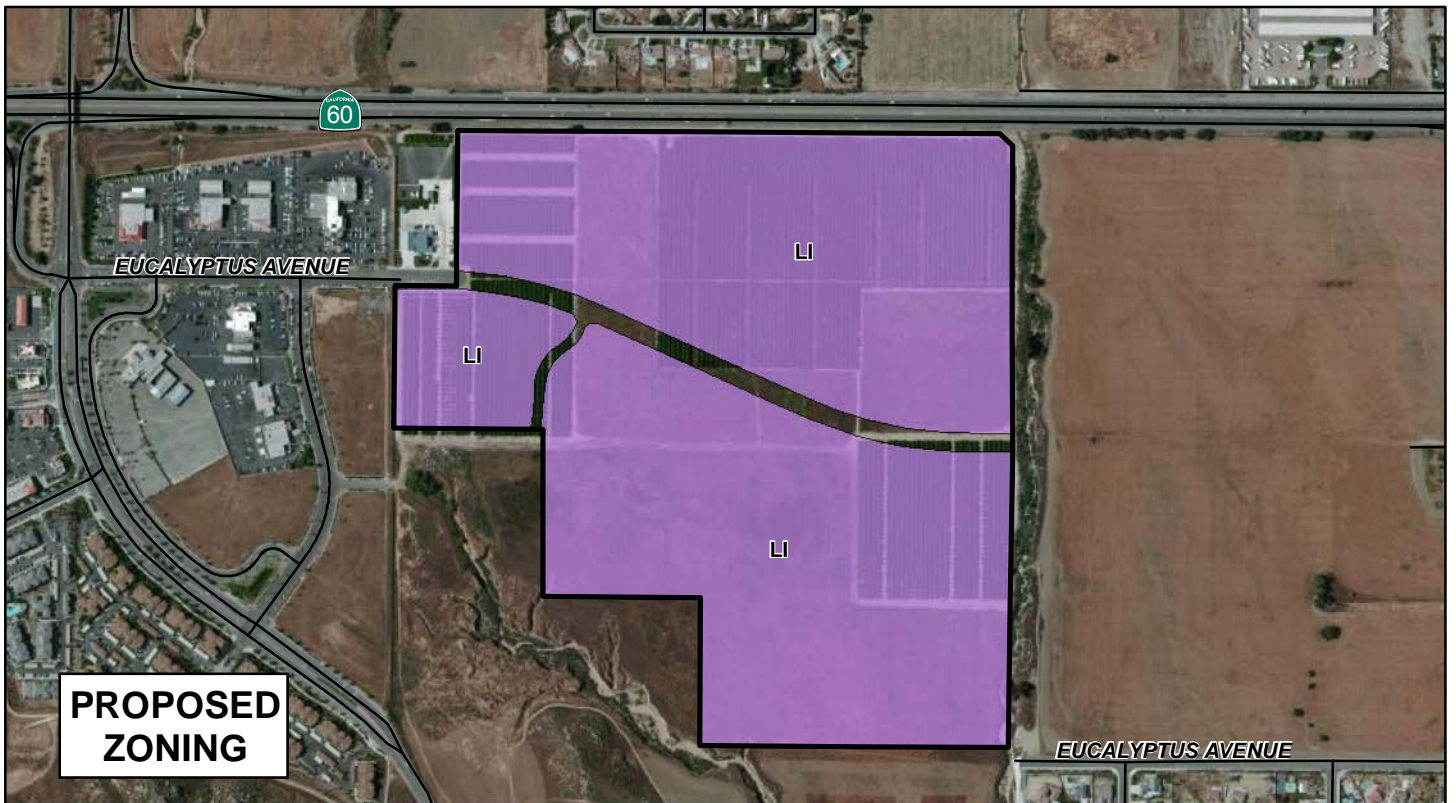
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SOURCE: Bing Maps Aerial, 2010; County of Riverside, 2011; City of Moreno Valley, 2007.

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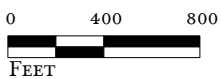


EXISTING ZONING



PROPOSED ZONING

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Project Boundary

Zoning Designations

BP, Business Park

BPX, Business Park - Mixed Use

R15, Multi-family Residential (15 du/ac)

R5, Suburban Residential (5 du/ac)

RA-2, Residential Agricultural (2 du/ac)

LI, Light Industrial

FIGURE 3.1B

*Eucalyptus Industrial Park
Environmental Impact Report*

General Plan and Zoning

Item No. E.3

SOURCE: Bing Maps Aerial, 2010; County of Riverside, 2011; City of Moreno Valley, 2007.

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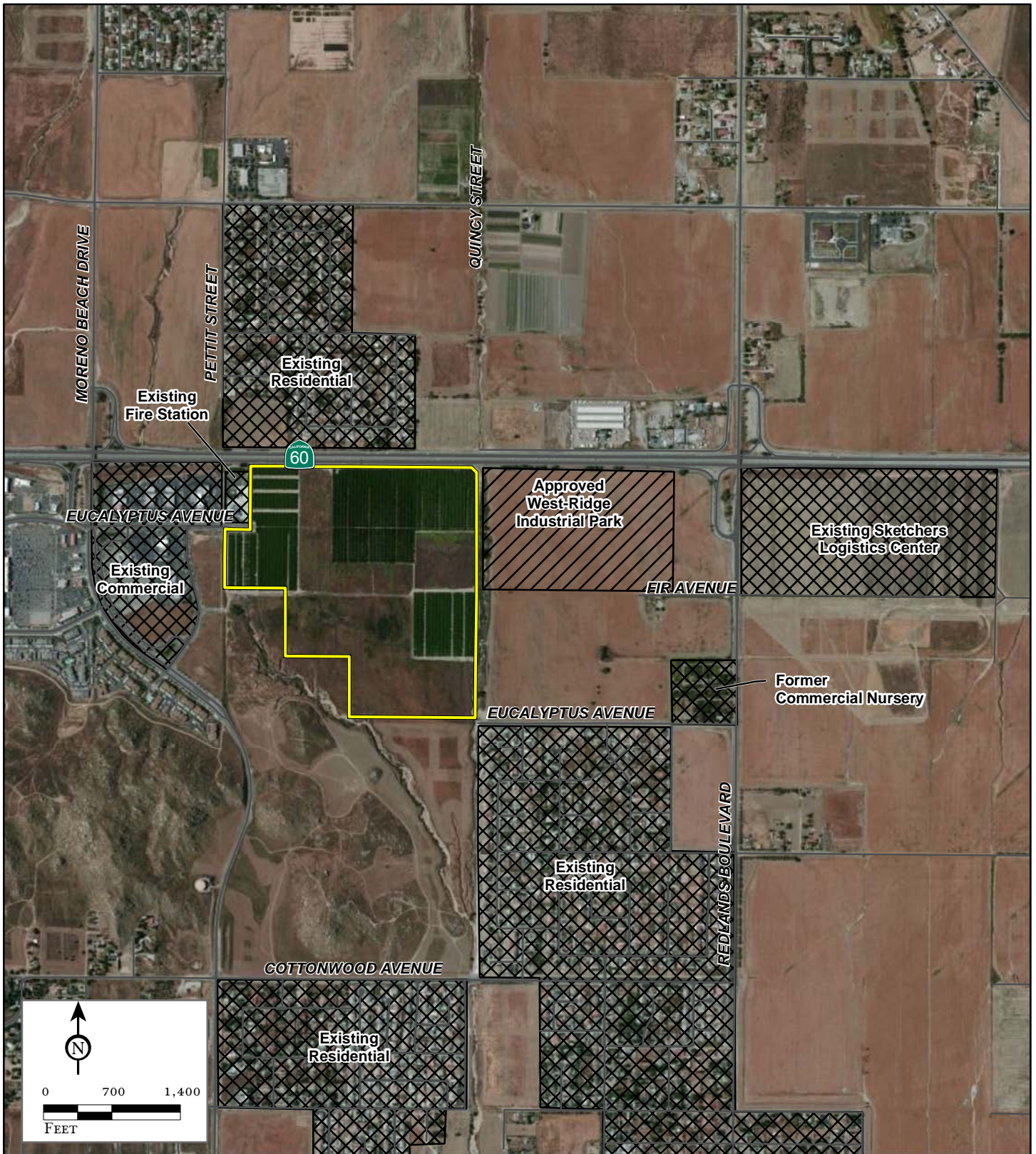


FIGURE 3.2

LSA

- Project Location
- Existing Land Use
- Proposed Land Use

*Eucalyptus Industrial Park
Environmental Impact Report*

Surrounding Land Uses

Item No. E.3

SOURCE: Bing Map Aerial, 2010; Riverside County, 2011.

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- Approval of a Zone Change of the entire 122.8 acres from its current zoning designations of Business Park (BP), Business Park/Mixed Use (BPX), Residential 15 District (R15), Residential 5 District (R5), and Residential Agriculture 2 (RA-2) to all Light Industrial (LI).
- Zone Change will also be used to redraw the boundary of the Primary Animal Keeping Overlay (PAKO) district.
- Approval of an amendment to the City's Master Plan of Trails to relocate the Eucalyptus Avenue Trail to the north side of future Eucalyptus Avenue and eliminate the planned trail segment on Quincy Avenue from SR-60 to Fir Avenue (future Eucalyptus Avenue), based on discussion with the City Trails Commission.
- Approval of an amendment to the Circulation Element of the General Plan. These changes (as illustrated in Figure 3.3) include the following:
 - Eliminate the undeveloped Quincy Street from Eucalyptus Avenue south to Encilia Avenue;
 - Realign Encilia Avenue from its current alignment such that its westerly terminus is located at Moreno Beach Drive instead of the current General Plan westerly terminus at Eucalyptus Avenue; and
 - The segment between Quincy Channel and Moreno Beach Drive would be classified as a Collector.

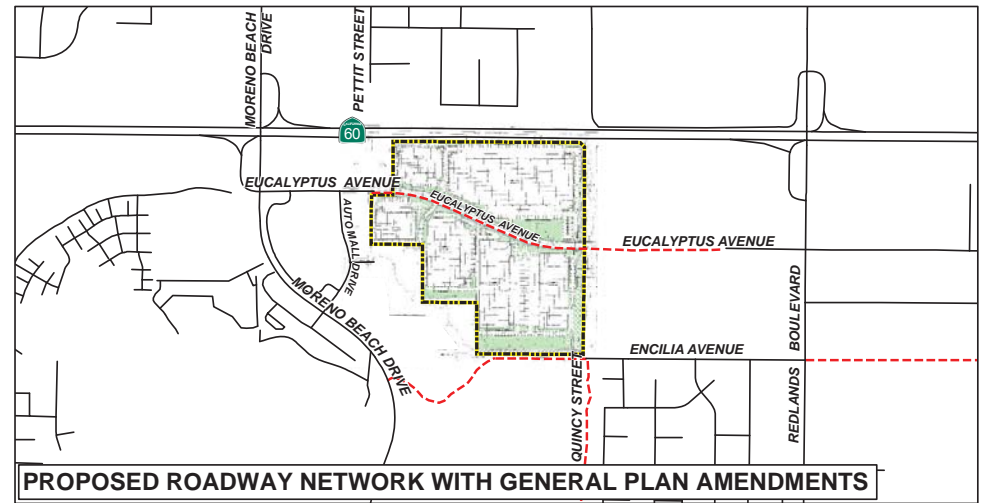
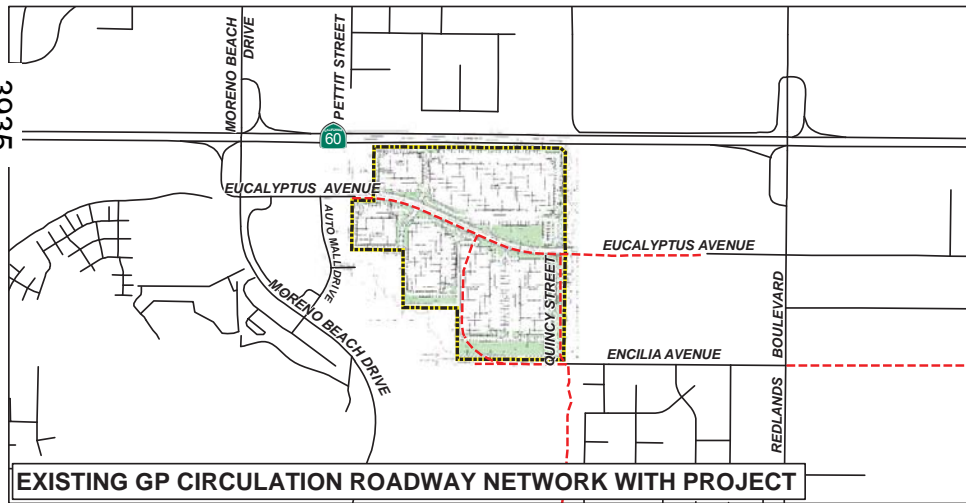
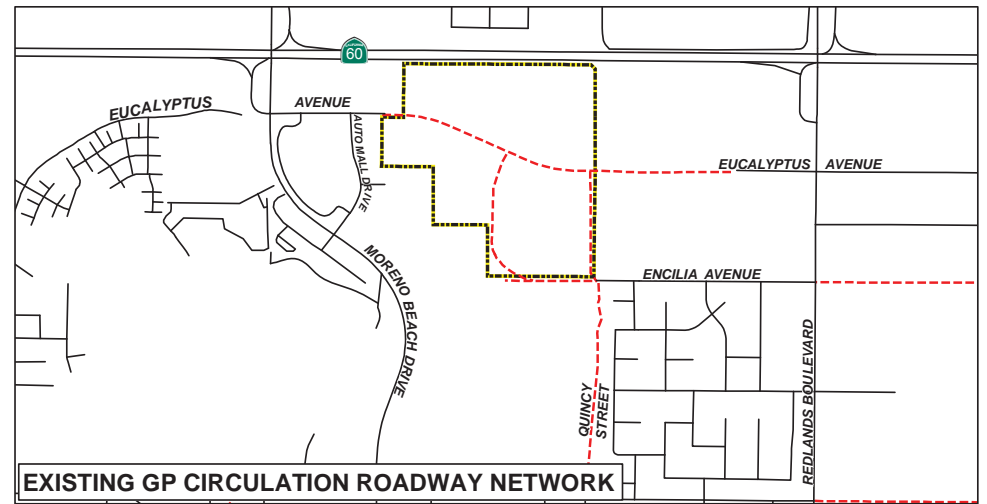
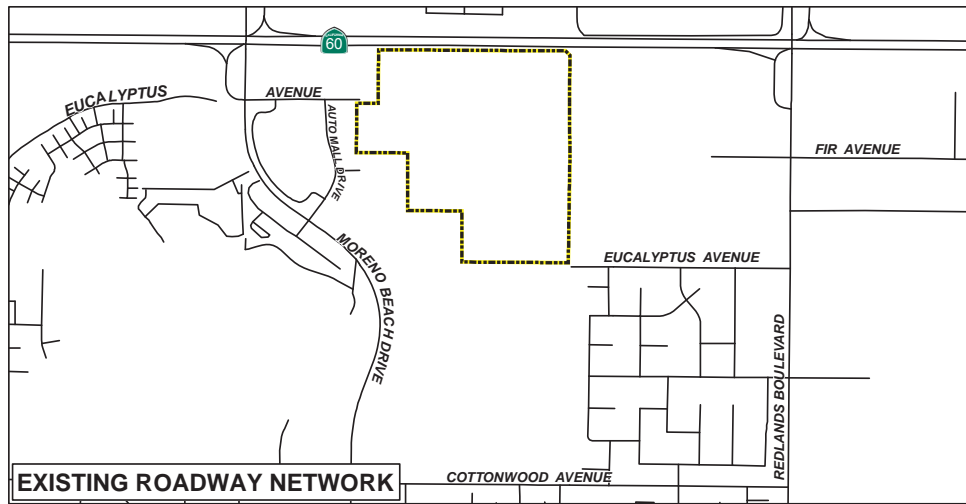
With construction of the proposed project, storm water runoff would be routed and treated through water quality basins and sand filters. The basins would be used to detain the incremental increase in flows as well as serve as a treatment control best management practice (BMP) identified in the project specific Water Quality Management Plan (WQMP) per the City of Moreno Valley Public Works Department guidelines and National Pollutant Discharge Elimination System (NPDES) requirements. Landscape improvements would be installed throughout the parking area and would utilize a varied selection of low-water-demand plants and include a water-efficient irrigation system. The locations of the water quality basins and the building landscaping plans are provided in Appendix K.

An approximately 12.2-acre portion of the project site is zoned Residential Agriculture RA-2 located near the southern portion of the project site. The RA-2 zone is within the City's PAKO, which serves to maintain animal keeping and the rural character of the areas noted within the overlay district and designate a portion of the parcel for medium and large animal keeping. With the development of the project, this portion of the site would be rezoned to Light Industrial to allow for the proposed warehouse distribution uses and would also be removed from the PAKO. Section 4.8.6.1 evaluates the impacts of the loss of this PAKO-designated land.

A recent amendment to the Municipal Code requires a 250-foot buffer or clearance between a truck court or primary truck circulation driveway in an industrial area and adjacent residential use(s). The proposed industrial project provides for a minimum 250-foot buffer between the nearest truck circulation area (i.e., near southeast corner of Building No. 6) and the existing residential neighborhood to the southeast (off of the existing Eucalyptus Avenue).

The project proposes to construct a number of off-site improvements, including a bridge over the Quincy Channel for Fir Avenue/future Eucalyptus Avenue, utility connections and improvements (and contributions to improvements) for utilities in Fir Avenue/future Eucalyptus Avenue east to Redlands Boulevard. In addition, the project will construct or help fund the installation of improvements at various area intersections and roadway segments, as outlined in the project traffic study (LSA 2012) and Section 4.11, *Traffic and Circulation*. These improvements will be analyzed in appropriate sections of the EIR. Table 3.B summarizes details the development characteristics of each of the six project buildings.

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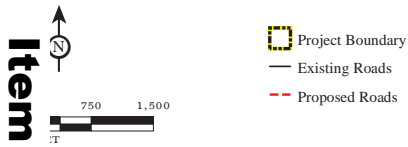


FIGURE 3.3

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Table 3.B: Summary of Project Development Characteristics

Project Characteristics	Parcel/Building						LL ¹	Total
	1	2	3	4	5	6		
Site Acres	8.8	39.4	8.5	15.7	19.3	17.7	13.4	122.8
Building Area (SF)	168,342	862,035	160,106	339,015	390,102	325,038	—	2,244,638
Dimensions (ft)								
North-South	300	560	320	826	1,070	926	—	—
East-West	542	1,514	484	400	360	350	—	—
Height (ft)								
Average	39	39	39	38	39	39	—	39
Maximum	44	50	50	44	44	44	—	50
Net Building Coverage	43.8%	50.2%	43.2%	49.7%	46.4%	42.2%	—	47.1%
Auto Parking								
Required (MC)	100	311	98	180	193	176	—	1,058
Provided	103	331	114	190	193	179	—	1,110
Bicycle Parking (required/provided)	5 16	5		9	10	9	—	54
Truck Docks	21	143	20	36	53	53	—	326
Truck Trailer Parking Spaces	22 169		24	37	60	60	—	372
Landscaping								
Required (10%)	38,453	171,606	37,033	68,204	84,036	77,056	—	476,483
Provided	67,001	258,190	73,756	128,965	165,429	188,142	—	881,483
Percent	17.4	15.1	19.9	18.9	19.7	24.4	—	18.5

¹ Lettered Lots for detention basins, streets, and Quincy Channel

Source: Thinnis Engineering, Revised Tentative Parcel Map 35679 (12/19/11), Conceptual Grading Plan, and Individual Site Plans.

3.5.1 Operations and Infrastructure Timing

The EIR evaluated “worst case” conditions of the project operating 24/7. If the proposed project is constructed prior to the West Ridge project, ProLogis will install the infrastructure necessary to serve its project (e.g., roads, water, and sewer) and will be reimbursed by the City from the West Ridge developer at the time that project is constructed. If the West Ridge project is constructed first, ProLogis will contribute an appropriate amount to the City for a reimbursement account to help off-site improvement costs installed by the West Ridge project that serve the ProLogis project. The timing of improvements shall be coordinated by the City in cooperation with ProLogis and the West Ridge developer.

3.5.2 Jobs Estimate

Although specific uses/users are not known at this time, it is useful to the public and decision-makers to estimate the likely number of workers the project will generate. Although only 1,097 car parking spaces are required, the project could generate approximately 1,500 new jobs based on 260 square feet per office worker for 115,000 square feet of office uses (446 jobs) and 1,000 square feet per warehouse worker for 2,115,000 square feet of warehousing (1,057 jobs). These numbers could be higher if there was more office use, multiple shifts, etc. or they could be lower if there were more highly automated warehouse operations (P. Cavanagh, personal communication, April 2012).

3.5.3 Green Building Construction

The applicant has indicated the buildings will be designed to qualify for certification under the Leadership in Energy and Environmental Design (LEED) program, but there are no plans to submit the project for actual LEED certification at this time due to cost and time delay factors.

3.5.4 Utilities

There is an existing 12-inch EMWD water line along the northern property boundary, and the project will install a new 12-inch line to connect the existing EMWD line with the new 24-inch line planned in Eucalyptus Avenue. The project will install a new 18-inch storm drain line along the north and east sides of the property, and a new 8-inch sewer line and 24-inch water line in Fir Avenue/future Eucalyptus Avenue through the project site, tying into existing lines to the west and east to Redlands Boulevard (totaling approximately 1,620 feet). A new 8-inch sewer line will connect to Encilia Avenue at the southeast corner of the site with a siphon to take flows under the Quincy Channel and tie into an existing line in Redlands Boulevard (approximately 780 feet). Each of the six parcels/buildings will be served by 6–8-inch sewer lines to the office “corners” of each building. There are existing overhead Southern California Edison (SCE) lines along the northern property boundary; these will be relocated and undergrounded as part of project construction. If available and/or required by the EMWD, the project will install “purple piping” for future reclaimed water use.

3.5.5 Roads and Related Improvements

The new Eucalyptus Avenue (existing Fir Avenue) through the project site will utilize City Cross Section 104A and have a right-of-way (ROW) of 104 feet with 76 feet of travel lanes to accommodate large trucks, plus sidewalks. Encilia Avenue (existing Eucalyptus Avenue) along the south side of the site will have an 88-foot ROW and the project will preserve ROW for half the width along the project site. The new “A” Street between Buildings No. 3 and 4 will have a 60-foot ROW with 40 feet for travel lanes and sidewalks (City Cross Section 108A).

The Eucalyptus Avenue bridge over the Quincy Channel will utilize City Cross Section 116 with 100 feet ROW and will span the channel with no piers in the channel, which will minimize impacts on jurisdictional areas.

A multi-purpose trail will be constructed along the north side of Fir Avenue/future Eucalyptus Avenue west of the Quincy Channel to the west boundary of the project site. It should be noted that the project plans and the end of Section 3 and in Appendix K show a trail segment along the north side of the Quincy Channel north of the new Eucalyptus Avenue; however, recent action by the City Trails Commission has eliminated this northern trail segment in favor of a trail along the north side of Eucalyptus Avenue through the project site.

3.5.6 Grading

The conceptual grading plan for the project indicates that the project will require a total of 572,196 cubic yards of earthwork, although it will be largely balanced on site and only 200 cubic yards of soil importation is expected (see end of this chapter and Appendix K). Excavation will require 339,561 cubic yards of fill assuming approximately 15 percent shrinkage of soil during placement. This amount of earthwork has been incorporated where appropriate into the analysis of project impacts (e.g., air quality, noise, etc.).

3.5.7 Landscaping

Each building and surrounding parking areas will be landscaped according to the project landscape plans (see end of this chapter and Appendix K), consistent with City landscaping requirements. The

project will have several rows of citrus trees planted along the south side of SR-60, the east sides of Buildings No. 2 and 6, and the south sides of Buildings No. 6 and 5. These trees will help shield views of the site from the existing residential neighborhood to the southeast, and partially shield views from travelers on SR-60.

3.6 RELATED ACTIONS

The following actions are required to be taken by the City as part of the proposed project (actions are discretionary unless noted):

- General Plan Amendment to amend the Land Use Element resulting in a change of land use designations for the southern portion of the project site (approximately 71.3 acres) from Residential 15, Residential 5, and Residential Agriculture to Business Park.
- General Plan Amendment to amend the Circulation Element including (1) elimination of undeveloped Quincy Street from Eucalyptus Avenue to Encilia Avenue; and (2) realignment of Encilia Avenue from its current alignment such that its westerly terminus is located at Moreno Beach Drive instead of the current General Plan westerly terminus at Eucalyptus Avenue. The segment between Quincy Channel and Moreno Beach Drive would be classified as a Collector.
- Change of Zone resulting in a change from Business Park (BP), Business Park Mixed-Use (BPX), Residential 15 (R15), Residential 5 (R5), and Residential Agriculture (RA-2) to Light Industrial (LI) on the project site.
- Modification of the PAKO zone district per the recommended change of zone.
- Modification of the Master Plan of Trails to eliminate trail segment along the west side of the Quincy Channel north of the future Eucalyptus Avenue and add a segment along the north side of Eucalyptus Avenue from the Quincy Channel to the west boundary of the project site.
- Approval of a Master Plot Plan and five related Plot Plans.
- Tentative Parcel Map approval.
- Certification of the Environmental Impact Report.
- Final Parcel Map, public improvement agreement, and related securities approval.
- Issuance of an encroachment permit for any construction work done in any City-controlled ROW. Encroachment permit issuance requires approval of improvement plans, public improvement agreement execution with securities posted, and satisfying those conditions of approval required prior to grading.
- Approval of a Storm Water Pollution Prevention Plan (SWPPP) to accommodate site runoff during construction.
- Approval of a Preliminary Water Quality Management Plan (P-WQMP) and Final Water Quality Management Plan (F-WQMP) to mitigate for post-construction runoff flows (non-discretionary).
- Issuance of a Grading Permit that requires approval of a grading plan, approval of the final drainage study, approval of the F-WQMP, obtaining an NOI and WDID#, obtaining a WQMP#, and satisfying those conditions of approval required prior to grading (non-discretionary).
- Issuance of a Building permit. The comprehensive building permit includes building, plumbing, mechanical, and electrical permits (non-discretionary).

The following approvals and permits are required by other agencies:

- Approval from the City and Riverside County Flood Control and Water Conservation District (RCFCWCD) to ensure that construction site drainage velocities are equal to or less than the pre-construction conditions and downstream water quality is not worsened.

- Approval of Quincy Channel improvements from the RCFCWCD.
- A Section 404 Permit from the U.S. Army Corps of Engineers (USACE).
- A Section 401 Water Quality Certification from the Regional Water Quality Control Board (RWQCB).
- A Section 1602 Streambed Alteration Agreement from the California Department of Fish and Game (CDFG).
- Encroachment permits from Caltrans for any construction work done in any State-controlled ROW (i.e., SR-60).

3.7 PROJECT OBJECTIVES

Upon development, the proposed project will achieve the following objectives:

- Provide industrial warehouse facilities that meet the substantial and unmet demands of businesses located in the City and County;
- Provide new industrial development that is attractive and minimizes conflicts with the surrounding existing uses;
- Provide a variety of new employment opportunities for the citizens of Moreno Valley and surrounding communities;
- Encourage warehouse distribution services that take advantage of the area's close proximity to various freeways and transportation corridors;
- Encourage new development consistent with the capacity and municipal service capabilities;
- Provide infrastructure improvements to meet phased project needs in an efficient and cost-effective manner;
- Cluster industrial warehouse uses near access points to the state highway system to reduce traffic congestion on surface streets and to reduce air pollutant emissions from vehicle sources;
- Develop land uses that provide the City with a positive revenue/cost ratio and provide needed infrastructure in a timely fashion;
- Address community circulation, both vehicular and pedestrian, utilizing available capacity within the existing circulation system, and provide fair share improvements to various future-year deficient intersection or road segments; and
- Reduce peak hour vehicle trips, energy and water consumption compared to existing General Plan land uses.

3.8 CUMULATIVE PROJECTS

Substantial changes are anticipated to occur as the result of population and employment as well as the development of other projects in the City and region. *CEQA Guidelines* (Section 15130) require that an EIR include a discussion of the potential cumulative impacts of a proposed project. Cumulative impacts are defined as two or more individual effects that, when considered together, are considerable or that compound or increase other environmental impacts. The cumulative impact from several projects is the change in the environment that results from the incremental impact of the development when added to the impacts of other closely related past, present, and reasonably foreseeable or probable future developments.

Cumulative impacts can result from individually minor, but collectively significant, developments taking place over a period of time. The *CEQA Guidelines*, state:

- (a) *Cumulative impacts shall be discussed when the project's incremental effect is cumulatively considerable.*
- (b) *The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided of the effects attributable to the project. The discussion should be guided by the standards of practicality and reasonableness.*

The cumulative baseline for this project includes past, present, and probable future projects, which are either approved or being considered for approval, or anticipated to be submitted for consideration, including projects in the design phase or under construction. In determining the cumulative impacts of a proposed project with other area projects, an EIR may either consider a list of past, present, and probable future projects, or it may consider a summary of projections method or a combination of both.¹ This EIR utilizes the list method.

Information was collected and compiled from the Cities of Moreno Valley and Calimesa, and Riverside County. The cumulative area was limited to within 5.0 miles of the project site, which coincides with the 5.0-mile limit identified in the Traffic Impact Analysis (LSA 2012) for study area intersections prepared for the proposed project.

The list of cumulative projects is based on project listings provided by staff from the City of Moreno Valley.² The project listings provided by the cities identify projects for which applications have been submitted. As noted by the respective development reports, some of the identified applications are "inactive," "on-hold," or pending Planning Commission approval. It is not possible to determine with a reasonable level of certainty which or how many of the projects listed on the respective development inventories will complete the entitlement process and be issued permits for construction and occupancy; therefore, the figures cited represent a scenario of what may be developed within 5.0 miles of the project site. Because of market demands, demographic and economic conditions, and local development trends, it is reasonable to conclude that the number and amount of uses developed may vary from the total potential cumulative development cited in Table 3.C. The cumulative area is illustrated in Figure 3.4.

The cumulative analyses are provided following the discussion of the individual impacts associated with the proposed project in Chapter 4.0. For example, the cumulative impact for biological resources is provided in Section 4.3, for air quality in Section 4.1, and so forth. Depending on the issue discussed, the area addressed in the cumulative analysis varies. For example, because of the cumulative nature of regional air pollutant emissions, the cumulative area for air quality impacts would encompass the South Coast Air Basin; while the cumulative area associated with the biological resources would be limited to areas in the proximity of the project site. Because of the nature of the various cumulative discussions, the consideration of all the cumulative projects in every cumulative analysis is not warranted.

¹ State CEQA Guidelines, Section 15130(b) (1).

² Based on traffic study for West Ridge Commerce Center and input from Jeff Bradshaw, City of Moreno Valley Community Development – Planning Division, dated July 2011.

Table 3.C: Cumulative Projects

#	Title/Applicant	Location	Type and Status
1	Stoneridge Towne Center (Phase 2) PA05-0209, PM 34411	South of State Route 60 at southeast corner of State Route 60 and Nason Street	80,000 square feet of Retail/Restaurant – Existing
2	WalMart Shopping Center (Phase 2) P06-164, PM 30882	South of State Route 60 at southwest corner of State Route 60 and Moreno Beach Drive	85,267 square feet of Retail/Restaurant – Existing
3	P05-111/ UC Riverside Foundation/L'Aquila D'Pietra PA08-0059, TTM 35823	Northeast corner of Moreno Beach Drive and Cottonwood Avenue	478 units of Residential – In Review
4	PA07-0138	Northeast Corner of Moreno Beach Drive and Alessandro Avenue	176,200 square feet of Commercial – Currently Inactive
5	West Ridge Commerce Center, Ridge Property Trust PA08-0097	North side of Fir Avenue and west of Redlands Boulevard at Quincy Channel	937,260 square feet of Warehouse distribution facility – Approved
6	Highland Fairview Corporate Park TPM 35629	South side of State Route 60 on Eucalyptus Avenue between Redlands Boulevard and Theodore Street	2,410,000 square feet of Warehouse distribution facility, 10,000 square feet of retail/outlet center, 200,000 square feet community commercial uses – Phase 1 Existing
7	Quail Ranch Specific Plan PA07-0062, TTM 35530	Gilman Springs Road	1,251 units Residential/Golf Course – Currently Inactive
8	PA07-0 039, PA08-0021, TPM 35822	Northeast corner of Heacock Street and Iris Avenue	409,598 square feet of Industrial – Approved
9	PA07-0 035, PA08-0021, TPM 35822	Near northeast corner of Heacock Street and Iris Avenue	201,086 square feet of Industrial – Approved
10	PA07-0 079, PA07-0080, TPM 35672	Southwest corner of Iris Avenue and Indian Street	1,491,469 square feet of Industrial – Approved
11	PA07-0151, TPM 35879	24015 Iris Avenue	1,572,405 square feet of Industrial – Approved
12	PA07-0 165-0167/ First Industrial, TPM 35859	Northwest corner of Perris Boulevard and Nandina Avenue	880,000 square feet of Industrial - Approved
13	PA09-0004 Plot Plan, PA09-0012 Tentative Parcel Map 36162	South side of Grove View Road between Perris Boulevard and Indian Street	1,161,613 square feet of Industrial – Currently in Review, requires an EIR
	TOTAL		6,653,431 SF Industrial 667,830 SF Commercial (all types) 1,729 Residential units 1 Golf Course

Source: City of Moreno Valley, January 2012.

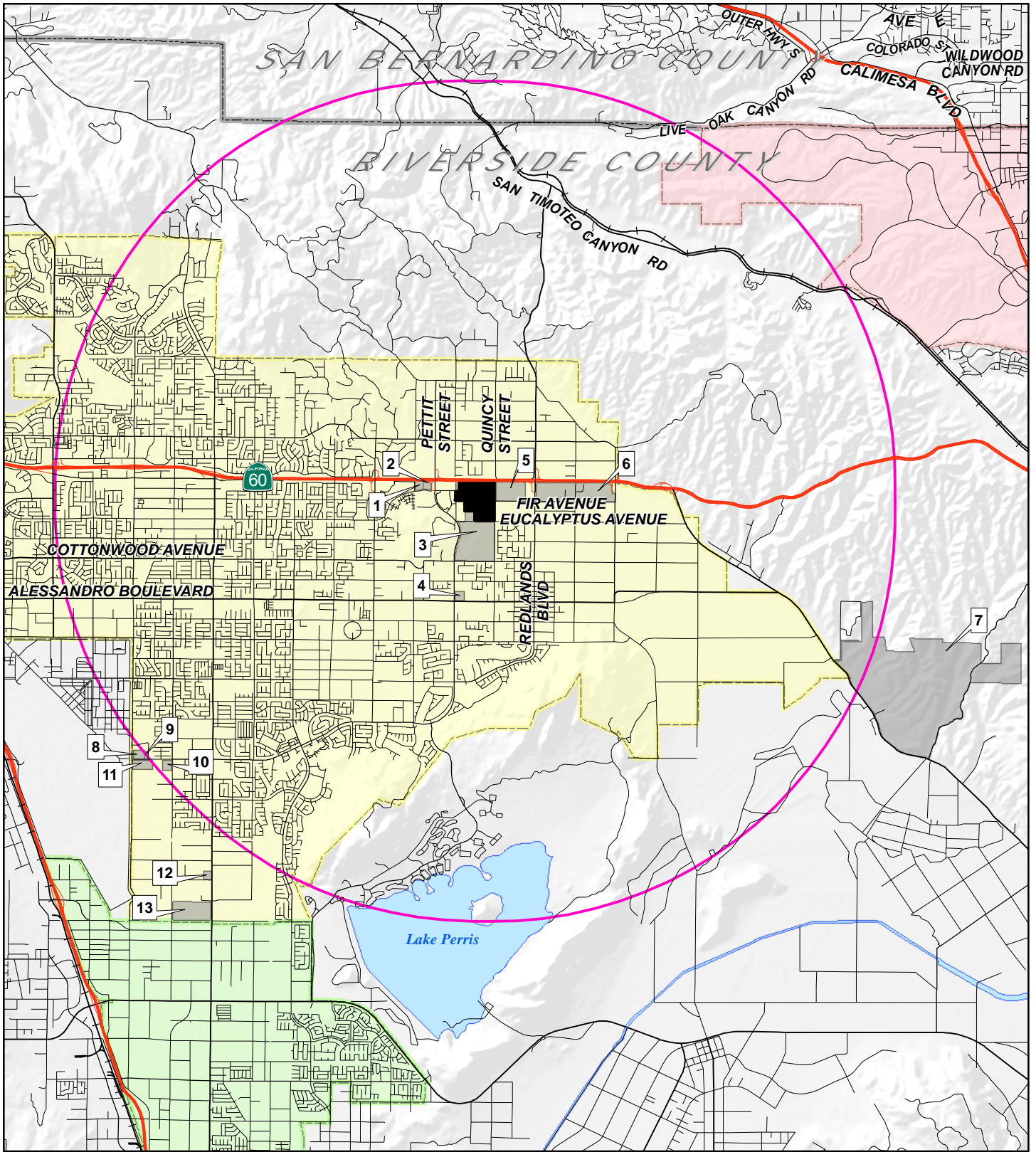
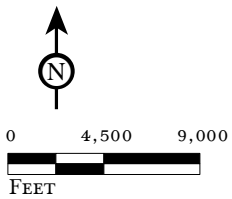


FIGURE 3.4

LSA



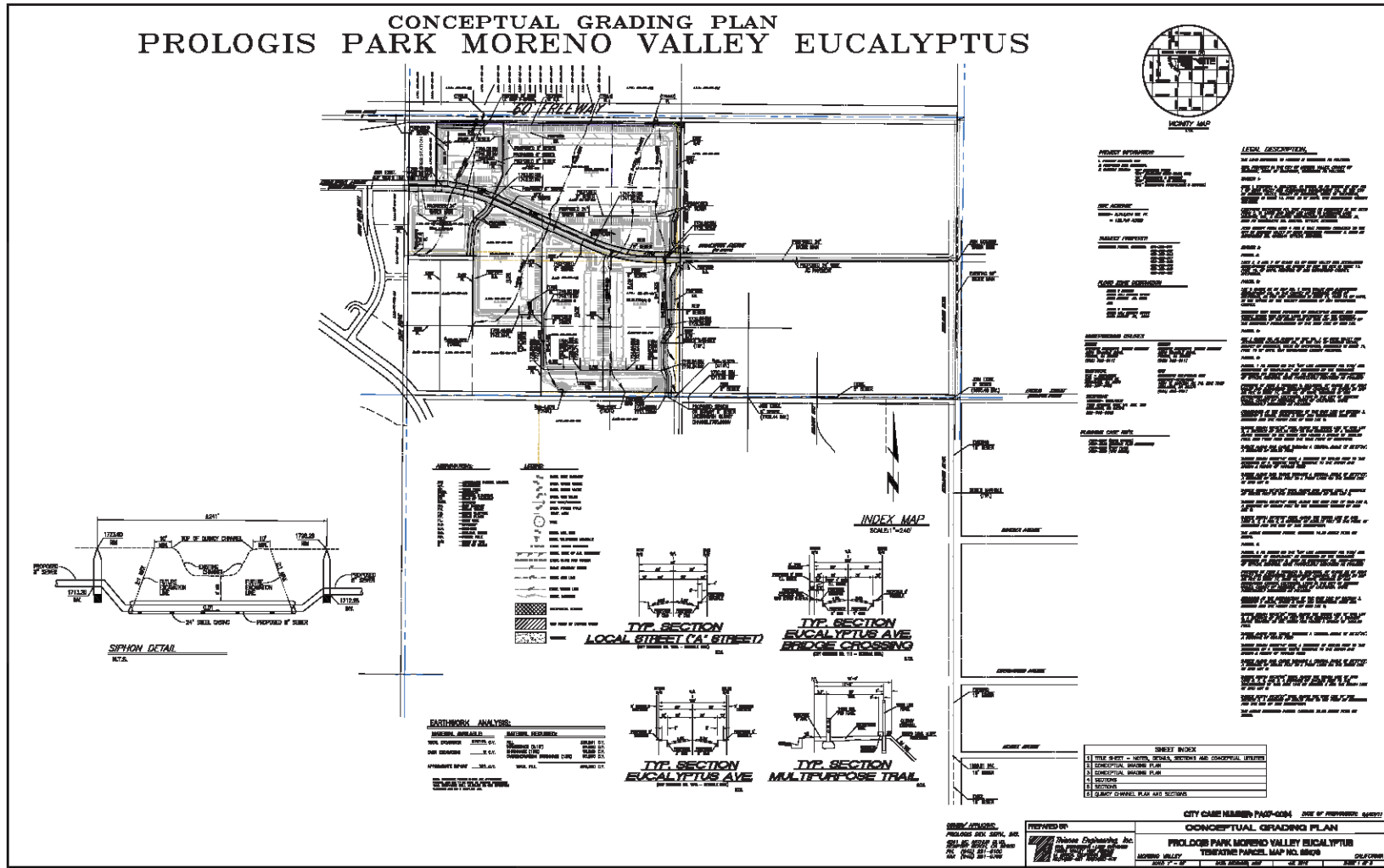
- Project Location
- 5 Mile Buffer of Project
- Cumulative Projects
- # Moreno Valley Project

- CITIES**
- Calimesa
 - Moreno Valley
 - Perris
 - County Boundary

*Eucalyptus Industrial Park
Environmental Impact Report*

Cumulative Projects
Item No. E.3

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PROLOGIS PARK MORENO VALLEY EUCALYPTUS

CONCEPTUAL GRADING PLAN

PROLOGIS PARK MORENO VALLEY EUCALYPTUS

THEMATIC PANEL MAP NO. 88009

DATE: 03/20/12

SCALE: 1" = 40'

SHEET NO. 1 OF 1

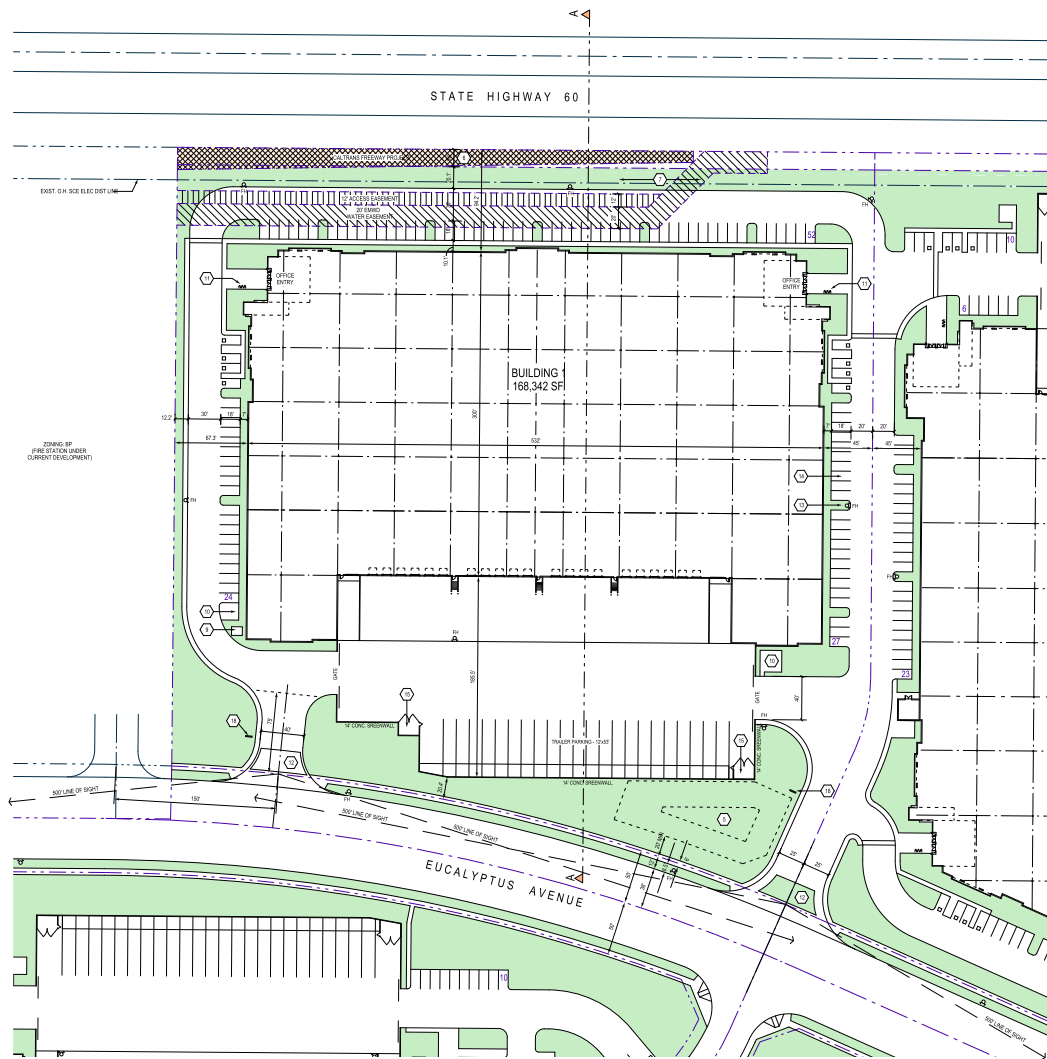
FIGURE 3.5

Eucalyptus Industrial Park Environmental Impact Report Conceptual Grading Plan

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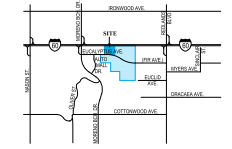
KEYNOTES

1. NA
2. NA
3. NA
4. NA
5. WATER QUALITY BASIN LANDSCAPED TO CITY STANDARDS.
6. 16' CALTRANS RESERVATION AREA FOR FUTURE DEDICATION TO CALTRANS.
7. STAGGERED DOUBLE ROW OF CITRUS TREES ALONG FREEWAY FRONTAGE.
8. NA
9. BUILDING TRANSFORMER SCREENED BY LANDSCAPING OR TRUCK COURT SCREEN
10. LAND-PAINT
11. BICYCLE RACK AT PRIMARY BUILDING ENTRANCES.
12. DECORATIVE COLORED CONCRETE AT DRIVEWAY CURB CUTS.
13. TYPICAL LANDSCAPED FINGER AT PARKING STALLS: 8' W X 14' WITH 12" WIDE CONCRETE CURBS ALONG SIDE AUTO STALLS.
14. TYPICAL AUTO PARKING STALL: 9'6" X 18'5" OR 10'5" X 18'5" OVERHANG STALLS TO BE STRIPPED PER CITY STANDARDS.
15. DOUBLE TRASH ENCLOSURE PER CITY STANDARDS G24 & 6.
16. NA
17. NA
18. 8 SQUARE FOOT SIGN IDENTIFYING THE APPROVED TRUCK ROUTE PLAN AT ALL LEG FREEWAY CUT LOCATIONS. SEE DETAIL 1/8" X 11" SHEET A-1/8" X 11" SHEET.

PROJECT DATA

BUILDING 1	
SITE AREA	SQUARE FEET
ACRES	384,527
OTHER LOTS (STREETS & RAINE)	8.63
SQUARE FEET	
ACRES	
BUILDING AREA	188,342
NET COVERAGE	43.78%
AUTO PARKING REQUIRED	
1000 SF OFFICE @ 4/1000	40
10K - 20K OFFICE @ 4/1000	-
0 - 20K WH @ 1/1000	20
20K - 40K WH @ 1/2000	10
20K + WH @ 1/1000	30
TOTAL PARKING REQUIRED	100
AUTO PARKING PROVIDED	103
BICYCLE PARKING REQ'D PROVIDED	5
TRUCK DOCK POSITIONS PROVIDED	21
TRUCK TRAILER PARKING PROVIDED	22
LANDSCAPE REQ'D @ 10% OF NET SITE	38,453
LANDSCAPE PROVIDED	83,001
	17.42%

VICINITY MAP:



OWNER:

PROJEC:
451 MACARTHUR BLVD., SITE 400
NEWPORT BEACH, CA 92660
PHONE: 949-271-6100
FAX: 949-271-6102
E-MAIL: LANDSCAPE@RGA.COM
CONTACT: JIM JACCHETTI

ARCHITECT:

DESAI GROUP OF ARCHITECTURAL DESIGN
1521 ALTON PARKWAY, SUITE 200
IRVINE, CA 92619
PHONE: 949-241-0800
FAX: 949-241-0802
E-MAIL: DESAI@DESAIGROUP.COM
CONTACT: DENNIS BOY

UTILITY PURVEYORS:

WATER: EASTERN MUNICIPAL WATER DISTRICT T: 951-415-3486
SEWER: EASTERN MUNICIPAL WATER DISTRICT T: 951-415-3486
ELECTRIC: CITY OF IRVINE VALLEY / SCE T: 951-415-3481 / 951-307-6759
GAS: SOUTHERN CALIFORNIA GAS COMPANY T: 951-255-7586
TELEPHONE: IRVINE T: 951-748-6640
CABLE: TRISTAR BROADCAST COMMUNICATIONS T: 951-266-3883

GENERAL NOTES:

1. PROPOSED BUILDING ARE OF CLEAR HEIGHT TO ROOF STRUCTURE. SEE ELEVATION DRAWINGS FOR SPECIAL BUILDING HEIGHT.
2. PROPOSED SCREEN WALLS IS IN ARE PAINTED CONCRETE, 4 MIN. HEIGHT OF 12' & 1/2" WAVE UP TO 4" WAVE REQUIRED TO ADEQUATELY SCREEN TRUCK AND TRAILER.
3. PROPOSED FENCES ARE STEEL TUBE CONSTRUCTION AND ARE 6' HIGH.
4. BLAZED AREA IS PROPOSED LANDSCAPING AREA. ALL LANDSCAPE IS REGULATED A BOOKED BY CITY CONG. CURBS WITH EXCEPTIONS OF PARKING AREAS AND DRIVE STORMWATER DETENTION BASINS, WHICH SHALL COMPLY WITH IRVINE COUNTY CONTROL REQUIREMENTS.
5. ALL DRIVE AISLES SHOWS ARE FOR 2-WAY TRAFFIC, AND ARE A MIN. OF 30' WITH A CLEAR TO 30'.
6. PARKING STALLS ARE 9' X 18', STRIPPED PER CITY REQUIREMENTS.
7. 'MOVEMENT' SIGNAGE IS NOT PROPOSED AS PART OF THIS PRINT. A SEPARATE 34 PROGRAM SHALL BE SUBMITTED AND APPROVED SEPARATELY BY OTHERS.
8. FOR CLARITY, THE PROPOSED FINISH TOPOGRAPHY IS SHOWN ON THE CONCEPTUAL GRADING PLAN. RETAINING WALLS ARE SHOWN ON THIS PLAN.
9. SEE ELEVATION SHEETS FOR HEIGHTS OF PARKING AREAS AT PROPOSED OFFICE CORNER. FUTURE ROOF-MOUNTED EQUIPMENT SHALL BE ADEQUATELY SCREENED BY THESE SCREENING IMPACT AREAS.
10. EXISTING ZONING TO BE CHANGED. EXISTING ZONING IS BY 81X, R15, R6 & R4.
11. DROUGHT TOLERANT TREES, SHRUBS AND GRASS/COVER SPECIES SHALL BE USED WHERE POSSIBLE.

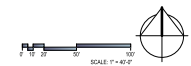


FIGURE 3.6A

Eucalyptus Industrial Park
Environmental Impact Report

Architectural Plan - Building 1

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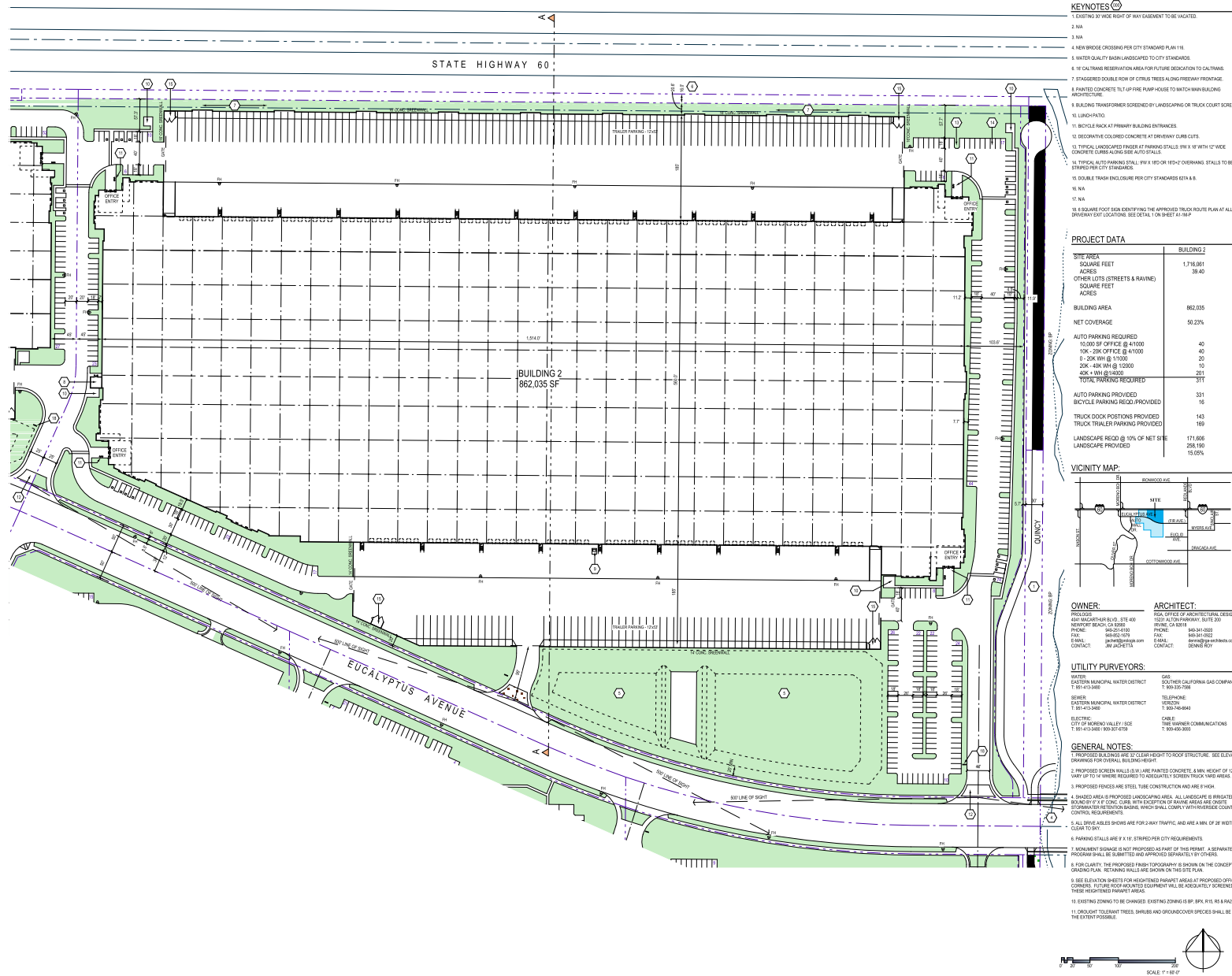


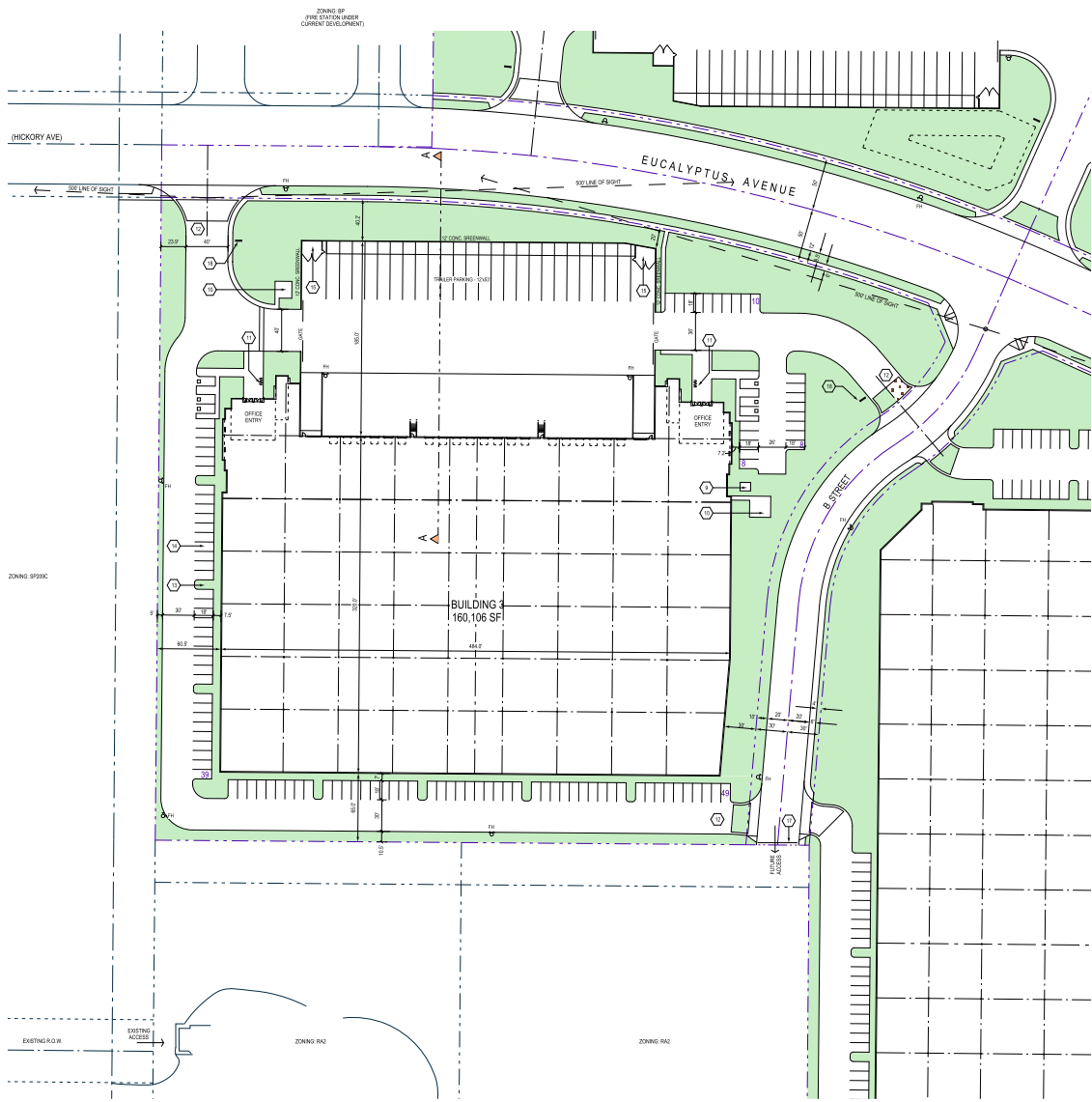
FIGURE 3.6B

Eucalyptus Industrial Park
Environmental Impact Report

Architectural Plan - Building 2

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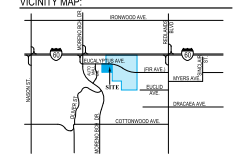
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- KEYNOTES**
1. NA
 2. NA
 3. NA
 4. NA
 5. NA
 6. NA
 7. NA
 8. NA
 9. BUILDING TRANSFORMER SCREENING BY LANDSCAPING OR TRUCK COURT SCREENING
 10. LAND-PATH
 11. BICYCLE RACK AT PRIMARY BUILDING ENTRANCES
 12. DECORATIVE COLORED CONCRETE AT DRIVEWAY CURB CUTS
 13. TYPICAL LANDSCAPED PARKING AT PARKING STALLS 8' X 18' WITH 12" WIDE CONCRETE CURB ALONG SIDE AND AUTO STALLS
 14. TYPICAL AUTO PARKING STALL 8' X 18' OR 10' X 20' OVERLAP STALLS TO BE SHOWN PER CITY STANDARDS
 15. DOUBLE TRASH ENCLOSURE PER CITY STANDARDS 67X4.8.8
 16. NA
 17. TEMPORARY BARRIER AT END OF STREET
 18. SQUARE FOOT SON IDENTIFYING THE APPROVED TRUCK ROUTE PLAN AT ALL DRIVEWAY EXIT LOCATIONS. SEE SECTION SHEET A-11-11

PROJECT DATA

BUILDING 3	
SITE AREA	370,325
SQUARE FEET	8.50
ACRES	
OTHER LOTS (STREETS & RAVINE)	
SQUARE FEET	
ACRES	
BUILDING AREA	160,106
NET COVERAGE	43.23%
AUTO PARKING REQUIRED	
10,000 SF OFFICE @ 4/10,000	40
10K - 20K OFFICE @ 4/10,000	-
3 - 20K WH @ 1/10,000	30
20K - 40K WH @ 1/10,000	10
40K - 100K WH @ 1/10,000	20
TOTAL PARKING REQUIRED	60
AUTO PARKING PROVIDED	114
BICYCLE PARKING REQ. PROVIDED	5
TRUCK DOCK POSITIONS PROVIDED	20
TRUCK TRAILER PARKING PROVIDED	24
LANDSCAPE REQ. @ 10% OF NET SITE	37,033
LANDSCAPE PROVIDED	72,156
	19.22%



OWNER:
 PROJECT: 4541 W. CANTON BLVD., SITE 400
 HANFORD, CA 93230
 PHONE: 848-201-6700
 FAX: 848-201-6701
 E-MAIL: jay@wshd.com
 CONTACT: JAY ARCHITECTS

ARCHITECT:
 RGA OFFICE OF ARCHITECTURAL DESIGN
 10201 ALTON PARKWAY, SUITE 200
 IRVINE, CA 92618
 PHONE: 949-261-0800
 FAX: 949-261-0802
 E-MAIL: jay@rga.com
 CONTACT: JAY ARCHITECTS

UTILITY SURVEYORS:
 WATER: EASTERN MUNICIPAL WATER DISTRICT
 T: 951-413-3480
 SEWER: EASTERN MUNICIPAL WATER DISTRICT
 T: 951-413-3480
 ELECTRIC: CITY OF BROWNS VALLEY / SCE
 T: 951-413-3480 / 909-307-6750

SOB:
 SOUTHERN CALIFORNIA GAS COMPANY
 T: 951-255-7580
 TELEPHONE: BROWNS VALLEY
 T: 952-748-6640
 CABLE: THE TURNER COMMUNICATIONS
 T: 952-488-2883

- GENERAL NOTES:**
1. PROPOSED BUILDING AREAS TO CLEAR HEIGHT TO ROOF STRUCTURE. SEE ELEVATION DRAWINGS FOR ORIGINAL BUILDING HEIGHT.
 2. PROPOSED SCREEN WALLS SHALL BE PAINTED CONCRETE, 8' MIN. HEIGHT OF 12" X 4" VARY UP TO 12" SPACES REQUIRED TO ACCOMMODATE TRUCK TRAILER ARRIVAL.
 3. PROPOSED FENCES ARE STEEL TUBE CONSTRUCTION AND ARE 8' HIGH.
 4. SHADY AREA IS PROPOSED LANDSCAPING AREA. ALL LANDSCAPE IS IRRIGATED BY 8" DRAINAGE 1" W.P. PVC. CURB WITH DEPTH OF 10" AREA ARE UNDER STORMWATER RETENTION BASINS WHICH SHALL COMPLY WITH PRIVATE COUNTY F. CONTROL REQUIREMENTS.
 5. ALL DRIVE ABLES SHALL BE FOR 2-WAY TRAFFIC AND ARE A MIN. OF 20' WIDTH & CLEAR TO TOP.
 6. PARKING STALLS ARE 8' X 18' SET UP PER CITY REQUIREMENTS.
 7. MONUMENT SIGNAGE IS NOT PROPOSED AS PART OF THIS PERMIT. A SEPARATE SIG PROGRAM SHALL BE SUBMITTED AND APPROVED SEPARATELY BY OTHERS.
 8. FOR CLARITY THE PROPOSED FENCE CONSTRUCTION IS SHOWN ON THE CONCEPTUAL GRADING PLAN. RETAINING WALLS ARE SHOWN ON THIS SITE PLAN.
 9. SEE ELEVATION SHEETS FOR PROPOSED PARKING AREAS AT PROPOSED OFFICE SCREENING. FUTURE DOCK MOUNTED EQUIPMENT WILL BE ACCURATELY SCREENED BY THESE HEIGHTENED PARKING AREAS.
 10. EXISTING TREES TO BE CHAINED. EXISTING ZONING IS BY R1A, R1B, R1C, R1D, R1E, R1F.
 11. DRUG/ALCOHOL TOLERANT TREES (SHRUBS AND GRASS/COVER SPECIES) SHALL BE USE THE EXTENT POSSIBLE.

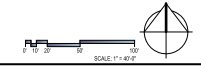
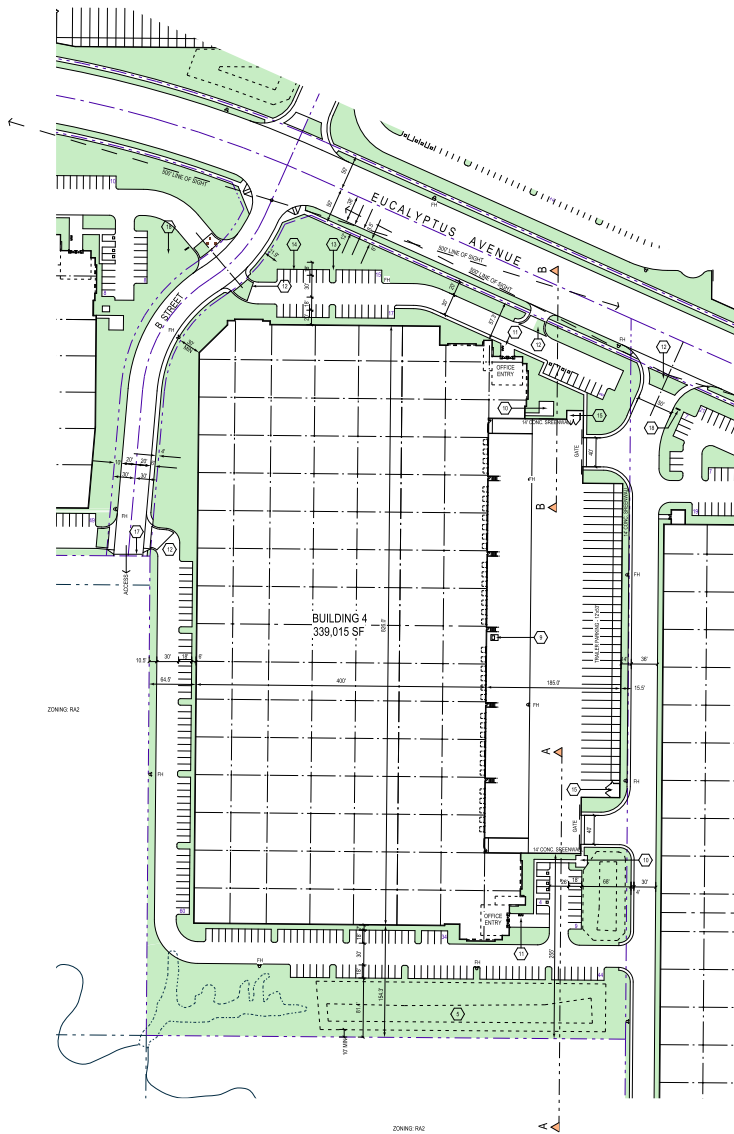


FIGURE 3.6C
 Eucalyptus Industrial Park
 Environmental Impact Report
 Architectural Plan - Building 3

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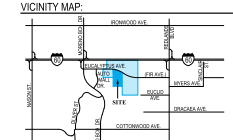
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- KEYNOTES**
1. N/A
 2. N/A
 3. N/A
 4. N/A
 5. WATER QUALITY BASIN/LANDSCAPED TO CITY STANDARDS
 6. N/A
 7. N/A
 8. N/A
 9. BUILDING TRANSFORMER SCREENED BY LANDSCAPING OR TRUCK COLOR SCREEN
 10. LANDSCAPE
 11. BICYCLE RACK AT PRIMARY BUILDING ENTRANCES
 12. DECORATIVE COLORED CONCRETE AT DRIVEWAY CURB CUTS
 13. TYPICAL LANDSCAPED FRIDGE AT PARKING STALLS 10' X 18' WITH 12" WIDE CONCRETE CURBS ALONG SIDE AUTO STALLS
 14. TYPICAL AUTO PARKING STALL 10' X 18' OR 12' X 18' WITH 12" OVERHANG STALLS TO BE STRIPED PER CITY STANDARDS
 15. DOUBLE TRASH ENCLOSURE PER CITY STANDARDS 60" X 8'
 16. N/A
 17. TEMPORARY BARRIER AT END OF STREET
 18. 8' SQUARE FOOT SIGN IDENTIFYING THE APPROVED TRUCK ROUTE PLAN AT ALL SETBACKS AND LOCATIONS SEE DETAIL FOR STREET CROSSING

PROJECT DATA

BUILDING 4	
SITE AREA	
SQUARE FEET	652,038
ACRES	15.56
OTHER LOTS (STREETS & RAVINE)	
SQUARE FEET	
ACRES	
BUILDING AREA	339,015
% NET COVERAGE	49.71%
AUTO PARKING REQUIRED	
10,000 SF OFFICE @ 41/1000	40
10K - 20K OFFICE @ 41/1000	40
0 - 20K WH @ 11/1000	20
20K - 40K WH @ 10/200	10
40K + WH @ 14/1000	70
TOTAL PARKING REQUIRED	180
AUTO PARKING PROVIDED	190
BICYCLE PARKING REQ'D PROVIDED	9
TRUCK DOCK POSITIONS PROVIDED	36
TRUCK TRAILER PARKING PROVIDED	37
LANDSCAPE REQ'D @ 10% OF NET SITE	68,204
LANDSCAPE PROVIDED	129,965
	18.97%



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WATER:
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SEWER:
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ELECTRIC:
 CITY OF IRVINE VALLEY / SCE
 T: 949-453-3486 / 800-937-8709

GAS:
 SOUTHERN CALIFORNIA GAS COMPANY
 T: 909-393-7868

TELEPHONE:
 VERIZON
 T: 909-744-6848

CABLE:
 TIME WARNER COMMUNICATIONS
 T: 909-456-3881

- GENERAL NOTES:**
1. PROPOSED BUILDING ARE 12' CLEAR HEIGHT TO ROOF STRUCTURE. SEE ELEVATIC DRAWINGS FOR OVERALL BUILDING HEIGHT.
 2. PROPOSED SCREEN WALLS IS IN ARE PAINTED CONCRETE & MIN HEIGHT OF 12'. A MAX UP TO 14' WHERE REQUIRED TO ACCOMMODATE GREEN TRUCK VEHICLE AREA.
 3. PROPOSED FENCES ARE STEEL TUBE CONSTRUCTION AND ARE 6' HIGH.
 4. SHADED AREA IS PROPOSED LANDSCAPING AREA. ALL LANDSCAPE IS IRRIGATED AT BOUNDARY BY 1/2" LONG CURBS WITH EXCEPTION OF PARKING AREAS ARE CEMENT STORMWATER DETENTION BASINS, WHICH SHALL COMPLY WITH RIVERSIDE COUNTY FIF CONTROL REQUIREMENTS.
 5. ALL DRIVE ANGLES SHOWN ARE FOR 3-WAY TRAFFIC, AND ARE A MIN. OF 30' WIDTH BY 12.25' TO 15'.
 6. PARKING STALLS ARE 10' X 18'. STRIPED PER CITY REQUIREMENTS.
 7. MONUMENT SIGNAGE IS NOT PROPOSED AS PART OF THIS PROJECT. A SEPARATE SIG PROGRAM SHALL BE SUBMITTED AND APPROVED SEPARATELY BY CHSRS.
 8. FOR CLARITY, THE PROPOSED FRESH TOPOGRAPHY IS SHOWN ON THE CONCEPTUAL GRADING PLAN. RETAINING WALLS ARE SHOWN ON THIS SITE PLAN.
 9. SEE ELEVATIC SHEETS FOR FRESH TOPOGRAPHY AND RETAINING WALLS AT PROPOSED OPTIC CONCRETE. FUTURES SCOPED ACQUAINTED EQUIPMENT WILL BE ADEQUATELY SCREENED BY THESE PROPOSED IMPROVEMENTS.
 10. EXISTING ZONING TO BE CHANGED. EXISTING ZONING IS SP. BPK, R15, RS & RA2.
 11. DROUGHT TOLERANT TREES, SHRUBS AND GROUND COVER SPECIES SHALL BE USE THE EXTENT POSSIBLE.

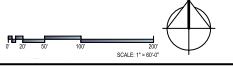


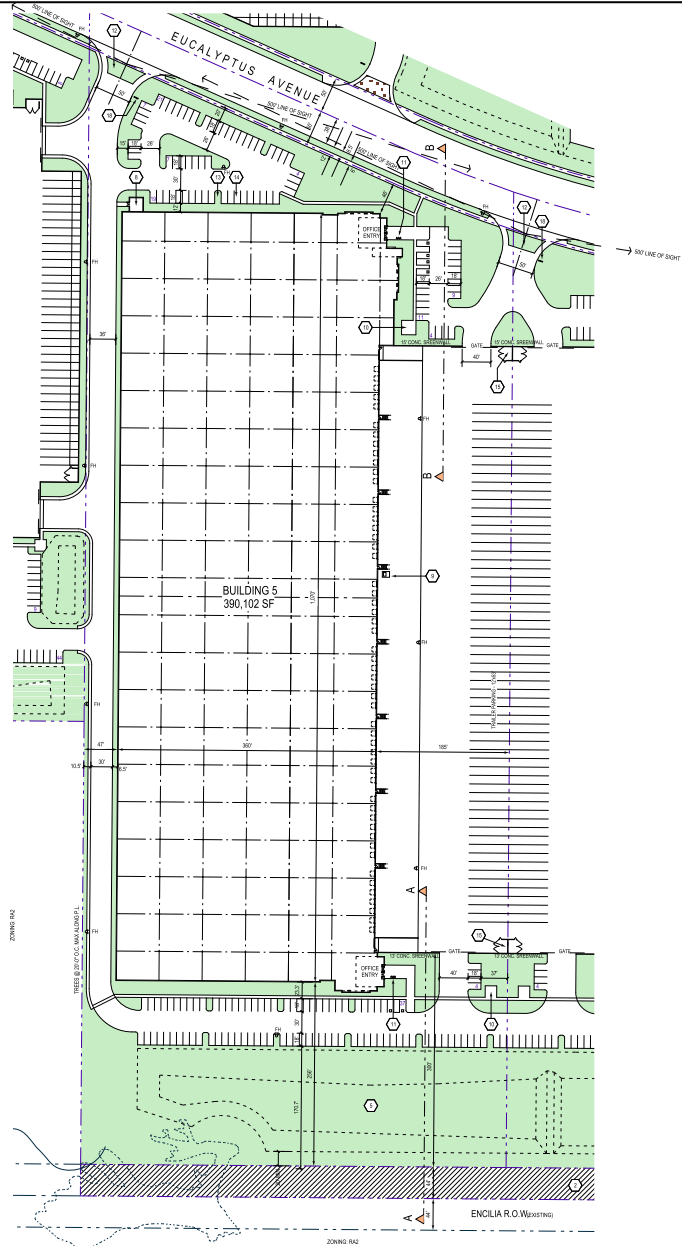
FIGURE 3.6D

Eucalyptus Industrial Park
Environmental Impact Report

Architectural Plan - Building 4

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SA



KEYNOTES

1. N/A
2. EXISTING 44' WIDE RIGHT OF WAY SCHEDULED TO REMAIN FOR FUTURE ENCLIA STRIP
3. N/A
4. N/A
5. SWHET QUALITY BACKLANDSCAPED TO CITY STANDARDS
6. N/A
7. N/A
8. PAINTED CONCRETE TILT UP FIRE PUMP HOUSE TO MATCH MAIN BUILDING PROPORTIONS
9. BUILDING TRANSFORMER SCREENED BY LANDSCAPING OR TRUCK COURT SCREEN
10. LUNCH PATIO
11. BICYCLE RACK AT PRIMARY BUILDING ENTRANCES
12. DECORATIVE COLORED CONCRETE AT DRIVEWAY CURB CUTS
13. TYPICAL LANDSCAPED UNDER 11' PARKING STALLS: 9'W X 18' WITH 12" WIDE CONCRETE CURBS ALONG SIDE AUTO STALLS
14. TYPICAL AUTO PARKING STALL: 9'W X 18' OR 12' WID-OR OVERHANG STALLS TO BE STRIPED PER CITY STANDARDS
15. DOUBLE TRASH ENCLOSURE PER CITY STANDARDS 607A & B
16. N/A
17. N/A
18. SQUARE FOOT SIGN IDENTIFYING THE APPROVED TRUCK ROUTE PLAN AT ALL BAY DRIVEWAY EXIT LOCATIONS. SEE DETAIL 1 ON SHEET A-1104

PROJECT DATA

PROJECT DATA	BUILDING 5
SITE AREA	840,382
SQUARE FEET	19.28
ACRES	
OTHER LOTS (STREETS & RAVINE)	
SQUARE FEET	
ACRES	
BUILDING AREA	390,102
NET COVERAGE	46.42%
AUTO PARKING REQUIRED	
10,000 SF OFFICE @ 4/1000	40
10K - 20K OFFICE @ 4/1000	40
0 - 20K WH @ 1/1000	20
20K - 40K WH @ 1/1000	10
40K + WH @ 1/1000	82
TOTAL PARKING REQUIRED	192
AUTO PARKING PROVIDED	192
BICYCLE PARKING PROVIDED	10
TRUCK DOCK POSITIONS PROVIDED	33
TRUCK / TRAILER PARKING PROVIDED	60
LANDSCAPE REQ @ 10% OF NET SITE	84,038
LANDSCAPE PROVIDED	165,429
	19.69%

VICINITY MAP



OWNER:
 PROJECT: JIM MACARTHUR BLDG. SITE 405
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SEWER:
 EASTERN MUNICIPAL WATER DISTRICT
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ELECTRIC:
 CITY OF MORENO VALLEY / SCE
 T: 951-413-3400 / 951-367-6139

GAS:
 SOUTH-BAY CALIFORNIA GAS COMPANY
 T: 951-263-7396

TELEPHONE:
 VERIZON
 T: 951-263-6840

CABLE:
 THE SHARPE COMMUNICATIONS
 T: 951-465-5852

GENERAL NOTES

1. PROPOSED BUILDINGS ARE TO BE CLIMB WEIGHT TO ROOF STRUCTURE. SEE CIVIL/NO DRAWINGS FOR OVERALL BUILDING HEIGHTS.
2. PROPOSED SCREEN WALLS 16" W/ 1" ARE PAINTED CONCRETE. MAX HEIGHT OF 12' IN VARY UP TO 14' HEIGHTS REQUIRED TO ADEQUATELY SCREEN FROM WIND AREA.
3. PROPOSED FENCES ARE STEEL TUBE CONSTRUCTION AND ARE 5' HIGH.
4. SHARED AREA IS PROPOSED LANDSCAPING AREA. ALL LANDSCAPE IS INTEGRATED AN BEANED BY 8" CONCRETE CURBS WITH EXCEPTIONS OF RAISED AREAS ARE NOTED.
5. CONFORMANCE WITH TECHNICAL REQUIREMENTS, WHICH SHALL COMPLY WITH INVERDIGO COUNTY FL CONTROL REQUIREMENTS.
6. ALL DRIVEWAYS SHOWS ARE FOR 2-WAY TRAFFIC AND ARE A MIN. OF 20' W/ETHAN CLEAR TO CURB.
7. PARKING STALLS ARE 9' X 18'. STRIPED PER CITY REQUIREMENTS.
8. SIGNAGE IS NOT PROPOSED AS PART OF THIS PERMIT. A SEPARATE SIG PROGRAM SHALL BE SUBMITTED AND APPROVED SEPARATELY BY OTHERS.
9. FOR CLARITY, THE PROPOSED FINISH TOPOGRAPHY IS SHOWN ON THE CONCEPTUAL GRADING PLAN. ACTING FINISH SHALL BE SHOWN ON THE SITE PLAN.
10. SEE ELEVATION SHEETS FOR HEIGHTS OF PAINTED AREAS AT PROPOSED OFFICE CORNERS. FUTURE SCOPED AND RELATED EQUIPMENT WILL BE ADEQUATELY SCREENED BY THESE HEIGHTS OF PAINTED AREAS.
11. EXISTING ZONING TO BE CHANGED. EXISTING ZONING IS SP. BPA, R15, R5 & R2.
12. DROUGHT TOLERANT TREES, SHRUBS AND ORNAMENTAL SPECIES SHALL BE USED THE EXTENT POSSIBLE.

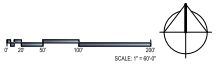


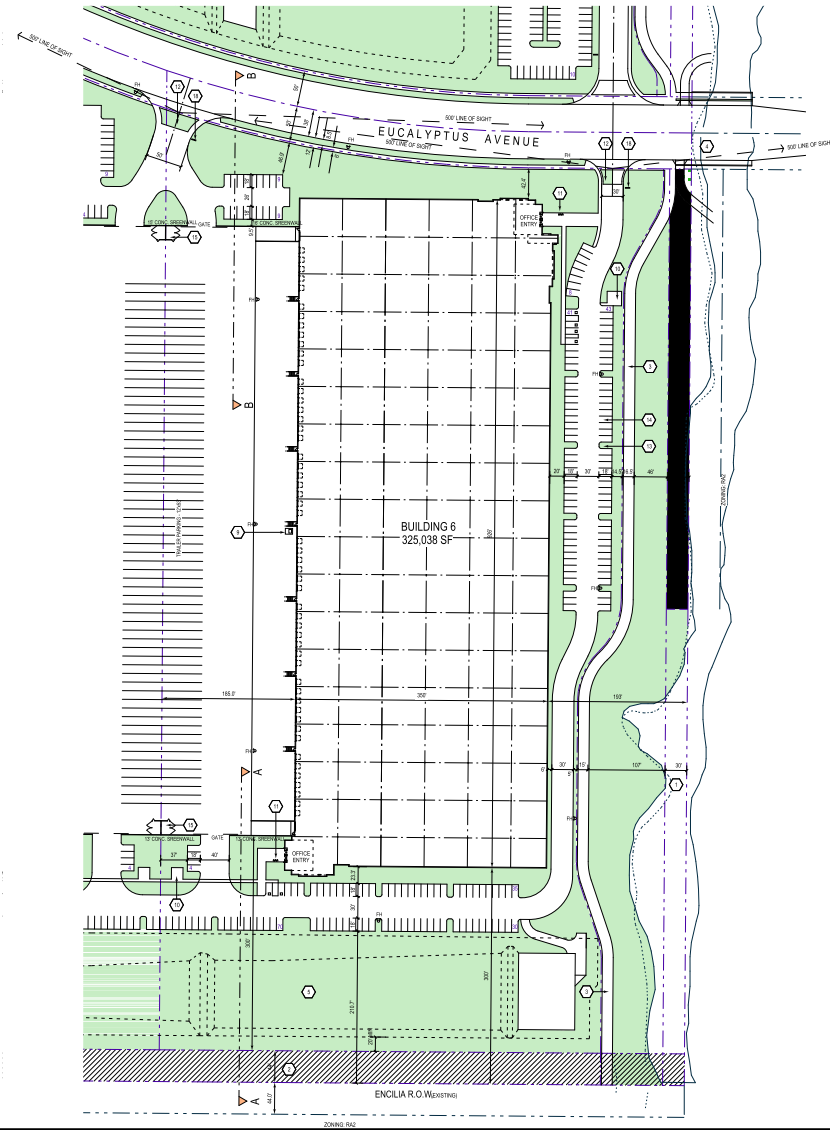
FIGURE 3.6E

Eucalyptus Industrial Park
Environmental Impact Report

Architectural Plan - Building 5

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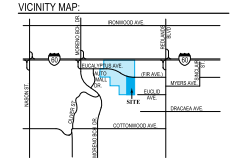
SA



- KEYNOTES**
- EXISTING 34' WIDE RIGHT OF WAY EASEMENT TO BE SACRIFICED.
 - EXISTING 44' WIDE RIGHT OF WAY EASEMENT TO REMAIN FOR FUTURE ENCLIA TRAIL.
 - PROPOSED 14' WIDE MULTIPURPOSE TRAIL.
 - NEW BRIDGE CROSSING PER CITY STANDARDS PLAN 118.
 - WATER QUALITY BASIN LANDSCAPED TO CITY STANDARDS.
 - 10' LANDSCAPED DEDICATION TO CAL TRANS.
 - DOUBLE ROW OF CITRUS TREES TO MATCH FIRE STATION LANDSCAPING.
 - PAINTED CONCRETE TILT UP FIRE PUMP HOUSE TO MATCH MAIN BUILDING ARCHITECTURE.
 - BUILDING TRANSFORMER SCREENED BY LANDSCAPING OR TRUCK COURT SCREEN Y.
 - LUNCH PATIO.
 - BICYCLE RACK AT PRIMARY BUILDING ENTRANCES.
 - RECREATIVE COLORED CONCRETE AT DRIVEWAY CURB CUTS.
 - TYPICAL LANDSCAPED FRAMES BY TRIMMING STALLS 20" X 18" WITH 12" WIDE CONCRETE CURBS ALONGSIDE AUTO STALLS.
 - TYPICAL AUTO PARKING STALL 10' X 18' OR 10' X 20' OVERHANG STALLS TO BE STRIPED PER CITY STANDARDS.
 - DOUBLE TRASH ENCLOSURE PER CITY STANDARDS 607A & B.
 - NA.
 - NA.
 16. 88 SQUARE FOOT SIGN IDENTIFYING THE APPROVED TRUCK ROUTE PLAN AT ALL SERVICE DRIVEWAY EXIT LOCATIONS. SEE DETAIL 1 ON B-REEL A1-N&P.

PROJECT DATA

	BUILDING 6
SITE AREA	770,955
SQUARE FEET	17,661
OTHER LOTS (STREETS & RAVINE)	
SQUARE FEET	
ACRES	
BUILDING AREA	325,038
NET COVERAGE	42.18%
AUTO PARKING REQUIRED	
10,000 SF OFFICE @ 41'000	40
10K - 20K WH @ 41'000	10
2 - 20K WH @ 17'000	20
20K - 40K WH @ 12'000	40
60K - 100K @ 10'000	60
TOTAL PARKING REQUIRED	170
AUTO PARKING PROVIDED	175
BICYCLE PARKING REQ. PROVIDED	9
TRUCK DOCK POSITIONS PROVIDED	53
TRUCK TRAILER PARKING PROVIDED	50
LANDSCAPE REQ @ 10% OF NET SITE	77,096
LANDSCAPE PROVIDED	188,142
	24.42%



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 FAX: 949-341-0000
 E-MAIL: pasc@pascad.com
 CONTACT: DENISE ROY

UTILITY PURVEYORS:
 WATER: GCS SOUTHERN CALIFORNIA GAS COMPANY
 EASTERN MUNICIPAL WATER DISTRICT
 T: 951-413-3400
 SEWER: EASTERN MUNICIPAL WATER DISTRICT
 T: 951-413-3400
 ELECTRIC: CITY OF IRVINE VALLEY / SCE
 T: 951-413-3400 / 951-307-8100
 CABLE: SOUTHERN CALIFORNIA GAS COMPANY
 TELEPHONE: VERIZON
 T: 951-768-8648
 CABLE: TIME WARNER COMMUNICATIONS
 T: 951-466-3800

- GENERAL NOTES:**
- PROPOSED BUILDING AREA IS CLEAR HEIGHT TO ROOF STRUCTURE. SEE ELEVATION DRAWINGS FOR OVERALL BUILDING HEIGHT.
 - PROPOSED SCREEN WALLS (S) IF ARE PAINTED CONCRETE A MIN. HEIGHT OF 12'. (A) WALLS UP TO 16' ARE REQUIRED TO ADEQUATELY SCREEN TRUCK TRAILER HEADS.
 - PROPOSED FENCES ARE STEEL TUBE CONSTRUCTION AND ARE 6' HIGH.
 - SHADED AREA IS PROPOSED LANDSCAPING AREA. ALL LANDSCAPE IS INSTALLED AN 80% BY 12" CONC. CURBS WITH EXCEPTIONS FOR RAIOLE AREAS AND CRUISE. STEERWATER RETENTION BASINS, WHICH SHALL COMPLY WITH RIVERSIDE COUNTY FC CONTROL REQUIREMENTS.
 - ALL DRIVE RABLES SHOWS ARE FOR 2-WAY TRAFFIC, AND ARE A MIN. OF 30' WIDTH AN CLEAR TO 5'6".
 - PARKING STALLS ARE 8' X 10'. STRIPED PER CITY REQUIREMENTS.
 - MOULDED SIGNAGE IS NOT PROPOSED AS PART OF THIS PERMIT. A SEPARATE SIG PROGRAM SHALL BE SUBMITTED AND APPROVED SEPARATELY TO OTHERS.
 - FOR CLARITY, THE PROPOSED FINISH TOPOGRAPHY IS SHOWN ON THE CONCEPTUAL GRADING PLAN. RETAINING WALLS ARE SHOWN ON THIS SITE PLAN.
 - SEE ELEVATION SHEETS TO VIEW HEAD-ON TRUCK TRAILER HEADS AT PROPOSED OFFICE COURSE. FUTURE ROAD AND UTILITY EQUIPMENT WILL BE ADEQUATELY SCREENED BY THESE RESTRICTED TRAILER HEADS.
 - EXISTING ZONING TO BE CHANGED. EXISTING ZONING IS SP, SPX, R10, R5 & R10.
 - PROUGHT TOLERANT TREES, SHRUBS AND GROUNDCOVER SPECIES SHALL BE USED THE EXISTING POSSIBLE.

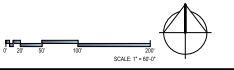
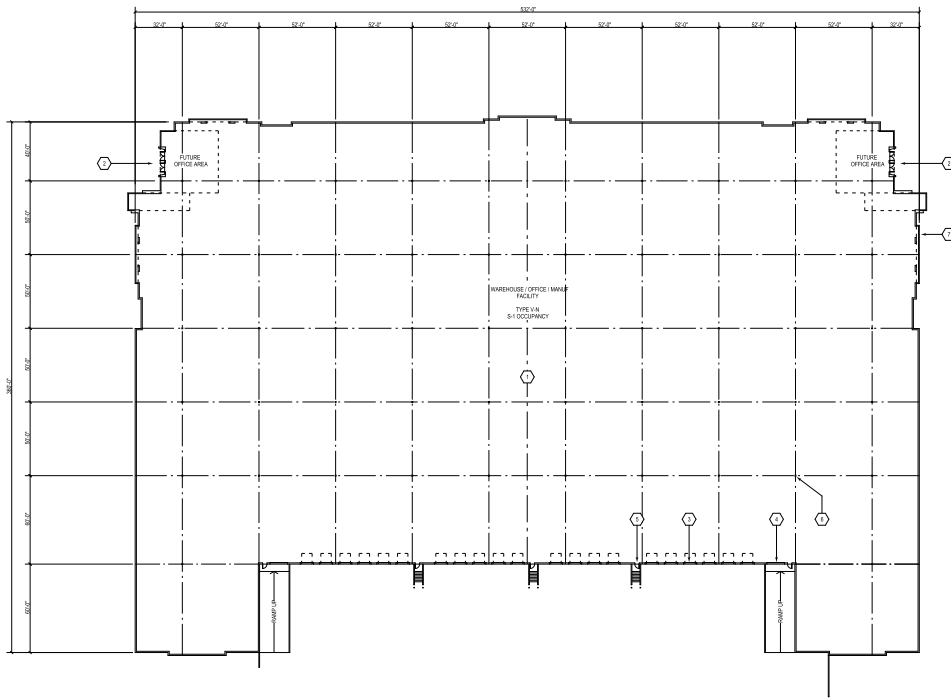


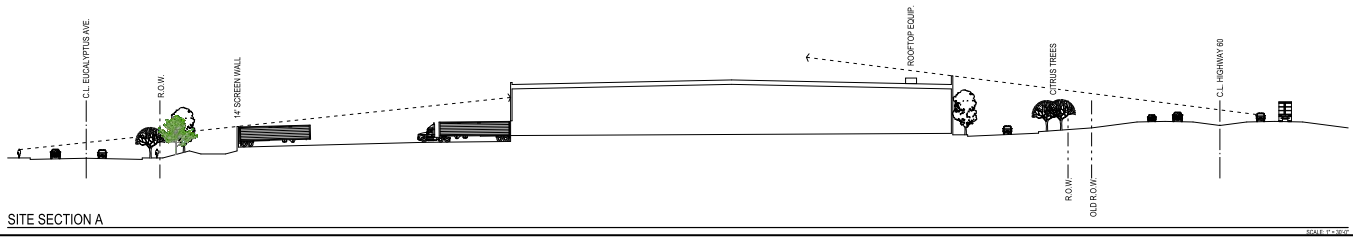
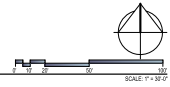
FIGURE 3.6F
 Eucalyptus Industrial Park
 Environmental Impact Report
 Architectural Plan - Building 6

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- KEYNOTES**
1. PAINTED CONCRETE TILT-UP WAREHOUSE / OFFICE / MANUFACTURING FACILITY.
 2. PRIMARY BUILDING ENTRANCE.
 3. PAINTED 8' X 10' DOOR-HIGH METAL TRUCK DOORS.
 4. PAINTED 12' X 16' GRADE-LEVEL METAL TRUCK DOORS.
 5. PAINTED 8' X 7' METAL ACCESS WARD DOORS.
 6. STRUCTURAL BUILDING COLUMN.
 7. STOREFRONT GLAZING SET IN CLEAR ANODIZED ALUMINUM 2" X 4" 14" MAX. OFF-SE GLAZING SYSTEM.
 8. CONCRETE TILT-UP SCREEN WALL. PAINT TO MATCH BUILDING.



FLOOR PLAN - BUILDING 1



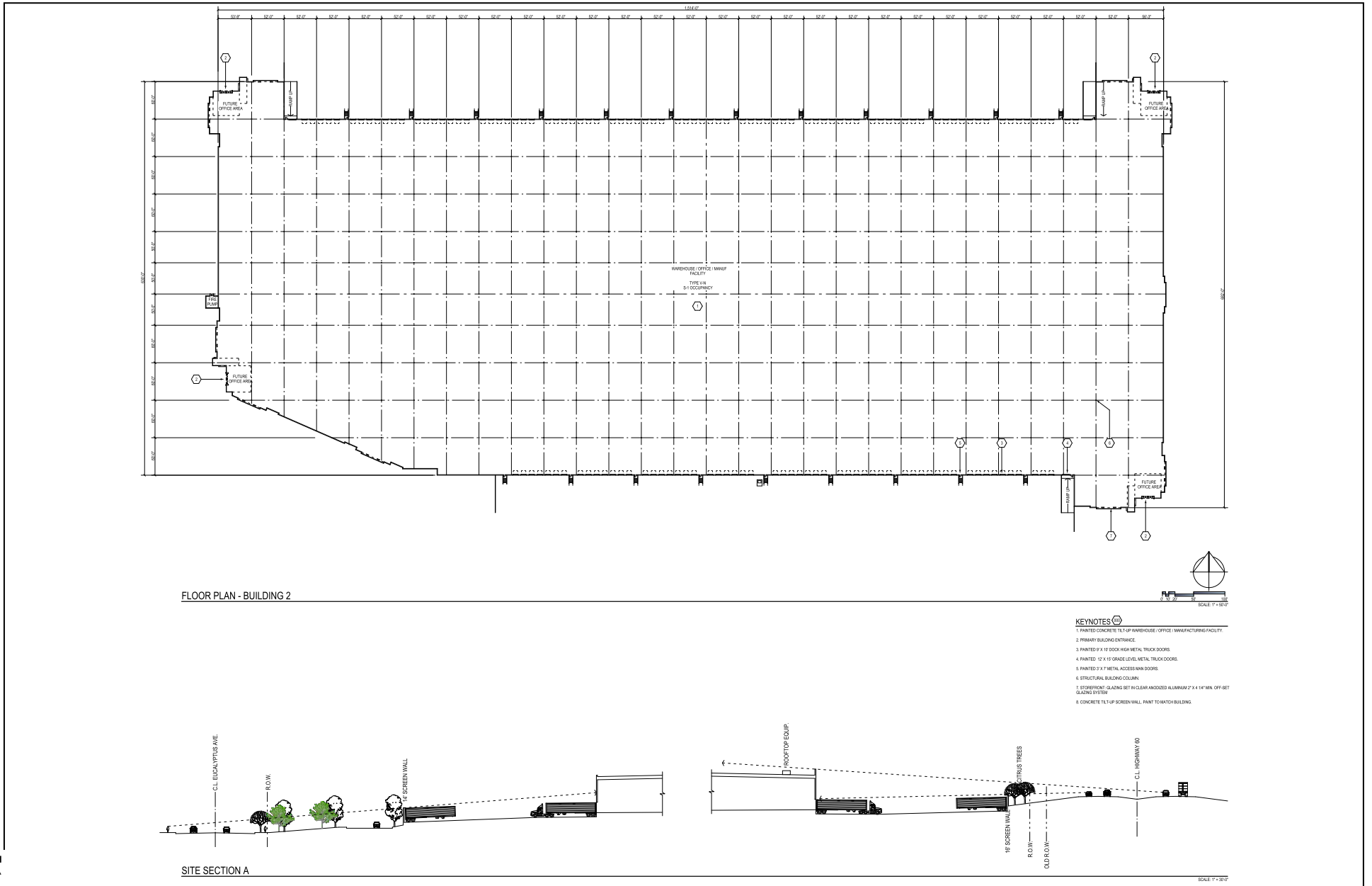
SITE SECTION A

S A

FIGURE 3.7A
Eucalyptus Industrial Park
Environmental Impact Report

Floor Plan and Line of Sight - Building 1

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S A

FIGURE 3.7B

*Eucalyptus Industrial Park
Environmental Impact Report*

Floor Plan and Line of Sight - Building 2

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S A

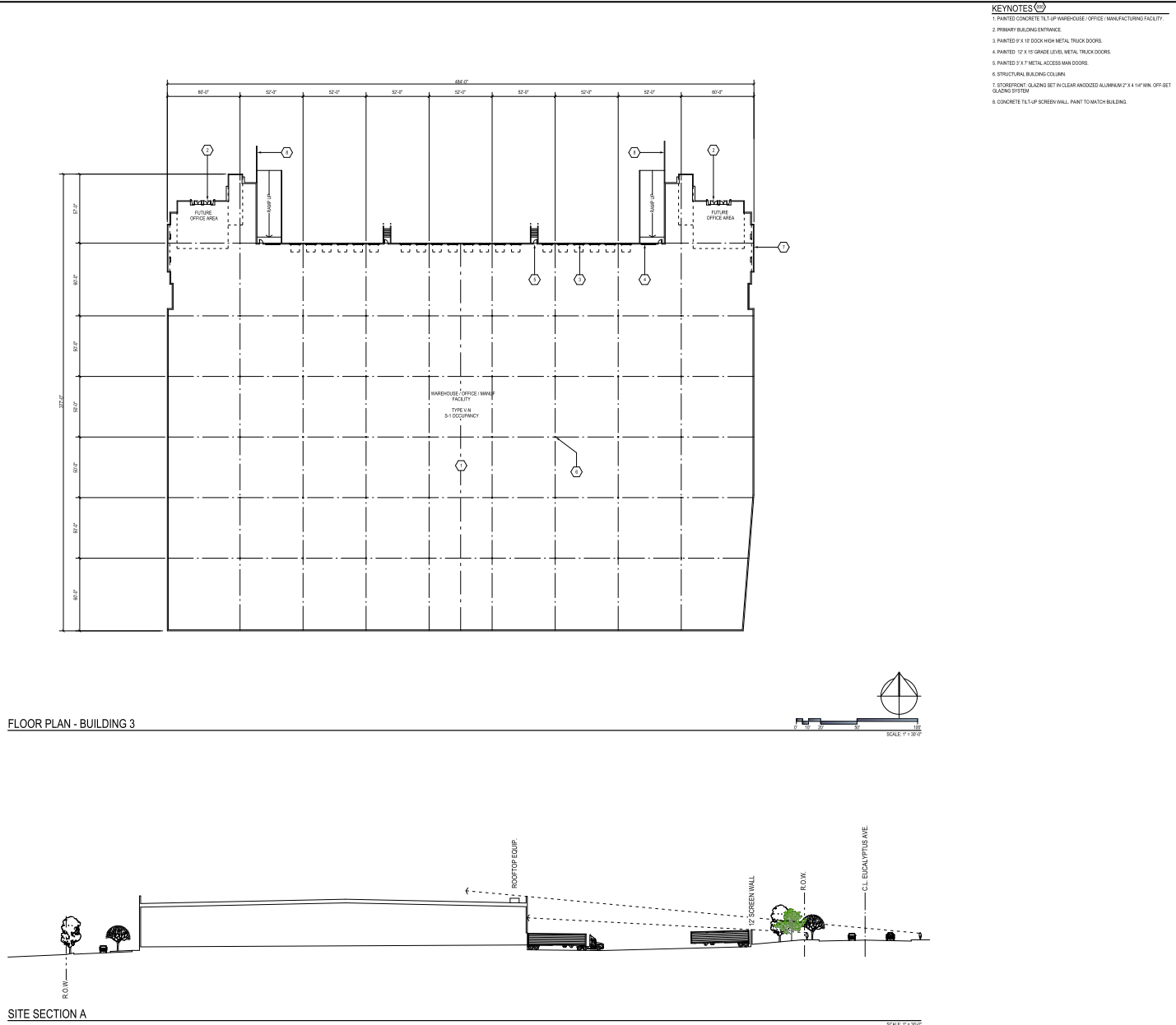


FIGURE 3.7C

*Eucalyptus Industrial Park
Environmental Impact Report*

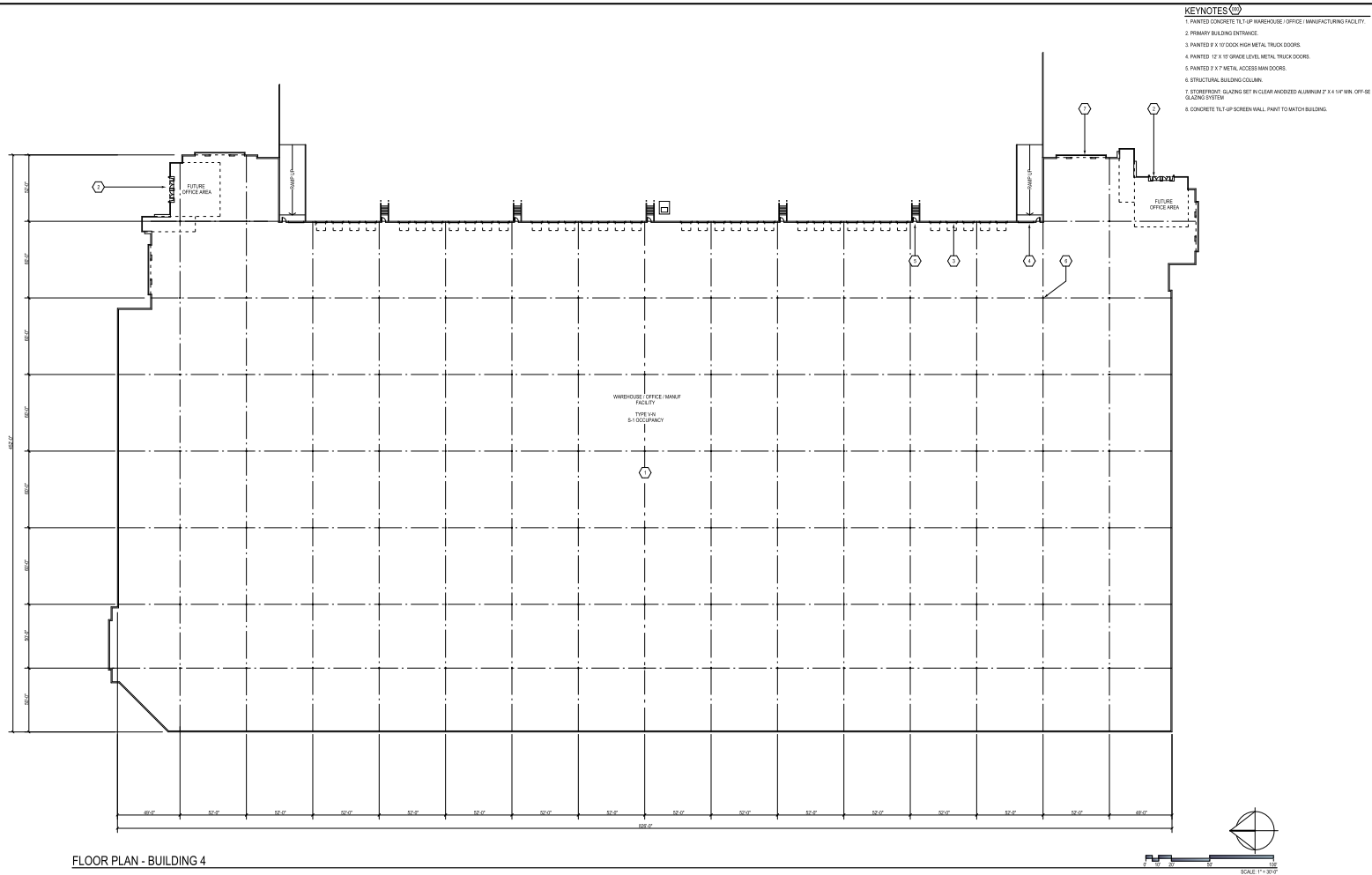
Floor Plan and Line of Sight - Building 3

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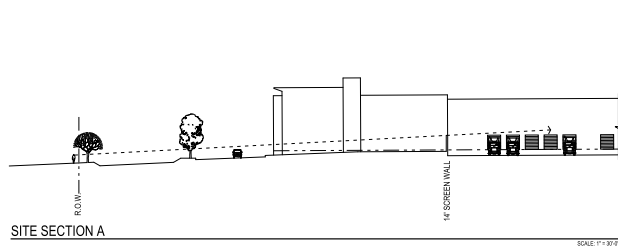
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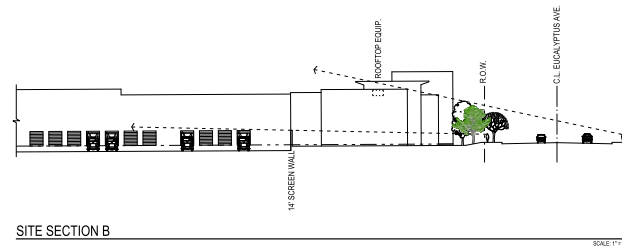
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FLOOR PLAN - BUILDING 4



SITE SECTION A



SITE SECTION B

FIGURE 3.7D

*Eucalyptus Industrial Park
Environmental Impact Report*

Floor Plan and Line of Sight - Building 4

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Item No. E.3

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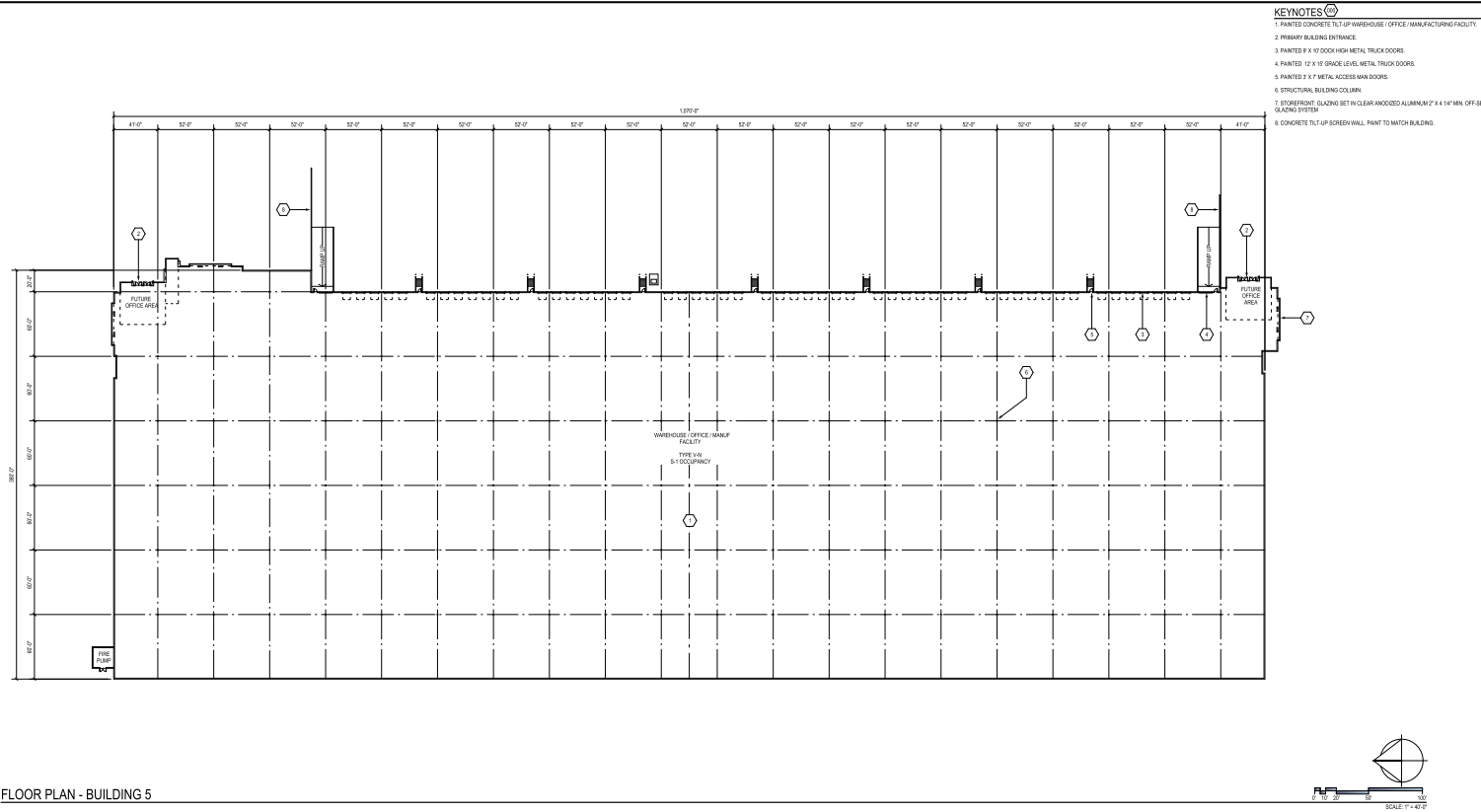
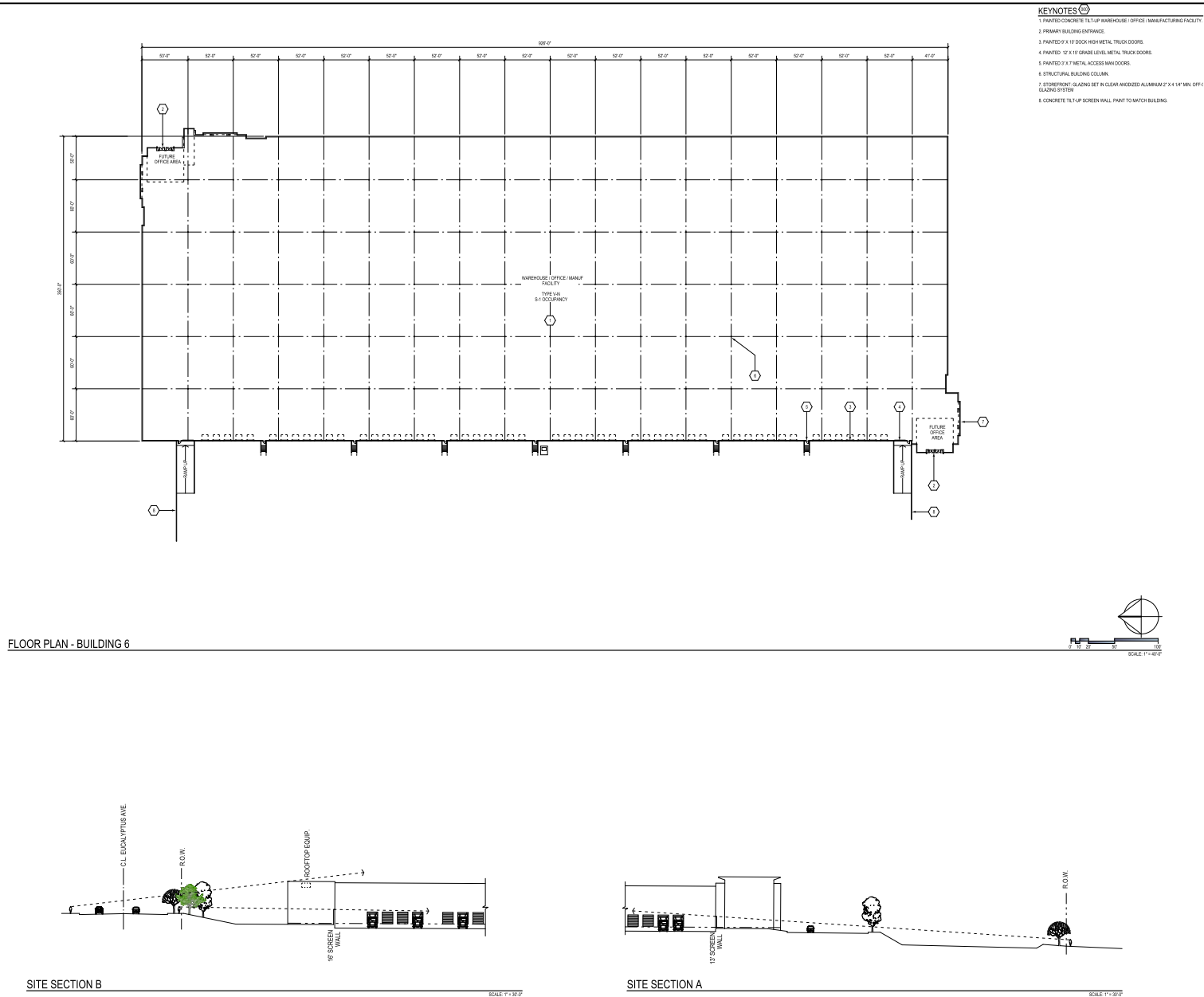


FIGURE 3.7E

*Eucalyptus Industrial Park
Environmental Impact Report*

Floor Plan and Line of Sight - Building 5

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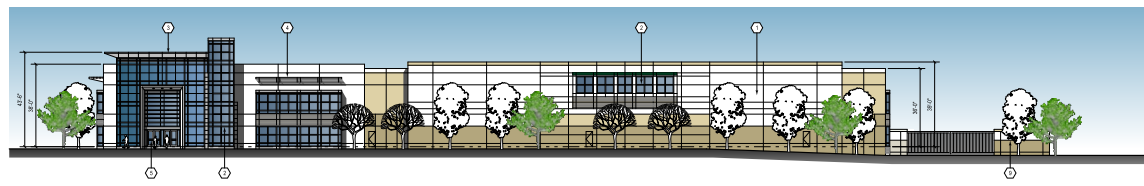
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FIGURE 3.7F

*Eucalyptus Industrial Park
Environmental Impact Report*

Floor Plan and Line of Sight - Building 6

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WEST ELEVATION

SCALE: 1/4" = 1'-0"

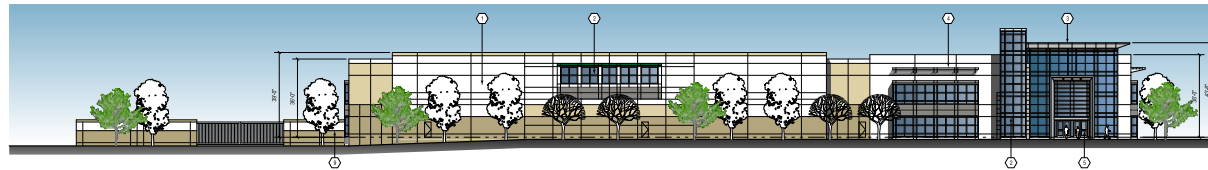
KEYNOTES

- 1. PAINTED CONCRETE TILT-UP PANELS IN ACCENT REVEALS AS SHOWN
- 2. REFLECTIVE BLUE GLASS IN CLEAR ANODIZED ALUMINUM FINISH SYSTEM
- 3. ALUMINUM FINISHED CANOPY OVER ENTRY ELEMENT
- 4. METAL SHADING DEVICE OVER UPPER LEVEL WINDOWS
- 5. RECESSED ENTRY WITH PRIMARY GLASS ENTRANCE DOORS
- 6. PAINTED 2" X 10" DOOR HIGH VERTICAL LIFT METAL TRUCK DOOR ASSEMBLY WITH DOOR BUMPERS SEE DOOR SCHEDULE
- 7. PAINTED 12" X 14" GRADE LEVEL VERTICAL LIFT METAL TRUCK DOOR ASSEMBLY SEE DOOR SCHEDULE
- 8. ACCENT CLADDING MATERIAL AT OFFICE ENTRY ELEMENTS
- 9. CONCRETE TILT-UP SCREEN WALL PAINT AND REVEALS AS SHOWN TO MATCH BUILDING



NORTH ELEVATION

SCALE: 1/4" = 1'-0"

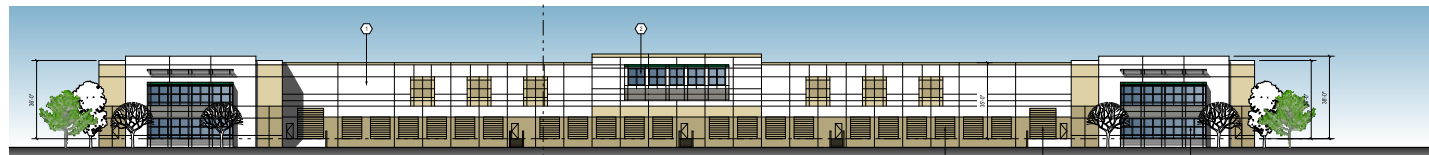


EAST ELEVATION

SCALE: 1/4" = 1'-0"

FINISH SCHEDULE

- 1. FIELD COLOR - PLO-1 PAPER WHITE - SHERWIN WILLIAMS SW 288
- 2. ACCENT COLOR - PLO-2 STONE LUCKY - SHERWIN WILLIAMS SW 707
- 3. BASE ACCENT COLOR - PLO-3 TAVENI TRAPE - SHERWIN WILLIAMS SW 717
- 4. PROLOGUS ACCENT COLOR - PLO-4 TALL TREE GREEN - AMERTONE 18L
- 5. VISION GLAZING - SEE KEYNOTE 5 - VISTON VERSALUX 14" BLUE 200R. SEE KEYNOTES FOR LOCATIONS OF INSULATED UNITS.



SOUTH ELEVATION

SCALE: 1/4" = 1'-0"



SCREENWALL ELEVATION

SCALE: 1/4" = 1'-0"

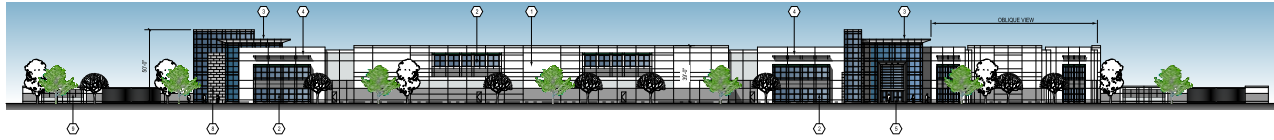
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FIGURE 3.8A
Eucalyptus Industrial Park
Environmental Impact Report
 Elevations - Building I

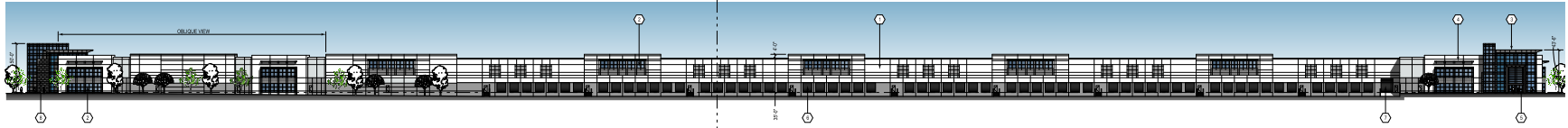
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SA

- KEYNOTES**
1. PAINTED CONCRETE TILT-UP PANELS IN ACCENT REVEALS AS SHOWN.
 2. REFLECTIVE BLUE GLASS IN CLEAR ANODIZED ALUMINUM MULLION SYSTEM.
 3. ALUMINUM FINISHED CORNICES OVER ENTRY ELEMENTS.
 4. METAL SHADING DEVICE OVER UPPER LEVEL WINDOWS.
 5. RECESSED ENTRY WITH PRIMARY GLASS ENTRANCE DOORS.
 6. PAINTED 2" x 1" COOK HIGH VERTICAL LIFT METAL TRUCK DOOR ASSEMBLY WITH COOK BLINDERS SEE DOOR SCHEDULE.
 7. PAINTED 1/2" x 1/4" GRADE LEVEL VERTICAL LIFT METAL TRUCK DOOR ASSEMBLY - SEE DOOR SCHEDULE.
 8. ACCENT CLADDING MATERIAL AT OFFICE ENTRY ELEMENTS.
 9. CONCRETE TILT-UP SCREEN WALL PAINT AND REVEALS AS SHOWN TO MATCH BUILDING.

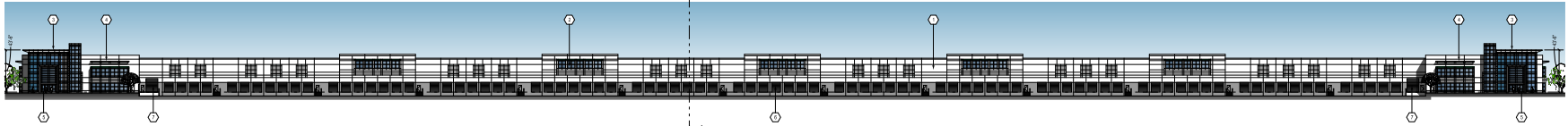


WEST ELEVATION
SCALE: 1/4" = 1'-0"

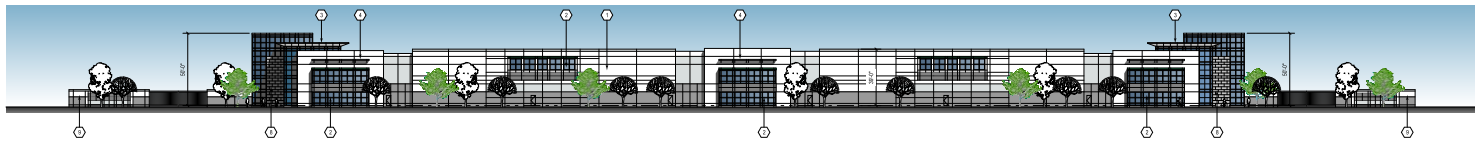


SOUTH ELEVATION
SCALE: 1/4" = 1'-0"

- FINISH SCHEDULE**
1. FIELD COLOR - PLO4 SABLE - SHERWIN WILLIAMS SW 000
 2. ACCENT COLOR - PLO-7 LAGOONIC TINT - SHERWIN WILLIAMS SW 000
 3. BASE ACCENT COLOR - PLO-3 JAGUAR - SHERWIN WILLIAMS SW 000
 4. PROLOGIS ACCENT COLOR - PLO4 - TALL TREE GREEN - AMERITONE 1B,18A
 5. SYSTEM GLAZING - SEE KEYNOTE 2 - JUSTON VERTICAL 1/4" BLUE 200PL. SEE KEYNOTES FOR LOCATIONS OF INSULATED UNITS.



NORTH ELEVATION
SCALE: 1/4" = 1'-0"



EAST ELEVATION
SCALE: 1/4" = 1'-0"

FIGURE 3.8B

*Eucalyptus Industrial Park
Environmental Impact Report*

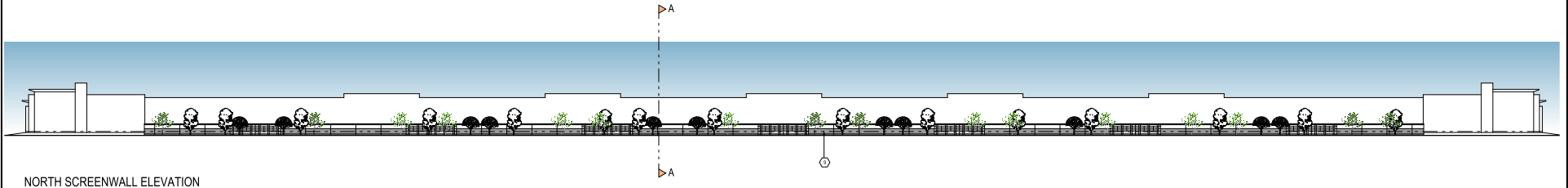
Elevations - Building 2a

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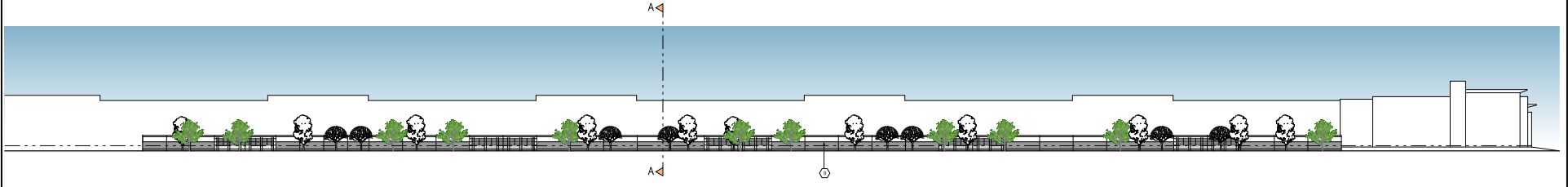
KEYNOTES
 9. CONCRETE TILT-UP SCREEN WALL PAINT AND REVEALS AS SHOWN TO MATCH BUILDING.

FINISH SCHEDULE

1	FIELD COLOR - PCD-4 SABLE - SHERWIN WILLIAMS SW 0000
2	ACCENT COLOR - PFD-7 LAQUORCE TINT - SHERWIN WILLIAMS SW 0000
3	BASE ACCENT COLOR - PFD-3 JAGUAR - SHERWIN WILLIAMS SW 0000
4	PROLOGOS ACCENT COLOR - PFD-4 TALL TREE GREEN - AEROTONE 18 15A
5	VISION GLAZING - SEE KEYNOTE 6 - VITTON VERVALUX 14" BLUE 200P SEE KEYNOTES FOR LOCATIONS OF INSULATED UNITS.



NORTH SCREENWALL ELEVATION
 SCALE: 1"=40'-0"



SOUTH SCREENWALL ELEVATION
 SCALE: 1"=30'-0"

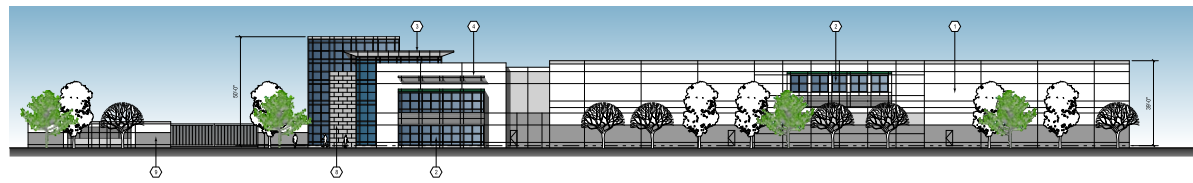
-3975-

Item No. E.3

S A

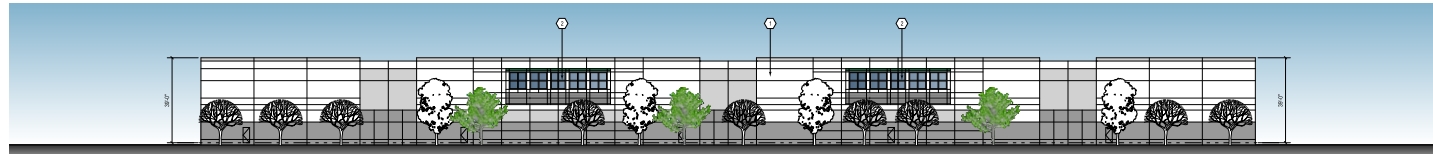
FIGURE 3.8C
Eucalyptus Industrial Park
Environmental Impact Report
 Elevations - Building 2b

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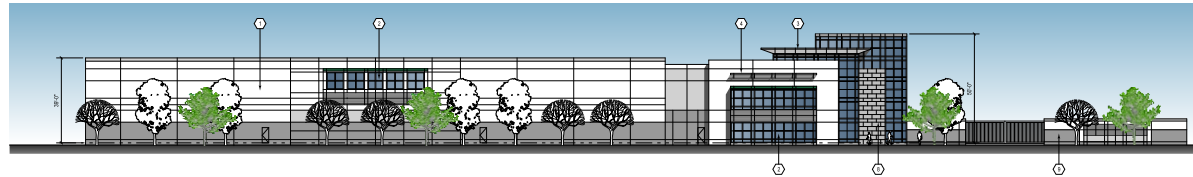


WEST ELEVATION
SCALE: 1" = 20'-0"

- KEYNOTES**
1. PAINTED CONCRETE TILT-UP PANELS IN ACCENT REVEALS AS SHOWN
 2. REFLECTIVE BLUE GLASS IN CLEAR ANODIZED ALUMINUM MULLION SYSTEM
 3. ALUMINUM FINISHED CORNICE OVER ENTRY ELEMENT
 4. METAL SHADING DEVICE OVER UPPER LEVEL WINDOWS
 5. RECESSED ENTRY WITH PRIMARY GLASS ENTRANCE DOORS
 6. PAINTED 10" X 10" DOOR HIGH VERTICAL LIFT METAL TRUCK DOOR ASSEMBLY WITH DOOR BUMPERS. SEE DOOR SCHEDULE
 7. PAINTED 12" X 14" GRADE LEVEL VERTICAL LIFT METAL TRUCK DOOR ASSEMBLY. SEE DOOR SCHEDULE
 8. ACCENT CLADDING MATERIAL AT OFFICE ENTRY ELEMENTS
 9. CONCRETE TILT-UP SCREEN WALL PAINT AND REVEALS AS SHOWN TO MATCH BUILDING

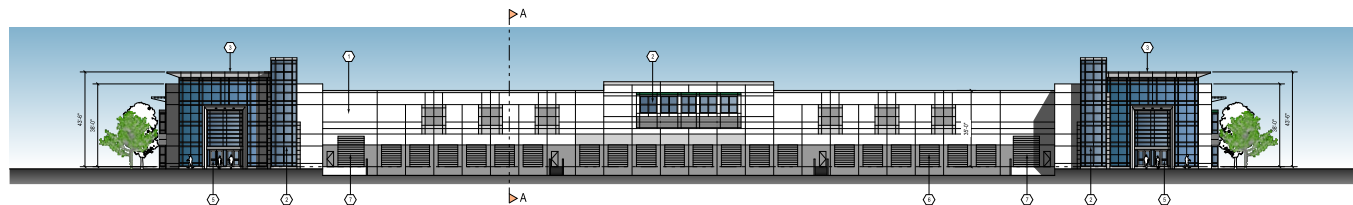


SOUTH ELEVATION
SCALE: 1" = 20'-0"

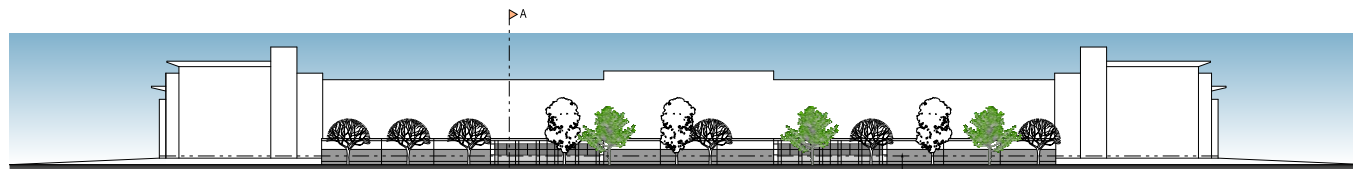


EAST ELEVATION
SCALE: 1" = 20'-0"

- FINISH SCHEDULE**
- | | |
|---|-----------------------------------------------------------------------------------------------------------------|
| 1 | FIELD COLOR - PLS4 SABLE - SHERWIN WILLIAMS SW 0000 |
| 2 | ACCENT COLOR - PLS7 LUXURIOUS TINT - SHERWIN WILLIAMS SW 0000 |
| 3 | BASE ACCENT COLOR - PLS3 JAGUAR - SHERWIN WILLIAMS SW 0000 |
| 4 | PROLOGS ACCENT COLOR - PLS4 TALL TREES GREEN - AMERITONE 18L |
| 5 | VISION GLAZING - SEE KEYNOTE 6 - VISTON VERSALUX 1/4" BLUE 2008. SEE KEYNOTES FOR LOCATIONS OF INSULATED UNITS. |



NORTH ELEVATION
SCALE: 1" = 20'-0"

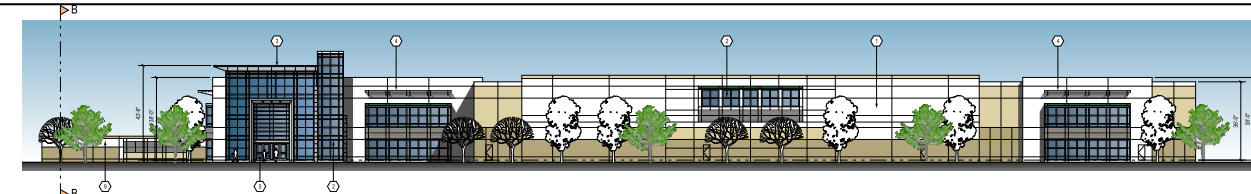


SCREENWALL ELEVATION
SCALE: 1" = 20'-0"

S A

FIGURE 3.8D
*Eucalyptus Industrial Park
Environmental Impact Report*
Elevations - Building 3

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NORTH ELEVATION
SCALE 1/8" = 1'-0"

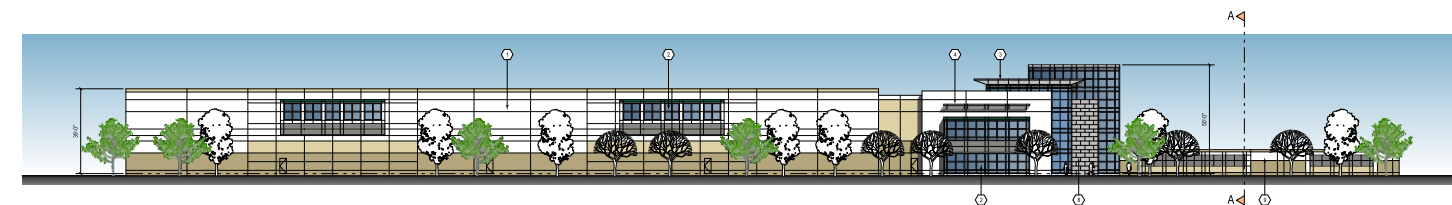
- KEYNOTES**
1. PAINTED CONCRETE TILT-UP PANELS ON ACCENT REVEALS AS SHOWN.
 2. REFLECTIVE BLUE GLASS IN CLEAR ANODIZED ALUMINUM MULLION SYSTEM.
 3. ALUMINUM FINISHED CORNICE OVER ENTRY ELEMENT.
 4. METAL SHADING DEVICE OVER UPPER LEVEL WINDOWS.
 5. RECESSED ENTRY WITH PRIMARY GLASS ENTRANCE DOORS.
 6. PAINTED 8'0" X 12' DOOR-HIGH VERTICAL LIFT METAL TRUCK DOOR ASSEMBLY WITH DOOR BUMPERS. SEE DOOR SCHEDULE.
 7. PAINTED 12' X 14' GRACE LEVEL VERTICAL LIFT METAL TRUCK DOOR ASSEMBLY. SEE DOOR SCHEDULE.
 8. ACCENT CLADDING MATERIAL AT OFFICE ENTRY ELEMENTS.
 9. CONCRETE TILT-UP SCREEN WALL PAINT AND REVEALS AS SHOWN TO MATCH BUILDING.

FINISH SCHEDULE

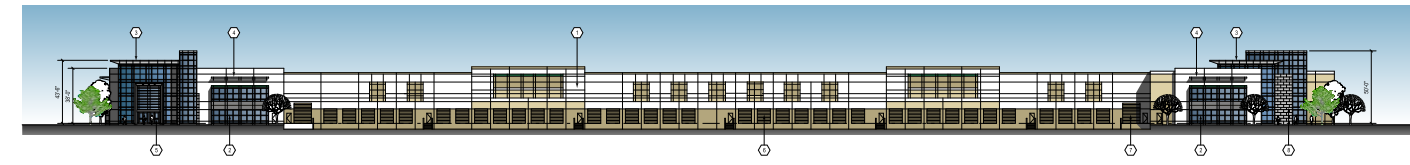
1. FRESH COLOR - PLD-1 PARIS WHITE - SHERWIN WILLIAMS SW 2881
2. ACCENT COLOR - PLD-3 STONE LON - SHERWIN WILLIAMS SW 7527
3. BASE ACCENT COLOR - PLD-5 TAVEN TAUPÉ - SHERWIN WILLIAMS SW
4. PROLOGS ACCENT COLOR - PLD-4 TALL TREE GREEN - AMERTONE 118
5. VISION GLAZING - SEE KEYNOTE 1 - VISION VERSALUX 14" BLUE 289R SEE KEYNOTES FOR LOCATIONS OF INSULATED UNITS.



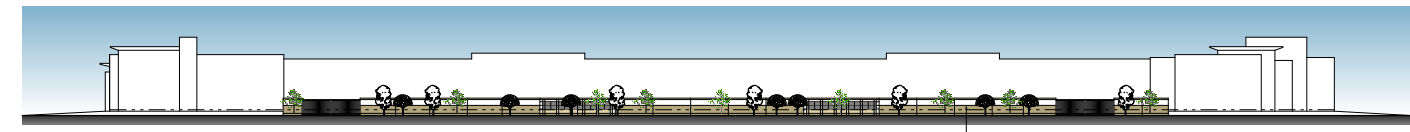
WEST ELEVATION
SCALE 1/8" = 1'-0"



SOUTH ELEVATION
SCALE 1/8" = 1'-0"



EAST ELEVATION
SCALE 1/8" = 1'-0"



SCREENWALL ELEVATION
SCALE 1/8" = 1'-0"

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FIGURE 3.8E
Eucalyptus Industrial Park
Environmental Impact Report
 Elevations - Building 4

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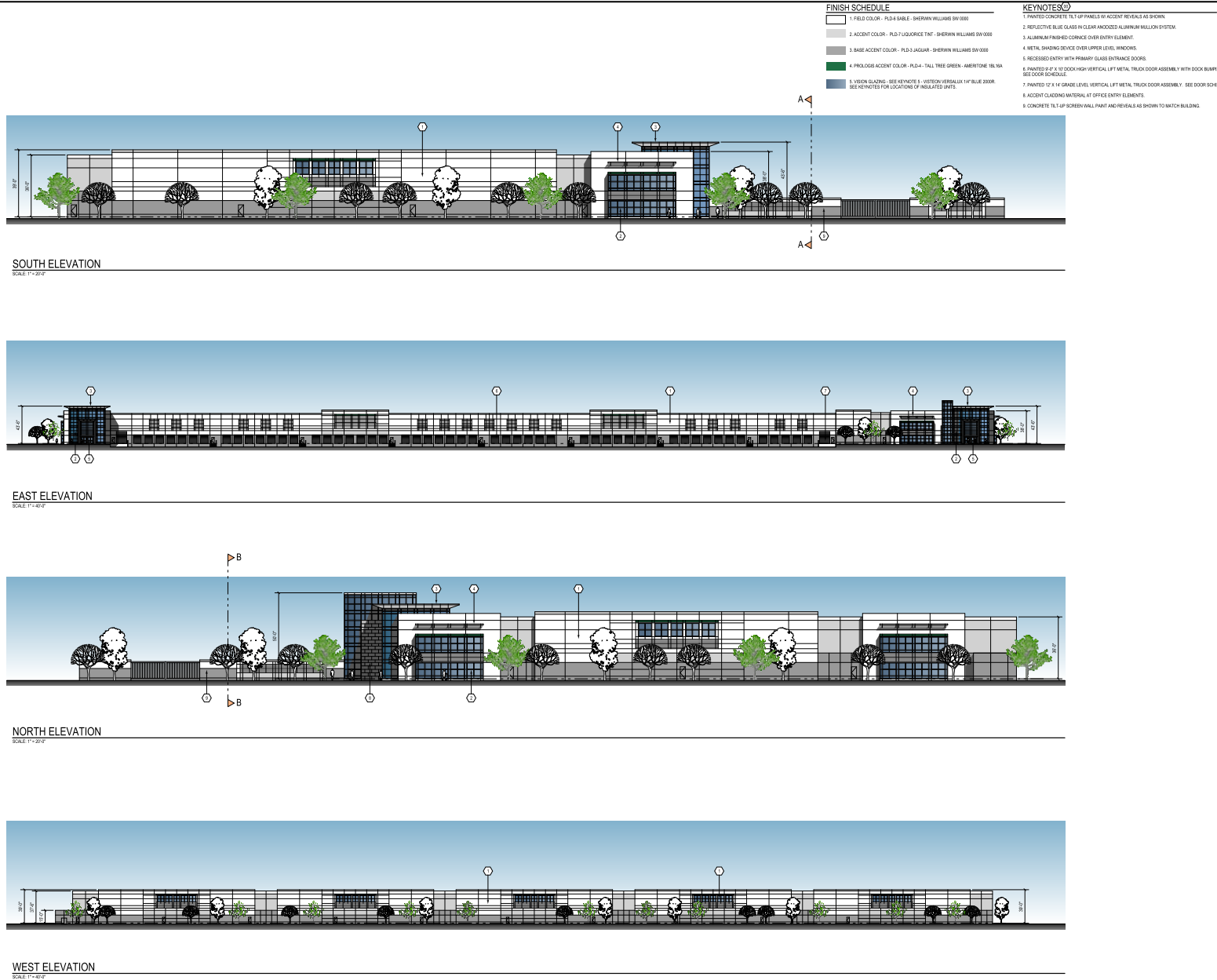


FIGURE 3.8F
Eucalyptus Industrial Park
Environmental Impact Report
 Elevations - Building 5

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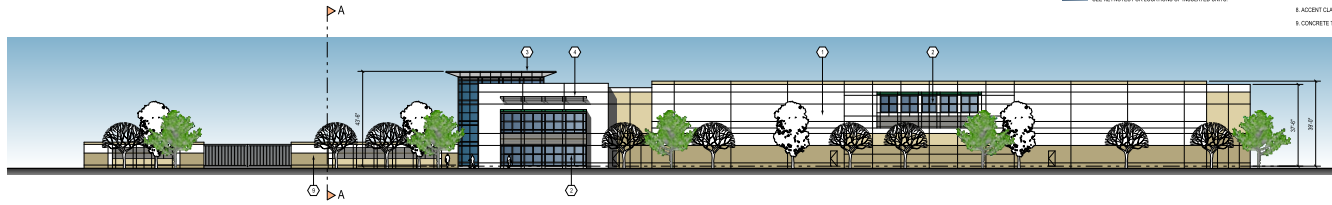
- S A

FINISH SCHEDULE

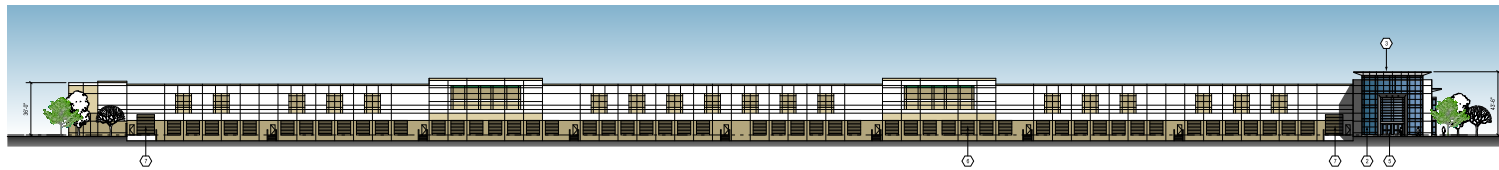
- 1. FIELD COLOR - PLO-1 PAPER WHITE - SHERWIN WILLIAMS SW 2041
- 2. ACCENT COLOR - PLO-2 STONE LION - SHERWIN WILLIAMS SW 7507
- 3. BASE ACCENT COLOR - PLO-3 FAUVEN TALPE - SHERWIN WILLIAMS SW 7008
- 4. PROLOGS ACCENT COLOR - PLO-4 TALL TREE GREEN - AMERITONE 16L16A
- 5. VISION GLAZING - SEE KEYNOTE E - WESTERN VERSALUX 14" BLUE 200R - SEE KEYNOTES FOR LOCATIONS OF INSULATED UNITS

KEYNOTES

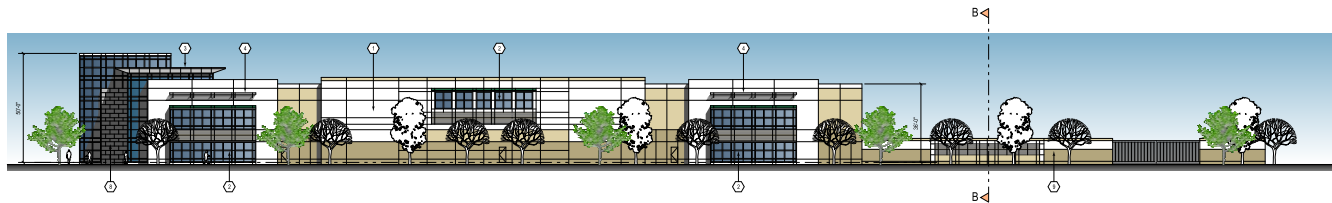
- 1. PAINTED CONCRETE TILT-UP PANELS IN ACCENT REVEALS AS SHOWN
- 2. REFLECTIVE BLUE GLASS IN CLEAR ANODIZED ALUMINUM MULLION SYSTEM
- 3. ALUMINUM FINISHED CORNICE OVER ENTRY ELEMENT
- 4. METAL SHADING DEVICE OVER UPPER LEVEL WINDOWS
- 5. RECESSED ENTRY WITH PRIMARY GLASS ENTRANCE DOORS
- 6. PAINTED 8'0" x 10'0" COOK-HIGH VERTICAL LIFT METAL TRUCK DOOR ASSEMBLY WITH DOCK BUM - SEE DOOR SCHEDULE
- 7. PAINTED 12' x 14' GRADE LEVEL VERTICAL LIFT METAL TRUCK DOOR ASSEMBLY - SEE DOOR SC
- 8. ACCENT CLADDING MATERIAL AT OFFICE ENTRY ELEMENTS
- 9. CONCRETE TILT-UP SCREEN WALL PAINT AND REVEALS AS SHOWN TO MATCH BUILDING



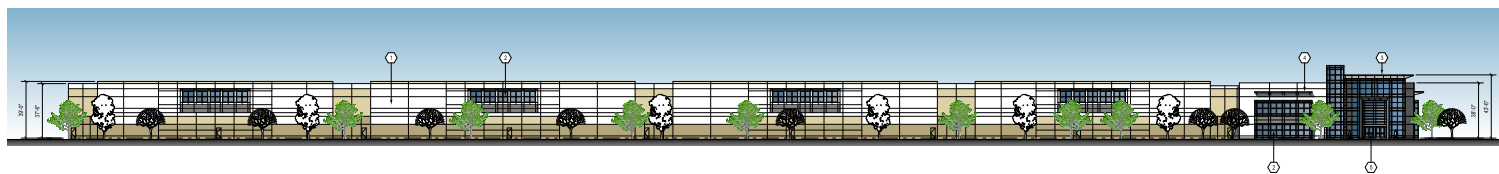
SOUTH ELEVATION
SCALE 1" = 20'-0"



WEST ELEVATION
SCALE 1" = 20'-0"



NORTH ELEVATION
SCALE 1" = 20'-0"



EAST ELEVATION
SCALE 1" = 20'-0"

FIGURE 3.8G

*Eucalyptus Industrial Park
Environmental Impact Report
Elevations - Building 6*

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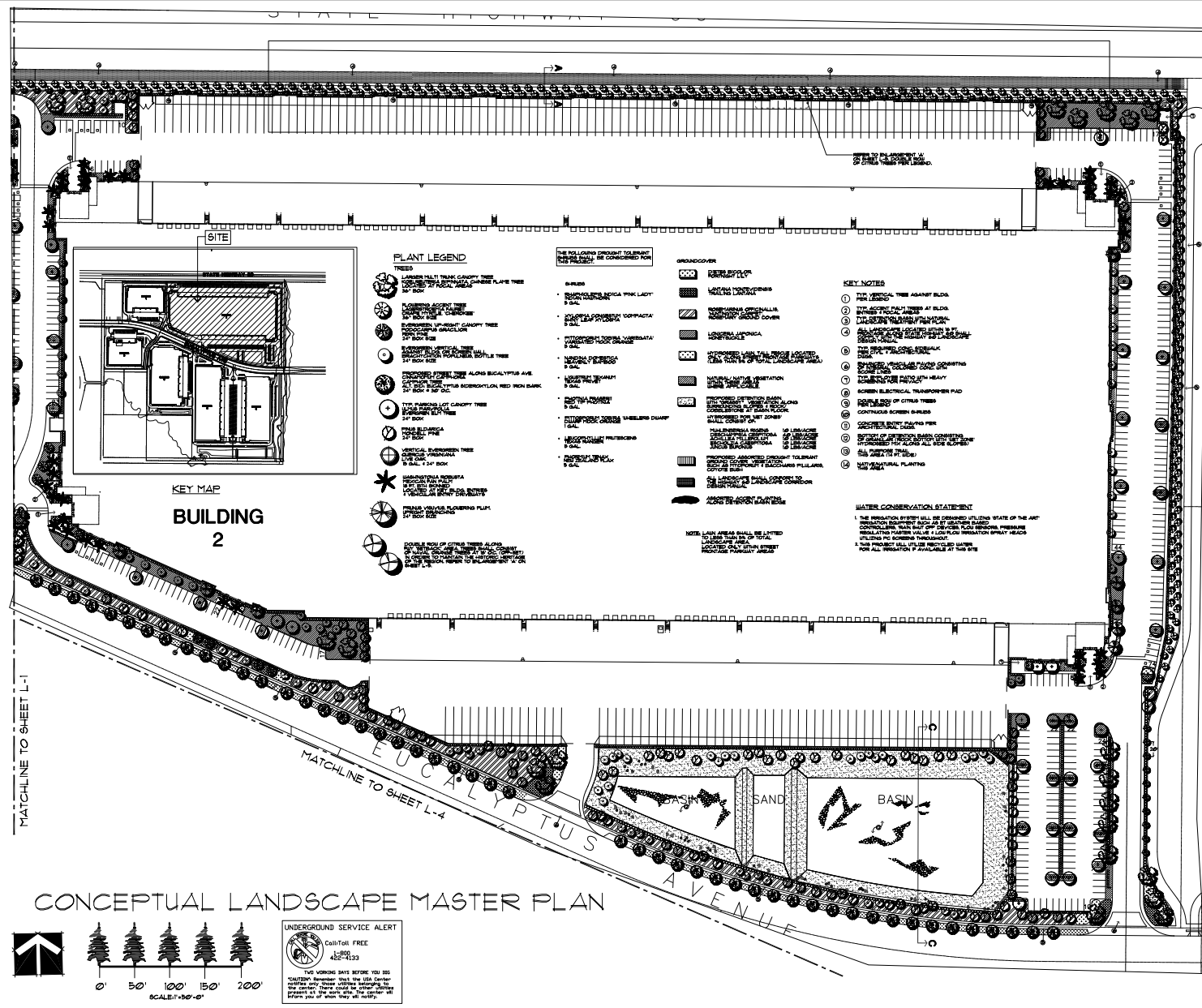


FIGURE 3.9B

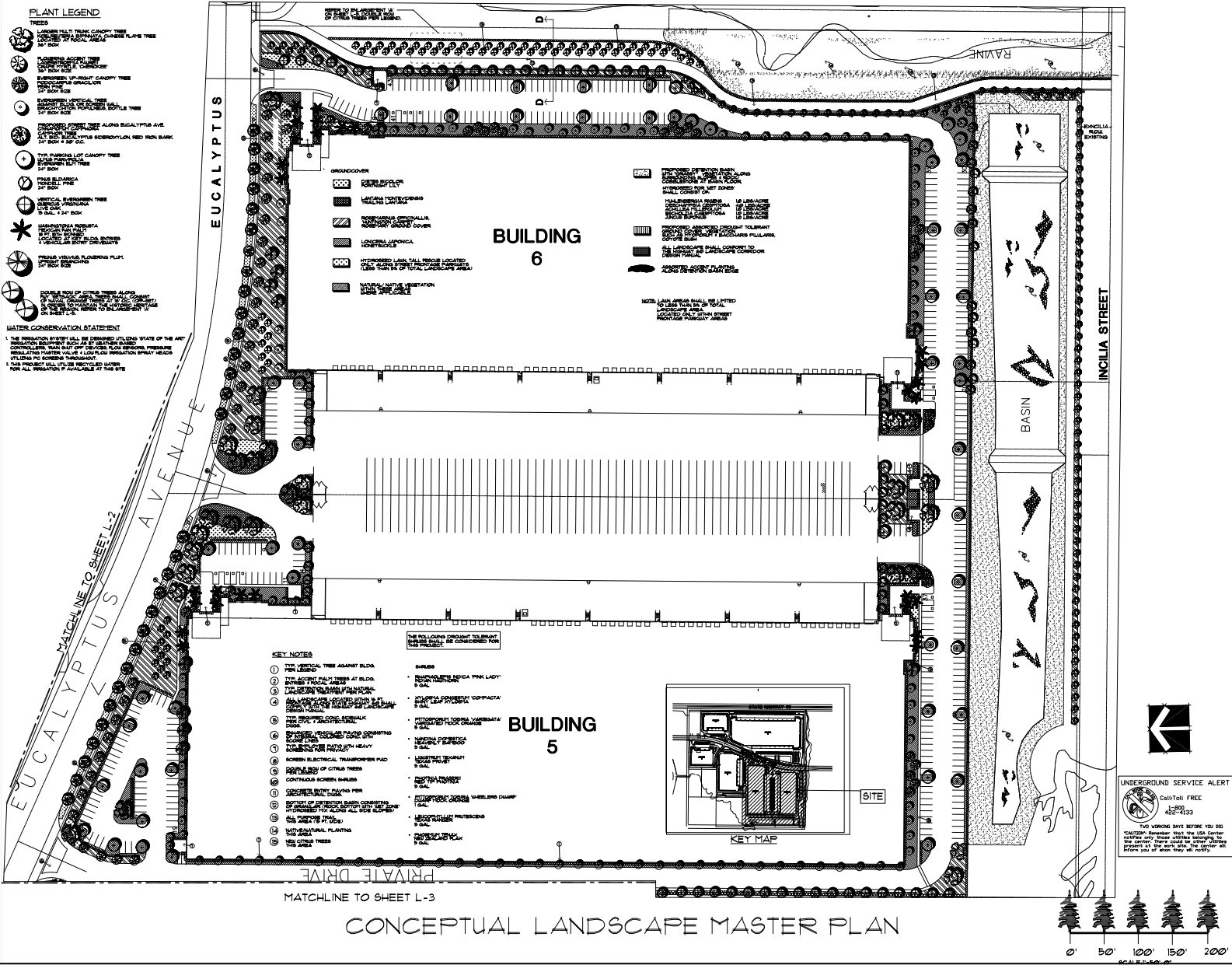
Eucalyptus Industrial Park
Environmental Impact Report

Landscaping - Building 2

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UNDERGROUND SERVICE ALERT

CallToll FREE
1-800-427-4333

THE WORKING DAYS BEFORE YOU SEE
"CAUTION" BEFORE YOU SEE THE USA CENTER
OFFICE AND THESE SIGNS BEING IN
PLACE AT THE WORK SITE, YOU SHOULD
BEWARE OF ANY TRUCKS OR TRAILERS.

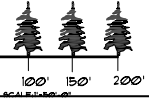
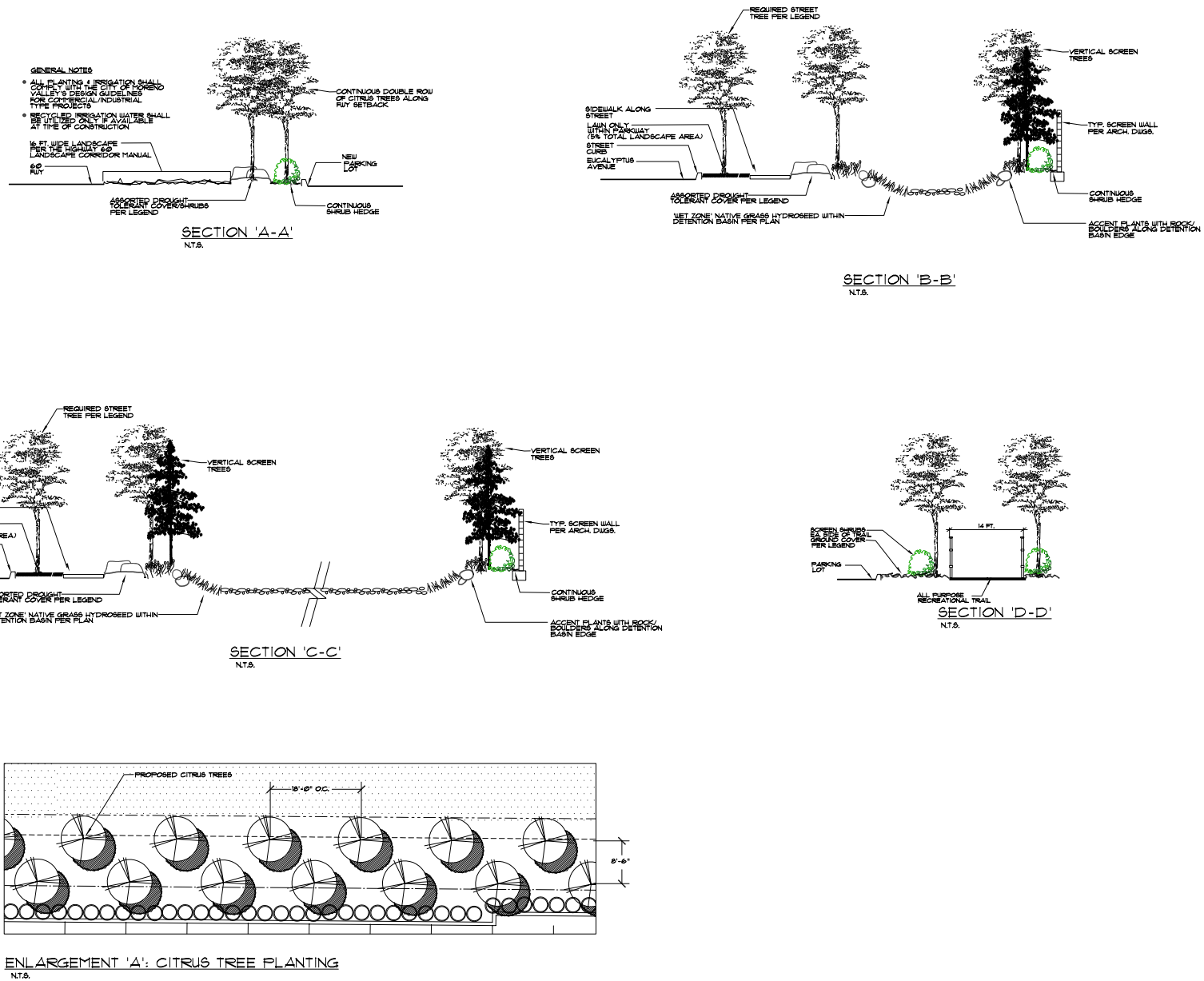


FIGURE 3.9D
Eucalyptus Industrial Park
Environmental Impact Report
Landscaping - Buildings 5 and 6

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FIGURE 3.9E

Eucalyptus Industrial Park
Environmental Impact Report

Landscaping - Detention Basin Details

SOURCE: RGA, 2011

APLO1101\Reports\EIR\fig3-9_Landscape.cdr (03/20/12)

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4.0 ENVIRONMENTAL IMPACT EVALUATION

As stated previously, there are 13 environmental issues that are analyzed in this EIR with respect to the proposed project. These issues are:

- | | |
|--------------------------------------------|------------------------------------|
| 4.1 Aesthetics | 4.8 Land Use and Planning |
| 4.2 Agricultural Resources | 4.9 Noise |
| 4.3 Air Quality | 4.10 Population and Housing |
| 4.4 Biological Resources | 4.11 Traffic and Circulation |
| 4.5 Cultural and Paleontological Resources | 4.12 Utilities and Service Systems |
| 4.6 Hazards and Hazardous Materials | 4.13 Global Climate Change |
| 4.7 Hydrology and Water Quality | |

Within each subsection described in Section 4.0, the following information is presented relative to each environmental issue described:

- Description of the Existing Setting as it relates to the specific environmental issue;
- A summary of Policies and Regulations relevant to the specific environmental issue;
- Identification of the Thresholds of Significance;
- Evaluation of project-specific impacts and a determination of significance based on identified threshold levels;
- Identification of Mitigation Measures for project-specific impacts;
- A determination of the level of significance after mitigation measures are implemented; and
- Cumulative Impacts and any additional mitigation for those impacts.

The following environmental analysis provided in Sections 4.1 through 4.13 focuses on changes in the existing physical environment and identifies direct and indirect significant effects associated with the proposed project. The cumulative impacts for each of the proposed project components are analyzed within the discussion of each component for each threshold.

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4.1 AESTHETICS

This section describes the existing aesthetic condition of the project area and analyzes aspects of the proposed project, such as light and glare generation and compatibility issues with the visual characteristics of surrounding land uses. In particular, descriptions of existing visual characteristics, both on the site and in the vicinity of the project site, are presented. Potential impacts to aesthetic and visual resources resulting from the development of the proposed project were based on analyses of site photographs, site reconnaissance, and project data provided in reports prepared for the project. This section is based in part on the City of Moreno Valley General Plan, site reconnaissance, conceptual elevations, and visual simulations provided by the applicant.

4.1.1 Existing Setting

The approximately 122.8-acre project site is located in the eastern portion of the City, and is situated on a relatively flat valley floor directly south of SR-60 between Moreno Peak, Reche Mountains, and the Badlands. Land uses adjacent to the project site include vacant land to the south, agricultural operations to the east, and City of Moreno Valley Fire Station 58 and the Moreno Valley Auto Mall to the west. There is a large single-family residential neighborhood immediately southeast of the project site, along the south side of the existing Eucalyptus Avenue east to Redlands Boulevard. The closest residence is within 50 feet of the project property (refer to Figure 3.2 in Chapter 3.0). There are also existing residential uses directly to the north of the project site; however, those residences are separated from the project site by SR-60.

4.1.1.1 Topographic/Vegetation Features

Situated within northern Moreno Valley, the project site gently slopes down to the south, and elevations on site range from 1,795 feet amsl near the northeast corner down to 1,720 feet amsl at the southeast corner. The project site is located immediately northeast of Moreno Peak, a prominent landform that reaches an elevation of 2,067 feet amsl or approximately 300 feet above the elevation of the project site. The proposed project site is currently undeveloped Commercial and citrus groves occupy the northwestern and northeastern portions of the project site, forming a dark-green canopy over approximately a third of the site area. The 2006 City General Plan EIR notes that the remaining citrus groves are “visually pleasing features” (MVGP FEIR, p. 5.11-2). The Quincy Channel, a small natural meandering channel, runs along the eastern side of the project site. There is currently no ornamental landscaping, lighting, or signage located within the project limits.

4.1.1.2 Surrounding Land Uses

Adjacent land uses include fallow agricultural land to the east, although a large industrial/warehouse development known as the “West Ridge Project” was recently approved on this property. Land uses to the south consist of undeveloped land, while there is an existing single-family residential neighborhood southeast of the project site (refer to Figure 3.2 in Chapter 3.0). Adjacent to the northern boundary of the project site is SR-60 (a six-lane freeway) and to north of the freeway is a single-family housing tract. The City of Moreno Valley Fire Station 58 and Moreno Valley Auto Mall are located directly west of the project site. The assessment of surrounding land uses is necessary to identify any “sensitive visual receptors” or land uses that contain persons especially sensitive to changes in visual character, such as residences. For the proposed project, the nearest sensitive visual receptor would be the existing single-family residential neighborhood to the southeast across future Encilia Avenue. The closest residence is approximately 200 feet southeast of the southeast corner of the project site, while the closest residence to an industrial building proposed on the project

site is 39.5 feet (residence at southeast corner of Eucalyptus and the Quincy Channel and the southeast corner of Building No. 6). Other sensitive visual receptors in the project vicinity include the residences north of SR-60 along Pettit Street (refer to Figure 3.2 in Chapter 3.0).

4.1.1.3 Existing Viewsheds

The Merriam Webster dictionary defines viewshed as the “natural environment that is visible from one or more viewing points.” CEQA documents typically define viewshed as what portions of the project viewers can see from surrounding areas. A viewshed can be divided into three distinct components: the foreground, midground, and background. Section 4.1.3 provides a description of these terms.

As illustrated in Figure 4.1.1, the proposed project site is situated within an urbanizing area between the Reche Mountains, Badlands, Moreno Peak, and Russell Mountains. Section 5.11, *Aesthetics*, in the City’s General Plan EIR, indicates that the major scenic resources within the Moreno Valley study area are visible from SR-60, a City-designated local scenic road. Upon entering Moreno Valley from the west, the dominant view is of the Box Springs Mountains to the immediate north and the Mount Russell foothills to the south. Both mountain ranges display numerous rock outcroppings and boulders that add visual character to these landforms. As SR-60 continues east through Moreno Valley, it passes through the Badlands area. Characterized by steep and eroded hillsides, the Badlands provide a range of hills that act as a visual backdrop to the valley. Similarly, views afforded while traveling west through the City include views of the Badlands to the north, the Mount Russell Range to the south, and the Box Springs Mountains to the northwest. The resources are highlighted in General Plan EIR Figure 5.11-1, *Major Scenic Resources*. Table 4.1.A provides a summary of the existing viewsheds to and from the project site.

Table 4.1.A: Existing Viewsheds Toward the Project Site

Vantage Point	Characteristics of Views		
	Foreground	Midground	Background
Northward view toward project site from south	Citrus groves, Quincy Channel, unnamed drainage courses, concrete wall, disked undeveloped fields	State Route 60 (SR-60), single-family residential subdivision north of SR-60, portions of Auto Mall to northwest, portions of Moreno Peak	Reche Mountains, Badlands
Southward view toward project site from north	SR-60, soundwall, citrus groves, small portions of disked fields	Moreno Peak, single-family residential to southeast, portion of Auto Mall to southwest	Russell Mountains, foothill area
Eastward view toward project site from west	Citrus groves, unnamed drainage courses, disked undeveloped fields	Citrus groves, disked undeveloped fields	Skechers Warehouse (across Redlands Boulevard), Badlands
Westward view toward project site from east	Citrus groves, Quincy Channel, disked undeveloped fields, Auto Mall, City of Moreno Valley Fire Station 58, residential subdivision to south	Citrus groves, disked undeveloped fields, un-named drainage courses, residential subdivision, Moreno Peak	Reche Mountains, Badlands

Source: LSA Associates, Inc. July 2011.

Views from the Project Site. Views north from the project site consist of SR-60, single-family residential residences, and the Reche Mountains. Views to SR-60 and to the single-family residences are partially obstructed by a six-foot high concrete block walls. Views east of the project site consist of active agricultural land, dispersed residences, Quincy Channel, and the Badlands. Views to the south of the project site include undeveloped land, unnamed drainages, Moreno Peak, single-family residences (southeast of the project site), and the Russell Mountains. Views to the west of the project site include an existing six-foot concrete wall, undeveloped land, City of Moreno Valley Fire Station

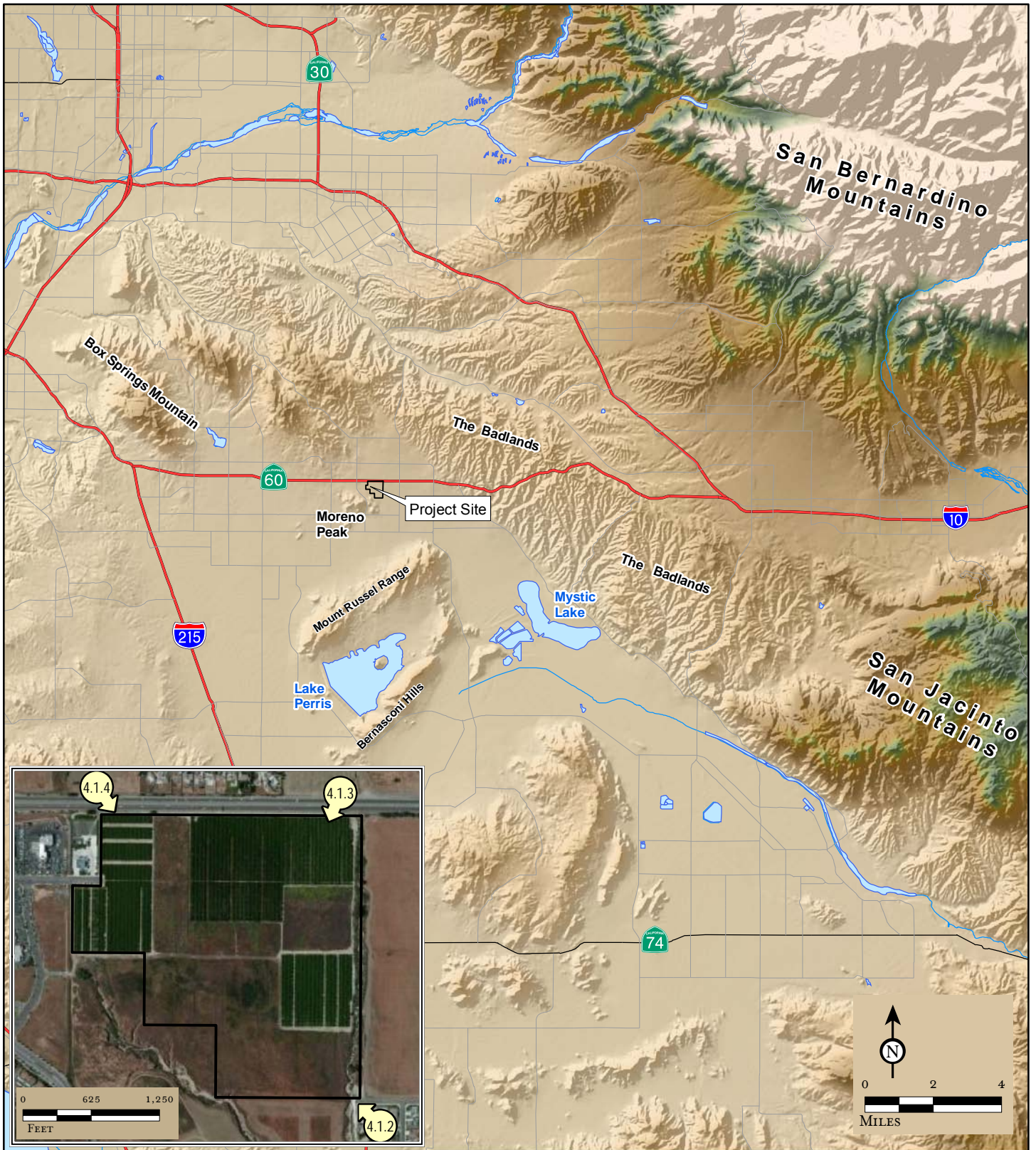


FIGURE 4.1.1

LSA

- Project Boundary
- 1 Photograph Location and Direction Taken

*Eucalyptus Industrial Park
Environmental Impact Report
Photographic Key Map
and Natural Landforms*

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58, the Moreno Valley Auto Mall, multifamily residential uses, the Moreno Beach Drive/SR-60 interchange, and commercial uses.

Views toward the Project Site. The most critical view considerations from surrounding areas are the residential neighborhoods to the north and southeast of the project site. At present, views for the residences located north of SR-60 and the project site looking south are partially obscured by the freeway and soundwalls. In addition, the project site is partially vacant and contains citrus groves, which provide a green canopy, so the main views from this residential area are the uplands in the background to the south and southwest. Views for the residences southeast of the project site are vacant land, green canopy of the citrus groves in the foreground, SR-60 in the midground, and the Reche Mountains in the background. For the analysis in this EIR, the critical consideration will be views that the residences north and southeast of the project site have toward the project site if it were to be developed with the proposed project, as highlighted in previously referenced Table 4.1.A.

4.1.1.4 Lighting and Visibility

Ambient nighttime lighting in the vicinity of the project site is characteristic of areas along a major transportation corridor and commercial development. Light sources include the headlights of vehicles traveling along SR-60, street lighting along Moreno Beach Drive and Auto Mall Drive, outdoor lighting and illuminated signs from the existing Moreno Valley Auto Mall parking lot located to the west, and lighting from the existing single-family residential development located southeast. Due to the absence of on-site development, no lighting sources currently operate within the project limits.

4.1.2 Existing Policies and Regulations

4.1.2.1 City of Moreno Valley General Plan Policies

The following policies and goals pertain to aesthetics and are applicable to the proposed project:

Community Development

Objective 2.5 Promote a mix of industrial uses which provide a sound and diversified economic base and ample employment opportunities for the citizens of Moreno Valley with the establishment of industrial activities that have good access to the regional transportation system, accommodate the personal needs of workers and business visitors, and which meets the service needs of local businesses.

Policy 2.5.1 The primary purpose of areas designated Business Park/Industrial is to provide for manufacturing, research and development, warehousing and distribution, as well as office and support commercial activities. The zoning regulations shall identify the particular uses permitted on each parcel of land. Development intensity should not exceed a Floor Area Ratio of 1.00 and the average floor area ratio should be significantly less.

Policy 2.5.2 Locate manufacturing and industrial uses to avoid adverse impacts on surrounding land uses.

Policy 2.5.3 Screen manufacturing and industrial uses where necessary to reduce glare, noise, dust, vibrations, and unsightly views.

Policy 2.5.4 Design industrial developments to discourage access through residential areas.

Objective 2.10 Ensure that all development within the City of Moreno Valley is of high quality, yields a pleasant living and working environment for existing and

- future residents, and attracts business as the result of consistent exemplary design.
- Policy 2.10.1** Encourage a design theme for each new development that is compatible with surrounding existing and planned developments.
- Policy 2.10.2** Screen trash storage and loading areas, ground and roof mounted mechanical equipment, and outdoor storage areas from public view as appropriate.
- Policy 2.10.3** Require exterior elevations of buildings to have architectural treatments that enhance their appearance.
- (a) A design theme, with compatible materials and styles, should be evident within a development project.
- (b) Secondary accent materials, colors, and lighting should be used to highlight building features.
- (c) Variations in roofline and setbacks (projections and recesses) should be used to break up the building mass.
- (d) Industrial buildings shall include architectural treatments on visible façades that are aesthetically pleasing.
- Policy 2.10.4** Landscaping and open spaces should be provided as an integral part of project design to enhance building design, public views, and interior spaces, provide buffers and transitions as needed, and facilitate energy and resource conservation.
- Policy 2.10.5** Development projects to freeways shall provide landscaped buffer strips along the ultimate freeway right-of-way.
- Policy 2.10.6** Buildings should be designed with a plan for adequate signage. Signs should be highly compatible with the building and site design relative to size, color, material, and placement.
- Policy 2.10.7** On-site lighting should not cause nuisance levels or glare on adjacent properties.
- Policy 2.10.8** Lighting should improve the visual identification of structures.
- Policy 2.10.9** Fences and walls should incorporate landscape elements and changes in materials or textures to deter graffiti and add visual interest.
- Policy 2.10.10** Minimize the use and visibility of reverse frontage walls along streets and freeways by treatments as landscaping, berming, and “side-on” cul-de-sacs.
- Policy 2.10.11** Screen and buffer non-residential projects from adjacent residential property and other sensitive land uses when necessary to minimize noise, glare, and other adverse effects on adjacent uses.
- Policy 2.10.12** Screen parking areas from streets to the extent consistent with surveillance needs (e.g., mounding, landscaping, low profile walls, and/or grade separations).
- Policy 2.10.13** Provide landscaping in automobile parking areas to reduce solar heat and glare.
- Conservation Element**
- Objective 7.7** Where practicable, preserve significant visual features significant views and vistas.

- Policy 7.7.3** Implement reasonable controls on the size, number, and design of signs to minimize degradation of visual quality.
- Policy 7.7.4** Gilman Road, Moreno Beach Drive, and State Route 60 shall be designated as local scenic roads.
- Policy 7.7.5** Require development along scenic roadways to be visually attractive and to allow for scenic views of the surrounding mountains and Mystic Lake.

City of Moreno Valley Municipal Code. The following City of Moreno Valley Municipal Code requirements are applicable to the proposed project.

- Section 9.05.40 B3. Industrial site development standards:** In all industrial districts, required front building setback areas shall be landscaped. The landscaping shall consist predominantly of plant materials except for necessary walks and drives.
- Section 9.08.100 L.4. Lighting:** Industrial and manufacturing developments shall provide adequate lighting for safe and secure onsite parking, loading, storage, receiving, and pedestrian areas.
- Section 9.16.160 B4. Business Park/Industrial:** Entries into industrial buildings shall be well-defined through the use of projections, recesses, space frames, pergolas, colonnades, raised planters, seats, enhanced paving, low-level lighting bollards or other elements.
- Section 9.17.130 Freeway Frontage:** Development projects adjacent to the Moreno Valley Freeway (California State Highway 60) are landscaped within the freeway right-of-way, as prescribed in guidelines established by the City of Moreno Valley.

4.1.3 Methodology

It should be noted at the outset that any evaluation of visual impacts is inherently subjective; however, community aesthetic values can be used as a benchmark against which to evaluate changes in views within a particular community. These values can be derived from General Plan policies, zoning ordinances, and, where specific policies are absent, general design theory and visual analysis methods can be incorporated to evaluate aesthetic impacts. For the purposes of CEQA compliance, this analysis of visual impacts will focus on changes in the visual character of the project site that would result from the development of the proposed on-site uses, including the visual compatibility of on-site and adjacent uses, changes in vistas and viewsheds where visual changes would be evident, and the introduction of sources of light and glare. Impacts to the existing environment of the project site are to be determined by the contrast between the site's visual setting before and after proposed development. In this analysis, emphasis has been placed on the transformation of the existing undeveloped conditions into more urbanized uses. Although few standards exist to singularly define perceptions of aesthetic value, the degree of visual change can be measured and described in terms of visibility and visual contrast, dominance, and magnitude. Concepts of visual character and quality can be organized around four elements: site utilization, buildings and structures, landscaping, and signage. Current residences north and south of the project site, as well as travelers along SR-60, would be considered sensitive to the visual and aesthetic alteration of the project site.

For conditions where new buildings are being placed where they can be seen by existing residents, architectural considerations become important such as viewing distance, building height, length, proportionality, massing, appearance, building materials, landscaping, fencing, signage, etc. because they can affect the degree to which new buildings are positively or negatively perceived by residents.

A scenic vista can be categorized as either containing a panoramic view¹ or a focal view. Panoramic views are typically associated with vantage points that provide a sweeping geographic orientation not commonly available (e.g., skylines, valleys, mountain ranges, or large bodies of water). Focal views are typically associated with views of natural landforms, public art/signs, and visually important structures, such as historic buildings. Aesthetic components of a scenic vista include three components: scenic quality, sensitivity level, and view access.

As previously stated, a viewshed can be divided into three distinct components: the foreground, midground, and background. The foreground is the part of the view that is or seems to be nearest to the viewer. The background is the part of the view that is or seems to be farthest away from the viewer. The midground view is the part of the view that is between the foreground view and the background view.

Where possible, the potential aesthetic impacts of the proposed project will be evaluated to determine if or the degree to which the project is consistent with applicable General Plan objectives and policies.

4.1.4 Thresholds of Significance

Appendix G of the State CEQA Guidelines recognizes the following significance thresholds related to aesthetics. Based on these significance thresholds, a project would have a significant impact on aesthetic resources if it would result in:

- A substantial adverse effect on a scenic vista;
- Substantial damage to scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway;
- Substantial degradation of the existing visual character or quality of the site and its surroundings; and/or
- A new source of substantial light or glare that would adversely affect daytime or nighttime views in the area.

4.1.5 No Impact/Less than Significant Impacts

The following potential aesthetic impacts were determined to be less than significant (i.e., either no impact would occur and no mitigation would be required, or the adherence to established regulations, standards, and policies would reduce potential impacts to a less than significant level).

4.1.5.1 Light and Glare

Threshold	Would the proposed project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?
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Currently, there are no sources of light or glare on the project site, but the proposed on-site uses would be visible from SR-60, future Eucalyptus Avenue, future Encilia Avenue, and residences to the southeast and north of SR-60. Existing sources of light and glare from surrounding areas include streetlights, exterior lighting from the nearby Moreno Valley Auto Mall and City of Moreno Valley Fire Station 58, exterior lighting from the nearby single-family residences, and vehicle headlights from motorists driving along SR-60. Development of the project site would introduce new sources of light and glare into the area in the form of street lighting, parking lot lighting, and security lighting for the buildings. It is anticipated that the materials utilized in the construction of the proposed lighting fixtures would be generally similar to those utilized in nearby warehouse uses within the City. Lighting within loading

¹ A panoramic view consists of visual access to a large geographic area, for which the field of view can be wide and extend into the distance.

areas (areas within the public view include the loading areas of Buildings 1, 2, and 3) will be directed downward so as to not project lighting into the sky. The overall increase in ambient light in the area is expected to be incremental with compliance with the City's development standards for lighting.

Exterior surfaces of the concrete tilt-up structure would be finished with a combination of architectural coatings, trim, and/or other building materials such as concrete and brushed metal. The proposed project will incrementally increase the amount of daytime glare in the project area from introducing windows and metal fixtures into the area. All development in the City, which includes light generated from warehouse buildings and parking lots, is required to adhere to lighting requirements contained in the City's Municipal Code (Section 9.08.100 Lighting), which state that any outdoor lighting associated with non residential uses shall be shielded and directed away from the surrounding residential uses. Such lighting shall not exceed one-half foot-candle at all property lines and shall not blink, flash, oscillate, or be of unusually high intensity or brightness. Lighting in parking areas and drive aisles must be at least 1.0 foot candle and cannot exceed a maximum of 8.0 foot candles. Adherence to the City's Zoning Code will help reduce potential building or parking lighting impacts to less than significant levels.

Consistency with General Plan Policies. The project is consistent with Objective 2.5 and Policy 2.5.1 by providing industrial uses near SR-60 and within the floor to area ratio (FAR) limits outlined. The project does not appear to be fully consistent with Policies 2.5.2 and 2.5.3 because it places industrial uses adjacent to lower density residential uses without the typical buffering land uses (e.g., higher density residential, business park, etc) for impacts such as light and glare. The project is consistent with Policies 2.10.7 and 2.10.8 relative to lighting, although the tower accent features at the corners of the buildings may produce new off-site glare.

Consistency with Municipal Code Requirements. The project appears to be consistent with the various Municipal Code requirements for the proposed land uses outlined in Section 4.1.2 related to lighting and glare.

Based on the preceding analysis, aesthetic impacts associated with light and glare can be reduced to less than significant with adherence to established City ordinances and development guidelines. Therefore, no mitigation is required.

4.1.6 Significant Impacts

4.1.6.1 Scenic Vistas

Threshold	Would the proposed project have a substantial adverse effect on a scenic vista?
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The proposed project could have a substantial adverse effect on one or more scenic vistas, notably views of the Red Mountain and Balds, Moreno Peak, and the Russell Mountain. For the proposed project, the nearest sensitive permanent visual receptor would be the existing single-family residences to the southeast across future Encilia Avenue. Other sensitive visual receptors in the project vicinity include the residences north of SR-60 along Pettit Street. The nearest transient visual receptor would be motorists traveling along SR-60. A discussion of impacts to transient visual receptors is provided in Section 4.1.6.2 of this EIR. In general, views for the residences southeast of the site will change from vacant land and citrus groves to industrial buildings with extensive landscaping including rows of citrus trees to help provide a visual buffer. Permanent views for residences north of SR-60 and transient views for travelers on SR-60 will change as the tops of the proposed industrial buildings will partially block views of the mountains to the south.

To better evaluate impacts to views from surrounding sensitive receptors, both conceptual elevations and photographic renderings or simulations were prepared for the project. Three computerized

photographic simulations were prepared to illustrate the proposed project from three vantage points. Figures 4.1.2 through 4.1.4 show before-and-after views of the project site from (1) residences southeast of the site; (2) travelers westbound on SR-60 and to some degree residences north of SR-60; and (3) travelers eastbound on SR-60.

Views from Residences Southeast of the Site. The conceptual elevations for the proposed project indicate the proposed buildings would have a height of 39 feet, with the entrances at a height of 43 feet. By comparison, the single-family residences southeast of the proposed project have an approximate height of 30 feet. The plans also show the closest distance between the existing single-family residences to the southeast and the proposed warehouse uses would be approximately 395 feet. The landscape plans for the proposed project show several rows of citrus trees being planted along the south side of SR-60 to shield views of freeway travelers, and along eastern property line of Parcel No. 6 and the southern property lines of Parcels No. 5 and 6. These trees will help shield views from residential areas to the southeast, but will not fully obscure views of the buildings or parking areas.

Views from the existing single-family residences would be limited to the second-floor windows on the back sides of the residences. Views from the first floor of the existing single-family residences are currently partially obstructed due to the existing perimeter concrete block wall located along the side yards of some homes, on the south side of future Encilia Avenue. Views from the rear of homes backing the Quincy Channel are somewhat unobstructed since they have a tubular steel view fence.

As illustrated in Figure 4.1.2, existing views looking onto the project site from the existing residences include future Encilia Avenue in the foreground, vacant land and citrus groves in the midground, and portions of Box Springs Mountains in the background. With development of the proposed project, buildings, associated parking lots, and landscaping would be built and placed on the project site. This would change existing views from the single-family residences to the southeast. Foreground views would consist of future Encilia Avenue, midground views would consist of trees, ornamental landscaping, grass, warehouse buildings, and background views would consist of the Box Springs Mountains. Although the warehouse buildings and the single-family residences would be separated by a distance of 395 feet, the proposed project would still result in the obstruction of existing background views, including Box Springs Mountain.

Views from SR-60 and Residences North of SR-60. Travelers on SR-60, both eastbound and westbound, will have views of the project site. Once it is developed, the proposed buildings would partially block views of travelers in both directions, as shown in Figures 4.1.3 and 4.1.4. The landscape plans for the proposed project show several rows of citrus trees planted along the south side of SR-60 to shield views of freeway travelers, but will not fully obscure views of the buildings or parking areas, as the buildings will be higher than the citrus trees would grow.

As previously identified, other sensitive permanent visual receptors in the area include the residences on the north of SR-60 along Pettit Street. Views from these residences would be limited to the second-floor windows on the rear of the house as there is an existing noise attenuation wall along the southern perimeter of these properties. As identified in Figure 4.1.3, existing views from this vantage point include SR-60 in the foreground, a concrete lane divider and the tops of citrus groves in the midground, and the Mount Russell Range in the background. As part of conditions of approval for the proposed project, two rows of the existing orange trees would be provided and maintained on the northern portion of the project site adjacent to SR-60 and along the perimeter of the proposed project site adjacent to the public ROW or residential zoning. With development of the proposed project, buildings, associated parking lots, and ornamental landscaping would be built and placed on the project site. This would change existing views from the single-family residences north of SR-60 along Pettit Street. Foreground views would consist of SR-60, midground views would consist of a concrete divider and the tops of the mature orange trees, and background views would consist of the upper half of the proposed warehouse buildings.



Existing Condition



Proposed Condition

-4007-

LSA

FIGURE 4.1.2

*Eucalyptus Industrial Park
Environmental Impact Report*

Visual Simulation from Eucalyptus Avenue
(Existing Alignment)

SOURCE: RGA Office of Architectural Design.

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Item No. E.3

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Existing Condition



Proposed Condition

LSA

FIGURE 4.1.3

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Existing Condition



Proposed Condition

-4011-

LSA

FIGURE 4.1.4

Item No. E.3

*Eucalyptus Industrial Park
Environmental Impact Report*

SOURCE: RGA Office of Architectural Design.

Visual Simulation From Eastbound on State Highway 60

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Single-family residences north of SR-60 and along Pettit Street have an approximate height of 30 feet. As identified in the conceptual elevations for the proposed project, the proposed buildings would have a height of 39 feet, with the entrances at a height of 43 feet. It is anticipated that the existing orange trees have an approximate height ranging from 12 feet to 16 feet. Two rows of the orange trees will be retained on the northern boundary adjacent to SR-60. Additionally, orange trees would be planted along the northern length of Buildings No. 1 and 2. With the inclusion of the orange trees along this project boundary, the existing residences would see the upper 27 to 31 feet of the proposed buildings.

Summary. Despite the provision of ornamental landscaping and citrus trees along the northern, western, and southern boundaries, implementation of the proposed project would obstruct background views of the distant Box Springs Mountains for residences southeast of the project, foreground and midground views of travelers on SR-60, and background views of the Mount Russell Range for residences north of SR-60 and along Pettit Street. This obstruction of views is a significant visual impact of the proposed project.

Mitigation Measures. The sizes, heights, and general locations of buildings on the site are limited by the types of uses being proposed as part of this project. Therefore, there is no feasible mitigation available to reduce impacts related to the loss of this viewshed.

Level of Significance after Mitigation. Since there is no feasible mitigation available to reduce adverse effects on scenic vistas, impacts associated with this issue would remain significant and unavoidable.

4.1.6.2 Scenic Resources and Scenic Highways

Threshold	Would the proposed project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway and/or local scenic road?
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As described previously in Section 4.1.1.2 and in the City's General Plan EIR, major scenic resources within the Moreno Valley study area are visible from SR-60, a City-designated local scenic roadway. The proposed project could have a substantial adverse effect on one or more scenic vistas, including views of the Reche Mountains and the Badlands for both residents and travelers on SR-60.

While the Caltrans Scenic Highway Program does not identify any state-designated scenic highways¹ near the project site,² the City of Moreno Valley identifies SR-60 as a local scenic road.³ According to the City's General Plan, the man-made environment is equally important as natural landforms in terms of scenic values (e.g., buildings, landscaping and signs). Agricultural uses, such as citrus groves, are one example of a man-made environment that constitutes a visually pleasing feature.

The project is not required to provide a formal Visual Impact Assessment (VIA) to Caltrans since SR-60 is not a state-designated scenic highway; however, a cursory application of typical VIA requirements is useful in evaluating potential visual impacts of the project relative to travelers on SR-60 just north of the site. According to the Caltrans Handbook, a VIA is typically considered for projects that have the potential to change the "visual" environment. The level of assessment for the VIA can range from "no formal analysis" to a "complex analysis" and is determined by many factors

¹ A State Scenic Highway is defined as any freeway, highway, road, or other public right-of-way, that traverses an area of exceptional scenic quality.

² *Eligible and Officially Designated Routes*, California Department of Transportation Scenic Highway Program, http://www.dot.ca.gov/hq/LandArch/scenic_highways/scenic_hwy.htm, website accessed April 4, 2008.

³ *Conservation Element, Figure 7-2 Major Scenic Resources*, City of Moreno Valley General Plan, adopted July 11, 2006.

such as numbers of viewer groups affected; existence of scenic resources; degree and totality of the proposed changes in the visual environment; local concerns or project controversy; and cumulative impacts along the transportation corridor.

In order to establish the need and level of study for a VIA, a preliminary evaluation is performed to determine if the project will cause any physical changes to the environment. Projects that replace or rehabilitate existing facilities (e.g., pavement overlay, striping, sign replacement) and do not constitute a change in character to those facilities will not require a formal analysis. This preliminary evaluation includes activities such as conducting a site visit to inventory the scenic resources of the project site, estimating potential changes to that character, and identifying viewer groups and public concerns or opposition to the proposal.

The following analysis of visual impacts of the project was conducted with the VIA criteria in mind. Even though a Caltrans VIA was not prepared, the following evaluation of potential impacts to visual resources is based on guidance from the following resource documents:

- FHWA Technical Advisory T6640.8;
- FHWA Guidance HI-88-054: Visual Impact Assessment for Highway Projects;
- Title 23 U.S.C. 109 (h); and
- FHWA DOT-FH-11-9694: Visual Impact Assessment for Highway Projects, as published by the American Society of Landscape Architects.

Table 4.1.B provides a qualitative analysis as to what would be considered a minor, moderate, or major visual intrusion along scenic highways.

Table 4.1.B: Visual Intrusion Criteria

Type of Intrusion	Characteristics
Minor	Widely dispersed buildings, natural landscape dominates, wide setbacks and buildings screened from roadway, exterior colors and materials are compatible with environment, buildings have cultural or historical significance.
Moderate	Increased number of buildings, but complementary to the landscape, smaller setbacks and lack of roadway screening, buildings do not degrade or obstruct scenic view.
Major	Dense and continuous development, highly reflective surfaces, buildings poorly maintained, visible blight, development along ridge lines, buildings degrade or obstruct scenic view.

Source: *Scenic Highway Guidelines*, California Department of Transportation, March 1996; http://www.dot.ca.gov/hq/LandArch/scenic/guidelines/scenic_hwy_guidelines.pdf, site accessed December 27, 2011. Page 23.

The following analysis is based on the visual intrusion criteria from the Caltrans Guidelines for the Official Designation of Scenic Highways. The criteria, as identified in Table 4.1.B, provide for a qualitative analysis as to what would be considered a minor, moderate, or major visual intrusion along scenic highways. Existing views for motorists traveling eastbound and westbound on SR-60 consist of noise attenuation walls, commercial and residential development, landscaping, parking lots, open space, and orange groves in addition to the mountains and badlands in the distance. As previously identified in Figure 4.1.3, development of the proposed project would alter the existing view by introducing large industrial buildings adjacent to the freeway. As illustrated in Figure 4.1.4, existing eastbound views on SR-60 would be altered with the development of the proposed project. Motorists would still view noise attenuation walls, urban development, landscaping, and orange trees as they look to the south, although these views would be of short duration for motorists traveling at normal freeway speeds.

As illustrated in previously identified Figures 4.1.2 through 4.1.4, the proposed project would have highly reflective surfaces at the taller (43 feet) glass veneered office towers, but would not result in development along ridge lines. The proposed project would result in an increased number of large

bulk structures, but would include colors and materials that are compatible with the existing environment, as shown in the project detail sheets provided in Appendix K. The proposed ornamental landscaping and citrus trees would provide some visual screening, as shown in the landscape plans in Appendix K. However, the proposed project would result in the obstruction of most of the Mount Russell Range for motorists traveling on SR-60, so the proposed buildings would obstruct the view of a scenic feature. The proposed project meets criteria in both the moderate and major visual intrusion categories. In an overall abundance of caution, the worst-case scenario is utilized. Therefore, it is anticipated that based on project design features, the proposed project would have a major visual intrusion (i.e., significant impact) for motorists traveling on SR-60.

Development Under Existing Land Use Designations. Development of the site under the existing GP and zoning designations, and under the approved TTM 32255, would result in construction of several smaller warehouse and business park (i.e., office) uses in the northern portion of the site, and multifamily residential uses in the central and southern portion of the site. Warehouse buildings under the proposed project would be less numerous but larger than those under the existing land use designations. The appearance of new buildings under the proposed land use/zoning designations, compared to the existing designations, would result in incremental and potentially significant visual impacts compared to existing (baseline) conditions and compared to buildings that would be built under existing land use designations (warehouses, business park/offices, and multifamily residential).

Mitigation Measures. Incorporation of the proposed building façades and ornamental landscaping design features will soften the visual appearance of the buildings from SR-60; however, the obstruction of local views will still be significant, and there are no feasible mitigation measures available that would reduce these impacts to less than significant levels.

Level of Significance after Mitigation. Since there is no mitigation available to reduce impacts related to the loss of this view from the SR-60, impacts associated with this issue would remain significant and unavoidable.

4.1.6.3 Existing Visual Character and its Surroundings

Threshold	Would the proposed project substantially degrade the existing visual character or quality of the site and its surroundings?
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Visual impacts associated with changes to the general character of the project site (e.g., loss of open area), the components of the visual settings (e.g., landscaping and architectural elements), and the visual compatibility between proposed site uses and adjacent land uses would occur. The significance of visual impacts is inherently subjective as individuals respond differently to changes in the visual characteristics of an area. The project site is currently undeveloped with existing citrus groves on the northwestern, northeastern, and east-central portions of the site. Development of the proposed industrial uses on the project site would include approximately 2.2 million square feet of warehouse distribution uses in six buildings with associated parking areas, ornamental landscaping, and roadway infrastructure within approximately 122.8 acres. The buildings will have an average maximum height of 39 feet and will substantially change the views of residents living southeast of the site, and may incrementally affect views from some residences north of SR-60, although the freeway and soundwall along the northern side of the freeway at least partially block views to the south for many residences immediately north of the freeway. The proposed project would also change views for travelers on this portion of SR-60 by introducing large industrial buildings in place of several citrus groves and vacant land. When the approved West Ridge project is built just east of the proposed project, it will also introduce large industrial buildings into this area. The proposed buildings have an average height of 39 feet (maximum height at the corner towers of 43 feet), which would exceed the existing height of the adjacent freeway by approximately 31 feet at the west end and 23 feet at the

east end, based on a finished floor elevation for Building No. 2 of 1,775 feet and freeway elevations of 1,783 feet at the west and 1,791 feet at the east end (adjacent to Building No. 2).

Development of the proposed project would change the existing character of the project site from open space to a more urbanized setting with large industrial buildings. The change in the character of the site would constitute a significant alteration of the existing visual character of the project site.

While the final design of the proposed project may slightly differ from the preliminary renderings, they are sufficient to assess the effect the development of the proposed project may have on the aesthetic character of the project site and surrounding area. The proposed project features a variety of architectural elements including façade accents such as corner treatments and roof trim. The project also provides variation in wall planes that serve to avoid an institutional appearance and break up the bulk of the buildings. This variation would create shadow lines at various times of the day.

The proposed ornamental landscaping would replace the scattered weedy vegetation and existing citrus groves. Landscaping on the site would be provided in accordance with City Municipal Code Chapter 9.17, which requires the installation of landscaping on site and the planting of one tree for every 30 linear feet of building dimension that is visible from the parking lot or public right-of-way. Additionally, the proposed project includes the installation of landscaping throughout the development including along the project perimeter, internal drives, and parking areas. In addition, as part of conditions of approval for the proposed project, two rows of the existing orange trees would be maintained on the northern portion of the project site adjacent to SR-60 and along the perimeter of the proposed project site adjacent to the public right-of-way or residential zoning.

The City's Municipal Code (Section 19.05 and Table 9.05.040-8) establishes the number, location, height, and style of signage permitted within industrial zones. The submittal and approval of signs are required for all development in the City; therefore, it is reasonable to conclude that all on-site signs are internally compatible and consistent with the City's current signage standards. Adherence to City requirements would result in a less than significant visual impact in this regard.

The existing General Plan and zoning designations for the site show low density residential (RA-2) adjacent to the southeast corner of the site, with mainly higher density residential uses (R5, R15) buffering the Industrial/Business Park uses farther north, adjacent to freeway. The proposed plan would introduce industrial uses/buildings adjacent to residences near the southeast corner of the project site. However, it should be noted that the City recently approved an industrial project similar to the proposed project immediately north of the existing residential neighborhood south of Eucalyptus Avenue. In conjunction with that project, the City approved an amendment to the Municipal Code requiring a 250-foot buffer or setback between industrial uses (i.e., the closest building and/or parking areas) and residential uses. According to the current site plan, the proposed project provides 395 feet between the closest residence to the project site and the closest industrial building (southeast corner of Eucalyptus and the Quincy Channel) to the southeast corner of Building No. 6.

Since the project site is currently vacant, suburban development of any type would cause a fundamental change in the visual characteristics of the project site. In addition, the site is currently planned for industrial, business park, single-family, and multifamily uses, which would be different in appearance from the proposed industrial warehouse buildings. Of these uses, the lower density housing (R2) is currently designated adjacent to the existing residences southeast of the project site.

The proposed project would replace the existing vacant parcel and citrus groves with development that is visually compatible with the existing commercial development to the west and the existing and the approved Ridge industrial development to the east, but it will not be compatible with the residential uses to the southeast or farther to the north across SR-60.

Consistency with General Plan Policies. The project is consistent with Objective 2.5 and Policy 2.5.1 by providing industrial uses near SR-60 and within the FAR limits outlined. The project does not

appear to be fully consistent with Policies 2.5.2 and 2.5.3 because it places industrial uses adjacent to lower density residential uses without the typical buffering land uses (e.g., higher density residential or business park). The project is consistent with Policy 2.5.4 as it precludes industrial traffic through residential areas by eliminating Quincy Street south of the new Eucalyptus Avenue road alignment and eliminating the new Encilia Avenue (old Eucalyptus Avenue) west of the Quincy Channel. The project is generally consistent with Objective 2.10 and Policies 2.10.1 through 2.10.5 by providing detailed architectural and landscaping measures for the proposed buildings and grounds, including adjacent to SR-60. The project is consistent with Policies 2.10.7 and 2.10.8 relative to lighting, although the tower accent features at the corners of the buildings may produce new off-site glare. The project appears to be consistent with Policy 2.10.9 as its fences and walls will incorporate landscaping and materials designed to reduce graffiti (see design details in Appendix K). The project may not be fully consistent with Policy 2.10.11 in terms of buffering for nearby residential uses, although it does comply with the new Municipal Code requirement of a 250-foot buffer between industrial and residential uses. Policies 2.10.12 and 2.10.13 require screening for parking areas and the project is consistent with that policy.

Consistency with Municipal Code Requirements. The previous analysis indicates the project is not consistent with Objective 7.7 and Policies 7.7.4 and 7.7.5 as it does not fully preserve significant views and vistas, including those along SR-60. Signage will be consistent with Municipal Code requirements so it is consistent with Policy 7.7.3. Finally, the project appears to be consistent with the various Municipal Code requirements for the proposed land uses outlined in Section 4.1.2 related to landscaping, setbacks, parking, storage, etc.

Mitigation Measures. Incorporation of the proposed building façades and landscaping design features will soften the visual appearance of the buildings from both SR-60 and near by residences; however, the fundamental change in visual character of the area will still be significant. Even with compliance with the City's General Plan and Municipal Code development guidelines for industrial development, including the 250-foot buffer between industrial and residential land uses, the anticipated fundamental change in views expected in this area will be significant. Due to the heights and masses of buildings needed to accommodate the proposed land uses, no feasible mitigation is available that would reduce these potential impacts to less than significant levels.

Level of Significance after Mitigation. Since there is no feasible mitigation is available to reduce impacts related to the substantial change in visual character from development of the proposed project, impacts associated with this issue would remain significant and unavoidable.

4.1.7 Cumulative Impacts

The development of the proposed project would partially obstruct views of surrounding mountain ranges from current vantage points near the project structures. However, vistas would not be completely obstructed from viewpoints through parking circulation areas, openings between rows of buildings or trees, or at the end of vehicular rights-of-way. Development of lands within the City, particularly along SR-60, would result in the cumulative conversion from open space to a more urbanized land use. The proposed project would continue a recent development trend in the City to expand industrial uses along the south side of SR-60 east of the City's Auto Center. This development trend has not yet been incorporated into the City's General Plan. The proposed project, in conjunction with other cumulative projects, would be developed in a manner consistent with existing development trends in the City. Since other cumulative projects in the area would include similar distribution uses, it can be anticipated that such uses would have a similar design and massing as the proposed project. Since the proposed project would obstruct views of the surrounding mountains, it can be reasonable to conclude that similar warehouse distribution uses would also obstruct views of the surrounding mountains. In addition, General Plan Policy 7.7.4 in the

Conservation Element requires the designation of SR-60 as a local scenic roadway. Therefore, the proposed project, in combination with other cumulative projects in the eastern portion of the City and along SR-60 would have a cumulatively significant and unavoidable impact on aesthetics (i.e., views and scenic resources) in this portion of the City.

The proposed, existing, and future development within the planning area would increase the amount of additional lighting and glare in the area. As with past and currently proposed development, cumulative lighting-related impacts would be reduced through adherence to applicable City lighting standards, and thus would not make a significant contribution to any cumulative lighting impacts.

4.2 AGRICULTURAL RESOURCES

This section provides a discussion of agricultural resource impacts attributable to the project. As part of the analysis, a description of existing on-site agricultural resources, soils, State farmland classifications, and zoning for the project site have been identified. This section focuses on discussions involving applicable State, regional, and local policies regarding agricultural resources and the conversion of farmland to non-agricultural uses. This section is based in part on the City of Moreno Valley General Plan, the Guide to Farmland Mapping and Monitoring Program (FMMP), and the California Land Evaluation and Site Assessment (LESA) Model.

4.2.1 Existing Setting

Within Moreno Valley, land used for agricultural production is generally concentrated in the eastern portion of the City. Farmland within the City is most often used for grazing, citrus orchards, and potato and dryland farming.¹ Of the land in the City that is utilized for agricultural use, few parcels are owner-operated with the majority of the properties being leased for agricultural use. Many agricultural fields within the City have been out of production for a number of years and are dominated by disturbed ruderal (weedy) vegetation. Various forms of disturbance related to agricultural uses include frequent disking, pesticide application, and irrigation. In addition to on-site farming of citrus, active agricultural operations take place on properties located to the north of SR-60, east and south of the proposed project site.

The project site can be divided into three categories of land cover: citrus production, hay/alfalfa production, and fallow. Currently, the majority of the northern portion of the site (approximately 57 acres) is used for citrus production. The remaining portions of the site are hay/alfalfa (approximately 36 acres) located on the southern portion of the site and fallow Land (approximately 25 acres) located in the northern portion of the site between citrus groves. Currently, there are several abandoned wells and a non-functioning wind machine that were used in the past for on-site agricultural uses.

4.2.1.1 State Designated Farmland

The California Government Code (Section 65570) requires the collection and reporting of agricultural land use acreage and conversion by June 30 of each even-numbered year. Utilizing data from the U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) soil survey and current land use information, the California Department of Conservation (DOC) FMMP² compiles important farmland maps for each county within the State. Maps and statistics are produced biannually using a process that integrates aerial photo interpretation, field mapping, a computerized mapping system, and public review. These maps categorize land use into eight mapping categories and represent an inventory of agricultural soil resources within Riverside County. The categories of land shown on these maps are listed below.

- **Prime Farmland:** Land which has the best combination of physical and chemical characteristics for the production of crops. It has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops when treated and managed, including water management, according to current farming methods.
- **Farmland of Statewide Importance:** Land that is similar to *Prime Farmland* but with minor shortcomings, such as greater slopes or less ability to hold and store moisture.
- **Unique Farmland:** Land of lesser quality soils used for the production of specific high economic value crops. It has the special combination of soil quality, location, growing season, and moisture

¹ 5.8 *Agricultural Resources*, City of Moreno Valley General Plan Final Environmental Impact Report, July 2006.

² A Guide to the Farmland Mapping and Monitoring Program, California Department of Conservation, Division of Land Resources Protection, 2004 Edition.

supply needed to produce sustained high quality or high yields of a specific crop when treated and managed according to current farming methods. It is usually irrigated, but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Examples of crops include oranges, olives, avocados, rice, grape, and cut flowers.

- **Farmland of Local Importance:** Land of importance to the local agricultural economy, as determined by each county's board of supervisors and local advisory committees. Examples include dairies, dryland farming, aquaculture, and uncultivated areas with soils qualifying for *Prime Farmland* and *Farmland of Statewide Importance*.
- **Grazing Land:** Land on which the existing vegetation, whether grown naturally or through management, is suitable for grazing or browsing of livestock.
- **Urban and Built-up Land:** Land used for residential, industrial, commercial, construction, institutional, public administrative purpose, railroad yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment plants, water control structures, and other development purposes. Highways, rail roads, and other transportation facilities are also included in this category.
- **Other Land:** Land not included in any of the other mapping categories. Common examples include low-density rural developments, brush, timber, wetland, and riparian areas not suitable for livestock grazing, confined livestock, poultry or aquaculture facilities, strip mines, borrow pits, and water bodies smaller than 40 acres.
- **Water:** Water areas with an area of at least 40 acres.

Within the City, approximately 1,639 acres are designated as Prime Farmland.¹ As illustrated in Figure 4.2.1, the majority of the project site is identified as Prime Farmland, Farmland of Local Importance, and Urban/Built-Up land. Approximately 82.55 acres (69%) of the project site is designated as Prime Farmland,² 36.4 acres (30%) is designated Farmland of Local Importance, and less than one acre (1%) is designated Urban and Built-up land.

4.2.1.2 General Plan and Zoning Designations

The City of Moreno Valley's General Plan policies support agriculture as an interim use. No land in the City is dedicated for agricultural use. The site is designated as R-15, R-5, R-2, and Business Park in the City's General Plan and currently zoned for Business Park, Business Park Mixed-Use and Residential uses (R-15, R-5, and RA-2). The RA-2 zone is within the PAKO (Municipal Code Section 9.07.080) adopted in 2006, which allows agricultural activities as interim uses of land in specified areas of the City. The PAKO designation requires larger lots with a maximum of 2 residences per acre and allows agricultural uses and animal keeping, and the City identifies agricultural crops as an allowable use for all of its zoning categories. The City's approved PAKO area is bounded by Nason Street on the west, the City limits to the north, Theodore Street to the east, and Cottonwood Avenue to the south. The designation includes properties within the Rural Residential (RR), Residential-1 (R1), Residential Agricultural-2 (RA-2) zoning categories, which currently comprise 2,887 acres based on City's 2011 GIS database. The PAKO-designated land represents 77 percent of the 3,740 total acres of the land zoned RR, R1, and RA-2 in the City.

4.2.1.3 Williamson Act Contract Lands

The Williamson Act is a non-mandated State program, administered by counties and cities, for the preservation of agricultural land. Participation in the program is voluntary on the part of both landowners and local governments, and is implemented through the establishment of Agricultural Preserves and the execution of Williamson Act contracts. Individual property owners enter into a

¹ 5.8 Agricultural Resources, City of Moreno Valley General Plan Final Environmental Impact Report, July 2006.

² Important Farmland Map Riverside County, Farmland Mapping and Monitoring Program, 2004.

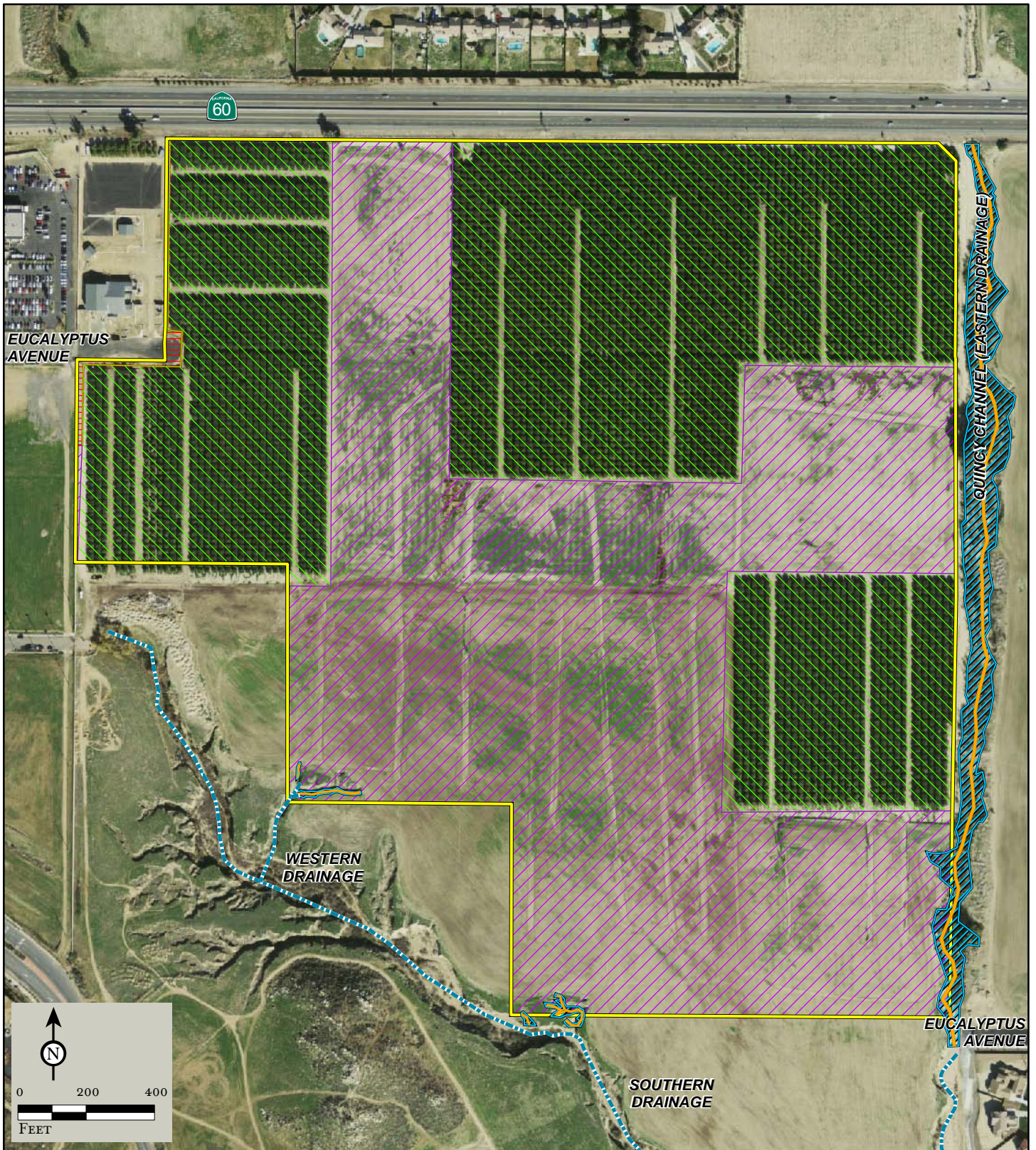


FIGURE 4.2.1

LSA

- | | |
|----------------------------------------------|------------------------------------|
| Project Boundary | State Farmland Designations |
| CDFG* Potential Jurisdictional Waters | Farmland of Local Importance |
| ACOE*/RWQCB* Potential Jurisdictional Waters | Prime Farmland |
| Eroded Channel | Urban and Built-Up Land |

*Eucalyptus Industrial Park
Environmental Impact Report*

State Farmland Designations

Item No. E.3

SOURCE: AirPhotoUSA, 2008; Dept. of Conservation, Farmland & Mapping Program (FMMP), 2008.

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contract that restricts or prohibits development of their property to non agricultural uses during the term of the contract in return for lower property taxes. Initially signed for a minimum ten-year period, the contracts are automatically renewed each year for a successive minimum ten-year period unless a notice of non-renewal is filed or a contract cancellation is approved by the local government. In the City of Moreno Valley, currently there is no land currently under a Williamson Act contract.¹

4.2.2 Existing Policies and Regulations

The City of Moreno Valley General Plan recognizes the high demand for land and housing and development in the region and that many of the current agricultural operations in the City are “interim uses” or uses that will ultimately be converted to urban uses. The following policies and goals pertain to agriculture and are applicable to the proposed project.

Parks, Recreation, and Open Space Element

Objective 4.1 Retain agricultural open space as long as agricultural activities can be economically conducted, and are desired by agricultural interests (with some agriculture retained in long-term use), and provide for an orderly transition of agricultural lands to other urban and rural uses.

To support this objective, the City identifies policies to encourage grazing and crop production as a compatible part of a rural residential atmosphere. Additionally, where practical, the City plans to incorporate existing groves into the design of future development projects. These groves can help retain the agricultural character of the area as well as provide a buffer between different land uses.¹

4.2.3 Methodology

The analysis looks at the FMMP to assess the presence of type of farmlands based on soil quality and irrigation status for State designated farmlands. It evaluates the current land use designation and zoning and the proposed land use and zoning for any conflicts with existing zoning for agricultural uses. Based on California Land Conservation Act, lands under Williamson Act are determined for the project site and surrounding parcels. Lastly, the California LESA, developed by the DOC, is used to quantify potential impacts a development project may have on agricultural resources.

4.2.4 Thresholds of Significance

Appendix G of the *CEQA Guidelines* recognizes the following significance thresholds related to agricultural resources. Based on the significance thresholds, potential impacts to agricultural resources could be considered significant if the proposed project:

- Conflicted with existing zoning for agricultural use, or a Williamson Act contract;
- Converted Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use; and/or
- Involved changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use.

4.2.5 No Impact/Less than Significant Impacts

The following potential impacts were determined to be less than significant. In each of the following issues, either no impact would occur (therefore, no mitigation would be required) or a adherence to

¹ 5.8 *Agricultural Resources*, City of Moreno Valley General Plan Final Environmental Impact Report, July 2006.

established regulations, standards, and policies would reduce potential impacts to a less than significant level.

4.2.5.1 Conflict with Existing Zoning or a Williamson Act Contract

Threshold	Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?
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Neither the project site nor the surrounding area contains a Williamson Act contract, so the project will have no impacts in this regard.

An approximately 12-acre portion of the project site, located near the southern border, is zoned Residential Agriculture RA-2, which is within the City's PAKO. Citywide there are 2,887 acres of land within the PAKO designation, so the proposed project would result in the loss of 12 acres or 0.4 percent of the PAKO-designated land in the City. The purpose of the PAKO is to maintain animal keeping and the rural character of the areas noted within the overlay district and designate a portion of the parcel for medium and large animal keeping. With the development of the project, this portion of the site would be rezoned to Light Industrial to allow for the proposed warehouse distribution uses and would also be removed from the PAKO.

It should be noted that the Moreno Valley General Plan policies and zoning designations support agriculture only as an interim use, and no land in the City is designated solely for agricultural use or for agricultural preservation. Despite this, the proposed zone change would conflict with the existing zone and PAKO overlay for this portion of the project site; however, this change would remove less than one percent of the PAKO-designated land and would not represent a significant loss of land under this overlay designation.

Based on the recent trends of urban development in the City, development pressures will eventually lead to the conversion of agricultural land in the City to suburban uses. The City's General Plan recognizes that these conversions will eventually occur, and the proposed project is a demonstration of that trend. Therefore, impacts in this regard would be less than significant and no mitigation is required.

4.2.6 Significant Impacts

4.2.6.1 Conversion of State Designated Farmland

Threshold	Would the proposed project result in the conversion of Prime, Unique, or Statewide Important Farmland as shown on the maps prepared by the FMMP?
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As previously stated, approximately 82.5 acres of the project site is designated as Prime Farmland. At the time of this writing, the 2004–2006 FMMP survey results were not available. During the 2002–2004 reporting period, Riverside County experienced a net loss of 4,824 acres of Prime Farmland. The conversion of the 82.5 acres of onsite Prime Farmland would be equivalent to 1.7 percent of the total loss of Prime Farmland in the County during this period. The amount of Prime Farmland inventoried in Riverside County during the last countywide survey of farmland totaled 139,253 acres. Of this area, approximately 1,639 acres were located within the City. The 82.5 acres of on-site Prime Farmland represents 5.0 and 0.06 percent of the total amount of Prime Farmland in the City and County, respectively. Because Prime Farmland is a finite resource, its conversion to a non-agricultural use is a significant impact.

Demographic increases, coupled with the availability of developable land and the rising cost of water, increasingly exert pressure on the owners/operators of agricultural operations to sell and/or convert agricultural lands to non-agricultural uses. The DOC has identified potential "conservation tools" available to mitigate for the loss of agricultural land. These include the purchase of agricultural

conservation easements; transfer of development rights; acquisition of farmland by the City or County; mitigation banking; the establishment of “urban limits,” greenbelts, and buffers; the payment of in-lieu fees sufficient to purchase and maintain farmland conservation easements; and planning tools such as clustering development, use of density bonuses, and limiting “leapfrog” development.¹

A variety of techniques and programs has been utilized in other areas of the State to mitigate for the loss of Prime Farmland and/or ensure the continued economic viability of agricultural operations. For example, the City of Davis requires the granting of a farmland conservation easement or other conservation mechanism for twice the amount of agricultural land being converted to a non-agricultural uses; or the payment of in-lieu fees based upon a two-to-one mitigation requirement.² In its “Agricultural Lands Conversion Ordinance,” Yolo County requires a one-to-one replacement of converted agricultural lands, either through the granting of a conservation easement, or payment of in-lieu fees. Generally, mitigation lands are required to have similar soil quality, water supply adequacy, and should be in relative proximity to the lands being converted.³

The DOC’s California Farmland Conservancy Program (CFCP) seeks to encourage the long-term, private stewardship of agricultural lands through the voluntary use of agricultural conservation easements. Implementation of conservation easements is typically achieved either through (1) the outright purchase of easements or (2) the donation of mitigation fees to a local, regional, or statewide organization whose purpose includes the acquisition and stewardship of conservation easements. Through April 2005, the preservation of 22,481 acres of farmland in the State has been wholly or partially funded through the CFCP. Additional agricultural conservation easements have been funded by various entities without the use of CFCP funds. While the amount of CFCP grants varies depending on location, farmland type, and size, CFCP grants to conservancy agencies made to offset the cost of purchasing agricultural conservation easements has averaged approximately \$3,000 per acre statewide.⁴

The City does not maintain a program for mitigating impacts resulting from the conversion of agricultural land. Because Prime Farmland is a finite resource, the loss of 82.5 acres of on-site Prime Farmland is significant. Although implementation of the proposed project would result in the retention or provision of rows of citrus trees along the northern portion of the project site adjacent to SR-60, along the western perimeter of Building No. 6, and along the southern perimeter of Buildings No. 5 and 6, the retention or provision of citrus trees on site is for ornamental and landscaping purposes and not for continued agricultural cultivation.

While the proposed project would result in the conversion of Prime Farmland, development of this site and the surrounding area is consistent with the long-term vision of the City as outlined in the General Plan. While the Moreno Valley General Plan policies support agriculture as an interim use, no land in the City is designated for agricultural preservation.

The City of Moreno Valley General Plan EIR discusses impacts related to agriculture in the City as well as potential mitigation. Potential mitigation measures exist which would reduce the impact related to the loss of agricultural resources within the City. These potential mitigation measures include:

- Enrolling productive agricultural land, not presently under contract, under a Williamson Act Contract;
- Providing protection to ongoing agricultural operations from complaints and nuisance complaints from adjacent new development;
- Protecting productive agricultural land subject to conversion through the purchase of or transfer of its development rights;

¹ Discussion Paper, Agricultural Land Conservation Tools, California Department of Conservation.

² Chapter 40 (Right to Farm and Farmland Preservation), City of Davis Municipal Code.

³ Yolo County General Plan Agricultural Element, November 2002.

⁴ http://www.consrv.ca.gov/dlrp/cfcp/stories/easement_projects.htm, site accessed August 17, 2006.

- Purchasing conservation easements on existing agricultural land to ensure that the land is never converted to urban uses; and
- Donating funds to a regional or statewide program that promotes and implements the use of agricultural land conservation easements.¹

Mitigation measures must be feasible and fully enforceable through permit conditions, agreements, or other legally binding considerations. To be feasible, mitigation must be capable of being accomplished in a successful manner within a reasonable period of time, taking into account the economic, environmental, legal, social, and technological factors.²

While the City of Moreno Valley General Plan EIR identifies potential mitigation measures for impacts to agricultural resources, no mechanism for the mitigation of impacts to Prime Farmland and/or existing agricultural operations has been enacted by either the City of Moreno Valley or the County of Riverside. Rather, the City has specifically recognized that the conversion of agricultural land under its jurisdiction is an eventual and expected outcome of current and future growth. The current General Plan does not include any agricultural designations. The City allows agricultural uses in all land use designations as an interim use until such time as the land is developed per the vision identified in the General Plan. One of the goals stated in the City's recent General Plan is the "...orderly conversion of agricultural lands." The proposed project is a continued extension of development in the surrounding area (commercial to the west, industrial to the east, residential to the south east). The proposed project does not interfere with the ability of other adjacent properties to be used for agricultural production should the property owner wish to do so, nor does it create any gaps of vacant or agricultural land between the proposed project and the existing adjacent development. However, the project would permanently remove prime agricultural land from active production, and thus is considered a significant impact on agricultural resources.

Mitigation Measures. The potential mitigation measures identified by the City's General Plan have been deemed infeasible by the property owner under current economic conditions. In addition, supplementary analysis of the project site and local economic conditions indicates that continued citrus production and/or the raising of row crops would not be economically feasible on the project site (see Appendix L).

Williamson Act contracts are entered into voluntarily by property owners and the City cannot force owners to participate in this program. The City does have the ability to encourage property owners to participate in Williamson Act programs; however, this is expected to result only in temporary preservation of agricultural land since property owners have the option of non-renewal of these contracts at any time after the ten-year contract period ends. The land would then be available to be developed with urban uses.

Providing protection for ongoing agricultural activities from new developments, such as requiring buffers between agricultural operations and new development or requiring the notification and disclosure of agricultural activities to the purchasers adjacent properties will not permanently protect agricultural land. In addition, the land immediately east of the project site was recently approved by the City Council for industrial/warehouse uses (West Ridge project), which would indicate the City is not requiring or encouraging local property owners to preserve local agricultural land over the long term.

The purchase or transfer of development rights, purchase of conservation easements, or donation of funds to assist in the conservation of agricultural land would need to be implemented to ensure the preservation of agricultural land. As stated previously, the City anticipates the conversion of agricultural land within the City and does not set aside land for permanent preservation. The City expects that the majority of the land within the City will be converted to urban uses, although some

¹ Moreno Valley General Plan Final Program EIR, July 2006

² CEQA Guidelines, Sections 15126.4 and 15364.

agriculture will continue as interim uses, as allowed by the City's Development Code for all zoning categories. Moreno Valley has determined that these measures are economically infeasible and that they are contrary to the City's vision (as stated in its General Plan); therefore, they are not feasible and alternative mitigation has not been identified.¹

Level of Impact After Mitigation. Since the mitigation measures discussed are not consistent with the objectives of the Moreno Valley General Plan and are not economically feasible, no mitigation measures are proposed and impacts related to this issue remain significant and unavoidable.

4.2.6.2 Conversion of an Existing Agricultural Operation to a Non-Agricultural Use

Threshold	Would the proposed project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?
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The proposed project would result in the development of industrial uses on land that has historically been utilized for citrus production. Implementation of the proposed project would result in the retention or provision of rows of citrus trees along the northern portion of the project site adjacent to SR-60, along the western perimeter of Building No. 6, and along the southern perimeter of Buildings No. 5 and 6. Although these citrus trees would be retained or provided along the perimeter of the project site, the retention or provision of citrus trees on site is for ornamental and landscaping purposes and not for agricultural cultivation. The conversion of the project site's agriculture land to non-agricultural uses is a result of various economic and demographic factors. Increased cost for water and a continuing demand for housing and other development in the City and region are the primary reasons for this agricultural land conversion.

To further evaluate the proposed project's impacts on agricultural resources, an analysis was completed utilizing the DOC LESA Model. The LESA model is a method to rate the relative quality of land resources and potential impacts to agricultural resources. The LESA Model is intended to provide lead agencies with a methodology to identify potentially significant impacts that may result from agriculture land conversions.

The LESA model is a method to rate the relative quality of land resources and potential impacts to agricultural resources using six different factors (two based on soil resource quality, and four based on on-site and adjacent resources) to develop a weighted score used to identify the significance of potential impacts to agricultural resources. For a given project, the factors are rated, weighted, and combined, resulting in a single numeric score, which becomes the basis for making a determination of a project's potential significance.² The resulting LESA score for the project site is provided in Table 4.2.A while the scoring threshold is provided in Table 4.2.B.

Table 4.2.A: Land Evaluation and Site Assessment Model Score

Factor Name	Factor Rating (0-100 Points)	×	Factor Weighting (Total = 1.00)	=	Weighted Factor Rating
Land Evaluation					
1. Land Capabilities	94.7	×	0.25	=	23.68
2. Storie Index Rating	91.78	×	0.25	=	22.95
Land Evaluation (LE) Subscore					46.63

¹ 5.8 Agricultural Resources – Environmental Impacts, City of Moreno Valley General Plan Final Program EIR, July 2006.
² California Land Evaluation and Site Assessment Model, Instruction Manual, State of California Department of Conservation, Office of Land Conservation, 1997, http://www.conservation.ca.gov/dlrp/Pages/qh_lesa.aspx, website accessed December 19, 2011.

Table 4.2.A: Land Evaluation and Site Assessment Model Score

Factor Name	Factor Rating (0–100 Points)	x	Factor Weighting (Total = 1.00)	=	Weighted Factor Rating
Site Assessment					
1. Project Size	122.8	x	0.15	=	18.42
2. Water Resources Available	95	x	0.15	=	14.25
3. Surrounding Agriculture	20	x	0.15	=	3.0
4. Protected Resource Lands	20	x	0.15	=	3.0
Site Assessment (SA) Subscore					38.67
TOTAL LESA SCORE (LE+SA)					85.30

Table 4.2.B: LESA Model Scoring Threshold

Total LESA Score	Scoring Decision
0–39 Points	Not Considered Significant
40–59 Points	Considered Significant <u>only</u> if LE and SA subscores are each <u>greater</u> than or equal to 20 points
60–79 Points	Considered Significant <u>unless</u> either LE or SA subscore is <u>less</u> than 20 points
80–100 Points	Considered Significant

As identified in Table 4.2.A, the proposed project’s LESA score is 85.07. As indicated in Table 4.2.B, a LESA score of 85.3 is considered significant. Therefore, the proposed project would result in a significant impact to agricultural resources.

Currently, property northeast beyond SR-60 is utilized for agriculture, while the land immediately east of the site was used for agriculture in the past but is currently fallow. The proposed project will result in the construction and operation of industrial uses, but it would not preclude the continuation of agricultural uses on adjacent properties, in the event the property owners elected to do so. Whether or not adjacent agricultural land is developed relies on several factors including market demand, availability of property, profitability of the agricultural use, and the landowner’s interest in continuing farming. While the operation of industrial uses would increase development pressure on adjacent agricultural properties, conversion of the adjacent agricultural properties is reasonably foreseeable.

The project does not include design features that would prevent the existing agricultural operations in the area from continuing. The project would convert land that is currently used for agriculture and the development of the proposed project would contribute to the conversion of adjacent lands. However, the project is a logical extension of development in the City and does not create leapfrog development or islands of agricultural land that would be difficult to farm. The City recognizes development pressures within the City, and that these pressures will increase as the City continues to build out.

Additionally, while the project would not directly cause the conversion of adjacent agricultural land to non-agricultural uses, it would contribute to development pressure within the City that could potentially lead to the conversion of agricultural land off site. This is a significant impact requiring mitigation.

Mitigation Measures. As stated in Section 4.2.6.1, no feasible mitigation for the loss of agricultural land within the City of Moreno Valley exists.

Level of Impact After Mitigation. As with impacts associated with the conversion of Prime Farmland, no feasible mitigation is available to mitigate for the direct impacts associated with the

conversion of an existing agricultural operation, as previously discussed in Section 4.2.6.1. While the City has identified that the conversion of agricultural land under its jurisdiction is an eventual outcome of current and future growth, the impacts associated with this issue remain significant and unavoidable.

4.2.7 Cumulative Impacts

The cumulative area for agricultural resource impacts is Riverside County. As with the project-related impacts to Prime Farmland and the existing on-site agricultural use, no local or regional program to mitigate for the cumulative impacts to agricultural resources is available. As stated previously, the City does not maintain a General Plan or zoning designation for agricultural uses and there are no project-level feasible mitigation measures that would help reduce cumulative impacts. For example, during 2002–2004 approximately 4,824 acres of Prime Farmland in Riverside County were converted to other uses, and this trend has continued to today. The cumulative effect of development in the region will continue to result in the conversion of agricultural lands to non-agricultural uses. Because agricultural land, including Prime Farmland, is a finite resource, the conversion of 122.8 acres of farmland to industrial uses, combined with planned and future development in the City and region, represents a cumulative impact to agricultural operations and resources, and the proposed project's contribution to this cumulative impact through the conversion of 122.8 acres of farmland is cumulatively considerable.

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4.3 AIR QUALITY

This section analyzes the proposed project's potential air quality impacts based on the comprehensive *Air Quality Analysis* contained in Appendix B (LSA Associates, Inc. November 2011) to this EIR. The air quality analysis evaluates potential air quality impacts and mitigation measures by examining the short-term construction and long-term operational impacts associated with the project and by evaluating the effectiveness of mitigation measures incorporated as part of the project design. Additionally, the analysis provides a discussion of the proposed project, the physical setting of the project area, and the air quality regulatory framework. Modeled air quality levels are based upon vehicle data and project trip generation included in the project's *Traffic Impact Analysis* (LSA Associates, Inc. November 2011, Appendix I of EIR) and peak turn volumes generated for the proposed project combined with emission factors from the California Air Resources Board (CARB) CalEEMod program. The evaluation was prepared in accordance with appropriate standards, utilizing procedures and methodologies in the South Coast Air Quality Management District (SCAQMD) *CEQA Air Quality Handbook* (SCAQMD 1993). Air quality data posted by the CARB and the U.S. Environmental Protection Agency (EPA) Web sites are included to document the local air quality environment.

4.3.1 Existing Setting

The project site is located in the City of Moreno Valley, in western Riverside County, California. The project site is located in the South Coast Air Basin (Basin), a geographic area that encompasses the coastal plain and connecting broad inland valleys and low hills. The Pacific Ocean forms the southwestern border of the Basin, with mountain ranges forming the remainder of the border. The Basin includes Orange County and the non-desert portions of Los Angeles County, Riverside County, and San Bernardino County. The Basin is under the jurisdiction of the SCAQMD.

4.3.1.1 Climate and Meteorology

Air quality in the project area is not only affected by various emission sources (mobile, industry, etc.), but also by atmospheric conditions such as wind speed, wind direction, temperature, rainfall, and amount of sunshine. The combination of topography, low mixing height, abundant sunshine, and emissions from the second largest urban area in the United States combine to give the Basin the worst air pollution problem in the nation.

Winds in the Basin are predominantly of relatively low velocities, averaging about 4.0 miles per hour (mph). These low average wind speeds, together with a persistent temperature inversion, limit the vertical dispersion of air pollutants throughout the Basin. Strong, dry, north or northeasterly winds, known as Santa Ana winds, occur during the fall and winter months, dispersing air contaminants, and these conditions tend to last for several days at a time. The prevailing winds in the project area move predominantly from the northwest to the southeast with an average wind speed of 0.001 mile per second (1.73 meters per second).

The Basin experiences a persistent temperature inversion (increasing temperature with increasing altitude) as a result of the Pacific High, a large subtropical high pressure system, which holds air contaminants relatively near the ground. The annual average temperatures throughout the Basin vary from the low to middle 60s (degrees Fahrenheit [°F]). Due to a decreased marine influence, the eastern portion of the Basin shows greater variability in average annual minimum and maximum temperatures. More than 90 percent of the Basin's rainfall occurs from November through April. The annual average rainfall varies from approximately 9 inches in Riverside to approximately 14 inches in downtown Los Angeles. Monthly and yearly rainfall totals are extremely variable. Summer rainfall usually consists of widely scattered thunderstorms near the coast and slightly heavier shower activity in the eastern portion of the Basin with frequency being higher near the coast.

During periods of low inversions and low wind speeds, air pollutants generated in urbanized areas are transported predominantly onshore into Riverside and San Bernardino Counties. In the winter, the greatest pollution problems are carbon monoxide (CO) and oxides of nitrogen (NO_x), because of extremely low inversions and air stagnation during the night and early morning hours. In the summer, the longer daylight hours and the brighter sunshine combine to cause a reaction between hydrocarbons and NO_x to form photochemical smog.

4.3.1.2 Regional Air Quality

Both the State of California and the Federal government have established health-based ambient air quality standards (AAQS) for six air pollutants. As identified in Table 4.3.A, these pollutants include ozone (O₃), CO, nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter with a diameter of 10 microns or less (PM₁₀), and lead (Pb). In July 1997, the EPA adopted standards for eight-hour ozone and for fine particulate matter less than 2.5 microns in diameter (PM_{2.5}). In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

Table 4.3.B lists the health effects of criteria pollutants and their potential sources. These health effects would not occur unless the standards are exceeded by a large margin or for a prolonged period of time. The State AAQS are more stringent than the Federal AAQS. Indirect sources of pollution are generated when minor sources collectively emit a substantial amount of pollution. Examples of this would be the motor vehicles at intersections, malls, and on highways. The California Clean Air Act (CCAA) provides the SCAQMD with the authority to manage transportation activities at indirect sources. The SCAQMD also regulates stationary sources of pollution throughout its jurisdictional area. Direct emissions from motor vehicles are regulated by the CARB.

4.3.1.3 Local Air Quality

The SCAQMD, together with the CARB, maintains ambient air quality monitoring stations in the Basin. The air quality monitoring stations closest to the site is the Riverside-Rubidoux Station. The air quality trends from these monitoring stations are representative of the ambient air quality in the project area. The criteria pollutants monitored at this station¹ are identified in Table 4.3.C. CO, NO₂, and SO₂ levels monitored at this station have not exceeded State and Federal standards in the past three years. O₃ and PM₁₀ concentrations monitored at this station frequently exceeded their respective State and Federal standards during the last three years. PM_{2.5} only exceeded its standard occasionally.

4.3.1.4 Air Pollution Constituents and Attainment Status

The CARB coordinates and oversees both State and Federal air pollution control programs in California. The CARB oversees activities of local air quality management agencies and maintains air quality monitoring stations throughout the State in conjunction with the EPA and local air districts. The CARB has divided the State into 15 air basins based on meteorological and topographical factors of air pollution. The CARB and EPA use the data collected at monitoring stations to classify air basins as attainment, nonattainment, nonattainment transitional, or unclassified, based on air quality data for the most recent three calendar years compared with the AAQS. Non attainment areas are imposed with additional restrictions, as required by the EPA. The air quality data are also used to monitor progress in attaining air quality standards. Table 4.3.D identifies the attainment status² for the criteria pollutants in the Basin.

¹ California Air Resources Board and U.S. EPA, 2008.

² Unclassified designation: a pollutant that is designated unclassified if the data are incomplete and do not support a designation of attainment or nonattainment; Attainment designation: a pollutant is designated attainment if the State standard for that pollutant was not violated at any site in the area during a 3-year period. Non attainment: a pollutant is designated nonattainment if there was at least one violation at any site in the area during a 3-year period.

Table 4.3.A: Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards ¹		Federal Standards ²			Notes
		Concentration ³	Method ⁴	Primary ^{2,5}	Secondary ^{2,6}	Method ⁷	
Ozone (O ₃)	1-Hour	0.09 ppm (180 µg/m ³)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry	<p>¹ California standards for ozone; carbon monoxide (except Lake Tahoe); sulfur dioxide (1 and 24 hour); nitrogen dioxide; suspended particulate matter, PM₁₀; and visibility reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.</p> <p>² National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth-highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM₁₀, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than 1. For PM_{2.5}, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.</p> <p>³ Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25° C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25° C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.</p> <p>⁴ Any equivalent procedure that can be shown to the satisfaction of the CARB to give equivalent results at or near the level of the air quality standard may be used.</p> <p>⁵ National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.</p> <p>⁶ National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.</p> <p>⁷ Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.</p> <p>⁸ The CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.</p>
	8-Hour	0.07 ppm (137 µg/m ³)		0.075 ppm (147 µg/m ³)			
Respirable Particulate Matter (PM ₁₀)	24-Hour	50 µg/m ³	Gravimetric or Beta Attenuation*	150 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis	
	Annual Arithmetic Mean	20 µg/m ³		—			
Fine Particulate Matter (PM _{2.5})	24-Hour	No Separate State Standard		35 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis	
	Annual Arithmetic Mean	12 µg/m ³	Gravimetric or Beta Attenuation*	15 µg/m ³			
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m ³)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m ³)	None	Non-Dispersive Infrared Photometry (NDIR)	
	1-Hour	20 ppm (23 mg/m ³)		35 ppm (40 mg/m ³)			
	8-Hour (Lake Tahoe)	6ppm (7 mg/m ³)		—			
Nitrogen Dioxide (NO ₂)	Annual Arithmetic Mean	0.030 ppm (56 µg/m ³)	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m ³)	Same as Primary Standard	Gas Phase Chemiluminescence	
	1-Hour	0.18 ppm (338 µg/m ³)		100 ppb			
Lead (Pb) ⁸	30-Day Average	1.5 µg/m ³	Atomic Absorption	—	Same as Primary Standard	High Volume Sampler and Atomic Absorption	
	Calendar Quarter	—		1.5 µg/m ³			
	Rolling 3-Month Average	—		0.15 µg/m ³			
Sulfur Dioxide (SO ₂)	Annual Arithmetic Mean	—	Ultraviolet Fluorescence	0.030 ppm (80 µg/m ³)	—	Spectrophotometry (Pararosaniline Method)	
	24-Hour	0.04 ppm (105 µg/m ³)		0.14 ppm (80 µg/m ³)			
	3-Hour	—		—			0.5 ppm (1300 µg/m ³)
	1-Hour	0.25 ppm (655 µg/m ³)		75 ppb			—
Visibility-Reducing Particles Sulfates	8-Hour	Extinction coefficient of 0.23 per kilometer—visibility of 10 miles or more (0.07-30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70%. Method: Beta Attenuation and Transmittance through Filter Tape. Method: Beta Attenuation and transmittance through Filter Tape.		<p>No Federal Standards</p>			
Sulfates	24-Hour	25 µg/m ³	Ion Chromatography				
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m ³)	Ultraviolet Fluorescence				
Vinyl Chloride ⁸	24-Hour	0.01 ppm (26 µg/m ³)	Gas Chromatography				

Source: California Air Resources Board (February 7, 2012).

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Table 4.3.B: Summary of Health Risks from Some of the Common Pollutants Found in Air

Pollutants	Health Risks	Examples of Sources
Particulate Matter (PM ₁₀ : less than or equal to 10 microns)	Increase respiratory disease Lung damage Premature death	Cars and trucks, especially diesels. Fireplaces, wood stoves. Windblown dust from roadways, agriculture, and construction.
Ozone (O ₃) Breathing	difficulties Lung damage	Formed by chemical reactions of air pollutants in the presence of sunlight; common sources are motor vehicles, industries, and consumer products.
Carbon Monoxide (CO)	Chest pain in heart patients Headaches, nausea Reduced mental alertness Death at very high levels	Any source that burns fuel such as cars, trucks, construction and farming equipment, and residential heaters and stoves.
Nitrogen Dioxide (NO ₂)	Lung damage	See carbon monoxide sources.
Toxic Air Contaminants	Cancer Chronic eye, lung, or skin irritation Neurological and reproductive disorders	Cars and trucks, especially diesels. Industrial sources such as chrome platers. Neighborhood businesses such as dry cleaners and service stations. Building materials and products.

Source: CARB 2005.

Table 4.3.C: Ambient Air Quality in the Project

Pollutant	Standard	2008	2009	2010
Carbon Monoxide				
Max 1-hr concentration (ppm)		2.7	2.7	2.0
No. days exceeded: State	> 20 ppm/1-hr	0	0	0
Federal	> 35 ppm/1-hr	0	0	0
Max 8-hr concentration (ppm)		1.86	1.85	1.20
No. days exceeded: State	9.0 ppm/8-hr	0	0	0
Federal	9 ppm/8-hr	0	0	0
Ozone				
Max 1-hr concentration (ppm)		0.146	0.116	0.076
No. days exceeded: State	> 0.09 ppm/1-hr	54	25	0
Max 8-hr concentration (ppm)		0.116	0.100	0.067
No. days exceeded: State	> 0.07 ppm/1-hr	89	57	0
No. days exceeded: Federal ²	> 0.08 ppm/8-hr	64	36	0
Course Particulates (PM₁₀)				
Max 24-hr concentration (µg/m ³)		115	77	50
No. days exceeded: State	> 50 µg/m ³ /24-hr	46	30	ND
Federal	> 150 µg/m ³ /24-hr	0	0	ND
Annual Arithmetic Average (µg/m ³)		44.8	41.1	ND
Exceeded: State	> 20 µg/m ³ ann. arth. avg.	Yes	Yes	ND
Fine Particulates (PM_{2.5})				
Max 24-hr concentration (µg/m ³)		57.6	54.4	ND
No. days exceeded: Federal	> 65 µg/m ³ /24-hr	13	13	ND
Annual Arithmetic Average (µg/m ³)		16.3	15.2	ND
Exceeded: State	> 12 µg/m ³ ann. arth. avg.	Yes	Yes	ND
Federal	> 15 µg/m ³ ann. arth. avg.	Yes	Yes	ND
Nitrogen Dioxide				
Max 1-hr concentration (ppm)		0.092	0.078	0.052
No. days exceeded: State	> 0.25 ppm/1-hr	0	0	0
Annual arithmetic average concentration (ppm)		0.019	0.017	ND
Exceeded: Federal	> 0.053 ppm ann. arth. avg.	No	No	ND
Sulfur Dioxide				
Max 24-hr concentration (ppm)		0.003	0.003	0.002
No. days exceeded: State	> 0.04 ppm/24-hr	0	0	0
Federal	> 0.14 ppm/24-hr	0	0	0
Annual arithmetic average concentration (ppm)		0.000	0.001	ND
Exceeded: Federal	> 0.030 ppm ann. arth. avg.	No	No	ND

¹ Monitored at the Riverside-Rubidoux Monitoring Station, 5888 Mission Blvd.

² Exceedance counts shown are of the 1997 federal standard; no data is available for the new standard of 0.075 ppm.

µg/m³ = microgram of pollutant per cubic meter of air

ppm = parts per million

Source: United States Environmental Protection Agency and California Air Resources Board, 2008-2010.

Table 4.3.D: Attainment Status of Criteria Pollutants in the South Coast Air Basin

Pollutant	State	Federal
1-hour O ₃	Nonattainment	Revoked June 2005
8-hour O ₃	Not Established	Severe-17 Nonattainment
PM ₁₀ Non	attainment	Serious Nonattainment
PM _{2.5} Non	attainment	Nonattainment
CO Attainment		Attainment/Maintenance
NO ₂ Attainment		Attainment/Maintenance
SO ₂ Attainment		Attainment
Lead Attainment		Attainment
All others	Attainment/Unclassified Attainment	t/Unclassified

CO = carbon monoxide

NO₂ = nitrogen dioxide

O₃ = ozone (smog)

PM₁₀ = particulate matter less than 10 microns in size

PM_{2.5} = particulate matter less than 2.5 microns in size

SO₂ = sulfur dioxide

Source: CARB (www.arb.ca.gov/desig/desig.htm) and EPA (www.epa.gov/air/data/monvals.html) 2011

4.3.1.5 Sensitive Land Uses in the Project Vicinity

Sensitive receptors include residences, schools, medical offices, convalescent facilities, and similar uses that are sensitive to air pollutants. The nearest sensitive receptors in the vicinity of the project site are the existing single-family residences located approximately 50 feet southeast of the southern boundary of the project site, approximately 395 feet southeast of the proposed warehouse buildings, and approximately 664 feet southeast of the proposed loading docks. Other sensitive uses in the area include existing single-family residences approximately 200 feet away from the northern project boundary north of SR-60 along Mesa Top Trail. Future sensitive receptors that may be located in close proximity to the proposed project site include the L'Aquila D'Pietra development located to the south, and the potential residential uses that may occur within areas designated RA-2 to the east and south.

At the time that the Notice of Preparation (NOP) was released for the proposed project, the Moreno Valley Unified School District (MVUSD) had plans to locate an elementary school (MVUSD Elementary School #24), a middle school (MVUSD Middle School #7), and a high school (MVUSD High School #5) in the vicinity of Redlands Boulevard and future Eucalyptus Avenue, in close proximity to the proposed project (refer to Figure 4.11.2, q.v.). After the NOP was released, MVUSD decided to abandon plans for these school sites and relocate the future school facilities in a different area of the City.¹ Therefore, there are no proposed schools that would be located next to the proposed project. For purposes of a analysis, the nearest sensitive receptor (the existing residences located southwest of the project site) was utilized as this represents the worst-case scenario.

4.3.2 Existing Policies and Regulations

4.3.2.1 Federal Regulations

Clean Air Act. Pursuant to the Federal Clean Air Act (CAA) of 1970, the EPA established national ambient air quality standards (NAAQS). The NAAQS were established for six major pollutants, termed "criteria" pollutants. Criteria pollutants are defined as those pollutants for which the Federal and State governments have established ambient air quality standards, or criteria, for outdoor concentrations in order to protect public health. In April 2003, the EPA was cleared by the White House Office of Management and Budget (OMB) to implement the eight-hour ground-level O₃

¹ Resolution No. 2007-08-81, Moreno Valley Unified School District Board of Education, approved April 15, 2008.

standard. The EPA issued the proposed rule implementing the eight-hour O₃ standard in April 2003. The EPA completed final eight-hour nonattainment status on April 15, 2004. The EPA issued the final PM_{2.5} implementation rule in fall 2004. The EPA issued final designations on December 15, 2004.

4.3.2.2 State Regulations

Mulford-Carrell Act. The state first set California Ambient Air Quality Standards (CAAQS) in 1969 under the mandate of the Mulford-Carrell Act. The CAAQS are generally more stringent than the NAAQS. In addition to the six criteria pollutants covered by the NAAQS, there are CAAQS for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. Originally, there were no attainment deadlines for CAAQS; however, the CCAA of 1988 provided a time frame and a planning structure to promote their attainment. The CCAA required nonattainment areas in the state to prepare attainment plans and proposed to classify each such area on the basis of the submitted plan, as follows: moderate, if CAAQS attainment could not occur before December 31, 1994; serious, if CAAQS attainment could not occur before December 31, 1997; and severe, if CAAQS attainment could not be conclusively demonstrated at all. The attainment plans are required to achieve a minimum 5 percent annual reduction in the emissions of nonattainment pollutants unless all feasible measures have been implemented. The EPA has designated the Southern California Association of Governments (SCAG) as the Metropolitan Planning Organization (MPO) responsible for ensuring compliance with the requirements of the CAA for the Basin.

California Code of Regulations Title 24, Part 6. Enacted in 1978, this part of the California Code established energy efficiency standards for residential and nonresidential buildings in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and incorporation of new energy efficiency technologies and methods. The latest amendments were enacted in 2011 as part of the new California "Green" Building Code.

4.3.2.3 Regional Regulations

Lewis Air Quality Management Act. The 1976 Lewis Air Quality Management Act established the SCAQMD and other air districts throughout the State. The Federal Clean Air Act Amendments of 1977 required that each state adopt an implementation plan outlining pollution control measures to attain the Federal standards in nonattainment areas of the state. The CARB is responsible for incorporating air quality management plans for local air basins into a State Implementation Plan (SIP) for EPA approval. Significant authority for air quality control within them has been given to local air districts that regulate stationary source emissions and develop local nonattainment plans.

Regional Air Quality Management Plan (AQMP). The SCAQMD and the SCAG are responsible for formulating and implementing the AQMP, which has a 20-year horizon for the Basin. The SCAQMD and SCAG must update the AQMP every three years. The current regional air quality plan is the Final 2007 AQMP adopted by the SCAQMD on June 1, 2007.

The Final 2007 AQMP proposes attainment demonstration of the Federal PM_{2.5} standards through a more focused control of sulfur oxides (SO_x), directly-emitted PM_{2.5}, and nitrogen oxides (NO_x) supplemented with volatile organic compounds (VOC) by 2015. The 8-hour ozone control strategy builds upon the PM_{2.5} strategy, augmented with additional NO_x and VOC reductions to meet the standard by 2024 assuming a bump-up¹ is obtained.

¹ A "bump-up" is a voluntary reclassification of a nonattainment area to a higher classification allowing for an extension of an attainment deadline.

The Final 2007 AQMP proposes policies and measures currently contemplated by responsible agencies to achieve Federal standards for healthful air quality in the Basin and those portions of the Salton Sea Air Basin that are under SCAQMD jurisdiction. This Final Plan also addresses several Federal planning requirements and incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools. This Final Plan builds upon the approaches taken in the 2003 AQMP for the Basin for the attainment of the Federal ozone air quality standard.¹ The Basin is currently a Federal and State nonattainment area for PM₁₀, PM_{2.5}, and ozone.

4.3.2.4 City of Moreno Valley General Plan Policies

Local jurisdictions, such as the City of Moreno Valley, have the authority and responsibility to reduce air pollution through its police power and decision-making authority. Specifically, the City is responsible for the assessment and mitigation of air emissions resulting from its land use decisions. The City is also responsible for the implementation of transportation control measures as outlined in the AQMP. Examples of such measures include bus turnouts, energy-efficient streetlights, and synchronized traffic signals. In accordance with CEQA requirements and the CEQA review process, the City assesses the air quality impacts of new development projects, requires mitigation of potentially significant air quality impacts by conditioning discretionary permits and monitors and enforces implementation of such mitigation. In accordance with CEQA requirements, the City does not, however, have the expertise to develop plans, programs, procedures, and methodologies to ensure that air quality within the City and region will meet Federal and State standards. Instead, the City relies on the expertise of the SCAQMD and utilizes the CEQA *Air Quality Handbook* as the guidance document for the environmental review of plans and development proposals within its jurisdiction.

Chapter 9 of the City's General Plan defines goals and policies related to air quality within the City of Moreno Valley. The specific policies of the General Plan that are relevant to the proposed project are as follows:

Objective 6.7 Reduce mobile and stationary source air pollutant emissions.

Policy 6.7.1 Cooperate with regional efforts to establish and implement regional air quality strategies and tactics.

Policy 6.7.2 Encourage the financing and construction of park and ride facilities.

Policy 6.7.4 Locate heavy industrial and extraction facilities away from residential areas and sensitive receptors.

Policy 6.7.5 Require grading activities to comply with South Coast Air Quality Management District's Rule 403 regarding the control of fugitive dust.

Policy 6.7.6 Require building construction to comply with the energy conservation requirements of Title 24 of the California Administrative Code.

4.3.3 Methodology

Evaluation of air quality impacts associated with the proposed project includes the following:

- Determine the short-term construction air quality impacts based on SCAQMD emissions thresholds;
- Determine the long-term air quality impacts, including vehicular traffic, on both on-site and off-site air quality sensitive uses based on SCAQMD emissions thresholds; and

¹ *Final 2007 Air Quality Management Plan*, South Coast Air Quality Management District, June 1, 2007.

- Determine the required mitigation measures to reduce short-term and long-term on-site air quality impacts from all sources.

A number of modeling tools are available to assess air quality impacts of projects. In addition, certain air districts, such as the SCAQMD, have created guidelines and requirements to conduct air quality analysis. SCAQMD's current guidelines, *CEQA Air Quality Handbook, April 1993*, were adhered to in the assessment of air quality impacts for the proposed project. The air quality models identified in the document are outdated; therefore, the CalEEMod model was used to estimate project-related mobile and stationary source emissions in this air quality assessment.

The air quality assessment includes estimating emissions associated with short-term construction of the proposed project. Localized air quality impacts (i.e., higher CO concentrations [CO hot spots] near intersections or roadway segments in the project vicinity) would be small and less than significant due to the generally low ambient CO concentrations (2.7 parts per million [ppm] versus the State one-hour CO standard of 20.0 ppm and 1.9 ppm versus the State eight-hour CO standard of 9.0 ppm) in the project area. The net increase in pollutant emissions determines the significance and impact on regional air quality as a result of the proposed project. The results also allow the local government to determine whether the proposed project will deter the region from achieving the goal of reducing pollutants in accordance with the AQMP in order to comply with Federal and State AAQS.

Air quality in the project area would be affected by long-term air pollutant emissions from stationary sources and mobile sources related to the proposed project. The CalEEMod model was used to predict these project-related long-term impacts. Localized air quality impacts (i.e., CO hot spots) in the project area would be affected by increased traffic flow due to the proposed project. The Caltrans CALINE4 model and the CARB's CalEEMod model were used to assess the project's impact on the local CO concentrations.

The SCAQMD has developed Local Significance Threshold (LST) methodology that can be used to determine whether or not a project may generate significant adverse localized air quality impacts. LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable Federal or State AAQS and are developed based on the ambient concentrations of that pollutant for each source receptor area. SCAQMD current guidelines, *Final Localized Significance Threshold Methodology* (June 2003), were adhered to in the assessment of air quality impacts for the proposed project. The LST mass rate look-up tables are used to determine whether the daily emissions for the proposed construction activities could result in significant localized air quality impacts. The emissions of concern from construction activities are NO_x, CO, PM₁₀, and PM_{2.5} combustion emissions from construction equipment and fugitive PM₁₀ dust from construction site preparation activities.

A health risk assessment (HRA) has also been included due to the close proximity of current residents to the project site that would be exposed to construction emissions and to warehouse operations and their diesel-powered delivery trucks, both potentially resulting in a significant exposure. An HRA is a process used to estimate the increased risk of health problems in people who are exposed to different amounts of toxic substances. An HRA combines results of studies on the health effects of various animal and human exposures to toxic air pollutants with results of studies that estimate the level of people's exposures at different distances from the sources of the pollutants.

4.3.3.1 Types of Impacts

Direct Impacts. Direct impacts are the result of the project itself (from its construction and operation) in the form of project activity and trips generated by the project. For example, in the case of a warehouse project, construction emissions (e.g., equipment exhaust, wind erosion, and vehicle exhaust) and trips to and from the warehouse site (e.g., vehicle exhaust and tire wear) represent direct impacts.

Indirect Impacts. Indirect impacts are the result of changes that would not occur without the project. In the case of a warehouse project, indirect impacts on the surrounding community can be generated in many ways: nearby construction of roadways (or roadway modifications) and other infrastructure to support the subdivision, construction and operation of development, changes in traffic/circulation patterns that result in increased congestion/delays, etc.

Cumulative Impacts. Cumulative impacts are direct and indirect impacts to which the project contributes. In the case of a warehouse project, a given project has a cumulative impact with all other warehouse projects, from the standpoint of each type of impact (cumulative construction emissions, residential natural gas consumption, solvent use, transportation emissions, congestion, etc.).

Conformity Impacts. A project is non-conforming if it conflicts with or delays implementation of any applicable attainment or maintenance plan. A project is conforming if it complies with all applicable air district rules and regulations, complies with all proposed control measures that are not yet adopted from the applicable plan(s), and is consistent with the growth forecasts in the applicable plan(s) (or is directly included in the applicable plan). Conformity with regional growth forecasts can be established by demonstrating that the project is consistent with the land use plan that was used to generate the growth forecast, such as a City's General Plan (i.e., a project is consistent with the established local land use and zoning designations of the General Plan at the time the regional plan was prepared).

4.3.4 Thresholds of Significance

Appendix G of the *State CEQA Guidelines* recognizes the following significance thresholds related to air quality. Based on these significance thresholds, potential impacts to air quality could be considered significant if the proposed project would:

- Violate any AAQS;
- Contribute substantially to an existing air quality violation;
- Expose sensitive receptors to substantial pollutant concentrations;
- Create objectionable odors affecting a substantial number of people; and/or
- Conflict with adopted environmental plans and goals of the community in which it is located.

In addition to the Federal and State AAQS, there are daily emissions thresholds for construction and operation of a proposed project in the Basin. The Basin is administered by the SCAQMD, and guidelines and emissions thresholds established by the SCAQMD in its CEQA Air Quality Handbook (SCAQMD, April 1993) are used in this analysis.

It should be noted that the emissions thresholds were established based on the attainment status of the air basin with regard to air quality standards for specific criteria pollutants. Because the concentration standards were set at a level that protects public health with an adequate margin of safety (EPA), these emissions thresholds are regarded as conservative and would overstate an individual project's contribution to health risks.

4.3.4.1 Thresholds for Construction Emissions

The following CEQA significance thresholds for construction emissions have been established by the SCAQMD for the Basin:

- 75 pounds per day of reactive organic compounds (ROC).

- 100 pounds per day of NO_x.
- 550 pounds per day of CO.
- 150 pounds per day of PM₁₀.
- 50 pounds per day of SO₂.
- 55 pounds per day of PM_{2.5}.

Projects in the Basin with construction-related emissions that exceed any of the emission thresholds are considered to be significant under CEQA.

4.3.4.2 Thresholds for Operational Emissions

Projects with operation-related emissions that exceed any of the emission thresholds listed below are considered significant under the SCAQMD guidelines with respect to CEQA.

- 55 pounds per day of ROC.
- 55 pounds per day of NO_x.
- 550 pounds per day of CO.
- 150 pounds per day of PM₁₀.
- 150 pounds per day of SO₂.
- 55 pounds per day of PM_{2.5}.

4.3.4.3 Air Pollutant Standards for CO with Localized Effects

The significance of localized project impacts under CEQA depends on whether ambient CO levels in the vicinity of the project are above or below State and Federal CO standards. If ambient levels are below the standards, a project is considered to have a significant impact if project emissions result in an exceedance of one or more of the standards. If ambient levels already exceeded a State or Federal standard, project emissions are considered significant if they increase one-hour CO concentrations by 1.0 ppm or more or eight-hour CO concentrations by 0.45 ppm or more. The Basin (with the exception of Los Angeles County) meets State and Federal attainment standards for CO; therefore, the proposed project would have a significant CO impact if project emissions result in an exceedance of State or Federal one-hour or eight-hour standard. The following emission concentration standards for CO apply to the proposed project:

- California State one-hour CO standard of 20.0 ppm.
- California State eight-hour CO standard of 9.0 ppm.

4.3.4.4 Diesel Exhaust Health Risk Thresholds

For pollutants without defined significance standards or air contaminants not covered by the standard criteria cited above, the definition of substantial pollutant concentrations varies. For toxic air contaminants (TAC), "substantial" is taken to mean that the individual cancer risk exceeds a threshold considered to be a prudent risk management level. If best available control technology for toxics (T-BACT) has been applied, the individual cancer risk to the maximum exposed individual (MEI) must not exceed 10 in 1 million if an impact is to be considered less than significant.

The following limits for maximum individual cancer risk (MICR), cancer burden and non-cancer acute and chronic hazard indices (HI) from project emissions of TACs have been established for the Basin:

- **MICR and Cancer Burden.** MICR is the estimated probability of a potential maximally exposed individual contracting cancer as a result of exposure to TACs over a period of 70 years for residential and 40 years for worker receptor locations. The MICR calculations include multipathway consideration, when applicable. Cancer burden is the estimated increase in the occurrence of cancer cases in a population subject to a MICR of greater than or equal to one in one million (1.0×10^{-6}) resulting from exposure to TACs.

The total increase in MICR that is the sum of the calculated MICR values for all TACs emitted from the project will not result in any of the following:

- (A) An increased MICR greater than 10 in 1 million (1.0×10^{-5}) at any receptor location (assumes the project will be constructed with T-BACT); or
- (B) A cancer burden greater than 0.5.

- **Chronic HI.** This is the ratio of the estimated long-term level of exposure to a TAC for a potential maximally exposed individual to its chronic reference exposure level. The chronic HI calculations include multipathway consideration, when applicable.

The cumulative increase in total chronic HI for any target organ system due to total emissions from the project will not exceed 1.0 at any receptor location.

- **Acute HI.** This is the ratio of the estimated maximum one-hour concentration of a TAC for a potential maximally exposed individual to its acute reference exposure level.

The cumulative increase in total acute HI for any target organ system due to total emissions from the project will not exceed 1.0 at any receptor location.

4.3.4.5 Local Significance Thresholds

For this project, the appropriate Source Receptor Area (SRA) is the Perris Valley, according to the SRA/City Table on the SCAQMD LST web site.¹ The site is approximately 122.8 acres; however, it is expected that the site would be graded in phases, with no more than 4 acres being graded in any one day. Construction-period emissions were evaluated using the Industrial Source Complex Short Term (ISCST) dispersion model that was developed by the EPA and recommended by the SCAQMD. The on-site mass emissions were input into the ISCST model to ascertain the project-related increases to air quality pollutant concentrations at sensitive receptor locations nearest the project site. The ISCST model was run using SCAQMD-provided meteorological data from the Riverside-Rubidoux Monitoring Station.

The nearest sensitive receptors to the project site are the existing residences located approximately 50 feet away from the southeastern property line, approximately 395 feet southeast of the proposed warehouse buildings, and approximately 664 feet southeast of the proposed loading docks. Other sensitive uses in the area include existing single-family residences approximately 200 feet away from the northern project boundary north of SR-60 along Mesa Top Trail. Future sensitive receptors that may be located in close proximity to the proposed project site include the L'Aquila D'Pietra development located to the south, and the potential residential uses that may occur within a reas designated RA-2 to the east and south.

Although the nearest existing sensitive receptors are located approximately 50 feet away, the SCAQMD recommends utilizing the 82-foot (25 meters [m]) distance when receptors are located 82 feet or less from the project site. This distance has been utilized for the construction phase of the project, as construction activity would occur along the boundaries of the project site.

Local air quality construction thresholds are as follows:

- 270 lbs/day of NO_x at 25 m.
- 1,577 lbs/day of CO at 25 m.

¹ www.aqmd.gov/ceqa/handbook/LST/LST.html.

- 13 lbs/day of PM₁₀ at 25 m.
- 8 lbs/day of PM_{2.5} at 25 m.

For the operational phase of the proposed project, a distance of 82 feet (25 m) was utilized for LST operational thresholds:

- 270 lbs/day of NO_x at 25 m.
- 1,577 lbs/day of CO at 25 m.
- 4 lbs/day of PM₁₀ at 25 m.
- 2 lbs/day of PM_{2.5} at 25 m.

4.3.5 No Impact/Less than Significant Impacts

The following impacts were determined to be less than significant. In each of the following issues, either no impact would occur (therefore, no mitigation would be required) or adherence to established regulations, standards, and policies would reduce impacts to a less than significant level.

4.3.5.1 Construction-Chronic Health Risk Impacts

Threshold	<p>Would the proposed project expose sensitive receptors to substantial pollutant concentrations?</p> <p>For MICR, the applicable thresholds are:</p> <ul style="list-style-type: none"> • An increased cancer risk greater than 10 in 1 million (1.0×10^{-5}) at any receptor location; or • A cancer burden greater than 0.5. <p>For non-cancer chronic HI; the applicable threshold is:</p> <ul style="list-style-type: none"> • A cumulative increase for any target organ system exceeding 1.0 at any receptor location.
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The only toxic air pollution emissions in any significant quantity associated with the construction of the project occur from diesel-powered equipment exhaust. The Office of Environmental Health Hazard Assessment (OEHHA) currently describes the health risk from diesel exhaust entirely in terms of the amount of particulates, or PM₁₀, that are emitted. Currently, the health risk associated with diesel exhaust PM₁₀ has only a carcinogenic and chronic effect; no short-term acute effect is recognized.

Health risks are determined by defining the exposure of sensitive receptors such as homes, schools, hospitals, etc., to toxic air contaminants. Thus, there is a relationship between proximity of the source of the emissions to the sensitive receptor. The nature of the mobile equipment used in construction operations is that mobile equipment only operates in one location a short time, relative to the length of time required for carcinogenic and chronic health impacts (usually 6 months or less). The anticipated level of diesel-powered equipment use will, on average for the entire construction period, emit approximately 6.0 lbs/day of diesel exhaust particulate. A screening health risk assessment was performed using this emission rate and assuming the mobile equipment operates for 22 days per month and 4 months continuously at this high rate. This is considered conservative even though the total construction period will be longer than 4 months due to the extreme variation from day to day of heavy-duty construction equipment usage. All of these values are deliberately higher than expected so that the risk levels will not be underestimated.

Following published OE HHA health risk techniques,¹ Table 4.3.E shows potential impacts from air toxics associated with diesel exhaust during project construction.

Table 4.3.E: Screening Health Risk Results

Distance (feet)	Inhalation Cancer Risk (No. in 1 million)	Inhalation Chronic Risk Factor
50 0.530		0.300
56 0.530		0.290
59 0.510		0.280
66 0.520		0.290
69 0.510		0.280
75 0.510		0.280
79 0.500		0.280
85 0.500		0.270
Health Risk Thresholds	10	1.0

Source: Table Q, *Air Quality Analysis Eucalyptus Industrial Park*, LSA Associates, Inc. November 2011.

As identified in Table 4.3.E, the health risk is below the cancer threshold of 10 in 1 million and the chronic threshold of 1.0; therefore, both health risks would be less than significant and no mitigation is required.

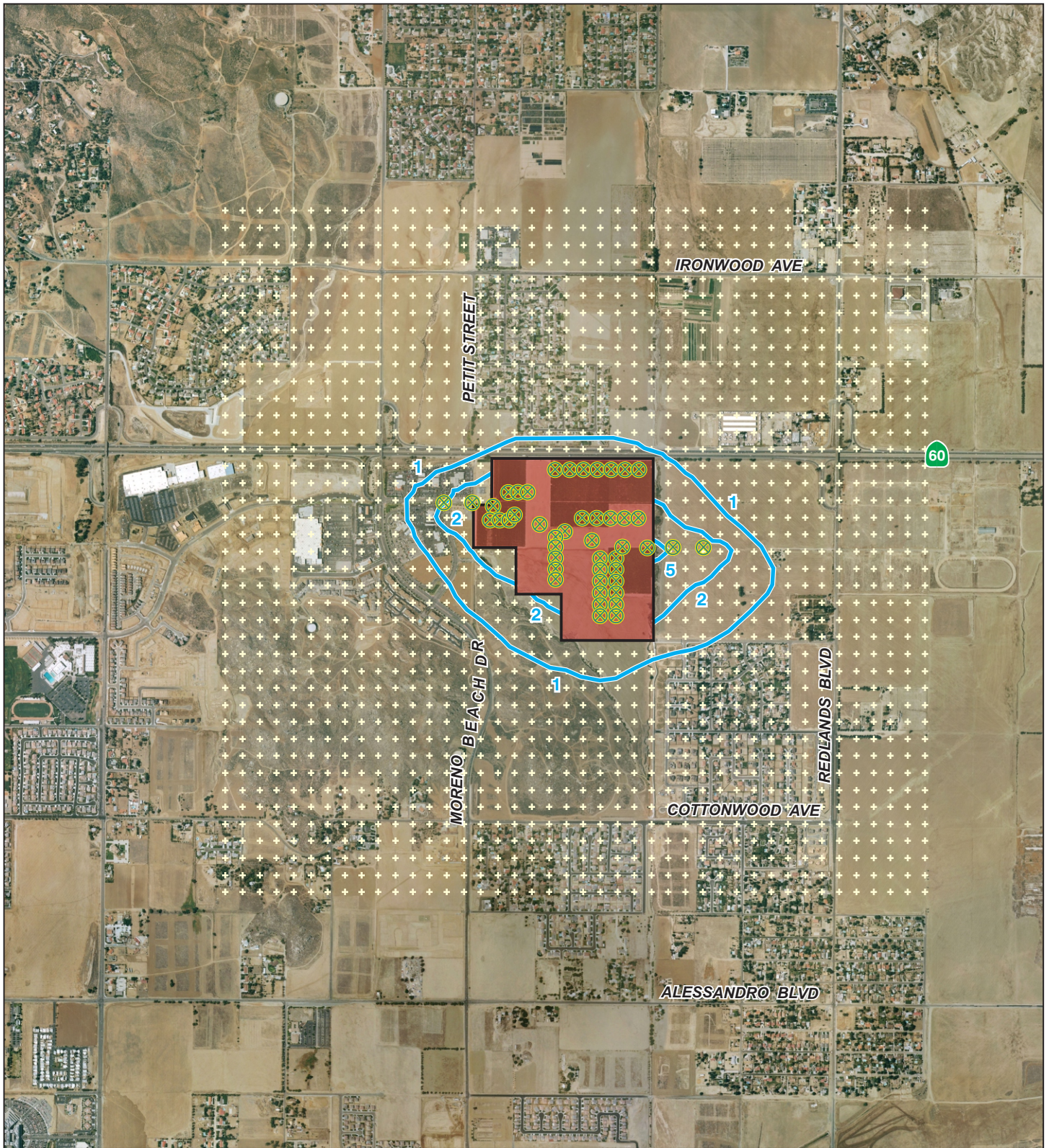
4.3.5.2 Operational-Acute Health Risk Emission Impacts

Threshold	<p>Would the proposed project expose sensitive receptors to substantial pollutant concentrations?</p> <p>For MICR, the applicable thresholds are:</p> <ul style="list-style-type: none"> An increased cancer risk greater than 10 in 1 million (1.0×10^{-5}) at any receptor location; or <p>For non-cancer chronic and acute HI; the applicable threshold is:</p> <ul style="list-style-type: none"> A cumulative increase for any target organ system exceeding 1.0 at any receptor location.
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A screening level health risk assessment was performed for the operational emissions associated with the proposed project based on the SCAQMD's *Health Risk Assessment Guidance for Analyzing Cancer Risk from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis* guidance. The operations expected to occur at this facility will not emit any toxic chemicals in any significant quantity other than vehicle exhaust. While there may be other toxic substances in use on site, compliance with State and Federal handling regulations will bring emissions to below a level of significance. Due to the lack of data, precise evaluation of vehicle exhaust impacts is not feasible; however, based on the limited amount of TAC from vehicle exhaust associated with the project operations in relation to background levels, the impact is not expected to be significant.

To predict the impacts on human health by both diesel-powered trucks that perform delivery services for the project industrial warehouses and gasoline-powered vehicles operated by employees, the following analysis has been performed. The first step is to characterize the delivery truck emissions. The traffic study identifies a daily trip rate of 1,246 heavy duty trucks. For purposes of analysis, these 1,246 trucks are assumed to be virtually all semi-trailer diesel trucks. The proposed project has six warehouses, each having their own loading docks. As identified in Figure 4.3.1, the loading emissions

¹ OE HHA, *Air Toxics Hot Spots Program Risk Assessment Guidelines*, August 2003, Appendix D, *Risk Assessment Procedures to Evaluate Particulate Emissions from Diesel-Fueled Vehicles*.



LSA



0 1000 2000
FEET

MAP SOURCE: AirPhotoUSA

LEGEND

- Carcinogenic Risk Level - 1 in 1 Million
- Carcinogenic Risk Level - 2 in 1 Million
- Carcinogenic Risk Level - 5 in 1 Million

- Modeling Receptors
- Emission Locations
- Project Site

FIGURE 4.3.1

*Eucalyptus Industrial Park
Environmental Impact Report*

Health Risk Levels

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were modeled by a series of volume sources in a line adjacent to each warehouse using the truck delivery distribution from the traffic study.

These delivery trucks operate in two modes: stationary idling and moving on and off the site. The emissions from the trucks while idling result in much higher concentrations of TAC at nearby residences than the emissions from the trucks while moving. This occurs because the distance between the moving truck and residences is changing and the motion of the truck tends to disperse the exhaust. For this screening level assessment, the moving emissions of all trucks and all cars were modeled as if all were concentrated on the future portion of Eucalyptus Avenue that will run through the middle of the project. The idling times of the trucks were assumed to conform to State and Federal regulations of no more than 5 minutes per stop while deliveries are assumed to occur 12 hours per day and 7 days a week.

Since building wake effect¹ influences can significantly increase concentrations for receptors located close to the emissions source, all six buildings were included, with an assumed height of 65 feet.

The PM₁₀ and reactive organic gas (ROG) emission factors were determined by using the CARB model, CalEEMod, for the year 2025. This year was chosen to be representative of the average emission factor over the entire period of an HRA, 70 years. Due to the anticipated technological improvements over this time period, and the higher emission levels at present, 2025 is the statistical median point for emission rates.

The nearest existing sensitive land uses are single-family residences located approximately 50 feet southeast of the southern boundary of the project site, approximately 395 feet southeast of the proposed warehouse buildings, and approximately 664 feet southeast of the proposed loading docks. Sensitive receptors were placed in a general grid extending in all directions to characterize the risk level surrounding the project site. Meteorological data from the Perris area² were utilized to represent the conditions at the project site.

Exposure to diesel exhaust can have immediate health effects, such as irritation of the eyes, nose, throat, and lungs, and it can cause coughs, headaches, light-headedness, and nausea. In studies with human volunteers, diesel exhaust particles made people with allergies more susceptible to the materials to which they are allergic, such as dust and pollen. Exposure to diesel exhaust also causes inflammation in the lungs, which may aggravate chronic respiratory symptoms and increase the frequency or intensity of asthma attacks. However, according to the rulemaking on *Identifying Particulate Emissions from Diesel-Fueled Engines as a Toxic Air Contaminant* (CARB 1998), the available data from studies of humans exposed to diesel exhaust are not sufficient for deriving an acute non-cancer health risk guidance value. While the lung is a major target organ for diesel exhaust, studies of the gross respiratory effects of diesel exhaust in exposed workers have not provided sufficient exposure information to establish a short-term non-cancer health risk guidance value for respiratory effects. Therefore, the potential for short-term acute exposure from diesel exhaust are considered to be less than significant. Table 4.3.F provides the results of the short-term acute health risk assessment conducted.

Table 4.3.F: Operational-Related Health Risk Assessment Results

	Carcinogenic Inhalation Health Risk (with Cancer Risk Adjustment Factor Applied)	Chronic Hazard Index	Acute Hazard Index
Residential, 30-Year	3.88 in 1 million	0.0016 0.000	0.088
Residential, 70-Year	4.33 in 1 million		
Worker	1.50 in 1 million	0.0016	0.0000088
Threshold	10 in 1 million	1.0	1.0

Source: *Air Quality Analysis Eucalyptus Industrial Park*, LSA Associates, Inc. November 2011.

¹ Building wake effects occur when aerodynamic turbulence, induced by nearby buildings, cause pollutants emitted from an elevated source to be mixed rapidly toward the ground (downwash), resulting in higher ground-level concentrations.
² Downloaded from the SCAQMD web site, www.aqmd.gov/smog/metdata/MeteorologicalData.html, on May 27, 2008.

As identified in Table 4.3. F, the nearest residences would experience a cancer risk of 4.33 in 1 million, which is below the 10 in 1 million threshold. The nearest residences would also experience a chronic HI of 0.0016 and an acute HI of 0.0000088. Both the chronic and acute HI would be below the chronic and acute HI threshold of 1.0. Since the operational phase of the proposed project would not exceed any of the short-term acute health risk assessment thresholds, a less than significant impact would occur. No mitigation is required.

4.3.5.3 Operational-Carcinogenic and Chronic Health Risk Emission Impacts

Threshold	Would the proposed project expose sensitive receptors to substantial pollutant concentrations? For MICR, the applicable thresholds are: <ul style="list-style-type: none"> • An increased cancer risk greater than 10 in 1 million (1.0×10^{-5}) at any receptor location; or For non-cancer health risk HI; the applicable threshold is: <ul style="list-style-type: none"> • A cumulative increase for any target organ system exceeding 1.0 at any receptor location.
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Previously referenced Figure 4.3.1 shows the results of the screening level analysis of carcinogenic risk levels to residents. The closest residences to the north would be exposed to a lifetime inhalation cancer risk of no more than 4.33 in 1 million, a 30-year inhalation cancer risk of no more than 3.88 in 1 million, and nearby workers a 40-year career inhalation cancer risk of no more than 1.5 in 1 million.

The chronic health risk index is significantly less than the threshold of 1.0, in this case 0.0016 for residents and workers. No significant carcinogenic or chronic health risks would occur from project-related traffic. No mitigation is necessary. This assessment determined the increase in health risks to the nearby sensitive receptors from the proposed project's air emissions. The CARB website "Maps of Estimated Cancer Risk From Air Toxics"¹ shows a carcinogenic risk of over 250 in 1 million for the Riverside area. This HRA shows that the project's incremental increase is only a very small fraction of the ambient condition. No significant health risk would occur from project-related truck traffic, and no mitigation is necessary.

4.3.5.4 Air Quality Impacts to Adjacent Future Development

Threshold	Would the proposed project expose sensitive receptors to substantial pollutant concentrations?
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Based on the land use assumptions for the future L-Aquila D'Pietra (LADP) project, residential development would be located along the southern project boundary between the proposed project and the proposed LADP. It is anticipated that the proposed project site would be fully developed prior to the occupation of any dwelling units in LADP; therefore, no construction-related air quality impacts to adjacent sensitive receptors would result from development of the proposed project. The primary health risk from heavy-duty truck emissions is diesel particulate exhaust. Maximum incremental cancer risk is the estimated probability of a potential maximally exposed individual contracting cancer as a result of exposure to toxic air contaminants over a standard period of time (70 years for residential and 40 years for worker receptors).

The HRA performed for the EIR is a screening-level assessment. A screening-level assessment, compared with the more sophisticated detailed-level assessment, is a useful tool in proving that an impact is not significant (i.e., if a screening-level analysis demonstrates an impact is not significant, its conservative nature provides confidence in this conclusion). The HRA was performed by placing

¹ <http://www.arb.ca.gov/toxics/cti/hlthrisk/hlthrisk.htm>.

volume sources along the loading dock areas of all buildings and along the future Eucalyptus Avenue through the project site, extending several hundred meters east and west of the site, where the project-related vehicles mix into the general traffic. Thus, the HRA includes the effects of both the diesel-powered trucks that perform delivered services for the project industrial warehouses and gasoline-powered vehicles operated by employees, light delivery trucks, etc.

The future residential units south of the project site would be exposed to an unmitigated inhalation cancer risk of approximately 4.3 in 1 million, which is less than the threshold of 10 in 1 million. The corresponding chronic and acute hazard indices would be approximately 0.0016 and 0.000088, which is less than the threshold of 1.0 for the chronic hazard index and acute hazard index. Since the screening-level analysis overall project health risks are below established thresholds, any detailed assessment would also produce less than significant health risk levels. Therefore, a less than significant impact associated with future use that may occupy adjacent properties subsequent to development of the proposed project would occur. No mitigation is required.

4.3.5.5 Long-Term Microscale (CO Hotspot) Impacts

Threshold	<p>Would the proposed project violate any air quality standard or contribute substantially to an existing or projected air quality violation?</p> <p>For CO, the applicable thresholds are:</p> <ul style="list-style-type: none"> • California State one-hour CO standard of 20.0 ppm; and • California State eight-hour CO standard of 9.0 ppm.
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Vehicular trips associated with the proposed project would contribute to traffic levels at intersections and along roadway segments in the project vicinity. Localized air quality impacts would occur when emissions from vehicular traffic increase in local areas as a result of the proposed project. The primary mobile-source pollutant of local concern is CO, which is a direct function of vehicle idling time and, thus, traffic flow conditions. CO transport is extremely limited and disperses rapidly with distance from the source under normal meteorological conditions; however, under certain extreme meteorological conditions, CO concentrations proximate to a congested roadway or intersection may reach unhealthy levels affecting local sensitive receptors (residents, schoolchildren, the elderly, hospital patients, etc). While the entire Basin is in attainment for the State standards for CO, the Basin is designated as “Severe Maintenance” area under the Federal CO standards.

The proposed project would have a significant CO impact if project emissions increase 1-hour CO concentrations by 1.0 ppm or more. Similarly, the proposed project would also have a significant CO impact if project emissions increase 8-hour CO concentrations by 0.45 ppm or more. Existing Year, Opening Year (2012), Project Build Out Year (2035), and General Plan Build Out scenarios were evaluated for traffic impacts from the proposed project. It is anticipated that emissions in the future years, including CO, would decrease with advances in technology. The highest one-hour CO concentrations for intersections within the project vicinity are identified in Table 4.3.G.

Table 4.3.G: One-Hour Carbon Monoxide Concentrations (ppm)

Scenario	Highest One-Hour CO Concentration		Exceeds State Standards
	Without Project	With Project	1-Hour (20 ppm)
Existing Year (2011)	3.5	3.6	No
Opening Year (2012)	3.5	3.6	No
Project Build Out Year (2035)	3.2	3.2	No
General Plan Build Out Year	3.3	3.3	No

Source: Tables M, N, and O, *Air Quality Analysis Eucalyptus Industrial Park*, LSA Associates, Inc. November 2011.

As identified in Table 4.3.G, the highest one-hour CO concentration experienced at any of the intersections in the project vicinity would not exceed the one-hour CO State standard of 20 ppm. Based on the *Air Quality Analysis* prepared for the proposed project, the proposed project would contribute, at most, a 0.1 ppm increase to the one-hour CO concentrations for all scenarios. This is below the 1.0 ppm increase threshold. Table 4.3.H identifies the highest eight-hour CO concentrations for intersections within the project vicinity.

Table 4.3.H: Eight-Hour Carbon Monoxide Concentrations (ppm)

Scenario	Highest Eight-Hour CO Concentration		Exceeds State Standard
	Without Project	With Project	8-Hour (35 ppm)
Existing Year (2011)	2.4	2.5	No
Opening Year (2012)	2.4	2.5	No
Project Build Out Year (2035)	2.2	2.2	No
General Plan Build Out Year	2.3	2.2	No

Source: Tables M, N, and O, *Air Quality Analysis Eucalyptus Industrial Park*, LSA Associates, Inc. November 2011.

As identified in Table 4.3.H, the highest eight-hour CO concentration experienced at any of the intersections in the project vicinity would not exceed the eight-hour CO State standard of 35 ppm. Based on the *Air Quality Analysis* prepared for the proposed project, the proposed project would contribute, at most, a 0.1 ppm increase to the eight-hour CO concentrations for all scenarios. This is below the 0.45 ppm increase threshold.

Since the proposed project would not exceed the one-hour or eight-hour CO concentration standards, it is reasonable to conclude that no CO hot spots would occur. Therefore, the proposed project would not have a significant impact on local air quality for CO and no mitigation measures would be required.

4.3.5.6 Odors

Threshold	Would the proposed project create objectionable odors affecting a substantial number of people?
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During construction, the various diesel-powered vehicles and equipment in use on the site would create odors. SCAQMD Rule 402 states that air discharged from any source shall not cause injury, nuisance, or annoyance to the health, safety, or comfort of the public. With the exception of short-term construction-related odors (e.g., equipment exhaust and asphalt odors), the proposed uses do not include uses that are generally considered to generate offensive odors. While the application of architectural coatings and installation of asphalt may generate odors, these odors are temporary and not likely to be noticeable beyond the project boundaries. SCAQMD Rules 1108 and 1113 identify standards regarding the application of asphalt and architectural coatings, respectively.

Long-term objectionable odors are not expected to occur during the operation of the proposed project. There are no fueling stations associated with the proposed project; therefore, evaporative emissions from fuel storage tanks would not be emitted from the site.

Solid waste generated by the proposed on-site uses would be collected by a contracted waste hauler, ensuring that any odors resulting from on-site operations would be adequately managed. Due to the distance to the trash enclosures to the nearest sensitive receptors, and because solid waste from the project would be managed and collected in manner to prevent the proliferation of odors, no significant odor impact would occur and no mitigation is required.

4.3.6 Significant Impacts

4.3.6.1 Air Quality Plan Management Plan Consistency

Threshold	Would the proposed project conflict with or obstruct implementation of the applicable air quality plan?
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An Air Quality Management Plan (AQMP) describes air pollution control strategies to be taken by counties or regions classified as nonattainment areas. The AQMP's main purpose is to bring the area into compliance with the requirements of Federal and State air quality standards. The AQMP uses the assumptions and projections by local planning agencies to determine control strategies for regional compliance status. Therefore, any projects causing a significant impact on air quality would impede the progress of the AQMP. CEQA requires that projects resulting in a General Plan Amendment be analyzed for consistency with the AQMP.

The 2007 AQMP was prepared to accommodate growth, to reduce the high levels of pollutants within the areas under the jurisdiction of the SCAQMD, and to reestablish clean air to the region. For a project in the Basin to be consistent with the AQMP, the pollutants emitted from the project must not exceed the SCAQMD significant threshold or cause a significant impact on air quality. If feasible mitigation measures can be implemented to reduce the project's impact level from significant to less than significant, the project is considered to be consistent with the AQMP.

A consistency determination plays an essential role in local agency project review by linking local planning and unique individual projects to the air quality plans. It fulfills the CEQA goal of fully informing local agency decision-makers of the environmental costs of the project under consideration at a stage early enough to ensure that air quality concerns are addressed. Only new or amended General Plan elements, Specific Plans, and significantly unique projects need to undergo a consistency review due to the air quality plan strategy being based on projections from local General Plans.

One measurement tool in determining consistency with the AQMP is to determine how a project accommodates the expected increase in population or employment. Generally, if a project is planned in a way that results in the minimization of vehicle miles traveled (VMT) both within the project and the community in which it is located, and consequently the minimization of air pollutant emissions, that aspect of the project is consistent with the AQMP. The proposed project site is located in an urbanizing area of the City of Moreno Valley along SR-60, which accommodates traffic in the area. In addition, the proposed warehouse uses would be within walking distance of existing homes and commercial areas in the local vicinity. The proposed project would add jobs resulting from the development of the warehouse uses to the City, with the potential to minimize the VMT traveled within the project site and community.

The SCAQMD has the following consistency criteria:

- Consistency Criterion No. 1: The proposed project will not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay the timely attainment of air quality standards or the interim emissions reductions specified in the AQMP.
- Consistency Criterion No. 2: The proposed project will not exceed the assumptions in the AQMP in 2010 or increments based on the year of project build-out phase.

Implementation of the proposed project would require a General Plan Amendment that would change the General Plan designations for a portion of the project site from Residential to Business Park/Light Industrial. The project also proposes an amendment to the Circulation Element of the General Plan.

Changes to the City's Circulation Element involve the following:

- Elimination of undeveloped Quincy Street south of Eucalyptus Avenue;

- Elimination of undeveloped Encilia Avenue roadway segment between Quincy Channel and Moreno Beach Drive;
- The extension and connection of future Eucalyptus Avenue to its current terminus, east of Auto Mall Drive;
- Renaming of existing Fir Avenue to future Eucalyptus Avenue; and
- Renaming of existing Eucalyptus Avenue to future Encilia Avenue.

Implementation of the proposed project would require a zone change from Business Park (BP), Business Park Mixed Use (BPX), Multi-Family Residential (R-15), Suburban Residential (R-5), and Residential Agriculture (RA-2) to Light Industrial for the entire 122.8 acres.

The traffic study conducted for the proposed project (LSA Associates, Inc. November 2011, Appendix I of this EIR) compared the trip generation from the proposed project (522 passenger car equivalent [PCE] trips in the a.m. peak hour, 604 PCE trips in the p.m. peak hour, and 7,527 daily PCE trips) to the existing General Plan uses (1,407 PCE trips in the a.m. peak hour, 1,543 PCE trips in the p.m. peak hour, and 14,229 daily PCE trips). A comparison of these two trip generations identifies a 47 percent reduction in daily trips when the proposed project is compared to the General Plan build out conditions. Since future levels of traffic in the area would be lower with the proposed project than with the General Plan build out conditions, it can be reasonable to conclude that air pollutant emissions would be correspondingly reduced. Therefore, there is a potential for the proposed project to reduce total VMT in the area when compared to existing zoning of the project site. This could ultimately result in the reduction in criteria air pollutants in build out conditions, as fewer daily trips would be generated when compared to the trips that would be generated under existing zoning. Since the proposed project will require a General Plan Amendment, the project has not been considered in preparation of the General Plan and therefore it is uncertain if it is consistent with the AQMP.

Because the project site is located in a nonattainment air basin for ozone, PM₁₀ and PM_{2.5}, the proposed project's emission of ozone precursors (CO, ROG, and NO_x), PM₁₀ and PM_{2.5} would contribute to the existing nonattainment status in the Basin. Thus, according to the SCAQMD Consistency Criterion No. 1, the proposed project is not consistent with the AQMP.

Mitigation Measures. Please refer to **Mitigation Measures 4.3.6.2A** through **4.3.6.2M** and **Mitigation Measures 4.3.6.3A** through **4.3.6.3H**.

Level of Significance after Mitigation. As identified in this section of the EIR, the proposed project would have significant impacts, although feasible mitigation measures shall be implemented as part of the proposed project. Hence, the proposed project would be considered to be consistent only after the City of Moreno Valley General Plan Amendment is approved. Once the City's General Plan Amendment and the required zoning changes are approved, the proposed project would be included in the next SCAG and SCAQMD AQMP projections. When that occurs, the proposed project would be consistent with the regional AQMP and the SIP. However, until that occurs, the project is inconsistent with the regional AQMP and the impacts are considered significant and unavoidable.

4.3.6.2 Equipment Exhaust from Construction-Related Activities

Threshold	<p>Would the proposed project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable Federal or State ambient air quality standard?</p> <p>For construction operations, the applicable daily thresholds are:</p>
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- 75 pounds of ROG;
- 100 pounds of NO_x;
- 550 pounds of CO;
- 150 pounds of PM₁₀;
- 55 pounds of PM_{2.5}; and
- 150 pounds of SO₂.

Grading and other construction activities would result in combustion emissions from various sources such as grading, utility engines, on-site heavy-duty construction vehicles, equipment hauling materials to and from the site, asphalt paving, and motor vehicles transporting the construction crew. Exhaust emissions from construction activities envisioned on site would vary daily as construction activity levels change. The use of construction equipment on site would result in exhaust emissions. Table 4.3.I identifies a set of emissions sources that represents a peak day during the most intense of the planned construction phases.

Table 4.3.I: Emissions from Construction Equipment Exhaust

Construction Phase	Peak Daily Emissions (lbs./day)					
	CO	ROG	NO _x	SO ₂	PM ₁₀ ¹	PM _{2.5} ¹
Site Preparation	49	11	85	0.07	11.6	8.2
Grading 57		13	104	0.1	8.7	6.3
Building Construction	139	18	111	0.26	23.4	5.39
Architectural Coatings	16344		4.2	0.02	3.27	0.4
Paving 22		8	34	0.03	3.13	2.9
SCAQMD Threshold	550	75	100	150	150	55
Do Any of the Phases Exceed A Threshold?	No	Yes	Yes	No	No	No

¹ Includes both fugitive and exhaust sources.
Source: *Air Quality Analysis Eucalyptus Industrial Park*, LSA Associates, Inc. November 2011.

The construction emissions estimates summarized in Table 4.3.I are based on the assumed construction scenario described in the *Air Quality Analysis* prepared for the proposed project, which used emission factors from the SCAQMD CEQA *Air Quality Handbook* and the CARB CalEEMod model. The emission rates shown in Table 4.3.I are from the CalEEMod output tables listed as “Mitigated Construction,” even though the only mitigation measures that have been applied to the analysis are the required construction emission control measures. They are also the combination of the on- and off-site emissions. Table 4.3.I lists a representative set of emission sources that represent a peak day during the various construction years.

As identified in Table 4.3.I, construction equipment/vehicle emissions during proposed on-site grading periods would exceed the SCAQMD daily thresholds for ROG and NO_x. Although construction of the structures uses different types of equipment on site than during grading periods, similarities do exist in terms of equipment exhaust emissions and fugitive dust emissions. While it is anticipated that total emissions during construction would be below the peak grading day emissions presented in Table 4.3.I, construction emissions of ROG and NO_x would still exceed the SCAQMD daily threshold. This is a significant impact requiring mitigation.

Mitigation Measures. The following mitigation measures have been identified to reduce short-term pollutant emissions during construction:

4.3.6.2A Prior to the issuance of a grading permit, the project developer shall require by contract specifications that contractors shall place construction equipment staging areas at least

200 feet away from sensitive receptors. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the City.

- 4.3.6.2B** Prior to the issuance of a grading permit, the project developer shall require by contract specifications that contractors shall utilize power sources (e.g., power poles) or clean-fuel generators. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the City.
- 4.3.6.2C** Prior to the issuance of a grading permit, the project developer shall require by contract specifications that contractors shall utilize California Air Resources Board (CARB) Tier II Certified equipment or better during the rough/mass grading phase for the following pieces of equipment: rubber-tired dozers and scrapers. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the City.
- 4.3.6.2D** All clearing, grading, earthmoving, or excavation activities shall cease when winds exceed 25 mph per SCAQMD guidelines in order to limit fugitive dust emissions.
- 4.3.6.2E** The contractor shall ensure that all disturbed unpaved roads and disturbed areas within the project are watered at least three times daily during dry weather. Watering, with complete coverage of disturbed areas, shall occur at least three times a day, preferably in the mid-morning, afternoon, and after work is done for the day.
- 4.3.6.2F** The contractor shall ensure that traffic speeds on unpaved roads and project site areas are reduced to 15 miles per hour or less to reduce PM₁₀ and PM_{2.5} fugitive dust haul road emissions. Speed limit signs (15 mph maximum) shall be posted at entry points to the project site, and along any unpaved roads providing access to or within the project site and/or any unpaved designated on-site travel routes.
- 4.3.6.2G** Groundcover shall be replaced, and/or non-toxic soil stabilizers shall be applied (according to manufacturers' specifications) to any inactive construction areas (previously graded areas inactive for ten days or more).
- 4.3.6.2H** The contractor shall minimize pollutant emissions by maintaining equipment engines in good condition and in proper tune according to manufacturer's specifications and during smog season (May through October) by not allowing construction equipment to be left idling for more than five minutes (per California law).
- 4.3.6.2I** The contractor shall ensure use of low-sulfur diesel fuel in construction equipment as required by the California Air Resources Board (CARB) (diesel fuel with sulfur content of 15 ppm by weight or less).
- 4.3.6.2J** Grading plans, construction specifications and bid documents shall also include the following notations:
- Off-road construction equipment shall utilize alternative fuels where feasible e.g., biodiesel fuel (a minimum of B20), natural gas (CNG), liquefied natural gas (LNG), propane, except for equipment where use of such fuels would void the equipment warranty;
 - Gravel pads shall be provided at all access points to prevent tracking of mud onto public roads;
 - Install and maintain trackout control devices at all access points where paved and unpaved access or travel routes intersect;
 - The contractor or builder shall designate a person or person(s) to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust off site;

- The contractor or builder shall post a publicly visible sign with the telephone number and person to contact regarding dust complaints. The contact person shall take corrective action within 24 hours;
- High -pressure injectors shall be provided on diesel construction equipment where feasible;
- Engine size of construction equipment shall be limited to the minimum practical size;
- Substitute gasoline-powered for diesel powered construction equipment where feasible;
- Use electric construction equipment where feasible;
- Install catalytic converters on gasoline-powered equipment where feasible;
- Ride-sharing program for the construction crew shall be encouraged and shall be supported by contractor(s) via incentives or other inducement;
- Documentation shall be provided to the City of Moreno Valley indicating that construction workers have been encouraged to carpool or otherwise reduce VMT to the greatest extent practical, including providing information on available park and ride programs;
- Lunch vendor services shall be provided on site during construction to minimize the need for off-site vehicle trips; and
- All forklifts used during construction and in subsequent operation of the project shall be electric or natural gas powered.

4.3.6.2K Throughout project construction, a construction relations officer/community liaison, appointed by the Applicant, shall be retained on site. In coordination and cooperation with the City, the construction relations officer/community liaison shall respond to any concerns related to PM₁₀ (fugitive dust) generation or other construction-related air quality issues.

4.3.6.2L All project entrances shall be posted with signs which state:

- Truck drivers shall turn off engines when not in use;
- Diesel delivery trucks servicing the project shall not idle for more than three (3) minutes; and
- Telephone numbers of the building facilities manager and CARB, to report violations.

These measures shall be enforced by the on-site facilities manager (or equivalent).

4.3.6.2M During project grading and construction, the various project contractors shall adhere to the control measures listed in Tables 1 and 2.

Air Quality Measure 4.3.6.2M Table 1: Best Available Control Measures for Fugitive Dust (Applicable to All Construction Activity Sources)

Source Category	Control Measures	Guidance
Backfilling	<ul style="list-style-type: none"> • Stabilize backfill material when not actively handling; and • Stabilize backfill material during handling; and • Stabilize soil at completion of activity. 	<ul style="list-style-type: none"> • Mix backfill soil with water prior to moving; and • Dedicate water truck or high capacity hose to backfilling equipment; and • Empty loader bucket slowly so that no dust plumes are generated; and • Minimize drop height from

**Air Quality Measure 4.3.6.2M Table 1: Best Available Control Measures for Fugitive Dust
(Applicable to All Construction Activity Sources)**

Source Category	Control Measures	Guidance
		loader bucket.
Clearing and grubbing	<ul style="list-style-type: none"> Maintain stability of soil through pre-watering of site prior to clearing and grubbing; and Stabilize soil during clearing and grubbing activities; and Stabilize soil immediately after clearing and grubbing activities. 	<ul style="list-style-type: none"> Maintain live perennial vegetation where possible; and Apply water in sufficient quantity to prevent generation of dust plumes.
Clearing forms	<ul style="list-style-type: none"> Use water spray to clear forms; or Use sweeping and water spray to clear forms; or Use vacuum system to clear forms. 	<ul style="list-style-type: none"> Use of high pressure air to clear forms may cause exceedance of Rule requirements.
Crushing	<ul style="list-style-type: none"> Stabilize surface soils prior to operation of support equipment; and Stabilize material after crushing. 	<ul style="list-style-type: none"> Follow permit conditions for crushing equipment; and Pre-water material prior to loading into crusher; and Monitor crusher emissions opacity; and Apply water to crushed material to prevent dust plumes.
Cut and fill	<ul style="list-style-type: none"> Pre-water soils prior to cut and fill activities; and Stabilize soil during and after cut and fill activities. 	<ul style="list-style-type: none"> For large sites, pre-water with sprinklers or water trucks and allow time for penetration; and Use water trucks/pulls to water soils to depth of cut prior to subsequent cuts.
Demolition – mechanical/manual	<ul style="list-style-type: none"> Stabilize wind erodible surfaces to reduce dust; and Stabilize surface soil where support equipment and vehicles will operate; and Stabilize loose soil and demolition debris; and Comply with AQMD Rule 1403. 	<ul style="list-style-type: none"> Apply water in sufficient quantities to prevent the generation of visible dust plumes.
Disturbed soil	<ul style="list-style-type: none"> Stabilize disturbed soil throughout the construction site; and Stabilize disturbed soil between structures. 	<ul style="list-style-type: none"> Limit vehicular traffic and disturbances on soils where possible; and If interior block walls are planned, install as early as possible; and Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes.
Earthmoving activities	<ul style="list-style-type: none"> Pre-apply water to depth of proposed cuts; and Re-apply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 100 ft in any direction; and Stabilize soils once earthmoving activities are complete. 	<ul style="list-style-type: none"> Grade each project phase separately, timed to coincide with construction phase; and Upwind fencing can prevent material movement on site; and Apply water or a stabilizing agent in sufficient quantities to prevent the generation of

**Air Quality Measure 4.3.6.2M Table 1: Best Available Control Measures for Fugitive Dust
(Applicable to All Construction Activity Sources)**

Source Category	Control Measures	Guidance
		visible dust plumes.
Importing/ exporting of bulk materials	<ul style="list-style-type: none"> • Stabilize material while loading to reduce fugitive dust emissions; and • Maintain at least 6 inches of freeboard on haul vehicles; and • Stabilize material while transporting to reduce fugitive dust emissions; and • Stabilize material while unloading to reduce fugitive dust emissions; and • Comply with CVC Section 23114. 	<ul style="list-style-type: none"> • Use tarps or other suitable enclosures on haul trucks; and • Check belly-dump truck seals regularly and remove any trapped rocks to prevent spillage; and • Comply with track-out prevention/mitigation requirements; and • Provide water while loading and unloading to reduce visible dust plumes.
Landscaping	Stabilize soils, materials, slopes	<ul style="list-style-type: none"> • Apply water to materials to stabilize; and • Maintain materials in a crusted condition; and • Maintain effective cover over materials; and • Stabilize sloping surfaces using soil binders until vegetation or ground cover can effectively stabilize the slopes; and • Hydroseed prior to rain season.
Road shoulder maintenance	<ul style="list-style-type: none"> • Apply water to unpaved shoulders prior to clearing; and • Apply chemical dust suppressants and/or washed gravel to maintain a stabilized surface after completing road shoulder maintenance. 	<ul style="list-style-type: none"> • Installation of curbing and/or paving of road shoulders can reduce recurring maintenance costs; and • Use of chemical dust suppressants can inhibit vegetation growth and reduce future road shoulder maintenance costs.
Screening	<ul style="list-style-type: none"> • Pre-water material prior to screening; and • Limit fugitive dust emissions to opacity and plume length standards; and • Stabilize material immediately after screening. 	<ul style="list-style-type: none"> • Dedicate water truck or high capacity hose to screening operation; and • Drop material through the screen slowly and minimize drop height; and • Install wind barrier with a porosity of no more than 50 percent upwind of screen to the height of the drop point.
Staging areas	<ul style="list-style-type: none"> • Stabilize staging areas during use; and • Stabilize staging area soils at project completion. 	<ul style="list-style-type: none"> • Limit size of staging area; and • Limit vehicle speeds to 15 miles per hour; and • Limit number and size of staging area entrances/exits.
Stockpiles/ bulk material handling	Stabilize stockpiled materials, and stockpiles within 100 yards of off-site occupied buildings must not be greater than 8 ft in height; or must have a road bladed to the top to allow water truck access or must have an operational	<ul style="list-style-type: none"> • Add or remove material from the downwind portion of the storage pile; and • Maintain storage piles to avoid steep sides or faces.

**Air Quality Measure 4.3.6.2M Table 1: Best Available Control Measures for Fugitive Dust
(Applicable to All Construction Activity Sources)**

Source Category	Control Measures	Guidance
	water irrigation system that is capable of complete stockpile coverage.	
Traffic areas for construction activities	<ul style="list-style-type: none"> Stabilize all off-road traffic and parking areas; and Stabilize all haul routes; and Direct construction traffic over established haul routes. 	<ul style="list-style-type: none"> Apply gravel/paving to all haul routes as soon as possible to all future roadway areas; and Barriers can be used to ensure vehicles are only used on established parking areas/haul routes.
Trenching	<ul style="list-style-type: none"> Stabilize surface soils where trencher or excavator and support equipment will operate; and Stabilize soils at the completion of trenching activities. 	<ul style="list-style-type: none"> Pre-watering of soils prior to trenching is an effective preventive measure. For deep trenching activities, pre-trench to 18 inches, soak soils via the pre-trench and resuming trenching; and Washing mud and soils from equipment at the conclusion of trenching activities can prevent crusting and drying of soil on equipment.
Truck loading	<ul style="list-style-type: none"> Pre-water material prior to loading; and Ensure that freeboard exceeds 6 inches (CVC 23114). 	<ul style="list-style-type: none"> Empty loader bucket such that no visible dust plumes are created; and Ensure that the loader bucket is close to the truck to minimize drop height while loading.
Turf overseeding	<ul style="list-style-type: none"> Apply sufficient water immediately prior to conducting turf vacuuming activities to meet opacity and plume length standards; and Cover haul vehicles prior to exiting the site. 	<ul style="list-style-type: none"> Haul waste material immediately off site.
Unpaved roads/parking lots	<ul style="list-style-type: none"> Stabilize soils to meet the applicable performance standards; and Limit vehicular travel to established unpaved roads (haul routes) and unpaved parking lots. 	<ul style="list-style-type: none"> Restricting vehicular access to established unpaved travel paths and parking lots can reduce stabilization requirements.
Vacant land	In instances where vacant lots are 0.10 ac or larger and have a cumulative area of 500 sf or more that are driven over and/or used by motor vehicles and/or off-road vehicles, prevent motor vehicle and/or off-road vehicle trespassing, parking and/or access by installing barriers, curbs, fences, gates, posts, signs, shrubs, trees, or other effective control measures.	

ac = acre(s)

CVC = California Vehicle Code

AQMD = Air Quality Management District

ft = feet

sf = square feet

Air Quality Measure 4.3.6.2M Table 2: Contingency Control Measures for Fugitive Dust (During High Winds in Excess of 25 mph)

Fugitive Dust Source Category	Control Measures
Earthmoving	<ul style="list-style-type: none"> • Cease all active operations; or • Apply water to soil not more than 15 minutes prior to moving such soil.
Disturbed surface areas	<ul style="list-style-type: none"> • On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than 4 consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than $\frac{1}{20}$ of the concentration required to maintain a stabilized surface for a period of 6 months; or • Apply chemical stabilizers prior to wind event; or • Apply water to all unstabilized disturbed areas 3 times per day. If there is any evidence of wind driven fugitive dust, watering frequency is increased to a minimum of 4 times per day; or • Establish a vegetative ground cover within 21 days after active operations have ceased. Ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter; or • Utilize any combination of these control actions such that, in total, these actions apply to all disturbed surface areas.
Unpaved roads	<ul style="list-style-type: none"> • Apply chemical stabilizers prior to wind event; or • Apply water 2 times per hour during active operation; or • Stop all vehicular traffic.
Open storage piles	<ul style="list-style-type: none"> • Apply water 2 times per hour; or • Install temporary coverings.
Paved road track-out	<ul style="list-style-type: none"> • Cover all haul vehicles; or • Comply with the vehicle freeboard requirements of Section 23114 of the CVC for both public and private roads.
All categories	<ul style="list-style-type: none"> • Executive Officer and the USEPA as equivalent to the methods specified in this table may be used.

CVC = California Vehicle Code
USEPA = United States Environmental Protection Agency

Level of Significance after Mitigation. The use of low-NO_x diesel fuel in construction equipment typically reduces NO_x emissions by 16 percent.¹ Use of this fuel would reduce NO_x emissions but not below SCAQMD thresholds. In addition, there is no reasonable way to ensure that retrofitted diesel-powered equipment, low-NO_x diesel fuel, and alternative fuel sources would be available during the construction period; therefore, it is not possible to quantify reductions in NO_x emissions that would result from **Mitigation Measures 4.3.6.2A through 4.3.6.2M**. Because no additional feasible mitigation is available to reduce construction-related NO_x emissions, this impact remains significant and unavoidable. Furthermore, there is no feasible mitigation to reduce the ROG emissions during architectural coating phase to less than the daily threshold. Thus, the emissions during construction of NO_x and ROG will remain significant.

4.3.6.3 Localized Construction Equipment Exhaust Emissions Impacts

Threshold	<p>Would the proposed project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard?</p> <p>For short-term construction, the applicable localized daily thresholds are:</p> <ul style="list-style-type: none"> • 270 lbs/day of NO_x;
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¹ <http://www.aqmd.gov/ceqa/igr/2006/feb/10-01.pdf>, site accessed December 30, 2011.

- 1,577 lbs/day of CO;
- 13 lbs/day of PM₁₀; and
- 8 lbs/day of PM_{2.5}.

SCAQMD has developed LST methodology that can be used to determine whether or not a project may generate significant adverse localized air quality impacts. LSTs represent the maximum emissions from a project that would not cause or contribute to an exceedance of the most stringent applicable Federal or State ambient air quality standard and are developed based on the ambient concentrations of that pollutant for each source receptor area. The emissions of concern from construction activities are NO_x, CO, PM₁₀, and PM_{2.5} resulting from on-site combustion emissions from construction equipment and on-site fugitive PM₁₀ dust from construction site preparation activities.

As identified in Table 4.3.J, the air pollutant emission rates for the proposed construction activities are below the localized construction thresholds at the nearest sensitive receptor for CO, NO_x, PM₁₀, and PM_{2.5}. Thus, no mitigation is required.

Table 4.3.J: Localized Concentrations from Construction Equipment Exhaust

Emission Sources	Pollutants (lbs/day)			
	CO	NO ₂	PM ₁₀	PM _{2.5}
On-site (grading) emissions	55	104	8.4	6.3
Localized Significance Threshold	1,577	270	13	8
Exceed Significance Threshold?	No	No	No	No

Source: *Air Quality Analysis Eucalyptus Industrial Park*, LSA Associates, Inc. November 2011.

Mitigation Measures. Although adherence to the set requirements is required of all development within the City, implementation of **Mitigation Measures 4.3.6.2A** through **4.3.6.2M** and the incorporation of these additional requirements as **Mitigation Measures 4.3.6.3A** through **4.3.6.3C** is designed to track both standard requirements and mitigation measures as part of the project's Mitigation Monitoring and Reporting Program (MMRP).

4.3.6.3A Prior to the issuance of grading permits, the project applicant shall require by contract specifications that all trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least 2 feet of freeboard in accordance with the requirements of California Vehicle Code (CVC) Section 23114 (freeboard means vertical space between the top of the load and top of the trailer).

4.3.6.3B Prior to the issuance of grading permits, the project applicant shall provide evidence to the City that construction access roads shall be paved at least 100 feet onto the site from the main road.

4.3.6.3C Prior to the issuance of grading permits, the project applicant shall require by contract specifications that all streets within the construction site shall be swept once per day if visible soil materials are carried to adjacent streets.

Level of Significance after Mitigation. As shown in Table 4.3.J, impacts associated with localized construction emissions are all less than significant.

4.3.6.4 Architectural Coating Impacts

Threshold	Would the proposed project violate any air quality standard or contribute substantially to an existing or projected air quality violation? For VOC, the applicable threshold is 75 pounds per day.
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Architectural coatings contain volatile organic compounds (VOC) that are similar to ROG and are part of the O₃ precursors. Rule 1113 of the SCAQMD deals with the selling and application of architectural coatings. Rule 1113 is applicable to any person who supplies, sells, offers for sale, or manufactures any architectural coating for use in the Basin that is intended to be applied to buildings, pavements, or curbs. This rule is also applicable to any person who applies or solicits the application of any architectural coating within the Basin. Rule 1113 sets limits on the amount of VOC emissions allowed for all types of architectural coatings, along with a time table for tightening the emissions standards in the future.

At this stage of project planning, no detailed architectural coatings information is available. Based on the site plan and project information, the project would have up to 6 buildings totaling 2.2 million square feet. As previously identified in Table 4.3.1, approximately 344 pounds of ROG would be generated during the architectural coating phase of the project. Manual applications such as a paintbrush, hand roller, trowel, spatula, dauber, rag, or sponge have 100 percent transfer efficiency. Construction of the project using the required HVLP spray method reduces the daily VOC emissions to 224 pounds per day during the architectural coatings application period. These emissions would occur after grading activities, near the end of the construction phase. The amount of VOC generated per day from the application of architectural coating even with the use of the required HVLP spray method (224 pounds) during the application of architectural coatings would exceed the SCAQMD VOC threshold of 75 lbs/day. This is a significant impact requiring mitigation.

Mitigation Measures. Typical mitigation identified to reduce the level of architectural coating impacts includes the following:

- 4.3.6.4A** The project applicant shall use “Low-Volatile Organic Compounds” paints, coatings, and solvents with a VOC content lower than required under Rule 1113 (not to exceed 150 grams/liter; 1.25 pounds/gallon). High Pressure Low Volume (HPLV) applications of paints, coatings, and solvents shall be consistent with South Coast Air Quality Management District Rule 1113. Alternatively, the project applicant shall use materials that do not require painting or are pre-painted.

Level of Significance after Mitigation. Emissions associated with architectural coatings can be reduced by using pre-coated/natural-colored building materials, water-based or low VOC coating or by using coating transfer or spray equipment with high transfer efficiency. For example, the HVLP spray method is a coating application system operates at air pressure between 0.1 and 10 pounds per square inch gauge (psig) with 65 percent transfer efficiency, which could reduce VOC emissions to 224 lbs/day. Manual coating applications, such as a paintbrush, hand roller, trowel, spatula, dauber, rag, or sponge have 100 percent transfer efficiency. Adherence to SCAQMD Rule 1113 would reduce the project’s architectural coatings emissions impact. However, even with adherence to SCAQMD Rule 1113, the SCAQMD VOC threshold would still be exceeded. Therefore, impacts associated with this issue would remain significant and unavoidable.

4.3.6.5 Long-Term Project-Related Emissions Impacts

Threshold	Would the proposed project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable Federal or State ambient air quality standard?
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For long-term operations, the applicable daily thresholds are:

- 55 pounds of ROG;
- 55 pounds of NO_x;
- 550 pounds of CO;
- 150 pounds of PM₁₀;
- 55 pounds per day of PM_{2.5}; and
- 150 pounds of SO_x.

Long-term air pollutant emission impacts are those associated with stationary sources and mobile sources related to the proposed project. Under build out of the proposed development, the project would consist of warehouse distribution uses on 122.8 acres. The stationary source emissions from these land uses would come from consumption of natural gas and electricity. Mobile source emissions would come from automobiles and trucks traveling to and from the site and from landscape maintenance equipment used to maintain the site. Average truck trip length in this area has been shown to be greater than the default trip length in the CalEEMod model. Table 4.3.K lists the potential origin and destination points for the truck trips that would be associated with the proposed project. The average trip length for the employee commute is assumed to be 17 miles. This is also greater than the default commute trip length included in the CalEEMod model for the Inland Empire area.

Table 4.3.K: Average Truck Trip Lengths

Truck Route	Route Length (miles)	Percentage of Trucks on Route
East on State Route 60 to Basin Boundary	30	10%
Port of Los Angeles/Long Beach	80	50%
South on the I-215 to San Diego	50	20%
Inland Empire (i.e., Ontario, Mira Loma, Fontana)	50	10%
Perris Destinations	40	5%
Moreno Valley Destinations	20	5%
Average Truck Trip (54% of trips)	61	—
Employee Trips (46% of trips)	17	—

Source: Table J, *Air Quality Analysis Eucalyptus Industrial Park*, LSA Associates, Inc. November 2011.

Project emissions resulting from the operation of the project, using the average trip lengths listed in Table 4.3.K, are presented in Table 4.3.L. It should be noted that the *Traffic Impact Analysis* considers a General Plan Build Out scenario; however, for purposes of the operational emissions analysis, an evaluation of the General Plan Build Out scenario was not required as the existing year (2011) and opening year (2012) with project analysis provides the most conservative estimate for operational emissions. Due to stringent vehicle emissions regulations in place and proposed by the CARB and the EPA, tailpipe emissions of CO are expected to decrease by more than 70 percent for Year 2030 conditions (the General Plan Build Out analysis year) thus, the emissions decrease in tailpipe emissions of CO would more than offset the increase in traffic at the study area intersections during the p.m. peak-hour and an evaluation of General Plan Build Out p.m. peak-hour CO concentrations would likely be less than the existing year (2011) and opening year (2012) with project conditions analysis. As identified in Table 4.3.L, project-related emissions for CO, ROG, NO_x, PM₁₀, and PM_{2.5} would exceed the SCAQMD daily emissions thresholds. As previously noted, the vehicle trips generated by the proposed project will not result in any CO hot spots. Pollutant emissions of ROG and NO_x that would exceed the SCAQMD thresholds would contribute to the existing nonattainment status in the Basin. This is a significant impact requiring mitigation.

Table 4.3.L: Long-Term Operational Emissions

Source	Pollutants, lbs./day					
	CO	ROG	NO _x	SO ₂	PM ₁₀	PM _{2.5}
Area Sources	0.0	59	0	0	0	0
Energy Sources	1.1	0.14	1.3	0.01	0.1	0.1
Mobile Sources	1,800	230	2,000	3.1	370	85
Total Project Emissions	1,801	289	2,001	3.1	370	85
SCAQMD Thresholds	550	55	55	150	150	55
Significant Impact?	Yes	Yes	Yes	No	Yes	Yes

Source: Table K, *Air Quality Analysis Eucalyptus Industrial Park*, LSA Associates, Inc. November 2011.

Mitigation Measures. The following mitigation measures have been identified to help reduce the operational emissions of CO, ROG, NO_x, PM₁₀, and PM_{2.5}:

4.3.6.5A Prior to issuance of building permits, the project applicant shall provide evidence to the City that applicable (as determined by the City) Transportation Demand Management (TDM)/Transportation Control Measure (TCM) strategies such as preferential parking for employee vanpooling/carpooling, bicycle parking facilities (such as bicycle lockers and racks), bus turnouts, and other strategies are incorporated into the design of the proposed project.

4.3.6.5B Prior to issuance of building permits, the project applicant shall provide evidence to the City that energy-efficient and low-emission methods and features of building construction shall be incorporated into the project design. These methods and features may include (but are not limited to) the following:

- Construction of buildings that exceed state wide energy requirements beyond 20 percent of that identified in Title 24:
 - Use of low-emissions water heaters;
 - Use of central water-heating systems;
 - Use of energy-efficient appliances;
 - Use of increase insulation;
 - Use of automated controls for air conditioners;
 - Use of energy-efficient parking lot lighting; and
 - Use of lighting controls and energy-efficient lighting.
- Utilize low-VOC interior and exterior coatings during project repainting.
- Provide on-site improvements such as sidewalks or pedestrian walkways to promote pedestrian activity and reduce the amount of vehicle trips.
- Installation of skylights and energy-efficient lighting that exceeds California Title 24 standards where feasible, including electronic dimming ballasts and computer-controlled daylight sensors in the buildings.
- Shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and building shall be planted at the proposed project site. These strategies will minimize the heat island effect and thereby reduce the amount of air conditioning required.

- Strategies to be considered include fans to assist natural ventilation, centralized water and space conditioning systems, high efficiency individual heating and cooling units, and automatic setback thermostats.
- Reduction of energy demand associated with potable water conveyance through the following methods:
 - Incorporating drought-tolerant plants into the landscaping palette; and
 - Use of water-efficient irrigation techniques.
- Energy-efficient low-pressure sodium parking lot lights or lighting equivalent as determined by the City, shall be used;
- Buildings shall be oriented north-south where feasible;
- Implement an on-site circulation plan in parking lots to reduce vehicle queuing;
- Develop a trip reduction plan to achieve 1.5 average vehicle ridership (AVR) for businesses with fewer than 100 employees or multitenant worksites;
- Include bicycle parking facilities such as bicycle lockers and racks;
- Include showers for bicycling employees use; and
- Construct on-site pedestrian facility improvements such as building access that is physically separated from street and parking lot traffic and walk paths.

Level of Significance after Mitigation. Although implementation of **Mitigation Measures 4.3.6.5A** through **4.3.6.5B** may reduce vehicle trips associated with the proposed project, it is not possible to quantify the reduction in the amount of emissions that may occur. Considering the volume of emissions generated and current commuter habits, it is unlikely the implementation of TDMS/TCMs will result in a reduction of operational project emissions to below existing SCAQM D thresholds. Application of Leadership in Energy and Environmental Design (LEED) standards and green building design principles could reduce emissions from building operations such as heating and cooling; however, such standards and principles would not reduce emissions of CO, ROG, NO_x, PM₁₀, and PM_{2.5} to below SCAQMD thresholds. No other feasible mitigation measures have been identified to reduce the operational emissions of CO, ROG, NO_x, PM₁₀, and PM_{2.5} to a less than significant level. Because the project site is located in a nonattainment air basin for criteria pollutants, the addition of air pollutants resulting from operation of the proposed project would contribute to the continuation of nonattainment status in the Basin. In the absence of mitigation to reduce the proposed project's emission of contribution of CO, ROG, NO_x, PM₁₀, and PM_{2.5} to below SCAQMD thresholds, long-term air quality impacts resulting from the operation of the proposed project would remain significant and unavoidable.

4.3.6.6 Project-Related Localized Operational Emissions Impacts

Threshold	<p>Would the proposed project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable Federal or State ambient air quality standard?</p> <p>For long-term operations, the applicable daily thresholds at 25 meters (82 feet) are:</p> <ul style="list-style-type: none"> • 270 pounds of NO_x; • 1,577 pounds of CO; • 4 pounds of PM₁₀; and • 2 pounds of PM_{2.5}.
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The primary emissions from operational activities include but are not limited to NO_x, CO, PM₁₀, and PM_{2.5} combustion emissions from stationary sources and/or on-site mobile equipment. Similar to the localized construction emissions analysis, the SRA is the Perri's Valley. Table 4.3.M identifies the calculated emissions for the proposed operational activities compared with the appropriate localized significance thresholds.

Table 4.3.M: Localized Project Operational Emissions

	Pollutants, lbs./day			
	CO	NOx	PM ₁₀	PM _{2.5}
On-site emissions	90	100	19	4.3
Localized Significance Threshold	1,577	270	4	2
Significant Impact?	No	No	Yes	Yes

Source: Air Quality Analysis Eucalyptus Industrial Park, LSA Associates, Inc. November 2011.

As identified in Table 4.3. M, all localized operational emissions for the proposed project, with the exception of PM₁₀ and PM_{2.5} emissions, are below the localized significance threshold. Since PM₁₀ and PM_{2.5} emissions exceed the localized significance thresholds, operational activities associated with the proposed project may cause long-term localized air quality impacts and mitigation would be required.

Mitigation Measures. The following measures have been identified to reduce operational emissions of ROG, NO_x, CO, and PM₁₀:

4.3.6.6A Prior to issuance of the first building permit, building and site plan designs shall ensure that the project's energy efficiencies surpass applicable 2008 California Title 24, Part 6 Energy Efficiency Standards by a minimum of 20 percent. Verification of increased energy efficiencies shall be documented in Title 24 Compliance Reports provided by the Applicant, and reviewed and approved by the City. Any combination of design features, including but not limited to the following list, may be used to fulfill this requirement provided that the total increase in energy efficiency meets or exceeds 20 percent:

- Buildings shall exceed California Title 24 Energy Efficiency performance standards for water heating and space heating and cooling, as deemed acceptable by the City.
- Increase in insulation such that heat transfer and thermal bridging is minimized.
- Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption.
- Incorporate dual-paned or other energy efficient windows.
- Incorporate energy efficient space heating and cooling equipment.
- Interior and exterior energy efficient lighting which exceeds the California Title 24 Energy Efficiency performance standards shall be installed, as deemed acceptable by the City. Automatic devices to turn off lights when they are not needed shall be implemented.
- To the extent that they are compatible with landscaping guidelines established by the City, shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and buildings shall be planted at the project site.
- Paint and surface color palette for the project shall emphasize light and off-white colors which reflect heat away from the buildings.
- All buildings shall be designed to accommodate renewable energy sources, such as photovoltaic solar electricity systems, appropriate to their architectural design.

- To reduce energy demand associated with potable water conveyance, the project shall implement the following:
 - Landscaping palette emphasizing drought-tolerant plants;
 - Use of water-efficient irrigation techniques; and,
 - U.S. EPA Certified WaterSense labeled for equivalent faucets, high-efficiency toilets (HETs), and water-conserving shower heads.
- The project shall provide secure, weather-protected, on-site bicycle storage/parking.
- The project shall provide on-site showers (one for males and one for females). Lockers for employees shall be provided.
- The project will establish a Transportation Management Association (TMA). The TMA will coordinate with other TMAs within the City to encourage and coordinate carpooling among building occupants. The TMA will advertise its services to building occupants, and offer transit and/or other incentives to reduce greenhouse gas (GHG) emissions. A plan will be submitted by the TMA to the City within two months of project completion that outlines the measures implemented by the TMA, as well as contact information.
- The project shall provide preferential parking for carpools and vanpools. Locations and configurations of proposed preferential parking for carpools and vanpools are subject to review and approval by the City. Prior to final site plan approval, preferential parking for carpools and vanpools shall be delineated on the project site plan.
- The project shall provide at least two electric vehicle charging stations. Locations and configurations of proposed charging stations are subject to review and approval by the City. Prior to issuance of the first building permit, stub outs for charging stations shall be indicated on the project building plans.
- Lease/purchase documents shall identify that tenants are encouraged to promote the following:
 - Implementation of compressed workweek schedules.
 - SmartWay partnership;
 - Achievement of at least 20 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of consolidated trips carried by SmartWay carriers until it reaches a minimum of 90 percent of all long-haul trips carried by SmartWay 1.0 or greater carriers.
 - Achievement of at least 15 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of long-haul trips carried by SmartWay carriers until it reaches a minimum of 85 percent of all consolidated trips carried by SmartWay 1.0 or greater carriers.
 - Use of fleet vehicles conforming to 2010 air quality standards or better.
 - Installation of catalytic converters on gasoline-powered equipment.
 - Inclusion of electric powered and/or compressed natural gas fueled trucks and/or vehicles in fleets.
 - Establishment and use of carpool/van pool programs, complemented by parking fees for single-occupancy vehicles.
 - Provision of preferential parking for EV and CNG vehicles.
 - Use of electrical equipment (instead of gasoline-powered equipment) for landscape maintenance.

- Use of electric (instead of diesel or gasoline-powered) yard trucks.
- Use of SmartWay 1.25 rated trucks.

4.3.6.6B The project shall be designed to facilitate the reduction of waste generated by building occupants that is hauled to and disposed of in landfills by providing easily accessible areas that are dedicated to the collection and storage of recyclable materials including paper, cardboard, glass, plastics, and metals. Locations of proposed recyclable materials collection areas are subject to review and approval by the City. Prior to Final Site Plan approval, locations of proposed recyclable materials collection areas shall be delineated on the project site plan.

It is important to note that in addition to the operational activity mitigation measures identified above, the proposed project would incorporate physical attributes and operational programs that will act to generally reduce operational-source pollutant emissions including GHG emissions. The specific characteristics are identified in Section 4.13 (Climate Change and Greenhouse Gas Emissions) of this EIR.

Level of Significance after Mitigation. Although implementation of **Mitigation Measures 4.3.6.6A** and **4.3.6.6B** may reduce vehicle trips associated with the proposed project, it is not possible to quantify the reduction in the amount of emissions that may occur. Considering the volume of emissions generated and current commuter habits, it is unlikely the implementation of TDMs/TCMs will result in a reduction of operational project emissions to below existing localized operation emissions thresholds. In the absence of mitigation to reduce the proposed project's localized emission contribution of PM₁₀ and PM_{2.5} to below localized emission thresholds, long-term air quality impacts resulting from the operation of the proposed project would remain significant and unavoidable.

4.3.7 Cumulative Impacts

As stated in Section 15130(b) of the *CEQA Guidelines*, cumulative impacts can either be (1) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects out the control of the agency or (2) A summary of projections contained in a prior adopted or certified environmental document such as an adopted General Plan or related planning document which describes or evaluated regional or area-wide conditions contributing to the cumulative impact. For purposes of analysis, the cumulative area for air quality impacts is the Basin.

The 2007 AQMP describes and evaluated regional/area-wide conditions within the Basin and set regional emission significance thresholds for both construction and operation of development projects. The SCAQMD recommends that a project's potential contribution to cumulative impacts should be assessed using the same significance criteria as those for project-specific impacts. This would mean that if a project exceeds the SCAQMD recommended daily regional emission thresholds, the project-specific impacts would also result in a cumulatively considerable increase in emissions for those pollutants for which the Basin is in nonattainment. Therefore, the SCAQMD daily regional emission thresholds are utilized in this cumulative discussion.

The project would contribute criteria pollutants to the area during project construction. A number of individual projects in the area may be under construction simultaneously with the proposed project. Depending on construction schedules and actual implementation of projects in the area, generation of fugitive dust and pollutant emissions during construction would result in substantial short-term increases in air pollutants. This would be a contribution to short-term cumulative air quality impacts.

The traffic study included vehicular trips from all present and future projects in the project vicinity; therefore, the CO hot spot concentrations calculated at the site intersections include the cumulative traffic effect. Based on previously referenced Tables 4.3.G and 4.3.H, no significant cumulative CO

impacts would occur. Previously referenced Table 4.3.L identifies that the long-term operation of the project would exceed the standards for CO, ROC, NO_x, PM₁₀, and PM_{2.5}. The Basin is in nonattainment for PM₁₀ and ozone at the present time; therefore, the construction and operation of the proposed project would exacerbate nonattainment of air quality standards for PM₁₀ and ozone within the Basin and contribute to cumulative air quality impacts. Therefore, long-term cumulative air quality impacts are considered to be significant and avoidable.

The study included in the "Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant" (June 19 98) estimated that the population-weighted average outdoor diesel exhaust PM₁₀ concentration in California for 1995 was 2.2 micrograms per cubic meter (µg/m³), with it reaching as high as 10 µg/m³ near a free way. These concentrations of diesel particulates present a carcinogenic health risk ranging from 130 in 1 million to 2,400 in 1 million (using a 70-year exposure duration). The study suggests that virtually all residents of California are being exposed to large doses of diesel exhaust PM₁₀.

The HRA conducted for the proposed project identified the increase in health risks to the nearby sensitive receptors from the proposed project's air pollutant emissions. The CARB web site "Maps of Estimated Cancer Risk From Air Toxics"¹ identifies a carcinogenic risk of over 250 in 1 million for the Riverside area. This HRA identified that the project's incremental increase is only a very small fraction of the ambient condition. Therefore, the concentration of diesel particulates at the project site is below the established risk threshold. Individuals living and working in southern California may be exposed to levels of diesel emissions that are cumulatively significant; however, that circumstance is not created by the project.

It is reasonable to anticipate that advancements in truck/transportation technology would reduce the amount of particulate matter in future years. However, a determination of the amount and extent of that reduction in diesel particulate matter from the set types of activities is not available at this time. Therefore, in an overabundance of caution, because other cumulative projects in the area would also contribute diesel particulates in the area and because the Riverside area has a level of particulate matter that is above the SCAQMD's recommended cancer risk threshold of 10 in one million, regional impacts associated with diesel particulate matter are considered cumulatively considerable and the proposed project will make a significant contribution to that cumulative impact.

¹ <http://www.arb.ca.gov/toxics/cti/hlthrisk/hlthrisk.htm>.

4.4 BIOLOGICAL RESOURCES

This section discusses the effects of development of the proposed project on biological resources. Information to evaluate and analyze the proposed project's impacts to biological resources is derived from the *MSHCP Consistency Analysis and Burrowing Owl Habitat Assessment and Focused Survey for the Eucalyptus Industrial Development PA07-0083* (ICF International, original July 2011 updated January 2012), the *Jurisdictional Delineation Report for the ProLogis Eucalyptus Project Site* (ICF International, original July 2011 updated January 2012), and the *Determination of Biologically Equivalent or Superior Preservation Report* (ICF International, original August 2011 updated January 2012), which are included in their entirety in Appendix C. The presence or likelihood of presence of sensitive species is based on information compiled through field reconnaissance and applicable reference materials.

The habitat assessment information summarized in this section was collected during a site visit to the project site on May 29, 2008, which was updated in 2011. The site reconnaissance consisted of walking the entire site, including adjacent properties up to 500 feet where possible and recording information on the vegetation communities and wildlife present. In addition, a search for sensitive plant communities and evidence of special-status species or habitats that could support such species was conducted during the site visits. Soil conditions, topography, and quality of habitat were also documented. The project site is within the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) Burrowing Owl Survey Area. A focused western burrowing owl (*Athene cunicularia hypugaea*) survey was conducted for the proposed project site on five separate days. Under the MSHCP, the focused survey protocol was divided into two parts: 1) a Focused Burrowing Survey and 2) a Focused Burrowing Owl Survey. The focused survey was conducted during the breeding season (March 1–August 31) as defined under the MSHCP,¹ and also in accordance with the California Burrowing Owl Consortium's (CBOC) *Burrowing Owl Survey Protocol and Mitigation Guidelines*.²

4.4.1 Existing Setting

4.4.1.1 Topography and Soils

The proposed project site is located in the eastern portion of the City of Moreno Valley, Riverside County. The approximately 122.8-acre project site is generally located south of SR-60, east of Moreno Valley Auto Mall, and adjacent to the Quincy Channel. The site topography is level with little variation (slight southward grade). The site has three drainages that occur on or near the project site, on the eastern, southern, and western portions of the site. The proposed project site occurs within an elevation range of approximately 1,720 to 1,795 feet above mean sea level (amsl). The project site is bordered by existing retail development to the west, residential development to the north across SR-60, and vacant land to the south and east zoned for Residential/Agricultural uses.

The soils on the proposed project site, as mapped by the *Soil Survey of Western Riverside Area, California* (1971),³ consist of Gullied land (GzG); San Emigdio fine sandy loam, 2–8 percent slopes, eroded (SeC2); San Emigdio loam, 0–2 percent slopes (SgA); and San Emigdio loam, 2–8 percent slopes (SgC). The site is mapped as being dominated by San Emigdio loam. The observed surface soils on the project site contain evidence of heavy disturbance from agriculture-related activities. None of the soils present is considered sensitive pursuant to the MSHCP.

¹ *Western Riverside County Multiple Species Habitat Conservation Plan, Volume I, Part I*, Dudek & Associates, June 17, 2003.

² *Burrowing Owl Survey Protocol and Mitigation Guidelines*, California Burrowing Owl Consortium, 1993.

³ *Soil Survey of Western Riverside Area, California*, United States Department of Agriculture, November 1971.

4.4.1.2 Vegetation

Vegetation communities present on site are scarce as portions of the site are currently utilized for agricultural uses and the remaining land is fallow. Figure 5.9 -2 of the City's *General Plan Final Program EIR*¹ identifies the proposed project site's vegetation communities as both Field Cropland and Grove/Orchard. The *MSHCP Consistency Analysis Report*² indicates that the project site consists of four vegetation communities: former agriculture, ruderal, non-native grassland, and mule fat scrub.

Agriculture-Citrus (citrus tree orchards) occur on the north western, north eastern, and east-central portions of the project site and occupy approximately 57.2 acres. Approximately 47.4 acres of ruderal vegetation occurs on the project site and is dominated by weedy vegetation that is typically associated with a past disturbance (agriculture). The ruderal plant community is dominated by several mustard species (*Brassica* spp.), annual bur rag weed (*Ambrosia acanthicarpa*), Russian thistle (*Salsola tragus*), cheeseweed (*Malva parviflora*), and non-native grass species. Non-native grassland occurs in a small area (approximately 16.6 acres) in the northern portion of the project site. Non-native grassland is generally characterized by a dense-to-sparse cover of non-native, annual grasses often associated with numerous weedy species, as well as some native annual forbs, such as wildflowers that emerge especially in years of plentiful rain. Dominant plant genera typically found within non-native grassland include bromes (*Bromus* spp.), wild oats (*Avena* spp.), fescues (*Vulpia* spp.), and barleys (*Hordeum* spp.).

The drainage that occurs along the eastern boundary (within the Quincy Channel) of the project site is heavily disturbed and contains a number of non-native species, including Peruvian pepper (*Schinus molle*), tree tobacco (*Nicotiana glauca*), castor bean (*Ricinus communis*), eucalyptus (*Eucalyptus* spp.), and tree of heaven (*Ailanthus altissima*). Patches of mule fat scrub (*Baccharis salicifolia*) and one Gooding's black willow tree (*Salix gooddingii*) also occur within the eastern drainage. The western and southern drainages located within the project boundary include several mustard species, annual bur ragweed, Russian thistle, cheeseweed, and non-native grass species. As indicated in Figure 4.4.1, the project site consists of highly disturbed land from which most natural vegetation has been removed by regular disking and ongoing citrus cultivation.

4.4.1.3 Wildlife

Despite the disturbed nature of the site, common wildlife species that have adapted to human-modified landscapes were observed on site during the biological survey. Species include the red-tailed hawk (*Buteo jamaicensis*), house finch (*Carpodacus mexicanus*), mourning dove (*Zenaidia macroura*), common raven (*Corvus corax*), coyote (*Canis latrans*), desert cottontail (*Sylvilagus audubonii*), and California ground squirrel (*Spermophilus beecheyi*). A complete list of species observed on site is included in Appendix B of the *MSHCP Consistency Analysis* contained in Appendix C to this EIR. Utilization of agricultural areas by wildlife varies greatly depending upon the type of crop and the time of the year. Numerous bird and mammal species may occur within certain Field/Croplands dependent on the season. Orchards/Groves adjacent to Field/Croplands or Non-native Grasslands may be utilized as a perching area that facilitates raptor foraging.

4.4.1.4 Sensitive Biological Resources

Special status species are plant and animal species or subspecies for which there is concern for population sustainability or that are otherwise considered worthy of consideration by the California Department of Fish and Game (CDFG), US Fish and Wildlife Service (USFWS), local agencies, or special interest groups such as the California Native Plant Society (CNPS). In addition to species federally or State listed as Endangered or Threatened, these include species that are Candidates or Proposed for listing as Endangered or Threatened, plant species that are State listed as Rare, animal

¹ City of Moreno Valley Final Program EIR Conservation Element, City of Moreno Valley, October 2006.

² MSHCP Consistency Analysis and Burrowing Owl Habitat Assessment and Focused Survey for the Eucalyptus Industrial Development PA07-0083 City of Moreno Valley, County of Riverside, California, ICF Jones & Stokes, July 2011.

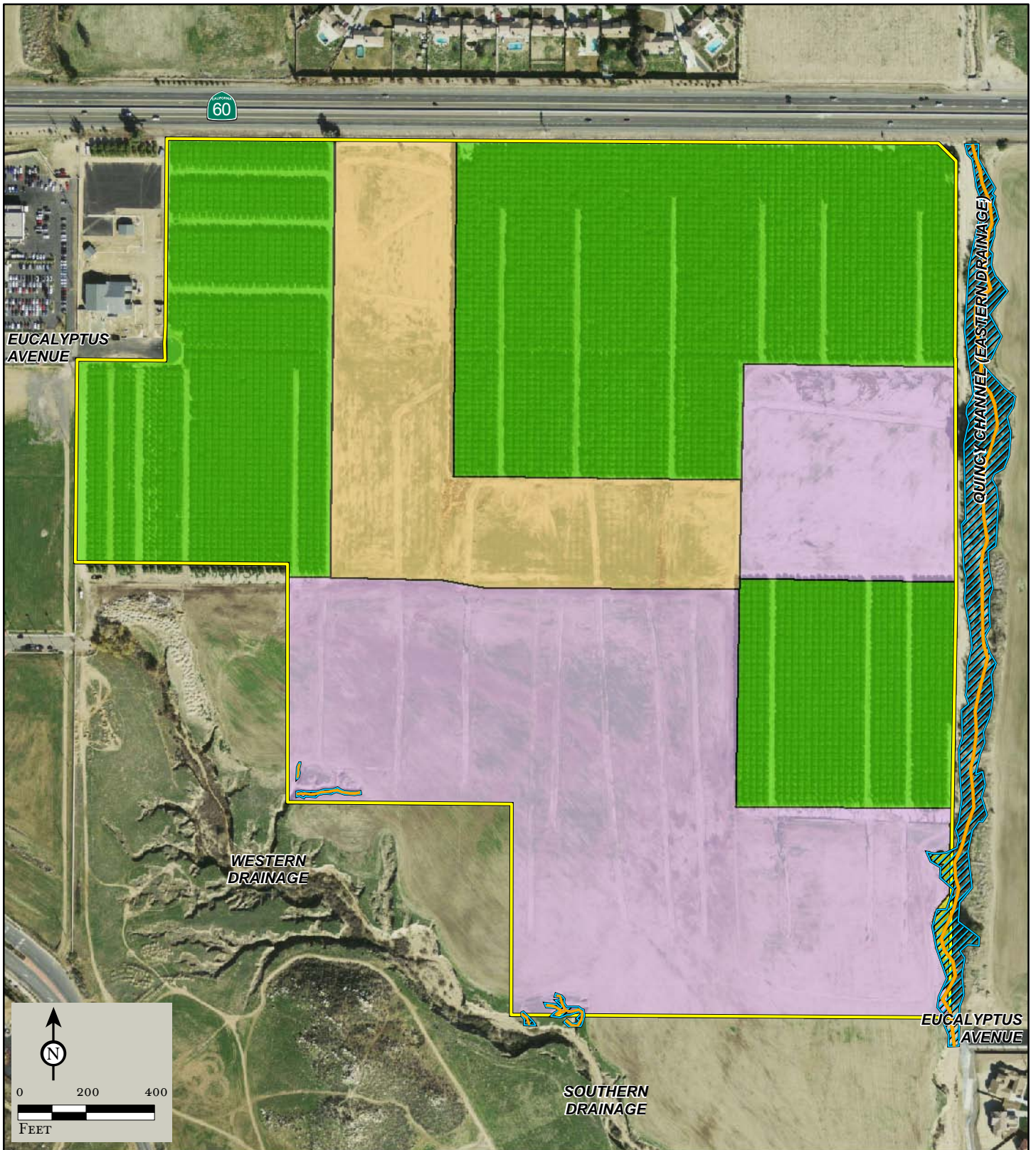


FIGURE 4.4.1

LSA

- Project Boundary
- CDFG* Potential Jurisdictional Waters
- ACOE*/RWQCB* Potential Jurisdictional Waters

Vegetation and Land Use

- Agricultural, Citrus (57.20 Ac)
- Non-Native Grassland (16.62 Ac)
- Ruderal (47.39 Ac)
- Disturbed Mulefat Scrub (0.62 Ac)

*Eucalyptus Industrial Park
Environmental Impact Report*

On-Site Vegetation Communities

Item No. E.3

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species designated as Fully Protected or Species of Special Concern by the State of California, and plant species designated as California Rare Plant Rank (RPR) 1A, 1B, or 2. California Rare Plant Ranks are assigned by a committee of government agency and non-governmental botanical experts, including experts from CNPS, and are not official State designations of rarity status. Legal protection for sensitive species varies widely, from the comprehensive protection extended to federally-listed threatened and/or endangered species to species without legal protection at the current time. It is the general practice in the biology industry to base the presence or likelihood of presence of sensitive species within a specific area on the following criteria:

- Direct observation of the species or its sign in the study area or immediate vicinity during site-specific surveys or reported in previous biological studies;
- Sighting by other qualified observers;
- Record reported by the Natural Diversity Data Base (NDDDB) published by CDFG; and
- Presence or location of specific species lists provided by private groups (e.g., CNPS).

4.4.1.5 Endangered, Threatened, and Special Status Species

Threatened and Endangered Species. The USFWS and the CDFG list species as Threatened or Endangered under the Federal and California Endangered Species Acts (FESA and CESA, respectively). An Endangered species is one that is in danger of extinction throughout all or a significant portion of its range. A Threatened species is one that is likely to become endangered in the foreseeable future.

The USFWS may designate “critical habitat” that identifies specific areas, both occupied and unoccupied, that are essential to the conservation of a listed species. To make a determination of Critical Habitat, biologists consider physical and biological habitat features needed for life and successful reproduction of the species, which include:

- Space for individual and population growth and for normal behavior;
- Cover or shelter;
- Food, water, air, light, minerals, or other nutritional or physiological requirements;
- Sites for breeding and rearing offspring; and
- Habitats that are protected from disturbances or are representative of the historic geographical and ecological distributions of a species.

Critical Habitat areas may require special management considerations or protections.

The project site is not located within any USFWS designated Critical Habitat area, and no Threatened or Endangered species were observed within the project site during the field surveys.

Table 4.4.A identifies Threatened and Endangered species identified in the City’s *General Plan Final EIR* and in searches of the CDFG’s *California Natural Diversity Data Base* (CNDDDB) and the CNPS’s *Electronic Inventory of Rare and Endangered Vascular Plants of California* that may potentially occur in the project vicinity.

Table 4.4.A: Threatened and Endangered Species Potentially Occurring in the Project Vicinity

Species	Status	Habitat and Distribution	On-site Potential
Plants			
<i>Dodecahema leptoceras</i>	US: FE CA: SE/1B MSHCP: S	In the Vail Lake area, occurs in gravel soils of Temecula arkose deposits in openings in chamise chaparral. In other areas, occurs in	Absent. No alluvial fan sage scrub on site.

Table 4.4.A: Threatened and Endangered Species Potentially Occurring in the Project Vicinity

Species	Status	Habitat and Distribution	On-site Potential
Slender-horned spineflower		sandy cobbly riverbed alluvium in alluvial fan sage scrub (usually late seral stage), on floodplain terraces and benches that receive infrequent overbank deposits from generally large washes or rivers, where it is most often found in shallow silty depressions dominated by leather spineflower (<i>Lastarriaea coriacea</i>) and other native annual species, and is often associated with cryptogamic soil crusts composed of bryophytes, algae and/or lichens. Occurs at 600 to 2,500 feet elevation. Known only from Los Angeles, Riverside, and San Bernardino Counties, California.	
Birds			
<i>Buteo swainsoni</i> (nesting) Swainson's hawk	US: – CA: ST MSHCP: C	Open desert, grassland, or cropland containing scattered, large trees or small groves. Breeds in stands with few trees in juniper-sage flats, riparian areas, and in oak savannah in the Central Valley. Forages in adjacent grasslands or suitable grain or alfalfa fields, or livestock pastures. Breeds and nests in western North America; winters in South America. Uncommon breeding resident and migrant in the Central Valley, Klamath Basin, Northeastern Plateau, Lassen County, and Mojave Desert. Very limited breeding reported from Lanfair Valley, Owens Valley, Fish Lake Valley, and Antelope Valley. In southern California, now mostly limited to spring and fall transient. Formerly abundant in California, with wider breeding range. Species is not known to nest in Riverside County.	Low. Most open habitat of lowlands in the region, including the habitat on site, is potentially suitable foraging habitat for this species, which is not known to nest in Riverside County. The species is likely to forage on site only briefly during migration, if at all.
<i>Coccyzus americanus occidentalis</i> (nesting) Western yellow-billed cuckoo	US: FC CA: SE MSHCP: S	Breeds and nests in extensive stands of dense cottonwood/willow riparian forest along broad, lower flood bottoms of larger river systems at scattered locales in western North America; winters in South America.	Absent. No extensive stands of riparian habitat on site.
<i>Empidonax traillii extimus</i> Southwestern willow flycatcher	US: FE CA: SE MSHCP: S	Rare and local breeder in extensive riparian areas of dense willows or (rarely) tamarisk, usually with standing water, in the southwestern U.S. and (formerly?) northwestern Mexico. Winters in Central and South America. Below 6,000 feet elevation.	Absent. No dense willows on site.
<i>Poliioptila californica californica</i> Coastal California gnatcatcher	US: FT CA: SSC MSHCP: C	Inhabits coastal sage scrub in low-lying foothills and valleys in cismontane southwestern California and Baja California.	Absent. No coastal sage scrub on site.
<i>Vireo bellii pusillus</i> Least Bell's vireo	US: FE CA: SE MSHCP: S	Riparian forests and willow thickets. The most critical structural component of least Bell's vireo habitat in California is a dense shrub layer 2 to 10 feet above ground. Nests from central California to northern Baja California. Winters in southern Baja California.	Absent. No riparian forest or willow thickets on site.

Table 4.4.A: Threatened and Endangered Species Potentially Occurring in the Project Vicinity

Species	Status	Habitat and Distribution	On-site Potential
Mammals			
<i>Dipodomys merriami parvus</i> San Bernardino kangaroo rat	US: FE CA: SSC MSHCP: S	Gravelly and sandy soils of alluvial fans, braided river channels, active channels and terraces; San Bernardino Valley (San Bernardino County) and San Jacinto Valley (Riverside County). In San Bernardino County, this species occurs primarily in the Santa Ana River and its tributaries north of Interstate 10, with small remnant populations in the Etiwanda alluvial fan, the northern portion of the Jurupa Mountains in the south Bloomington area, and in Reche Canyon. In Riverside County, this species occurs along the San Jacinto River east of approximately Sanderson Avenue, and along Bautista Creek. Remnant populations may also occur within Riverside County in Reche Canyon, San Timoteo Canyon, Laborde Canyon, the Jurupa Mountains, and the Santa Ana River Wash north of State Route 60.	Absent. No alluvial fans or river channels on site.
<i>Dipodomys stephensi</i> Stephens' kangaroo rat	US: FE CA: ST MSHCP: C	Found in plant communities transitional between grassland and coastal sage scrub, with perennial vegetation cover of less than 50%. Most commonly associated with <i>Artemesia tridentata</i> , <i>Eriogonum fasciculatum</i> , and <i>Erodium</i> . Requires well-drained soils with compaction characteristics suitable for burrow construction. Not found in soils that are highly rocky, less than 20 inches deep, or heavily alkaline or clay, or in areas exceeding 25% slope. Occurs only in western Riverside County, northern San Diego County, and extreme southern San Bernardino County, below 915 meters (3,000 feet) elevation. In northwestern Riverside County, known only from east of Interstate 15. Reaches its northwest limit in south Norco, southeast Riverside, and in the Reche Canyon area of Riverside and extreme southern San Bernardino Counties.	Low. No coastal sage scrub on site, but may potentially occur along the southwest edge of the site near undisturbed scrubland.

US: Federal Classifications

- FE Listed as Endangered.
- FT Listed as Threatened.
- FC Candidate for listing as Threatened or Endangered.

CA: State Classifications

- SE State-listed as Endangered.
- ST State-listed as Threatened.
- SSC Species of Special Concern. Refers to animals with vulnerable or seriously declining populations.
- 1B California Rare Plant Rank 1B – rare, threatened or endangered in California and elsewhere.

MSHCP: Western Riverside County Multiple Species Habitat Conservation Plan Status

- C Species is covered and adequately conserved under the MSHCP.
- S Species is covered and adequately conserved under the MSHCP, but surveys are required within indicated habitats and/or survey areas.

Source: *City of Moreno Valley General Plan Final EIR*, City of Moreno Valley, approved October, 2006; *California Natural Diversity Data Base* records for *Sunnymead, California* USGS 7.5-minute quadrangle searched on December 16, 2011, using *Rarefind 3* (version 3.1.0, California Department of Fish and Game, dated September 3, 2011); *Electronic Inventory of Rare and Endangered Vascular Plants of California* (online edition, v8-01a, California Native Plant Society, 2011, <http://www.rareplants.cnps.org/>) records for *Sunnymead, California* USGS 7.5-minute quadrangle searched on December 23, 2011.

Two species identified in Table 4.4.A, Swainson's hawk (*Buteo swainsoni*) and Stephens' kangaroo rat (*Dipodomys stephensi*), have potential to occur on site. Swainson's hawk is unlikely to occur, based on the typical range of the species. Any occurrence on site would be expected to be brief foraging by migrating individuals, as the species is not known to breed or winter in the area. Impacts to foraging habitat of these raptors would be minimal at most because areas in the vicinity that are not to be disturbed would still provide adequate foraging habitat. Swainson's hawk is State Listed as Threatened, but is not listed under the FESA. This species is covered by the MSHCP, meaning that it is considered adequately conserved within the MSHCP plan area if the MSHCP is implemented as intended. The MSHCP is an element of the Riverside County Integrated Project (the integration of land use, transportation, and conservation planning, and implementation, to develop a consensus for the future development of Riverside County). It is designed to protect over 150 species and conserve over 500,000 acres in western Riverside County. Any project-related impacts to Swainson's hawk will be offset by implementing the agreements established in the MSHCP, which include the formation of the MSHCP Conservation Area and reducing edge effects to preserved habitat (by following the Guidelines pertaining to the Urban/Wildlands Interface in MSHCP Section 6.1.4). The MSHCP was conceived, developed, and is being implemented specifically to address the direct, indirect, cumulative, and growth-related effects on covered species resulting from build out of planned land use and infrastructure, including the proposed project.

Stephens' kangaroo rat (SKR) is unlikely to occur based on habitat quality, but has a low potential to occur along the southwest border of the site near higher quality off-site habitat. The project is within the Stephens' Kangaroo Rat Habitat Conservation Plan (SKR HCP) fee area. The SKR HCP provides take authorization for the SKR within the fee area, and no focused surveys for the species are required.

Other Special Status Species. Based on the CDFG and CNPS database searches mentioned above, 26 special status species that are not listed as Threatened or Endangered have the potential to occur in the project vicinity (Table 4.4.B). Species that are not covered under the MSHCP or are not adequately conserved by the MSHCP at this time are also included in Table 4.4.B. All but six of the species in Table 4.4B are covered by the MSHCP, meaning that they are considered adequately conserved if the MSHCP is implemented as intended.

Table 4.4.B: Special Interest Species Potentially Occurring in the Project Vicinity

Species	Status	Habitat and Distribution	On-site Potential
Plants			
<i>Calochortus plummerae</i> Plummer's mariposa lily	US: – CA: 1B MSHCP: P	Sandy or rocky sites of (usually) granitic or alluvial material in valley and foothill grassland, coastal scrub, chaparral, cismontane woodland, and lower montane coniferous forest at 300 to 5,600 feet elevation. Known from the Santa Monica Mountains to San Jacinto Mountains in Riverside, San Bernardino, Orange, Los Angeles, and Ventura Counties. In western Riverside County, this species is known from the foothills of the San Bernardino Mountains, northeastern Santa Ana Mountains, Box Springs Mountains, and from the Lake Skinner area (<i>The Vascular Plants of Western Riverside County, California</i> . F.M. Roberts et al., 2004).	Absent. No suitable granitic or alluvial habitat on site.
<i>Centromadia pungens</i> ssp. <i>laevis</i> Smooth tarplant	US: – CA: 1B MSHCP: S	Alkaline areas in chenopod scrub, meadows, playas, riparian woodland, valley and foothill grassland below 1,600 feet elevation. Known from Riverside and San Bernardino Counties, extirpated from San Diego County.	Absent. No alkaline areas on site.

Table 4.4.B: Special Interest Species Potentially Occurring in the Project Vicinity

Species	Status	Habitat and Distribution	On-site Potential
<i>Chorizanthe parryi</i> var. <i>parryi</i> Parry's spineflower	US: – CA: 1B MSHCP: P	Sandy or rocky soils in chaparral, coastal scrub, or woodlands at 100 to 5,600 feet elevation. Known only from Los Angeles, Riverside, and San Bernardino Counties.	Absent. No sandy or rocky soils in chaparral, coastal sage scrub, or woodlands on site.
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i> Coulter's goldfields	US: – CA: 1B MSHCP: S	Usually alkaline soils in marshes, playas, vernal pools, and valley and foothill grassland below 4,600 feet elevation. Known from Colusa, Merced, Tulare(?), Orange, Riverside, Santa Barbara, San Diego, San Luis Obispo, and Ventura Counties. Believed extirpated from Kern, Los Angeles, and San Bernardino Counties. Also occurs in Mexico.	Absent. No alkaline soils or suitable wet areas on site.
<i>Lepidium virginicum</i> var. <i>robinsonii</i> Robinson's pepper-grass	US: – CA: 1B MSHCP: NC	Dry soils in coastal sage scrub and chaparral below 2,900 feet elevation. In California, known only from Los Angeles, Orange, Riverside, Santa Barbara, San Bernardino and San Diego Counties, and Santa Cruz Island. Also occurs in Mexico.	Absent. No coastal sage scrub or chaparral on site.
<i>Symphyotrichum defoliatum</i> (<i>Aster defoliatum</i>) San Bernardino aster	US: – CA: 1B MSHCP: NC	Vernally wet sites (such as ditches, streams, and springs) in many plant communities below 6,700 feet elevation. In California, known from Ventura, Kern, San Bernardino, Los Angeles, Orange, Riverside, and San Diego Counties. May also occur in San Luis Obispo County. In western Riverside County, this species is scarce, and documented only from Temescal and San Timoteo Canyons (<i>The Vascular Plants of Western Riverside County, California</i> . F.M. Roberts et al., 2004).	Low. The east drainage may be marginally suitable.
Amphibians			
<i>Spea hammondi</i> Western spadefoot	US: – CA: SSC MSHCP: C	Grasslands and occasionally hardwood woodlands; largely terrestrial but requires rain pools or other ponded water persisting at least three weeks for breeding; burrows in loose soils during dry season. Occurs in the Central Valley and adjacent foothills, the non-desert areas of southern California, and Baja California.	Absent. No breeding habitat on site.
Reptiles			
<i>Anniella pulchra</i> California legless lizard	US: – CA: SSC MSHCP: NC	Inhabits sandy or loose loamy soils with high moisture content under sparse vegetation from central California to northern Baja California.	Low. East drainage may provide marginally suitable habitat.
<i>Aspidoscelis hyperythra</i> Orangethroat whiptail	US: – CA: SSC MSHCP: C	Prefers washes and other sandy areas with patches of brush and rocks, in chaparral, coastal sage scrub, juniper woodland, and oak woodland from sea level to 3,000 feet elevation. Perennial plants required. Occurs in Riverside, Orange, and San Diego Counties west of the crest of the Peninsular Ranges, in extreme southern San Bernardino County near Colton, and in Baja California.	Absent. No coastal sage scrub, chaparral, or woodlands on site.
<i>Crotalus ruber</i> Red diamond rattlesnake	US: – CA: SSC MSHCP: C	Desert scrub, thornscrub, open chaparral and woodland; occasional in grassland and cultivated areas. Prefers rocky areas and dense vegetation. Morongo Valley in San Bernardino and Riverside Counties to the west and south into Mexico.	Low. No rocky areas on site.

Table 4.4.B: Special Interest Species Potentially Occurring in the Project Vicinity

Species	Status	Habitat and Distribution	On-site Potential
<i>Phrynosoma blainvillii</i> (<i>coronatum</i>) Coast horned lizard	US: – CA: SSC MSHCP: C	Primarily in sandy soil in open areas, especially washes and floodplains, in many plant communities. Requires open areas for sunning, bushes for cover, patches of loose soil for burial, and an abundant supply of ants or other insects. Occurs west of the deserts from northern Baja California north to Shasta County below 8,000 feet elevation.	Low. East drainage may provide marginally suitable habitat.
Birds			
<i>Agelaius tricolor</i> (nesting colony) Tricolored blackbird	US: – CA: SSC (breeding) MSHCP: C	Open country in western Oregon, California, and northwestern Baja California. Breeds near fresh water, preferably in emergent wetland with tall, dense cattails or tules, but also in thickets of willow, blackberry, wild rose, tall herbs and forages in grassland and cropland habitats. Seeks cover for roosting in emergent wetland vegetation, especially cattails and tules, and also in trees and shrubs.	Absent. No marshy areas nearby.
<i>Ammodramus savannarum</i> (nesting) Grasshopper sparrow	US: – CA: SSC (breeding) MSHCP: P	Grasslands, agricultural fields, prairie, old fields and open savanna. Uncommon and very local summer resident on grassy slopes and mesas west of the deserts. Only rarely in migration and in winter. Coastal Southern California.	Present. Observed during burrowing owl surveys.
<i>Asio flammeus</i> (nesting) Short-eared owl	US: – CA: SSC (breeding) MSHCP: NC	Open country, usually with tall grass, in scattered regions around the Northern Hemisphere. Primarily a rare winter visitor in southwestern California, but recorded at Mystic Lake in the San Jacinto Valley, Riverside County, in summer 1992, and Harper Dry Lake, San Bernardino County, summer 1993.	Low. A rare winter visitor in region. No tall grassy areas on site.
<i>Athene cucularia</i> (burrow sites) Burrowing owl	US: – CA: SSC (breeding) MSHCP: S	Open country in much of North and South America. Usually occupies ground squirrel burrows in open, dry grasslands, agricultural and rangelands, railroad rights-of-way, and margins of highways, golf courses, and airports. Often utilizes man-made structures, such as earthen berms, cement culverts, cement, asphalt, rock, or wood debris piles. They avoid thick, tall vegetation, brush, and trees, but may occur in areas where brush or tree cover is less than 30 percent.	Low. Not found during focused survey.
<i>Charadrius montanus</i> (wintering) Mountain plover	US: – CA: SSC (wintering) MSHCP: C	Forages in areas with flat topography and bare ground or short vegetation: short grasslands, freshly plowed fields, newly sprouting grain fields, grazed areas, and sometimes sod farms. Found on short grasslands and plowed fields of the Central Valley from Sutter and Yuba Counties southward. Also found in foothill valleys west of San Joaquin Valley, Imperial Valley, plowed fields of Los Angeles and western San Bernardino Counties, and along the central Colorado River Valley. Recent extralimital records exist for locations along the northern coast of California. Winters below 3,200 feet.	Low. Habitat on site may be marginally suitable for brief winter foraging if plowed or mowed.
<i>Circus cyaneus</i> (nesting) Northern harrier	US: – CA: SSC (breeding) MSHCP: C	Marshy habitats, grassland and other open country; uncommon in open desert and brushlands. Nests on the ground in open (treeless) wetland and upland areas, including cultivated cropland and dry	Low. Open habitat on site is marginally suitable.

Table 4.4.B: Special Interest Species Potentially Occurring in the Project Vicinity

Species	Status	Habitat and Distribution	On-site Potential
		grassland. Nest usually constructed in tall, dense clumps of vegetation. Found in the Temperate Zone worldwide.	
<i>Elanus leucurus</i> (nesting) White-tailed kite	US: – CA: CFP MSHCP: C	Typically nests in riparian trees such as oaks, willows, and cottonwoods at low elevations. Forages in open country. Found in South America and in southern areas and along the western coast of North America.	Low. May forage over site.
<i>Icteria virens</i> (nesting) Yellow-breasted chat	US: – CA: SSC (breeding) MSHCP: C	Riparian thickets of willow, brushy tangles near watercourses. Nests in riparian woodland throughout much of western North America. Winters in Central America.	Absent. No riparian thickets or woodland on site.
<i>Lanius ludovicianus</i> (nesting) Loggerhead shrike	US: – CA: SSC (breeding) MSHCP: C	Prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches. Inhabits open country with short vegetation, pastures, old orchards, cemeteries, golf courses, riparian areas, and open woodlands. Highest density occurs in open-canopied valley foothill hardwood, valley foothill hardwood-conifer, valley foothill riparian, pinyon-juniper, juniper, desert riparian, and Joshua tree habitats. Occurs only rarely in heavily urbanized areas, but often found in open cropland. Found in open country in much of North America.	Low. Uncommon in urbanized areas, but habitat on site is otherwise suitable.
Mammals			
<i>Chaetodipus fallax fallax</i> Northwestern San Diego pocket mouse	US: – CA: SSC MSHCP: C	Found in sandy herbaceous areas, usually associated with rocks or coarse gravel in coastal scrub, chaparral, grasslands, and sagebrush, from Los Angeles County through southwestern San Bernardino, western Riverside, and San Diego Counties to northern Baja California.	Low. Site may be marginally suitable.
<i>Eumops perotis</i> Western mastiff bat	US: – CA: SSC MSHCP: NC	Occurs in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, etc.; roosts in crevices in vertical cliff faces, high buildings, and tunnels, and travels widely when foraging.	Low. No roosting habitat on site, but may forage over site.
<i>Lasiurus xanthinus</i> Western yellow bat	US: – CA: SSC (in process) MSHCP: NC	Found in desert and riparian areas of the southwest U.S. Individuals roost in the dead fronds of palm trees, and have also been documented roosting in cottonwood trees.	Low. Roosting habitat is sparse in site vicinity.
<i>Lepus californicus bennettii</i> San Diego black-tailed jackrabbit	US: – CA: SSC MSHCP: C	Variety of habitats including herbaceous and desert scrub areas, early stages of open forest and chaparral. Most common in relatively open habitats. Restricted to the cismontane areas of Southern California, extending from the coast to the Santa Monica, San Gabriel, San Bernardino, and Santa Rosa Mountain ranges.	Moderate. Open areas of site are suitable.
<i>Perognathus longimembris brevinasus</i> Los Angeles pocket mouse	US: – CA: SSC MSHCP: S	Prefers sandy soil for burrowing, but has been found on gravel washes and stony soils. Found in coastal sage scrub in Los Angeles, Riverside, and San Bernardino Counties.	Absent. No coastal sage scrub and very little sandy soil on site.

Table 4.4.B: Special Interest Species Potentially Occurring in the Project Vicinity

Species	Status	Habitat and Distribution	On-site Potential
<i>Taxidea taxus</i> American badger	US: – CA: SSC MSHCP: NC	Primary habitat requirements seem to be sufficient food and friable soils in relatively open uncultivated ground in grasslands, woodlands, and desert. Widely distributed in North America.	Absent. Avoids urbanized areas. Widely but sparsely distributed in the region.

LEGEND

US: Federal Classifications

– No Federal classification

CA: State Classifications

SSC Species of Special Concern. Refers to animals with vulnerable or seriously declining populations.

CFP California Fully Protected. Refers to animals protected from take under Fish and Game Code sections 3511, 4700, 5050, and 5515.

1B California Rare Plant Rank 1B – rare, threatened or endangered in California and elsewhere.

MSHCP: Western Riverside County Multiple Species Habitat Conservation Plan Status

C Species is covered and adequately conserved under the MSHCP.

S Species is covered and adequately conserved under the MSHCP, but surveys are required within indicated habitats and/or survey areas.

P Species is covered and will be adequately conserved when MSHCP specified requirements are met.

NC Species not covered under the MSHCP.

Source: *City of Moreno Valley General Plan Final EIR*, City of Moreno Valley, approved October, 2006; *California Natural Diversity Data Base* records for *Sunnymead, California* USGS 7.5-minute quadrangle searched on December 16, 2011, using *Rarefind 3* (version 3.1.0, California Department of Fish and Game, dated September 3, 2011); *Electronic Inventory of Rare and Endangered Vascular Plants of California* (online edition, v8-01a, California Native Plant Society, 2011, <http://www.rareplants.cnps.org/>) records for *Sunnymead, California* USGS 7.5-minute quadrangle searched on December 23, 2011.

One of the species in Table 4.4.B, grasshopper sparrow (*Ammodramus savannarum*), was observed on the site during the burrowing owl survey. Fourteen others, including burrowing owl, have a low to moderate potential to occur on the site based on existing habitat quality.

The project site is within the MSHCP burrowing owl survey area, and a habitat assessment and focused survey were conducted. During the habitat assessment, one location within the project site contained burrowing owl sign (i.e., whitewash and bone fragments). Field surveys also identified suitable burrows on the proposed project site that may provide habitat for the western burrowing owl; however, no occurrence of the burrowing owl was documented on site during the survey. To confirm continued absence of the burrowing owl from the project site, an MSHCP 30-day pre-construction protocol survey for the burrowing owl prior to ground-disturbing activities will be required.

Of the species with potential to occur on the site, none is listed as threatened or endangered under State or Federal law, all are relatively widespread, and the site does not contain high quality habitat for any of these species. Therefore, any impacts to these species by the project would not be considered significant. Neither additional surveys nor additional conservation measures for the species will be required for the proposed project. This includes the San Bernardino aster, California legless lizard, short-eared owl, western mastiff bat, the western yellow bat, and the grasshopper sparrow.

4.4.1.6 Onsite Drainages

The jurisdictional delineation report,¹ originally conducted in June of 2008 and verified in June of 2011, identified three areas that are jurisdictional drainages on the proposed project site. All drainages on site connect to the San Jacinto watershed and are subject to regulatory authority by the U.S. Army Corps of Engineers (USACE) and Regional Water Quality Control Board (RWQCB). The

¹ Jurisdictional Delineation Report for the ProLogis Eucalyptus Project Site, ICF International, July 2011.

definable bed to bank observed for all drainages are subject to regulatory authority by the CDFG. Figure 4.4.2 illustrates the location and extent of these three drainages in relation to the project site.

The eastern drainage (within the Quincy Channel) appears to carry water flows more frequently and contains a small area of disturbed mule fat scrub habitat. The eastern drainage flows from north of the project site off site south of the southern boundary. The portion of the eastern drainage within the project site does not meet the wetland requirements for hydrophytic vegetation within the ordinary high water mark (OHWM). Rubbish and green waste has been dumped in the past on both sides of the eastern drainage. Ruderal weeds dominated by short-pod mustard (*Hirshfeldia incana*) filled the margin between the drainage and adjacent fields. The eastern drainage was dry within the proposed project area at the time of this study. However, the eastern drainage contains evidence of high-velocity seasonal flow events, including drainage patterns. When taken into context with the vegetation and soils present in the eastern drainage, these indicators are more suggestive of flood flow hydrology than wetland hydrology. No organic streaking, high levels of organic matter in the surface layer, or other hydric soil indicators for sandy soils were observed in the upper 12 inches of sample soil pits. The sample does not meet wetland hydric soil criteria. Although the eastern drainage is not a wetland, it is subject to USACE and RWQCB jurisdiction as non-wetland waters and to CDFG jurisdiction as a streambed.

The western drainage begins at Pettit Street west of the project boundary. The southern drainage is a continuation of the western drainage. The western drainage is an eroded channel that appears to be storm water runoff from the culverts located at the intersection of Pettit Street and Auto Mall Drive.

The western drainage begins at the culverts and then meanders in a southeasterly direction until it meets with the southern drainage near the southwest corner of the project site. The combined drainage then continues southeasterly and meets with the eastern drainage near Cottonwood Avenue. The dominant plant communities associated with the western and southern drainages within the project boundaries are identified as several mustard species, annual bur rag weed, Russian thistle, chee seweed, and non-native grass species. These drainages do not meet the wetland requirements for hydrophytic vegetation within the OHWM. The southern and western drainage were dry within the proposed project area at the time of this study; however, they contain evidence of high-velocity seasonal flow events, including drainage patterns. When taken in context with the vegetation and soils present in the western and southern drainages, these indicators are more suggestive of flood flow hydrology than wetland hydrology. No organic streaking, high levels of organic matter in the surface layer, or other hydric soil indicators for sandy soils were observed in the upper 12 inches of the sample soil pits. The samples do not meet wetland hydric soil criteria. Because of the presence of a bed and bank and the potential to support wildlife and aquatic resources, the western and southern drainages are considered jurisdictional streambeds under the jurisdiction of CDFG.

Like the eastern drainage, the southern and western drainages are subject to USACE and RWQCB jurisdiction as non-wetland waters and to CDFG jurisdiction as streambeds.

4.4.2 Existing Policies and Regulations

4.4.2.1 Federal Regulations

Federal Endangered Species Act. The FESA was promulgated to protect any species of plant or animal that is endangered or threatened with extinction. Section 9 of the FESA prohibits "take" of federally threatened or endangered wildlife. Take, as defined under the FESA, means to harass, harm, pursue, hunt, wound, kill, trap, capture, collect, or attempt to engage in any such conduct (16 USC 1532[19]). Section 9 also prohibits the removal and reduction of endangered plants from lands under federal jurisdiction, and the removal, cutting, digging, damage, or destruction of endangered plants on any other area in "knowing violation of State law or regulation."

Section 9 of the FESA (16 USC 1538) prohibits take of a federally listed endangered species of fish or wildlife except pursuant to a permit and Habitat Conservation Plan (HCP) approved under Section

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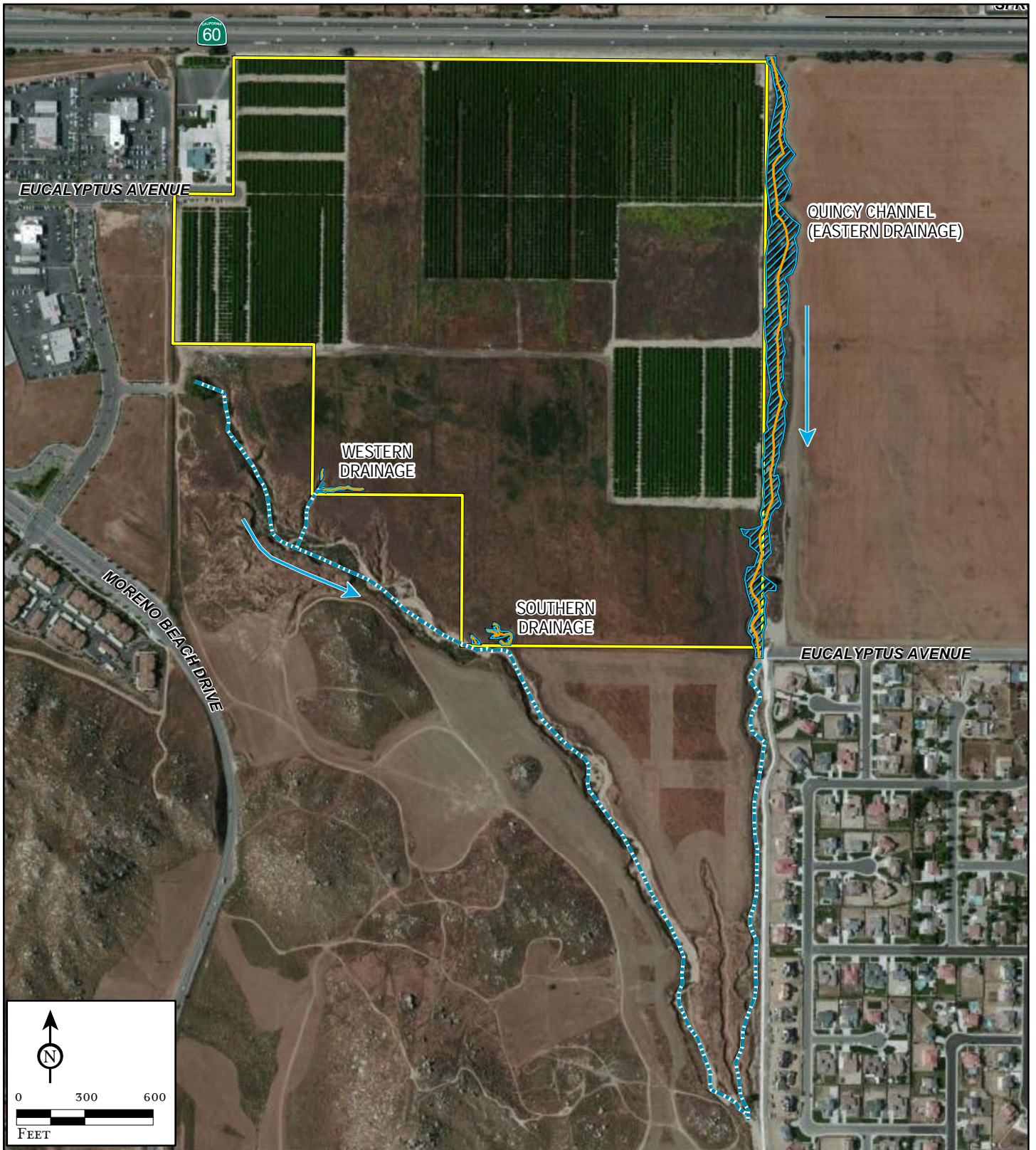


FIGURE 4.4.2A

LSA

- Project Boundary
- Eroded Channel
- ACOE*/RWQCB* Potential Jurisdictional Waters
- CDFG* Potential Jurisdictional Waters
- ← Flow Direction

*ACOE: Army Corps of Engineers
 RWQCB: Regional Water Quality Control Board
 CDFG: California Department of Fish and Game

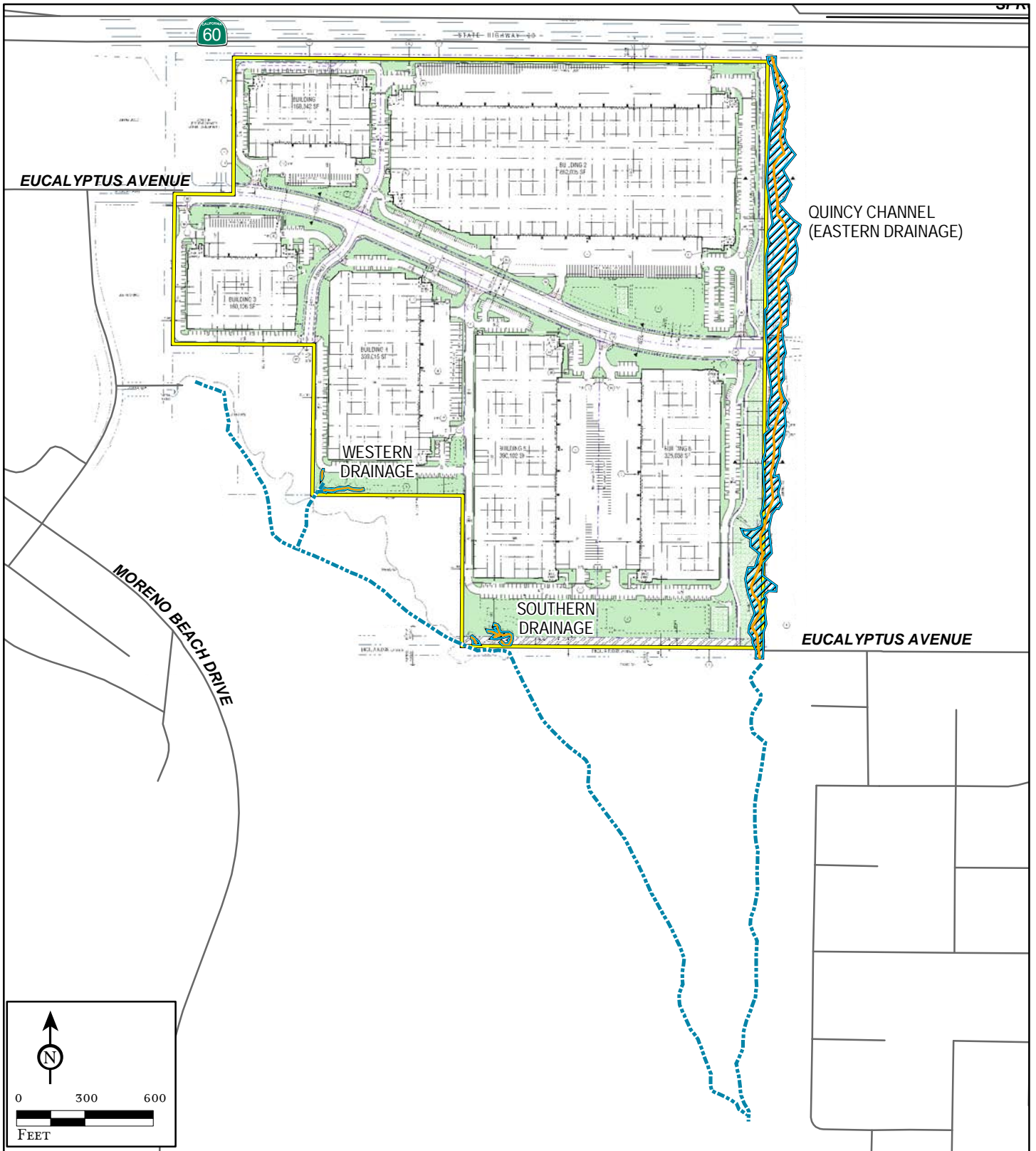
*Eucalyptus Industrial Park
 Environmental Impact Report*

Onsite Drainages

SOURCE: ICF Jones & Stokes, 2008; Bing Aerial Map, 2010

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LSA

FIGURE 4.4.2B

- Project Boundary
- Eroded Channel
- ACOE*/RWQCB* Potential Jurisdictional Waters
- CDFG* Potential Jurisdictional Waters

SOURCE: ICF Jones & Stokes, 2008; RGA, 2011

*ACOE: Army Corps of Engineers
 RWQCB: Regional Water Quality Control Board
 CDFG: California Department of Fish and Game

*Eucalyptus Industrial Park
 Environmental Impact Report*
 Onsite Drainages with Site Plan

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10(a) of the FESA (16 USC 1539). The FESA prohibitions and requirements are different, however, for endangered species of plants. Section 9 prohibits the take of endangered plants only from areas under Federal jurisdiction, or if such take would violate State law.

The proposed project site is located on private land. For listed plants located on private land, formal consultation with the USFWS is required when a project has a Federal “nexus” (i.e., a Federal permit is required or Federal funding is involved). In the absence of a Federal nexus, a project does not require a permit under the FESA for impacts to listed plants on private lands.

Clean Water Act. The USACE regulates discharges of dredged or fill material into waters of the United States. These waters include wetlands and non-wetland bodies of water that meet specific criteria, including a direct or indirect connection to interstate commerce. The USACE regulatory jurisdiction pursuant to Section 404 of the Federal Clean Water Act (CWA) is founded on a connection, or nexus, between the water body in question and interstate commerce. This connection may be direct (through a tributary system linking a stream channel with traditional navigable waters used in interstate or foreign commerce) or may be indirect (through a nexus identified in the USACE regulations). The USACE typically regulates as non-wetland waters of the U.S. any body of water displaying an OHWM. In order to be considered a jurisdictional wetland under Section 404, an area must possess three wetland characteristics: hydrophytic vegetation, hydric soils, and wetland hydrology. Each characteristic has a specific set of mandatory wetland criteria that must be satisfied in order for that particular wetland characteristic to be met.

In 2006, the United States Supreme Court in the consolidated cases *Rapanos v. United States* and *Caravell v. United States*, Nos. 04-1034 and 04-1384 (*Rapanos*: June 19, 2006) addressed CWA jurisdiction over wetlands adjacent or abutting navigable, non-navigable and ephemeral tributaries and jurisdiction over permanent and relatively permanent non-navigable tributaries. The CWA does not assert jurisdiction over upland erosional features, gullies, and roadside ditches that have infrequent, low volume, and short duration of water flow. In addition, USACE uses a significant nexus analysis. Application of this standard will involve a comprehensive review of the tributary flow characteristics, functions of the tributary, and functions of any adjacent wetlands. The analysis involves completion of a seven-page “Approved Jurisdiction Form.” The USACE uses the standard to determine if the tributary or wetland significantly affects the hydrological, ecological, chemical, physical, and biological integrity of the downstream navigable water. Additional information is provided in the EPA memorandum titled “Clean Water Act Jurisdiction Following the U.S. Supreme Court’s Decision in *Rapanos v. United States* & *Caravell v. United States*,” dated June 5, 2007 (USACE 2007), and also the *U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook* (USACE and EPA 2007).

The CDFG, through provisions of the California Fish and Game Code (Sections 1601–1603), is empowered to issue agreements for any alteration of a river, stream, or lake where fish or wildlife resources may be adversely affected. Streams (and rivers) are defined by the presence of a channel bed and banks, and at least an intermittent flow of water. The CDFG regulates wetland areas only to the extent that those wetlands are part of a river, stream, or lake as defined by the CDFG.

The RWQCB is responsible for the administration of Section 401 of the Clean Water Act, through water quality certification of any activity that may result in a discharge to jurisdictional waters of the U.S. The RWQCB may also regulate discharges to “waters of the State,” including wetlands, under the California Porter-Cologne Water Quality Control Act.

Migratory Bird Treaty Act. The Migratory Bird Treaty Act of 1918 (MBTA) protects most native birds as well as their nests and eggs, but does not regulate impacts to the species’ habitats. The MBTA prohibits “take” (pursuit, possession, or destruction of birds, their nests, or eggs) (16 U.S.C. 703–711). Activities that can cause destruction of active nests, or that cause nest abandonment and subsequent death of eggs or young, may constitute violations of the MBTA.

4.4.2.2 State Regulations

California Endangered Species Act. The State of California has promulgated the California Endangered Species Act. The CESA is similar to the FESA in that its intent is to protect species of fish, wildlife, and plants that are in danger of, or threatened with, extinction because their habitats are threatened with destruction, adverse modification, or severe curtailment, or because of overexploitation, disease, predation, or other factors.

“Take” as defined under CESA means hunt, pursue, capture, or kill, or attempt to hunt, pursue, capture, or kill. Under certain conditions, CESA has provisions for take through a 2081 Permit or a Section 2081 Memorandum of Understanding. The impacts of the authorized take must be minimized and fully mitigated. No permit may be issued if the issuance of the permit would jeopardize the continued existence of the species.

California Environmental Quality Act. Section 15380(b) of the *CEQA Guidelines* provides that a species not listed on the Federal or State lists of protected species may be considered rare or endangered if the species can be shown to meet specified criteria. These criteria have been modeled after the definitions in FESA and CESA and § 2780-2781 of Article 1 of the California Fish and Game Code dealing with the California Wildlife Protection Act of 1990. This section was included in the guidelines primarily to deal with situations in which a public agency is reviewing a project that may have a significant effect on a species that has not yet been listed by either the USFWS or CDFG.

California Fish and Game Code. Section 3503 of the California Fish and Game Code prohibits the destruction of bird nests or eggs except as otherwise provided for in the Fish and Game Code. This regulation applies to the individual nests of native bird species, but does not regulate impacts to the species' habitats. Activities that can cause destruction of active nests, or that cause nest abandonment and subsequent death of eggs, may constitute violations of this regulation.

Streambed Alteration Agreement. Sections 1600 et seq. of the California Fish and Game Code define the responsibilities of the CDFG and require public and private applicants to obtain an agreement for projects that would “divert, obstruct, or change the natural flow or bed, channel, or bank of any river, stream, or lake designated by CDFG in which there is at any time an existing fish or wildlife resource or from which those resources derive benefit, or would use material from the streambed designated by the department.” CDFG wardens and/or unit biologists typically have the responsibility for formulating and issuing Streambed Alteration Agreements. The CDFG, through provisions of the Code (Sections 1601–1603), is empowered to issue agreements for any alteration of a river, stream, or lake where fish or wildlife resources may be adversely affected. Streams (and rivers) are defined by the presence of a channel bed and banks, and at least an intermittent flow of water. The CDFG regulates wetland areas only to the extent that those wetlands are part of a river, stream, or lake as defined by the CDFG.

Native Plant Protection Act (NPPA). Sections 1900–1913 of the California Fish and Game Code (Native Plant Protection Act) direct the CDFG to carry out the Legislature's intent to “... preserve, protect and enhance endangered or rare native plants of this state.” The NPPA gives the California Fish and Game Commission the power to designate native plants as “endangered” or “rare” and protect endangered and rare plants from take.

4.4.2.3 Local Regulations

Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). The continued loss of habitat to new development and the cumbersome process of environmental review and habitat mitigation on a project-by-project basis led to preparation of the MSHCP. The MSHCP area

encompasses an area stretching from the San Jacinto Mountains to the Orange County border. The MSHCP is a multi-jurisdictional effort that provides a regional conservation solution to species and habitat issues that have historically threatened to stall infrastructure and land use development. The MSHCP's underlying goal is to protect multiple species by preserving a variety of habitat and providing linkages between different habitat areas and other undeveloped lands that would ensure long-term survival of 146 species of plants and animals. As long as adherence to the policies and requirements of the MSHCP is maintained, participants in the MSHCP, which include the County of Riverside and fourteen cities (including the City of Moreno Valley), are allowed to authorize "incidental take" of plant and wildlife species of concern.

The MSHCP provides for the assembly of Conservation Areas consisting of Core Areas and Linkages for the conservation of Covered Species (Riverside County Transportation and Land Management Agency, 2003). Covered Species include 146 species of plants and animals that receive varying levels of protection from State and Federal authorities. The MSHCP provides an incentive-based program, the Habitat Evaluation and Acquisition Negotiation Strategy (HANS) for adding land to the MSHCP Conservation Area. If it is determined that all or a portion of the property is needed for inclusion in the MSHCP Conservation Area, then various incentives may be available to the property owner in exchange for the conveyance of a property interest. Projects located in proximity to the MSHCP Conservation Area may result in edge effects that could adversely affect biological resources within the MSHCP Conservation area. MSHCP Urban/Wildlands Interface Guidelines (MSHCP Section 6.1.4) are intended to reduce such indirect effects. The MSHCP and the SKR HCP are the principal habitat conservation plans in western Riverside County.

Stephens' Kangaroo Rat Habitat Conservation Plan (SKR HCP). The USFWS issued a permit to the Riverside County Habitat Conservation Agency on May 3, 1996, to incidentally take the Stephens' kangaroo rat. The 30-year plan is designed to acquire and permanently conserve, maintain, and fund the conservation, preservation, restoration, and enhancement of Stephens' kangaroo rat occupied habitat. The SKR HCP covers approximately 534,000 acres within the member jurisdictions (including the City of Moreno Valley), and includes an estimated 30,000 acres of occupied Stephens' kangaroo rat habitat. The SKR HCP requires members to preserve and manage 15,000 acres of occupied Stephens' kangaroo rat habitat in 7 Core Reserves encompassing over 41,000 acres. Currently 12,460 acres of occupied habitat exists within the Core Reserves.

4.4.2.4 City of Moreno Valley General Plan Policies

The General Plan defines goals and policies related to biological resources within the City of Moreno Valley. The specific policies of the General Plan that are relevant to the proposed project are as follows:

Conservation Element

- Policy 7.4.1** Require all development, including roads, proposed adjacent to riparian and other biologically sensitive habitats to provide adequate buffers to mitigate impacts to such areas.
- Policy 7.4.3** Preserve natural drainage courses in their natural state and the natural hydrology, unless the protection of life and property necessitate improvement as concrete channels.
- Policy 7.4.5** The City shall fulfill its obligations set forth within any agreement(s) and permit(s) that the City may enter into for the purpose of implementing the Western Riverside County Multiple Species Habitat Conservation Plan.

4.4.3 Methodology

4.4.3.1 Habitat Assessment Survey

Prior to the field visit, a literature review to determine potential environmental conditions occurring on the project site was conducted. Literature reviewed includes the United States Department of Agriculture (USDA) (1971) Soil Survey. The Riverside County Integrated Project Conservation Summary Report was queried to determine habitat assessment and potential survey requirements for the site (Appendix A). The project site was assessed to determine consistency with the requirements set forth in the MSHCP. Geographic Information Systems (GIS) software was utilized to map the site in relation to MSHCP areas including criteria cells; conservation areas and wildlife movement corridors and linkages; criteria area species survey areas for plant, bird, mammal, and amphibian species; narrow endemic plants survey areas; and survey requirements for inadequately covered species.

The MSHCP also requires that an assessment be completed to determine the potentially significant effects of the project on riparian/riverine areas and vernal pools. In addition, the NDDB (CD FG 2008a) and the CNPS Electronic Inventory (California Native Plant Society 2008) was reviewed for the project site and a 5-mile radius. The MSHCP was also reviewed for habitat assessment requirements as well as habitat suitability elements for sensitive wildlife species, narrow endemic plant species, and criteria area plant species. The review was conducted to evaluate the potential for suitable habitat for sensitive plant and wildlife species and to determine the applicability of other MSHCP and CEQA biological resources requirements as they pertain to the proposed project.

A habitat assessment of the project site was conducted to assess physical parameters such as vegetation composition, soil substrate conditions, slope, aspect, hydrology, and disturbance to the land. Special attention was directed toward determining the plant communities that occur on and in the immediate vicinity of the site in an effort to qualify the suitability of the site for sensitive plant and wildlife species that are known to occur in the region.

A riparian/riverine habitat assessment of the project site concurrent with the MSHCP burrowing owl habitat assessment was also conducted. The riparian/riverine habitat assessment focused on all drainage features on the project site. Special attention was directed toward features that were considered to meet the minimum criteria to be considered riparian/riverine habitat per the definition provided within the MSHCP. All targeted drainage features were carefully inspected for the presence of riparian habitat characteristics and suitability to support associated species, including a dominance of hydrophytic vegetation, suitable topography and hydrology, and suitable soil substrate where necessary. Hydrophytic vegetation in riparian habitats typically consists of trees, shrubs, persistent emergents or emergent mosses and lichens that occur within permanent or near permanent watersheds, or occupy areas with moist soils that occur nearby a freshwater source, as defined in Section 6.1.2 of the MSHCP (pg. 6-21). The assessment was based upon an analysis of the functions and values of these features, including hydrologic regime, flood storage and flood flow modification, nutrient retention and transformation, sediment trapping and transport, toxicant trapping, public use, wildlife habitat, and aquatic habitat. Plant communities within the project site were mapped using 7.5-minute U.S. Geological Survey (USGS) topographic base maps and aerial photography. The plant communities within the project site were classified according to descriptions provided in Holla nd's *Preliminary Descriptions of the Terrestrial Natural Communities of California* (1986 and 1992 update). Common plant species observed during the field survey were identified by visual characteristics and morphology and recorded. Unusual and less familiar plants were identified in the office using taxonomical guides. A comprehensive list of all plant species observed on the project site was compiled from the survey data and is provided in Appendix B of the *MSHCP Consistency Analysis Report*. Taxonomic nomenclature used in this study follows Hickman (1993) and Munz (1974). Wildlife species detected during field surveys by sight, calls, tracks, scat, or other sign were recorded. Field guides were used to assist with identification of species during surveys. Although common names of wildlife species are fairly well standardized, scientific names are used in this report and are provided in Appendix B of the *MSHCP Consistency Analysis Report*.

Taxonomy and nomenclature used in this report follow Hickman (1993) for plants, Collins and Taggart (2002) for native herptiles (amphibians, reptiles, and relatives), American Ornithologists' Union (1998) and supplements (American Ornithologists' Union [AOU] 2000, 2002, 2003, 2004, and 2005) for birds, and Jones et al. (1997) for mammals. Taxonomy and nomenclature for higher-level taxa (kingdoms through classes) follow Raven and Johnson (1996). Subspecies taxonomy and nomenclature for birds follow AOU (1957) as updated by Browning (1990).

4.4.3.2 Burrowing Owl Focused Survey

A habitat assessment for the potential presence of burrowing owl was conducted on the project site in July 2011. Potential habitat was found to occur at a broad landscape level. Specifically, open lands that were sparsely vegetated with native or non-native vegetation were judged potentially suitable with particular emphasis made to the incised drainages along the east and south boundaries of the project site. During the habitat assessment, a complex of four burrows was found (refer to Exhibit 7 – location #14 of the *MSHCP Consistency Analysis Report*). The assessment involved walking the project site and adjacent properties up to 500 feet, where possible. All plant and vertebrate animal species detected either directly or indirectly (e.g., tracks, scat, and vocalizations) were recorded. Soil conditions, topography, vegetative communities, and quality of habitat were also documented. All encountered burrows were checked for the presence of feathers, scat, pellets, tracks, or other indications of use by burrowing owls.

Under the MSHCP, the focused survey protocol was performed in two parts: (A) a Focused Burrow Survey; and (B) a Focused Burrowing Owl Survey. The work was conducted during the breeding season as defined under the MSHCP (March 1–August 31). All work was conducted during weather conducive to observing owls outside their burrows and detecting burrowing owl sign. Surveys were not performed within five days following rain; during rain, high winds (> 20 mph), or dense fog; or when temperatures exceeded 90°F. For Part B, surveys were conducted in the morning between one hour before sunrise and two hours after sunrise.

Part A: Focused Burrow Survey. A systematic survey for burrows including burrowing owl sign was conducted by walking through potentially suitable habitat over the entire survey area (i.e., the project site and 500-foot buffer). Transects were walked to allow 100 percent visual coverage of the ground surface. The distance between transect center lines was no more than 30 meters (approximately 100 feet) and was reduced to account for differences in terrain, vegetation density, and ground surface visibility. The location of all suitable burrowing owl habitat, potential owl burrows, burrowing owl sign, and any owls observed were recorded and mapped, including GPS coordinates. Natural or man-made structures and debris piles that could potentially support burrowing owls were also noted and mapped.

Part B: Focused Burrowing Owl Surveys. The focused surveys consisted of site visits on five separate days. The first survey was conducted concurrently with Part A, which is permitted by guidelines. There are no timing restrictions on the burrow surveys. Prior to the walking survey, areas were scouted. All potentially suitable habitat as well as previously mapped burrows and known locations of owl sign and perch locations (if any) were scanned using binoculars. Once this had been accomplished, a survey for owls and owl sign was conducted by walking through suitable habitat over the entire project site and all areas within 150 meters (approximately 500 feet) of the project site. These pedestrian surveys followed transects spaced to allow 100 percent visual coverage of the ground surface and spaced no more than 30 meters (approximately 100 feet) apart. For potentially suitable habitat within the 150-meter buffer for which legal access had not been acquired, binoculars and a scope were used to determine if owls are present.

4.4.3.3 Jurisdictional Delineation Survey

Methods for delineating Federal wetlands followed the guidelines set forth by the USACE (Environmental Laboratory 1987). The routine on-site determination method was used to gather field data at potential wetland areas for most projects. Visual observations of vegetation types and hydrology were used to locate areas for evaluation. At each evaluation area, several parameters are considered to determine whether the sample point is within a wetland. Three criteria normally must be fulfilled in order to classify an area as a jurisdictional USACE wetland: 1) a predominance of hydrophytic vegetation, 2) the presence of hydric soils, and 3) the presence of wetland hydrology.

The delineation of non-wetland waters of the United States was based on indicators for the OHWM, following established criteria (33 CFR 328.3[e]). Specifically, 1) average OHWM width accurate to at least a half foot at points wherever clear changes in width occurred, and 2) OHWM length using drainage mapping that was confirmed in the field. The OHWM is defined in Federal regulations as "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as [a] clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" (33 CFR 328.3 [e]).

Evaluation of State jurisdiction followed guidance in the Fish and Game Code, related CDFG materials, and standard practices by CDFG personnel. Briefly, State jurisdiction was delineated by measuring outer width and length boundaries of State jurisdiction (lakes or streambeds), consisting of the greater of either the top of bank measurement (bank full width) or the extent of associated riparian or wetland vegetation.

4.4.4 Thresholds of Significance

Based on Appendix G of the *CEQA Guidelines*, significant biological resource impacts would occur if the proposed project would:

- Have a substantial adverse effect, either directly or indirectly or through habitat modification, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFG or USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFG or the USFWS;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native or resident migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan.

4.4.5 Less than Significant Impacts

4.4.5.1 Habitat Fragmentation/Wildlife Movement

Threshold	Would the proposed project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?
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Habitat fragmentation occurs when a single, contiguous habitat area is divided into two or more areas, or where an action isolates the two or more new areas from each other. Isolation of habitat occurs when wildlife cannot move freely from one portion of the habitat to another or to/from one habitat type to another. Habitat fragmentation may occur when a portion of one or more habitats is converted into another habitat, as when scrub habitats are converted into annual grassland habitat because of frequent burning. Wildlife movement includes seasonal migration along corridors, as well as daily movements for foraging. Examples of migration corridors may include areas of unobstructed movement for deer, riparian corridors providing cover for migrating birds, routes between breeding waters and upland habitat for amphibians, and between roosting and feeding areas for birds.

Migratory birds, including raptors, may use the site to forage and/or nest in trees on site and near the site, particularly within the Quincy Channel. The Quincy Channel is considered a local wildlife corridor trending in a north-to-south direction. While the Quincy Channel supports riparian habitat that may be used by migratory birds to forage and/or nest, the proposed project would be designed to minimize encroachment into this natural area through setback requirements established in Sections 9.16.120 and 9.05.040 of the City's Municipal Code, thus preserving this drainage in its natural state pursuant to the City's General Plan. The setbacks would provide a landscaped buffer area between the drainage and the structures proposed on site.

The MSHCP does not identify a regional wildlife corridor habitat preserve in the project vicinity. The nearest regional wildlife corridor identified in the MSHCP is within the Baldlands/Norton Yunglove Preserve located approximately three miles east of the project site. This area consists of an extensive pattern of dramatic and rugged mountainous terrain and serves as a crucial wildlife corridor. The preserve includes grasslands, riparian, and woodland habitats. In addition, the San Jacinto Wildlife Reserve/Mystic Lake ecological reserve is located south of the project site along the northern border of the San Jacinto River, next to Lake Perris State Recreation Area and Mystic Lake. This reserve includes wetlands, restored riparian habitat, grasslands, sage scrub, and marshes and also serves as a regional wildlife corridor.

The proposed project site is isolated from these regional wildlife corridors by existing barriers including urban development, agricultural uses, and roadways. Land uses adjacent to the project site include fallow agricultural land to the south and east, commercial uses to the west, and residential uses to the north across SR-60. Due to the nature of development occurring in the project area and the current condition of the project site, it is highly unlikely that the project site is utilized as a wildlife movement corridor, with the exception of the Quincy Channel. The proposed project will not affect the majority of Quincy Channel, thus allowing wildlife to continue using the existing channel to traverse the site.

Typical of similar agricultural activity in the City and similar to adjacent land uses, natural habitat on the project site is limited due to previous disturbance. The quality of on-site habitat has been diminished due to the previous and frequent ground disturbance and agricultural activities. In addition, the existing roadways and infrastructure features further isolate the project site from natural areas. Due to the disturbed condition of the project site, the nature of development to the south east and west, the intervening presence of roadways and infrastructure, and adherence to City development standards identified in the Municipal Code, development of the proposed project will not result in significant habitat fragmentation or substantially affect established wildlife corridors or wildlife movement. A less than significant impact would result and no mitigation is required.

4.4.5.2 Adopted Policies and/or Ordinances

Threshold	Would the proposed project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?
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City policies or ordinances identified in the General Plan protecting biological resources include: mitigation of impacts to riparian areas or other natural sensitive communities (Policy 7.4.1), preservation of natural drainage courses in their natural hydrological state (Policy 7.4.3), and City fulfillment of obligations set forth within any agreements and permits related to MSHCP implementation (Policy 7.4.5). Adherence to Policy 7.4.5 is discussed in the following section (4.4.5.6 *Adopted Habitat Conservation Plans*).

The Quincy Channel, located adjacent and to the east of the proposed project site, is a natural drainage, which supports riparian habitat (mule fat scrub). This habitat type is considered a sensitive natural habitat due to the value it provides as nesting sites and foraging sites for migratory birds. As previously identified, the proposed project would be designed to minimize encroachment into this natural area through setback requirements established in Sections 9.16.120 and 9.05.040 of the City's Municipal Code, thus preserving this habitat area in its natural state pursuant to the City's General Plan. At the northeast corner of Building 2, the development plans call for a minimum setback from Quincy Channel due to the topography and alignment of the creek. From that point, the plan provides a setback and landscaped buffer area between the drainage area and the structures proposed on the site that wide ns and varies from 25 to 50 feet (including the flood control access road). Therefore, the proposed project would not conflict with local policies or ordinances protecting biological resources and a less than significant impact would occur. No mitigation is required.

4.4.5.3 Adopted Habitat Conservation Plans

Threshold	Would the proposed project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?
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While the project site is located within the Western Riverside County MSHCP, the project site is not within any MSHCP criteria cell or habitat linkage.¹ The nearest MSHCP criteria cell or habitat linkage to the project site is MSHCP Criteria Cell 841, which is approximately 1.15 miles northeast of the project site. Furthermore, the project site is not located within an MSHCP mammal or amphibian survey area; a Narrow Endemic Plant Species Survey Area or Criteria Area Plant Species Survey Area; or a riparian, wetland, or vernal pool habitat/species survey area.² A habitat assessment for the burrowing owl is required under the MSHCP. Potential impacts to this species are addressed in Section 4.4.6.1. While the project site is not within any MSHCP conservation areas, the project is still subject to provisions of the MSHCP. In particular, the project applicant will be required to provide payment of mitigation fees and adhere to the requirements established in the MSHCP. Pursuant to agreements with the USFWS and the CDFG, the payment of the mitigation fee prior to the issuance of a building permit by the City, and compliance with applicable provisions of the MSHCP provides full mitigation under CEQA, FESA, and CESA for impacts to the species and habitats covered by the MSHCP. Therefore, development of the proposed project will not conflict with the provisions of the MSHCP. A less than significant impact would occur and no mitigation is required.

In addition to the MSHCP, the project site is within the boundaries of the SKR HCP established by the County of Riverside. Development of the proposed project will not conflict with the provisions of the SKR HCP. Because the project is within the SKR HCP fee area, payment of a local mitigation fee prior to issuance of a grading permit by the City will be required. According to the City of Moreno Valley Fee Resolution Number 89-92, mitigation fees are set at \$500 per acre. There are no other

¹ *Western Riverside County Multiple Species Habitat Conservation Plan, Volume I, Part I*, Dudek & Associates, June 17, 2003.
² *Ibid.*

requirements for the project under the SKR HCP and a less than significant impact would occur with payment of the fee.

4.4.5.4 Endangered and Threatened Species

Threshold	Would the proposed project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as endangered or threatened in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?
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No species listed by the State and/or Federal Government as Endangered or Threatened was identified on site during the field surveys; however, Swainson's hawk, a State-listed species, and Stephens' kangaroo rat, a federally and State-listed species, have a low potential to occur on the site.

The project site is not located within any USFWS designated critical habitat¹. Swainson's hawk would be expected to occur on the site, if at all, only during migration as foraging individuals. Impacts to foraging habitat of this species would be minimal at most because areas in the vicinity that are not to be disturbed would still provide adequate foraging habitat. Swainson's hawk is covered by the MSHCP. Mitigation for covered species consists of participation in the MSHCP.

The project site is within the Stephens' Kangaroo Rat Habitat Conservation Plan (SKR HCP) Fee Area. The SKR is relatively widespread throughout the SKR HCP Fee Area, but the main blocks of occupied habitat are concentrated in several Core Areas that must be conserved. The proposed project site is not within an SKR Core Area. The SKR HCP provides Take Authorization for the SKR within its boundaries, and no surveys or additional measures are required other than paying a development fee prior to issuance of a grading permit by the City, as discussed in the previous section.

4.4.6 Significant Impacts

4.4.6.1 Candidate, Non-listed Sensitive, or Other Special Status Species

Impact 4.4.6.1: *The proposed project has the potential to affect migratory bird species and 15 non-listed special status species, including burrowing owl.*

Threshold	Would the proposed project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?
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One non-listed special status species, grasshopper sparrow, was observed on the site during the burrowing owl survey. This species is conditionally covered by the MSHCP, which means that the species will be covered when the following conservation objectives are met (MSHCP Vol. II, p. B-225):

Within the MSHCP Conservation Area, maintain occupancy within 3 large Core Areas (100 percent) and at least 3 of the 4 smaller Core Areas (75 percent) in at least 1 year out of any 5 consecutive year period. In order for this species to become a Covered Species Adequately Conserved, the following conservation must be demonstrated: Include within the MSHCP Conservation Area at least 8,000 acres in 7 Core Areas. Core areas may include the following: 1) Prado Basin, 2) Lake Skinner/Diamond Valley Lake/Johnson Ranch area, 3) Lake Mathe ws-Estelle Mountain, 4) Badlands, 5) Box Springs, 6) Santa Rosa Plateau/Tenaja, 7) Kabian Park, 8) Steele Peak, 9) Sycamore Canyon, 10) Potrero, and 11)

¹ MSHCP Consistency Analysis, ICF International. July 2011.

Mystic Lake/San Jacinto Wildlife Area. Three of the 7 Core Areas will be large, consisting of a minimum of 2,000 acres of grassland habitat or grassland-dominated habitat (<20 percent shrub cover). The other 4 Core Areas may be smaller but will consist of at least 500 acres of contiguous grassland habitat or grassland-dominated habitat (<20 percent shrub cover). Five of the 7 Core Areas will be demonstrated to support at least 20 grasshopper sparrow pairs with evidence of successful reproduction within the first 5 years after permit issuance. Successful reproduction is defined as a nest which fledged at least one known young.

The project site is not within any of the proposed core areas. The proposed project would reduce foraging and potential nesting habitat of this species; however, because the project area is disturbed and nearly surrounded by existing development, the habitat is of low quality. Given that this species is not listed as threatened or endangered, is relatively widespread, and occupies relatively common habitat types, and given that the project site does not provide high quality habitat, the impacts to this species by the proposed project would not be considered significant and no mitigation is required.

Fourteen other non-listed special status species, including burrowing owl, have a low to moderate potential to occur on the site based on existing habitat quality (previously referenced Table 4.4.B). Of these fourteen, all are covered by the MSHCP except for five: San Bernardino aster, California legless lizard, short-eared owl, western mastiff bat, and western yellow bat. Each of these five species has only a low potential of occurring on site. The project may reduce habitat and result in death of individuals of San Bernardino aster and California legless lizard, but, due to the low habitat quality, substantial populations of these species are not expected to be present. The project may also reduce foraging habitat for short-eared owl, western mastiff bat, and western yellow bat. None of these species is listed as Threatened or Endangered under State or Federal law, all are relatively widespread, and the site does not contain high quality habitat for any of them. Therefore, any impacts to these species by the project would not be considered significant. Neither additional surveys nor additional conservation measures for these species will be required for the proposed project, with the exception of burrowing owl, which is discussed below.

Although not observed on the project site, the planning area may support habitat for bird species protected under the California Fish and Game Code and MBTA, which may utilize the project site, including raptors. If clearing and grubbing activities take place during the general bird nesting season (February 1 through August 31), potential impacts to bird species protected under the California Fish and Game Code and MBTA may occur, so mitigation is required.

The project site contains habitat suitable to support the burrowing owl. The burrowing owl is designated a California Species of Special Concern, is a migratory bird species protected by international treaty under the MBTA of 1918 (16 USC. 703–711), and is protected under Section 3503 of the California Fish and Game Code. Burrowing owls generally forage in short grass (2–6 inches in height), mowed and grazed pastures, and ruderal vegetation. Burrowing owls avoid vegetation taller than approximately three feet and avoid foraging in open fields that do not provide adequate cover from potential predators.

The *Focused Burrowing Owl Survey* was conducted in accordance to the burrowing owl survey instructions set forth in the California Burrowing Owl Consortium's *Burrowing Owl Survey Protocol and Mitigation Guidelines*.¹ The focused survey was conducted to determine locations of fossorial mammal burrows and/or burrows with burrowing owl sign (e.g., individuals, feathers, pellets, whitewash, and/or prey remnants) or other non-natural structures with the potential for the owl to inhabit (e.g., drainage pipes, concrete refuse piles, debris piles, and detention basins) within the project area. The focused surveys were conducted in July 2011. The focused surveys provided 100 percent coverage and included an approximately 500-foot buffer zone (approximately 150 meters) surrounding the property by observing areas with suitable burrows and walking areas near fence posts, rocks, and other low perching locations on the project site. Buffer areas that were inaccessible due to lack of acquisition of legal access were surveyed visually (with binoculars and a scope) from

¹ *Burrowing Owl Survey Protocol and Mitigation Guidelines*, California Burrowing Owl Consortium, 1993.

within the project's boundary. The survey consisted of walking transects, no more than 30 meters apart (approximately 100 feet), within the limits of the property boundary.

Although burrowing owl was not found on the site during the focused survey, the species is highly mobile, so there is a potential that at some future date prior to project development, this species may occupy the site. This is a potentially significant impact requiring mitigation.

Mitigation Measures. The following measures have been identified to reduce the significance of potential impacts to migratory bird species and the burrowing owl:

- 4.4.6.1A** If tree removal or clearing and grubbing activities must take place during the general nesting season (February 1 through August 31), a nesting bird survey shall be conducted within seven (7) days prior to any vegetation disturbance activities. If passerine birds are found to be nesting or there is evidence of nesting behavior inside the impact area, an exclusion buffer, to be determined by the appropriate agency (e.g. the City, County, and/or CDFG), shall be set in place around the nest where no vegetation disturbance will be permitted. For raptor species, such as hawks and owls, this buffer may be as large as 500 feet. A qualified biologist shall closely monitor nests until it is determined that they are no longer active, at which time construction activity in the vicinity of nests may continue.
- 4.4.6.1B** Prior to site grading, a pre-construction survey shall be required for the burrowing owl to confirm the presence/absence of this species from the site. The survey shall be conducted by a qualified biologist within 30 days prior to ground disturbance, and in accordance with MSHCP survey requirements, to avoid direct take of burrowing owls. If burrowing owls are determined to occupy the project site or immediate vicinity, the City of Moreno Valley Planning Department shall be notified and avoidance measures as identified in **Mitigation Measure 4.4.6.1C** shall be implemented. Implementation of avoidance measures shall be executed pursuant to the MSHCP, the California Fish and Game Code, and the MBTA, and according to the *Burrowing Owl Survey Protocol and Mitigation Guidelines* (CBOC 1993) and reviewed by the City of Moreno Valley, the County of Riverside, and/or by the CDFG.
- 4.4.6.1C** As recommended in the *BUOW Survey and Mitigation Guidelines* prepared by the CBOC, no disturbance to an occupied burrow shall occur within approximately 160 feet of an occupied burrow during the non-breeding season (September 1 through January 31), or within approximately 250 feet of an occupied burrow during the breeding season (February 1 through August 31). For unavoidable impacts, passive relocation of burrowing owls shall be implemented. Passive relocation shall be conducted by a qualified biologist in accordance with procedures set forth by the MSHCP and California Burrowing Owl Consortium. Passive relocation of occupied burrows supporting a breeding pair of burrowing owls shall be conducted outside of the breeding season pursuant to the California Fish and Game Code and the MBTA.

Level of Significance after Mitigation. Implementation of the above-listed mitigation measures would reduce impacts to migratory bird species and non-listed sensitive species to a less than significant level.

4.4.6.2 Riparian Habitat or Other Sensitive Natural Communities

Impact 4.4.6.2: *The proposed project has the potential to permanently affect 0.36 acre of riparian/riverine habitat and to temporarily affect 0.35 acre of riparian/riverine habitat.*

Threshold	Would the proposed project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or
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regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

The project site consists of highly disturbed land from which most natural vegetation has been removed by regular disking for weed abatement and citrus cultivation. The existing drainage along the eastern boundary of the site (Quincy Channel) and the two drainages located at the southern and western portions of the proposed site were surveyed as part of the Determination of Biologically Equivalent or Superior Preservation (DBESP) to identify riparian habitat or other sensitive natural communities as defined in Section 6.1.2 of the MSHCP, with emphasis on hydrophytic (aquatic) plants. Hydrophytic plants are adapted for life in permanently or periodically saturated soils. The hydrophytic vegetation criterion is met if more than 50 percent of the dominant plant species from all strata (tree, shrub, and herb layer) are considered hydrophytic.

No special status species plants were recorded on site within the southern and western drainages due to the site's long-standing disturbances and the fact that on-site soils may not be capable of supporting most sensitive plant species. The project site does not fall within any MSHCP criteria cell. However, the eastern drainage (i.e., the Quincy Channel) supports one type of riparian habitat, mule fat scrub. Additionally, the eastern drainage is a naturally occurring stream system that meets the MSHCP definition of riparian/riverine habitat because it contains a predominance of riparian vegetation and/or freshwater flow for at least a portion of the year. The southern and western drainages were labeled separately for the purposes of impact calculations contained in the Jurisdictional Delimitation Report because they cross the project site in two different locations. However, the western and southern drainages are actually part of one continuous drainage system that flows from the northwest of the project site to the southeast to its convergence with the Eastern Drainage. These combined drainages are identified as an intermittent stream on the *Sunnymead, California* USGS 7.5-minute quadrangle. Similar to the eastern drainage, the southern and western drainages meet the MSHCP definition of riparian/riverine because they contain a predominance of riparian vegetation and/or freshwater flow for at least a portion of the year. As identified in the DBESP, the southern and western drainages within the project boundaries contain 0.04 acre of riparian/riverine area. Table 4.4.C provides a summary of the total impacts vegetation within the identified riparian/riverine areas.

Table 4.4.C: Summary of Total Affected Vegetation within Riparian/Riverine Areas

Vegetation Community	Permanent	Temporary
Ruderal	0.04 acre	0.05 acre
Disturbed mule fat scrub	0.32 acre	0.28 acre
Unvegetated Streambed	0.0 acre	0.02 acre
Total	0.36 acre	0.35 acre

Source: *Determination of Biologically Equivalent or Superior Preservation Report*, ICF International, August 2011.

As identified in Table 4.4.C, implementation of the proposed project would result in permanent impacts on 0.36 acre of riparian/riverine areas as a result of the construction of the detention basins, and drain outlets. In addition to permanent impacts, the proposed project would result in temporary impacts on 0.35 acre of riparian/riverine areas associated with construction activities. Minimal intrusion into the drainages would be necessary and no construction is anticipated in the drainages themselves.

Following construction, temporary impact areas would be restored to their pre-construction contours and revegetated per a Habitat Mitigation and Monitoring Plan (HMMP) to be written for the project site. The HMMP would be developed to address temporary impacts on riverine/riparian areas subject to jurisdiction under the MSHCP, waters of the United States subject to jurisdiction under Section 404 of the CWA, waters of the state subject to jurisdiction under Section 401 of the CWA, and jurisdictional streambeds subject to jurisdiction under Sections 1600–1616 of the California Fish and Game Code. It is important to recognize that under these authorities, the CDFG jurisdiction

encompasses the separate jurisdictional boundaries. Therefore, the proposed mitigation design is directed at providing adequate mitigation based on impacts on the largest jurisdictional area (namely, CDFG jurisdictional streambeds). Because implementation of the proposed project would have impacts on riparian/riverine areas on site, mitigation would be required.

Mitigation Measures. The following measures have been identified to reduce the significance of potential impacts to riparian habitat:

- 4.4.6.2A** As outlined in the project's Determination of a Biologically Equivalent or Superior Preservation (DBESP) report, the project applicant shall compensate for the permanent impact on and loss of jurisdictional waters and streambeds by providing a minimum 2:1 off-site replacement of equivalent riverine/riparian habitat (0.36 acre impact = 0.72 acre replacement). This off-site replacement shall be accomplished through the contribution of in-lieu fees to the Santa Ana Watershed Association (SAWA) for its efforts in removal of invasive plants and restoration of riparian habitat adjacent to the tributaries of the San Jacinto River or within the Santa Ana River watershed. Documentation of acceptance of the SAWA contribution shall be provided to the City prior to issuance of a grading permit.
- 4.4.6.2B** The project applicant shall retain qualified personnel to prepare and implement a Habitat Mitigation and Monitoring Plan (HMMP) to oversee restoration of temporarily affected areas (0.35 acre of riverine/riparian habitat) to their pre-construction contours and vegetation. The HMMP will be approved by USA CE and CDFG prior to the City issuing any occupancy permits.

Level of Significance after Mitigation. Implementation of the above-listed mitigation measures would reduce impacts to riparian habitat to a less than significant level.

4.4.6.3 Jurisdictional Waters/Wetlands

Impact 4.4.6.3: *The proposed project has the potential to permanently affect 0.051 non-wetland waters of the US and 0.362 acre of CDFG jurisdictional area, and to temporarily affect 0.054 acre of non-wetland waters of the U.S. and 0.33 acre of CDFG jurisdictional area.*

Threshold	Would the proposed project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?
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Pursuant to Division 2, Chapter 6, Section 1600–1603 of the California Fish and Game Code, the CDFG regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake which supports fish or wildlife. CDFG jurisdiction within altered or artificial waterways is based upon the value of those waterways to fish and wildlife. Based on the *Jurisdictional Delineation Report* prepared for the proposed project site, there is a clear connection to drainages associated with the San Jacinto watershed, and all three drainages (western, southern, and eastern) located on or adjacent to the project site are determined to be jurisdictional waters of the United States.

Any measurable modifications to the drainage, or any measurable dredge, fill, or placement of anything into the watercourse would trigger impacts. A Section 404 Permit from the US ACE, a Section 401 Water Quality Certification from the RWQCB, and a Section 1602 Streambed Alteration Agreement from the CDFG would be required for impacts to jurisdictional waters of the U.S. and the State and areas regulated by the RWQCB. Table 4.4.D provides a summary of on-site jurisdictional areas that would be potentially affected by the proposed project.

Table 4.4.D: On-site Jurisdictional Areas

Drainage Feature	USACE and RWQCB				CDFG	
	Non-Wetland Waters		Wetlands		Permanent	Temporary
	Permanent	Temporary	Permanent	Temporary		
Quincy Channel (Eastern Drainage)	0.04 acre (223 linear ft)	0.03 acre (145 linear ft)	— —		0.32 acre (294 linear ft)	0.28 acre (390 linear ft)
Southern Drainage	0.01 acre (119 linear ft)	0.02 acre (154 linear ft)	— —		0.04 acre (134 linear ft)	0.04 acre (120 linear ft)
Western Drainage	0.001 acre (12 linear ft)	0.004 acre (33 linear ft)	— —		0.002 acre (12 linear ft)	0.01 acre (37 linear ft)
Total Jurisdiction	0.051 acre (354 linear ft)	0.054 acre (332 linear ft)	— —		0.362 acre (440 linear ft)	0.33 acre (547 linear ft)

Source: *Jurisdictional Delineation Report*, ICF International, July 2011.

As identified in Table 4.4.D, based on the most current project plans and site boundary provided by the project applicant, implementation of the proposed project would result in permanent impacts to 0.051 acre (354 linear feet) of non-wetland waters of the United States and waters of the State and 0.362 acre (440 linear feet) of state streambed associated with the eastern, southern, and western drainages. In addition to permanent impacts, the proposed project would result in temporary impacts to 0.054 acre (332 linear feet) of non-wetland waters of the United States and waters of the State and 0.33 acre (547 linear feet) of State streambed associated with construction activities. This is a significant impact requiring mitigation.

Mitigation Measure. The following mitigation measure has been identified to reduce the significance of potential impacts to jurisdictional waters:

4.4.6.3A The project applicant shall obtain a Section 404 Nationwide or Individual Permit, as appropriate, from the USACE and a Section 1602 Streambed Alteration Agreement from the CDFG. Direct temporary impacts to more than 0.1 acre of jurisdictional area that are regulated by the USACE, CDFG, and RWQCB shall be mitigated at a 2:1 ratio, including enhancement and/or creation of wetlands or the contribution of in-lieu fee to the Santa Ana Watershed Association (SAWA) for its efforts in removal of invasive plants and restoration of off-site riparian habitat, as outlined in **Mitigation Measure 3.3.6.2A**.

Level of Significance after Mitigation. The proposed on-site restoration of temporary impact areas and the long-term enhancement of off-site riparian/riverine habitat managed by SAWA provides adequate mitigation for identified impacts to on-site jurisdictional areas. Implementation of the recommended mitigation measure would reduce impacts to jurisdictional waters to less than significant levels.

4.4.7 Cumulative Impacts

Cumulative impacts refer to incremental effects of an individual project when viewed in connection with the effects of past projects, current projects, and probable future projects.

Project construction will contribute to the incremental loss of mule fat scrub and non-native grassland in the region, including potential habitat for some special status species. Cumulative impacts potentially include habitat fragmentation, increased edge effects, reduced habitat quality, and increased wildlife mortality. The MSHCP provides a comprehensive approach to the regional conservation of these habitats and, as a regional plan, serves to provide mitigation for cumulative

impacts to covered species. Project compliance and consistency with the MSHCP ensures that any cumulative impacts to covered species are effectively mitigated. Special status species that are not covered by the MSHCP also benefit from the surveys, conservation, and other measures of the MSHCP because they occupy many of the same habitats. Therefore, the proposed project will not make a significant contribution to any cumulatively considerable impacts to biological resources.

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4.5 CULTURAL AND PALEONTOLOGICAL RESOURCES

The purpose of this section is to identify and evaluate the potential for the proposed project to affect paleontological, archaeological, and historical resources. The resources of concern include, but are not limited to fossils, prehistoric/historic artifacts, burials, sites of religious or cultural significance to Native American groups, and historic structures. This section provides a detailed discussion of impacts attributable to the proposed project and criteria utilized in determining impacts to cultural and paleontological resources. This section is based in part on the City of Moreno Valley General Plan, the Cultural Resources Assessment for the Eucalyptus Industrial Park (LSA Associates, Inc., December 11, 2007, and updated in September 2011), and Paleontological Resources Assessment for the Eucalyptus Industrial Park (LSA Associates, Inc., March 8, 2008, and updated in September 2011), which are included as Appendices D and E of this Draft EIR.

4.5.1 Existing Setting

4.5.1.1 Archaeological Resources

Archaeological resources are those that are associated with prehistoric cultural sites and the remnants of historic cultural sites that lack substantive building remnants (termed “historic archaeological sites”) such as roads and trails. Prehistoric cultural resources consist of those physical properties that predate the advent of written records in a particular region that are considered important to a culture, subculture, or community for scientific or humanistic reasons. These include geographic districts, structures, sites, objects, and other physical evidence of past human activity. Similar to prehistoric cultural resources, historic cultural resources in a particular geographic region may be considered important to a culture, subculture, or community and postdate the advent of written records.

The City has identified approximately 190 archaeological locations within City boundaries; the vast majority of these resources are milling stations consisting only of bedrock grinding surfaces used by prehistoric people to grind chaparral seeds. These archaeological sites have been grouped into nine topographically distinct regions known as “complexes.” These complexes often contain one or more archaeological resources. The proposed project is within the Moreno Hills Complex.¹ The Moreno Hills Complex is a small cluster of hills located northwest of the Moreno town site. The hills extend northwest to an unnamed drainage that separates the hills from the southern end of the Reche Hills.

As indicated in the Cultural Resources Assessment (Appendix D of the EIR), 26 cultural resources surveys have been conducted entirely or partially within one mile of the project site. Only one of these (RI-2172) encompassed the entire project. Sixty-five archaeological sites and 22 historic buildings have been documented within the one-mile radius. The records search determined that the nearest cultural resource to the project site is a prehistoric bedrock grinding slick (site number CA-RIV-2865), located within approximately a quarter mile (750 feet) southwest of the project boundary.

4.5.1.2 Paleontological Resources

Paleontological resources include fossils or assemblages of fossils that are unique, unusual, rare, or add to the existing body of knowledge in specific areas, either stratigraphically, taxonomically, or regionally. Such resources may include the remains of large to very small terrestrial and/or aquatic species that can assist in the interpretation of tectonic events, geomorphic evolution, paleoclimatology, and relationships of terrestrial and aquatic species. Pleistocene (10,000 years before present [ybp]) sediments within the project limits have been identified, in the Paleontological Resources Assessment, as having a high potential to contain significant paleontological resources.

¹ *Figure 5.10-2 Locations of Prehistoric Sites, Chapter 5.10 Cultural Resources, City of Moreno Valley General Plan Final EIR, July 2006.*

The Paleontological Resources Assessment conducted in the project area documents the potential for paleontological resources older than 9,000 years to occur.

4.5.1.3 Historic Resources

The Cultural Resources Assessment identifies that 22 historic buildings have been documented within a one-mile radius from the project site. However, the current records search did not identify any such historic building or feature within the project limits. Additionally, the City's General Plan states that there are no sites within the Moreno Valley study area listed as State landmarks, nor are there any sites in the National Register of Historic Places.¹

4.5.1.4 Ethnographic Context

During the NOP period, the Pechanga Band indicated this area was within the traditional tribal area of the Luiseño Indians. In addition, the Cultural Resources Assessment (Appendix D of EIR) indicate the project site was within the traditional cultural territory of the Cahuilla. Like other Native American groups in southern California, the Cahuilla were semi-nomadic hunter-gatherers who subsisted by exploitation of seasonably available plant and animal resources and were first encountered by the Spanish missionaries in the late 18th century. The first written accounts of the Cahuilla are attributed to mission fathers.²

4.5.2 Existing Policies and Regulations

4.5.2.1 Federal Regulations

National Historic Preservation Act (NHPA) of 1966 (as amended), Section 106. The NHPA declares a national policy of historic preservation to protect, rehabilitate, restore, and reuse districts, sites, buildings, structures, and objects significant in American architecture, history, archaeology, and culture. The NHPA established the National Register of Historic Places (National Register), State Historic Preservation Offices (SHPOs) and programs, and the Advisory Commission on Historic Preservation. This Act applies to all properties on or eligible for inclusion in the National Register. The Section 106 review process requires consultation to mitigate damage to "historic properties" (defined per 36 CFR 800.16(1) as places that qualify for the National Register), including Native American traditional cultural places (TCPs). Evaluation of cultural resources consists of determining whether it is significant (i.e., if it meets one or more of the criteria for listing in the National Register). These eligibility criteria are defined in 36 CFR 60.4 as follows:

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association:

- A. That is associated with events that have made a significant contribution to the broad patterns of our history;
- B. That is associated with the lives of persons significant in our past;
- C. That embodies the distinctive characteristics of a type, period or method of construction, or that represents the work of a master, or possesses high artistic values, or that represents a significant and distinguishable entity whose components may lack individual distinction; and/or
- D. That has yielded, or may be likely to yield, information important to prehistory or history.

¹ Section 7.2.2 *Archaeological and Historical Sites*, Chapter 7 – Conservation, Moreno Valley General Plan, City of Moreno Valley, July 11, 2006.

² Cultural Resources Assessment Eucalyptus Industrial Park, City of Moreno Valley, LSA Associates, Inc., September 2011.

4.5.2.2 State Regulations

California Environmental Quality Act. A “historic resource” includes, but is not limited to, any object, building, site, area, place, record, or manuscript that is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California.¹ CEQA mandates that lead agencies consider a resource to be “historically significant” if it meets the criteria for listing in the California Register of Historic Resources (California Register). Such resources meet this requirement if they are (1) associated with events that have made a significant contribution to the broad patterns of California history, (2) associated with the lives of important persons in the past, (3) embody distinctive characteristics of a type, period, region, or method of construction, and/or (4) represent the work of an important creative individual or possesses high artistic value.² These criteria mimic the criteria utilized to determine eligibility for the National Register.

Senate Bill 18 (SB18). Signed into law in September 2004, and effective March 1, 2005, SB18 permits California Native American tribes recognized by the Native American Heritage Commission (NAHC) to hold (on terms mutually satisfactory to the tribe and the landowner) conservation easements. The term “California Native American tribe” is defined as “a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC.”

The bill also requires that, prior to the adoption or amendment of a city or county’s general plan, the city or county conduct consultations with California Native American tribes for the purpose of preserving specified places, features, and objects that are located within the city or county’s jurisdiction. This bill requires the planning agency to refer to and provide opportunities for involvement to the California Native American tribes specified by the NAHC.

California Health and Safety Code. The California Health and Safety Code states that if human remains are discovered on site, no further disturbance shall occur until the County Coroner has made a determination of origin and disposition. If the Coroner determines that the remains are not subject to his or her authority and if the Coroner recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the NAHC.

Paleontological Resource Regulations. Section 106 of the NHPA does not apply to paleontological resources unless they are found in a culturally related context. In addition to the Antiquities Act (16 USC 431–433), the preservation and salvage of fossils and other paleontological resources can be protected under the National Registry of Natural Landmarks (16 USC 461–467) and the National Environmental Policy Act (NEPA), which directs federal agencies to “...preserve important historic, cultural, and natural aspects of our national heritage.”

Potential impacts to paleontological resources must be assessed for any project subject to CEQA review. California law protects paleontological sites on State lands and establishes a authority to protect paleontological resources while allowing mitigation through the permit process.³

¹ Public Resources Code, Section 5020.1(j).

² Public Resources Code, Section 5024.1(c).

³ California Public Resources Code (§5097.5), Administrative Code (§§4306 and 4309).

4.5.2.3 City of Moreno Valley General Plan Policies

Chapter 9 of the City's General Plan defines goals and policies related to cultural resources within the City of Moreno Valley. The specific policies of the General Plan that are relevant to the proposed project are as follows:

- Objective 7.6** Identify and preserve Moreno Valley's unique historical and archaeological resources for future generations.
- Policy 7.6.1** Historical, cultural, and archaeological resources shall be located and preserved, or mitigated consistent with their intrinsic value.
- Policy 7.6.2** Implement appropriate mitigation measures to conserve cultural resources that are uncovered during excavation and construction activities.
- Policy 7.6.4** Encourage restoration and adaptive reuse of historical buildings worthy of preservation.
- Policy 7.6.5** Encourage documentation of historical buildings when such buildings must be demolished.

4.5.3 Methodology

Cultural resource research for this project included a records search at the Eastern Information Center (EIC) located at the University of California, Riverside. The EIC is the local branch of the California Historical Resources Information System (CHRIS). Cultural resource maps at the EIC were checked for possible prehistoric and historic resources previously recorded within one mile of the project site. To supplement the CHRIS data, a review of the National Register of Historic Places Index and Office of Historic Preservation Directory of Properties data bases was conducted. In addition, historic maps and aerial photos were reviewed to determine the potential for former sites of historic buildings or other historic resources within the project site. The field survey conducted for the cultural resource assessment included a pedestrian survey consisting of walking parallel transects spaced approximately 15 meters (49 feet) apart and focused on the visible portions of the project site. Soil profiles were examined for cultural resources and rodent back dirt was checked for cultural remains in November 2007.

The paleontological resource assessment was completed in compliance with the Paleontological Resources Impact Mitigation Standards of Riverside County and follows the guidelines of the Society of Vertebrate Paleontology (SVP). Available geological and paleontological literature was reviewed to determine the potential for paleontological resources to occur in sedimentary deposits within the project site. The Paleontological Resource Sensitivity Map from the Riverside County Planning Department was consulted to determine the paleontological sensitivity of the project site. The field survey for the paleontological resource assessment was conducted by walking transects over the area 15 meters (49 feet) apart, focusing on the visible sediments exposed on the portions of the project site.

4.5.4 Thresholds of Significance

Based on Appendix G of the *CEQA Guidelines*, the effects of the project on cultural resources are considered to be significant if the proposed project would:

- Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5;
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5;

- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; and/or
- Disturb any human remains, including those interred outside of formal cemeteries.

4.5.5 Less than Significant Impacts

In each of the following issues, either no impact would occur (therefore, no mitigation would be required) or adherence to established regulations, standards, and policies would reduce potential impacts to a less than significant level.

4.5.5.1 Historic Structures and Features

Threshold	Would the proposed project cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?
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No structures or unique features are currently located within the project limits. An online title search was conducted and historic maps were reviewed to determine the potential for structures and/or the remains of former sites of buildings or resources within the project limits.¹ No evidence of past structures or historic features was identified, nor was evidence of such structures identified during the on-site cultural resource survey or the records search. As no evidence has been identified to suggest the presence of past or current structures on site, no impacts related to historic structures or features will occur. In the absence of a significant impact, no mitigation is warranted.

4.5.5.2 Human Remains

Threshold	Would the proposed project disturb any human remains, including those interred outside of formal cemeteries?
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Currently, the project site is utilized for agricultural production. No evidence suggesting the project site has been utilized in the past for human burials has been identified.² In the unlikely event human remains are discovered during grading or construction activities, State law (Health and Safety Code §7050.5) requires that no further disturbance shall occur until the County Coroner has made determination of the origin and disposition pursuant to Public Resources Code 5097.98. The County Coroner must be notified immediately of the find. If the remains are determined to be prehistoric, the Coroner is required to notify the NAHC, which will determine and notify a Most Likely Descendant (MLD). With the permission of the owner of the land or his/her authorized representative, the descendant may inspect the site of the discovery. The MLD shall complete the inspection within 24 hours of notification of the NAHC. The MLD may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

Because adherence to provisions of Health and Safety Code §7050.5 is required of all development projects, and because adherence to the requirements in State law sufficiently mitigates for potential impacts to human remains, no significant impact related to this issue will occur. Because potential impacts associated with this issue are less than significant, no mitigation is required.

¹ Cultural Resource Assessment Eucalyptus Industrial Park, City of Moreno Valley, LSA Associates, Inc., September 2011.
² Chapter 5.10 Cultural Resources, City of Moreno Valley General Plan Final EIR, July 2006.

4.5.6 Significant Impacts

4.5.6.1 Prehistoric Cultural Resources

Threshold	Would the proposed project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?
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A reconnaissance pedestrian-survey for the project site was conducted in November 2007. During the survey, it was noted that 50 percent of the project was planted with grapefruit and orange groves. The majority of the ground surface has been affected by agricultural activities. As previously stated, the project site is located within the Moreno Hills Complex, which contains identified archaeological resources such as milling stations consisting only of bedrock grinding surfaces. Although the project site is located within the Moreno Hills Complex, no archaeological resources were identified on the project site during the field survey, and the cultural resource assessment concluded the project would have no significant impacts; however, there is a potential for project grading to disturb previously undiscovered cultural resources. While there is no recorded or surface evidence that archaeological resources are present on site, the project is located in an area with a high potential of containing prehistoric archaeological resources. Therefore, a potential exists that excavation and construction activities may uncover previously undetected prehistoric or historic cultural resources. This is a potentially significant impact under CEQA and requires mitigation.

Mitigation Measures. The following measures have been identified to reduce potential impacts to prehistoric and historic cultural resources:

- 4.5.6.1A** If cultural resources are found during grading, the applicant shall immediately retain a qualified archaeological monitor to oversee subsequent ground-altering activities (e.g., removal of debris, de-vegetation, and grading). This monitor shall ensure that any buried or previously unidentified resources are adequately identified, recorded, and evaluated in accordance with applicable standards. The archaeological monitor shall be trained in both prehistoric and historic archaeology and have the authority to temporarily redirect any ground disturbing activities affecting potentially significant cultural resources.
- 4.5.6.1B** Prior to the issuance of a grading permit, the local Native American representatives (Soboba, Morongo, and Pechanga) shall be notified in writing of the pending activities. If any evidence of Native American resources is discovered during grading, the archaeological monitor identified in **Mitigation Measure 4.5.5.1A** shall invite one or more Native American monitors to participate in the monitoring program. The Native American monitor shall work with the archaeological monitor to aid in the identification of resources and assist in the preliminary evaluation of any Native American resources.
- 4.5.6.1C** If cultural artifacts and resources are discovered during ground disturbance activities and are historic in nature (not Native American in origin), the archaeological monitor shall make recommendations for the appropriate handling and evaluation of the resources. If cultural artifacts and resources are discovered during ground disturbance activities are determined to be of Native American origin (but not involving burials or grave goods), the archaeological monitor/consultant shall notify the applicant, City, and local Native American representatives and complete consultation for the handling of the resources. All archaeological decisions shall be at the discretion of the professional archaeologist, taking the Native American concerns into account. Work may continue on other parts of the project site while historic or unique archaeological mitigation takes place (14 Cal. Code Regs. 15065.5(f)).
- 4.5.6.1D** As a condition of approval, the property owner shall make all cultural resources (e.g., artifacts) discovered on site available for curation at a curation facility identified by the City (e.g., the UCR Archaeological Research Unit, the Western Center for Archaeology and Paleontology, or the Ya'i Heki' Regional Indian Museum). All artifacts shall be inventoried and prepared for curation per standard professional requirements. If neither

repository is available to accept the collections, the cultural resources shall be temporarily curated at a facility identified through consultation with all stakeholders.

- 4.5.6.1E** Should resources determined to be of sacred or religious significance to Native Americans be identified within the project area, the resources shall be protected from adverse impacts until consultation between the applicant, City, the Most Likely Descendant (MLD) as determined by the Native American Heritage Commission, and the archaeological consultant, occurs. At that time, the responsibility for the care and disposition of the cultural resources shall be determined and recorded to the satisfaction of all parties involved.

Level of Significance After Mitigation. Adherence to the above mitigation measures would reduce potential impacts to archaeological resources to a less than significant level.

4.5.6.2 Paleontological Resources

Threshold	Would the proposed project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?
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The project site is located in the Peninsular Range geologic province of California that encompasses western Riverside County and is near the northern margin of the Perris Block,¹ which is bounded on the east by the San Jacinto Fault.²

The proposed project site is located within an area that has a high potential to contain near-surface Pleistocene fossils.³ Examples include Pliocene and Pleistocene fossils recovered five miles northeast of the project, bison fossil recovered from sediments south of SR-60 at Redlands Boulevard in eastern Moreno Valley, and the recovery of mammoth and saber cat fossils from the Lakeview Hot Springs site. At Hemet, more than 1,700 discrete paleontological resource localities were recovered during excavation of the Diamond Valley Reservoir. These localities have produced more than 70 late Pleistocene plant and animal taxa. These recovered fossils indicate that Pleistocene (10,000 ybp) fossils occur as close to the surface as 4.5 meters (15 feet).

As previously stated, the project site is located in an area identified as having a “high sensitivity” for paleontological resources. The paleontological literature search indicated that there is potential for significant, nonrenewable resources that to be encountered during on-site construction activities. Therefore, a paleontological resources impact mitigation program (PRIMP), including excavation monitoring by a qualified paleontologist, is recommended for earthmoving activities in Pleistocene sediments on the project site with potential to contain significant, nonrenewable paleontological resources. Although no paleontological resources were identified on site during the field survey, because of the location of the project site and associated sensitivity for paleontological resources, the potential exists that paleontological resources maybe uncovered during construction.

Mitigation Measures. The following measures have been identified to reduce potential impacts to paleontological resources that may be located within the project limits:

- 4.5.6.2A** Prior to the issuance of grading permits, the project applicant shall submit to and receive approval from the City, a Paleontological Resource Impact Mitigation Program (PRIMP). The PRIMP shall include the provision of a trained paleontological monitor during on-site soil disturbance activities. The monitoring for paleontological resources shall be

¹ The Perris Block is a geologic feature consisting of a large mass of granitic rock generally bounded by the San Jacinto Fault, the Elsinore Fault, the Santa Ana River, and a non-defined southeast boundary.

² Paleontological Resources Assessment Eucalyptus Industrial Park, City of Moreno Valley, LSA Associates, Inc., March 8, 2008.

³ Ibid.

conducted during the rough-grading phase of the project. In the event that paleontological resources are unearthed or discovered during excavation, **Mitigation Measure 4.5.6.2C** shall apply. Conversely, if no paleontological resources are unearthed or discovered on site during excavation, no additional action is required.

4.5.6.2B The paleontological monitor shall be equipped to rapidly remove any large fossil specimens encountered during excavation. During monitoring, samples of soil shall be collected and processed to recover microvertebrate fossils. Processing shall include wet screen washing and microscopic examination of the residual materials to identify small vertebrate remains.

4.5.6.2C If paleontological resources are unearthed or discovered during excavation of the project site, the monitoring for paleontological resources shall be conducted on a full-time basis for the duration of the rough-grading of the project site. The following recovery processes shall apply:

- Upon encountering a large deposit of bone, salvage of all bone in the area shall be conducted with additional field staff and in accordance with modern paleontological techniques.
- All fossils collected during the project shall be prepared to a reasonable point of identification. Excess sediment or matrix shall be removed from the specimens to reduce the bulk and cost of storage. Itemized catalogs of all material collected and identified shall be provided to the museum repository along with the specimens.
- A report documenting the results of the monitoring and salvage activities and the significance of the fossils shall be prepared.
- All fossils collected during this work, along with the itemized inventory of these specimens, shall be deposited in a museum repository for permanent curation and storage.

Level of Significance After Mitigation. Adherence to the above mitigation measures will reduce potential impacts to paleontological resources to a less than significant level.

4.5.7 Cumulative Impacts

The cumulative area for cultural resources is the City of Moreno Valley. On-site sediments and cumulative archaeological and paleontological discoveries elevate the potential for the on-site presence of archaeological and paleontological resources. The proposed project includes measures to identify, recover, and/or record any archaeological or paleontological resource that may occur within the project limits. Although unlikely to occur, potential impacts associated with human remains would be reduced to a less than significant level through adherence to existing State law. There are no projects that would, in combination with the proposed project, result in any significant cumulative impacts on historical, archaeological, or paleontological resources, or cumulative impacts to human remains. Therefore, the project will not make a significant contribution to any cumulatively considerable impacts associated with cultural resources.

4.6 HAZARDS AND HAZARDOUS MATERIALS

The State defines hazardous material as any material "...that, because of its quantity, concentration, or chemical characteristics poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. Hazardous materials are commonly used by all segments of society, including manufacturing and service industries, commercial enterprises, agriculture, military installations, hospitals, schools, and households. Hazardous waste is often generated as a byproduct of industrial, manufacturing, agricultural, and other uses." A hazardous material may become hazardous waste upon its abandonment, discard, or recycling; or by actions that change the composition of a previously non-hazardous material.¹

Potential impacts associated with toxic air contaminants that could be emitted during operation of the project are addressed in Section 4.3 (*Air Quality*), while the potential hazardous effects the project may have on groundwater are addressed in Section 4.7 (*Hydrology and Water Quality*). Impacts related to airport hazards, the routine transport, use and disposal of hazardous materials, interference with an emergency response or evacuation plan, and wildland fire hazards were determined to be less than significant in the Initial Study prepared for the proposed project. During the public review period of the NOP and Initial Study, comments were received regarding these issue areas; therefore, analysis of these issues is included in this section. This section is based in part on the following reports, which are included as Appendix F of this EIR:

- *Phase I Preliminary Environmental Site Assessment (84+ acres)* prepared for APN 477-120-001 and 477-120-006 (RM Environmental, Inc., October 20, 2003);
- *Phase I Preliminary Environmental Site Assessment (37+ acres)* prepared for APN 477-120-007,008,014,015 (RM Environmental, Inc., November 25, 2003); and
- Report for Removal of Abandoned 13,400 Gallon Diesel Underground Storage Tank, APN 477-120-001 (RM Environmental, Inc., January 28, 2004).

4.6.1 Existing Setting

4.6.1.1 Project Site History

The proposed project site is located on approximately 122.8 acres of land currently used for agricultural purposes on the south side of and adjacent to SR-60, east of Moreno Valley Auto Mall, and adjacent to and west of the Quincy Channel. A review of historical aerial photos (1949 to 2000) reveals the project site to be undeveloped and used as citrus production. The only distinguishable differences between the successive aerial photographs are whether the site was planted or fallow and the type of crops planted. From 1949 to 1990, the areas surrounding the project site appear to be undeveloped and/or used for agricultural purposes. The first signs of development on surrounding properties appear in 1990 west of the project site. Development in this area appears to be the existing Moreno Valley Auto Center. This development remains visible in the most recent (2000) aerial photo consulted for the project site. Currently, the northern portion of the site is still used for active citrus production.

4.6.1.2 Surrounding Area

The nearest existing schools to the project site are the Calvary Chapel Christian School, located approximately 0.69 mile to the north of the project, and Valley View High School, located approximately 1.3 miles west of the project site. The project site is approximately 5.5 miles northeast of March Air Reserve Base (MARB). The project site is not located in an area adjacent to natural areas prone to wildland fire hazards.

¹ California Health and Safety Code, §25501(n) and (o); and §25124.

The project site is not included on the Department of Toxic Substance Control's Hazardous Waste and Substance Site List (Cortese List). A portion of the project site is currently utilized for agricultural production. Land uses adjacent to the project site include residential uses to the south east, the existing auto center and a fire station to the west, SR-60 and residential uses to the north, vacant land to the east and vacant land to the south. No adjacent properties are included on the Cortese list.¹

Because no permanent structures are located within the project limits, a hazardous materials building survey (asbestos, lead-based paint, polychlorinated biphenyls, mercury, chlorofluorocarbons, floor drains, water, and wastewater) was not performed as part of the Phase I investigation.

4.6.2 Existing Policies and Regulations

4.6.2.1 Federal Regulations

Comprehensive Environmental Response, Compensation, and Liability Act. Discovery of environmental health damage from disposal sites prompted the U.S. Congress to pass the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund). The purpose of CERCLA is to identify and clean up chemically contaminated sites that pose a significant environmental health threat. The Hazard Ranking System is used to determine whether a site should be placed on the National Priorities List (NPL) for cleanup activities.

Superfund Amendments and Reauthorization Act. The Superfund Amendments and Reauthorization Act (SARA) pertains primarily to emergency management of accidental releases. It requires formation of State and local emergency planning committees, which are responsible for collecting material handling and transportation data for use as a basis for planning. Chemical inventory data are made available to the community at large under the "right-to-know" provision of the law. In addition, SARA also requires annual reporting of continuous emissions and accidental releases of specified compounds. These annual submissions are compiled into a nationwide Toxics Release Inventory (TRI).

Hazardous Materials Transportation Act. The Hazardous Materials Transportation Act is the statutory basis for the extensive body of regulations aimed at ensuring the safe transport of hazardous materials on water, rail, highways, in the sky, or in pipelines. It includes provisions for materials classification, packaging, marking, labeling, placarding, and shipping documentation.

Resource Conservation and Recovery Act (RCRA). The RCRA Subtitle C addresses hazardous waste generation, handling, transportation, storage, treatment, and disposal. It includes requirements for a system that uses hazardous waste manifests to track the movement of waste from its site of generation to its ultimate disposition. The 1984 amendments to RCRA created a national priority for waste minimization. Subtitle D establishes national minimum requirements for solid waste disposal sites and practices. It requires states to develop plans for the management of wastes within their jurisdictions. Subtitle I requires monitoring and containment systems for underground storage tanks that hold hazardous materials. Owners of tanks must demonstrate financial assurance for the cleanup of a potential leaking tank.

¹ EnviroStor Database, California Department of Toxic Substances Control, http://www.envirostor.dtsc.ca.gov/public/search.asp?cmd=search&city=Moreno%20Valley&zip=&county=&federal_superfund=True&state_response=True&voluntary_cleanup=True&school_cleanup=True&permitted=True&corrective_action=True&display_results=Report&pub=True, website accessed January 30, 2008.

4.6.2.2 State Regulations

The California Hazardous Waste Control Law. The Hazardous Waste Control Law (HWCL) is the primary hazardous waste statute in the State of California. The HWCL requires a hazardous waste generator, which stores or accumulates hazardous waste for periods greater than 90 days at an on-site facility or for periods greater than 144 hours at an off-site or transfer facility, which treats, or transports hazardous waste, to obtain a permit to conduct such activities. The HWCL implements RCRA as a “cradle-to-grave” waste management system in the State of California. HWCL specifies that generators have the primary duty to determine whether their wastes are hazardous and to ensure their proper management. The HWCL also establishes criteria for the reuse and recycling of hazardous wastes used or reused as raw materials. The HWCL exceeds Federal requirements by mandating source reduction planning and a much broader requirement for permitting facilities that treat hazardous waste. It also regulates a number of types of wastes and waste management activities that are not covered by Federal law with the RCRA.

The California Hazardous Material Management Act. The Hazardous Materials Management Act (HMMA) requires that businesses handling or storing certain amounts of hazardous materials prepare a Hazardous Materials Business Plan (HMBP), which includes an inventory of hazardous materials stored on site (above specified quantities), an emergency response plan, and an employee-training program. Businesses that use, store, or handle 55 gallons of liquid, 500 pounds of a solid, or 200 cubic feet of a compressed gas at standard temperature and pressure require HMBPs. Plans must be prepared prior to facility operation and are reviewed/updated biennially (or within 30 days of a change).

California Code of Regulations. Most State and Federal regulations and requirements that apply to generators of hazardous waste are spelled out in the California Code of Regulations (CCR), Title 22, Division 4.5. Title 22 contains the detailed compliance requirements for hazardous waste generators, transporters, treatment, storage, and disposal facilities. Because California is a fully authorized State according to the RCRA, most RCRA regulations (those contained in 40 Code of Federal Regulations [CFR] 260, et seq.) have been duplicated and integrated into Title 22. However, because the Department of Toxic Substance Control (DTSC) regulates hazardous waste more stringently than the EPA, the integration of California and Federal hazardous waste regulations that make up Title 22 do not contain as many exemptions or exclusions as does 40 CFR 260. As with the California Health and Safety Code, Title 22 also regulates a wider range of waste types and waste management activities than do the RCRA regulations in 40 CFR 260. To aid the regulated community, California compiled the hazardous materials, waste and toxics-related regulations contained in CCR, Titles 3, 8, 13, 17, 19, 22, 23, 24, and 27 into one consolidated CCR, Title 26 ‘Toxics.’ However, the California hazardous waste regulations are still commonly referred to as Title 22.

California Emergency Services Act. Government Code 8550–8692 provides for the assignment of functions to be performed by various agencies during an emergency so that the most effective use may be made of all manpower, resources, and facilities for dealing with any emergency that may occur. The coordination of all emergency services is recognized by the State to mitigate the effects of natural, man-made, or war-caused emergencies which result in conditions of disaster or extreme peril to life, property, and the resources of the State, and generally, to protect the health and safety and preserve the lives and property of the people of the State.

State Fire Plan. The State Board of Forestry and the California Department of Forestry and Fire Protection have drafted a comprehensive update of the State Fire Plan for wildland fire protection in California. The planning process defines a level of service measurement, considers assets at risk, incorporates the cooperative interdependent relationships of wildland fire protection providers, provides for public stakeholder involvement, and creates a fiscal framework for policy analysis.

4.6.2.3 Local Regulations

Riverside County Department of Environmental Health. The Hazardous Materials Division of the Department of Environmental Health (DEH) of the Riverside County Health Services Agency is responsible for regulation the operations of businesses and institutions that handle hazardous materials or generate hazardous wastes in the City of Moreno Valley. As part of the State-mandated Certified Unified Programs administered by the California Environmental Protection Agency (CalEPA), the DEH coordinates regulatory and enforcement of the following programs: Household Hazardous Waste, Hazardous Waste Minimization, Underground Storage Tanks (USTs), Hazardous Waste Generator Permits, and Hazardous Materials Handlers Program.

4.6.2.4 City of Moreno Valley General Plan Policies

Chapter 9 of the City of Moreno Valley General Plan defines goals, objectives, policies, and implementation measures related to hazards. The specific goals, policies, and implementation measures that are relevant to the proposed project are as follows:

- Goal 6.1** To achieve acceptable levels of protection from natural and man-made hazards to life, health, and property.
- Objective 6.1** Minimize the potential for loss of life and protect residents, workers, and visitors to the City from physical injury and property damage due to seismic ground shaking and secondary effects.
- Policy 6.1.1** Reduce fault rupture and liquefaction hazards through the identification and recognition of potentially hazardous conditions and areas as they relate to the San Jacinto fault zone and the high and very high liquefaction hazard zones. During the review of future development projects, the City shall require geologic studies and mitigation for fault rupture hazards in accordance with the Alquist-Priolo Special Study Zones Act. Additionally, future geotechnical studies shall contain calculations for seismic settlement on all alluvial sites identified as having high or very high liquefaction potential. Should the calculations show a potential for liquefaction, appropriate mitigation shall be identified and implemented.
- Policy 6.1.2** Require all new developments, existing critical and essential facilities and structures to comply with the most recent Uniform Building Code seismic design standards.
- Goal 6.2** To have emergency services which are adequate to meet minor emergency and major catastrophic situations.
- Objective 6.2** Minimize the potential for loss of life and protect residents, workers, and visitors to the City from physical injury and property damage, and to minimize nuisances due to flooding.
- Objective 6.10** Protect life and property from the potential short-term and long-term deleterious effects of the necessary transportation, use, storage treatment and disposal and hazardous materials and waste within the City of Moreno Valley.
- Policy 6.10.1** Require all land use applications and approvals to be consistent with the siting criteria and other applicable provisions of the adopted Hazardous Waste Management Plan, which is also incorporated into and as part of the General Plan.
- Policy 6.10.2** Manage the generation, collection, storage, processing, treatment, transport and disposal of hazardous waste in accordance with provisions of the City of Moreno Valley's adopted Hazardous Waste Management Plan, which is also incorporated into and as part of the General Plan.
- Objective 6.11** Maintain an integrated emergency management program that is properly staffed, trained, and equipped for receiving emergency calls, providing initial response, providing for key support to major incidents.

- Policy 6.11.1** Respond to any disaster situation in the City to provide necessary initial response and providing for key support to major incidents.
- Objective 6.13** Maintain fire prevention, fire-related law enforcement, and public education and information programs to prevent fires.
- Objective 6.15** Ensure that property in or adjacent to wildland areas is reasonably protected from wildland fire hazard, consistent with the maintenance of a viable natural ecology.
- Policy 6.15.1** Encourage programs to minimize the fire hazard, including but not limited to the prevention of fuel build-up where wildland areas are adjacent to urban development.
- Policy 6.15.2** Tailor fire prevention measures implemented in wildland areas to both the aesthetic and functional needs of the natural environment.
- Objective 6.16** Ensure that uses within urbanized areas are planned and designed consistent with accepted safety standards.
- Policy 6.16.1** Ensure that ordinances, resolutions and policies relating to urban development are consistent with the requirements of acceptable fire safety, including requirements for smoke detectors, emergency water supply and automatic fire sprinkler systems.
- Policy 6.16.2** Encourage the systematic mitigation of existing fire hazards related to land urban development or patterns of urban development as they are identified and as resources permit.
- Policy 6.16.4** Within the safety zones (e.g., Air Crash Hazard Zones and Clear Zones) shown in Figure 6-5, residential uses shall not be permitted, and business uses shall be restricted to low intensity uses as defined in the March Air Reserve Base Air Installation Compatible Use Zone Report, as amended from time to time.

4.6.3 Methodology

Evaluation of hazards and hazardous material impacts associated with the proposed project included a focus on the use, generation, management, transport, and disposal of hazardous or potentially hazardous materials on the project site. A Phase I Environmental Site Assessment was conducted to document existing site conditions involving the presence or absence of hazardous materials that may have been deposited on site through previous land uses. For airport hazards, the 1998 Air Installation Compatible Use Zone (AICUZ) study for MARB, and the County of Riverside Airport Land Use Commission MARB Airport Land Use Plan were consulted to determine if the proposed project was within these airport land use plans. It should be noted that the City of Moreno Valley has not adopted the Airport Land Use Plan, but the site is not within two miles of a public airport or public use airport. In determining the level of significance, the analysis assumes that construction and operation of the proposed project would be in compliance with relevant local, State, and Federal laws and regulations pertaining to the use, storage, and disposal of hazardous materials.

4.6.4 Thresholds of Significance

The proposed project would result in a significant adverse impact with regard to hazards if it were to:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- Create hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;

- Be located on a site included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment;
- For a project located within an airport land use plan or where such a plan has not been adopted within two miles of a public airport or public use airport, result in a safety hazard for people residing or working in the project area;
- For a project located within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation; and/or
- Result in the exposure of people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

4.6.5 Less than Significant Impacts

Within the Initial Study (Appendix A) for the proposed project, it was determined that the following issues would create no impacts:

- Safety hazards to people working within two miles of a public airport; and
- Safety hazards to people working within two miles of a private airport.

The project site is not located within two miles of a public airport (March Air Reserve Base is 5.5 miles to the southwest) or a private airport (University Medical Center Heliport is 2.5 miles to the southwest) and, therefore, would not have the potential to expose people to safety hazards from airport operations.

4.6.5.1 Routine Transport, Use, or Disposal of Hazardous Materials and Reasonable Foreseeable Upset and Accident Conditions

Threshold	<p>Would the proposed project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?</p> <p>Create a significant hazard to the public through the routine transport, use, or disposal of hazardous materials?</p>
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Development Phase. Two Phase I Environmental Site Assessments (ESAs) have been prepared for the proposed project site. One ESA was conducted in October 2003 and covers APNs 477-120-001 and 477-120-006.¹ The other ESA was conducted in November 2003 and covers APNs 477-120-007, 477-120-008, 477-120-014, and 477-120-015.² A review of historic maps dated 1967 and 2001 along with aerial photography ranging from 1949 to 2000 did not identify any potential hazardous material sources on the site. During the on-site inspection, no hazardous materials handling, storage, or disposal areas were observed. Additionally, no evidence of stressed vegetation, discolored water, or pools of liquid was observed during the on-site reconnaissance. However, because the project site has been historically utilized for agricultural production and because of the close proximity to SR-60,

¹ Phase 1 Preliminary Environmental Site Assessment 84± Acres, Assessor Parcel Numbers (APNs) 477-120-001 and 477-120-006, Near Intersection of Pettit Street and Highway 60, Moreno Valley, California, R M Environmental, October 30, 2003.

² Phase 1 Preliminary Environmental Site Assessment 37± Acres, Assessor Parcel Numbers (APNs) 477-120-(007, 008, 014, 015), Near Intersection of Pettit Street and Highway 60, Moreno Valley, California, R M Environmental, November 25, 2003.

soil samples were taken in various parts of the project site to further evaluate the potential contamination on the site. Soil samples were also collected from the area of a wind-machine remaining in the western portion of the site, the area adjacent to SR-60 in the northern portion of the site, and from selected areas of the citrus groves on the site. These soil samples are identified in Figure 4.6.1.

Two soil samples were collected at the base of the wind-machine. One 200 to 300-gallon petroleum tank is located in the western portion of the site within the column of the wind machine structure. In interviews with Raymond Noriega, manager of the site, he indicated that the wind machine had not been used in the past 10 years that he had been employed there. Soil samples were taken at depths of 1.5 feet and 3 feet below the ground surface to assess the potential of hydrocarbon compounds occurring in the soil. Laboratory results indicated no detectable concentrations of hydrocarbon compounds in the samples collected.

Two soil samples were collected at areas adjacent to SR-60 at depths of one to four inches below ground surface to assess the potential of lead contamination. Laboratory results indicated total lead concentrations of 0.601 to 4.41 milligrams per kilogram (mg/Kg), which were determined to be insignificant.¹ In addition, on September 3, 2003, five near-surface (upper 6 inches) soil samples were collected from selected areas (upper portion) of possible drainage accumulation and pesticide usage on the site. The detected concentrations of organochlorine pesticides and PCBs were within the allowable Preliminary Remedial Goals (PRGs) for the project. No additional assessment for organochlorine pesticides or PCBs is recommended for the site.²

On November 7, 2003, three near-surface (upper six inches) soil samples were collected from selected areas (lower portion) of possible drainage accumulation and pesticide usage on the site. The detected concentrations of organochlorine pesticides and PCBs were within the allowable PRGs for the project. No additional assessment for organochlorine pesticides or PCBs is recommended for the site.³

At the request of the current owner of the site (northern portion), the area of the former abandoned 13,400-gallon UST was excavated during the site reconnaissance on September 20, 2003. No significant hydrocarbon odors or staining were observed. Between January 5 and 8, 2004, the UST was removed from the site. The UST had been abandoned in-place approximately 50 years ago. The abandonment reportedly consisted of removal of free-liquids; removal of the UST top; then backfilling the interior of the UST with on-site soils. Due to the installation of a 12-inch diameter, Eastern Municipal Water District (EMWD) waterline main in the north portion of the UST, the north portion of the UST was not removed. No indication of soil contamination was observed during the UST removal work. Additionally, soil sampling was conducted on January 7, 2004, at depths between 2 feet and 6 feet below the former bottom elevation of the UST, under the direction of a representative from the County of Riverside DEH Hazardous Materials Management Division. Laboratory results of the collected soil samples indicated a concentration of total petroleum hydrocarbons as oil (116 mg/Kg) in the soil sample collected at 2 feet below the bottom elevation of the UST. No other hydrocarbons, BTEX,⁴ or fuel oxygenates were detected; therefore, no additional environmental investigation is recommended for the former UST location.⁵

¹ Phase 1 Preliminary Environmental Site Assessment 84± Acres, Assessor Parcel Numbers (APNs) 477-120-001 and 477-120-006, Near Intersection of Pettit Street and Highway 60, Moreno Valley, California, R M Environmental, October 30, 2003, page 8.

² Phase 1 Preliminary Environmental Site Assessment 84± Acres, Assessor Parcel Numbers (APNs) 477-120-001 and 477-120-006, Near Intersection of Pettit Street and Highway 60, Moreno Valley, California, R M Environmental, October 30, 2003, page 9.

³ Phase 1 Preliminary Environmental Site Assessment 37± Acres, Assessor Parcel Numbers (APNs) 477-120-(007, 008, 014, 015), Near Intersection of Pettit Street and Highway 60, Moreno Valley, California, R M Environmental, November 25, 2003, page 8.

⁴ BTEX is an acronym for benzene, toluene, ethyl benzene, and xylene. This group of volatile organic compounds (VOCs) is found in petroleum hydrocarbons, such as gasoline, and other common environmental contaminants.

⁵ Report of Removal of Abandoned 13,400± gallon Diesel Underground Storage Tank, APN 477-120-001, Near the Intersection of Pettit Street and Highway 60, Moreno Valley, California, R M Environmental, January 28, 2004.

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LSA

FIGURE 4.6.1

- Project Boundary
- Soil Sample Site
- Approximate Well Site Location

*Eucalyptus Industrial Park
Environmental Impact Report*

Soil Sampling Locations

Item No. E.3

SOURCE: Phase I Environmental Assessment, 2003; AirPhotoUSA, 2008

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During the project's construction, it is likely that materials such as fuels, lubricants, solvents, cleansers and paints will be transported to and from the site. These materials are not generally considered acutely hazardous. The use and transport of these materials and all potentially hazardous materials would be handled according to the appropriate State and Federal regulations. The type of storage, transfer, use, and disposal of potentially hazardous materials during construction activities is extensively regulated at the local, State, and Federal levels. Adherence to existing regulations as they relate to the handling and transport of potentially hazardous materials during construction would reduce impacts associated with this issue to a less than significant level.

Operational Phase. The proposed project involves the construction of an approximately 2,244,638-square foot warehouse distribution center. Potentially hazardous materials such as petroleum products, pesticides, fertilizer, and other household hazardous products such as paint products, solvents, and cleaning products may be stored and transported in conjunction with on-site uses. Exposure to hazardous materials during the operation of the proposed on-site uses may result from (1) the improper handling or use of hazardous substances; (2) transportation accident; or (3) an unforeseen event (e.g., fire, flood, or earthquake). The severity of any such exposure is dependent upon the type and amount of the hazardous material involved; the timing, location, and nature of the event; and the sensitivity of the individual or environment affected.

As described in Title 49 of the Code of Federal Regulations¹ and implemented by Title 13 of the CCR, the United States Department of Transportation (USDOT) Office of Hazardous Materials Safety has established strict regulations for the safe transportation of hazardous materials. It is possible that vendors may bring some hazardous materials to and from the project site. Appropriate documentation for all hazardous waste that is transported in connection with project-site activities would be provided as required for compliance with existing hazardous materials regulations. Hazardous wastes produced on site are subject to requirements associated with accumulation time limits, proper storage locations and containers, and proper labeling. Additionally, for removal of hazardous waste from the site, hazardous waste generators are required to use a certified hazardous waste transportation company, which must ship hazardous waste to a permitted facility for treatment, storage, recycling, or disposal.

Due to aforementioned hazardous materials on site and the routine transport of these materials, the potential for an accidental release of hazardous materials into the environment is present at the proposed project site. However, since the storage, transfer, use and disposal of potentially hazardous materials is extensively regulated at the local, State, and Federal levels, the proposed project is not anticipated to generate conditions that are not currently addressed by existing regulations. These standards and regulations include procedures to contain, report, and remediate any accidental spill or release of hazardous materials. The handling of hazardous materials in accordance with all applicable local, State, and Federal standards, ordinances, and regulations would reduce the impacts associated with environmental and health hazards related to an accidental release of hazardous materials to a less than significant level.

4.6.5.2 Hazardous Material Sites

Threshold	Would the proposed project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?
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A database review was conducted for both of the Phase 1 Environmental Site Assessments conducted for the project site. Based on the database review, the project site is not included on the State of California Hazardous Waste and Substances Site List (Cortese list) pursuant to the California

¹ Code of Federal Regulations, Title 49—Transportation, Pipeline and Hazardous Materials Safety Administration, Department of Transportation, http://ecfr.gpoaccess.gov/cgi/t/text/textidx?sid=585c275ee19254ba07625d8c92fe925f&c=ecfr&tpl=/ecfrbrowse/Title49/49cfrv2_02.tpl, site accessed March 11, 2008.

Code (Section 6 5962.5). The project site is not listed in the NP L; Corrective Action Order Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) list; Emergency Response Notification System (ERNS) list; Resource Conservation and Recovery Act System; Toxic Release Inventory System (TRIS); CAL-SITES Database for Annual Work Plan ; California Department of Toxic Substances Control (DTSC); Regional Water Quality Control Board (RWQCB); California Waste Management Board (CWMB); Solid Waste Information System (SWIS); Waste Management Units Database System (WMUDS); California Border Zone Properties (Deed Restriction Properties); DTSC Hazardous Waste and Substances Site List (Cortese list); or any Leaking Underground Storage Tank (LUST) database.

There is one Resource Conservation and Recovery Act (RCRA)/HAZNET site adjoining the site to the west (Moreno Valley Toyota, 27990 Eucalyptus Avenue). Although this adjoining site was identified in the RCRA/HAZNET database, all potentially hazardous waste was reported as being properly disposed of by use of transfer station and/or recycler. The database review also identified two California Hazardous Material Incident Reporting Sites (CHMIRS) within one mile of the project site. The sites are located at 28885 Fir Street approximately 0.3 mile east of the project and near the intersection of Moreno Beach Drive and Cottonwood Avenue just under one mile south west of the project. The site at 28885 Fir Street is reported as an illegal drug lab with all contamination being disposed of by the DTS C. The site located near the intersection of Moreno Beach Drive and Cottonwood Avenue does not report the classification of the contamination that occurred. However, the site was signed-off as closed in September 1988.¹

Because the project site is not identified on a list of hazardous materials sites, the potential that the development of the site would create a significant hazard to the public or environment is less than significant. In addition, the results of the site investigations performed by RM Environmental indicate that no significant amount of any hazardous material exists on site. Therefore, impacts associated with this issue are less than significant and no mitigation would be required.

4.6.5.3 Existing or Proposed Schools

Threshold	Would the proposed project create hazardous emissions or handle acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?
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Section 15168 of CEQA requires that certain projects near schools disclose and examine the potential health impacts resulting from exposure to hazardous materials, wastes, and substances. Before certifying the EIR for a project that might create hazardous air pollutant emissions within 0.25 mile of an existing or proposed school, or that would handle an extremely hazardous substance, the lead agency and the project proponent must consult with the affected school district regarding any potential impacts that may occur from the project. The affected districts must be notified in writing no less than 30 days prior to the approval or certification of the EIR.

At the time the NOP for the proposed project was released, the Moreno Valley Unified School District (MVUSD) had identified three potential school sites within the project vicinity. These potential school sites were for High School #5 (south west corner of Redlands Boulevard and future Encilia Avenue), Elementary School #24 (northeast corner of Redlands Boulevard and future Encilia Avenue), and Middle School #7 (south east corner of Redlands Boulevard and future Encilia Avenue). Of these potential school sites, High School #5 was the closest planned school to the project site as it was to be located on the adjacent parcel east of the project site. Due to MVUSD concerns regarding the placement of schools in areas that may be rezoned with warehousing uses, MVUSD has made a decision to abandon the development of these school facility projects on the previously identified

¹ Phase 1 Preliminary Environmental Site Assessment 37± Acres, Assessor Parcel Numbers (APNs) 477-120-(007, 008, 014, 015), Near Intersection of Pettit Street and Highway 60, Moreno Valley, California, RM Environmental, November 25, 2003, page 5.

sites.¹ Therefore, no planned school facilities would be located adjacent to or within 0.25 mile of the project site. The nearest existing schools to the project site are the Calvary Chapel Christian School (11960 Pettit Street) approximately 0.69 mile north of the site and Valley View High school, (13135 Nason Street, Moreno Valley) approximately 1.30 miles west of the project site. Since there are no schools planned, proposed, or operating within 0.25 mile of the project site, no impacts associated with this issue would occur and no mitigation is required.

4.6.5.4 Emergency Response Plan

Threshold	Would the proposed project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?
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In February 2006, the County of Riverside, in cooperation with the cities and special districts, completed its Emergency Operations Plan (EOP). The objective of the EOP is to inventory and coordinate all the facilities and personnel of the County and member jurisdictions into an efficient organization capable of responding effectively to any emergency.² The EOP addresses the planned response to extraordinary situations associated with natural disasters, technological incidents, and national security emergencies in or affecting Riverside County. The EOP establishes the emergency organization, assigns tasks, specifies general procedures, and provides for coordination of planning efforts of the various emergency staff and resources. Response plans are identified for specific hazards including dam failures, hazardous material incidents, national security emergencies, air crashes, earthquakes, oil spills, and terrorism.

Construction activities that may temporarily restrict vehicular traffic would be required to implement adequate measures to facilitate the passage of people and vehicles through/around any required road closures. Site-specific activities such as temporary construction activities would be reviewed on a project-by-project basis by the City and are formulated when development plans are submitted to the City.

During the operational phase of the proposed project, on-site access for fire and emergency vehicles would be required to comply with standards established by the City Public Works Department. The size and location of fire suppression facilities (e.g., hydrants) and fire access routes would be required to conform to Fire Department standards. As required of all development in the City, the operation of the proposed project would be required to conform to applicable Uniform Fire Code standards. The submittal of such plans would be considered a condition of approval, which would be part of the permitting process initiated by the applicant and approved by the City in accordance with City standards. As with any development, access to and through the project would be required to comply with the required street widths, as determined in the General Plan Circulation Element, and the Uniform Fire Code. Therefore, implementation of the proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

4.6.5.5 Wildland Fires

Threshold	Would the proposed project expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildland?
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The project site is not located within a "High Fire Hazard Area" or within an area susceptible to wildfires identified by the City of Moreno Valley.³ Areas surrounding the project site consist of urban, built, and open space. Because of lack of abundant vegetation and the extensive amount of

¹ Resolution No. 2007-08-8, Board of Education of the Moreno Valley Unified School District, April 15, 2008.
² Riverside County Operational Area Emergency Operations Plan, County of Riverside, February 2006.
³ Figure 5.5-2 Floodplains and Fire Hazard Areas, City of Moreno Valley General Plan Final Program EIR, July 2006.

development within the vicinity of the project site, on-site and adjacent areas do not have the capability to support a wildfire. The proposed uses on site do not typically create a fire hazards nor are they subject to wildland fire hazards due to the type of construction materials used. The project will be designed and constructed to comply with adopted standards and guidelines for fire protection. Irrigated landscaping will surround project and buildings are required to include fire suppression features by law. Due to the location of the fire station adjacent to the project in the northwest corner and the low probability that the project site would be subject or susceptible to wildland fires, no significant impact related to this issue would occur. No mitigation is required.

4.6.6 Significant Impacts

No potentially significant impacts related to hazards and hazardous materials have been identified.

4.6.7 Cumulative Impacts

The cumulative area for discussion of hazards and hazardous materials is the City of Moreno Valley. The proposed project would not result in significant cumulative impacts associated with the routine transport, use, and disposal of hazardous materials; or the emission or handling of hazardous substances. As areas of the eastern portion of Moreno Valley continue to develop, the amount of truck traffic is expected to increase in proportion to the amount of industrial or commercial development that take place in the area. The trucks traveling in the area of the existing project and the surrounding areas may contain hazardous materials as well as contribute to emission in the cumulative area. Accidental spills and leaks are unplanned occurrences. It is impossible to predict the occurrences of such events and the likelihood of such events occurring in close proximity to each other at the same time is very small; therefore, such events cannot be considered cumulatively significant.

As anticipated in the City's General Plan, demographic increases, continued retail and service demands, and the availability of vacant property will lead to the new residential, commercial, and industrial development in the City and surrounding area. While the project-specific hazardous material impacts of individual development projects will be addressed separately in future CEQA documents, anticipated future development will contribute, through increases in the number of locations that sell, store, transport, or dispose of hazardous materials, to a cumulative increase in risk for hazardous material incidents. As with the proposed project, it is anticipated that future development projects will be required to adhere to applicable local, State, and Federal requirements that regulate the use, release, storage, sale, and transport of hazardous materials. Such compliance would ensure that the proposed project will not make a significant contribution to a cumulatively considerable impact in this regard, and no mitigation measures for cumulative impacts are required.

4.7 HYDROLOGY AND WATER QUALITY

This section describes the hydrologic conditions on and adjacent to the project site and evaluates potential impacts to surface and groundwater resources that may result from the construction and operation of the proposed on-site uses. This section is based in part on the 2006 Riverside County Water Quality Management Plan for Urban Runoff, the Preliminary Hydrology Calculations for Moreno Valley Eucalyptus (Thienes Engineering, November 4, 2008) (Appendix G), the Preliminary Water Quality Management Plan (Thienes Engineering, July 15, 2009) (Appendix G), and the 2009 California Stormwater Quality Association [CASQA] Construction Best Management Practices (BMP) Handbook, effective June 1, 2010. A detailed discussion of jurisdictional waters and riparian/wetland impacts as it relates to the proposed project is included in Section 4.4 (Biological Resources).

4.7.1 Existing Setting

The proposed project site is located in the eastern portion of the City of Moreno Valley in Riverside County. The approximately 122.8-acre project site is located south of and adjacent to SR-60, east of Moreno Valley Auto Mall, adjacent to and west of existing Quincy Channel, and on both sides of the future extension of Eucalyptus Avenue.

The project site is located in the Santa Ana River Basin, which includes the upper and lower Santa Ana River watersheds, the San Jacinto watershed, and several other small drainage areas. The Santa Ana region covers parts of southwestern San Bernardino County, western Riverside County, and northeastern Orange County. The northern portion of the project site is currently utilized for citrus cultivation and the southern portion of the project site is currently covered by brush and grasses.

The site topography is level with little variation (slight southward grade). The site has three drainages that occur on or near the project site, on the eastern, southern, and western portions of the site. The proposed project site occurs within an elevation range of approximately 1,720 to 1,795 feet above mean sea level (amsl). The project site is within hydrologic soil type "B." Hydrologic soil type "B" soils have a moderate infiltration rate when thoroughly wetted and consists of moderately deep to deep, moderately well to well drained soils with moderately fine to moderately coarse textures.

4.7.1.1 Drainage

As illustrated in Figure 4.7.1, 12 sub-watershed areas currently drain the project site in a southerly direction. On-site flows from these 12 sub-watershed areas cross the project site and currently drain into two unnamed dry washes to the west and south and into Quincy Channel, which runs along the entire length of the eastern project boundary. Flows draining into the unnamed dry wash west and south of the project eventually drain into Quincy Channel further south. Quincy Channel flows are then eventually discharged into the Perris Valley storm drain system. The receiving body of water for the Perris Valley storm drain system is Reach 3 of the San Jacinto River.

Off-site flows coming onto the project site from the north originate from SR-60, which is located along the northern boundary of the project site and currently does not have any drainage improvements along the eastbound lanes. The preliminary hydrology report identifies that flows generated south of the centerline of SR-60 currently flow onto the project site via sheet flow and require drainage improvements such as culverts to intercept existing flows as well as areas north of SR-60. Flows currently leaving the project site for the 2-year, 5-year, 10-year, and 100-year storm events are identified in Table 4.7.A.

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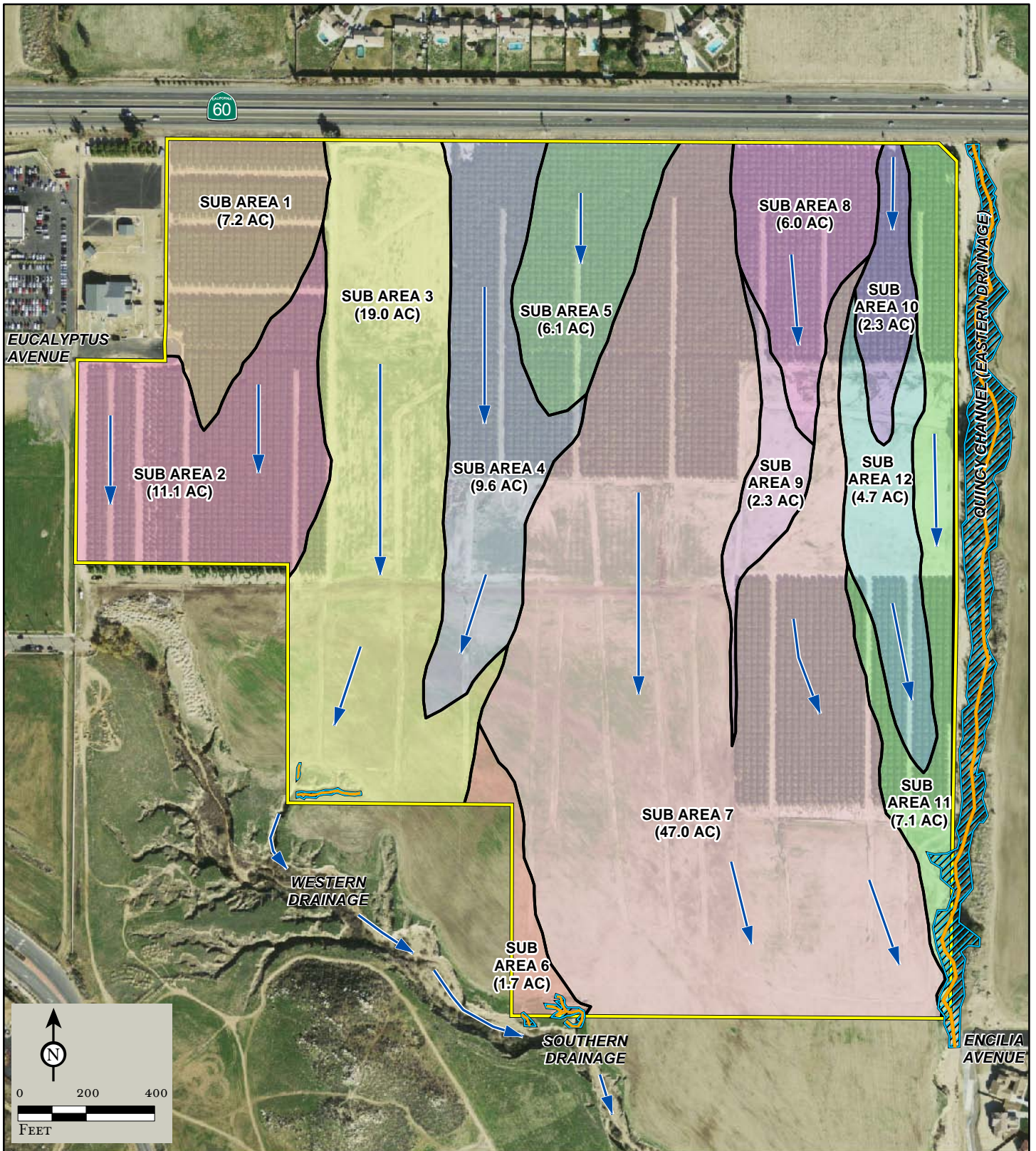


FIGURE 4.7.1

LSA

- Project Boundary
- ➔ Direction of Flow
- ACOE*/RWQCB* Potential Jurisdictional Waters
- CDFG* Potential Jurisdictional Waters

*ACOE: Army Corps of Engineers
 RWQCB: Regional Water Quality Control Board
 CDFG: California Department of Fish and Game

Eucalyptus Industrial Park
 Environmental Impact Report

Pre-Development Drainage

Item No. E.3

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Table 4.7.A: Existing Flows (cubic feet per second)

Storm Event (yr)	Storm Duration Flow (cfs)			
	1-hour	3-hour	6-hour	24-hour
2-year	59.4	27.4	20.8	2.8
5-year	94.7	49.9	40.4	3.8
10-year	144.6		89.0	76.8
100-year	257.7	167.3	147.8	56.9

* Storm Event refers to the natural action of precipitation (e.g. rain, snow, or hail) after a period of two or more hours. Storm Duration is the time period (in hours) over which a storm event occurs.

Source: *Preliminary Hydrology Calculations for Moreno Valley Eucalyptus*, Thienes Engineering, Inc., November 4, 2008.

4.7.1.2 Water Source

Water resources in the City and throughout Riverside County are sustained by groundwater basins, which are used as reservoirs to store water during wet years. These underground reservoirs are tapped throughout the year according to the demand for water. The project site lies within the Perri's North Management Zone of the West San Jacinto Groundwater Management Plan (Plan) area, which covers approximately 164,200 acres.¹ This Plan area is bounded by the San Jacinto Mountains on the east, the San Timoteo Badlands on the northeast, the Box Mountains on the north, the Santa Rosa Hills and Bell Mountain on the south, and unnamed hills on the west. Groundwater conditions in these basins are influenced by natural hydrologic conditions such as percolation of precipitation, groundwater seepage, and ephemeral stream flow within the watershed areas. Currently, the City does not identify any major groundwater recharge areas within the project site.²

4.7.1.3 Water Supply

The project site is located within the service boundary of the EMWD, which provides water, wastewater, and recycled water services to the City. The EMWD has a 555-square mile service area that provides water for a population of about 630,000. Without easy access to an ocean outfall for effluent, EMWD has developed into one of the State's largest reclaimed water providers, having a combined capacity from its five sewage treatment plants of more than 43 million gallons a day (mgd). Reclaimed water has become extremely important in managing local water resources and helps to extend the economic viability of agriculture. In recent years, reclaimed water has become increasingly accepted for irrigation and landscaping. EMWD utilizes an aggressive program of developing local groundwater resources, including desalination, water harvesting, and additional storage of surplus imported and reclaimed water.

The EMWD adopted the West San Jacinto Groundwater Basin Management Plan (Plan) in June 1995. The Plan serves to protect the interests of existing groundwater producers and to provide a framework for new water supply projects within the 256-square mile Management Plan area. This Plan encompasses more than 164,200 acres and includes the groundwater management zones, as well as essentially non-water bearing areas such as the Lakeview Mountains, the Bernasconi Hills around Lake Perri's, the Double Butte area near Winchester, and areas in the extreme northern, western, and southern portions of the EMWD.³ A detailed analysis of water supplies that would serve the proposed project is provided in Section 4.12 (Utilities and Service Systems) of this EIR.

¹ The West San Jacinto Groundwater Management Plan identifies groundwater areas as "management zones" which may not match the area or configuration of subbasins.
² Section 5.7 Hydrology/Water Quality, City of Moreno Valley General Plan Final Program EIR, City of Moreno Valley, July 2006.
³ West San Jacinto Groundwater Basin Management Plan 2010 Annual Report, Eastern Municipal Water District, June 2011.

A Water Supply Assessment (WSA) was prepared for this project and issued by EMWD on February 23, 2012. Based on the WSA conducted for the proposed project, water service to the project site will be provided by the EMWD, which utilizes a variety of water supplies to meet the needs of its customers. The water supply demands of the proposed project have been assessed in the WSA and a determination was made that there is adequate water to serve the proposed project. A detailed analysis of the water supply demand of the proposed project is provided in Section 4.12 (Utilities and Service Systems) of this EIR.

4.7.1.4 Storm Drain Infrastructure

The project site is located within the Moreno Area Master Drainage Plan (MDP) of the Riverside County Flood Control and Water Conservation District (RCFCWCD). The RCFCWCD is responsible for the regional flood control system within Riverside County. The MDP provides guidance for the construction of the master plan drainage system, and regional retention/detention basins. Based on the MDP, there are no existing RCFCWCD facilities within the project site or project area, but the RCFCWCD is proposing to construct a storm drain facility within the project vicinity. Line G-7, Quincy Channel, is proposed along the project's eastern edge and would follow the contours of the existing unnamed drainage south of the project. Impacts associated with RCFCWCD facilities are discussed in Section 4.7.6.3 of this EIR.

4.7.2 Existing Policies and Regulations

In the past, the effort to control the discharge of storm water focused on quantity (e.g., flood control) and to a limited extent on quality of storm water. In recent years, awareness of the need to improve water quality has increased. With this awareness, Federal, State, and local programs have been established to pursue the ultimate goal of reducing pollutants contained in storm water discharges to waterways. The emphasis of these programs is to promote the concept and the practice of preventing pollution at the source, before it can cause environmental harm.

4.7.2.1 Federal Regulations

Clean Water Act. The Federal Clean Water Act (CWA) was amended in 1972 to prevent discharge of pollutants to waters of the United States from any point source unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. The 1987 amendments to the CWA added Section 402(p), which establishes a framework for regulating municipal and industrial storm water discharges under the NPDES Program. In November 1990, the EPA published final regulations that establish application requirements for storm water permits. The regulations require an NPDES permit for storm water associated with construction and industrial activity, which discharges either directly to surface waters or indirectly through separate municipal storm drains. Pollution control is achieved by establishing engineering measures, such as detention basins and sediment traps, during both the construction period and the operational phases of the project.

Pursuant to requirements of the State Water Resources Control Board (SWRCB), the NPDES General Permit No. CAS5000002 applies to all construction activities that result in the disturbance of at least one acre of total land area, or activity that is part of a larger common plan of development of one acre or greater. The General Permit No. CAS5000002 is issued by the SWRCB as part of the Federal delegation responsibilities under this section of the CWA. The RWQCB regulates hydromodification¹ as well as surface and groundwater quality through adoption of water quality plans and standards, and issuance of water quality permits and waivers. The NPDES permit deals with both the construction phase and operational phase of development projects. For the construction phase of a project, the NPDES permit identifies the preparation of a Storm Water Pollution Prevention Plan (SWPPP).

¹ Hydromodification is the alteration of the hydrologic characteristics of coastal and non-coastal waters, which, in turn, could cause degradation of water resources.

The implementation of NPDES permits ensures that the State's mandatory standards for the maintenance of clean water and the Federal minimums are met. Coverage with the permit would prevent sedimentation and soil erosion through implementation of an SWPPP and periodic inspections by RWQCB staff. An SWPPP is a written document that describes the construction operator's activities to comply with the requirements in the NPDES permit. The SWPPP is intended to facilitate a process whereby the operator evaluates potential pollutant sources at the site and selects and implements BMPs designed to prevent or control the discharge of pollutants in storm water runoff.

Storm water control measures during construction and grading will be outlined in the construction NPDES permit and SWPPP prepared for the proposed project. Examples of such BMP control measures include detention basins for containment, use of silt fencing, gravel bags or straw bales to control runoff, and identification of emergency procedures in case of hazardous materials spills. The project proponent will be required to obtain a construction NPDES permit prior to site grading. In addition, the NPDES permit requires the identification of post-construction BMPs to be incorporated into the project site's Water Quality Management Plan (WQMP). The WQMP identifies measures to treat and/or limit the post-construction entry of contaminants into storm flows.

In addition, pursuant to Section 404 of the CWA, the USACE regulates discharges of dredged or fill material into waters of the United States. These waters include wetlands and non-wetland bodies of water that meet specific criteria, including a direct or indirect connection to interstate commerce. The USACE regulatory jurisdiction pursuant to Section 404 of the Federal CWA is founded on a connection, or nexus, between the water body in question and interstate commerce. This connection may be direct (through a tributary system linking a stream channel with traditional navigable waters used in interstate or foreign commerce) or may be indirect (through a nexus identified in the USACE regulations). The USACE typically regulates as non-wetland waters of the U.S. any body of water displaying an "Ordinary High Water Mark" (OHWM). In order to be considered a jurisdictional wetland under Section 404, an area must possess three wetland characteristics: hydrophytic vegetation, hydric soils, and wetland hydrology. Each characteristic has a specific set of mandatory wetland criteria that must be satisfied in order for that particular wetland characteristic to be met. A project specific discussion regarding Section 404 issues is provided in Section 4.4 (Biological Resources) of this EIR.

National Flood Insurance Program. The National Flood Insurance Program (NFIP) is a relatively recent Federal program. The Federal Government has been actively involved in flood control since 1927 following major floods on the Mississippi River. Beginning with the Flood Control Act of 1936, Congress assigned the USACE the responsibility for flood control engineering works and later for floodplain information services. Flood control was provided through the construction of dams and reservoirs. Despite these programs and rapidly rising Federal expenditures for flood control, flood losses continued to rise. In 1968, Congress passed the National Flood Insurance Act, which created the NFIP. The Flood Disaster Protection Act of 1973, which amended the 1968 Act, required the purchase of flood insurance by property owners who were located in special flood hazard areas and were being assisted by Federal programs, or by federally supervised, regulated, or insured agencies or institutions.

National Flood Insurance Program Reform Act of 1994. In 1994, the National Flood Insurance Program Reform Act went through its first major revision since its inception. Included in this revision were provisions that if a lender were to escrow an account and if the structure were in the floodplain, then the lender *must* escrow for flood insurance. The revised legislation also included increased flood insurance limits and the elimination of the 1962 buy-out program. However, the legislation did initiate the Hazard Mitigation Fund as part of the flood insurance policy. Also included in this legislation was the increase from a 5-day to a 30-day waiting period for a new policy to become effective. It also prohibits the waiver of flood insurance purchase requirements as a condition of receiving Federal

disaster assistance. If the flood insurance policy were not maintained, in the event of another disaster, no disaster assistance would be made available for that structure.

Executive Order 11988, Floodplain Management. Executive Order 11988 requires the USACE to provide leadership and to take action to:

- Reduce the hazards and risk associated with floods;
- Minimize the impact of floods on human health, safety, and welfare; and
- Restore and preserve the natural and beneficial values of the current floodplain.

To comply with Executive Order 11988, the policy of the USACE is to develop projects that, to the extent possible, avoid or minimize adverse effects associated with use of the floodplain and that avoid development (or the inducement of development) in an existing flood plain unless there is no practicable alternative.

4.7.2.2 State Regulations

The California Water Code is the principal State law regulating water quality in California. The Health and Safety Code, Fish and Game Code, Harbors and Navigation Code, and the Food and Agriculture Code all contain water quality provisions that require compliance.

The California Water Code contains provisions regulating water and its use. This portion of the California Water Code, Division 7 (Porter-Cologne Act), establishes a program to protect water quality and beneficial uses of the State water resources and includes groundwater and surface water. The State Water Resources Control Board is the principal State agency responsible for control of water quality. It establishes waste discharge requirements, water quality control planning and monitoring, enforcement of discharge permits, and ground and surface water quality objectives. It also prevents waste and unreasonable use of water, and adjudicates water rights.

The Health and Safety Code, Fish and Game Code, Harbors and Navigation Code, and the Food and Agriculture Code all contain provisions concerning water quality. The Health and Safety Code provides for protection of ground and surface waters from hazardous waste and other toxic substances. The Harbors and Navigation Code provides regulations designed to prevent the unauthorized discharge of waste from vessels into surface waters. The Fish and Game Code has provisions to prevent unauthorized diversions of any surface water and discharge of any substance that may be deleterious to fish, plant, animal, or bird life. The Food and Agriculture Code provides for the protection of groundwater that may be used for drinking water supplies.

The California Code of Regulations also contains administrative procedures for the State and RWQCBs in Title 23; and for water quality for domestic uses, wastewater reclamation, and hazardous waste management in Title 22. The CDFG, through provisions of the California Fish and Game Code (§1601 through §1603), is empowered to issue agreements for any alteration of a river, stream, or lake where fish or wildlife resources may be adversely affected. The presence of a channel bed and banks, and at least an intermittent flow of water define streams (and rivers). The CDFG regulates wetland areas only to the extent that those wetlands are part of a river, stream, or lake as defined by the CDFG. Discussion as it relates to jurisdictional waters and riparian/wetland resources is provided in Section 4.4 (Biological Resources) of this EIR.

Groundwater Management Act (AB 3030). [Sections 10750–10756 of the California Water Code.] This act provides a systematic procedure for an existing local agency to develop a groundwater management plan. This section of the Code provides such an agency with the powers of a water

replenishment district to raise revenue to pay for facilities to manage the basin (extraction, recharge, conveyance, quality).

The availability of groundwater and issues involving the adequacy of recharge capability are regional in nature. The Groundwater Management Act¹ (AB 3030) provides a systematic procedure for an existing local agency to develop a groundwater management plan. AB 3030 allows a local agency whose service includes a groundwater basin that is not already subject to groundwater management pursuant to law or court order to adopt and implement a groundwater management plan and includes plans to mitigate overdraft conditions, control brackish water, and to monitor and replenish groundwater. There are currently few domestic uses for groundwater in the area as the City primarily relies upon imported water from the EMWD.² Water sources for the EMWD include imported water purchased from the Metropolitan Water District (Metropolitan), groundwater sources, and recycled water from the EMWD's five regional water reclamation facilities. Approximately 75 percent of the EMWD's water is imported from Metropolitan, with the remaining 25 percent supplied by groundwater wells.³ Groundwater supplies are drawn from the EMWD wells located in the Hemet, San Jacinto, Moreno Valley, Perris Valley, and Murrieta areas.

Cobey-Alquist Flood Plain Management Act (California Water Code Section). This Act states that a large portion of land resources of the State of California is subject to recurrent flooding. The public interest necessitates sound development of land use, as land is a limited, valuable, and irreplaceable resource, and the floodplains of the State are a land resource to be developed in a manner that, in conjunction with economically justified structural measures for flood control, would result in prevention of loss of life and of economic loss caused by excessive flooding. The primary responsibility for planning, adoption, and enforcement of land use regulations to accomplish floodplain management rests with local levels of government. It is policy of the State of California to encourage local government to plan land use regulations to accomplish floodplain management and to provide State assistance and guidance.

California Toxics Rule. On May 18, 2000, the EPA promulgated numeric water quality criteria for priority toxic pollutants and other provisions for water quality standards to be applied to waters in the State of California. The EPA promulgated this rule based on the Administrator's determination that the numeric criteria are necessary in California to protect human health and the environment. The rule fills a gap in California water quality standards that was created in 1994 when a State court overturned the State's water quality control plans containing water quality criteria for priority toxic pollutants. Thus, the State of California has been without numeric water quality criteria for many priority toxic pollutants as required by the CWA, necessitating this action by the EPA. These Federal criteria are legally applicable in the State of California for inland surface waters, enclosed bays and estuaries for all purposes and programs under the CWA.

Municipal Separate Storm Sewer System (MS4) Permit System. The Municipal Separate Storm Sewer System (MS4) Permit is an NPDES, Phase II, General Permit that applies to the City of Moreno Valley. The purpose of the permit is to reduce the conveyance of storm water discharges with pollutants to streams, rivers, and creeks within the City. The Municipal Storm Water Permitting Program regulates storm water discharges from MS4s. MS4 permits were issued in two phases. Under Phase I, which started in 1990, the RWQCBs have adopted NPDES storm water permits for medium (serving between 100,000 and 250,000 people) and large (serving more than 250,000 people) municipalities. Most of these permits are issued to a group of co-permittees encompassing an entire metropolitan area. These permits are reissued as the permits expire.

¹ Sections 10750–10756 of the California Water Code.

² Section 5.7 Hydrology/Water Quality, *Moreno Valley General Plan Final Program EIR*, City of Moreno Valley, July 2006.

³ EMWD History and Mission, <http://www.emwd.org>, Eastern Municipal Water District, website accessed December 31, 2011.

4.7.2.3 City of Moreno Valley General Plan Policies

The following General Plan objectives, policies, and programs are applicable to the proposed project:

Objectives, Policies, and Programs

- Objective 6.2** Minimize the potential for loss of life and protect residents, workers, and visitors to the City from physical injury and property damage, and to minimize nuisances due to flooding.
- Policy 5.5.11** Implement National Pollutant Discharge Elimination System Best Management Practices relating to construction of roadways to control runoff contamination from affecting water resources.
- Objective 7.2** Maintain surface water quality and the supply and quality of groundwater.
- Program 7-2** Advocate for natural drainage channels to the Riverside County Flood Control District, in order to assure the maximum recovery of local water, and to protect riparian habitats and wildlife.
- Policy 7.4.3** Preserve natural drainage courses in their natural state and the natural hydrology, unless the protection of life and property necessitate improvement as concrete channels.

4.7.3 Methodology

Evaluation of hydrology and water quality impacts associated with the proposed project includes the following:

- Determine the construction phase water quality impacts based on NPDES standards;
- Determine the construction impacts on drainage patterns and drainage capacity;
- Determine the operational water quality impacts based on NPDES standards;
- Determine the operational impacts on drainage patterns and drainage capacity; and
- Determine the impacts on local groundwater table levels.

An SWPPP and preliminary WQMP (included as Appendix G of this EIR) have been prepared for the proposed project, and evaluate impacts associated with construction and operation activities. Drainage pattern and capacity impacts were evaluated by calculating existing and proposed flow condition rates through Civil Design Computer Software, which incorporates the Riverside County Flood Control and Water Conservation District Hydrology Manual requirements. The peak 100-year storm runoff was utilized to preliminarily size storm drain pipes as indicated in the Preliminary Hydrology Report conducted for this project (Appendix G of this EIR).

4.7.3.1 Pollutants of Concern and Assessment Methodology

The pollutants of concern for the water quality analysis have been identified based on the previously described regulations and the pollutants identified by regulatory agencies that potentially could be generated by the proposed project. The anticipated and potential pollutants in storm water or urban runoff for various land uses are reflected in Table 4.7.B. The project pollutants of concern are defined as those pollutants that currently impair a downstream water body listed in Section 303 (d). Based on the WQMP prepared for the proposed project, impaired receiving waters downstream from the project include Reach 2 of the San Jacinto River and Lake Elsinore. Reach 2 of the San Jacinto River is impaired for nutrients and pathogens and Lake Elsinore is impaired for nutrients, organic enrichment/low dissolved oxygen, PCBs, and unknown toxicity.

The following pollutants were chosen for evaluating water quality impacts of the proposed project based on three jointly applied criteria:

- (1) Pollutants that have impaired urban surface receiving waters in other areas with similar land use type;
- (2) Prevalence in urban runoff; and
- (3) Regulatory requirements and guidance, including the California Toxics Rule (CTR) and MS4 permit.

Table 4.7.C describes these pollutants (sediments, nutrients, heavy metals, organic compounds, trash and debris, oxygen-demanding substances, oil and grease, and pathogens) and their general effect on water quality and aquatic habitat.

4.7.3.2 Treatment Control BMPs and Assessment Methodology

The treatment control BMPs for the water quality analysis have been chosen based upon the previously described regulations and the pollutants of concern. The anticipated and potential efficiency of BMPs in regard to specific pollutants in urban runoff is reflected in Table 4.7.D. The following treatment control BMPs were chosen for the purpose of evaluating water quality impacts based on the following criteria: (1) effectiveness of removing specific pollutants that have impaired urban surface receiving waters in other areas with similar land use type and (2) regulatory requirements and guidance, including the CTR and MS4 permit.

Proprietary BMPs combined with traditionally accepted BMPs may assist with the treatment of project pollutants. Proprietary BMPs combined with traditionally accepted BMPs may be employed on a site-specific basis as approved by the City of Moreno Valley. The appropriate BMP(s) for a project should be determined based on the size of the project area, the types of pollutants that would be found in the development runoff, and pollutants of concern. Table 4.7.E describes these BMPs (biofilters, water quality inlets, detention basins, and infiltration basins) and their general characteristics. A discussion of the types of BMPs that would be utilized for the proposed project has been provided in Section 4.7.6.2 of this EIR.

4.7.4 Thresholds of Significance

The following thresholds of significance regarding potential impacts to hydrology and water quality are based on *CEQA Guidelines* (2008). A project would have a significant impact on surface hydrology, water quality, and/or groundwater if it would:

- Result in violations of any water quality standards or waste discharge requirements of the City of Moreno Valley or the Regional Water Quality Control Board;
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion, siltation on site or off site;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff which would result in on-site or off-site flooding;
- Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff;

Table 4.7.B: Anticipated and Potential Pollutants Generated by Land Use Type

Priority Project Categories	General Pollutant Categories								
	Sediment/ Turbidity	Nutrients	Organic Compounds	Trash & Debris	Oxygen- Demanding Substances	Bacteria & Viruses	Oil & Grease	Pesticides	Metals
Commercial/Industrial Development	P ¹	P ¹	P ⁵ E		P ¹	P ³ E		P ¹ P	
Parking Lots	P ¹	P ¹	E ⁴ E		P ¹	P ⁶ E		P ¹ E	
Streets, Highways and Freeways	E P	1	E ⁴ E		P ¹	P ⁶ E		P ¹ E	

E = Expected P = Potential N= Not Expected

¹ A potential pollutant if landscaping or open area exists on the project site.

² A potential pollutant if the project includes uncovered parking areas.

³ A potential pollutant if land use involves animal waste.

⁴ Specifically, petroleum hydrocarbons.

⁵ Specifically, solvents.

⁶ Bacterial indicators are routinely detected in pavement runoff.

Source: *Riverside County Water Quality Management Plan Guidance for Urban Runoff* (2006).

Table 4.7.C: Pollutants and General Water Quality Impacts

Pollutant	Water Quality Impact
Sediments	Excessive sediment can be detrimental to aquatic life by interfering with photosynthesis, respiration, growth, and reproduction.
Nutrients	Elevated nutrient levels in surface waters cause algal blooms, excessive vegetative growth, and dissolved oxygen levels, which is detrimental to aquatic life.
Heavy Metals	Bio-available forms of trace metals are toxic to aquatic life, potential of groundwater contamination, bio-accumulation in aquatic life, affect beneficial uses of a water body.
Organic Compounds	May contain levels that are harmful or hazardous to aquatic life.
Trash and Debris	Detrimental effect on recreational value of a water body and aquatic habitat; interferes with aquatic life respiration and can be harmful or hazardous to aquatic animals that mistakenly ingest floating debris.
Oxygen-Demanding Substances	Reduces a water body's capacity to support aquatic life. Can result in the growth of undesirable organisms and the release of odorous and hazardous compounds such as hydrogen sulfide.
Oil and Grease	Can accumulate in aquatic life from contaminated water, sediments, and food and are toxic at low concentrations. Can persist in sediments for long periods of time and result in adverse impacts on the diversity and abundance of existing bio-communities and can affect the aesthetic value of a water body.
Pathogens (Bacteria, Viruses, and Protozoa)	May result in water body impairments, can exceed public health standards for water contact recreation, creating a harmful environment. Can alter the aquatic habitat and create a harmful environment for aquatic life.

Table 4.7.D: Treatment Control BMP Selection Matrix

Pollutant of Concern	Treatment Control BMP Selection Categories							
	Veg. Swale or Veg. Filter Strips	Detention Basins ¹	Infiltration Basins or Porous Pavement ²	Wet Ponds or Wetlands	Sand Filter or Filtration	Water Quality Inlets	Hydrodynamic Separator Systems ³	Manufactured Proprietary Devices
Sediment/Turbidity	H/M	M	H/M H/M H/M			L	H/M (L for turbidity)	U
Nutrients L		M	H/M	H/M	L/M	L	L	U
Organic Compounds	U U		U U		H/M	L	L	U
Trash & Debris	L	M	U	U	H/M	M	H/M	U
Oxygen-Demanding Substances	L	M	H/M H/M H/M			L	L	U
Bacteria & Viruses	U	U	H/M	U	H/M	L	L	U
Oils & Grease	H/M	M	U	U	H/M	M	L/M	U
Pesticides (non-soil bound)	U U		U U U			L	L	U
Metals	H/M	M	H H H			L	L	U

L = Low Removal Efficiency M = Medium Removal Efficiency H/M = High or Medium Removal Efficiency U = Unknown Removal Efficiency

Notes: ¹ Includes grass swales, grass strips, wetland vegetation swales, and bioretention.

² Includes extended/dry detention basins with grass lining and extended/dry detention basins with impervious lining.

³ Includes infiltration basins, infiltration trenches, and porous pavements.

Source: *Riverside County Water Quality Management Plan Guidance for Urban Runoff* (2006).

Table 4.7.E: BMP Characteristics

BMP	General Characteristics
Biofilters	Pollutants are removed by filtering and through settling of sediment and other solid particles as the design flow passes through (not over) the vegetation. Overall the effectiveness of grass swales is limited and they are recommended in combination with other BMPs.
Water Quality Inlet	Pollutants are removed through sedimentation and separation as the design flow passes through one or more chambers. Generally used for pretreatment before discharging into another type of BMP.
Extended Detention Basin	Basin sized to detain and slowly release the design volume of urban runoff, allowing particles and associated pollutants to settle out. Maintenance efforts would need to be directed toward vegetation management, vector control, and removal of debris accumulations.
Infiltration Basins	Basin sized to detain and infiltrate runoff, allowing particles and associated pollutants to settle out. Maintenance efforts would be directed toward vegetation management, vector control, and removal of debris accumulations. This BMP may require groundwater monitoring.
Hydrodynamic Separator System	Device treats stormwater by creating a whirlpool of water within a concrete chamber in which solids fall to the bottom of the chamber while buoyant debris, oil, and grease rise to the surface, allowing water to pass through a flow control opening.

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- Otherwise substantially degrade water quality;
- Place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- Place within a 100-year flood hazard area structures which would impede or redirect flood flows;
- Expose people or structures to a significant risk of loss injury or death involving flooding, including flooding as a result of the failure of a levee or dam; and/or
- Expose people or structures to inundation by seiche, tsunami, or mudflow.

4.7.5 No Impacts/Less than Significant Impacts

The following potential impacts were determined to be less than significant. In each of the following issues, either no impact would occur (therefore, no mitigation would be required) or adherence to established regulations, standards, and policies would reduce potential impacts to a less than significant level.

4.7.5.1 Groundwater

Threshold	Would the proposed project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level?
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Based on the WSA prepared for the proposed project, water demand for the proposed on-site uses would total 81,900 gpd or 91 acre-feet per year (AFY).¹ As identified in Section 4.12 of this EIR, the proposed project would obtain water service from the EMWD. It is anticipated that the proposed project would primarily utilize imported water purchased from Metropolitan. In the event that imported water is not available, this imported water would be supplemented by local groundwater sources.

The implementation of the existing West San Jacinto Groundwater Basin Management Plan would ensure that local groundwater resources are conserved and groundwater overdraft does not occur. If the use of groundwater supplies was necessary, the proposed project would be required to comply with any future water use restricting regulations further minimizing impacts to groundwater supply.

As identified in the City's General Plan, the proposed project would not interfere with groundwater recharge as the project site is not identified as a groundwater recharge area.² Therefore, the proposed project would not interfere with groundwater recharge activities. Impacts associated with this issue are less than significant and no mitigation measure is required.

4.7.5.2 Flooding-Related Impacts

Threshold	Would the proposed project place within a 100-year flood hazard area structures that would impede or redirect flood flows?
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Flooding in the City of Moreno Valley could result from intense storms resulting in rapid runoff. The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) identify areas subject to flooding during the 100-year storm.³ Based on these FIRMs and as indicated in Figure 4.7.2, the project site does not fall within a 100-year flood zone.⁴ The proposed project is

¹ *Water Supply Assessment*, Eastern Municipal Water District, February 23, 2012.

² *Section 5.7 Hydrology/Water Quality*, City of Moreno Valley General Plan Final Program EIR, City of Moreno Valley, July 2006.

³ The term "100-year" is a measure of the size of the flood, not how often it occurs. The "100-year flood" is a flooding event that has a one percent chance of occurring in any given year.

⁴ FEMA DFIRM Data, 2008.

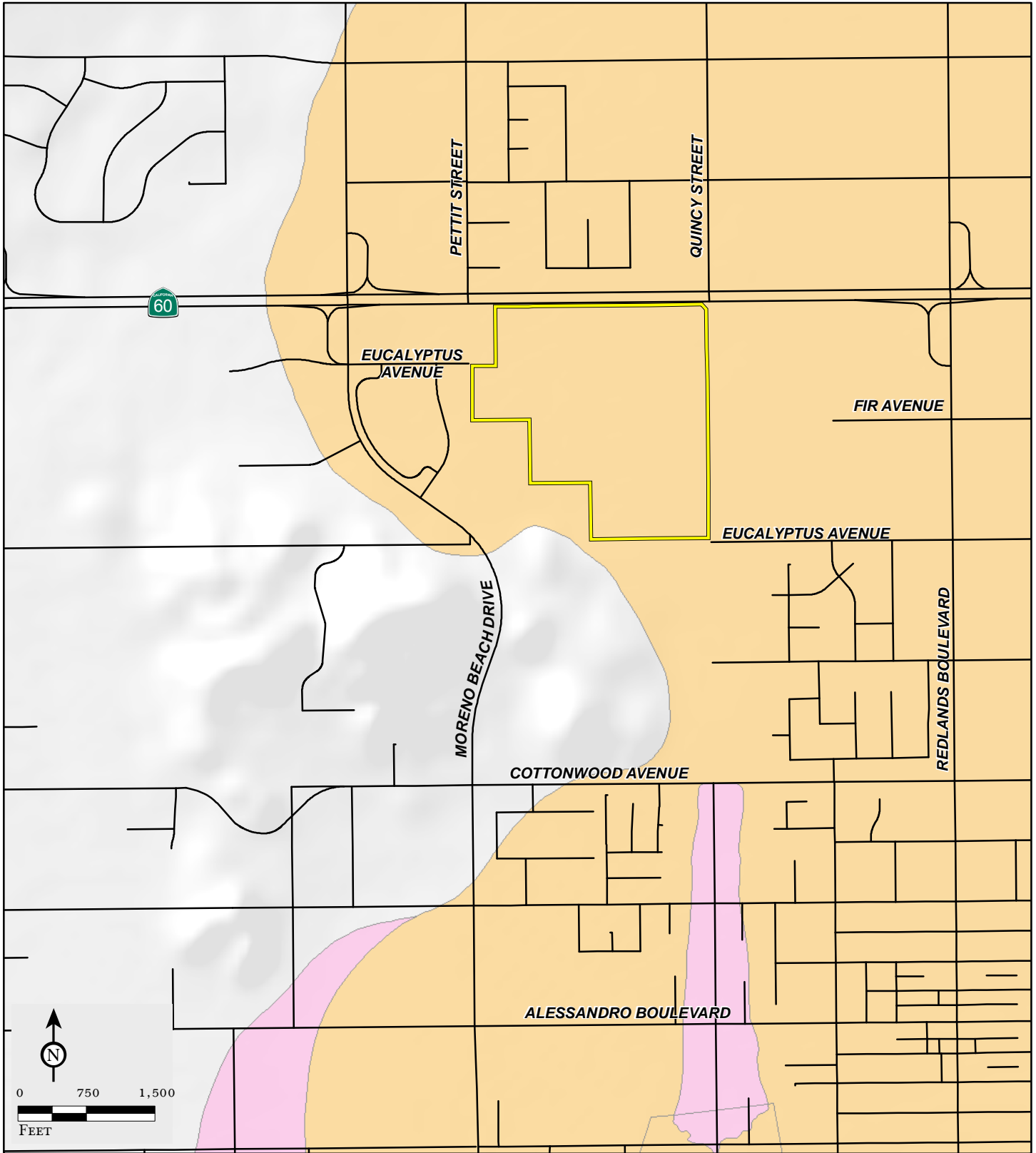


FIGURE 4.7.2

LSA

- Project Boundary
- An Area inundated by 100-year flooding
- An Area inundated by 500-year flooding

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FEMA Flood Zones

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SOURCE: FEMA DFIRM Data, 2008

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industrial in nature and the implementation of the proposed project would not result in the placement of housing within a 100-year flood plain. Because the project site does not lie within a 100-year floodplain and does not include housing, impacts related to this issue are less than significant. No further discussion or mitigation is required. It should be noted that the project site is within Zone X (shaded), which means it is within the 500-year flood zone.

4.7.5.3 Drainage Pattern-Related Impacts

Threshold	Would the proposed project substantially alter the existing local drainage patterns of the site and substantially increase the rate or amount of surface runoff in a manner which would result in substantial erosion, siltation, or flooding on or off site?
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The proposed project would alter the existing drainage patterns and affect surface runoff; however, several BMPs would be designed and installed on site to minimize these alterations, resulting in a less than significant impact.

Under current conditions, off-site flows coming onto the project site from SR-60 to the north flow onto the project site via sheet flow and require drainage improvements such as culverts to intercept existing flows. Flows generated on site cross the project site and currently drain into an unnamed dry wash to the south and east and into Quincy Channel, which runs along the entire length of the eastern project boundary. Flows draining into the unnamed dry wash south of the project eventually drain into Quincy Channel farther south. Quincy Channel flows are then eventually discharged into the Perris Valley Storm Drain system. Flows continue on to the San Jacinto River and eventually reach Lake Elsinore. Development of the project site would result in increased impervious surfaces in the form of roadways, parking lots, and industrial warehouse buildings. The proposed project incorporates six detention/sedimentation basins for both water quality and quantity control purposes.

As indicated in Figure 4.7.3, under post-development conditions, the project site would be divided into six areas. The northern portion of the project site would include Areas 1 and 2, which total 45.6 acres. The southern portion of the project site would include Areas 3, 4, 5, and 6, totaling 57.0 acres. The remainder of the project site (18.5 acres) would consist of vegetated swales, detention/sedimentation basins, and sand filters. The vegetated swales would retain and allow infiltration of a portion of the on-site flows, while the remainder of on-site flows would be routed to detention/sedimentation basins located on the southern side of the northern and southern portion of the project site. Table 4.7.F provides a summary of each drainage area, how flows would be routed, and water quality treatment features within each drainage area.

Table 4.7.F: Post-Development Drainage Areas

Area	Size	Flow Route
Area 1	6.4 acres	Flows routed to the south to a vegetated swale located in the southwest corner of Area 1. From there, flows would then be routed to Detention Basin 1 and its associated sand filter.
Area 2	39.2 acres	Flows routed to Detention Basin 1 and the sand filter. Once flows reach Detention Basin 1 and the sand filter, remaining flows would be routed to the southeast into Quincy Channel via a north outlet.
Area 3	14.6 acres	Flows routed to a vegetated swale located on the southern portion of Area 3. Flows from this vegetated swale would be eventually routed to Detention Basin 2 and associated sand filter located on the southeast corner of the project site.
Area 4	2.7 acres	Flows routed to a vegetated swale located on the western side of Area 4. Flows would then be routed to the vegetated swale located in Area 3 and then to Detention Basin 2 and associated sand filter.
Area 5	6.5 acres	Flows routed to the vegetated swale located in the southeast corner of Area 5. Flows would then be routed to Detention Basin 2 and associated sand filter.
Area 6	33.2 acres	Flows routed to Detention Basin 2 and its sand filter. Once flows reach Detention Basin 2 and the sand filter and are treated, any remaining flows would be routed to the southeast into Quincy Channel via a south outlet.

Source: Preliminary Water Quality Management Plan for Moreno Valley Eucalyptus, Thienes Engineering, Inc., April 2008.

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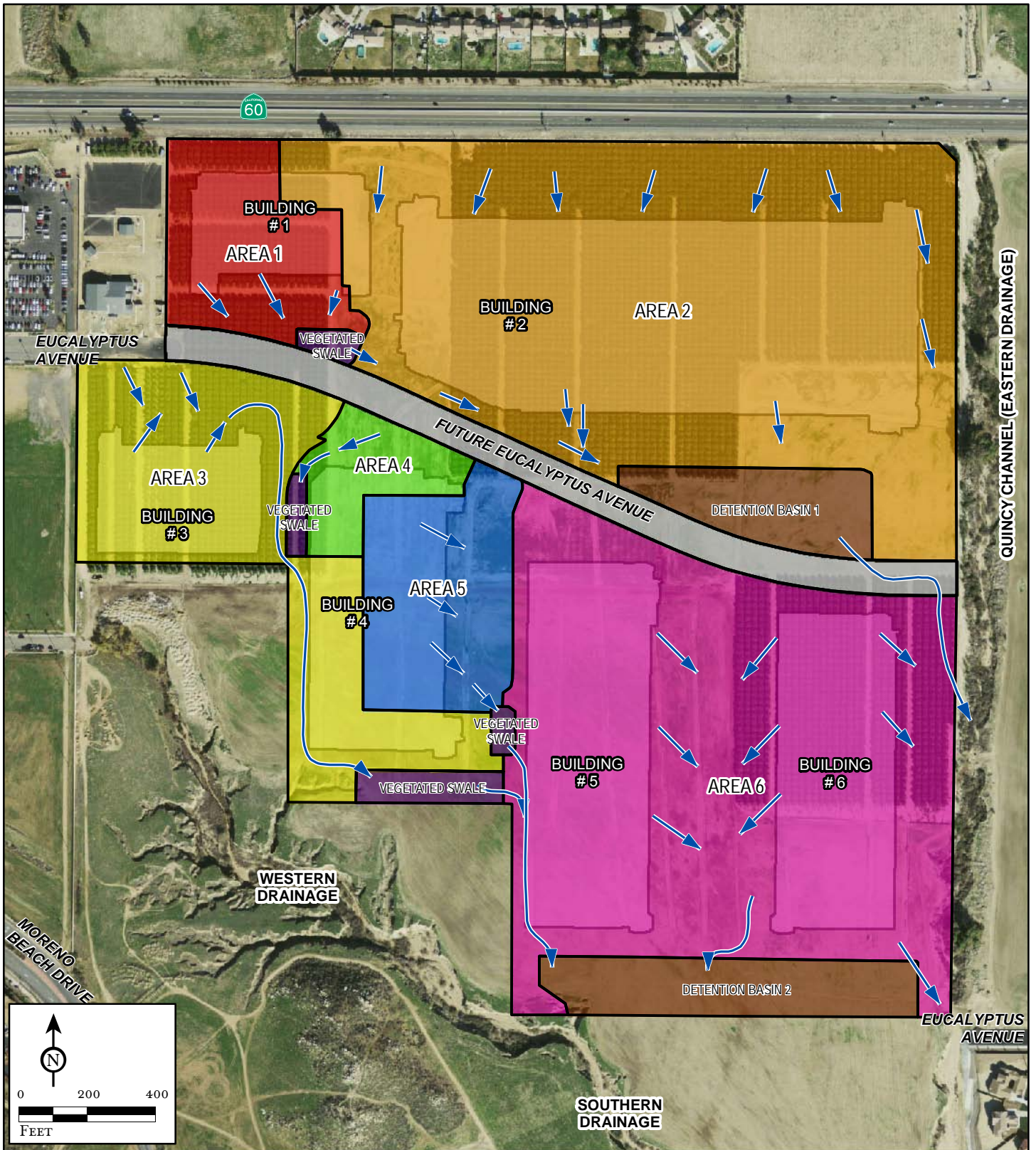


FIGURE 4.7.3

LSA

- ➔ Direction of Flow
- Area 1 (6.4 AC)
- Area 2 (39.2 AC)
- Area 3 (14.6 AC)
- Area 4 (2.7 AC)
- Area 5 (6.5 AC)
- Area 6 (33.2 AC)
- Detention Basins 1 & 2
- Vegetated Swale

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Post-Development Drainage

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SOURCE: Thienes Engineering, Inc. (2008).

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As indicated in Table 4.7.F and illustrated in Figure 4.7.3, vegetated swales would be located within Drainage Area 1 (southwestern corner), Drainage Area 3 (southern boundary), Drainage Area 4 (western side adjacent to Drainage Area 3), and Drainage Area 6 (western boundary adjacent to Drainage Area 5). In addition to the vegetated swales, the proposed project would also have two detention/sedimentation basins within the project site. These detention/sedimentation basins are located in Drainage Area 2 (southern boundary) and Drainage Area 6 (southern boundary). A discussion regarding the effectiveness of these facilities as water quality treatment areas is further analyzed and discussed in Section 4.7.6.2.

Under post-development conditions, all on-site flows would be routed to Quincy Channel. This drainage pattern would mimic the existing drainage pattern, which has flows draining to the Quincy Channel and the unnamed dry wash to the south. Since the unnamed dry wash connects to Quincy Channel farther south of the project, all flows under existing conditions drain into Quincy Channel. As previously stated, flows in Quincy Channel are routed to the Perris Valley Storm Drain where flows continue onto the San Jacinto River and eventually reach Lake Elsinore.

Increased runoff from the site could result in substantial erosion of local drainage ways and siltation of downstream receiving waters. However, as identified in Section 4.7.6.3, with the proposed drainage system installed on site, the proposed project would not produce any post-development peak flow leaving the site larger than the pre-development peak flows leaving the site for the analyzed storms. In addition, because the implementation of various BMPs will reduce off-site flow velocity and volume, erosional runoff and silt volumes would be minimized to the greatest extent practical. Capacity of the proposed drainage system is discussed further in Section 4.7.6.3. Because the proposed project would maintain existing drainage patterns on site and implement BMPs that would minimize erosion and generation of silt on site, impacts associated with this issue are less than significant and no mitigation measures are required.

4.7.6 Significant Impacts

4.7.6.1 Construction-Related Water Quality Impacts

Threshold	Would the proposed project violate any water quality standards or waste discharge requirements during construction phases of the project in form of increased soil erosion, sedimentation, or storm water discharges?
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Construction-related activities have the potential to affect water quality. However, implementation of construction practices and adherence to existing water quality regulations would reduce the impacts to a less than significant level.

Development of the project site is in excess of one acre (project site is approximately 122.8 acres); therefore, the project is required to obtain coverage under an NPDES permit, which includes the preparation of an SWPPP for construction discharges. The project will be required to submit a Notice of Intent (NOI) and obtain a Water Discharge Identification (WDID) Number prior to grading. During the construction period, the project would use a series of BMPs to reduce erosion and sedimentation. These measures may include the use of gravel bags, silt fences, straw wattles, hay bales, check dams, hydroseed, and soil binders. The construction contractor would be required to operate and maintain the sediment controls throughout the duration of on-site activities. In addition, the construction contractor would be required to maintain an inspection log and have the log on site to be reviewed by the City and representatives of the RWQCB.

The construction and grading phases of the project site would require the disturbance of surface soils and removal of existing orange groves and vegetative cover. During the construction period, grading and excavation activities would result in exposure of soil to storm runoff, potentially causing erosion and sediment runoff. If not managed through BMPs, the runoff could cause erosion and increased sedimentation in local drainage ways such as the Quincy Channel. By volume, sediment is the

principal component in most storm runoff. Sediments also transport substances such as nutrients, hydrocarbons, and trace metals, which are conveyed to the receiving waters. The potential for chemical releases is present at most construction sites in the form of fuels, solvents, glues, paints, and other building construction materials. Once released, substances such as fuels, oils, paints, and solvents could be transported to nearby surface waterways and/or to groundwater in storm water runoff, wash water, and dust control water, potentially reducing the quality of the receiving waters and potentially resulting in impairment of downstream water sources.

The NPDES permit program was established under Section 402 of the CWA, which prohibits the unauthorized discharge of pollutants, including municipal, commercial, and industrial waste water discharges. An NPDES permit would generally specify an acceptable level of a pollutant or pollutant parameter in a discharge (for example, a certain level of bacteria). The permittee may choose which technologies to use to achieve that level. Some permits, however, do contain certain generic BMPs. Table 4.7.G lists BMPs for runoff control, sediment control, erosion control, and housekeeping that may be used during the construction and operations phases of the proposed project.

Table 4.7.G: General Best Management Practices

Runoff Control	Sediment Control	Erosion Control	Good Housekeeping
<ul style="list-style-type: none"> Minimize clearing Preserve natural vegetation Stabilize drainage ways 	<ul style="list-style-type: none"> Install perimeter controls (e.g., silt fences) Install sediment trapping devices (e.g., straw wattles, hay bales, gravel bags) Inlet protection (e.g., check dams) 	<ul style="list-style-type: none"> Stabilize exposed soils (e.g., hydroseed, soil binders) Protect steep slopes Complete construction in phases 	<ul style="list-style-type: none"> Create waste collection area Put lids on containers Clean up spills immediately

Source: National Pollutant Discharge Elimination System, *Construction Site Storm Water Runoff Control*, <http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm>, site accessed December 31, 2011. 2009. More detailed Best Management Practices are available at this web site.

Mitigation Measures. Adherence to NPDES requirements is required of all development within the City. Incorporation of **Mitigation Measures 4.7.6.1A** through **4.7.6.1C** is designed to track both standard requirements and mitigation measures as part of the project's MMRP.

4.7.6.1A Prior to grading plan approval and the first issuance of a grading permit by the City, the project applicant shall provide evidence to the City that a Notice of Intent (NOI) has been filed with the Regional Water Quality Control Board for coverage under the State NPDES General Construction Permit for discharge of storm water associated with construction activities.

4.7.6.1B Prior to grading plan approval and the first issuance of a grading permit by the City, the project applicant shall submit to the City of Moreno Valley a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP shall include a surface water control plan and erosion control plan citing specific measures to control on-site and off-site erosion during the entire grading and construction period. Additionally, the SWPPP shall identify structural and nonstructural BMPs to control sediment and nonvisible discharges from the site. BMPs to be implemented in the SWPPP may include (but shall not be limited to) the following:

- Sediment discharges from the site may be controlled by the following: sandbags, silt fences, straw wattles and temporary debris basins (if deemed necessary), and other discharge control devices. The construction and condition of the BMPs will be periodically inspected during construction, and repairs will be made when necessary as required by the SWPPP.

- No materials of any kind shall be placed in drainage ways.
- Materials that could contribute nonvisible pollutants to storm water runoff must be contained, elevated, and placed in temporary storage containment areas.
- All loose piles of soil, silt, clay, sand, debris, and other earthen material shall be protected per RWQCB standards to eliminate any discharge from the site. Stockpiles will be surrounded by silt fences.
- The SWPPP will include inspection forms for routine monitoring of the site during the construction phase to ensure NPDES compliance.
- Additional BMPs and erosion control measures will be documented in the SWPPP and utilized if necessary.
- The SWPPP will be kept on site for the entire duration of project construction and will also be available to the local RWQCB for inspection at any time.

In the event that it is not feasible to implement the above BMPs, the City of Moreno Valley can make a determination that other BMPs will provide equivalent or superior treatment either on or off site.

4.7.6.1C Prior to the issuance of grading permits, the project applicant shall provide evidence to the City that the following provisions have been added to construction contracts for the project:

- The Construction Contractor shall be responsible for performing and documenting the application of BMPs identified in the SWPPP. Weekly inspections shall be performed on sediment control measures called for in the SWPPP. Monthly reports shall be maintained by the Contractor and submitted to the City for inspection. In addition, the Contractor will also be required to maintain an inspection log and have the log on site to be reviewed by the City of Moreno Valley and the representatives of the Regional Water Quality Control Board.

Level of Significance after Mitigation. On-site grading activities and the development of the proposed on-site uses would increase the potential for the erosion of soils. However, adherence to the BMPs identified by the above mitigation measures would reduce impacts associated with short-term (construction) storm water discharges during project construction. Therefore, impacts associated with this issue are reduced to a less than significant level.

4.7.6.2 Operational-Related Water Quality Impacts

Threshold	Would the proposed project violate any water quality standards or waste discharge requirements during the operational phases of the project in the form of increased soil erosion, sedimentation, or urban runoff?
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Since 2005, post-construction impacts associated with urban runoff have been addressed through adherence to the Riverside County WQMP. New development projects submitted for approval after December 2004 are required to submit a project-specific WQMP prior to the first discretionary project approval or permit.¹ The project-specific WQMP must address management of urban runoff, both in terms of the amount and quality of water leaving the project site. The primary objective of the WQMP, by addressing site design, source control, and treatment control BMPs applied on a project-specific and/or sub-regional or regional basis, is to ensure that the land use approval and permitting process of each City minimizes the cumulative regional impact of urban runoff. The WQMP is required to be

¹ Storm Water Clean Water Protection Program, "Riverside County Water Quality Management Plan, Santa Ana River Region, Santa Margarita Region," December 2004.

incorporated by reference or attached to the project's SWPPP as the Post-Construction Management Plan.

The proposed project would result in the conversion of existing on-site permeable surfaces to impermeable surfaces, thereby altering the current drainage pattern. Upon development of the proposed on-site uses, storm runoff from the roadways, parking lots, and buildings may carry a variety of pollutants such as sediment, pathogens, petroleum products, commonly utilized construction materials, landscaping chemicals, and (to a lesser extent) trace metals such as zinc, copper, lead, cadmium, and iron, which may lead to the degradation of storm water in downstream channels.

Pollutant concentrations in urban runoff are extremely variable and are dependent on storm intensity, land use, elapsed time since previous storms, and the volume of runoff generated in a given area that reaches a receiving water. As such, potential water quality impacts are related to the increase in the peak runoff, new urban uses, and the sensitivity of the receiving water. Runoff from landscaped areas may contain elevated levels of phosphorous, nitrogen, and suspended solids. Nutrients from this runoff could promote algae growth in waters downstream from the project as well as contribute to degradation of surface water quality.

The proposed project would implement and emphasize pollution prevention controls as the first line of defense against storm water pollution. Site design BMPs include measures such as common area landscape maintenance practices. The P-WQMP prepared for the project incorporates the following site design BMPs:

- Efficient building layout leaves permeable areas at locations where they are best used and incorporated for BMPs. Areas not used for building or parking will be landscaped to maximize permeable area;
- Sidewalk, drive, and parking lot aisles are at the minimum widths necessary for safety and appropriate vehicle use;
- Required landscaped areas will not use decorative concrete or impervious surfaces;
- Landscape plans incorporate native and drought-tolerant plants, trees, and shrubs. Landscaping will be maintained weekly and maintenance contractor will properly dispose of all landscape wastes;
- Irrigation systems will be inspected monthly by the landscape contractor to check for overwatering, leaks, or excessive runoff to paved areas. Timers will be used to prevent overwatering;
- Signage will be inspected and maintained twice a year for legibility;

Source control BMPs will be incorporated into the project to further reduce the amount of pollutants released into the environment. Source control BMPs that have been incorporated into the project include the following:

- Street and parking lot sweeping and vacuuming;
 - Outdoor Loading/Unloading truck docks will be kept in a clean and orderly condition with weekly inspections, continuous monitoring and immediate clean up of spills;
 - Parking area maintenance will be swept or vacuumed at least quarterly, if there is any trash or debris in between the routine sweeping, it will be swept or vacuumed immediately;
- Activity restrictions; and
- Maintaining separate trash storage areas.
 - Trash enclosures will be inspected and maintained weekly or as needed by maintenance contractor.

Treatment control BMPs will be incorporated into the project design such as:

- Detention basins/sedimentation basins.
 - On-site extended detention/sedimentation basins and sand filters will treat all of the site's runoff via vegetated swales and will be maintained and inspected at least twice a year and prior to October 1;
- Vegetated swales.
- Sand filters.
- Catch basin drain inserts.
 - Drainage system maintenance will include the catch basins, storm drain system, extended detention/sedimentation basins, and sand filters will be cleaned at least twice a year and prior to October 1;
- Hydrodynamic separators.
 - Drain inserts will be inspected and maintained at least twice a year and prior to October 1.

The implementation of these treatment controls is planned to further supplement the pollution prevention and source control measures by treating the water to remove pollutants before it is released from the project site.¹ Basins constructed on the site would be anticipated to function as detention/sedimentation basins. The proposed project also includes the use of vegetated swales and sand filters which would filter runoff coming from the project site. As indicated in previously referenced Table 4.7.D, the use of the detention/sedimentation basins, vegetated swales, and sand filters has a medium-to-high removal efficiency for the pollutants that are anticipated to occur on the project site and the pollutants of concern (Table 4.7.B).

Mitigation Measures. Although adherence to the Riverside County Storm Water Clean Water Protection Program, which includes the preparation of a WQMP, is required of all applicable development within the City, the incorporation of this requirement as **Mitigation Measure 4.7.6.2A** is designed to track both standard requirements and mitigation measures as part of the project's MMRP.

4.7.6.2A Prior to grading plan approval and the first issuance of a grading permit by the City, the project applicant shall receive approval from the City of Moreno Valley for a Final Water Quality Management Plan (F-WQMP). The F-WQMP shall specifically identify pollution prevention, site design, source control, and treatment control BMPs that shall be used on site to control predictable pollutant runoff in order to reduce impacts to water quality to the maximum extent practicable. BMPs to be implemented in the F-WQMP may include (but shall not be limited to) the following:

- Required landscaped areas shall not use decorative concrete or impervious surfaces.
- Landscape plans shall incorporate native and drought-tolerant plants, trees, and shrubs. Landscaping shall be maintained weekly and maintenance contractor will properly dispose of all landscape wastes.
- Irrigation systems shall be inspected monthly by the landscape contractor to check for overwatering, leaks, or excessive runoff to paved areas. Timers will be used to prevent overwatering.
- Signage will be inspected and maintained twice a year for legibility.

¹ Preliminary Water Quality Management Plan for Moreno Valley-Eucalyptus, Thienes Engineering, revised July 15, 2009.

- Outdoor Loading/Unloading truck docks shall be kept in a clean and orderly condition with weekly inspections, continuous monitoring and immediate clean up of spills.
- Parking area maintenance shall be swept or vacuumed at least quarterly, if there is any trash or debris in between the routine sweeping, it shall be swept or vacuumed immediately.
- Trash enclosures will be inspected and maintained weekly or as needed by maintenance contractor.
- On-site extended detention/sedimentation basins and sand filters will treat all of the site's runoff via vegetated swales and will be maintained and inspected at least twice a year and prior to October 1.
- Additional BMPs will be documented in the WQMP and utilized if necessary.

In the event that it is not feasible to implement the above BMPs, the City of Moreno Valley can make a determination that other BMPs will provide equivalent or superior treatment either on or off site.

Level of Significance after Mitigation. The proposed project would incorporate on-site drainage that would have hydrodynamic infrastructure components that would meet City and County water quality requirements. Through the use of site design BMPs (e.g., see Section 4.7.6.2), source control BMPs (e.g., street and parking lot sweeping and vacuuming), and treatment control BMPs (e.g., detention/sedimentation basins, sand filters and catch basin drain inserts), the resulting pollutant loads coming from the proposed project would be reduced thereby ultimately reducing pollutants discharged from urban storm water runoff to surface water bodies. Because adherence to the requirements of the NPDES permit, which include implementation of the BMPs outlined in the WQMP, would be required by the City during the operation of the proposed project, potential water quality impacts resulting from storm water and urban runoff would be reduced to a less than significant level.

4.7.6.3 Drainage Capacity-Related Impacts

Threshold	Would the proposed project create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?
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Development and operation of the proposed project would result in the generation of the additional storm water flows that would be above those generated in existing site conditions. With the construction and maintenance of adequate storm water drainage systems, impacts would be less than significant.

Table 4.7.H identifies changes in the volume of storm runoff that will result from the development of the proposed buildings and the installation of impervious surfaces within the project limits without the development of the on-site detention/sedimentation basins. Because of the installation of impervious surfaces, the post-development flows that would be generated on the project site are higher than the pre-development flows. To avoid a significant impact to drainage capacity, the post-development flows coming from the proposed project must not be greater than pre-development flows. To reduce the flows to below or equal to pre-development conditions, the anticipated on-site storm water flows must be routed to the on-site detention/sedimentation basins before flows are routed off site. While the resultant increase in impervious surfaces would contribute to a greater volume and higher velocities of storm flow, Table 4.7.I identifies that the proposed project's drainage system is sufficiently sized to accommodate runoff that would result from project construction at historic, or pre-project, conditions.

Table 4.7.H: Peak Flow Comparisons of Project Site without Detention Basins

Storm Event	Storm Duration	Storm Water Flows (cfs)			
		Existing	With Project		
			North Outlet	South Outlet	Total
2-year 1-ho	ur	59.4	53.0	57.6	110.6
2-year 3-ho	ur	27.4	31.2	33.3	64.5
2-year 6-ho	ur	20.8	26.4	28.6	55.0
2-year 24-h	our	2.8	7.2	7.7	14.9
5-year 1-ho	ur	94.7	74.6	81.2	155.8
5-year 3-ho	ur	49.9	43.4	46.5	89.9
5-year 6-ho	ur	40.4	36.9	40.0	76.9
5-year 24-h	our	3.8	10.9	11.2	22.1
10-year 1-ho	ur	144.6	93.7	102.2	195.9
10-year 3-ho	ur	89.0	55.4	59.6	115.0
10-year 6-ho	ur	76.8	47.4	51.8	99.2
10-year 24-h	our	17.1	16.7	17.7	34.4
100-year 1-ho	ur	257.7	150.6	164.5	315.1
100-year 3-ho	ur	167.3	88.7	95.6	184.3
100-year 6-ho	ur	147.8	76.3	83.3	159.6
100-year 24-h	our	56.9	30.9	33.0	63.9

Data Source: *Preliminary Hydrology Calculations for Moreno Valley Eucalyptus*, Thienes Engineering, November 4, 2008.

Table 4.7.I: Comparisons of Storm Water Flow Volume (acre-feet)

Storm	Pre-Development	Post-Development (without basins)	Volume Required ¹	Volume Proposed ²	Adequate Volume
2 yr – 1 hr	1.6	3.3	1.7	20.3	Yes
2 yr – 3 hr	1.4	4.5	3.1	20.3	Yes
2 yr – 6 hr	1.5	6.9	5.4	20.3	Yes
2 yr – 24 hr	1.8	10.3	8.5	20.3	Yes
5 yr – 1 hr	2.6	5.1	2.5	20.3	Yes
5 yr – 3 hr	2.4	6.2	3.8	20.3	Yes
5 yr – 6 hr	2.5	8.8	6.3	20.3	Yes
5 yr – 24 hr	2.4	12.6	10.2	20.3	Yes
10 yr – 1 hr	5.3	6.8	1.5	20.3	Yes
10 yr – 3 hr	5.2	9.4	4.2	20.3	Yes
10 yr – 6 hr	5.7	11.0	5.3	20.3	Yes
10 yr – 24 hr	4.3	17.9	13.6	20.3	Yes
100 yr – 1 hr	11.1	11.5	0.4	20.3	Yes
100 yr – 3 hr	15.1	16.9	1.8	20.3	Yes
100 yr – 6 hr	18.0	21.6	3.6	20.3	Yes
100 yr – 24 hr	22.1	31.9	9.8	20.3	Yes

¹ Difference between pre-development volumes and post-development volumes

² 20.3 acres = 9.6 acre foot of storage for northern detention basin + 10.7 acre foot of storage for southern detention basin.

Data Source: *Preliminary Hydrology Calculations for Moreno Valley Eucalyptus*, Thienes Engineering, November 4, 2008.

The project site would require a minimum storage volume of 13.6 acre-feet to adequately contain and store the greatest volume that would be generated during identified storm events. As indicated in

Table 4.7.I, the 10-year – 24-hour storm event would have the greatest difference in water volume, 13.6 acre-feet, between existing and proposed flows. The proposed project would allocate approximately 18.7 acre-feet of storage on the project site (7.1 acre-feet of storage for the large detention/sedimentation basin on the northern portion of the site and 11.6 acre-feet of storage for large detention/sedimentation basin on the southern portion of the site). The proposed amount of storage (20.3 acre-feet) is greater than the required amount of storage (13.6 acre-feet). Given this information, it is reasonable to assume that the proposed project would have adequate drainage capacity that would result in post-development flows being reduced to pre-development flows before leaving the project site.

Flows leaving the project site would be routed into Quincy Channel after being routed through water quality detention/sedimentation basins on site. It should be noted that the Quincy Channel is part of the County's Master Plan of Drainage for this area. From Quincy Channel, flows would be routed to the 250-foot wide earthen Perris Valley Storm Channel (PVSC). The PVSC is the primary collector of storm water in the Moreno Valley and Perris area. The PVSC was built and is currently owned and maintained by the RCF CWCD. The proposed project would include improvements to the Quincy Channel, which could consist of erosion control features such as rock stabilizers or concrete walls along the outer edges to prevent soil erosion. Aside from these improvements, the Quincy Channel would be left as an earthen channel. As stated in Section 4.4 (Biological Resources) of this EIR, the Quincy Channel is considered a local wildlife corridor trending in a north-to-south direction. While the Quincy Channel supports riparian habitat that may be used by migratory birds to forage and/or nest, the proposed project would be designed to minimize encroachment into this natural area through setback requirements established in Sections 9.16.120 and 9.05.040 of the City's Municipal Code, thus preserving this drainage in its natural state pursuant to the City's General Plan. The setbacks would provide a landscaped buffer area between the drainage and the structures proposed on site. Therefore, potential conflicts between drainage requirements and biological resource protection requirements as it relates to Quincy Channel are anticipated to be less than significant.

Since all post-development flows would be routed to Quincy Channel, it is anticipated that no flows generated on site would be routed to the southern drainage (i.e., the dry wash south of the project site). In the event that the RCF CWCD decides to construct the proposed storm drain facility west and southwest of the project, it is reasonable to anticipate that capacity would not be affected by the proposed project.

Mitigation Measures. The following measure has been identified to mitigate potential impacts associated with long-term drainage capacity during the project operation:

4.7.6.3A Prior to the approval of a rough grading plan, the project proponent shall receive approval on a project-specific Final Hydrology Study, with supporting engineering calculations, from the City Engineer. The Final Hydrology Study shall incorporate relevant requirements identified by the City, and/or site-specific geotechnical investigations.

Level of Significance after Mitigation. Adherence to **Mitigation Measure 4.7.6.3A** would reduce potential impacts associated with drainage capacity issues to a less than significant level. In addition, the design and installation of the proposed drainage improvements will be required to adhere to applicable City and County standards.

4.7.7 Cumulative Impacts

The cumulative area for hydrologic and water quality impacts is the City of Moreno Valley. Increases in the amount and extent of development in the City and surrounding areas will increase the potential for pollutants in runoff, which in turn would affect water quality. The project's water quality impacts will be mitigated through on-site detention/sedimentation basins and other water pollution control

mechanisms such as vegetated swales, sand filters, and storm drain inlet filters. Similar requirements will be placed on all other development in the project vicinity by the City and the RWQCB, further reducing the potential for cumulative impacts. Since all development within the City is required to account and mitigate for their individual water quality impacts before runoff leaves each individual site, it is reasonable to conclude that water quality would be maintained throughout the cumulative area. Adherence to NPDES, SWPPP, and WQMP requirements will reduce any such cumulative water quality impact to a less than significant level.

The cumulative area for water supply-related issues is the EMWD service area. A detailed discussion regarding cumulative impacts with water supply-related issues is provided in Section 4.12.2.7 (Cumulative Impacts to Water Supply Services). As stated in Section 4.12.2.7, groundwater recharge policies and practices implemented by the RWQCB and local agencies will ensure groundwater supplies are maintained at appropriate levels. As such, no significant cumulative groundwater supply impacts are anticipated to occur with the development of the proposed project.

The cumulative area for drainage impacts is the City of Moreno Valley. The drainage system for the proposed project would be designed so that runoff from the project site after project development is directed to on-site treatment BMPs and flow volumes would be equal to or less than historic conditions at any given discharge location. This same requirement will be placed on all other development in the vicinity of the project site by the City of Moreno Valley. Therefore, the proposed project will not make a significant contribution to any cumulatively considerable impacts related to drainage or water quality.

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4.8 LAND USE AND PLANNING

Analysis carried out for this section of the EIR addresses the consistency of the proposed project with the goals and policies of the City of Moreno Valley General Plan, applicable community plans, redevelopment plans, and the Planning, Zoning Code, and compatibility within regional plans. The section also identifies and evaluates the compatibility of the proposed project with existing land uses and the potential land use impacts that may result during or subsequent to development of the proposed on-site uses. This section is based in part on the City of Moreno Valley General Plan, the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), and the Southern California Association of Governments (SCAG) Regional Comprehensive Plan.

4.8.1 Existing Setting

4.8.1.1 General Plan and Zoning Designations

The proposed project site is located within the City's northeastern planning area, an area bounded by SR-60 to the north, the Quincy Channel on the east, and future Encilia Avenue on the south. The City's General Plan designates the site for a mixture of R15, R5, and R2 Residential uses, plus Business Park and Light Industrial uses which would create additional employment opportunities. Table 4.8.A identifies on-site and adjacent General Plan and Zoning designations. The on-site existing and proposed General Plan and zoning designations are illustrated in previously referenced Figures 3.1 and 3.2.

Table 4.8.A: On-site and Adjacent Land Use Designations

Location	Current Land Use	General Plan	Zoning
On site	Undeveloped on south, citrus orchards on 57 acres in north and east-central portions	R15, R5 and R2 Residential, Business Park/Light Industrial	BP; BPX; R-15; R-5 and RA-2
North	State Route 60	Residential R-2	R-2 and RA-2
South	Undeveloped	Residential R-2	RA-2 and HR
East	Former or fallow agricultural	R2 and Business Park/Light Industrial	BP and RA-2
West	Moreno Valley Auto Mall; City of Moreno Valley Fire Station 58; vacant	Commercial	C and CC in SP 209

Notes: BP Industrial/Business Park; BPX Business Park Mixed Use; R-15 Multi-Family; R-5 Suburban Residential; R-2 Residential 2 dwelling/acre; and RA-2 Residential Agriculture 2 dwellings/acre

Source: Moreno Valley General Plan Land Use Map, August 2010; Moreno Valley Zoning Map, November 7, 2011.

The project site's existing General Plan land use designation includes R15 (36.5 acres), R5 (21.8 acres), and RA-2 (36.5 acres). The General Plan indicates the "Residential" uses on southern portion of the site (71.3 acres) represent 59 percent of the site, while "Business Park/Light Industrial" used are on the northern portion of the site (approximately 50 acres). The "Business Park/Light Industrial" and "Residential" General Plan land use designations are intended to provide flexibility in the type and mix of land uses of residential with non-residential uses.

Existing on-site zoning consists of five designations, which include Business Park (31.7 acres), Business Park Mixed Use (2.0 acres), Residential 15 District (R15)(36.5 acres), Residential 5 District (R5)(21.8 acres), and Residential Agriculture 2 District (RA-2)(12.2 acres). The RA-2 designation also has a Primary Animal Keeping Overlay (PAKO) designation. Section 4.2, *Agricultural Resources*, provides more information and analysis on impacts related to the PAKO designation.

4.8.1.2 Adjacent and On-site Land Use

The northwestern, northeastern, and east-central portions of the proposed project site, comprising approximately 57.2 acres, are utilized for agriculture (i.e., citrus groves). The southern portion of the project site, comprising approximately 64.1 acres, is also currently vacant. The City of Moreno Valley Fire Station 58 and Moreno Valley Auto Mall and associated Specific Plan area¹ are located west of the project site, but the project site is not within the Specific Plan. SR-60 is adjacent to the project site on the northern boundary, while the existing citrus groves are located east of undeveloped Quincy Street. Vacant land is located directly south of the project site and existing single-family residences, the nearest sensitive receptors, are located approximately 50 feet southeast of the southern boundary of the project site. Other sensitive uses in the area include existing single-family residences approximately 200 feet away from the northern project boundary north of SR-60 along Mesa Top Trail. Future sensitive receptors that may be located in close proximity to the proposed project site include the L'Aquila D'Pietra development located to the south, and the potential residential uses that may occur within areas designated RA-2 to the east and south.

Table 4.8.B and previously referenced Figure 3.2 identify on-site and adjacent land uses.

Table 4.8.B: On-site and Adjacent Land Use

Location	Land Uses
On site	Entire site vacant, citrus groves on northern 57 acres
North	State Route 60; Single-family residential
South U	undeveloped
East	Former Agriculture (hay and alfalfa)
West	Moreno Valley Auto Mall Specific Plan; City of Moreno Valley Fire Station 58

4.8.2 Existing Policies and Regulations

The following goals, objectives, and policies of the City of Moreno Valley General Plan are applicable to the proposed project:

Section 9.2.2 Community Development

- Goal 2.1** A pattern of land uses which organizes future growth, minimizes conflicts between land uses, and which promotes the rational utilization of presently underdeveloped and undeveloped parcels.
- Goal 2.2** An organized, well-designed, high quality, and functional balance of urban and rural land uses that will meet the needs of a diverse population, and promote the optimum degree of health, safety, well-being, and beauty for all areas of the community, while maintaining a sound economic base.
- Goal 2.3** Achieves an overall design statement that will establish a visually unique image throughout the City.
- Objective 2.1** Balance the provision of urban and rural lands within Moreno Valley by providing adequate land for present and future urban and economic development needs, while retaining the significant natural features and the rural character and lifestyle of the northeastern portion of the community.
- Objective 2.5** Promote a mix of industrial uses which provide a sound and diversified economic base and ample employment opportunities for the citizens of Moreno Valley with the establishment of industrial activities that have good access to the regional

¹ The Moreno Valley Auto Mall Specific Plan consists of a 151.9-acre site that encompasses community commercial and multifamily residential uses.

transportation system, accommodate the personal needs of workers and business visitors; and which meets the service needs of local businesses.

Policy 2.5.1 The primary purpose of areas designated Business Park/Industrial is to provide for manufacturing, research and development, warehousing and distribution, as well as office and support commercial activities. The zoning regulations shall identify the particular uses permitted on each parcel of land. Development intensity should not exceed a Floor Area Ratio of 1.00 and the average floor area ratio should be significantly less.

Policy 2.5.2 Locate manufacturing and industrial uses to avoid adverse impacts on surrounding land uses.

Policy 2.5.3 Screen manufacturing and industrial uses where necessary to reduce glare, noise, dust, vibrations and unsightly views.

Policy 2.5.4 Design industrial development to discourage access through residential areas.

Section 9.6.2 Safety Element

Objective 6.6 Promote land use patterns that reduce daily automotive trips and reduce trip distance for work, shopping, school, and recreation.

4.8.3 Methodology

The focus of the land use analysis is on land use impacts that would result from implementation of the proposed project. Land use conflicts are identified and evaluated based on existing land uses, land uses proposed as part of the project, land use designations, and standards and policies related to land use. Land use compatibility is based on the intensity and patterns of land use to determine whether the project would result in incompatible uses or nuisance impacts to sensitive receptors (e.g., residences, medical facilities, or schools).

An evaluation of the potential land use impacts associated with implementation of the proposed project is based on review of the Moreno Valley General Plan and associated Final EIR, Municipal Code, SCAG Regional Comprehensive Plan, SCAG Regional Transportation Plan, SCAG Compass Growth Vision, South Coast Air Quality Management Plan Air Quality Management Plan, Santa Ana Water Quality Control Plan, Riverside County Drainage Area Management Plan, and the Eastern Municipal Water District Urban Water Management Plan. Compatibility of the proposed project with the Western Riverside County Multiple Species Habitat Conservation Plan is discussed in Section 4.4 Biological Resources.

Potential land use conflicts or incompatibility (specifically during construction activities) are usually the result of the other environmental effects, such as the generation of noise or air quality pollutants resulting from grading activities. Specific impacts and consistency issues associated with population and housing, transportation and circulation, noise, air quality, agriculture resources, hazards and hazardous materials, hydrology and water quality, biological resources, cultural and paleontological resources, aesthetics and visual resources, land use, and/or utilities and service systems are addressed in each EIR section. Refer to Sections 4.1 through 4.13 of this EIR for detailed analyses of other relevant environmental effects as they relate to particular issue areas.

4.8.4 Thresholds of Significance

Appendix G of the *State CEQA Guidelines* recognizes the following significance thresholds related to land use. Based on these significance thresholds, potential impacts to land use could be considered significant if the proposed project would:

- Physically divide an established community;

- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the General Plan, Specific Plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect; and/or
- Conflict with any applicable habitat conservation plan or natural community conservation plan.

4.8.5 Less than Significant Impacts

The following potential impacts were determined to be less than significant. In each of the following issues, either no impact would occur (therefore, no mitigation would be required) or adherence to established regulations, standards, and policies would reduce potential impacts to a less than significant level.

4.8.5.1 Physically Divide an Established Community

Threshold	Would the proposed project physically divide an established community?
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Existing and planned land uses along SR-60 include neighborhood commercial centers, distribution centers, residential uses, and agricultural production. Land uses adjacent to the project site include residential uses to the southeast, vacant land to the south, commercial uses to the west, SR-60 and residential uses to the north, and active hay/alfalfa production uses to the east. The project site does not contain any existing housing, nor does the site complement or constitute part of a community or neighborhood.

While the proposed action would not “physically” divide an established community, the approved and proposed industrial uses just south of SR-60 in the eastern portion of the City have in some ways “divided” the overall community of Moreno Valley. These areas in transition to industrial uses were formerly planned for low-density residential uses that could keep animals (i.e., the PAKO designation), and many existing residents have opposed the planned conversion of this area to industrial uses. They have expressed concern about these non-residential uses coming in to their “end” of the City and believe them to be more appropriate in the south western portion of the City, near I-215, where there are a number of existing and proposed industrial uses similar to the proposed project. In this way, the controversy over land use changes in this portion of the City has resulted in the community being divided on this issue.

The transition of the project area north of Eucalyptus Avenue/Fir Avenue and south of SR-60 to industrial uses appears to be consistent with the goals of the City for the following reasons:

- This area is adjacent to a major goods transportation corridor (SR-60);
- The project would not displace any existing land uses (residences or residents); and
- Industrial uses have been developed (Skechers) and approved (West Ridge) just east of the project site, south of SR-60.

However, conversion of the southern portion of the project, south of Eucalyptus Avenue/Fir Avenue, from various residential uses to industrial use would remove an existing buffer or transition of land uses that are typically used to separate residential uses (i.e., southeast of Eucalyptus Avenue/Quincy Channel) from industrial uses.

The project also proposes several circulation changes to better accommodate truck traffic in and out of the project area, including closing off the planned Quincy Street south of SR-60 and extending Encilia Avenue (the existing Eucalyptus Avenue) west of the Quincy Channel to Moreno Beach Drive. The project traffic study evaluated these proposed circulation changes and determined they would have no significant impact relative to the City’s Circulation Element.

The southern portion of the site is currently planned for residential uses, but the proposed industrial uses would consume less water and generate less wastewater than residential uses, so the proposed project would not place any additional burdens on the planned utility network in the area.

Based on this information, it does not appear the proposed project will physically divide an existing established community. No impact related to this issue would occur; therefore, no mitigation is required. A detailed analysis of the project's consistency and compatibility with existing land uses, existing General Plan designations, and zoning designations is provided in Section 4.8.6.1.

4.8.5.2 Conflict with Any Applicable Habitat or Natural Community Conservation Plan

Threshold	Would the proposed project conflict with any applicable habitat conservation plan or natural community conservation plan?
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Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). The project site is located within the MSHCP area.¹ The MSHCP is a comprehensive, multi-jurisdictional effort that includes western Riverside County and fourteen cities to provide a regional approach to conservation planning. The project site is not within an MSHCP criteria cell or habitat linkage. Furthermore, the project site is not located within an MSHCP mammal or amphibian survey area, Narrow Endemic Plant Species Survey Area (NEPSA), Criteria Area Plant Species Survey Area (CAPSSA), or a riparian, wetland, or vernal pool habitat/species survey area.²

While the project site is not within any conservation area delineated in the MSHCP, the project is still subject to provisions of the MSHCP. In particular, the project proponent will be required to provide payment of mitigation fees and adhere to the requirements established in the MSHCP. Pursuant to agreements with the USFWS and the CDFG, the payment of the mitigation fees and compliance provisions of the MSHCP provides full mitigation under the CEQA, FESA, and CESA for impacts to the species and habitats covered by the MSHCP. Since the City has adopted the MSHCP and its requirements and provisions, and since the project is within the City, the proposed project would be required to adhere to applicable MSHCP requirements and fees. Therefore, the proposed project would not conflict with any applicable HCP and no significant impact associated with this issue would occur. No mitigation would be required.

4.8.6 Significant Impacts

The following significant land use and planning impacts were identified for the proposed project, and no feasible mitigation measures are available that would reduce these impacts to less than significant levels. Approval of the proposed General Plan Amendment and Zone Change would be required to make the proposed project consistent with the City's General Plan and zoning designations for the project site. However, the following analysis is based on the project as proposed compared to the existing General Plan land use designations, applicable General Plan objectives and policies, and the existing zoning designations for the project site.

4.8.6.1 Conflict with Applicable Land Use Plans, Policies, or Regulations

Threshold	Would the proposed project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect?
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Section 15125 (d) of the *CEQA Guidelines* requires EIRs to "discuss any inconsistencies between the proposed project and applicable general plans and regional plans." The objective of such a

¹ City of Moreno Valley General Plan Final Program EIR, Figure 5.9-4 Reche Canyon/Badlands Area.
² <http://www.rctlma.org/gis/rciprepgen.html>, site accessed December 4, 2007.

discussion is to find ways to modify the project, if warranted, to reduce any identified inconsistencies with relevant plans and policies. Pursuant to CEQA Section 15125 (d), this EIR section includes an evaluation of the consistency of the proposed project with pertinent goals and policies of relevant adopted local plans (e.g., City General Plan, Housing Element) and regional plans. Because certain plans are more specifically tailored to other issue areas, such as air quality, transportation, biology, hazards, water quality, and water supply, the local and regional plans identified below are addressed in detail in other sections of this EIR.

Regional Plans, Policies, or Regulations

Regional Comprehensive Plan (RCP). The SCAG, the designated metropolitan planning organization (MPO) for the Counties of Ventura, Orange, San Bernardino, Riverside, Imperial, and Los Angeles, is federally mandated to develop plans for transportation, growth management, hazardous waste management, and air quality. With its members and other regional planning entities, the SCAG has prepared the RCP to serve as a framework to guide decision-making with respect to the growth and changes that can be anticipated in the region through the year 2015.

The RCP consists of five core chapters that contain goals, policies, implementation, and strategies to achieve the SCAG's overall goals of improving the standard of living for all; improving the quality of life for all; and enhancing equity and access to government. Local governments are required to use the RCP as the basis for their own plans and are required to discuss the consistency of projects of "regional significance" with the RCP. While the SCAG's Draft 2008 RCP is available, it has not yet been adopted. The Draft 2008 RCP has nine chapters and each chapter is based on a specific area of planning or resource management. As these chapters are still in the draft stage, goals and policies found within these chapters have not been considered in the following consistency analysis. The most recent regional land use policy document adopted by the SCAG was originally adopted in 1994 and revised in 1996. The document is described as a regional policy framework for future land use decisions in Riverside County that respects the need for strong local control, but that also recognizes the importance of regional comprehensive planning for issues of regional significance.

Projects of regional significance, including General Plans, are subject to review by the SCAG to evaluate conformity with the Regional Comprehensive Plan and Guide. The Regional Comprehensive Plan and Guide identify strategies for local government actions that have regional implications (e.g., adoption and implementation of land use policies in a General Plan). As indicated in the City's General Plan Environmental Impact Report (certified on April 26, 2005), the adoption and implementation of the City's General Plan would be consistent with regional plans that are based on SCAG population projections.

Additionally, the document contains policies that (1) direct growth where regional infrastructure (e.g., freeways, transit, water, solid waste disposal, and sewage treatment) is available and natural resources will not be overburdened, (2) encourage development that discourage long-distance commuting, (3) establish firm growth boundaries, and (4) encourage provision of housing at all levels. The proposed project would be generally consistent with these policies, in that (1) existing regional infrastructure (e.g., freeways, transit, water, solid waste disposal, sewage treatment, and utilities) is available and would not be overburdened; (2) it encourages development that discourages long-distance commuting by providing employment opportunities in a City that is housing rich and jobs poor; (3) it establishes firm growth boundaries; (4) it could be served by existing regional infrastructure systems, with improvements as recommended in Section 4.11 (Transportation and Circulation) and Section 4.12 (Public Services and Utilities); and (5) it would facilitate increased local employment growth and provide improved opportunities that together would assist the City in achieving a better balance between local jobs and employed residents. By providing "blue collar" employment in an area planned for residential uses, the project may incrementally reduce the need for long-distance commuting of City and other area residents to job centers. At the time the EIR was written, there were no commitments from specific companies to purchase or lease the industrial

buildings, so the types, numbers, and the pay for the jobs that will be created is not certain. Specific growth management, regional mobility, and air quality policies of the RCP are discussed below.

Policy 3.01 The population, housing, and job forecasts, which are adopted by the SCAG's Regional Council and that reflect local plans and policies, shall be used by the SCAG in all phases of implementation and review.

Construction activities resulting from the proposed project's implementation would be short-term and temporary. Construction personnel are anticipated to come from the surrounding region and are not expected to generate a permanent increase in population levels or result in a decrease in available housing. Direct population increases are generally associated with residential developments and as there are no residential uses proposed for the project, there would be no direct increase in population. As most of the new employment opportunities are anticipated to be filled by existing local area residents, a large influx of new residents to the City is not anticipated. Based on SCAG forecasts, the number of jobs in the City of Moreno Valley is expected to increase from 46,416 jobs in 2010 to approximately 86,993 jobs in 2030. A similar job trend is forecast for Riverside County. Employment at the proposed project would total approximately 1,532 jobs based on the estimates identified by the SCAG in the regional Employment Density Report.¹ The project would eliminate the potential for a maximum of 681 housing units and replace them with (a total of) 2.2 million square feet of industrial uses (see also City Housing Element consistency below). This change would incrementally reduce housing growth but in turn increase employment growth. Since Moreno Valley is considered a "housing rich" area (higher housing to employment ratio than the regional average), as outlined in Policy 3.11 below, the increase from the proposed project would be generally consistent with the employment projections adopted by the SCAG.

Policy 3.05 Encourage patterns of urban development and land use that reduce costs of infrastructure construction and make better use of existing facilities.

The proposed project would be located in an urbanizing area, for which roadways and utility infrastructure already exist and municipal services are provided. The existing Fir Avenue west of the project site is a paved roadway with existing sewer manholes and fire hydrants. Project construction would involve connecting to existing water and sewer lines to the east and west of the project site, which would complete the water and sewer networks in this area. During project construction, the utilities, particularly electricity and natural gas, would be expanded to serve the needs of the proposed project. The supply of electricity and natural gas is demand-responsive and the project proponent would be required to meet the service requirements of these utility providers. By maximizing the use of existing facilities, the costs of expanding infrastructure would be minimized. Because the proposed project would be located in close proximity to commercial and residential structures requiring a similar type of infrastructure, it is consistent with this growth management policy.

Policy 3.09 Support local jurisdictions' efforts to minimize the cost of infrastructure and public service delivery, and efforts to seek new sources of funding for development and the provision of services.

Existing commercial and residential development is located in the immediate vicinity of the project site where infrastructure for water, sewer, storm drainage, electrical, natural gas, transportation facilities, and a fire station currently exist. The availability of this existing infrastructure would reduce the cost to public agencies that would provide services to the project area. The proposed project would be developed in an area where such infrastructure is available. Furthermore, the project applicant would pay all applicable development fees for the necessary infrastructure and public service improvements, including those associated with water, sewer, drainage, roadways, fire, and police; therefore, the proposed project is consistent with this policy.

¹ *Employment Density Report*, Southern California Association of Governments, Natelson Company, Inc., October 2001.

Policy 3.10 Support local jurisdictions' actions to minimize red tape and expedite the permitting process to maintain economic vitality and competitiveness.

The proposed project will be developed in cooperation with and with input from City staff, and the elected representation of the City. Additionally, through the public review process required under CEQA, local and regional agencies (e. g., Riverside Transit Agency [RTA], SCAG, and SCAQMD) have provided and will provide comment on the proposed project throughout the planning process. Agency participation and consultation during the project development process is expected to expedite the permitting process for the proposed project. As such, the project would be consistent with this SCAG policy.

Policy 3.11 Support provisions and incentives by local jurisdiction to attract housing growth in job-rich sub-regions and job growth in housing-rich sub-regions.

According to the regional growth forecast developed by the SCAG, ¹ employment in the City of Moreno Valley will increase from 46,416 jobs in 2010 to approximately 76,485 jobs in 2025, with the number of households increasing from 47,295 households in 2010 to approximately 65,591 households in 2025. Over this fifteen-year period, the jobs-to-housing ratio increases from 0.98 to 1.17 indicating that the City would transition from a jobs-poor area to a more balanced area in terms of jobs and housing. By comparison, the jobs/housing ratio for the SCAG region is currently 1.43 and is projected to be 1.37 by 2030 (see Table 4.10.F, Section 4.10, Population and Housing). The proposed project would result in additional jobs in the City, which currently has a higher number of households than jobs and supports the regional policy of attracting jobs to housing-rich sub-regions. The City of Moreno Valley is currently considered a housing-rich area, so the replacement of some planned housing with employment-generating uses is consistent with this long-term growth goal. The additional jobs resulting from the proposed project are consistent with SCAG forecasts for the City and would improve the City's jobs-to-housing ratio.

Policy 3.12 Encourage existing or proposed local jurisdictions' programs aimed at designing land uses which encourage the use of transit and thus reduce the need for roadway expansion, reduce the number of auto trips and vehicle miles traveled, and create opportunities for residents to walk and bike.

The proposed project would result in the development of employment opportunities in close proximity to existing residential development. The type of uses proposed will increase truck traffic on local roads connecting to SR-60, but will not increase truck traffic through residential neighborhoods. RTA Routes 17 and 210 operate in the project area.² Route 17 operates along Moreno Beach Drive, Auto Mall Parkway, Nason Street, and Cactus Avenue while Route 210 operates along SR-60 starting in Banning and ending at Downtown Riverside. Through consultation with the RTA, the project applicant will coordinate and facilitate the use of public transit to access the project site through such means as installing additional bus stops if needed. The provision of additional employment options in proximity

to existing residential development may help reduce vehicle miles traveled if area residents are employed at the new industrial uses; therefore, the proposed project is generally consistent with this policy.

Policy 3.13 Encourage local jurisdiction's plans that maximize the use of existing urbanized areas accessible to transit through infill and redevelopment.

The proposed project is located within an area of the City that is in the process of being urbanized with other industrial development projects that have already been approved or constructed (i.e., West

¹ *City Projections*, Southern California Association of Governments, www.scag.gov/forecast/downloads/2004gf.xls, 2004.

² *Route Schedules*, Riverside Transit Agency, http://www.riversidetransit.com/bus_info/schedules.htm, website accessed May 9, 2008.

Ridge and Skechers). The project site is accessible to transit and existing infrastructure and would maximize the use of existing urbanized areas and services.

Policy 3.14 Support local plans to increase density of future development located at strategic points along the regional commuter rail, transit systems, and activity centers.

The currently planned land use pattern in this area includes business park uses along the SR-60 frontage, and single-family uses including half-acre lots zoned for animal keeping. The proposed changes in land use are generally consistent with current residential uses to the south based on the minimum 250-foot industrial-residential buffer (CMC 9.05), and are consistent with the completed Skechers warehouse project east of Redlands Boulevard (south of SR-60) and the recently approved West Ridge industrial warehouse project just east of the proposed project. Unlike the Skechers or West Ridge project, the proposed project would involve a General Plan Amendment and Zoning Change to eliminate residential uses on the project site in favor of industrial uses.

The proposed project is in close proximity to State Route 60, which is considered a regional transportation corridor and RTA Route 210, which can be considered a regional transit system as the route begins in Banning and continues until reaching Downtown Riverside. As such, the proposed project would be consistent with Policy 3.14.

Policy 3.16 Encourage developments in and around activity centers, transportation corridors, underutilized infrastructure systems, and areas needing recycling and redevelopment.

The project site is located along SR-60, a local and regional transportation corridor. Redlands Boulevard to the east and Moreno Beach Drive to the west are fully-paved roads with existing sewer manholes and fire hydrants indicating the presence of water and sewage facilities. The proposed project is consistent with Policy 3.16 in that it exists along a major transportation corridor of the City and will be connecting to the existing utilities in Redlands Boulevard and Moreno Beach Drive, consistent with the EMWD plan of service for this area.

Policy 3.18 Encourage planned development in locations likely to cause adverse environmental impact.

As required, mitigation has been identified that would avoid or reduce the majority of the environmental impacts associated with the development of the proposed project to a less than significant level. Long-term operation air pollutant emissions and cumulative air pollutant emissions remained significant after the implementation of mitigation. The proposed project incrementally contributes to adverse regional air quality conditions. Cumulative traffic impacts were determined to be significant and unavoidable. The significant environmental impacts resulting from the implementation of the project would not be reduced by undertaking the proposed project at an alternative location because grading of a site and operation of the proposed uses will have to occur whether on the proposed project site or on another site in the City.

Policy 3.20 Vital resources such as wetlands, groundwater recharge areas, woodlands, production lands, and land containing unique and endangered plants and animals should be protected.

As identified in Section 4.4.6.2 of this EIR (Riparian Habitat or Other Sensitive Natural Communities), the proposed project contains three ephemeral drainages: the Quincy Channel (adjacent and east of the project site), and two unnamed drainages in the southern and southwestern portions of the site. Quincy Channel, located off site and adjacent to the proposed project site, supports two types of disturbed riparian habitat: southern willow scrub and mule fat scrub. Improvements would be made to Quincy Channel, such as the installation of a concrete wall along the western channel edge to prevent erosion, which will be maintained by the County or the project applicant as appropriate. To accommodate this feature, a portion of riparian habitat would need to be removed. However, the

proposed project would provide on-site or off-site replacement or protection of such habitat as outlined in **Mitigation Measure 4.4.6.4A**.

The burrowing owl is a transient species that utilizes pre-existing burrows created by small mammals as nesting areas during breeding season and is a CDFG Species of Special Concern. The focused surveys concluded that no burrowing owls were found to be utilizing the project site. However, in the event that burrowing owls are discovered to occupy the site, **Mitigation Measures 4.4.6.1A** and **4.4.6.1B** are identified to reduce impacts to this species and can be found in Section 4.4.6.1 of this EIR. Where necessary, mitigation was identified to reduce the severity of impacts to a less than significant level thus remaining consistent with Policy 3.20.

Policy 3.21 Encourage the implementation of measures aimed at the preservation and protection of the recorded and unrecorded cultural resources and archaeological sites.

The proposed project site is not located in an area that contains significant archaeological or historic resources. Although the project site is not located in an area containing such resources, the project site was identified as being within an area that has a high potential for paleontological resources to occur. If significant paleontological resources are found during any phase of construction, mitigation has been developed that would ensure appropriate recordation or preservation techniques are implemented. Details of this mitigation measure can be found in Section 4.5 of this EIR. Given these circumstances, the proposed project is consistent with this particular SCAG policy.

Policy 3.22 Discourage development, or encourage the use of special design requirement, in areas with steep slopes, high fire, flood, and seismic hazards.

The project would be consistent with Policy 3.22, in that project would not be located in an area with steep slopes or high fire or flood hazards. Project facilities will be designed and developed to withstand seismic hazards based on applicable standards and regulations contained in the California Uniform Building Code.

Policy 3.23 Encourage mitigation measures that reduce noise in certain locations, measures aimed at preservation of biological and ecological resources, measures that would reduce exposure to seismic hazards, minimize earthquake damage, and to develop emergency response and recovery plans.

As stated in Section 2.4.1 of this EIR, no significant impact related to on-site geological conditions was identified. Implementation of the proposed project would increase the number of noise sources in the proposed project vicinity. As detailed in Section 4.9 of this EIR, no significant construction or operational noise would result from development of the proposed on-site use. Implementation of the proposed project would result in new development on the project site that would not have a substantial adverse impact on biological and ecological resources.

The proposed project would not impair implementation of, or physically interfere with, emergency and evacuation efforts as all roadway or travel lane closures associated with the proposed project construction would be coordinated with City emergency response personnel. In addition, all access roads to the project site would comply with the required street widths, as determined in the City's building code and applicable police and fire codes. Based on this information, the proposed project is consistent with this SCAG policy.

Policy 5.11 Through the environmental review process, ensure that at all levels of government (regional, air basin, county, subregional, and local) consider air quality, land use, transportation, and economic relationships to ensure consistency and minimize conflicts.

The EIR conducted for the proposed project fully addresses air quality (Section 4.3), land use (Section 4.8), and transportation (Section 4.11) impacts that would result and are anticipated to occur

with the implementation of the proposed project and considers all relevant planning documents, such as the AQ MP and the Congestion Management Program (CMP). The EIR provides mitigation measures to reduce significant environmental impacts to a less than significant level where possible, but not for cumulative traffic and air quality impacts. Therefore, the proposed project is only partially consistent with this policy.

Regional Transportation Plan (RTP). The 2008 RTP adopted by the SCAG contains a set of existing socioeconomic projections that is used as the basis for the SCAG's transportation planning efforts. They include projections of population, housing, and employment at the regional, county, sub-regional, jurisdictional, census tract, and transportation analysis zone (TAZ) levels. The RTP includes policies and regulations set forth to ensure development within the SCAG regional area is within planned and forecast socioeconomic projections. Applicable goals established within the RTP include the following:

- Maximize mobility and accessibility for all people and goods in the region (discussed in Section 4.11: Transportation and Traffic);
- Ensure travel safety and reliability for all people and goods in the region (discussed in Section 4.11: Transportation and Traffic);
- Preserve and ensure a sustainable regional transportation system (discussed in Section 4.11: Transportation and Traffic);
- Maximize the productivity of our transportation system (discussed in Section 4.11: Transportation and Traffic);
- Protect the environment, improve air quality, and promote energy efficiency (discussed in Section 4.3: Air Quality); and
- Encourage land use and growth patterns that complement our transportation investments (discussed in Section 4.11: Transportation and Traffic).

The proposed project is consistent with the RTP such that the proposed project would be required to adhere to the City of Moreno Valley's General Plan. The General Plan contains goals and policies that aim to minimize traffic congestion, provide adequate transportation facilities, and require development to pay its share of costs. The goals and policies identified in the City's General Plan resemble those of the RTP that address mobility, traffic safety, environmental concerns, and land use consistency as the major traffic study factors to identify existing traffic conditions and to assess the future effects on a relevant traffic pattern/flow. Where necessary, mitigation measures have been identified to reduce the effect of project-related traffic impacts.

Compass Growth Vision. The Compass Growth Vision plan provides a framework for local and regional decision-making regarding growth, transportation, land use, and economic development. The framework includes principles and a specific set of strategies intended to achieve and improve the quality of life that promotes and sustains for future generations the region's mobility, livability, and prosperity. The main objective of the Compass Growth Vision is to manage the forecast growth while improving future living conditions for all people within the SCAG area, including live, work, and play activities. The following discussion includes the principles within the Compass Growth Vision plan and their association to the proposed project.

- *Principle 1:* Improve mobility for all residents;
- *Principle 2:* Foster livability in all communities;
- *Principle 3:* Enable prosperity for all people; and
- *Principle 4:* Promote sustainability for future generations.

The proposed project may not be fully consistent with the four growth principles identified above. The nature of the proposed project allows the transport of commodities from a single area rather than multiple areas, minimizing vehicle trip generation. Conversely, trucks from the proposed project may increase localized and freeway congestion. The project eliminates a planned transition of land uses that may incrementally reduce livability in this portion of the City. The proposed project does support increased prosperity by providing additional (mainly "blue collar") employment opportunities close to existing housing within the City of Moreno Valley. The proposed project is located in an area where existing infrastructure (freeway, sewer, electrical, water, etc.) is present. The development of the proposed project will augment existing services available in the City and region. In these ways, the project is only partially consistent with the four principles of the Compass Growth Vision.

SCAQMD Air Quality Management Plan. In California, the CARB coordinates and oversees both State and Federal air quality control programs. The CARB's primary functions include establishing and updating the California ambient air quality standards, monitoring existing air quality, controlling emissions from mobile sources, and developing the State Implementation Plan (SIP). The SIP is the State's overall air quality control strategy for both mobile and stationary sources. Control programs for these sources are carried out at the regional or county level.

The current regional air quality plan is the 2007 AQMP adopted by the SCAQMD on June 1, 2007. The 2007 AQMP employs the most up-to-date science and analytical tools and incorporates a comprehensive strategy aimed at controlling pollution from all sources, including stationary sources, on-road and off-road mobile sources, and area sources. The 2007 AQMP also updates the attainment demonstration for the standards for ozone and PM₁₀, and proposes attainment demonstration with a more focused control of sulfur oxides, directly emitted PM_{2.5}, nitrogen oxides, and volatile organic compounds by 2015.

A discussion of the proposed project's consistency with the 2007 AQMP has been analyzed in Section 4.3 (Air Quality) of this EIR. "Since the proposed project will require a General Plan Amendment, the project has not been considered in preparation of the City's General Plan and therefore is inconsistent with the AQMP. Amendments to the City of Moreno Valley General Plan, zoning reclassification, and plan approval are required before the affected portion of the proposed project can be implemented. This is a significant impact requiring mitigation." That section of this EIR concluded that, despite the recommended mitigation, project air quality impacts related to the AQMP would remain significant.

Santa Ana Water Quality Control Plan (Basin Plan). The Santa Ana Basin Plan, which is implemented by the Santa Ana Regional Water Quality Control Board (RWQCB), specifically (1) designates beneficial uses for surface and ground waters, (2) sets qualitative and quantitative objectives that must be attained and maintained at that level in order to protect the designated beneficial uses and conform to the State's anti-degradation policy, and (3) describes implementation policies and programs to protect all waters in the region. In cases where the Basin Plan does not contain a standard for a particular pollutant, other criteria are used to establish a standard. Storm water runoff from the proposed project will eventually make its way to the San Jacinto River. Because the proposed project is required to comply with all applicable water quality standards and requirements established by the RWQCB, and is therefore in compliance with the NPDES permitting system, the proposed project would be consistent with the Basin Plan.

Riverside County Drainage Area Management Plan (DAMP). Like the Basin Plan, the Drainage Area Management Plan deals primarily with the Santa Ana Region. The DAMP describes a wide range of continuing and enhanced BMPs and control techniques for development projects within a municipality and are being implemented during the five-year terms of the third-term MS4 permits. In essence, the DAMP describes the overall urban runoff management strategies planned by the permittees in the Santa Ana Region. The proposed project is required to comply with all applicable

drainage standards and requirements designed to protect water resources and enhance water quality and would therefore, be consistent with the DAMP.

Eastern Municipal Water District Urban Water Management Plan (EMWD UWMP). The UWMP is required of every urban water supplier in order to be in compliance with the Urban Water Management Plan Act. The UWMP includes an assessment of current and projected water supplies, evaluation of water demand, customer types, and reliability of water supplies, description of conservation measures, a response plan for water shortage, and a comparison of demand and supply projections. The proposed project is required to comply with all applicable standards and requirements designed to conserve water supplies and ensure water source reliability for future years prior to the approval of the project. As such, the proposed project would be consistent with the EMWD UWMP.

March Air Reserve Base Airport Land Use Compatibility Plan. The March Air Reserve Base is located in the County of Riverside, west of and adjacent to the City of Moreno Valley, approximately 5.5 miles southwest of the project site. Since the proposed project is not located within the March Reserve Base Airport Specific Plan Area or Airport Influence Zone,¹ the proposed project is not subject to a consistency analysis with the March Air Reserve Base Airport Land Use Compatibility Plan.

City of Moreno Valley Plans, Policies, or Regulations

City General Plan. By law, all activities undertaken by a planning agency must be consistent with the goals and policies of the community's general plan. The City of Moreno Valley Plan *Community Development Chapter*, as adopted in 2006, plays a central planning role in correlating all City land use issues, goals, and objectives into one set of development policies. Currently adopted Land Use Map designations for the existing project site are summarized below, followed by a listing of those land use goals, policies, and guidelines from the City's General Plan that are relevant to the consideration of the proposed project and its land use impacts. These General Plan community development designations, goals, policies, and guidelines are incorporated into the proposed project, and would govern all development actions set forth in or facilitated by the proposed project's construction.

GP Land Use Element. Adopted General Plan Land Use Map designations for the existing project area largely reflect the existing land use pattern. The northern portion of the proposed project site is designated Business Park/Light Industrial, while the southern area, south of proposed Eucalyptus Avenue, is designated Residential in the City's General Plan. The primary purpose of areas designated Business Park/Light Industrial is to provide for manufacturing, research and development, warehousing and distribution, as well as office and support commercial activities.²

The proposed project is not consistent with the current General Plan and zoning, and includes a General Plan Amendment (and related Zone Change) so the project will be consistent with the General Plan.

Implementation of the proposed project would result in the development of six industrial buildings totaling approximately 2.2 million square feet of industrial uses. Although warehousing and distribution uses are allowed in the Business Park General Plan land use designation, the existing Business Park Zone limits the size of buildings to no more than 50,000 square feet. Buildings 1 and 2, totaling approximately 1 million square feet, would be consistent with the type of uses permitted in the

¹ March Air Reserve Compatibility Plan, December 29, 2004. [http://www.rcaluc.org/filemanager/plan/old//March%20Air%20Reserve%20Base%20\(MARB\).pdf](http://www.rcaluc.org/filemanager/plan/old//March%20Air%20Reserve%20Base%20(MARB).pdf), accessed May 9, 2008.

² Moreno Valley General Plan. *Chapter 9 Goals and Objectives. Policy 2.5.1.* Pg. 9-7.

Business Park General Plan land use designation. However, because there is a limit of the size of building permitted in the Business Park zoning designation, the proposed buildings would still require a Zone Change to allow the development of buildings greater than 50,000 square feet. Because the southern portion of the proposed project site is currently designated for residential uses, the construction of Buildings 3 through 6 would not be consistent with the existing General Plan land use designation. Therefore, implementation of the proposed project would require a General Plan Amendment to change the proposed project's southern designation from Residential to Business Park/Light Industrial. Such an amendment to the General Plan and zoning uses would enable consistency between the proposed project and uses permitted in the Business Park/Light Industrial General Plan land use designation.

General Plan Objective 2.1 and Policy 2.5.1 require a transition of buffer of land uses between residential and industrial uses. In this area, the R5 and R15 zone areas in the southern portion of the site act as a buffer from the BP uses near the freeway and the RA2 residential uses. It should be noted that, while there is an existing transition of land uses from BP to R2 in the vicinity of the project site, it is not the function of either the R-5 or R-15 zones to act as a buffer between non-residential land uses and low density residential uses. The project is consistent with Municipal Code Section 9.05, which requires a minimum 250-foot buffer between industrial and residential land uses, and the proposed project provides a buffer of 395 feet to the closest residential use. Therefore, implementation of the proposed project with approval of the General Plan Amendment would not result in General Plan land use inconsistencies between existing and proposed land uses in the southern portion of the proposed project site, and would not result in a significant land use impact.

Approval of the proposed General Plan Amendment would require the City Council to determine that the layout of the proposed project provides an adequate buffer between the existing residential neighborhood and the planned industrial uses.

City Municipal Code. Section 9.05, Industrial Districts, of the City Municipal Code requires a minimum 250-foot buffer between residential uses and truck activity areas of industrial uses. The site plan of the proposed project provides a buffer of at most 400 feet from the closest residence to the southeast, so the project is consistent with this adopted land use buffer requirement.

GP Circulation Element. In addition to the General Plan Amendment to change existing General Plan land use designations, the proposed project would also require a General Plan Amendment to change the City's General Plan Circulation Element. These changes involve the:

- Elimination of the undeveloped Quincy Street south of SR-60 within the project site;
- Renaming of existing Eucalyptus Avenue (south of the project site and east of the Quincy Channel) to Encilia Avenue; and
- Elimination of a north-south segment of Encilia Avenue through the project site, but Encilia would still connect with Moreno Beach Drive to the west.

Previously referenced Figure 3.3 provides a comparison of these changes versus existing roadway and access conditions. It should be noted that a recent amendment to the Circulation Element included the extension of Fir Avenue westerly from Quincy Street connecting to existing Eucalyptus Avenue (in the Moreno Valley Auto Center) and renaming it Eucalyptus Avenue.

The project traffic study indicates that removal of undeveloped Quincy Street south of SR-60 would not significantly affect the existing circulation network as that portion of Quincy Street is currently a dirt access road, which does not directly connect to existing or planned arterials, collector roads, or over crossings. Additionally, as indicated in the City's General Plan Final EIR, previously planned freeway overcrossings at Sinclair Street and Quincy Street would not occur as the light traffic volumes

on Sinclair Street and Quincy Street did not justify the construction of the overcrossing.¹ Therefore, the elimination of Quincy Street south of SR-60 would not have a significant land use impact.

The extension and connection of Eucalyptus Avenue by the proposed project would connect two segments of an east-west arterial road as well as link two north-south major arterial roads. With the recent amendment to the Circulation Element in place, the existing Eucalyptus Avenue (in the Moreno Valley Auto Center) and the former Fir Avenue would be connected with a roadway segment that would cross the proposed project site in an east-west direction (i.e., new Eucalyptus Avenue). The former Eucalyptus Avenue would be renamed to Encilia Avenue but would be extended west from just east of the Quincy Channel to Moreno Beach Drive. The western alignment of Encilia Avenue (i.e., west of the Quincy Channel) may change once other future development projects adjacent to the project site are developed. This topic is addressed in detail in Section 4.11, *Transportation and Traffic*, of this EIR. Although the proposed project would reconfigure the existing local roadway network, such changes would not result in significant land use impacts; therefore, impacts in this regard would be less than significant and no mitigation would be required.

General Plan Housing Element. The proposed project would result in the loss of potential housing units as the General Plan Amendment (GPA) and Zone Change (ZC) request a change to industrial uses (see Table 4.8.C). Development of the site as proposed could eliminate as many as 681 housing units from the site, with 80 percent of those units (548) at a density that is generally accepted as helping to promote housing affordability (15 units per acre) on a regional level. Economic conditions are very difficult for new housing sales at present, but these changes may incrementally hinder the City's ability to achieve its affordable housing goals in the future.

Table 4.8.C: Potential Housing Impacts

Zone	Acres/Density	Maximum Units	Average Units (80% of max)
R-15	36.5 ac × 15 du/ac	548	438
R-5	21.8 ac × 5 du/ac	109	87
RA-2	12.2 ac × 2 du/ac	24	19
Total	70.5 acres	681	544

Notes: R-15 Multi-Family; R-5 Suburban Residential; and RA-2 Residential Agriculture
Source: City General Plan Land Use Map, August 2010; City Zoning Map, November 7, 2011.

A portion of the project site is shown in the latest Housing Element for the City (2008–2014) as a potential location for multifamily residential affordable housing in the future (2011 Housing Element, Vacant Properties Inventory). The 2011 Housing Element (Table 20-8, *Sites Inventory Summary for All Income Groups*) states that the total number of potential affordable units from the Amended Inventory is 20,894 and the City's Regional Housing Needs Assessment (RHNA) allocation is 7,474, or 2.8 times as much as the RHNA allocation.

The loss of the (max) potential 548 units (R-15 land) from the proposed project would reduce the total potential affordable units from 20,894 to 20,346 or still 2.7 times the RHNA number. The proposed project would not reduce the City's potential pool of affordable housing to below its RHNA number; therefore, it would not create a significant impact related to the City's Housing Element.

Jobs vs. Housing Balance. The proposed project would provide jobs in an area that is considered "housing-rich" or "jobs-poor" by SCAG standards and would contribute toward the maintenance of a sound economic base. The proposed project would incrementally reduce the potential for higher density housing in this portion of the City (i.e., loss of 36.5 acres of land planned for maximum of 15 units per acre). Although the proposed project would result in a reduction of land available for

¹ Section 5.2 Traffic/Circulation, Moreno Valley General Plan Final Program EIR, City of Moreno Valley, July 2006.

residential development, the City currently has 6.02 percent (3,198 units) of its existing housing inventory vacant.¹ The number of units currently vacant (3,198 units) would be much greater than the number of residences that could be built on the southern portion of the site, under the existing zoning designation (up to 681 units, average 545 units based on 80% of maximum). Under current economic conditions, the conversion of 71 acres of residentially zoned land to warehouse uses would not be expected to cause a shortage of housing units within the City.

Although the proposed project would introduce a type of land use not historically associated with the rural character and lifestyle of the northeastern portion of the City, it would provide an opportunity for the City to provide adequate land for present and future urban and economic development needs. The proposed project would provide additional employment opportunities for Moreno Valley citizens, and would also have good access to the regional transportation system corridors such as SR-60. The proposed project is located in an area where various land uses occur or are being planned. Such land uses include existing residential uses, public services uses, and retail uses. Existing residences are located to the north of SR-60, vacant RA-2 zoned land to the east, existing residences to the southeast, proposed residential to the south, and vacant RA-2 zoned land to the southwest and west.

Animal Keeping Designation. An approximately 12-acre portion of the project site is zoned Residential Agriculture RA-2 located near the southern portion of the project site. The RA-2 zone is within the City's Primary Animal Keeping Overlay (PAKO), which helps protect animal keeping and the rural character of the areas noted within the overlay district and designates a portion of the parcel for medium and large animal keeping. With the development of the project, this portion of the site would be rezoned to Light Industrial to allow for the proposed warehouse distribution uses and would also be removed from the PAKO. Because this portion of the site will no longer be within the PAKO, the area available for animal keeping within the City will be reduced by approximately 0.4 percent. For an analysis of this issue, see Section 4.2, *Agricultural Resources*, which determined potential impacts in this regard were less than significant since the project will only remove 0.4 percent of the designated PAKO land in the City.

Municipal Code Consistency. Implementation of the proposed project would require a Zone Change from the existing Business Park (BP), Business Park Mixed Use (BPX), Multi-Family Residential (R-15), Suburban Residential (R-5), and Residential Agriculture (RA-2) on-site zone designations to Light Industrial (LI) for the entire 122.8 acres.

The purpose of the LI zoning designation is to provide for light manufacturing, light industrial, research and development, warehousing and distribution and multi-tenant industrial uses as well as certain supporting administrative and professional offices and commercial uses on a limited basis. In a similar manner, the existing zoning of BP on the northern portion of the site provides for light industrial, research and development, office-based firms and limited supportive commercial uses. The BP zoning, which restricts buildings to no more than 50,000 square feet, is intended to provide a transition between residential and other sensitive uses and more intense industrial uses.

The project proposes the development of warehouse uses, which would result in an inconsistency with the existing residential zoning on the southern portion of the site, and the BP zone on the northern portion of the site. The development that would occur with the zone change has the potential to create indirect environmental impacts since the zone change would permit more intense and larger industrial/warehousing uses on the project site, requiring a discretionary action based on an environmental determination of the project. These environmental impacts are analyzed through this EIR for each of the environmental topics. The baseline for comparative analysis of environmental impacts would be the existing condition of the project site. Currently, there is no existing development on the project site, which represents the worst-case scenario on which the EIR analysis is based.

¹ Table E-5 City/County Population and Housing Estimates, Revised January 1, 2008. http://www.dof.ca.gov/research/demographic/reports/estimates/e-5_2001-06/documents/E-5_2008%20Internet%20Version.xls Website accessed May 1, 2008.

With implementation of the zone change, the proposed project would be consistent with zoning requirements identified by the City.

The City recently approved a Municipal Code (MC) amendment (Ordinance #830) to establish a minimum buffer or distance of 250 feet between any residential zoning district and any adjacent industrial truck court or primary truck circulation driveway. According to the current development plan, trucks traveling to the proposed project would directly access the truck courts from future Eucalyptus Avenue and would not utilize the driveways around the perimeter of the buildings because access to the loading bays is much more direct. The proposed project would be located near an existing single-family residence tract, and the southern portion of the site, closest to the existing residences, is currently planned for residential and business park uses as a buffer between residential and industrial uses.

According to the latest development plans, the closest loading and unloading operations of the proposed project (e.g., truck courts) would be located 395 feet northwest of the nearest single-family residence (see plans in Appendix K). In addition, the reconfigured roadways surrounding the project site would discourage industrial traffic through the residential areas to the southeast. Despite these design characteristics, the fundamental change from residential/business park uses to industrial adjacent to residential represents an incremental adverse effect on the "quality of life" of existing residents in this area, which represents a potentially significant land use compatibility impact. This impact requires the City Council to approve a Zone Change to bring the proposed zoning designations into consistency with the Zoning Map and Municipal Code.

Other Environmental Impacts. To determine more specifically how the proposed project and its related growth impacts relate to adopted General Plan policies, each environmental analysis chapter of this EIR includes a subsection that describes those applicable General Plan policies adopted for the purpose of avoiding or mitigating a pertinent environmental effect.

Master Plan of Trails. The project must also be evaluated within the City's Master Plan of Trails (MPT). On February 1, 2012, the City Trails Commission recommended amending the MPT to City Council to remove the multi-use trail segment along the west side of the Quincy Channel between Fir Avenue/Future Eucalyptus Avenue and SR-60 as part of this project. The Commission instead identified a new segment of multi-use trail along the north side of Fir Avenue/Future Eucalyptus Avenue from the west side of the Quincy Channel to Fire Station # 58 to the west (the western boundary of the project site). The applicant has agreed to include this new trail segment in the project site plan, and this change will be incorporated into the project as part of the development review approval process.

4.8.7 Cumulative Impacts

Implementation of the proposed project represents establishment of new land uses within the currently undeveloped project site that would result in an intensification of permitted land uses associated with a land use change from Business Park and Residential to Light Industrial uses, changes to the General Plan Circulation Element, and the loss of the PAKO associated with the RA-2 zone. As outlined in the analysis in Section 4.8.6.1, the proposed project is generally consistent with regional plans and planning efforts, although it is not fully consistent with the SCAG's RTP and Compass Blueprint Plan because it eliminates some housing in favor of industrial employment uses. However, it will incrementally improve the City's long-standing jobs/housing ratio, which is also a regional goal of the various SCAG plans. It is also not consistent with existing General Plan land use designations, objectives and policies, nor is it consistent with existing zoning designations on the site. For these reasons, a General Plan Amendment and Zone Change are proposed for consideration by the City.

The project proposes more intense land uses (i.e., from residential and business park uses to industrial uses) which will result in significant air quality and traffic impacts (see Sections 4.3 and 4.11, respectively), and both were found to be cumulatively considerable even after implementation of all project-specific mitigation.

In addition, the proposed project represents a fundamental change in community character for this portion of the City (i.e., mixed residential and business park to industrial warehouse buildings), which can represent an incremental adverse change in terms of public perception. This change would be particularly acute if both the proposed project and the approved West Ridge Commerce Centre (an industrial project just east of the proposed project) were built within a relatively short period of time, as they would both follow relatively closely the completion of the Skechers Logistics Center (another warehouse project) east of both the proposed project and the West Ridge project, on the east side of Redlands Boulevard. Furthermore, the addition of industrial space from the proposed project and the adjacent West Ridge (industrial) project may create an over-supply of warehousing space in the City, based on current economic conditions.

The proposed changes in land use will also result in a loss of up to 584 (R-15) multi-family residential units, many of which could have contributed to the City's affordable housing supply at some point in the future. However, this was determined to be a less than significant project impact on local housing because the City's Housing Element identifies over twice as much potential affordable housing as the City's RHNA allocation, so it will not make a significant contribution to a cumulatively considerable impact on regional housing.

Similar to the proposed project, some of the cumulative projects within the project vicinity would also require amendments to the existing General Plan and zoning, which may in turn cause additional cumulative impacts. Therefore, planned industrial development in the City may contribute to a cumulatively considerable impact or change in the overall character of the surrounding area, and the proposed project would make a significant contribution to that change in terms of consistency with adopted land use plans. No feasible mitigation is available to reduce this significant contribution. However, the project would not make a similar cumulatively considerable land use impact relative to dividing an established community or conflicting with an approved habitat conservation plan.

4.9 NOISE

This analysis is intended to satisfy the City's requirements for a project-specific noise impact analysis by examining the short-term and long-term noise impacts of the proposed project on sensitive uses adjacent to the proposed project site and by evaluating the effectiveness of mitigation measures incorporated as part of the project design. This includes the potential for the proposed project to result in impacts associated with a substantial temporary and/or permanent increase in ambient noise levels in the vicinity of the project area; exposure of people to excessive noise levels, groundborne vibration, or groundborne noise levels. The analysis contained in this section is based on a comprehensive *Noise Impact Analysis* contained in Appendix H (LSA Associates, Inc., November 2011), which examines existing ambient noise conditions and project-related impacts, and updates associated with the traffic report revisions (LSA, November 2011).

4.9.1 Existing Setting

4.9.1.1 Background

Characteristics of Sound. Noise is usually defined as unwanted sound; it consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, and sleep. To the human ear, sound has two significant characteristics: pitch and loudness. Pitch is generally an annoyance, while loudness can affect our ability to hear. The analysis of a project's noise impact defines the noise environment of the project area in terms of sound intensity and its effect on adjacent sensitive land uses.

Measurement of Sound. There are many ways to rate sound for various time periods. An appropriate rating of ambient noise¹ affecting humans accounts for the annoying effects of sound by penalizing noises that occur during quiet periods of time, such as late night/early morning, through weighted averaging metric. Single-event or peak noises are measured by a simple peak noise measurement. Equivalent continuous sound level (L_{eq}) is the total sound energy of time varying noise over a sample period. However, the predominant rating scales for human communities in the State of California are the L_{eq} and community noise equivalent level (CNEL) or the day-night average level (L_{dn}) based on A-weighted decibels (dBA). CNEL is the time varying noise over a 24-hour period, with a five dBA weighting factor applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and a 10 dBA weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). L_{dn} is similar to the CNEL scale, but without the adjustment for events occurring during the evening hours. CNEL and L_{dn} are within one dBA of each other and are normally exchangeable.

Other noise rating scales of importance when assessing the annoyance factor include the maximum noise level (L_{max}), which is the highest exponential time averaged sound level that occurs during a stated time period. The noise environments discussed in this analysis for short-term noise impacts are specified in terms of maximum levels denoted by L_{max} , which reflects peak operating conditions and addresses the annoying aspects of intermittent noise. It is often used together with another noise scale, or noise standards in terms of percentile noise levels, in noise ordinances for enforcement purposes. For example, the L_{10} noise level represents the noise level exceeded 10 percent of the time during a stated period. The L_{50} noise level represents the median noise level. Half the time the noise level exceeds this level, and half the time it is less than this level. The L_{90} noise level represents the noise level exceeded 90 percent of the time and is considered the background noise level during a monitoring period. For a relatively constant noise source, the L_{eq} and L_{50} are approximately the same. Table 4.9.A defines noise measurements that are typically used in noise analyses.

¹ Ambient noise is the totality of noise in a given place and time; usually a composite of sounds from varying sources at varying distances. Ambient sounds generally range from 30 dBA (very quiet) to 100 dBA (very loud).

Table 4.9.A: Noise Measurement Definitions

Unit of Measurement		Description
dB	Decibel	Units for measuring the volume of sound, decibels are measured on a logarithmic scale, representing points on a sharply rising curve. For example, 10 decibels are 10 times more intense than one decibel and 20 decibels are 100 times more intense. A 10-decibel increase in sound level is perceived by the human ear as a doubling of the loudness of the sound.
dBA A-W	A-weighted Decibel	A sound pressure level that has been weighted to quantitatively reduce the effect of the high and low frequency noise. It was designed to approximate the response of the human ear to sound.
CNEL Community Noise Equivalent Level		The CNEL value represents noise as measured by an A-weighted sound level. The metric includes a 4.8-decibel penalty during relaxation hours (7 p.m. to 10 p.m.) and a 10-decibel penalty for sleeping hours (10 p.m. to 7 a.m.). CNEL is similar to L_{dn} (which does not include the evening penalty).
L_{dn} Day-Night Average Noise		The 24-hour average sound level, expressed in a single decibel rating, for the period from midnight to midnight obtained after the addition of a 10.0-decibel penalty to sound levels for the periods between 10 p.m. and 7 a.m.
L_{eq} Equivalent Noise Level		Total sound energy of time-varying noise over a sample period.
L_{01} , L_{10} , L_{25} , L_{50} , L_{90}	Percentile Noise Exceedance Levels	The fast A-weighted noise levels that are equaled or exceeded by a fluctuating sound level 1 percent, 10 percent, 25 percent, 50 percent, and 90 percent of a stated time period.
L_{max} Maximum Noise Level		L_{max} is the highest exponential time-averaged sound level that occurs during a stated time period. It reflects peak operating conditions and addresses the annoying aspects of intermittent noise.

Sound levels are generated from a source and their decibel level decreases as the distance from that source increases. Table 4.9.B describes attenuation levels of various types of noise sources.

Table 4.9.B: Attenuation Levels and Type of Noise Sources

Decrease in Sound for Each Doubling of Distance	Type of Noise Source	Description/Example
6.0 decibels	Single-point source	Stationary equipment
4.5 decibels	Line source	Highway traffic or railroad operations in a relatively flat environment with absorptive vegetation
3.0 decibels	Line source	Highway traffic or railroad operations in a hard site environment

Source: *Noise Analysis, Eucalyptus Industrial Park*, LSA Associates, Inc., November 2011.

Audible Noise Level Range. Noise impacts can be described in three categories:

- Audible (3.0 dB or greater);
- Potentially audible (between 1.0 and 3.0 dB); and
- Inaudible (less than 1.0 dB).

Audible noises are increases in noise levels noticeable to humans and generally refer to a change of 3.0 dB or greater, because this level has been found to be barely perceptible in exterior environments. Potentially audible refers to a change in the noise level between 1.0 and 3.0 dB, which is noticeable only in laboratory environments. Changes in noise levels of less than 1.0 dB are inaudible to the human ear. Only audible changes in existing ambient or background noise levels are

considered potentially significant. Therefore, a 3 d BA increase in long-term noise levels above existing ambient noise levels is used as a threshold of significant change in this noise analysis.

Fundamentals of Groundborne Vibration. Vibration refers to groundborne noise and perceptible motion. Groundborne vibration is almost exclusively a concern inside buildings and is rarely perceived as a problem outdoors, where the motion may be discernable. However, without the effects associated with the shaking of a building, there is less adverse reaction. Building vibration may be perceived by the occupants as motion of building surfaces, rattling of items on shelves or hanging on walls, or as a low-frequency rumbling noise. Building damage is not a factor for normal projects, with the occasional exception of blasting and pile driving during construction or mining. Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by up to 10 decibels. This is an order of magnitude below the damage threshold for normal buildings.

Typical sources of groundborne vibration are construction activities (e.g., blasting, pile driving, and operating heavy-duty earthmoving equipment), steel-wheeled trains, and occasional traffic on rough roads. Problems with groundborne vibration and noise from these sources are usually localized to within about 100 feet of the vibration source, although there are examples of groundborne vibration causing interference out to distances greater than 200 feet, as described in the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment (May 2006). When roadways are smooth, vibration from traffic, even heavy trucks, is rarely perceptible.

Factors that influence groundborne vibration and noise include the following:

- Vibration Source: vehicle suspension, wheel types and condition, track/roadway surface, track support system, speed, transit structure, and depth of vibration source.
- Vibration Path: soil type, rock layers, soil layering, depth to water table, and frost depth.
- Vibration Receiver: foundation type, building construction, and acoustical absorption.

Among the factors listed above, there are significant differences in the vibration characteristics when the source is underground versus at ground surface. In addition, soil conditions are known to have a strong influence on the levels of groundborne vibration. Among the most important factors are the stiffness and internal damping of the soil and the depth to bedrock. Vibration propagation is more efficient in stiff clay soils than in loose sandy soils, and shallow rock seams to concentrate the vibration energy close to the surface and can result in groundborne vibration problems at a great distance from the track. Factors such as layering of the soil and depth to water table can have significant effects on the propagation of groundborne vibration. Soft, loose, sandy soils tend to attenuate more vibration energy than hard, rocky materials. Vibration propagation through groundwater is more efficient than through sandy soils.

4.9.1.2 Sensitive Land Uses in the Project Vicinity

Certain land uses are considered more sensitive to noise than others. Examples include residential areas, educational facilities, hospitals, childcare facilities, and senior housing. The nearest existing sensitive receptors in the vicinity of the project site are single-family residences located approximately 50 feet southeast of the project boundary. The nearest future sensitive receptors are the land designated RA-2 east of the site. However, this area has recently been approved for industrial development (West Ridge Commerce Center). The proposed L-Aquila D'Pietra (LADP) development consisting of a mix of residential uses is expected to be developed immediately south of the proposed project site. Future development within the proposed LADP project would result in the occupation of residential units in close proximity to noise-generating uses located within the limits of the proposed project site.

Although there is a degree of uncertainty for the actual construction schedule and on-site activities, an analysis based on typical construction for projects with similar size has been provided for disclosure purposes. Based on land use assumptions for the proposed LADP development, the nearest proposed residential uses are near the southern project boundary approximately 25 feet to the south. The nearest trucks will operate on site are more distant, with the nearest loading/unloading area approximately 280 feet from the proposed residences to the south of the project site.

Existing Noise Environment. The project site is currently fallow agricultural land. The primary existing noise sources in the project area are transportation facilities. Primary transportation noise sources include vehicular traffic along SR-60, Eucalyptus Avenue, Pettit Street, Fir Avenue, and Spruce Avenue. Aircraft operations from March Air Reserve Base, approximately 5 miles to the southwest of the project site, contribute to high intermittent single-event noise levels. Based on the 1998 March Air Reserve Base Noise Impact Area, the project site is outside of the 60 dB A CNEL impact zone.

Existing Traffic Noise Modeling. To document the existing environment, the Federal Highway Administration (FHWA) highway traffic noise prediction model (FHWA RD-77-108) was used to evaluate highway traffic-related noise conditions in the project vicinity. This model requires various parameters, including traffic volumes, vehicle mix, vehicle speed, and roadway geometry¹ to compute typical equivalent noise levels during daytime, evening, and nighttime hours. The noise impact analysis was conducted using the existing traffic volumes provided in the *Traffic Study* prepared for the proposed project (LSA Associates, Inc., November 2011). The modeled 24-hour CNEL levels are identified in Table 4.9.C. The resultant noise levels are weighted and summed over 24-hour periods to determine the CNEL values. As shown in Table 4.9.C, existing traffic noise along these roadway segments is generally low to moderate.

Table 4.9.C: Existing Traffic Noise Levels

Roadway Segment	ADT	Centerline to 70 CNEL (feet)	Centerline to 65 CNEL (feet)	Centerline to 60 CNEL (feet)	CNEL (dBA) 50 Feet from Centerline of Outermost Lane
Eucalyptus Avenue west of Nason Street	2,600 <	50*	78	162	65.4
Eucalyptus Avenue between Nason Street and Fir Avenue	3,100 <	50	87	182	66.2
Eucalyptus Avenue between Moreno Beach Drive and Auto Mall Drive	550	< 50	< 50	< 50	58.2
Eucalyptus Avenue/Fir Avenue between Auto Mall Drive and Redlands Boulevard	140	< 50	< 50	< 50	52.2
Nason Street north of Eucalyptus Avenue	10,000 76		160	343	70.8
Nason Street between Eucalyptus Avenue and Alessandro Boulevard	9,600 86		179	384	71.1
Nason Street south of Alessandro Boulevard	8,300 68		142	303	70.0
Moreno Beach Drive north of Eucalyptus Avenue	12,000 85		180	387	71.6

¹ Roadway geometry is defined as the lane configuration (number of through lanes and turn lanes) of two intersecting roads.

Table 4.9.C: Existing Traffic Noise Levels

Roadway Segment	ADT	Centerline to 70 CNEL (feet)	Centerline to 65 CNEL (feet)	Centerline to 60 CNEL (feet)	CNEL (dBA) 50 Feet from Centerline of Outermost Lane
Moreno Beach Drive between Eucalyptus Avenue and Cottonwood Avenue	13,000	104	219	470	72.4
Moreno Beach Drive between Cottonwood Avenue and Alessandro Boulevard	12,400	61	132	284	70.6
Moreno Beach Drive south of Alessandro Boulevard	13,000	63	136	293	70.8
Auto Mall Drive between Eucalyptus Avenue and Moreno Beach Drive	820	< 50	< 50	67	59.9
Redlands Boulevard north of Eucalyptus Avenue/Fir Avenue	7,200	< 50	92	198	68.3
Redlands Boulevard between Eucalyptus Avenue/Fir Avenue and Encilia Avenue/Eucalyptus Avenue	7,200	< 50	92	198	68.3
Redlands Boulevard between Encilia Avenue/Eucalyptus Avenue and Cottonwood Avenue	6,600	< 50	87	187	67.9
Redlands Boulevard between Cottonwood Avenue and Alessandro Boulevard	5,700	< 50	79	169	67.2
Redlands Boulevard south of Alessandro Boulevard	5,100	< 50	73	157	66.8

ADT = Average Daily Trips CNEL = Community Noise Equivalent Level dBA = A-weighted decibel.
*Traffic noise within 50 feet of the roadway centerline should be evaluated with site-specific information.

Source: *Noise Impact Analysis, Eucalyptus Industrial Park*, City of Moreno Valley. LSA Associates, Inc. November 2011.

4.9.2 Existing Policies and Regulations

The applicable noise standards governing the project site are the criteria in the City of Moreno Valley General Plan Noise Element and Municipal Code (Noise Ordinance). The City’s Noise Element of the General Plan is based on the County of Riverside Land Use Compatibility Chart for Community Noise and is adopted by reference. In addition, standards identified in the *California Noise Insulation Standards*¹ and the *State of California Vehicular Code*² are included below. The following sections list the General Plan policies and State standards relevant to noise for the proposed project.

4.9.2.1 City of Moreno Valley General Plan Policies

Chapter 9 of the *City of Moreno Valley General Plan*³ defines goals, objectives, policies, and action items related to noise conditions in the City. The specific policies related to noise that are relevant to the proposed project are as follows:

Objective 6.3 Provide noise compatible land use relationships by establishing noise standards utilized for design and siting purposes.

¹ California Code of Regulations, Title 24, Part 2, §3501, *California Noise Insulation Standards*.

² Governor’s Office of Planning and Research, *State of California General Plan Guidelines*, October 2003, pages 249 and 250.

³ *City of Moreno Valley General Plan*, City of Moreno Valley, July 2006.

- Policy 6.3.6** Building shall be limited in areas of sensitive receptors.
- Objective 6.4** Review noise issues during the planning process and require noise attenuation measures to minimize acoustic impacts to existing and future surrounding land uses.
- Policy 6.4.1** Site, landscape and architectural design features shall be encouraged to mitigate noise impacts for new developments, with a preference for noise barriers that avoid freeway sound barrier walls.
- Objective 6.5** Minimize noise impacts from significant noise generators such as, but not limited to, motor vehicles, trains, aircraft, commercial, industrial, construction, and other activities.
- Policy 6.5.1** New commercial and industrial activities (including the placement of mechanical equipment) shall be evaluated and designed to mitigate noise impacts on adjacent uses.
- Policy 6.5.2** Construction activities shall be operated in a manner that limits noise impacts on surrounding uses.

The City's General Plan, Section 5.4, states that acceptable residential exterior noise standards are within 60–65 dBA CNEL, and acceptable residential interior noise standard is 45 dBA CNEL.

Moreno Valley Municipal Code. The *Moreno Valley Municipal Code*¹ describes the noise standards within the City. It states that noise will be measured with a sound level meter that meets the standards of the American National Standards Institute (ANSI) Section I.4-1983. All measurements of sound will be made by qualified officials of the City who are designated by the City Manager or designee to operate the apparatus used to make the measurements.

In addition, the following standards are listed in the *Moreno Valley Municipal Code* in Chapter 11.80.030 Prohibited Acts (Title 11). Sound level limits are established for both continuous and impulsive (momentary) sounds. The City prohibits grading activities between the hours of 8:00 p.m. and 7:00 a.m. and prohibits construction activities from 8:00 p.m. to 6:00 a.m. during the week and between 8:00 p.m. and 7:00 a.m. on weekends and holidays.

Residential uses, schools, office buildings, and professional service and business establishments are normally acceptable in exterior noise environments up to 60 dBA CNEL and conditionally acceptable in exterior noise environments up to 70 dBA CNEL. Commercial land uses, including retail uses and restaurants, are conditionally acceptable in exterior noise levels up to 75 dBA CNEL. Industrial and manufacturing land uses, being less sensitive to noise, are normally acceptable where the exterior noise levels are 75 dBA CNEL or less. In addition, outdoor active use areas such as backyards or balconies in areas exceeding 65 dBA CNEL are required to be mitigated.

The City's residential site development standards, as identified in Chapter 9.03.040 of the City's Planning and Zoning Code, state that in all residential districts, air conditioners, heating, cooling, and ventilating equipment and all other mechanical lighting or electrical devices shall be operated so that noise levels do not exceed 60 dBA (L_{dn}) at the property line.

The City's Municipal Code, Section 6.04.030.J states that "to create, allow or maintain any loud or unusual noise or operate or maintain any device, instrument, vehicle, or machinery in such a manner as to create loud or unusual noise, cause vibrations, or unreasonable light spillage or glare which causes discomfort or annoyance to reasonable persons of normal sensitivity, or which endangers the comfort, repose, health or peace of the public or of any person using or occupying other property in the vicinity" is prohibited.

¹ *Moreno Valley Municipal Code*, City of Moreno Valley, current through Ordinance 827 and the August 2011 code supplement.

The City's Municipal Code, Section 9.10.140, specifies that all commercial and industrial uses shall be operated so that noise created by any loud speaker, bells, gongs, buzzers, or other noise attenuation or attracting devices shall not exceed 55 dBA at any one time beyond the boundaries of the property.

Chapter 11.80.030 of the City's Municipal Code also states:

Based on statistics from the Center for Disease Control and Prevention and the National Institute for Occupational Safety and Health, Table 1 and Table 1-A specify sound level limits which, if exceeded, will have a high probability of producing permanent hearing loss in anyone in the area where the sound levels are being exceeded. No sound shall be permitted within the City which exceeds the parameters set forth in Table 11.80.030-1 [Table 4.9.D] and 11.80.030-1-A [Table 4.9.E] of this chapter.

No person shall maintain, create, operate or cause to be operated on private property any source of sound in such a manner as to create any nonimpulsive sound which exceeds the limits set forth for the source land use category (as defined in Section 11.80.020) in Table 11.80.030-2 [Table 4.9.F] when measured at a distance of two hundred (200) feet or more from the real property line of the source of the sound, if the sound occurs on privately owned property, or from the source of the sound, if the sound occurs on public right-of-way, public space or other publicly owned property. Any source of sound in violation of this subsection shall be deemed prima facie to be a noise disturbance.

The following uses and activities shall be exempt from the sound level regulations except the maximum sound levels provided in Tables 11.80.030-1 [Table 4.9.D] and 11.80.030-1A [Table 4.9.E]:

- 1. Sounds resulting from any authorized emergency vehicle when responding to an emergency call or acting in time of an emergency.*
- 2. Sounds resulting from emergency work as defined in Section 11.80.020.*
- 3. Any aircraft operated in conformity with, or pursuant to, federal law, federal air regulations and air traffic control instruction used pursuant to and within the duly adopted federal air regulations; and any aircraft operating under technical difficulties in any kind of distress, under emergency orders or air traffic control, or being operated pursuant to and subsequent to the declaration of an emergency under federal air regulations.*
- 4. All sounds coming from the normal operations of interstate motor and rail carriers, to the extent that local regulation of sound levels of such vehicles has been preempted by the Noise Control Act of 1972 (42 U.S.C. § 4901 et seq.) or other applicable federal laws or regulations.*
- 5. Sounds from the operation of motor vehicles, to the extent they are regulated by the California Vehicle Code.*
- 6. Any constitutionally protected noncommercial speech or expression conducted within or upon any public right-of-way, public space or other publicly owned property constituting an open or a designated public forum in compliance with any applicable reasonable time, place and manner restriction on such speech or expression or otherwise pursuant to legal authority.*
- 7. Sounds produced at otherwise lawful and permitted city-sponsored events, organized sporting events, school assemblies, school playground activities, by permitted fireworks, and by permitted parades on public right-of-way, public space, or other publicly owned property.*
- 8. An event for which a temporary use permit or special event permit has been issued under other provisions of this code, where the provision of Section 11.80.010 are met, the permit granted expressly grants an exemption from specific standards contained in this chapter, and the permittee and all persons under the permittee's reasonable control actually comply with all conditions of such permit. Violation of any condition of such permit related to sound or sound equipment shall be in violation of this chapter and punishable as such.*

Table 4.9.D: Maximum Continuous Sound Levels*

Duration Per Day Continuous Hours	Sound Level (dBA)
8 90	
6 92	
4 95	
3 97	
2 100	
1.5 102	
1 105	
0.5 110	
0.25 115	

* When the daily sound exposure is composed of two or more periods of sound exposure at different levels, the combined effect of all such periods shall constitute a violation of this section if the sum of the percentage of allowed period of sound exposure at each level exceeds 100 percent.

Source: Chapter 11.80.030 Table 11.80.030-1, City of Moreno Valley Municipal Code, City of Moreno Valley.

Table 4.9.E: Maximum Impulsive Sound Levels

Number of Repetitions Per 24-Hour Period	Sound Level (dBA)
1 145	
10 135	
100 125	

Source: Chapter 11.80.030 Table 11.80.030-1A, City of Moreno Valley Municipal Code, City of Moreno Valley.

Table 4.9.F: Maximum Sound Levels (in dBA) for Source Land Uses

Residential		Commercial	
Daytime	Nighttime	Daytime	Nighttime
60 55	65		60

Source: Chapter 11.80.030 Table 11.80.030-2, City of Moreno Valley Municipal Code, City of Moreno Valley.

4.9.2.2 State of California Vehicular Code

Recent studies have shown that the most objectionable feature of traffic noise is the sound produced by vehicles equipped with illegal or faulty exhaust systems. In addition, such vehicles are often operated in a manner that causes tire squeal and excessively loud exhaust noise. A number of California State vehicle noise regulations can be enforced by local authorities as well as the California Highway Patrol (CHP). These include § 23130, § 23130.5, § 27150, and § 38275 of the CVC, as well as excessive speed laws, which may be applied to curtail traffic noise:

- § 23130 and § 23130.5 establish maximum noise emission limits for the operation of all motor vehicles at any time under any conditions of grade, load, acceleration, or deceleration.
- § 27150 requires motor vehicles to be equipped with an adequate muffler to prevent excessive noise.
- § 38275 requires off-highway motor vehicles to be equipped with an adequate muffler to prevent excessive noise.

The CHP and the Department of Health Services (DHS) (through local health departments) are available to aid local authorities in code enforcement and training pursuant to proper vehicle sound level measurements.

4.9.3 Methodology

Evaluation of noise impacts associated with the proposed project includes the following:

- Determination of the short-term construction noise impacts on off-site noise-sensitive uses;
- Determination of the long-term noise impacts, including vehicular traffic and stationary noise sources, on on-site and off-site noise-sensitive uses; and
- Determination of the required mitigation measures to reduce long-term noise impacts from all sources.

The proposed project includes the construction and operation of an approximately 2,244,638-square foot warehousing project. The noise analysis considers the noise effects of the industrial development on the existing and future residential development (sensitive receptors) near the proposed project site. The applicable noise standards governing the project site are the criteria in the City of Moreno Valley's *Noise Element of the General Plan and Zoning Code*.

The FHWA highway traffic noise prediction model (FHWA RD-77-108) was used to evaluate highway-traffic-related noise conditions. The *Noise Impact Assessment* (NIA) was conducted using the traffic volumes provided in the Traffic Impact Analysis (LSA Associates, Inc., November 2011). Existing with Project plus Opening Year (2012), Build Out Year (2035), and General Plan Build Out with and without Project scenarios average daily traffic (ADT) volumes on roadway segments in the project vicinity were used to conduct the traffic noise modeling. Standard vehicle mix for Southern California streets was modified to account for project-related truck traffic and was used in this analysis. The modeled 24-hour CNEL levels represent the worst-case scenario, which assumes that no shielding is provided between the traffic and the location where the noise contours are drawn. The specific assumptions used in developing these noise levels and model printouts are provided in Appendix H of this EIR.

4.9.4 Thresholds of Significance

A project would have a significant effect on the environment related to noise if it would substantially increase the ambient noise levels for adjoining areas or if it would conflict with adopted environmental plans and goals of the community in which it is located.

The applicable noise standards governing the project site are the criteria that are contained within the Noise Element of the *City of Moreno Valley General Plan* and the *Moreno Valley Municipal Code*. For this project, a noise impact is considered significant if the project would result in:

- Exposure of persons to or generation of noise levels in excess of standards established in the *City of Moreno Valley General Plan*, *Moreno Valley Municipal Code*, or applicable standards of other agencies;
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;
- A substantial temporary, periodic, and/or permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels; and/or
- For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

The standards within the *City of Moreno Valley General Plan* and *Moreno Valley Municipal Code* determine the acceptable noise environment for proposed project and its vicinity. The standards are as follows:

- Ensure through the design review process that exterior noise levels at commercial and industrial areas do not exceed 75 dBA CNEL.
- Consider the following uses noise-sensitive and discourage them in areas where exterior noise levels exceed 65 dBA CNEL unless measures are implemented that reduce the noise exposure below this level: single- and multiple-family residential uses, group homes, hospitals, schools and other learning institutions, and parks and open space areas where quiet is a basis for use.

4.9.5 No Impact/Less than Significant Impacts

The Initial Study (Appendix A) identified the following impacts as having a less than significant impact or no impact on the environment with implementation of the proposed project.

4.9.5.1 Airport Noise Impacts

Threshold	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, results in exposure of people residing or working in the project area to excessive noise levels. For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.
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The proposed project site is located approximately 5 miles northeast of the March Air Reserve Base. Aircraft operations from the airport currently contribute intermittent single-event noise. However, the proposed project is not identified as being within the noise or safety contours delineated for the MARB Airport.¹ The proposed project is not located within two miles of a public or private airport; therefore, the proposed project would not have the potential to expose people to excessive noise levels from airport operations and no impact regarding this issue would occur with implementation of the proposed project. No mitigation is required.

4.9.5.2 Groundborne Vibration Impacts

Threshold:	Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?
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Vibration refers to groundborne noise and perceptible motion. Typical sources of groundborne vibration are construction activities (e.g., blasting, pile driving, and operating heavy-duty earthmoving equipment), steel-wheeled trains, and occasional traffic on rough roads. Groundborne vibration is almost exclusively a concern inside buildings and is rarely perceived as a problem outdoors, where the motion may be discernable but without the accompanying effects (e.g., shaking of a building). Groundborne vibration is measured in terms of the velocity of the vibration oscillations. When groundborne vibration exceeds 0.1 inch per second (in/sec), it is generally perceived as a nuisance to building occupants. The degree of annoyance is dependent upon type of land use, individual sensitivity to vibration, and the frequency of the vibration events. Typically, vibration levels must exceed 0.2 in/sec before building damage occurs. Problems with groundborne vibration and noise are usually localized to areas within about 100 feet from the vibration source, although there are examples of groundborne vibration causing interference out to distances greater than 200 feet.

¹ Figure 5.4-1 March Reserve Air Base Noise Impact Area, City of Moreno Valley General Plan EIR, July 2006.

The project site is not located near steel-wheeled trains. Additionally, roadways in the project area are either paved or would be paved and would not result in traffic driving over rough roads. Construction activities for the project site do not include blasting or pile driving. The primary vibratory source during the construction of the proposed project would be large bulldozers. Based on published data, typical bulldozer activities generate an approximate vibration level of 0.089 in/sec at a distance of 25 feet. At the distance of the nearest residence to the project boundary (about 50 feet) the estimated vibration level will be 0.0415 in/sec. While heavy-duty earthmoving equipment would be used during the construction phase of the project, the level of vibration would not be excessive or permanent, nor would it exceed the level at which building damage typically occurs. Therefore, impacts from construction-related groundborne vibration construction would be less than significant and no mitigation is required.

4.9.5.3 Long-Term Traffic Noise Impacts

Threshold	Would the project result in a substantial temporary, periodic, and/or permanent increase in ambient noise levels in the project vicinity above levels existing without the project?
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Only audible changes in existing ambient or background noise levels are considered potentially significant. Therefore, a 3 dBA increase in long-term noise levels above existing ambient noise levels is used as a threshold of significant change in this noise analysis. The FHWA highway traffic noise prediction model (FHWA RD-77-108) was used to evaluate highway traffic-related noise conditions. The noise impact analysis was conducted using the future traffic volumes provided in the *Traffic Study* (LSA Associates, Inc., November 2011). Existing Year with Project, Opening Year (2012) Project Build Out Year (2035), and General Plan Build Out Year with and without Project scenarios ADT volumes on roadway segments in the project vicinity were used to conduct the traffic noise modeling. The existing ADT volumes in the area were taken from the *Traffic Study* prepared for the proposed project.

Existing Year Analysis. The NIA (Appendix H) indicates that implementation of the proposed project would result in relatively minor changes in traffic noise levels except along Eucalyptus Avenue between Moreno Beach Drive and Driveway A. As indicated in Table 4.9.G, the largest project-related increase in traffic noise would be along Eucalyptus Avenue/Fir Avenue between Auto Mall Drive and Redlands Boulevard. This segment would experience a 13.6 dBA increase over the baseline (with the project) scenario; however, no noise-sensitive uses exist or are planned near this roadway segment. The existing surrounding land uses consist of the auto mall, commercial uses, and vacant land zoned for commercial uses.

Table 4.9.G: Existing Year With Project Traffic Noise Levels

Roadway Segment	ADT	CL 70 CNEL (feet)	CL to 65 CNEL (feet)	CL to 60 CNEL (feet)	CNEL (dBA) 50 feet from CL of Outermost Lane	Increase CNEL (dBA) 50 feet from CL to Outermost Lane
Eucalyptus Avenue west of Nason Street	2800 <	50*	82	170	65.7	0.3
Eucalyptus Avenue between Nason Street and Fir Avenue	3200 <	50	89	186	66.3	0.1
Eucalyptus Avenue between Moreno Beach Drive and Auto Mall Drive	990	< 50	< 50	75	60.7	2.5
Eucalyptus Avenue/Fir Avenue between Auto Mall Drive and Redlands Boulevard	3,200 <	50	77	161	65.8	13.6
Fir Avenue east of Redlands Boulevard	540	< 50	< 50	< 50	58.1	NA

Table 4.9.G: Existing Year With Project Traffic Noise Levels

Roadway Segment	ADT	CL 70 CNEL (feet)	CL to 65 CNEL (feet)	CL to 60 CNEL (feet)	CNEL (dBA) 50 feet from CL of Outermost Lane	Increase CNEL (dBA) 50 feet from CL to Outermost Lane
Nason Street north of Eucalyptus Avenue	10,000	76	160	343	70.8	0.0
Nason Street between Eucalyptus Avenue and Alessandro Boulevard	9,800	87	182	389	71.2	0.1
Nason Street south of Alessandro Boulevard	8,700	70	146	313	70.2	0.2
Moreno Beach Drive north of Eucalyptus Avenue	12,100	86	181	389	71.6	0.0
Moreno Beach Drive between Eucalyptus Avenue and Cottonwood Avenue	13,300	105	222	477	72.5	0.1
Moreno Beach Drive between Cottonwood Avenue and Alessandro Boulevard	12,800	63	135	290	70.8	0.2
Moreno Beach Drive south of Alessandro Boulevard	13,200	64	138	296	70.9	0.1
Auto Mall Drive between Eucalyptus Avenue and Moreno Beach Drive	1,300	< 50	< 50	90	61.9	2.0
Redlands Boulevard north of Eucalyptus Avenue/Fir Avenue	9,400	51	110	236	69.4	1.1
Redlands Boulevard between Eucalyptus Avenue/Fir Avenue and Encilia Avenue/Eucalyptus Avenue	9,000	< 50	107	229	69.2	0.9
Redlands Boulevard between Encilia Avenue/Eucalyptus Avenue and Cottonwood Avenue	8,200	< 50	100	216	68.8	0.9
Redlands Boulevard between Cottonwood Avenue and Alessandro Boulevard	7,100	< 50	91	196	68.2	1.0
Redlands Boulevard south of Alessandro Boulevard	5,100	< 50	73	157	66.8	0.0

ADT = Average Daily Trips CNEL = Community Noise Equivalent Level dBA = A-weighted decibel
CL = centerline NA = Not Applicable

*Traffic noise within 50 feet of the roadway centerline should be evaluated with site-specific information.

Source: Table F, *Noise Impact Analysis Eucalyptus Industrial Park*, City of Moreno Valley. LSA Associates, Inc. November 2011.

Opening Year (2012) Analysis. Table 4.9.H depicts Opening Year without Project traffic noise levels. The NIA (Appendix H) indicates that implementation of the proposed project would result in relatively minor changes in traffic noise levels except along Eucalyptus Avenue between Moreno Beach Drive and Driveway A. As indicated in Table 4.9.I, the largest project-related increase in traffic noise would be along Eucalyptus Avenue/Fir Avenue between Auto Mall Drive and Redlands Boulevard. This segment would experience a 13.3 dBA increase over the baseline (with the project) scenario in opening year (2012); however, no noise-sensitive uses exist or are planned near this roadway segment. The existing surrounding land uses consist of the auto mall, commercial uses, and vacant land zoned for commercial uses.

Table 4.9.H: Opening Year (2012) Without Project Traffic Noise Levels

Roadway Segment	ADT	Centerline to 70 CNEL (feet)	Centerline to 65 CNEL (feet)	Centerline to 60 CNEL (feet)	CNEL (dBA) 50 Feet from Centerline of Outermost Lane
Eucalyptus Avenue west of Nason Street	2,800 <	50*	82	170	65.7
Eucalyptus Avenue between Nason Street and Fir Avenue	3,400 <	50	92	193	66.6
Eucalyptus Avenue between Moreno Beach Drive and Auto Mall Drive	600	< 50	< 50	56	58.6
Eucalyptus Avenue/Fir Avenue between Auto Mall Drive and Redlands Boulevard	150	< 50	< 50	< 50	52.5
Nason Street north of Eucalyptus Avenue	10,900 80		169	363	71.1
Nason Street between Eucalyptus Avenue and Alessandro Boulevard	10,500 91		190	407	71.5
Nason Street south of Alessandro Boulevard	9,100 72		150	322	70.4
Moreno Beach Drive north of Eucalyptus Avenue	13,200 91		192	412	72.0
Moreno Beach Drive between Eucalyptus Avenue and Cottonwood Avenue	14,300 110		233	500	72.8
Moreno Beach Drive between Cottonwood Avenue and Alessandro Boulevard	13,600 65		140	302	71.0
Moreno Beach Drive south of Alessandro Boulevard	14,200 67		144	311	71.2
Auto Mall Drive between Eucalyptus Avenue and Moreno Beach Drive	910	< 50	< 50	72	60.4
Redlands Boulevard north of Eucalyptus Avenue/Fir Avenue	7,900 <	50	98	210	68.7
Redlands Boulevard between Eucalyptus Avenue/Fir Avenue and Encilia Avenue/Eucalyptus Avenue	7,900 <	50	98	210	68.7
Redlands Boulevard between Encilia Avenue/Eucalyptus Avenue and Cottonwood Avenue	7,200 <	50	92	198	68.3
Redlands Boulevard between Cottonwood Avenue and Alessandro Boulevard	6,300 <	50	84	181	67.7
Redlands Boulevard south of Alessandro Boulevard	5,600 <	50	78	167	67.2

ADT = Average Daily Trips CNEL = Community Noise Equivalent Level dBA = A-weighted decibel.

*Traffic noise within 50 feet of the roadway centerline should be evaluated with site-specific information.

Source: Table G, *Noise Impact Analysis Eucalyptus Industrial Park*, City of Moreno Valley. LSA Associates, Inc. November 2011.

Table 4.9.I: Opening Year (2012) With Project Traffic Noise Levels

Roadway Segment	ADT	CL 70 CNEL (feet)	CL to 65 CNEL (feet)	CL to 60 CNEL (feet)	CNEL (dBA) 50 feet from CL of Outermost Lane	Increase CNEL (dBA) 50 feet from CL to Outermost Lane
Eucalyptus Avenue west of Nason Street	3,000 <	50*	85	178	66.9	0.3
Eucalyptus Avenue between Nason Street and Fir Avenue	3,500 <	50	94	197	66.7	0.1
Eucalyptus Avenue between Moreno Beach Drive and Auto Mall Drive	1,700	< 50	< 50	107	63.1	4.5
Eucalyptus Avenue/Fir Avenue between Auto Mall Drive and Redlands Boulevard	3,200 <	50	77	161	65.8	13.3
Fir Avenue east of Redlands Boulevard	240	< 50	< 50	< 50	54.6	NA
Nason Street north of Eucalyptus Avenue	10,900 80		169	363	71.1	0.0
Nason Street between Eucalyptus Avenue and Alessandro Boulevard	10,500 91		190	407	71.5	0.0
Nason Street south of Alessandro Boulevard	9,400 73		154	329	70.5	0.1
Moreno Beach Drive north of Eucalyptus Avenue	13,300 91		193	415	72.0	0.0
Moreno Beach Drive between Eucalyptus Avenue and Cottonwood Avenue	14,500 111		235	505	72.9	0.1
Moreno Beach Drive between Cottonwood Avenue and Alessandro Boulevard	14,200 67		144	311	71.2	0.2
Moreno Beach Drive south of Alessandro Boulevard	14,300 68		145	312	71.2	0.0
Auto Mall Drive between Eucalyptus Avenue and Moreno Beach Drive	1,500	< 50	< 50	98	62.5	2.1
Redlands Boulevard north of Eucalyptus Avenue/Fir Avenue	10,700 56		120	257	70.0	1.3
Redlands Boulevard between Eucalyptus Avenue/Fir Avenue and Encilia Avenue/Eucalyptus Avenue	8,200 <	50	100	216	68.8	0.1
Redlands Boulevard between Encilia Avenue/Eucalyptus Avenue and Cottonwood Avenue	7,400 <	50	94	201	68.4	0.1
Redlands Boulevard between Cottonwood Avenue and Alessandro Boulevard	6,400 <	50	85	183	67.7	0.0
Redlands Boulevard south of Alessandro Boulevard	5,600 <	50	78	167	67.2	0.0

ADT = Average Daily Trips CNEL = Community Noise Equivalent Level dBA = A-weighted decibel

CL = centerline NA = Not Applicable

*Traffic noise within 50 feet of the roadway centerline should be evaluated with site-specific information.

Source: Table H, *Noise Impact Analysis Eucalyptus Industrial Park*, City of Moreno Valley. LSA Associates, Inc. November 2011.

Additionally, the roadway segment along Eucalyptus Avenue between Moreno Beach Drive and Auto Mall Drive would experience a 4.5 dBA increase over the baseline scenario in 2012. However, similar to Eucalyptus Avenue between the Auto Mall Drive and Redlands Boulevard segment, no noise-sensitive uses exist or are planned in the vicinity of this roadway segment. Therefore, noise impacts at the roadway segments where an increase of more than 3.0 dBA would occur are considered less than significant because there are no sensitive receptors located along those roadway segments. All other roadway segments would have an increase in noise of less than 3.0 dBA, which would not be perceptible to the human ear in an outdoor environment. Therefore, no mitigation measures related to traffic noise would be required for off-site areas.

Project Build Out Year (2035) Analysis. Table 4.9.J depicts Project Build Out Year without Project traffic noise levels. Increases in noise levels associated with Project Build Out Year (2035) traffic conditions on area roadways range from 0 dBA to 1.3 dBA (Table 4.9.K). The greatest increase in noise levels is along Eucalyptus Avenue between Auto Mall Drive and Redlands Boulevard, where an increase of up to 1.3 dBA is predicted, with the ambient noise level predicted to be 71.6 dBA at 50 feet from the centerline of the street. However, similar to the opening year (2012) scenario, no noise-sensitive uses exist or are planned near the roadway segment. The existing surrounding land uses consist of the auto mall, commercial uses, and vacant land zoned for commercial uses. Therefore, noise impacts at the roadway segments where an increase of more than 3.0 dBA would occur are considered less than significant because there are no sensitive receptors located along the roadway segments that would be affected. All other roadway segments would have an increase in noise of less than 3.0 dBA, which would not be perceptible to the human ear in an outdoor environment. Therefore, no mitigation measures related to Project Build Out Year (2035) traffic noise would be required for off-site areas.

Table 4.9. J: Project Build Out Year (2035) Without Project Traffic Noise Levels

Roadway Segment	ADT	Centerline to 70 CNEL (feet)	Centerline to 65 CNEL (feet)	Centerline to 60 CNEL (feet)	CNEL (dBA) 50 feet from Centerline of Outermost Lane
Eucalyptus Avenue west of Nason Street	9,400	85	177	379	71.0
Eucalyptus Avenue between Nason Street and Fir Avenue	11,800	98	206	440	72.0
Eucalyptus Avenue between Fir Avenue and Moreno Beach Drive	9,800	75	158	338	70.7
Eucalyptus Avenue between Moreno Beach Drive and Auto Mall Drive	10,400	78	164	352	70.9
Eucalyptus Avenue/Fir Avenue between Auto Mall Drive and Redlands Boulevard	9,000	71	149	320	70.3
Fir Avenue east of Redlands Boulevard	17,900	110	235	505	73.3
Nason Street north of Eucalyptus Avenue	22,300	127	272	585	74.3
Nason Street between Eucalyptus Avenue and Alessandro Boulevard	32,900	189	405	871	76.4
Nason Street south of Alessandro Boulevard	27,800	147	315	677	75.2
Moreno Beach Drive north of Eucalyptus Avenue	35,400	172	370	796	76.3
Moreno Beach Drive between Eucalyptus Avenue and Cottonwood Avenue	20,600	139	297	638	74.4

Table 4.9. J: Project Build Out Year (2035) Without Project Traffic Noise Levels

Roadway Segment	ADT	Centerline to 70 CNEL (feet)	Centerline to 65 CNEL (feet)	Centerline to 60 CNEL (feet)	CNEL (dBA) 50 feet from Centerline of Outermost Lane
Moreno Beach Drive between Cottonwood Avenue and Alessandro Boulevard	21,900	90	193	415	73.1
Moreno Beach Drive south of Alessandro Boulevard	28,000	105	227	489	74.2
Auto Mall Drive between Eucalyptus Avenue and Moreno Beach Drive	6,300	57	118	252	68.8
Redlands Boulevard north of Eucalyptus Avenue/Fir Avenue	25,600	99	214	460	73.8
Redlands Boulevard between Eucalyptus Avenue/Fir Avenue and Encilia Avenue/Eucalyptus Avenue	16,100	73	157	338	71.7
Redlands Boulevard between Encilia Avenue/Eucalyptus Avenue and Cottonwood Avenue	16,300	74	158	341	71.8
Redlands Boulevard between Cottonwood Avenue and Alessandro Boulevard	16,000	73	156	336	71.7
Redlands Boulevard south of Alessandro Boulevard	16,400	74	159	342	71.8

ADT = Average Daily Trips CNEL = Community Noise Equivalent Level dBA = A-weighted decibel.
*Traffic noise within 50 feet of the roadway centerline should be evaluated with site-specific information.
Source: Table I, *Noise Impact Analysis Eucalyptus Industrial Park*, City of Moreno Valley. LSA Associates, Inc. November 2011.

Table 4.9.K: Project Build Out Year (2035) With Project Traffic Noise Levels

Roadway Segment	ADT	CL 70 CNEL (feet)	CL to 65 CNEL (feet)	CL to 60 CNEL (feet)	CNEL (dBA) 50 feet from CL of Outermost Lane	Increase CNEL (dBA) 50 feet from CL to Outermost Lane
Eucalyptus Avenue west of Nason Street	9,500	85	178	381	71.0	0.0
Eucalyptus Avenue between Nason Street and Fir Avenue	12,100	99	209	448	72.1	0.1
Eucalyptus Avenue between Fir Avenue and Moreno Beach Drive	10,100	76	161	345	70.8	0.1
Eucalyptus Avenue between Moreno Beach Drive and Auto Mall Drive	13,000	90	190	408	71.9	1.0
Eucalyptus Avenue/Fir Avenue between Auto Mall Drive and Redlands Boulevard	12,000	85	180	387	71.6	1.3
Fir Avenue east of Redlands Boulevard	18,200	111	238	511	73.4	0.1
Nason Street north of Eucalyptus Avenue	22,300	127	272	585	74.3	0.0
Nason Street between Eucalyptus Avenue and Alessandro Boulevard	33,300	191	408	878	76.5	0.1

Table 4.9.K: Project Build Out Year (2035) With Project Traffic Noise Levels

Roadway Segment	ADT	CL 70 CNEL (feet)	CL to 65 CNEL (feet)	CL to 60 CNEL (feet)	CNEL (dBA) 50 feet from CL of Outermost Lane	Increase CNEL (dBA) 50 feet from CL to Outermost Lane
Nason Street south of Alessandro Boulevard	28,100	148	317	682	75.3	0.1
Moreno Beach Drive north of Eucalyptus Avenue	37,400	179	383	825	76.5	0.2
Moreno Beach Drive between Eucalyptus Avenue and Cottonwood Avenue	20,700	140	298	640	74.4	0.0
Moreno Beach Drive between Cottonwood Avenue and Alessandro Boulevard	22,100	90	194	417	73.1	0.0
Moreno Beach Drive south of Alessandro Boulevard	28,000	105	227	489	74.2	0.0
Auto Mall Drive between Eucalyptus Avenue and Moreno Beach Drive	6,500	58	121	258	68.9	0.1
Redlands Boulevard north of Eucalyptus Avenue/Fir Avenue	28,300	106	229	492	74.4	0.4
Redlands Boulevard between Eucalyptus Avenue/Fir Avenue and Encilia Avenue/Eucalyptus Avenue	16,300	74	158	341	71.8	0.1
Redlands Boulevard between Encilia Avenue/Eucalyptus Avenue and Cottonwood Avenue	16,400	74	159	342	71.8	0.0
Redlands Boulevard between Cottonwood Avenue and Alessandro Boulevard	16,100	73	157	338	71.7	0.0
Redlands Boulevard south of Alessandro Boulevard	16,400	74	159	342	71.8	0.0

ADT = Average Daily Trips CNEL = Community Noise Equivalent Level dBA = A-weighted decibel
CL = centerline NA = Not Applicable

*Traffic noise within 50 feet of the roadway centerline should be evaluated with site-specific information.

Source: Table J, *Noise Impact Analysis Eucalyptus Industrial Park*, City of Moreno Valley. LSA Associates, Inc. November 2011.

General Plan Build Out Year Analysis. Increases in noise levels associated with the General Plan Build Out Year traffic conditions on area roadways range from 0 dBA to 0.9 dBA. The greatest increase in noise levels is along Eucalyptus Avenue between Auto Mall Drive and Redlands Boulevard, where an increase of up to 0.9 dBA is predicted, with the ambient noise level predicted to be 73.0 dBA at 50 feet from the centerline of the street. However, similar to the project build out year (2035) scenario, no noise-sensitive uses exist or are planned in the vicinity of the roadway segment. The existing surrounding land uses consist of the auto mall, commercial uses, and vacant land zoned for commercial uses. Therefore, noise impacts at the roadway segments where an increase of more than 3.0 dBA would occur are considered less than significant because there are no sensitive receptors located along the roadway segments that would be affected. All other roadway segments would have an increase in noise of less than 3.0 dBA, which would not be perceptible to the human ear in an outdoor environment. Therefore, no mitigation measures related to General Plan Build Out Year traffic noise would be required for off-site areas. Tables 4.9.L and 4.9.M depict General Plan Build Out Year traffic noise conditions without and with the proposed project.

Table 4.9.L: General Plan Build Out Year Without Project Traffic Noise Levels

Roadway Segment	ADT	Centerline to 70 CNEL (feet)	Centerline to 65 CNEL (feet)	Centerline to 60 CNEL (feet)	CNEL (dBA) 50 Feet from Centerline of Outermost Lane
Eucalyptus Avenue west of Nason Street	19,700	135	288	619	74.2
Eucalyptus Avenue between Nason Street and Fir Avenue	17,300	125	264	568	73.6
Eucalyptus Avenue between Fir Avenue and Moreno Beach Drive	13,600	92	196	421	72.1
Eucalyptus Avenue between Moreno Beach Drive and Auto Mall Drive	16,100	103	219	471	72.8
Eucalyptus Avenue/Fir Avenue between Auto Mall Drive and Redlands Boulevard	13,700	93	197	423	72.1
Fir Avenue east of Redlands Boulevard	20,600	121	258	555	73.9
Nason Street north of Eucalyptus Avenue	24,600	136	290	624	74.7
Nason Street between Eucalyptus Avenue and Alessandro Boulevard	33,100	190	407	875	76.5
Nason Street south of Alessandro Boulevard	27,800	147	315	677	75.2
Moreno Beach Drive north of Eucalyptus Avenue	48,100	211	453	976	77.6
Moreno Beach Drive between Eucalyptus Avenue and Cottonwood Avenue	25,400	160	341	733	75.3
Moreno Beach Drive between Cottonwood Avenue and Alessandro Boulevard	22,800	92	198	426	73.3
Moreno Beach Drive south of Alessandro Boulevard	28,000	105	227	489	74.2
Auto Mall Drive between Eucalyptus Avenue and Moreno Beach Drive	7,500	64	132	283	69.5
Redlands Boulevard north of Eucalyptus Avenue/Fir Avenue	28,000	105	227	489	74.2
Redlands Boulevard between Eucalyptus Avenue/Fir Avenue and Encilia Avenue/Eucalyptus Avenue	18,200	79	170	367	72.3
Redlands Boulevard between Encilia Avenue/Eucalyptus Avenue and Cottonwood Avenue	16,700	75	161	346	71.9
Redlands Boulevard between Cottonwood Avenue and Alessandro Boulevard	18,900	81	175	376	72.4

Table 4.9.L: General Plan Build Out Year Without Project Traffic Noise Levels

Roadway Segment	ADT	Centerline to 70 CNEL (feet)	Centerline to 65 CNEL (feet)	Centerline to 60 CNEL (feet)	CNEL (dBA) 50 Feet from Centerline of Outermost Lane
Redlands Boulevard south of Alessandro Boulevard	23,100	93	200	430	73.3

ADT = Average Daily Trips CNEL = Community Noise Equivalent Level dBA = A-weighted decibel.

*Traffic noise within 50 feet of the roadway centerline should be evaluated with site-specific information.

Source: Table K, *Noise Impact Analysis Eucalyptus Industrial Park*, City of Moreno Valley. LSA Associates, Inc. November 2011.

Table 4.9.M: General Plan Build Out Year With Project Traffic Noise Levels

Roadway Segment	ADT	CL 70 CNEL (feet)	CL to 65 CNEL (feet)	CL to 60 CNEL (feet)	CNEL (dBA) 50 feet from CL of Outermost Lane	Increase CNEL (dBA) 50 feet from CL to Outermost Lane
Eucalyptus Avenue west of Nason Street	19,900	136	290	623	74.2	0.0
Eucalyptus Avenue between Nason Street and Fir Avenue	17,600	126	268	574	73.7	0.1
Eucalyptus Avenue between Fir Avenue and Moreno Beach Drive	13,900	94	199	427	72.2	0.1
Eucalyptus Avenue between Moreno Beach Drive and Auto Mall Drive	18,700	113	242	520	73.5	0.7
Eucalyptus Avenue/Fir Avenue between Auto Mall Drive and Redlands Boulevard	16,700	105	224	482	73.0	0.9
Fir Avenue east of Redlands Boulevard	20,800	122	260	558	74.0	0.1
Nason Street north of Eucalyptus Avenue	24,600	136	290	624	74.4	0.0
Nason Street between Eucalyptus Avenue and Alessandro Boulevard	33,500	191	410	882	76.5	0.1
Nason Street south of Alessandro Boulevard	28,100	148	317	682	75.3	0.1
Moreno Beach Drive north of Eucalyptus Avenue	50,100	217	466	1003	77.8	0.2
Moreno Beach Drive between Eucalyptus Avenue and Cottonwood Avenue	25,500	160	342	735	75.3	0.0
Moreno Beach Drive between Cottonwood Avenue and Alessandro Boulevard	23,000	93	199	429	73.3	0.0
Moreno Beach Drive south of Alessandro Boulevard	28,000	105	227	489	74.4	0.0
Auto Mall Drive between Eucalyptus Avenue and Moreno Beach Drive	7,700	65	135	288	69.6	0.1
Redlands Boulevard north of Eucalyptus Avenue/Fir Avenue	30,700	112	241	519	74.6	0.4

Table 4.9.M: General Plan Build Out Year With Project Traffic Noise Levels

Roadway Segment	ADT	CL 70 CNEL (feet)	CL to 65 CNEL (feet)	CL to 60 CNEL (feet)	CNEL (dBA) 50 feet from CL of Outermost Lane	Increase CNEL (dBA) 50 feet from CL to Outermost Lane
Redlands Boulevard between Eucalyptus Avenue/Fir Avenue and Encilia Avenue/Eucalyptus Avenue	18,400	80	172	369	72.3	0.0
Redlands Boulevard between Encilia Avenue/Eucalyptus Avenue and Cottonwood Avenue	16,900	75	162	349	72.0	0.1
Redlands Boulevard between Cottonwood Avenue and Alessandro Boulevard	19,000	82	175	377	72.5	0.1
Redlands Boulevard south of Alessandro Boulevard	23,100	93	200	430	73.3	0.0

ADT = Average Daily Trips CNEL = Community Noise Equivalent Level dBA = A-weighted decibel
CL = centerline NA = Not Applicable

*Traffic noise within 50 feet of the roadway centerline should be evaluated with site-specific information.

Source: Table K, *Noise Impact Analysis Eucalyptus Industrial Park*, City of Moreno Valley. LSA Associates, Inc. November 2011.

4.9.5.5 Long-Term Operational Noise Impacts

Threshold:	Would the project cause exposure of persons to or generation of noise levels in excess of standards established in the <i>City of Moreno Valley General Plan</i> , <i>Moreno Valley Municipal Code</i> , or applicable standards of other agencies?
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Potential long-term stationary noise impacts would primarily be associated with operations at the proposed warehouse and the light industrial uses. The proposed on-site uses would generate noise from truck delivery, loading/unloading activities at the loading areas, and other noise-producing activities within the parking lot. These activities are potential point sources of noise that could affect noise-sensitive receptors adjacent to the loading areas and parking lots, such as the existing residential uses to the southeast of the project site.

The project site is adjacent to SR-60 on the north, the auto center and vacant land on the west zoned for commercial uses, and vacant land to the east and south zoned for low-density residential uses. There are single-family residential uses located approximately 50 feet southeast of the southern boundary of the project site, approximately 395 feet southeast of the proposed warehouse buildings and approximately 664 feet southeast of the proposed loading docks.

As indicated in the project's site plan (Figure 1.2), proposed Buildings 1 and 2 have loading/unloading areas on the south side facing Eucalyptus Avenue. Building 3 has loading/unloading areas on the north side facing Eucalyptus Avenue. Buildings 4 and 5 have loading/unloading areas located on the east side of the buildings, and Building 6 has the loading/unloading area on the west side of the building facing Building 5. The closest warehouse buildings (Buildings 5 and 6) with loading docks facing the residential areas to the southeast are approximately 664 feet from the existing residences to the southeast. The proposed Building 6 would provide partial shielding to the residences to the southeast from loading/unloading activities at Buildings 5 and 6. Noise associated with loading/unloading activities would potentially affect these existing and future residential uses. Other on-site, noise-producing activities may include traffic and activity within the parking lot (talking, horn blowing, vehicle door slamming, truck idling, etc.).

As noise spreads from a source, it loses energy; therefore, the farther away the noise receiver is from the noise source, the lower the perceived noise level would be. Geometric spreading causes the sound level to attenuate or be reduced, resulting in a 6 dBA reduction in the noise level for each doubling of distance from a single-point source of noise, such as an idling truck, to the noise-sensitive receptor of concern. Although individual activity may generate relatively high and intermittent noise, when added to the typically lower ambient noise and averaged over a longer period, the cumulative noise level would be much lower and would be considered a less than significant impact.

Based on the preliminary site plan, the shortest distance (approximately 664 feet) from the existing residences to the nearest loading/unloading areas on the southeastern portion of the project site would result in a 22 dBA¹ noise attenuation (compared to the levels at 50 feet). The driveway along the southeastern side of the project site is approximately 600 feet from the nearest residences to the southeast, which also provides a noise attenuation of 22 dBA.²

Truck Delivery and Loading/Unloading. Delivery trucks for the proposed on-site warehouse uses would result in a maximum noise similar to noise readings from loading and unloading activities for other light industrial projects, which generate a noise level of 75 dBA L_{max} at 50 ft and is used in this analysis. Based on the above discussion, loading/unloading noise at Buildings 5 and 6 would be reduced to below 53 dBA L_{max} at ground level of the nearest residences southeast of the project site. This range of maximum noise levels is lower than the typical exterior noise standards of 75 dBA L_{max} during the day (7:00 a.m. to 10:00 p.m.) and the 65 dBA L_{max} standard during the night (10:00 p.m. to 7:00 a.m.). Although the typical truck unloading process takes an average of 15 to 20 minutes, this maximum intermittent noise level occurs in a much shorter period of time and would amount to less than a few minutes. It is not expected that this maximum noise level from truck loading/unloading activities at the proposed industrial uses would occur more than 30 minutes in any hour cumulatively during the daytime hours between 7:00 a.m. and 10:00 p.m. (with the 55 dBA L₅₀ noise standard for events lasting no more than 30 minutes in any hour). Therefore, noise associated with loading and unloading activities at the loading areas associated with the proposed warehouse uses would not result in noise levels exceeding the typical daytime noise standards at the nearest residences to the southeast. In addition, if loading/unloading activities occur during the nighttime hours between 10:00 p.m. and 7:00 a.m., the cumulative noise level would be below the nighttime standard of 55 dBA L₂₅ that is not to be exceeded for more than 15 minutes in any hour. Therefore, loading/unloading activities would not result in any significant noise impacts at the nearest off-site residential uses.

Similarly, loading/unloading noise from other on-site warehouse buildings (Buildings 1, 2, 3, and 4) would be reduced to below 50 dBA L_{max} at ground level of the nearest residences to the southeast from distance divergence and shielding provided by Buildings 5 and 6. This range of maximum noise levels is lower than the typical exterior noise standards of 75 dBA L_{max} (or the 55 dBA L₅₀) during the day (7:00 a.m. to 10:00 p.m.) and the 65 dBA L_{max} standard (or the 50 dBA L₅₀) during the night (10:00 p.m. to 7:00 a.m.). Therefore, noise associated with loading and unloading activities at the loading areas associated with the proposed warehouse buildings would not result in noise levels exceeding the typical daytime or nighttime noise standards at the nearest residences to the southeast. No mitigation measure is required.

Parking Lot Noise. Representative parking lot activities, such as conversing, doors slamming, engine startup, and slow-moving vehicles would generate approximately 60 to 70 dBA L_{max} at 50 feet. This level of noise is lower than that of the truck delivery and loading/unloading activities. With the noise attenuation effect from the distance divergence (minimum 600 feet and 22 dBA noise attenuation, and an additional 2 dBA noise reduction when measured at 200 feet from the project's

¹ Based on the sound pressure level equation of $L = 20 \text{ Log} (\text{Distance} / \text{Reference Distance})$; where L is the sound level (in dBA), the value of 20 is 20 μPa (Pascal) root mean squared or 20 units of pressure (usually considered the threshold of hearing), multiplied by the logarithm of the distance divided by the reference distance, thus $(\log [664 \text{ ft} \div 50 \text{ ft}] = 1.123; 1.123 \times 20 = 22.46)$.

² $\log [600 \text{ ft} \div 50 \text{ ft}] = 1.079; 1.079 \times 20 = 21.58$.

boundary) and the proposed on-site warehouse buildings, noise in the parking lots of the warehouse uses would not be a significant noise impact with respect to existing residences to the southeast of the project site. No mitigation is required.

Other Potential On-site Operational Noises. It is anticipated that the proposed uses would have some sort of speaker system at the truck loading docks. As stated previously, the closest warehouse buildings (Buildings 5 and 6) with loading docks adjacent to the residential areas to the southeast are approximately 664 ft from these existing residences to the southeast. The proposed Building 6 would provide partial shielding to the residences to the southeast from the loading docks area at Buildings 5 and 6. Noise associated with loudspeaker use at these loading docks would be attenuated by 13 dBA with the distance alone. Building 6 would provide, at a minimum, 8 dBA reduction for these existing residences to the southeast. Typical loudspeakers generate a sound level of 75 dBA L_{max} at 50 ft. With the distance attenuation and building shielding effect, the speaker noise at the nearest residences will be at or below 54 dBA L_{max} . This range of maximum noise levels is lower than the typical exterior noise standards of 75 dBA L_{max} (or the 55 dBA L_{50}) during the day (7:00 a.m. to 10:00 p.m.) and the 65 dBA L_{max} standard (or the 50 dBA L_{50}) during the night (10:00 p.m. to 7:00 a.m.). Therefore, noise associated with loading dock speakers at the proposed warehouse buildings would not result in noise levels exceeding the typical daytime or nighttime noise standards at the nearest residences to the southeast. No mitigation measure is required.

The proposed project would have rooftop heating, ventilating, and air conditioning (HVAC) mechanical equipment, as well as ground-floor garbage compactors. Although no final design is available at this time for the type and location of the rooftop mechanical units, based on noise measurements conducted at a similar use, rooftop HVAC units generate noise levels of approximately 62 dBA at 50 ft. The minimum distance between the residences to the southeast and feasible rooftop equipment location is 450 ft, which would provide 19 dBA in noise attenuation by distance divergence when compared to the noise level measured at 50 ft. In addition, the parapet or edge of the roof would provide an additional 3 to 5 dBA in noise reduction for ground-floor receptors. Therefore, noise levels at the nearest residences to the southeast, attributable to the rooftop mechanical equipment, would be below 40 dBA. This range of noise levels is much lower than traffic noise on roadways in the project area and the loading/unloading and truck movement noise. No significant noise impacts are anticipated from the rooftop mechanical equipment.

Noise associated with garbage compactors is approximately 70 dBA at 6 ft. It is assumed that two garbage compactors would be located at the loading docks on the south side of the proposed buildings. These compactors would be approximately 390 ft from the nearest residences to the southeast. This distance provides approximately 36 dBA in noise attenuation when compared to the noise level measured at 6 ft. The noise attenuation provided by the distance divergence would reduce the noise associated with the garbage compactor to less than 34 dBA. No significant noise impacts from the garbage compactor would occur.

Interior Noise Standard. The typical maximum allowable interior noise levels for residential uses are 45 dBA between 10:00 p.m. and 7:00 a.m. and 50 dBA between 7:00 a.m. and 10:00 p.m. Typical Southern California homes with windows open would achieve up to 12 dBA in exterior to interior noise reduction. When windows are closed, the noise attenuation increases to 24 dBA. Interior noise levels at the nearest residential homes to the southeast, attributable to loading/unloading activities from the nearest on-site light industrial use loading areas, would be reduced to 41 dBA L_{max} with windows open and to 29 dBA L_{max} with windows closed. This range of noise levels is compatible with or lower than typical household activity noise. Therefore, no significant interior noise impacts for these off-site residences would occur.

4.9.5.6 Noise Impacts to Adjacent Future Development

Threshold	Would the proposed project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?
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Future development of the L-Aquila D’Pietra (LADP) project would result in the occupation of residential units in close proximity to noise-generating uses located within the limits of the proposed project site. Noise impacts resulting from the construction and occupation of the LADP would be fully addressed in the environmental document for that project. While CEQA generally discourages the use of speculation in EIRs, in light of the existing condition, following discussion provides data on conditions that *may* occur if the LADP were developed as currently proposed. The following discussion is speculative and is included for information purposes only. It must not be used to assess impacts associated with the construction or operation of the LADP or to assign mitigation on the proposed project.

Based on the land use assumptions for the future LADP project, residential development would be located along the southern project boundary between the proposed project and the proposed LADP. It is anticipated that the proposed project site would be fully developed prior to the occupation of any dwelling units in LADP; therefore, no construction-related noise impacts to future adjacent sensitive receptors would result from development of the proposed project.

Truck Movements on Service Driveways and Loading/Unloading Operations. The nearest truck docks are located approximately 255 feet from the southern boundary of the project site and approximately 280 feet from the nearest future residence. Buildings on the project site would provide some noise attenuation for noise occurring at the truck dock. The nearest internal driveways are located approximately 5 feet from the southern boundary of the project and approximately 30 feet from the nearest future LADP residence. However, this service roadway is not anticipated to be utilized as a truck driveway as the width of the closest internal driveway is 30 feet. Other truck driveways located on site are 36 feet or 40 feet in width, which would accommodate trucks more easily. In addition, based on the conceptual site plan for the proposed project, it is reasonable to conclude that the internal driveway on the southern side of Buildings 5 and 6 would be utilized by passenger cars as the internal driveway is an access point for employee parking. Therefore, based on these assumptions, the nearest internal driveway that would be utilized by trucks on a daily basis would be farther north, between Buildings 4 and 5. This 36-foot wide driveway would be approximately 255 feet from the southern boundary of the project site and approximately 280 feet from the nearest future LADP residence.

At a distance of approximately 280 feet, distance divergence provides 15 dBA in noise attenuation. Additionally, it is assumed that the proposed development would include a 6-foot screening wall that would provide an additional 5 dBA in noise attenuation. Therefore, noise levels at the future LADP residential uses would be approximately 55 dBA L_{max}¹. When measured at 200 feet from the project’s boundary, this noise level would be attenuated to 51 dBA L_{max} and would not exceed the City’s residential exterior noise standards of 60 dBA L_{max} during the day (8:00 a.m. to 10:00 p.m.) and the 55 dBA L_{max} standard during the night (10:00 p.m. to 8:00 a.m.). A less than significant impact would occur and no mitigation is required.

Parking Lot Noise. Representative parking lot activities, such as conversing, doors slamming, engine startup, and slow-moving vehicles would generate approximately 60 to 70 dBA L_{max} at 50 feet. This level of noise is lower than that of the truck delivery and loading/unloading activities. With the noise attenuation effect from the distance divergence (minimum 280 feet and 15 dB A noise attenuation, and an additional 4 dBA noise reduction when measured at 200 feet from the project’s boundary) and the proposed on-site warehouse buildings, noise in the parking lots of the warehouse

¹ 75 dBA L_{max} – 15 dBA L_{max} – 5 dBA L_{max} = 55 dBA L_{max}.

uses would not be a significant noise impact with respect to future residences to the south of the project site. No mitigation is required.

Heating, Ventilating, and Air Conditioning Equipment. Rooftop HVAC units generate noise levels of approximately 62 dBA at 50 feet. The future proposed residences are located approximately 185 feet to the south from the nearest potential on-site rooftop HVAC equipment location. With the effect of distance divergence, noise generated by HVAC equipment would be reduced at the closest future residence when compared with the noise level measured at 50 feet. Additionally, the roof edge (parapet) creates a noise barrier that reduces noise levels from rooftop HVAC units by an additional 3 to 5 dBA or more for ground floor receptors. The HVAC noise would be attenuated to 48 dBA or lower at the nearest future residence. At 200 feet from the project's boundary, this noise would be further reduced to 44 dBA. Because of the attenuation achieved, the City's exterior noise standard of 60 dBA L_{dn} /CNEL for HVAC equipment in residential district would not be exceeded at the nearest future residence, no significant noise impact resulting from the operation of rooftop HVAC equipment would occur and no mitigation is required.

Garbage Compactor Noise. Garbage compactors generate approximately 70 dBA L_{max} at 6 feet. The nearest garbage compactors would be located approximately 255 feet from the proposed LADP residences. With the effect of distance divergence, noise generated by garbage compactors would be reduced at the closest residences. When measured at 200 feet from the project's boundary, noise from the garbage compactor would be reduced to 33 dBA L_{max} . Because the City's exterior noise standard of 60 dBA L_{max} during the day and 55 dBA L_{max} during the night would not be exceeded at the nearest sensitive noise receptors, no significant noise impacts from the on-site garbage compactors would occur. In the absence of any significant impact, no mitigation is required.

Other Potential On-site Operational Noise Sources. It is anticipated that the proposed uses would have some sort of speaker system at the truck loading docks. As stated previously, the closest warehouse buildings (Buildings 4) with loading docks adjacent to the residential areas to the southeast are approximately 280 feet from these potential future residences to the south. The proposed Building 4 would provide partial shielding to the future potential residences to the south from the loading docks area. Typical loud speakers generate a sound level of 75 dBA L_{max} at 50 feet and buildings would provide a minimum of 8 dBA shielding reduction for these future potential residences to the south. With the distance attenuation, the speaker noise at the nearest future residence would be reduced to 52 dBA L_{max} and at 200 feet from the project's boundary, the noise would be reduced to 48 dBA L_{max} . This range of noise levels will be lower than the City's exterior noise standards of 55 dBA L_{max} ¹ standard. Therefore, noise associated with loading dock speakers at the proposed warehouse buildings would not result in noise levels exceeding the typical daytime or nighttime noise standards at the nearest residences to the south east. No mitigation measures are required.

Combined Noise Level from On-site Stationary Sources. Similar to the discussions above for the existing residences to the southeast, most of the on-site stationary sources would occur intermittently and they do not usually occur at the same time with their maximum noise level. Therefore, it is not practical to add their noise together for a combined noise level at a specific receptor location. Assuming a worst-case scenario of all these noise sources occurring at the same time with their maximum noise level, the maximum noise level measured at 200 feet from the project's southern boundary would be 55 dBA L_{max} . Although this "combined" noise level is not likely to occur, if it occurs, it would not exceed the City's 55 dBA L_{max} nighttime standard for residential uses.

¹ Chapter 11.80.030 City of Moreno Valley Municipal Code, City of Moreno Valley.

4.9.6 Significant Impacts

4.9.6.1 Short-Term Construction Noise Impacts

Threshold: Would the project result in a substantial temporary, periodic, and/or permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Two types of short-term noise impacts could occur during the construction of the proposed project. First, construction crew commutes and the transport of construction equipment and materials to the site for the proposed project would incrementally increase noise levels on access roads leading to the site. There would be a relatively high single-event noise exposure potential at a maximum level of 87 dBA L_{max} with trucks passing at 50 feet. However, the projected construction traffic would be small when compared with the existing traffic volumes on SR-60, Eucalyptus Avenue, and other affected streets. Furthermore, the proposed project's truck traffic will not travel on roadways adjacent to the existing residences, as Encilia Avenue does not provide access to the project site. Therefore, short-term construction-related worker commutes and equipment transport noise impacts would be less than significant and no mitigation is required.

The second type of short-term noise impact is related to noise generated during excavation, grading, and building erection on the project site. Construction is completed in discrete steps, each of which has its own mix of equipment, and consequently, its own noise characteristics. The several sequential phases would change the character of the noise generated on the site, and therefore, the noise levels surrounding the site as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. Table 4.9.N lists typical construction equipment noise levels recommended for noise-impact assessments, based on a distance of 50 feet between the equipment and a noise receptor. Typical noise levels range up to 91 dBA L_{max} at 50 feet during the noisiest construction phases. The site preparation phase, which includes excavation and grading of the site, tends to generate the highest noise levels, because the noisiest construction equipment is earthmoving equipment. Earthmoving equipment includes excavating machinery such as backfillers, bulldozers, draglines, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve one or two minutes of full-power operation followed by three to four minutes at lower power settings.

Table 4.9.N: Typical Construction Equipment Maximum Noise Levels

Type of Equipment	Range of Maximum Sound Levels Measured (dBA at 50 feet)	Suggested Maximum Sound Levels for Analysis (dBA at 50 feet)
Pile Drivers, 12,000 to 18,000 ft-lb/blow	81 to 96	93
Rock Drills	83 to 99	96
Jack Hammers	75 to 85	82
Pneumatic Tools	78 to 88	85
Pumps	74 to 84	80
Dozers	77 to 90	85
Tractors	83 to 91	80
Scrapers	83 to 94	87
Haul Trucks	79 to 86	88
Cranes	71 to 87	82
Portable Generators	75 to 82	80
Rollers	77 to 82	80

Table 4.9.N: Typical Construction Equipment Maximum Noise Levels

Type of Equipment	Range of Maximum Sound Levels Measured (dBA at 50 feet)	Suggested Maximum Sound Levels for Analysis (dBA at 50 feet)
Front-End Loaders	77 to 90	86
Hydraulic Backhoe	81 to 90	86
Hydraulic Excavators	81 to 90	86
Graders	79 to 89	86
Air Compressors	76 to 89	86
Trucks	81 to 87	86

Source: Noise Control for Buildings and Manufacturing Plants, Bolt, Beranek & Newman, 1987

Construction of the proposed project is expected to require the use of scrapers, bulldozers, and water and pickup trucks. Based on the information in Table 4.9.N, the maximum noise level generated by each scraper on the proposed project site is assumed to be approximately 87 dBA L_{max} at 50 feet from the scraper. Each bulldozer would generate approximately 85 dBA L_{max} at 50 feet. The maximum noise level generated by water and pickup trucks is approximately 86 dBA L_{max} at 50 feet from these vehicles. Each doubling of the sound sources with equal strength increases the noise level by three (3) dBA. Assuming that each piece of construction equipment operates at some distance from the other equipment, the worst-case composite noise level during this phase of construction would be 91 dBA L_{max} at a distance of 50 feet from the active construction area.

The nearest receptor locations to the project site boundary are existing residences approximately 50 feet to the southeast. These nearest residents may be subject to short-term, intermittent, maximum noise reaching 91 dBA L_{max} , generated by construction activities on the project site. This noise level would exceed the City's exterior noise standard of 60 dBA¹ CNEL for residential uses. However, no significant construction noise impacts would occur if construction of the proposed project would occur within the permitted hours of 6:00 a.m. to 8:00 p.m. of any working day, and within the permitted hours of 7:00 a.m. and 8:00 p.m. on Sundays and Federal holidays. Compliance with the construction hours specified in the City's Municipal Code would result in construction noise impacts that are less than significant. While impacts would be considered less than significant as long as construction activities occur within the designated hours identified in the City's Municipal Code, mitigation measures have been identified to reduce the noise levels that would expose nearby sensitive receptors to noise levels in excess of the City's noise standards.

Mitigation Measures. Construction of the proposed project would result in noise levels at the closest residences exceeding the maximum noise level allowed under the City's Municipal Code. The following measures would reduce short-term construction-related noise impacts associated with the proposed project:

- 4.9.6.1A** During all project site excavation and grading on site, the project contractor shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards.
- 4.9.6.1B** The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest to the project site.
- 4.9.6.1C** The construction contractor shall locate equipment staging in a reas that will create the greatest distance between construction-related noise sources and noise-sensitive receptors nearest to the project site during all project construction.
- 4.9.6.1D** During all project site construction activities, the construction contractor shall limit all construction-related activities that would result in high noise levels to between the hours

¹ Chapter 11.80.030 Table 11.80.030-2, City of Moreno Valley Municipal Code, City of Moreno Valley.

of 6:00 a.m. and 8:00 p.m. on weekdays and between the hours of 7:00 a.m. to 8:00 p.m. on weekends and holidays, unless written approval is obtained from the City Building Official or City Engineer.

Level of Significance after Mitigation. With the implementation of the proposed mitigation measures, potential short-term noise impacts would be reduced below the level of significance.

4.9.7 Cumulative Impacts

The cumulative area for noise impacts is the City of Moreno Valley. Cumulative projects are identified in Chapter 2.0, Table 2.A and Figure 2.1. Implementation of the proposed project would result in the introduction of new noise sources and levels. Construction crew commutes and the transport of construction equipment, materials, and fill to the site for the proposed project would incrementally increase noise levels on access roads leading to the site. Secondary sources of noise would include noise generated during excavation, grading, and building erection on the project site. The net increase in project site noise levels generated by these activities and other sources has been quantitatively estimated and compared to the applicable noise standards and thresholds of significance. Although it is not possible to predict if contiguous properties may be constructed at the same time and create cumulative noise impacts that would be greater than if developed at separate times, it is unlikely that adjacent properties will be developed at the same time as the proposed project. However, in the unlikely event that adjacent properties are developed at the same time as the proposed project, implementation of the stated mitigation measures would render the cumulative impacts of the proposed project to less than significant levels. The noise analysis contained in this section also provides an assessment of on-site operational noise level impacts onto adjacent sensitive uses, both existing and future. Additionally, on-site operational noises are individual noise occurrences and are not additive in nature.

Cumulative traffic volumes were developed from the addition of traffic generated by approved and pending projects to opening year with project traffic volumes. Cumulative noise impacts associated with roadway noise have been addressed based on the cumulative traffic volumes. The increases over existing traffic volume are attributable to cumulative development projects in the project vicinity and region. As indicated, the cumulative roadway noise (with project) assessment concludes that noise levels along two roadway segments would exceed baseline noise levels by 3 dBA or more. Noise levels along this segment would occur even if the proposed project did not proceed. As stated earlier, the baseline condition represents a noise environment that, in light of approved and continuing development in the project area, is not likely to be replicated. Comparing cumulative noise levels that would occur both with and without the project, the proposed project would not expose sensitive uses located adjacent to area roadways to excessive noise levels. As indicated, the future roadway noise assessment concludes that there will be no significant roadway noise impacts associated with cumulative and cumulative plus project conditions. Therefore, there are no projects that would, in combination with the proposed project, produce significant noise impacts to sensitive land uses from on-site operational noise. Thus, no cumulatively considerable noise impacts are expected to occur in this area, and the proposed project will not make a significant contribution to cumulative noise impacts, so no additional mitigation measures are required.

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4.10 POPULATION AND HOUSING

This section identifies population and housing conditions within the City of Moreno Valley and addresses potential impacts that may result from the construction and operation of the proposed on-site uses. The analysis is based in part on population and housing projections identified by the California Department of Finance (DOF), Southern California Association of Governments (SCAG), as well as information contained in the City's General Plan.

4.10.1 Existing Setting

4.10.1.1 Population Characteristics

For the most recent year data available (2010), the U.S. Census Bureau estimated the City's population to be 193,365 persons. As detailed in Table 4.10.A, this population represents a 35.8 percent increase from the population recorded during the previous Federal Census in 2000. The rate of population growth that occurred in the City since 2000 was considerably higher than the population growth experienced in the City between 1990 and 2000, even with the economic and housing downturn in the later part of the decade.

Table 4.10.A: City of Moreno Valley Population

Census Year	Population	Increase
1990 118,8	81 ¹ —	
2000 142,3	81 ¹ 19.9%	
2010 193,3	65 ² 35.8%	

¹ U.S. Census Bureau: State and County QuickFacts. Data derived from Population Estimates, 2000 and 1990 Census of Population and Housing.

² U.S. Census Bureau website accessed December 28, 2011 for April 1, 2010 data. http://www.dof.ca.gov/research/demographic/state_census_data_center/census_2010/documents/2010Census

4.10.1.2 Housing Characteristics

The number of dwelling units in the City has increased to accommodate the City's growing population (Table 4.10.B). Currently, the DOF identifies that 42,595 units or nearly 80 percent of the existing housing units in the City are single-family detached units (Table 4.10.C). Multiple-unit dwellings comprise approximately 16 percent of the City's current housing stock.

Table 4.10.B: City of Moreno Valley Housing Units, 1990, 2000, and 2008

Year	Housing Units	Increase
1990 37,93	5 ¹ —	
2000 41,43	1 ¹ 9.2%	
2008 53,12	7 ² 28.2%	

¹ U.S. Census Bureau: State and County QuickFacts. Data derived from Population Estimates, 2000 and 1990 Census of Population and Housing.

² Department of Finance. Table E-5: City /County Population and Housing Estimates, Revised January 1, 2008. http://www.dof.ca.gov/research/demographic/reports/estimates/e-5_2001-06/documents/E-5_2008%20Internet%20Version.xls website accessed May 1, 2008.

Table 4.10.C: City of Moreno Valley Composition of the Housing Stock, 2008

Housing Type	Number of Units	Percentage
Single-Family, Detached	42,595	80.1%
Single-Family, Attached	1,031	1.9%
2- to 4-Unit Structure/ 5- or More Unit Structure	8,458	15.9%
Mobile Home	1,043	1.9%
Total	53,127	100%

Source: Department of Finance, Table E-5: City/County Population and Housing estimates, Revised January 1, 2008. http://www.dof.ca.gov/research/demographic/reports/estimates/e-5_2001-06/documents/E-5_2008%20Internet%20Version.xls
Web-site accessed May 1, 2008.

4.10.1.3 Employment Characteristics

As identified in Table 4.10.D, 23,072 jobs were located within the City. Two employment sectors, retail trade (32.7%) and education (21.9%), accounted for approximately half of jobs in the City.

Table 4.10.D: City of Moreno Valley 2005 Employment by Sector

Job Sector	Number of Employees	% of Employees
Retail Trade	7,559	32.7%
Education 5,075		21.9%
Other Services	1,703	7.3%
Health Services	1,607	6.9%
Construction 1,361		5.8%
Manufacturing 1,238		5.3%
Distribution/Transportation 1,164		5.0%
Hotel and Amusement Activities	758	3.2%
Financial, Insurance, Real Estate	757	3.2%
Business Services	559	2.4%
Government 392		1.6%
Agriculture 334		1.4%
Engineering and Management	311	1.3%
Utilities	259	1.1%
Total Employment	23,072	100%

Source: *Demographic, Economic & Quality of Life Report*, City of Moreno Valley, http://www.moreno-valley.ca.us/do_biz/pdfs/demo-economic-qol-0108.pdf, January 2008, date accessed May 1, 2008.

4.10.2 Existing Policies and Regulations

City of Moreno Valley General Plan. The City's General Plan Chapter 9 (Goals and Objectives) establishes goals and objectives to guide the development, redevelopment, and preservation of a balanced housing inventory within the City. Specific policies relevant to the proposed project include:

Objective 2.5 Promote a mix of industrial uses which provides a sound and diversified economic base and ample employment opportunities for the citizens of Moreno Valley with the establishment of industrial activities that have good access to the regional transportation system, accommodate the personal needs of workers and business visitors; and which meets the service needs of local businesses.

Goal 2.2 An organized, well-designed, high quality, and functional balance of urban and rural land uses that will meet the needs of a diverse population, and promote the optimum

degree of health, safety, well-being, and beauty for all areas of the community, while maintaining a sound economic base.

- Goal 2.4** A supply of housing in sufficient numbers suitable to meet the diverse needs of future residents and to support healthy economic development without creating an oversupply of any particular type of housing.

4.10.3 Thresholds of Significance

Significant population and housing impacts would result from the development of the proposed on-site uses if any of the following conditions occurred:

- Displacement of substantial amounts of existing housing, necessitating the construction of replacement housing elsewhere;
- Displacement of substantial numbers of people, necessitating the construction of replacement housing elsewhere; and/or
- Substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through the extension of roads or other infrastructure).

4.10.4 Methodology

To assess the potential housing and population impacts that may result from the development and occupation of the proposed on-site uses, the current condition of the project site, the historic and current population and housing characteristics, and future employment and population projections were identified. The analysis is based in part on population and housing projections identified by the DOF and SCAG, as well as information contained in the City's General Plan.

4.10.5 Less than Significant Impacts

As pertaining to the following issues, the construction and operation of the proposed on-site uses were determined to have no impact or a less than significant impact.

4.10.5.1 Population Growth

Threshold	Would the proposed project induce substantial population growth in an area, either directly (e.g., new homes and businesses) or indirectly (e.g., extension of roads and infrastructure)?
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CEQA requires that an EIR discuss how a proposed project could induce growth. *CEQA Guidelines* identify a project as growth-inducing if it would foster economic or population growth or the construction of additional housing either directly or indirectly, in the surrounding environment (*CEQA Guidelines* § 15126.2(d)). New employees of commercial or industrial development and new population from residential development represent direct forms of growth. These direct forms of growth have a secondary effect of expanding the size of local markets and inducing additional economic activity in the area. Direct employment impacts reflect the initial or first-round increases in jobs and wages, which result from the creation of on-site jobs. Indirect impacts occurring as a consequence of the direct impacts, elsewhere within the project area, may result from the production of goods and services required to support the proposed on-site uses, and/or the production of goods and services required to meet consumer demand generated by wages paid to new employees.

As outlined in Section 4.8.6.1, the project will eliminate the potential for 681 multifamily residential units on the site that could have contributed to the City's affordable housing program in the future.

This was determined to be a significant housing impact, which could also incrementally reduce the future population in the City.

A project could also indirectly induce growth by reducing or removing barriers to growth or by creating a condition that attracts additional population or new economic activity. Under CEQA, growth inducement is not necessarily considered detrimental, beneficial, or of little significance to the environment. Typically, the growth-inducing potential of a project would be considered significant if it fosters growth or a concentration of population in excess of what is assumed in pertinent master plans, land use plans, or in projections made by regional planning agencies (e.g., SCAG). Significant growth impacts could also occur if the project provides infrastructure or service capacity to accommodate growth beyond the levels currently permitted by local or regional plans and policies. In general, growth induced by a project is considered a significant impact if it directly or indirectly affects the ability of agencies to provide needed public services, or if it can be demonstrated that the potential growth significantly affects the environment in some other way.

As identified in Table 4.10.A, the City's population has grown steadily over the past decades. Population projections developed by the SCAG estimate the City's population will reach nearly 169,895 persons by 2010 and nearly 238,703 persons by 2030 (Table 4.10.E). Implementation of the proposed project would include a General Plan Amendment to change the land use designations in the southern portion of the site from residential 15 (R15), Residential 5 (R5), and Residential 2 (R2) to Business Park/Light Industrial, and a zone change of the entire 122.8-acre site from Business Park (BP), Business Park Mixed Use (BPX), Residential 15 District (R15), Residential 5 District (R5), and Residential Agriculture (RA-2) to Light Industrial (LI).

Table 4.10.E: Population, Housing, and Employment Forecasts

	2010	2020	2030
Population			
City of Moreno Valley	169,895 ¹ 205,503	203	238,703
Riverside County	2,085,432 2,644,200	70	3,143,468
SCAG 19,20	8,661	21,137,519 22,89	0,797
Housing Units			
City of Moreno Valley	47,295	59,515	71,619
Riverside County	685,775	907,932	1,127,780
SCAG 6,072,5	78	6,865,355 7,660,1	07
Employment			
City of Moreno Valley	46,416	66,221	86,993
Riverside County	727,711	954,499	1,188,976
SCAG 8,729,1	92	9,659,847 10,52	7,202

¹ Actual U.S. Census Bureau population figure for the City in 2010 is 193,365. Source <http://www.scag.ca.gov/forecast/downloads/2004GF.xls>, 2004, and <http://www.wrcog.cog.ca.us/downloads/wrcogsubregforecast.pdf> date accessed May 1, 2008.

The “jobs-to-housing ratio” measures the extent to which job opportunities in a given geographic area are sufficient to meet the employment needs of area residents. Since most residents of the region are employed somewhere in the region, the standard used for comparison is the jobs-to-housing ratio of the southern California region. A sub-area of the region with a jobs-to-housing ratio lower than the overall standard would be considered a “jobs-poor” area, indicating that many of the residents must commute to places of employment outside the sub-area. The projected 2010 jobs-to-housing ratio for the City, subregion (Western Riverside County), and region (SCAG) are 0.98, 1.06, and 1.43, respectively (Table 4.10.F). As the projected 2010 jobs-to-housing ratio for the City is lower than both the sub-regional and regional ratio, the City is “jobs poor” (meaning more residents must commute outside the City for employment).

Table 4.10.F: Projected Future Jobs-to-Housing Ratios

	2010 Jobs-to-Housing Ratio*	2030 Jobs-to-Housing Ratio
City 0.98		1.21
Riverside County	1.06	1.05
SCAG 1.43		1.37

*Using Southern California Association of Governments' most recently adopted forecasts, the housing and employment estimates for 2010 are the closest to the current year for which the SCAG provides information; therefore, the 2010 estimates are used to calculate the jobs-to-housing ratio.

The development of the proposed on-site warehouse distribution uses would create new jobs in the local economy. Based on an employee generation factor of 1 employee for every 1,465 square feet of warehouse uses,¹ the proposed project would generate up to 1,532 job opportunities.² The new employment opportunities resulting from development of the proposed warehouse uses would improve the City's current jobs-to-housing ratio by providing jobs to local residents. While the places of residence of the persons accepting employment provided by the proposed uses is uncertain, due to the City's projected jobs-to-housing ratio, it is reasonable that a large percentage of these jobs would be filled by persons already living within the City or project area; therefore, no significant increase in population of the City would result from the development or operation of the proposed on-site uses. In the absence of a significant impact, no mitigation is required.

A Tentative Tract Map for a business park and single-family residential development had been previously approved by the City to subdivide the project site into 101 single-family residential units, but the loss of these potential residences to the existing housing stock would not be significant as the City is considered to have more residential units than jobs. Development of the property as proposed would result in a maximum of 681 fewer residential units in the City (previously referenced Table 4.8C), which would result in a jobs-to-housing ratio of 0.98 and 1.21 in 2010 and 2030 (previously referenced Table 4.10.F),³ similar to the current projected ratios for the years. The decrease in dwelling units and increase in employment opportunities associated with development of the proposed project would incrementally improve (i.e., increase) the future jobs-to-housing balance in the City. While the increase in potential employment opportunities is a positive effect on the local economy, the loss of a potential for 681 residential units represents a significant impact on local housing, similar to the significant impact identified in Section 4.8.6.1 to the City's Housing Element. As with the Housing Element impact, there is no effective mitigation for this impact other than a project alternative that allows a similar amount of residential uses to be built on the site at some point in the future.

The proposed project would introduce a type of land use not historically associated with the rural character and lifestyle of the north eastern portion of the City, but it would provide an opportunity for the City to provide more land for employment-generating uses. The proposed project would provide some additional employment opportunities for Moreno Valley citizens, and would also have good access to the regional transportation system corridors such as SR-60. The proposed project is located in an area where various land uses already occur or are being planned. Such land uses include existing residential uses, public services uses, retail, and industrial uses.

¹ Table II-B Average Employees Per Acre – Average of Riverside and San Bernardino Counties, Employment Density Study Summary Report, Southern California Association of Government, The Natelson Company, Inc., October 31, 2001.

² 1 employee/1,465 square feet of warehouse use × 2,244,419 square feet of warehouse uses = 1,532 employees.

³ Year 2010 jobs: 18,045. Year 2010 Housing (with project): 15,814. $18,045 \div 15,814 = 1.141$ Year 2030 jobs: 25,370. Year 2010 Housing (with project): 24,595. $25,370 \div 24,595 = 1.032$.

4.10.5.1 Displace Substantial Housing/People

Threshold	Would the proposed project displace substantial numbers of people or existing housing, necessitating the construction of replacement housing elsewhere?
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The project site is currently undeveloped and zoned by the City as “Business Park/Mixed Use” (BPX), “Business Park” (BP), Residential 15 District (R 15), Residential 5 District (R5), and Residential Agriculture 2 District (RA-2). Although a Tentative Tract Map for a business park and single-family residential development had been previously approved by the City to sub divide the project site into 101 single-family residential units, the project site has not been historically utilized for residential uses, and no residential structures are currently located within the project limits. The construction and operation of the proposed on-site uses would neither displace existing housing or residents nor require the construction of replacement housing elsewhere in the City. However, the areas currently zoned for residential uses on the site could support up to 681 units, as shown in Table 4.10.G. Approximately 80 percent of that potential new housing was in the R15 category, which is considered high enough density to support affordable housing programs. In addition, a portion of the project site is shown in the latest Housing Element for the City (2008–2014) as a potential location for affordable housing in the future (2011 Housing Element, Vacant Properties Inventory). Development of the site as proposed could eliminate as many as 681 housing units from the site, with 80 percent of those units (548) at a density that is generally accepted as helping to promote housing affordability (15 units per acre) on a regional level. Economic conditions are very difficult for new housing sales at present, but these changes may incrementally hinder the City’s ability to achieve its affordable housing goals in the future.

Table 4.10.G: Potential Housing Impacts

Zone	Acres/Density	Maximum Units	Average Units (80% of max)
R-15	36.5 ac × 15 du/ac	548	438
R-5	21.8 ac × 5 du/ac	109	87
RA-2	12.2 ac × 2 du/ac	24	19
Total	70.5 acres	681	544

Notes: R-15 Multi-Family; R-5 Suburban Residential; and RA-2 Residential Agriculture
Source: City General Plan Land Use Map, August 2010; City Zoning Map, November 7, 2011.

A portion of the project site is shown in the latest Housing Element for the City (2008–2014) as a potential location for multifamily residential affordable housing in the future (2011 Housing Element, Vacant Properties Inventory). The 2011 Housing Element (Table 20-8, *Sites Inventory Summary for All Income Groups*) states that the total number of potential affordable units from the Amended Inventory is 20,894 and the City’s Regional Housing Needs Assessment (RHNA) allocation is 7,474, or 2.8 times as much as the RHNA allocation.

The loss of the (max) potential 548 units (R-15 land) from the proposed project would reduce the total potential affordable units from 20,894 to 20,346 or still 2.7 times the RHNA number. The proposed project would not reduce the City’s potential pool of affordable housing to below its RHNA number; therefore, it would not create a significant impact related to the City’s Housing Element.

The proposed project would not displace any existing residential units, nor would it trigger or require the construction of replacement housing elsewhere in the City. Therefore, there are no significant impacts related to this issue, and no mitigation is required.

4.10.6 Significant Impacts

Based on the analysis in Section 4.10.5, the proposed project will not result in any significant impacts related to population or housing.

4.10.7 Cumulative Impacts

The project includes development of 2.2 million square feet of new industrial uses, but would eliminate the potential for up to 681 new residential units, most of which would be in the R15 category, which can support affordable housing programs. The proposed industrial uses would provide additional employment opportunities for City and area residents. The proposed project, together with the other developments identified in Chapter 3, will serve existing and future cumulative demands for both housing and employment. The General Plan Amendment and Zone Change represents a cumulatively considerable housing impact within the City over the long term. The proposed uses would not induce significant population or housing growth in areas where growth was not previously anticipated.

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4.11 TRANSPORTATION AND TRAFFIC

This section analyzes the potential traffic and circulation impacts of the proposed project based on the *Traffic Impact Analysis* (TIA),¹ which is included in its entirety as Appendix I to this EIR. The TIA examines baseline and with-project traffic conditions for the existing (2011) conditions, as well as for the opening year of the proposed project (2016) and future (2035) conditions with the circulation system proposed in the General Plan Circulation Element.

4.11.1 Existing Setting

4.11.1.1 Existing Traffic Controls and Intersection Geometrics

An inventory of the existing study area street system was conducted by LSA Associates, Inc. (LSA). Existing study area locations are illustrated in Figure 4.11.1 and consist of 7 project driveways and 17 off-site intersections. In the project vicinity, existing Eucalyptus Avenue is a divided four-lane roadway, Auto Mall Drive is a divided four-lane roadway, and Redlands Boulevard is an undivided two-lane roadway.

4.11.1.2 Existing Traffic Volumes

Existing traffic conditions are based on a.m. and p.m. peak hour intersection turning movement counts collected by National Data and Surveying Services, Inc. (NDS) in July 2011. Count sheets are contained in the TIA, included as Appendix I of this EIR. Vehicle classification counts were conducted at the intersections of Na son Street/Alessandro Boulevard, Moreno Beach Drive/SR-60 Westbound Ramps, Moreno Beach Drive/SR-60 Eastbound Ramps, Moreno Beach Drive/Alessandro Avenue, Redlands Boulevard/SR-60 Westbound Ramps, Redlands Boulevard/SR-60 Eastbound Ramps, and Redlands Boulevard/Alessandro Boulevard. Passenger Car Equivalent (PCE) volumes for these locations were computed using a PCE factor of 1.5 for 2-axle trucks, 2.0 for 3-axle trucks, and 3.0 for trucks with 4 or more axles, values recommended by the City of Moreno Valley. The percentage of trucks at intersections where classification counts were not conducted was determined based on percentage of trucks and average truck PCE at the nearest intersection with classification counts. Detailed volume development worksheets are included in the TIA (Appendix I).

4.11.1.3 Existing Intersection Levels of Service

Traffic Level of Service Definitions. Level of service (LOS) will be referred to frequently in this section. Roadway operations and the relationship between capacity and traffic volumes are generally expressed in LOS, which are defined using the letter grades A through F (Table 4.11.A) and reflect the reality that conditions rapidly deteriorate as traffic approaches the absolute capacity of the roadway facility.

LOS was used in the traffic study to determine whether there is adequate traffic operation at each of the study intersections. These intersections were selected based on the City of *Moreno Valley* Public Works Department staff recommendations. The distribution of project trips was developed in consultation with City staff by examining the location of the proposed project trips in relation to the surrounding residential areas, as well as the regional roadway network, which follows current practice. The ramp terminus intersections on SR-60 are under the jurisdiction of Caltrans; all other study intersections are under the jurisdiction of the City of Moreno Valley.

¹ *Traffic Study, Eucalyptus Industrial Park*, prepared for ProLogis by LSA Associates, Inc., April 24, 2012.

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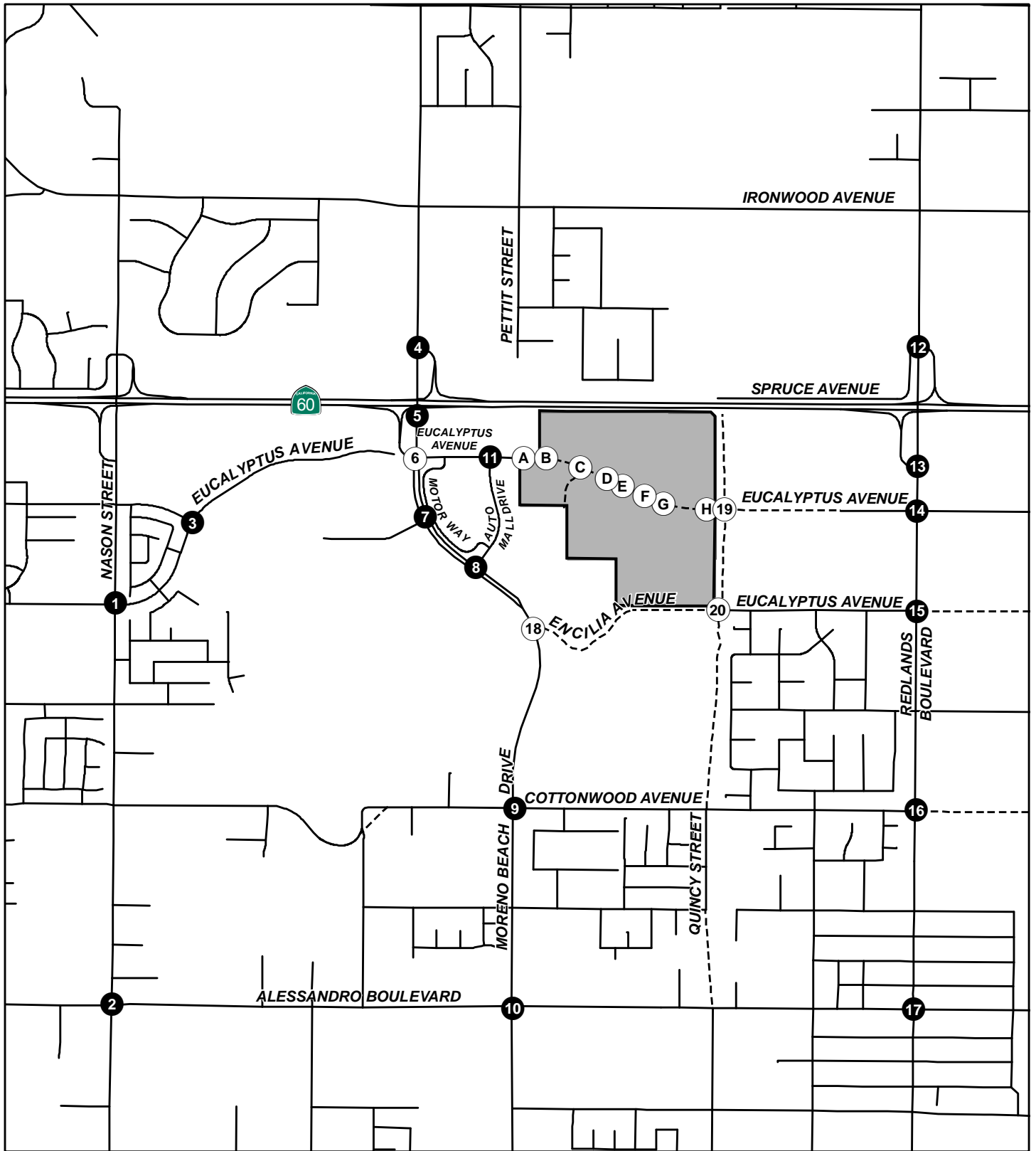
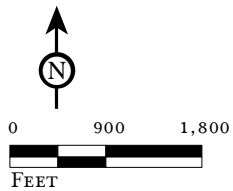


FIGURE 4.11.1

LSA

- Project Location
- Study Area Intersections**
- Existing Intersection
- Future Intersection
- Future Road



SOURCE: Riverside County, 2011

*Eucalyptus Industrial Park
Environmental Impact Report*

Existing Study Area Intersections

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Table 4.11.A: Traffic Level of Service (LOS) Definitions

LOS	Description
A	No approach phase is fully utilized by traffic and no vehicle waits longer than one red indication. The approach appears quite open, turns are made easily, and nearly all drivers find freedom of operation.
B	This service level represents stable operation, where an occasional approach phase is fully utilized and a substantial number approach full use. Many drivers begin to feel restricted within platoons of vehicles.
C	This level still represents stable operating conditions. Occasionally drivers may have to wait through more than one red signal indication, and backups may develop behind turning vehicles. Most drivers feel somewhat restricted, but not objectionably so.
D	This level encompasses a zone of increasing restriction approaching instability at the intersection. Delays to approaching vehicles may be substantial during short peaks within the peak period; however, enough cycles with lower demand occur to permit periodic clearance of developing queues, thus preventing excessive backups.
E	Capacity occurs at the upper end of this service level. It represents the most vehicles that any particular intersection approach can accommodate. Full utilization of every signal cycle is seldom attained no matter how great the demand.
F	This level describes forced flow operations at low speeds, where volumes exceed capacity. These conditions usually result from queues of vehicles backing up from a restriction downstream. Speeds are reduced substantially and stoppages may occur for short or long periods of time due to the congestion. In the extreme case, both speed and volume can drop to zero.

Source: *Highway Capacity Manual, Special Report 209*, Transportation Research Board, Washington, DC, 1985.

4.11.1.4 Level of Service Standards

As previously stated, the ramp terminus intersections on SR-60 are under the jurisdiction of Caltrans; all other study intersections are under the jurisdiction of the City of Moreno Valley. The City of Moreno Valley’s standard for peak hour intersection LOS and roadway segment LOS is either C or D, depending on the LOS defined for that roadway in the General Plan Circulation Element. The standard of LOS D applies to all City intersections and roadways analyzed in the traffic study conducted for the proposed project, with the exception of Moreno Beach Drive/Cottonwood Avenue, at which the standard of LOS C applies. Caltrans considers acceptable LOS to be between C and D for all intersections under its jurisdiction; therefore, all signalized ramp terminus intersections on SR-60 must operate with a weighted average delay of 45 seconds or less, and all unsignalized ramp terminus intersections on SR-60 must operate with a delay of 30 seconds or less. Any intersection operating below the relevant jurisdiction’s level of service is considered an impact requiring mitigation. Table 4.11.B summarizes the level of service criteria for unsignalized and signalized intersections.

Table 4.11.B: Level of Service Criteria for Unsignalized and Signalized Intersections

Level of Service	Unsignalized Intersection Average Delay per Vehicle (seconds)	Signalized Intersection Average Delay per Vehicle (seconds)
A <	≤ 10	≤ 10
B	> 10 and ≤ 15	> 10 and ≤ 20
C	> 15 and ≤ 25	> 20 and ≤ 35
D	> 25 and ≤ 35	> 35 and ≤ 55
E	> 35 and ≤ 50	> 55 and ≤ 80
F	> 50	> 80

Source: Transportation Research Board, *2000 Highway Capacity Manual, Intersection Level of Service Criteria*, December 2000.

4.11.1.5 Baselines

This section discusses LOS for the following five “no-project” conditions (or baselines) against which the project impacts are compared:

- Existing (2011) setting;
- Opening year (2016);
- Opening year (2016) cumulative;
- Future year (2035); and
- General Plan Build Out.

Existing (2011) Setting Baseline. Existing traffic volumes at study area intersections are based on peak hour intersection turn movement counts. The roadway network included in the analysis of the Existing (2011) condition is the roadways as they exist at the time the traffic counts were collected. An intersection level of service analysis was conducted for existing conditions to determine current circulation system performance. As identified in Table 4.11.C, all study area intersections are operating within their specified LOS standard with the exception of the following intersection:

- Redlands Boulevard/SR-60 Westbound Ramps.

An analysis of freeway mainline traffic volumes and levels of service was conducted for freeway segments on SR-60. This analysis is provided in the TIA. In the existing condition, the following three freeway segments currently operate at unsatisfactory LOS:

- SR-60 Eastbound between Pigeon Pass Road and Heacock Street (p.m. peak hour);
- SR-60 Westbound between Heacock Street and Perris Boulevard (a.m. peak hour); and
- SR-60 Westbound between Perris Boulevard and Nason Street (a.m. peak hour).

Freeway ramp merge-diverge volumes and LOS were also analyzed for freeway segments on SR-60. Based on this analysis, all locations currently operate at acceptable LOS in the existing condition.

Opening Year (2016) Baseline. Background traffic volumes at study area intersections for Opening Year (2016) baseline conditions represent the existing (2011) conditions plus the ambient growth that is expected to occur by the time the proposed project is built. Year 2016 without Project traffic volumes were developed by increasing the existing (2011) volumes by 10.4 percent (or 2% per year compounded over five years). The roadway network included in the analysis of the Opening Year (2016) Baseline condition are the roadways as they exist at the time the traffic counts were collected. As identified in Table 4.11.C, all intersections are forecast to operate at satisfactory levels of service with the exception of the following intersection:

- Redlands Boulevard/SR-60 Westbound Ramps.

An analysis of freeway mainline traffic volumes and levels of service was conducted for freeway segments on SR-60. This analysis is provided in the TIA. In the Opening Year (2016) Baseline condition, the following four freeway segments are forecast to operate at unsatisfactory LOS:

- SR-60 Eastbound: Pigeon Pass Road to Heacock Street (a.m. and p.m. peak hours);
- SR-60 Eastbound: Heacock Street to Perris Boulevard (p.m. peak hour);
- SR-60 Westbound: Heacock Street to Perris Boulevard (a.m. peak hour); and
- SR-60 Westbound: Perris Boulevard to Nason Street (a.m. peak hour).

Table 4.11.C: Baseline Intersection Levels of Service Without Project

Intersection	Existing (2011)				Opening Year (2016)				Opening Year (2016) + Cumulative				Future Year (2035) ¹				General Plan Build Out ¹								
	A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour						
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS					
Nason Street/ Eucalyptus Avenue	27.5	C	22.4	C	27.8	C	22.4			C	29.3	C	25.6	C			82.3	F	>100	F	85	F	>100	F	
Nason Street/ Alessandro Boulevard	29.1	C	28.5	C	29.3	C	28.6	C			29.9	C	30	C			68.3	F	82.5	F	92	F	>100	F	
Fir Avenue/ Eucalyptus Avenue	18.2	B	17.7	B	18.3			B	17.8	B	25.4	C	21.1	C			14.6	B	21.2	C	19.3	B	24.3	C	
Moreno Beach Drive/ SR-60 WB Ramps	15.5	B	13.2	B	16	B	13.5	B			17.4	B	16.7		B		>100	F	18.8	B	79.3	F	>100	F	
Moreno Beach Drive/ SR-60 EB Ramps	28.5	C	35.3	D	29	C	41.2	D			32.8	C	95.2	F	25.7	C	87.6	F	97.6	F	97.6	F	>100	F	
Moreno Beach Drive/ Eucalyptus Avenue	<i>Future Intersection</i>				<i>Future Intersection</i>				<i>Future Intersection</i>				39.7	D			>100	F	58.2	F	>100	F			
Moreno Beach Drive/ Trail Ridge Way	17.5	B	19.9	B	17.7			B	20.1		C	17.1	B	21.9		C	17.3	B	20.5	C	15.3	B	21.3	C	
Moreno Beach Drive/ Auto Mall Drive	15.8	B	16.1	B	15.5			B	16	B	16.4	B	23.4		C		18.7	B	25.8	C	21.8	C	27.7	C	
Moreno Beach Drive/ Cottonwood Avenue	18.1	B	19.3	B	18.3			B	20.5		C	26.2	C	55.3	E	26.3	C	66	F	95.8	F	>100	F		
Moreno Beach Drive/ Alessandro Boulevard	24.4	C	26.8	C	24.7	C	29.5	C			30.4	C	72.7	F	>100	F	>100	F	>100	F	>100	F	>100	F	

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Table 4.11.C: Baseline Intersection Levels of Service Without Project

Intersection	Existing (2011)				Opening Year (2016)				Opening Year (2016) + Cumulative				Future Year (2035) ¹				General Plan Build Out ¹			
	A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Auto Mall Drive/ Eucalyptus Avenue	8.9 A		9.1 A	B	9.1 A	B	9.1 A	B	10.1	B	14.9	B	11.6 B		18.4 C		14.9 B		42.4	E
Redlands Boulevard/ SR-60 WB Ramps	25.3 D		77	F	30.1 D		>100	F	>100	F	>100	F	61.8	F	>100	F	>100	F	>100	F
Redlands Boulevard/ SR-60 EB Ramps	21.9	C	24	C	22.6 C	25.2		C	>100	F	>100	F	>100	F	>100	F	>100	F	>100	F
Redlands Boulevard/ Eucalyptus Avenue-Fir Avenue	<i>Future Intersection</i>				<i>Future Intersection</i>				>100	F	>100	F	>100	F	>100	F	>100	F	>100	F
Redlands Boulevard/ Encilia Avenue-Eucalyptus Avenue	13.2	B	15.2 C		14	B	16.4 C		20.5 C		35	D	>100	F	>100	F	>100	F	>100	F
Redlands Boulevard/ Cottonwood Avenue	14.2 B		6.3	A	14.3	B	6.4	A	17.4 B	11.1		B	15.9 B		21.8 C		51.8 D		>100	F
Redlands Boulevard/ Alessandro Boulevard	10.5 B		12.2 B	11.1		B	13.4 B		15.8	C	42.7	F	>100	F	>100	F	>100	F	>100	F

Shaded=Exceeds LOS Standard.

¹ Assumes Encilia Avenue and Quincy Street are not built as proposed for this project.

Source: Tables F, L, R, X, and DD, Traffic Study, Eucalyptus Industrial Park. LSA Associates, Inc. April 2012, Appendix I of this EIR.

Freeway ramp junction volumes and LOS were also analyzed for freeway segments on SR-60. Based on this analysis, all locations are forecast to operate at acceptable LOS in the Opening Year (2016) Baseline condition.

Opening Year (2016) Cumulative Baseline. For the Opening Year (2016) Cumulative scenario, information concerning approved and pending projects in the project vicinity was obtained from the City of Moreno Valley and added to the year 2016 traffic volumes. From this information, 12 projects were identified to have potential impacts at the study intersections under year 2016 conditions. Trip generation for the approved and pending projects was taken directly from the traffic studies prepared for the projects, where available, or calculated based on the rates published in the Institute of Transportation Engineers (ITE) *Trip Generation*, 7th Edition. As in 2016 Baseline, the roadway network included in the analysis of the Opening Year (2016) Cumulative Baseline condition are the roadways as they existed at the time the traffic counts were collected.

As identified in previously referenced Table 4.11.C, the following intersections are forecast to operate at unsatisfactory levels of service in opening year 2016 with cumulative project traffic:

- Moreno Beach Drive/SR-60 EB Ramps (p.m. peak hour);
- Moreno Beach Drive/Cottonwood Avenue (p.m. peak hour);
- Moreno Beach Drive/Alessandro Boulevard (p.m. peak hour);
- Redlands Boulevard/SR-60 Westbound Ramps (a.m. and p.m. peak hour);
- Redlands Boulevard/SR-60 Eastbound Ramps (a.m. and p.m. peak hour);
- Redlands Boulevard/Eucalyptus Avenue-Fir Avenue (a.m. and p.m. peak hour); and
- Redlands Boulevard/Alessandro Boulevard (p.m. peak hour).

An analysis of freeway mainline traffic volumes and levels of service was conducted for freeway segments on SR-60. This analysis is provided in the TIA. In the Opening Year (2016) Cumulative Baseline condition, the following five freeway segments are forecast to operate at unsatisfactory LOS:

- SR-60 Eastbound: Pigeon Pass Road to Heacock Street (a.m. and p.m. peak hours);
- SR-60 Eastbound: Heacock Street to Perris Boulevard (a.m. and p.m. peak hours);
- SR-60 Eastbound: Perris Boulevard to Nason Street (a.m. peak hour);
- SR-60 Westbound: Heacock Street to Perris Boulevard (a.m. and p.m. peak hours); and
- SR-60 Westbound: Perris Boulevard to Nason Street (a.m. and p.m. peak hours).

Freeway ramp junction volumes and LOS were also analyzed for freeway segments on SR-60. Based on this analysis, all locations are forecast to operate at acceptable LOS in the Opening Year (2016) Cumulative Baseline condition.

Future Year (2035) Baseline. Future year (2035) traffic volumes were developed using the Riverside County Traffic Analysis Model (RivTAM). It was observed that forecast year turn-movement volumes decrease for certain movements at some of the study intersections, possibly due to some cumulative projects included in the interim year scenarios not being included in the RivTAM model. These turning-movement volumes were adjusted by applying a total growth factor of 5 percent to cumulative traffic volumes (which includes growth from existing traffic and traffic from approved and pending projects) to account for increase in traffic volumes at these locations from cumulative conditions to year 2035 conditions. Improvements to the Moreno Beach Drive and Redlands Boulevard interchanges with SR-60 were included in the analysis of the Future Year (2035) Baseline. Currently, the SR-60 Eastbound Ramps terminate at the west leg of the Moreno Beach Drive/Eucalyptus

Avenue intersections. Improvements to the Moreno Beach Drive interchange would relocate the SR-60 Eastbound Ramp intersection north of Eucalyptus Avenue, resulting in one additional intersection in the study area. As identified in previously referenced Table 4.11.C, the following intersections were forecast to operate at an unsatisfactory level of service at General Plan Build Out without the Project:

- Nason Street/Eucalyptus Avenue (a.m. and p.m. peak hour);
- Nason Street/Alessandro Boulevard (a.m. and p.m. peak hour);
- Moreno Beach Drive/SR-60 Westbound Ramps (a.m. peak hour);
- Moreno Beach Drive/SR-60 Eastbound Ramps (p.m. peak hour);
- Moreno Beach Drive/Eucalyptus Avenue (p.m. peak hour);
- Moreno Beach Drive/Cottonwood Avenue (p.m. peak hour);
- Moreno Beach Drive/Alessandro Boulevard (a.m. and p.m. peak hours);
- Redlands Boulevard/SR-60 Westbound Ramps (a.m. and p.m. peak hours);
- Redlands Boulevard/SR-60 Eastbound ramps (a.m. and p.m. peak hours);
- Redlands Boulevard/Eucalyptus Avenue-Fir Avenue (a.m. and p.m. peak hours);
- Redlands Boulevard/Encilia Avenue-Eucalyptus Avenue (a.m. and p.m. peak hours); and
- Redlands Boulevard/Alessandro Boulevard (a.m. and p.m. peak hour).

An analysis of freeway mainline traffic volumes and levels of service was conducted for freeway segments on SR-60. This analysis is provided in the TIA. In the Future Year (2035) Baseline, the following nine freeway segments currently operate at unsatisfactory LOS:

- SR-60 Eastbound: Pigeon Pass Road to Heacock Street (a.m. and p.m. peak hours);
- SR-60 Eastbound: Heacock Street to Perris Boulevard (a.m. and p.m. peak hours);
- SR-60 Eastbound: Perris Boulevard to Nason Street (a.m. and p.m. peak hours);
- SR-60 Eastbound: Nason Street to Moreno Beach Drive (a.m. and p.m. peak hours);
- SR-60 Eastbound: Moreno Beach Drive to Redlands Boulevard (a.m. peak hour);
- SR-60 Westbound: Heacock Street to Perris Boulevard (a.m. and p.m. peak hours);
- SR-60 Westbound: Perris Boulevard to Nason Street (a.m. and p.m. peak hours);
- SR-60 Westbound: Nason Street to Moreno Beach Drive (a.m. peak hour); and
- SR-60 Westbound: Moreno Beach Drive to Redlands Boulevard (a.m. peak hour).

Freeway ramp junction volumes and LOS were also analyzed for freeway segments on SR-60. Based on this analysis, the following nine ramps are forecast to operate at unacceptable LOS in the Future Year (2035) Baseline condition.

- SR-60 Eastbound: Moreno Beach Drive Off-Ramp (a.m. and p.m. peak hours);
- SR-60 Eastbound: Moreno Beach Drive On-Ramp (a.m. and p.m. peak hours);
- SR-60 Eastbound: Redlands Boulevard Loop On-Ramp (a.m. peak hour);
- SR-60 Eastbound: Redlands Boulevard Slip On-Ramp (a.m. peak hour);
- SR-60 Westbound: Moreno Beach Drive On-Ramp (a.m. peak hour);
- SR-60 Westbound: Moreno Beach Drive Off-Ramp (a.m. peak hour);
- SR-60 Westbound: Redlands Boulevard Slip On-Ramp (a.m. peak hour);

- SR-60 Westbound: Redlands Boulevard Loop On-Ramp (a.m. peak hour); and
- SR-60 Westbound: Redlands Boulevard Off-Ramp (a.m. peak hour).

General Plan Build Out Conditions. The City also required the traffic study to examine traffic conditions at ultimate build-out of the General Plan, which would occur at some indeterminate time after 2035. General Plan Build Out traffic volumes were developed using the City of Moreno Valley's General Plan Build Out traffic model maintained by Urban Crossroads, Inc. These volumes were then compared to the traffic volumes obtained from the RivTAM for year 2035. In some cases, the traffic volumes obtained from the Moreno Valley Traffic Model were lower than those obtained from the RivTAM. In these cases, the higher of the two volumes was used so as to ensure that traffic volumes do not decrease from year 2035 to build out year conditions. Improvements to the Moreno Beach Drive and Redlands Boulevard interchanges with SR-60 were included in the analysis of General Plan Build Out Conditions. Currently, the SR-60 Eastbound Ramps terminate at the west leg of the Moreno Beach Drive/Eucalyptus Avenue intersections. Improvements to the Moreno Beach Drive interchange would relocate the ramp SR-60 Eastbound Ramp intersection north of Eucalyptus Avenue, resulting in one additional intersection in the study area.

The General Plan Build-Out analysis found a continued worsening of traffic congestion at almost all area intersections, such that only 4 of the 17 intersections studied were not at LOS F. This analysis was done without the implementation of planned improvements so "actual" future traffic conditions could be identified at the point all land uses in the General Plan are built as planned.

4.11.2 Existing Policies and Regulations

The City of Moreno Valley's current General Plan was approved in July 2006. Goals and policies extracted from the Circulation Element are included in the current General Plan. The specific policies and recommendations of implementation of the General Plan that are relevant to the proposed project are as follows:

Community Development

Policy 2.2.17 Discourage nonresidential uses on local residential streets that generate traffic, noise, or other characteristics that would adversely affect nearby residents.

Circulation Element

Objective 5.1 Create a safe, efficient, and neighborhood-friendly street system.

Policy 5.1.1 Plan access and circulation of each development project to accommodate vehicles (including emergency vehicles and trash trucks), pedestrians, and bicycles.

Policy 5.1.2 Plan the circulation system to reduce conflicts between vehicular, pedestrian, and bicycle traffic.

Policy 5.1.3 Require adequate off-street parking for all developments.

Policy 5.1.4 Driveway placement shall be designed for safety and to enhance circulation wherever possible.

Policy 5.1.5 Incorporate Americans with Disabilities Act (ADA) and Title 24 requirements in roadway improvements as appropriate.

Policy 5.1.6 Design new developments to provide opportunity for access and circulation to future adjacent developments.

Objective 5.2 Implement access management policies.

- Policy 5.2.1** Locate residential units with access from local streets. Minimize direct residential access from collectors. Prohibit direct single-family driveway access on arterials and higher classification roadways.
- Policy 5.2.2** Feed short local streets into collectors.
- Policy 5.2.3** Encourage the incorporation of traffic-calming design into local and collector streets to promote safe vehicle speeds.
- Objective 5.3** Maintain LOS C on roadway links, wherever possible, and LOS D in the vicinity of SR-60 and high employment centers.
- Policy 5.3.1** Obtain right-of-way and construct roadways in accordance with the designation shown on the General Plan Circulation Element Map and the City street improvement standards.
- Policy 5.3.5** Ensure that new development pays a fair-share cost to provide local and regional transportation improvements and to mitigate cumulative traffic impacts. For this purpose, require new developments to participate in Transportation Uniform Mitigation Fee (TUMF), the Development Impact Fee Program (DIF), and any other applicable transportation fee programs and benefit assessment districts.
- Policy 5.3.6** Where new developments would increase traffic flows beyond the LOS C (or LOS D, where applicable), require appropriate and feasible mitigation measures as a condition of approval. Such measures may include extra right-of-way and improvements to accommodate left-turn and right-turn lanes at intersections, or other improvements.
- Policy 5.3.7** Provide consideration to projects that have overriding regional or local benefits that would be desirable even though the LOS standards cannot be met. These projects would be required to analyze traffic impacts and mitigate such impacts to the extent that it is deemed feasible.
- Objective 5.4** Maximize efficiency of the regional circulation system through close coordination with State and regional agencies and implementation of regional transportation policies.
- Policy 5.4.1** Coordinate with Caltrans and the Riverside County Transportation Commission (RCTC) to identify and protect ultimate rights-of-way, including those for freeways, regional arterial projects, transit, bikeways, and interchange expansion.
- Policy 5.4.2** Coordinate with Caltrans and the RCTC regarding the integration of Intelligent Transportation Systems (ITS) consistent with the principles and recommendations of the Inland Empire Regional ITS Architecture Project.
- Objective 5.5** Maximize efficiency of the local circulation system by using appropriate policies and standards to design, locate, and size roadways.
- Policy 5.5.3** Prohibit points of access from conflicting with other existing or planned access points. Require points of access to roadways to be separated sufficiently to maintain capacity, efficiency, and safety of the traffic flow.
- Policy 5.5.4** Wherever possible, minimize the frequency of access points along streets by the consolidation of access points between adjacent properties on all circulation element streets, excluding collectors.
- Policy 5.5.5** Design streets and intersections in accordance with the Moreno Valley Municipal Code.
- Policy 5.5.8** Whenever possible, require private and public land developments to provide on-site and off-site improvements necessary to mitigate any development-generated circulation impacts. A review of each proposed land development project shall be undertaken to identify project impacts to the circulation system. The City may require

developers to provide traffic impact studies prepared by qualified professionals to identify the impacts of a development.

- Policy 5.5.9** Design curves and grades to permit safe movement of vehicular traffic per applicable Caltrans and Moreno Valley standards.
- Policy 5.5.10** Provide adequate sight distances for safe vehicular movement at all intersections and driveways.
- Objective 5.8** Encourage development of an efficient public transportation system for the entire community.
- Policy 5.8.1** Support the development of high-speed transit linkages, or express routes, that would benefit the citizens and employers of Moreno Valley.
- Policy 5.8.4** Ensure that all new developments make adequate provision for bus stops and turnout areas for both public transit and school bus service.
- Objective 5.10** Encourage bicycling as an alternative to single occupant vehicle travel for the purpose of reducing fuel consumption, traffic congestion, and air pollution.
- Policy 5.10.1** Bikeways shall link residential neighborhood areas with parks, employment centers, civic and commercial areas, and schools.
- Objective 5.11** Eliminate obstructions that impede safe movement of vehicles, bicyclists, and pedestrians.
- Policy 5.11.2** Driveways shall be designed to avoid conflicts with pedestrian and bicycle travel.
- Program 5-1** Periodically review current traffic volumes, traffic collision data, and the pattern of urban development to coordinate, program, and as necessary revise the planning and prioritization of road improvements.
- Program 5-2** Periodically reassess the goals, objectives and policies statements of the Circulation Element and propose amendments, as necessary.
- Program 5-3** Develop a comprehensive strategy to ensure full funding of the circulation system. The strategy will include the DIF, TUMF, and other funding sources that may be available to the City. In addition, the creation of benefit assessment districts, and road and bridge fee districts may be considered where appropriate.
- Program 5-4** Develop a multi-year transportation infrastructure improvement program that, to the extent feasible, phases the construction of new projects in advance of new development.
- Program 5-5** The above-referenced program will prioritize circulation improvement projects to be funded from DIF, TUMF and other sources. Prioritization to consider the following factors: (a) Traffic safety; (b) Congestion relief; (c) Access to new development; and (d) Equitable benefit.
- Program 5-6** Conduct studies of specified arterial segments to determine if any additional improvements will be needed to maintain an acceptable LOS at General Plan build-out. Generally, these segments will be studied as new developments are proposed in their vicinity. Measures will be identified that are consistent with the Circulation Element designation of these roadway segments, such as additional turn lanes at intersections, signal optimization by coordination and enhanced phasing, and travel demand management measures. The study of specified arterial segments will be required to identify measures to maintain an acceptable LOS at General Plan build-out for at least one of the reasons discussed below:
- (a) Segments will need improvement, but their ultimate volumes slightly exceed design capabilities.

- (b) Segments will need improvements but require inter-jurisdictional coordination.
- (c) Segments would require significant encroachment on existing adjacent development if built out to their Circulation Element designations.

Program 5-7 Establish traffic study guidelines to deal with development projects in a consistent manner. The traffic study guidelines shall include criteria for projects that propose changes to the approved General Plan land uses.

Program 5-13 Implement Transportation Demand Management (TDM) strategies that reduce congestion in the peak travel hours. Examples include carpooling, telecommuting, and flexible work hours.

4.11.3 Methodology

Evaluation of traffic and circulation impacts associated with the proposed project includes the following:

4.11.3.1 Project Trip Generation

Trip generation estimates for the proposed project were based on the ITE rates for Land Use 150 (Warehousing) for buildings under 200,000 square feet, and the City of Moreno Valley rates for High-Cube warehousing for buildings over 200,000 square feet. The vehicle splits from the City of Fontana's *Truck Trip Generation Study* were utilized to convert project trips into PCE trips. As illustrated in Table 4.11.D, the proposed project is expected to generate 309 vehicle trips in the a.m. peak hour, 356 vehicle trips in the p.m. peak hour, and 4,409 daily vehicle trips.

Table 4.11.D: Project New Trip Generation

Land Use	A.M. Peak Hour			P.M. Peak Hour			Daily
	In	Out	Total	In	Out	Total	
Vehicular Trips							
Passenger Cars	131	45	176	43	156	199	2,420
2-Axle Trucks	8	9	17		8	20	238
3-Axle Trucks	15	18	33		15	40	505
4+-Axle Trucks	41	42	83	61	36	97	1,246
Total Trips (Vehicular)	191	114	309	141	215	356	4,409
PCE Trips							
Passenger Cars	131	45	176	43	156	199	2,420
2-Axle Trucks	15	16	31		15	34	359
3-Axle Trucks	30	36	66		30	80	1,010
4+-Axle Trucks	123	126	249	183	108	291	3,738
Total Trips (PCE)¹	299	223	522	295	309	604	7,527

Notes: PCE = Passenger Car Equivalent.

¹ Based on the following Passenger Car Equivalent Factors: 2-axle = 1.5 PCE, 3-axle = 2.0 PCE, 4+-axles = 3.0 PCE.
Total Trips (PCE) = Passenger Cars + Truck Trips converted to PCE.

The concept of PCEs accounts for the larger impact of trucks on traffic operations. It does so by assigning each type of truck a PCE factor that represents the number of passenger vehicles that could travel through an intersection in the same time that a particular type of truck could. For example, in this report, trucks with four or more axles have been assigned a PCE factor of 3.0, indicating that three passenger vehicles could travel through an intersection in the same amount of time required for a single truck with four or more axles; therefore, the impacts and mitigations identified in this report incorporate the impact of trucks on intersection operations. As illustrated in

Table 4.11.D, the proposed project is expected to generate 522 PCE trips in the a.m. peak hour, 604 PCE trips in the p.m. peak hour, and 7,527 daily PCE trips.

The project site is currently zoned for Industrial/Business Park (34% of the project site), Multi-Family Residential (35% of the project site), Suburban Residential (22% of the project site), and Residential Agricultural (11% of the project site). Table 4.11.E compares the trip generation of the project site as currently zoned and the trip generation resulting from the implementation of the proposed project. As indicated in Table 4.11.E, compared with the existing project zoning, the proposed project would generate 6,702 fewer daily trips, 885 fewer a.m. peak hour trips, and 939 fewer p.m. peak hour trips.

Table 4.11.E: Trip Generation Comparison

Land Use	A.M. Peak Hour			P.M. Peak Hour			Daily
	In	Out	Total	In	Out	Total	
Trip Generation of Existing Land Use (PCE) ¹	818	589	1,407	679	864	1,543	14,229
Trip Generation of Proposed Project (PCE) ²	299	223	522	295	309	604	7,527
Total Trips (PCE) Difference³	-519	-366	-885	-384	-555	-939	-6,702

Notes: PCE = Passenger Car Equivalent.

¹ Based on 665,300 square feet of industrial/business park uses, 549 multiple-family units, 114 SFR units, and 24 residential agricultural units.

² Based on 2.24 million square feet of warehouse uses.

³ Existing Zoning trips – proposed project trips.

4.11.3.2 Trip Distribution and Assignment

Trip distribution patterns for the proposed project were developed based on select zone model runs obtained from the RivTAM and through consultation with City staff. Trip distribution was developed separately for passenger vehicles and trucks, and was also developed separately for year 2016 and build out conditions to account for changes in the roadway network between 2016 and build out conditions. The project trip generation was applied to the trip distribution patterns for the proposed project to develop trip assignments for new project trips. The trip distribution for passenger vehicles and trucks in the 2016 and build out conditions are shown in Figures 8, 9, 10 and 11 of the TIA.

4.11.4 Thresholds of Significance

In the Initial Study¹ for this project, it was concluded that the proposed project could create potentially significant traffic impacts associated with the following CEQA traffic impact thresholds of significance if the project would:

- Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections).

(A significant traffic impact would occur if the project would cause a decrease from a standard LOS to a less than standard LOS at a study intersection based on a peak hour analysis. The following are the LOS standards that apply within the project study area)

- City of Moreno Valley LOS is C or D, depending on the LOS defined for that roadway in the General Plan Circulation Element. The LOS D criteria would apply to all study area intersections except for the intersections of Moreno Beach Drive/Cottonwood Avenue and Redlands Boulevard/Cottonwood Avenue, where the standard of LOS C applies.
- Caltrans LOS standard is between C and D. Within the project study area all signalized ramp terminus intersections must operate with a weighted average delay of 45 seconds or less,

¹ Initial Study, Eucalyptus Industrial Park, City of Moreno Valley, Riverside County, California, prepared by LSA Associates, Inc., January 28, 2008 (see Appendix A).

and stop controlled ramp terminus intersections on SR-60 must operate with a worst-case approach delay (two-way stop) or weighted average delay (four-way stop) of 30 seconds or less. Freeway segments on SR-60 must operate with a volume to capacity ratio of 0.80 or better. Caltrans does not have an LOS standard for freeway ramp junctions; therefore, the Riverside County Congestion Management Program (CMP) threshold of LOS E has been used. A significant impact would occur if the project causes a Caltrans facility to exceed the LOS standard, or if the project adds traffic to a facility operating with an satisfactory LOS in the baseline condition.

- *Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways.*
 - The Riverside County CMP specifies a LOS standard of E for all roadways and highways on the designated CMP roadway system. The LOS standards adopted by the City of Moreno Valley and Caltrans are more stringent than the CMP standard; therefore, the analysis according to the City and Caltrans standards would satisfy CMP standards as well. SR-60 is the only designated roadway on the CMP system within the project study area.
- *Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).*

The Initial Study also concluded that the project would not affect or would create a less than significant impact associated with the following CEQA traffic impact thresholds:

- *Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).*
- *Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in increased safety risks.*
- *Result in inadequate emergency access.*
- *Result in inadequate parking capacity.*

4.11.5 No Impact/Less than Significant Impacts

The following potential impacts were determined to be less than significant. In each of the following issues, either no impact would occur (therefore, no mitigation would be required) or adherence to established regulations, standards, and policies would reduce potential impacts to a less than significant level.

4.11.5.1 Air Traffic Patterns

Threshold	Would the proposed project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?
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The proposed project site is located approximately 5.5 miles northwest of the MARB and is not within the designated safety zones or the flight paths established for this facility.¹ The proposed project does not consist of any uses that would cause changes to air traffic volumes or otherwise affect air traffic patterns. Additionally, the proposed project does not include any visual, electronic, or physical hazards to aircraft in flight and is not anticipated to disrupt or alter air traffic patterns, including either an increase in traffic levels or a change in location. As such, no impacts associated with this issue would occur and no mitigation is required.

¹ March Air Reserve Compatibility Plan, December 29, 2004. [http://www.rcaluc.org/filemanager/plan/old/March%20Air%20Reserve%20Base%20\(MARB\).pdf](http://www.rcaluc.org/filemanager/plan/old/March%20Air%20Reserve%20Base%20(MARB).pdf). Accessed June 3, 2008.

4.11.5.2 Design Features or Incompatible Uses

Threshold	Would the proposed project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
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The design of roadways must provide adequate sight distance and traffic control measures. This provision is normally realized through roadway design to facilitate roadway traffic flows. Roadway improvements in and around the project site would be designed and constructed to satisfy all City requirements for street widths, corner radii, intersection controls as well as incorporate design standards tailored specifically to site access requirements.

The City requested an analysis of the internal circulation to verify that large trucks will be able to maneuver safely in and out of the project. Sufficiency of the turning radii available on the project was verified with ITE *Turning Vehicle Templates* using the template for a large semitrailer (Template WB 50). The analysis confirmed that the turning radii provided in the current plan is consistent to the requirements prescribed by ITE and that unrestricted truck movement is allowed by the current site plan. This is also consistent with the radii required for WB-40 (semitrailer medium or small), B-40 (bus large), and SU-30 (single-unit truck or bus medium) per the ITE *Turning Vehicle Templates*. As determined by the TIA conducted for the proposed project, the proposed roadways as designed in the current plan provide for safe truck movement.

As part of the City’s plan check process, the final design of all roadways and intersections within the project site access would be reviewed by a licensed professional civil engineer to ensure adequate safety when traveling to and from the project site. The proposed project does not include any sharp curves or dangerous intersections in its design. Adherence to applicable existing requirements of the City of Moreno Valley and other agencies would reduce impacts associated with this issue to a less than significant level and no mitigation is required.

At the time that the Notice of Preparation (NOP) was released for the proposed project, the Moreno Valley Unified School District (MVUSD) indicated it had plans to locate an elementary school (MVUSD Elementary School #24), a middle school (MVUSD Middle School #7), and a high school (MVUSD High School #5) in the vicinity of Redlands Boulevard and future Eucalyptus Avenue, in close proximity to the proposed project. After the NOP was released, MVUSD decided to abandon plans for the school sites and relocate the future school facilities in a different area of the City.¹ Since no proposed schools would be located next to the proposed project, there would not be an incompatible use associated with the proposed project and the traffic associated with the proposed project on school facilities in the area. Similarly, for the existing residences to the southeast, it is anticipated that there would not be an incompatible use associated with traffic generated by the proposed project since there would be no truck or vehicle access to the project site on Encilia Avenue. It is reasonable to conclude that traffic associated with the proposed project would utilize the future Eucalyptus Avenue as this route would provide direct access to the proposed project. Therefore, impacts associated with this issue are less than significant and no mitigation is required. Air quality and noise impacts associated with project-related traffic and sensitive receptors are analyzed in Section 4.3 (Air Quality) and Section 4.9 (Noise).

4.11.5.3 Inadequate Emergency Access

Threshold	Would the proposed project result in inadequate emergency access?
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The developers of the proposed project would be required to design, construct, and maintain structures, roadways, and facilities to provide for adequate emergency access and evacuation. Construction activities, which may temporarily restrict vehicular traffic, would be required to implement adequate and appropriate measures to facilitate the passage of persons and vehicles

¹ Resolution No. 2007-08-81, Moreno Valley Unified School District Board of Education, approved April 15, 2008.

through/around any required road closures. The proposed project design would be submitted to and approved by the City's Fire and Police Departments prior the issuance of building permits. Adherence to applicable existing requirements of the City of Moreno Valley and other agencies would reduce impacts associated with this issue to a less than significant level and no further discussion is required.

As discussed in the Section 4.11.6, the project would cause significant impacts at some study area intersections that may be used by emergency vehicles. Mitigation measures are prescribed that would fully mitigate the impact of the project at study intersections; therefore, the project would not result in inadequate emergency access due to traffic congestion at study intersections.

4.11.5.4 Inadequate Parking Capacity

Threshold	Would the proposed project result in inadequate parking capacity?
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Automobile parking standards contained in Section 9.11.040 D-12 of the *City of Moreno Valley Municipal Code* require one (1) space per 1,000 square feet of gross floor area for the first 20,000 square feet. For the second 20,000 square feet, (1) space per 2,000 square feet of gross floor area is required. In addition, structures in excess 40,000 square feet require (1) space per 4,000 square feet of gross floor area. The preliminary site plan indicates that 1,091 automobile parking spaces are provided, which includes spaces for employees, drivers, and handicap spaces, and is well above the minimum requirement of 562 spaces. The design of the proposed project would be required to comply with parking standards prior to final site plan approval. Adherence to parking standards contained in the *Zoning Code* would ensure that the proposed project would not result in inadequate parking capacity. Impacts associated with parking capacity are less than significant.

4.11.5.5 Alternative Transportation

Threshold	Would the proposed project conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts or bicycle racks)?
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The project proposes an amendment to the Master Plan of Trails to relocate the Eucalyptus Avenue Trail to the north side of Eucalyptus Avenue and/or eliminate the planned trail segment on Quincy Avenue from SR-60 to Fir Avenue. A recent action by the City Trails Commission has accepted these changes. The project provides bike parking to facilitate alternative transportation should employees desire to bike to work.

The Riverside Transit Agency (RTA) has numerous bus routes that serve the City of Moreno Valley and bus service in the project area is via Route 17, which provides service along Fir Avenue to Auto Mall Drive, adjacent to the southwestern portion of project site. Although the RTA provides service along Fir Avenue, it does not presently provide service directly to the project site. The design of the proposed project would be required to adhere to applicable City of Moreno Valley standards that support and/or facilitate alternative modes of transportation. Through the City's project review process, policies, plans, and/or programs supporting alternative transportation would be reviewed and incorporated as applicable. Consequently, a less than significant impact would occur as a result of the proposed project and no additional analysis is required in this EIR.

4.11.6 Significant Impacts

The following potential impacts were determined to be significant, either because the project would contribute to an intersection already exceeding the LOS threshold, or because the project would cause the intersection to exceed the LOS threshold. Local and regional circulation improvements already programmed in the City's DIF program or the Western Riverside Council of Governments' (WRCOG) TUMF for western Riverside County have not been assumed in the LOS analysis. The project would be required to contribute to local and regional circulation improvement through the

payment of the DIF and TUMFs, and would therefore contribute to improvements that may mitigate the direct project impact or cumulative impact of the project. Mitigation of direct project impacts can be in the form of improvements to the intersection, or payment of the fees if projects funded by the fee would mitigate the project impact to a less than significant level.

4.11.6.1 Existing (2011) With Project Conditions (Intersection) Traffic and Level of Service Impacts

Threshold:	Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system?
Threshold:	Exceed, either individually or cumulatively, the City's LOS D criteria at all study area intersections except for the intersections of Moreno Beach Drive/Cottonwood Avenue and Redlands Boulevard/Cottonwood Avenue, where the standard of LOS C applies, or the LOS standard on Caltrans facilities. All signalized ramp terminus intersections must operate with a weighted average delay of 45 seconds or less, and stop controlled ramp terminus intersections on SR-60 must operate with a worst-case approach delay (two-way stop) or weighted average delay (four-way stop) of 30 seconds or less. Freeway segments on SR-60 must operate with a volume-to-capacity ratio of 0.80 or better and freeway ramp junctions must operate at LOS E or better. A significant impact would occur if the project causes a Caltrans facility to exceed the LOS standard, or if the project adds traffic to a facility operating with unsatisfactory LOS in the baseline condition.

Existing (2011) with project conditions consider the addition of traffic generated by the proposed project to Existing (2011) without Project conditions. An intersection LOS analysis was conducted to determine Existing (2011) with Project intersection performance. Table 4.11.F summarizes the LOS for the study area intersections and shows that, with the addition of project traffic, the following intersections are forecast to operate at unsatisfactory levels of service:

- Redlands Boulevard/SR-60 Westbound Ramps (a.m. and p.m. peak hours); and
- Redlands Boulevard/Eucalyptus Avenue-Fir Avenue (p.m. peak hour).

The project would contribute to the worsening of the already unsatisfactory LOS at the intersection of Redlands Boulevard/SR-60 Westbound Ramps and would create a significant impact at the intersection of Redlands Boulevard/Eucalyptus Avenue-Fir Avenue. Therefore, mitigation is required at both intersections.

Freeway mainline and ramp junctions were evaluated in the Existing plus Project condition. The results of the freeway analysis are provided in the Traffic Study. The following segments are forecast to operate at an unsatisfactory level of service in the Existing plus Project condition:

- SR-60 Eastbound: Pigeon Pass Road to Heacock Street (a.m. and p.m. peak hours);
- SR-60 Westbound: Heacock Street to Perris Boulevard (a.m. peak hour); and
- SR-60 Westbound: Perris Boulevard to Nason Street (a.m. peak hour).

The project would add to the existing unsatisfactory LOS on these three freeway segments; therefore, the addition of project traffic would be considered a cumulative impact. Neither the project applicant nor the City has jurisdiction over Caltrans facilities; therefore, implementation of improvements to the freeway mainline cannot be guaranteed. Review of the SCAG Regional Transportation Improvement Plan (RTIP) indicates that there are no projects programmed on SR-60 within the study area. Furthermore, Caltrans does not have a mechanism for development projects to contribute to improvements on State Highways. Therefore, the cumulative impact to these three segments of SR-60 would be significant and unavoidable.

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Table 4.11.F: Existing (2011) Intersection Levels of Service

Intersection	Without Project				With Project				Mitigation Required?	Project With Improvements				
	A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour			A.M. Peak Hour		P.M. Peak Hour		
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS		Delay	LOS	Delay	LOS	
Nason Street/Eucalyptus Avenue	27.5	C	22.4	C 27	5	C	22.8	C	No	27.5	C	22.8	C	
Nason Street/Alessandro Boulevard	29.1	C	28.5	C 29	3	C	28.9	C	No	29.3	C	28.9	C	
Fir Avenue/Eucalyptus Avenue	18.2	B	17.7	B	18.2	B 17	5	B	No	18.2	B		17.5	B
Moreno Beach Drive/SR-60 WB Ramps	15.5	B	13.2	B	14.9	B	12.4	B	No	14.9	B	12.4	B	
Moreno Beach Drive/SR-60 EB Ramps	28.5	C	35.3	D 28	9	C	38.7	D	No	28.9	C	38.7	D	
Moreno Beach Drive/Eucalyptus Avenue	<i>Future Intersection</i>				<i>Future Intersection</i>				No	<i>Future Intersection</i>				
Moreno Beach Drive/Trail Ridge Way	17.5	B	19.9	B	17.7	B 19	9	B	No	17.7	B		19.9	B
Moreno Beach Drive/Auto Mall Drive	15.8	B	16.1	B	15.8	B	18.9	B	No	15.8	B	18.9	B	
Moreno Beach Drive/Cottonwood Avenue	18.1	B	19.3	B	17.8	B 19	4	B	No	17.8	B		19.4	B
Moreno Beach Drive/Alessandro Boulevard	24.4	C	26.8	C 25	2	C	27.7	C	No	25.2	C	27.7	C	
Auto Mall Drive/Eucalyptus Avenue	8.9	A	9.1	A	9.4	A	10.1	B	No	9.4	A	10.1	B	
Redlands Boulevard/SR-60 WB Ramps	25.3	D	77	F	36.4	E	>100	F	Yes	23.5	C	23.2	C	
Redlands Boulevard/SR-60 EB Ramps	21.9	C	24	C 24	7	C	27.6	C	No	24.7	C	27.6	C	
Redlands Boulevard/Eucalyptus Avenue-Fir Avenue	<i>Future Intersection</i>				25.3	D	44.6	E	Yes	18.2	B		18.3	B
Redlands Blvd./Encilia Avenue-Eucalyptus Avenue	13.2	B	15.2	C	13.5	B	15.6	C	No	13.5	B	15.6	C	
Redlands Boulevard/Cottonwood Avenue	14.2	B	6.3	A	14.2	B 6.2	A		No	14.2	B	6.2	A	
Redlands Boulevard/Alessandro Boulevard	10.5	B	12.2	B	10.6	B 12	2	B	No	10.6	B		12.2	B
Driveway A/Eucalyptus Avenue	<i>Future Intersection</i>				9.3	A 9.5	A		No	9.3	A		9.5	A
Driveway B/Eucalyptus Avenue	<i>Future Intersection</i>				9.1	A 9.2	A		No	9.1	A		9.2	A
Driveway C/Eucalyptus Avenue	<i>Future Intersection</i>				9.2	A 9.6	A		No	9.2	A		9.6	A
Driveway D/Eucalyptus Avenue	<i>Future Intersection</i>				9.3	A 9.2	A		No	9.3	A		9.2	A
Driveway E/Eucalyptus Avenue	<i>Future Intersection</i>				9.1	A 9.5	A		No	9.1	A		9.5	A
Driveway F/Eucalyptus Avenue	<i>Future Intersection</i>				9.2	A 9.2	A		No	9.2	A		9.2	A
Driveway G/Eucalyptus Avenue	<i>Future Intersection</i>				9.2	A 9.5	A		No	9.2	A		9.5	A
Driveway H/Eucalyptus Avenue	<i>Future Intersection</i>				10	A 9.7	A		No	10	A		9.7	A

Source: Tables F, I, and GG. Traffic Study, Eucalyptus Industrial Park. LSA Associates, Inc. April 2012.

The Traffic Study also analyzes the existing with project conditions a.m. and p.m. peak hour ramp merge-diverge volumes and levels of service for the ramp junctions on SR-60. All locations are forecast to operate at an acceptable level of service.

4.11.6.2 Opening Year 2016 With Project Conditions (Intersection) Traffic and Level of Service Impacts

Threshold:	Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system?
Threshold:	Exceed, either individually or cumulatively, the City's LOS D criteria at all study area intersections except for the intersections of Moreno Beach Drive/Cottonwood Avenue and Redlands Boulevard/Cottonwood Avenue, where the standard of LOS C applies, or the LOS standard on Caltrans facilities. All signalized ramp terminus intersections must operate with a weighted average delay of 45 seconds or less, and stop controlled ramp terminus intersections on SR-60 must operate with a worst-case approach delay (two-way stop) or weighted average delay (four-way stop) of 30 seconds or less. Freeway segments on SR-60 must operate with a volume-to-capacity ratio of 0.80 or better and freeway ramp junctions must operate at LOS E or better. A significant impact would occur if the project causes a Caltrans facility to exceed the LOS standard, or if the project adds traffic to a facility operating with unsatisfactory LOS in the baseline condition.

Opening Year (2016) with Project conditions considers the addition of traffic generated by the proposed project to Opening Year (2016) without Project conditions. An intersection LOS analysis was conducted to determine opening year (2016) intersection performance. The LOS for the study area intersections are summarized in Table 4.11.G, which shows that the following intersections would operate at unsatisfactory LOS:

- Moreno Beach Drive/SR-60 Westbound Ramps (p.m. peak hour);
- Redlands Boulevard/SR-60 Westbound Ramps (a.m. and p.m. peak hours); and
- Redlands Boulevard/Eucalyptus Avenue-Fir Avenue (p.m. peak hour).

The project would have a significant impact at all three intersections, and therefore mitigation would be required.

Freeway mainline and ramp junctions were evaluated in the Opening Year (2016) plus Project condition. The results of the freeway analysis are provided in the TIA. The following segments are forecast to operate at an unsatisfactory level of service in the Opening Year (2016) plus Project condition:

- SR-60 Eastbound: Pigeon Pass Road to Heacock Street (a.m. and p.m. peak hours);
- SR-60 Eastbound: Heacock Street to Perris Boulevard (p.m. peak hour);
- SR-60 Westbound: Heacock Street to Perris Boulevard (a.m. peak hour); and
- SR-60 Westbound: Perris Boulevard to Nason Street (a.m. peak hour).

The project would add to the existing unsatisfactory LOS on these four freeway segments; therefore, the addition of project traffic would be considered a cumulative impact. Neither the project applicant nor the City has jurisdiction over Caltrans facilities; therefore, implementation of improvements to the freeway mainline cannot be guaranteed. Review of the RTIP indicates that there are no projects programmed on SR-60 within the study area. Furthermore, Caltrans does not have a mechanism for development projects to contribute to improvements on State Highways. Therefore, the cumulative impact to these three segments of SR-60 would be significant and unavoidable.

Table 4.11.G: Opening Year (2016) Intersection Levels of Service

Intersection	Without Project				With Project				Mitigation Required?	Project With Improvements			
	A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour			A.M. Peak Hour		P.M. Peak Hour	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS		Delay	LOS	Delay	LOS
Nason Street/Eucalyptus Avenue	27.8	C	22.4	C	27.8	C	22.7	C	No	27.8	C	22.7	C
Nason Street/Alessandro Boulevard	29.3	C	28.6	C	29.4	C	28.9	C	No	29.4	C	28.9	C
Fir Avenue/Eucalyptus Avenue	18.3	B	17.8	B	18.3	B	17.7	B	No	18.3	B	17.7	B
Moreno Beach Drive/SR-60 WB Ramps	16	B	13.5	B	15.7	B	13	B	No	15.7	B	13	B
Moreno Beach Drive/SR-60 EB Ramps	29	C	41.2	D	29.6	C	49.3	D	Yes	28.8	C	37.3	D
Moreno Beach Drive/Eucalyptus Avenue	<i>Future Intersection</i>				<i>Future Intersection</i>				No	<i>Future Intersection</i>			
Moreno Beach Drive/Trail Ridge Way	17.7	B	20.1	C	17.8	B	20.2	C	No	17.8	B	20.2	C
Moreno Beach Drive/Auto Mall Drive	15.5	B	16	B	15.6	B	18.6	B	No	15.6	B	18.6	B
Moreno Beach Drive/Cottonwood Avenue	18.3	B	20.5	C	18	B	20.8	C	No	18	B	20.8	C
Moreno Beach Drive/Alessandro Boulevard	24.7	C	29.5	C	25.4	C	31.1	C	No	25.4	C	31.1	C
Auto Mall Drive/Eucalyptus Avenue	8.9	A	9.1	A	9.4	A	10.2	B	No	9.4	A	10.2	B
Redlands Boulevard/SR-60 WB Ramps	30.1	D	>100	F	51.3	F	>100	F	Yes	25.3	C	24.7	C
Redlands Boulevard/SR-60 EB Ramps	22.6	C	25.2	C	25.9	C	29.6	C	No	25.9	C	29.6	C
Redlands Boulevard/Eucalyptus Avenue-Fir Avenue	<i>Future Intersection</i>				29.5	D	60.3	F	Yes	17.6	B	18.3	B
Redlands Blvd./Encilia Avenue-Eucalyptus Avenue	14	B	16.4	C	14.4	B	17	C	No	14.4	B	17	C
Redlands Boulevard/Cottonwood Avenue	14.3	B	6.4	A	14.4	B	6.4	A	No	14.4	B	6.4	A
Redlands Boulevard/Alessandro Boulevard	11.1	B	13.4	B	11.2	B	13.5	B	No	11.2	B	13.5	B
Driveway A/Eucalyptus Avenue	<i>Future Intersection</i>				9.3	A	9.5	A	No	9.3	A	9.5	A
Driveway B/Eucalyptus Avenue	<i>Future Intersection</i>				9.1	A	9.2	A	No	9.1	A	9.2	A
Driveway C/Eucalyptus Avenue	<i>Future Intersection</i>				9.2	A	9.6	A	No	9.2	A	9.6	A
Driveway D/Eucalyptus Avenue	<i>Future Intersection</i>				9.3	A	9.2	A	No	9.3	A	9.2	A
Driveway E/Eucalyptus Avenue	<i>Future Intersection</i>				9.1	A	9.5	A	No	9.1	A	9.5	A
Driveway F/Eucalyptus Avenue	<i>Future Intersection</i>				9.2	A	9.2	A	No	9.2	A	9.2	A
Driveway G/Eucalyptus Avenue	<i>Future Intersection</i>				9.2	A	9.5	A	No	9.2	A	9.5	A
Driveway H/Eucalyptus Avenue	<i>Future Intersection</i>				10	A	9.7	A	No	10	A	9.7	A

Source: Tables L, O, and II. Traffic Study, Eucalyptus Industrial Park. LSA Associates, Inc. April 2012.

The TIA also analyzes the Opening Year (2016) with Project conditions a.m. and p.m. peak hour ramp merge-diverge volumes and levels of service for the ramp junctions on SR-60. All locations are forecast to operate at an acceptable level of service in the Opening Year (2016) plus Project condition.

4.11.6.3 Opening Year 2016 Cumulative With Project Conditions (Intersection) Traffic and Level of Service Impacts

Threshold:	Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system?
Threshold:	Exceed, either individually or cumulatively, the City's LOS D criteria at all study area intersections except for the intersections of Moreno Beach Drive/Cottonwood Avenue and Redlands Boulevard/Cottonwood Avenue, where the standard of LOS C applies, or the LOS standard on Caltrans facilities. All signalized ramp terminus intersections must operate with a weighted average delay of 45 seconds or less, and stop controlled ramp terminus intersections on SR-60 must operate with a worst-case approach delay (two-way stop) or weighted average delay (four-way stop) of 30 seconds or less. Freeway segments on SR-60 must operate with a volume-to-capacity ratio of 0.80 or better and freeway ramp junctions must operate at LOS E or better. A significant impact would occur if the project causes a Caltrans facility to exceed the LOS standard, or if the project adds traffic to a facility operating with unsatisfactory LOS in the baseline condition.

Opening Year (2016) Cumulative with Project conditions considers the addition of traffic generated by the proposed project to Opening Year (2016) Cumulative without Project conditions. As previously noted, the Opening Year (2016) Cumulative scenario was developed by adding the traffic volumes that would be generated by approved and pending projects in the project vicinity to year 2016 traffic volumes. Additionally, projects currently included in the City's Capital Improvements Program (CIP) and planned for construction by 2016, including improvements to the Moreno Beach Drive and Redlands Boulevard interchanges with SR-60, have been considered as complete. An intersection LOS analysis was conducted to determine Opening Year (2016) Cumulative intersection performance. As identified in Table 4.11.H, the addition of project traffic to the Opening Year (2016) Cumulative scenario would result in conditions exceeding the established LOS standard at the following intersections:

- Moreno Beach Drive/SR-60 Eastbound Ramps (p.m. peak hour);
- Moreno Beach Drive/Cottonwood Avenue (p.m. peak hour);
- Moreno Beach Drive/Alessandro Avenue (p.m. peak hour);
- Redlands Boulevard/SR-60 Westbound Ramps (a.m. and p.m. peak hours);
- Redlands Boulevard/SR-60 Eastbound Ramps (a.m. and p.m. peak hours);
- Redlands Boulevard/Fir Avenue-Eucalyptus Avenue (a.m. and p.m. peak hours);
- Redlands Boulevard/Encilia Avenue-Eucalyptus Avenue (p.m. peak hour); and
- Redlands Boulevard/Alessandro Boulevard (p.m. peak hour).

While these intersections are forecast to exceed satisfactory levels of service in Opening Year (2016) Cumulative with Project conditions (Table 4.11.H), with the exception of the intersection of Redlands Boulevard/Eucalyptus Avenue-Fir Avenue and Redlands Boulevard/Encilia Avenue-Eucalyptus Avenue, these intersections already exceeded established LOS standards in the Opening Year (2016) Cumulative without-Project condition. Because the proposed project would contribute to and would cause intersections to operate at unsatisfactory levels, mitigation is required.

Table 4.11.H: Opening Year (2016) Cumulative Intersection Levels of Service

Intersection	Without Project				With Project				Mitigation Required?	Project With Improvements			
	A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour			A.M. Peak Hour		P.M. Peak Hour	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS		Delay	LOS	Delay	LOS
Nason Street/Eucalyptus Avenue	29.3	C	25.6	C	29.2	C	25.8	C	No	28.3	C	25.7	C
Nason Street/Alessandro Boulevard	29.9	C	30	C	30	C	30.3	C	No	29.7	C	30.2	C
Fir Avenue/Eucalyptus Avenue	25.4	C	21.1	C	25.3	C	21	C	No	25	C	20.9	C
Moreno Beach Drive/SR-60 WB Ramps	17.4	B	16.7	B	18.1	B	19.1	B	No	17	B	16.8	B
Moreno Beach Drive/SR-60 EB Ramps	32.8	C	95.2	F	34.7	C	>100	F	No	29.3	C	30.1	C
Moreno Beach Drive/Eucalyptus Avenue	<i>Future Intersection</i>				<i>Future Intersection</i>				No	<i>Future Intersection</i>			
Moreno Beach Drive/Trail Ridge Way	17.1	B	21.9	C	17.2	B	21.9	C	No	17.2	B	21.9	C
Moreno Beach Drive/Auto Mall Drive	16.4	B	23.4	C	17.4	B	25	C	No	17.4	B	25	C
Moreno Beach Drive/Cottonwood Avenue	26.2	C	55.3	E	26.4	C	60.5	F	No	26.9	C	31.7	C
Moreno Beach Drive/Alessandro Boulevard	30.4	C	72.7	F	31.7	C	82.1	F	No	31.8	C	35.2	D
Auto Mall Drive/Eucalyptus Avenue	10.1	B	14.9	B	10.7	B	25.2	D	No	10.7	B	16.7	C
Redlands Boulevard/SR-60 WB Ramps	>100	F	>100	F	>100	F	>100	F	No	26.3	C	33.8	C
Redlands Boulevard/SR-60 EB Ramps	>100	F	>100	F	>100	F	>100	F	No	30.5	C	39.9	D
Redlands Boulevard/Eucalyptus Avenue-Fir Avenue	<i>Future Intersection</i>				>100	F	>100	F	Yes	42.5	D	44.8	D
Redlands Boulevard/Encilia Avenue-Eucalyptus Avenue	20.5	C	35	D	21.4	C	37.4	E	Yes	19	C	26.1	D
Redlands Boulevard/Cottonwood Avenue	17.4	B	11.1	B	17.5	B	11.1	B	No	17.1	B	10.8	B
Redlands Boulevard/Alessandro Boulevard	15.8	C	42.7	F	15.9	C	43.5	F	No	15.1	C	23.8	C
Driveway A/Eucalyptus Avenue	<i>Future Intersection</i>				9.8	A	10.7	A	No	9.8	A	10.7	A
Driveway B/Eucalyptus Avenue	<i>Future Intersection</i>				9.7	A	10	A	No	9.7	A	10	A
Driveway C/Eucalyptus Avenue	<i>Future Intersection</i>				9.9	A	10.8	A	No	9.9	A	10.8	A
Driveway D/Eucalyptus Avenue	<i>Future Intersection</i>				10	A	10.2	A	No	10	A	10.2	A
Driveway E/Eucalyptus Avenue	<i>Future Intersection</i>				9.6	A	10.7	A	No	9.6	A	10.7	A
Driveway F/Eucalyptus Avenue	<i>Future Intersection</i>				9.8	A	10.2	A	No	9.8	A	10.2	A
Driveway G/Eucalyptus Avenue	<i>Future Intersection</i>				9.6	A	10.5	A	No	9.6	A	10.5	A
Driveway H/Eucalyptus Avenue	<i>Future Intersection</i>				11.2	A	10.8	A	No	11.2	A	10.8	A

Source: Tables R, U, and KK. Traffic Study, Eucalyptus Industrial Park. LSA Associates, Inc. April 2012.

Freeway mainline and ramp junctions were evaluated in the Opening Year 2016 Cumulative plus Project condition. The results of the freeway analysis are provided in the TIA. The following segments are forecast to operate at an unsatisfactory level of service in the Opening Year 2016 Cumulative plus Project condition:

- SR-60 Eastbound: Pigeon Pass Road to Heacock Street (a.m. and p.m. peak hours);
- SR-60 Eastbound: Heacock Street to Perris Boulevard (a.m. and p.m. peak hours);
- SR-60 Eastbound: Perris Boulevard to Nason Street (a.m. and p.m. peak hours);
- SR-60 Westbound: Heacock Street to Perris Boulevard (a.m. and p.m. peak hours);
- SR-60 Westbound: Perris Boulevard to Nason Street (a.m. and p.m. peak hours); and
- SR-60 Westbound: Nason Street to Moreno Beach Drive (a.m. peak hour).

The project would add to the existing unsatisfactory LOS on the six freeway segments; therefore, the addition of project traffic would be considered a cumulative impact. Review of the RTIP indicates that there are no projects programmed on SR-60 within the study area. Furthermore, neither the project applicant nor the City has jurisdiction over Caltrans facilities; therefore, implementation of improvements to the freeway mainline cannot be guaranteed. Furthermore, Caltrans does not have a mechanism for development projects to contribute to improvements on State Highways. Therefore, the cumulative impact to these segments of SR-60 would be significant and unavoidable.

The Traffic Study also analyzes the Opening Year 2016 Cumulative with Project conditions a.m. and p.m. peak hour ramp merge-diverge volumes and levels of service for the ramp junctions on SR-60. All locations are forecast to operate at an acceptable level of service in the Opening Year 2016 Cumulative plus Project condition.

4.11.6.4 Future Year 2035 With Project Conditions (Intersection) Traffic and Level of Service Impacts

Threshold:	Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system?
Threshold:	Exceed, either individually or cumulatively, the City's LOS D criteria at all study area intersections except for the intersections of Moreno Beach Drive/Cottonwood Avenue and Redlands Boulevard/Cottonwood Avenue, where the standard of LOS C applies, or the LOS standard on Caltrans facilities. All signalized ramp terminus intersections must operate with a weighted average delay of 45 seconds or less, and stop controlled ramp terminus intersections on SR-60 must operate with a worst-case approach delay (two-way stop) or weighted average delay (four-way stop) of 30 seconds or less. Freeway segments on SR-60 must operate with a volume-to-capacity ratio of 0.80 or better and freeway ramp junctions must operate at LOS E or better. A significant impact would occur if the project causes a Caltrans facility to exceed the LOS standard, or if the project adds traffic to a facility operating with unsatisfactory LOS in the baseline condition.

Future Year (2035) with Project conditions considers the addition of traffic generated by the proposed project to Future Year (2035) Baseline conditions. An intersection LOS analysis was conducted to determine Future Year (2035) Intersection performance. As identified in Table 4.11.I, the addition of project traffic to the Future Year (2035) scenario would result in conditions exceeding City and Caltrans LOS standards at the following intersections:

- Nason Street/Eucalyptus Avenue (a.m. and p.m. peak hours);
- Nason Street/Alessandro Boulevard (a.m. and p.m. peak hours);

Table 4.11.I: Future Year (2035) Intersection Levels of Service

Intersection	Without Project				With Project				Mitigation Required?	Project With Improvements			
	A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour			A.M. Peak Hour		P.M. Peak Hour	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS		Delay	LOS	Delay	LOS
Nason Street/Eucalyptus Avenue	82.3	F	>100	F	83.3	F	>100	F	Yes	40.1 D		40.6	D
Nason Street/Alessandro Boulevard	68.3	F	82.5	F	70.6	F	85.2	F	Yes	47.3 D		54.5	D
Fir Avenue/Eucalyptus Avenue	14.6	B	21.2	C	14.5	B	21	C	No	14.5	B	21	C
Moreno Beach Drive/SR-60 WB Ramps	>100	F	18.8 B		>100	F	20.5 C		Yes	18.3 B	20.4		C
Moreno Beach Drive/SR-60 EB Ramps	25.7	C	87.6	F	28 C		>100	F	Yes	20.5	C 29 C		
Moreno Beach Drive/Eucalyptus Avenue	39.7	D	>100	F	49.5 D		>100	F	Yes	28.1 C		36.3	D
Moreno Beach Drive/Trail Ridge Way	17.3	B	20.5	C	17.3	B	20.5	C	No	17.3	B	20.5	C
Moreno Beach Drive/Auto Mall Drive	18.7	B	25.8	C	19	B	26.2	C	No	19	B	26.2	C
Moreno Beach Drive/Cottonwood Avenue	26.3	C	66	F	26.3 C		67.7	F	Yes	19.7 B	23.8		C
Moreno Beach Drive/Alessandro Boulevard	>100	F	>100	F	>100	F	>100	F	Yes	33.8 C		44.3	D
Auto Mall Drive/Eucalyptus Avenue	11.6	B	18.4	C	12.7	B	25.1	D	No	12.7	B	25.1	D
Redlands Boulevard/SR-60 WB Ramps	61.8	F	>100	F	>100	F	>100	F	Yes	11.8	B 13 B		
Redlands Boulevard/SR-60 EB Ramps	>100	F	>100	F	>100	F	>100	F	Yes	25.8 C		38.8	D
Redlands Boulevard/Eucalyptus Avenue-Fir Avenue	>100	F	>100	F	>100	F	>100	F	Yes	32.9 C		38.8	D
Redlands Boulevard/Encilia Avenue-Eucalyptus Avenue	>100	F	>100	F	>100	F	>100	F	Yes	29.4 C		33.4	C
Redlands Boulevard/Cottonwood Avenue	15.9	B	21.8	C	15.9 B	21.9		C	No	15.9	B	21.9	C
Redlands Boulevard/Alessandro Boulevard	>100	F	>100	F	>100	F	>100	F	Yes	43.5 D		50.6	D
Driveway A/Eucalyptus Avenue	<i>Future Intersection</i>				11.2	B	16	B	No	11.2	B 16 B		
Driveway B/Eucalyptus Avenue	<i>Future Intersection</i>				11.5 B	12.7 B			No	11.5	B	12.7	B
Driveway C/Eucalyptus Avenue	<i>Future Intersection</i>				11.8 B	16.8		C	No	11.8	B	16.8	C
Driveway D/Eucalyptus Avenue	<i>Future Intersection</i>				11.8 B	14.7 B			No	11.8	B	14.7	B
Driveway E/Eucalyptus Avenue	<i>Future Intersection</i>				10.7 B	15.9		C	No	10.7	B	15.9	C
Driveway F/Eucalyptus Avenue	<i>Future Intersection</i>				11.9 B	13.7 B			No	11.9	B	13.7	B
Driveway G/Eucalyptus Avenue	<i>Future Intersection</i>				10.7 B	14.8 B			No	10.7	B	14.8	B
Driveway H/Eucalyptus Avenue	<i>Future Intersection</i>				14.8 B	15.6		C	No	14.8	B	15.6	C

Source: Tables X, AA, and MM. Traffic Study, Eucalyptus Industrial Park. LSA Associates, Inc. April 2012

- Moreno Beach Drive/SR-60 Westbound Ramps (a.m. peak hour);
- Moreno Beach Drive/SR-60 Eastbound Ramps (p.m. peak hour);
- Moreno Beach Drive/Eucalyptus Avenue (p.m. peak hour);
- Moreno Beach Drive/Cottonwood Avenue (p.m. peak hour);
- Moreno Beach Drive/Alessandro Avenue (a.m. and p.m. peak hours);
- Redlands Boulevard/SR-60 Westbound Ramps (a.m. and p.m. peak hours);
- Redlands Boulevard/SR-60 Eastbound Ramps (a.m. and p.m. peak hours);
- Redlands Boulevard/Fir Avenue-Eucalyptus Avenue (a.m. and p.m. peak hours);
- Redlands Boulevard/Encilia Avenue-Eucalyptus Avenue (a.m. and p.m. peak hours); and
- Redlands Boulevard/Alessandro Boulevard (a.m. and p.m. peak hours).

All of the intersections that are forecast to experience a deficient LOS with the proposed project would also operate with a deficient LOS without the proposed project. Although the proposed project does not cause these intersections to operate at an unsatisfactory LOS, it does contribute to the worsening of the intersections' LOS and therefore mitigation would be required to offset the cumulative impact of the project.

Freeway mainline and ramp junctions were evaluated in the Future Year 2035 plus Project condition. The results of the freeway analysis are provided in the TIA. The following segments are forecast to operate at an unsatisfactory level of service in the Future Year 2035 Cumulative plus Project condition:

- SR-60 Eastbound: Pigeon Pass Road to Heacock Street (a.m. and p.m. peak hours);
- SR-60 Eastbound: Heacock Street to Perris Boulevard (a.m. and p.m. peak hours);
- SR-60 Eastbound: Perris Boulevard to Nason Street (a.m. and p.m. peak hours);
- SR-60 Eastbound: Nason Street to Moreno Beach Drive (a.m. and p.m. peak hours);
- SR-60 Eastbound: Moreno Beach Drive to Redlands Boulevard (a.m. and p.m. peak hours);
- SR-60 Westbound: Heacock Street to Perris Boulevard (a.m. and p.m. peak hours);
- SR-60 Westbound: Perris Boulevard to Nason Street (a.m. and p.m. peak hours);
- SR-60 Westbound: Nason Street to Moreno Beach Drive (a.m. peak hour); and
- SR-60 Westbound: Moreno Beach Drive to Redlands Boulevard (a.m. peak hour).

The Traffic Study also analyzes the Future Year 2035 plus Project conditions a.m. and p.m. peak hour ramp merge-diverge volumes and levels of service for the freeway segments on SR-60. The following ramp junctions are forecast to operate at an unacceptable level of service in the future Year 2035 plus Project condition.

- SR-60 Eastbound: Moreno Beach Drive Off-Ramp (a.m. and p.m. peak hours);
- SR-60 Eastbound: Moreno Beach Drive On-Ramp (a.m. and p.m. peak hours);
- SR-60 Eastbound: Redlands Boulevard Loop On-Ramp (a.m. peak hour);
- SR-60 Eastbound: Redlands Boulevard Slip On-Ramp (a.m. peak hour);
- SR-60 Westbound: Moreno Beach Drive On-Ramp (a.m. peak hour);
- SR-60 Westbound: Moreno Beach Drive Off-Ramp (a.m. peak hour);
- SR-60 Westbound: Redlands Boulevard Slip On-Ramp (a.m. peak hour);

- SR-60 Westbound: Redlands Boulevard Loop On-Ramp (a.m. peak hour); and
- SR-60 Westbound: Redlands Boulevard Off-Ramp (a.m. peak hour).

The project would add to the unsatisfactory LOS on these nine freeway segments and nine ramp junctions. Therefore, the addition of project traffic would be considered a cumulative impact. Review of the RTIP indicates that there are no projects programmed on SR-60 within the study area. Furthermore, neither the project applicant nor the City has jurisdiction over Caltrans facilities; therefore, implementation of improvements to the freeway mainline cannot be guaranteed. Furthermore, Caltrans does not have a mechanism for development projects to contribute to improvements on State Highways. Therefore, the cumulative impact to these three segments of SR-60 would be significant and unavoidable.

4.11.6.5 General Plan Build Out With Project Conditions (Intersection) Traffic and Level of Service Impacts

Threshold:	Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system?
Threshold:	Exceed, either individually or cumulatively, the City's LOS D criteria at all study area intersections except for the intersections of Moreno Beach Drive/Cottonwood Avenue and Redlands Boulevard/Cottonwood Avenue, where the standard of LOS C applies, or the Caltrans LOS standard of between C and D.

General Plan Build Out with project conditions considers the addition of traffic generated by the proposed project to General Plan Build Out baseline conditions. An intersection LOS analysis was conducted to determine General Plan Build Out intersection performance. As identified in Table 4.11.J, the addition of project traffic to the General Plan Build Out scenario would result in conditions exceeding City and Caltrans LOS standards at the following intersections:

- Nason Street/Eucalyptus Avenue (a.m. and p.m. peak hours);
- Nason Street/Alessandro Boulevard (a.m. and p.m. peak hours);
- Moreno Beach Drive/SR-60 Westbound Ramps (a.m. and p.m. peak hours);
- Moreno Beach Drive/SR-60 Eastbound Ramps (a.m. and p.m. peak hours);
- Moreno Beach Drive/Eucalyptus Avenue (a.m. and p.m. peak hours);
- Moreno Beach Drive/Cottonwood Avenue (a.m. and p.m. peak hours);
- Moreno Beach Drive/Alessandro Avenue (a.m. and p.m. peak hours);
- Redlands Boulevard/SR-60 Westbound Ramps (a.m. and p.m. peak hours);
- Redlands Boulevard/SR-60 Eastbound Ramps (a.m. and p.m. peak hours);
- Redlands Boulevard/Fir Avenue-Eucalyptus Avenue (a.m. and p.m. peak hours);
- Redlands Boulevard/Encilia Avenue-Eucalyptus Avenue (a.m. and p.m. peak hours);
- Redlands Boulevard/Cottonwood Avenue (a.m. and p.m. peak hours); and
- Redlands Boulevard/Alessandro Boulevard (a.m. and p.m. peak hours).

All of the intersections that are forecast to experience a deficient LOS with the proposed project would also operate with a deficient LOS without the proposed project. Although the proposed project does not cause these intersections to operate at an unsatisfactory LOS, it does contribute to the worsening of the intersections' LOS and therefore mitigation would be required to offset the cumulative impact of the project.

Table 4.11.J: General Plan Build Out Intersection Levels of Service

Intersection	Without Project				With Project				Mitigation Required?	Project With Improvements			
	A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour			A.M. Peak Hour		P.M. Peak Hour	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS		Delay	LOS	Delay	LOS
Nason Street/Eucalyptus Avenue	85	F	>100	F	90.1	F	>100	F	Yes	36.4 D	54.9		D
Nason Street/Alessandro Boulevard	92	F	>100	F	94.9	F	>100	F	Yes	43.3 D	45.3		D
Fir Avenue/Eucalyptus Avenue	19.3	B	24.3	C	19.3	B	24.3	C	No	22.8 C	27.4		C
Moreno Beach Drive/SR-60 WB Ramps	79.3	F	>100	F	90.2	F	>100	F	Yes	29.5 C	26.8		C
Moreno Beach Drive/SR-60 EB Ramps	97.6	F	>100	F	>100	F	>100	F	Yes	36.4 D	44.3		D
Moreno Beach Drive/Eucalyptus Avenue	58.2	F	>100	F	73.6	F	>100	F	Yes	30.3 C	46.2		D
Moreno Beach Drive/Trail Ridge Way	15.3	B	21.3	C	15.4	B	21.3 C		No	16.5	B	23	C
Moreno Beach Drive/Auto Mall Drive	21.8	C	27.7	C	22.1	C	28.1	C	No	23.5 C	29.9		C
Moreno Beach Drive/Cottonwood Avenue	95.8	F	>100	F	97	F	>100	F	Yes	29.8 C	32.3		C
Moreno Beach Drive/Alessandro Boulevard	>100	F	>100	F	>100	F	>100	F	Yes	34.1 C	44.2		D
Auto Mall Drive/Eucalyptus Avenue	14.9	B	42.4	E	17.3 C		73.3	F	Yes	20.5 C	29.7		C
Redlands Boulevard/SR-60 WB Ramps	>100	F	>100	F	>100	F	>100	F	Yes	19.8 B		16.8	B
Redlands Boulevard/SR-60 EB Ramps	>100	F	>100	F	>100	F	>100	F	Yes	23.6 C	27.7		C
Redlands Boulevard/Eucalyptus Avenue-Fir Avenue	>100	F	>100	F	>100	F	>100	F	Yes	31.3 C	40.5		D
Redlands Boulevard/Encilia Avenue-Eucalyptus Avenue	>100	F	>100	F	>100	F	>100	F	Yes	32.5 C	40.1		D
Redlands Boulevard/Cottonwood Avenue	51.8	D	>100	F	52.3 D		>100	F	Yes	30.1 C	33.8		C
Redlands Boulevard/Alessandro Boulevard	>100	F	>100	F	>100	F	>100	F	Yes	37.1 D	50.2		D
Driveway A/Eucalyptus Avenue	<i>Future Intersection</i>				15.5	C	27.4	D	No	15.5 C	27.4		D
Driveway B/Eucalyptus Avenue	<i>Future Intersection</i>				14.9	B	20.4 C		No	14.9	B 20.4		C
Driveway C/Eucalyptus Avenue	<i>Future Intersection</i>				15.8	C	31.7	D	No	15.8 C	31.7		D
Driveway D/Eucalyptus Avenue	<i>Future Intersection</i>				17.3	C	23.3	C	No	17.3 C	23.3		C
Driveway E/Eucalyptus Avenue	<i>Future Intersection</i>				14.4	B	27.8 D		No	14.4	B 27.8		D
Driveway F/Eucalyptus Avenue	<i>Future Intersection</i>				16 C		23.3	C	No	16	C	23.3	C
Driveway G/Eucalyptus Avenue	<i>Future Intersection</i>				14.3	B	24.1 C		No	14.3	B 24.1		C
Driveway H/Eucalyptus Avenue	<i>Future Intersection</i>				23.7	C	34.1	D	No	23.7 C	34.1		D

Source: Tables DD, EE, and OO. Traffic Study, Eucalyptus Industrial Park. LSA Associates, Inc. April 2012

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4.11.6.6 Mitigation Measures

The project is responsible for mitigation of all project impacts to the roadway network. Mitigation measures can be directly constructed by the project applicant, could be funded by the applicant and constructed by the City, or could be in the form of payment of fees to implement improvements that are required for all future development in the region. Typically, project proponents install internal streets and improvements within the project site. For streets that are affected by the proposed project, a fair-share amount is typically contributed by the project proponent to the city's roadway program, usually in form of a DIF. The DIF is a program covering the entire City of Moreno Valley and provides funds for a variety of public facilities that are both transportation and non-transportation related. The transportation component of the DIF includes various roads, bridges, and traffic signals required to complete the City's Circulation Element and covers projects not included in the TUMF program, which provides funding for the regional circulation infrastructure. The DIF establishes separate rates based on the location of projects. The DIF program is administered by the City and was adopted through (Ord. 695 § 1.1 (part), 2005).

On a regional scale, the WRCOG administers the TUMF program for western Riverside County. The TUMF requires developers of residential, industrial, and commercial property to pay a development fee to fund transportation projects that will be required as a result of the growth the projects create. The TUMF funds both local area transportation improvement projects and improvements to the region's arterial backbone system. While the TUMF cannot fund all necessary transportation system improvements, it is intended to address a current transportation funding shortfall by establishing a new revenue source that ensures future development will contribute toward addressing the impacts of new growth on regional transportation infrastructure.

Funding accumulated through the TUMF program will be used to construct transportation improvements that will be needed to accommodate future travel demand in western Riverside County. Local area projects receive 48.1 percent of all funds and the funds are programmed in each of five "zones" proportionately to the fees paid. The zone projects are proposed by local jurisdictions. Another 48.1 percent of all TUMFs goes to the RCTC, which proposes and implements transportation projects of a regional nature. The remaining 3.8 percent is allocated to transit projects by the RTA.

In February 2006, the WRCOG adopted the Final Transportation Uniform Mitigation Fee Nexus Study Report,¹ which established each jurisdiction's fair-share contribution for regional transportation facilities (e.g., freeway interchanges, regional arterials, and railroad grade separations) in western Riverside County. Through this study, the WRCOG determined a TUMF of \$2.27 per gross square foot for industrial uses.² As part of the Final TUMF Nexus Study, a transportation facility project list was compiled that contains the full listing of all transportation projects and project segments included for funding by the program. The timing of the improvements is established through the WRCOG to ensure that construction of needed improvements occurs prior to or concurrent with the time at which the identified roadway segment or intersection LOS is forecast to fail to achieve performance levels.

The following improvements within the project area are included in the TUMF program:

- SR-60/Moreno Beach Drive Interchange reconstruction;
- SR-60/Redlands Boulevard Interchange reconstruction;
- Widen Alessandro Boulevard from 2 to 4 lanes between Nason Street and Gilman Springs Road;
- Widen Redlands Boulevard from 2 to 4 lanes from Locust Avenue to Alessandro Boulevard; and
- Widen Nason Street from 2 to 4 lanes from Ironwood Avenue to Alessandro Boulevard.

¹ *Final Report Transportation Uniform Mitigation Fee Nexus Study 2005 Update*, Western Riverside Council of Governments, adopted February 6, 2006.

² *Table ES.1- Transportation Uniform Mitigation Fee for Western Riverside County, Final Report Transportation Uniform Mitigation Fee Nexus Study 2005 Update*, Western Riverside Council of Governments, adopted February 6, 2006.

The project traffic study recommends circulation improvements when any facility operates at a level of service below the target LOS, regardless of whether the deficiency is a background condition or caused by the project. These recommendations are required even if the project does not have a direct significant impact under CEQA. Mitigation of project impacts is the responsibility of the project applicant, whether the impact is a direct project impact or is a cumulative impact. Many of the improvements programmed into the DIF and TUMF program would mitigate the project's direct and cumulative impacts. In these cases, payment of the fee would constitute mitigation of the impact. In cases where the programmed improvement does not fully mitigate the project's impact, additional improvements and the project's fair share of these improvements have been identified.

Mitigation Measure. To reduce impacts associated with Existing (2011) intersection LOS, the following mitigation has been identified:

4.11.6.4A Prior to issuance of building permits, the project applicant shall pay the fair-share contribution toward the following traffic improvements through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program:

- **Redlands Boulevard/SR-60 Westbound Ramps.** Install a traffic signal. This improvement is currently approved, and permitted by Caltrans. If not otherwise completed prior to project opening, the required traffic signal shall be constructed by the Applicant prior to issuance of the first Certificate of Occupancy.
- **Redlands Boulevard/Fir Avenue/Eucalyptus Avenue.** If not otherwise completed prior to project opening, prior to issuance of the first Certificate of Occupancy, the Applicant shall construct the following improvements: Install a traffic signal. This improvement is listed in the City's DIF program. Add a northbound left-turn lane and a southbound left-turn lane. These improvements are listed in the TUMF.

Level of Significance after Mitigation. As identified in Table 4.11.F, with the implementation of the recommended improvements, the minimum level of service standards would be maintained for the Existing (2011) with Project and impacts would be reduced to a less than significant level for all identified intersections. However, improvements to free way facilities are under the authority of Caltrans. Since the City has no control over when and how the improvements will be in place, impacts associated with SR-60 ramp intersections would remain significant and unavoidable until such improvement is constructed.

Mitigation Measure. To reduce impacts associated with Opening Year (2016) intersection LOS, the following mitigation has been identified:

4.11.6.4B Prior to issuance of building permits, the project applicant shall pay the fair-share contribution toward the following traffic improvements through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program:

- **Moreno Beach Drive/SR-60 Eastbound Ramps.** The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF would mitigate the significant impact at this location. This project is scheduled to go into construction by the end of this year and completed by the end of 2013.
- **Redlands Boulevard/SR-60 Westbound Ramps.** Install a traffic signal. This improvement is currently approved, and permitted by Caltrans. If not otherwise completed prior to project opening, the required traffic signal shall be constructed by the Applicant prior to issuance of the first Certificate of Occupancy.

- **Redlands Boulevard/Fir Avenue/Eucalyptus Avenue.** If not otherwise completed prior to project opening, prior to issuance of the first Certificate of Occupancy, the Applicant shall construct the following improvements: Install a traffic signal. This improvement is listed in the City's DIF program. Add a northbound left-turn lane and a southbound left-turn lane.

Level of Significance after Mitigation. As identified in Table 4.11.G, with the implementation of the recommended improvements, the minimum level of service standards would be maintained for the Opening Year (2016) with Project and impacts would be reduced to a less than significant level for all identified intersections. In addition to the signalization of the Redlands Boulevard/SR-60 Westbound ramp intersection included in the City's DIF program, reconstruction of the Redlands Boulevard/SR-60 interchange is programmed in the TUMF program. As a result, there are programmed improvements at the deficient freeway ramp intersection identified in **Mitigation Measure 4.11.6.1B** in both the DIF and TUMF programs. However, improvements to freeway facilities are under the authority of Caltrans. Although the City would collect fees that would be utilized for improvements to the Moreno Beach Drive/SR-60 Eastbound Ramps and Redlands Boulevard/SR-60 Westbound Ramps, improvements to these intersections are outside the City's jurisdiction. Since the City has no control over when and how the improvements will be in place, impacts associated with these identified intersections would remain significant and unavoidable until such improvements are constructed.

Mitigation Measure. To reduce impacts associated with opening year (2016) cumulative intersection LOS, the following mitigation has been identified:

4.11.6.4C Prior to issuance of building permits, the project applicant shall pay the fair-share contribution toward the following traffic improvements through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program:

- **Moreno Beach Drive/SR-60 Eastbound Ramps.** The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF would mitigate the significant impact at this location.
- **Moreno Beach Drive/Cottonwood Avenue.** Add a southbound through lane. This improvement is listed in the City's DIF program. Therefore, payment of the DIF would mitigate the significant impact at this location.
- **Moreno Beach Drive/Alessandro Boulevard.** Add a southbound through lane. This improvement is listed in the City's DIF program. Therefore, payment of the DIF would mitigate the significant impact at this location.
- **Redlands Boulevard/SR-60 Westbound Ramps.** Install a traffic signal. This improvement is listed in the City's DIF program and will be installed before building occupancy since it was identified as a direct project impact. Add a northbound through lane. The Redlands Boulevard/SR-60 Interchange reconstruction would implement the northbound through lane. The interchange reconstruction project is programmed in the TUMF. Therefore, payment of the DIF and TUMF would mitigate the significant impact at this location.
- **Redlands Boulevard/SR-60 Eastbound Ramps.** The Redlands Boulevard/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF. Therefore, payment of the TUMF would mitigate the significant impact at this location.

- **Redlands Boulevard/Fir Avenue/Eucalyptus Avenue.** Install a traffic signal. Add a westbound right-turn lane and provide overlap phasing for the westbound right turns. Add a westbound left-turn lane and an eastbound left-turn lane. These improvements are programmed in the City's DIF program. Add a northbound left-turn lane and a southbound through lane and a southbound left-turn lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF would mitigate the significant impact at this location.
- **Redlands Boulevard/Eucalyptus Avenue.** Add a southbound right-turn lane. This improvement is programmed in the TUMF. Therefore, payment of the TUMFs would mitigate the significant impact at this location.
- **Redlands Boulevard/Alessandro Boulevard.** Add a southbound left-turn lane. This improvement is programmed in the TUMF. Therefore, payment of the TUMFs would mitigate the significant impact at this location.

Level of Significance after Mitigation. As identified in Table 4.11.H, with the implementation of the recommended improvements, the minimum level of service standards would be maintained for the Opening Year (2016) Cumulative with Project and impacts would be reduced to a less than significant level for all identified intersections. In addition, reconstruction of the interchanges at the location of the deficient free way ramp intersections identified in **Mitigation Measure 4.11.6.1C** are already programmed into the TUMF program. However, as noted previously, improvements to freeway facilities are under the authority of Caltrans. Although the City would collect fees that would be utilized for improvements to the Moreno Beach Drive/SR-60 Eastbound Ramps, Redlands Boulevard/SR-60 Westbound Ramps, and Redlands Boulevard/SR-60 Eastbound Ramps intersections, improvements to these intersections are outside the City's jurisdiction. Since the City has no control over when and how these improvements will be in place, impacts associated with these identified intersections would remain significant and unavoidable until such improvements are constructed.

Mitigation Measure. To reduce impacts associated with Future Year (2035) intersection LOS, the following mitigation has been identified:

- 4.11.6.4D** Prior to issuance of building permits, the project applicant shall pay the fair-share contribution toward the following traffic improvements through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program. At some locations, the DIF and TUMFs would not fully mitigate the project impact. For these locations, additional improvements shall be implemented by the project applicant prior to the issuance of a certificate of occupancy for the project:
- **Nason Street/Eucalyptus Avenue.** Add a northbound right-turn lane. This improvement is programmed in the City's DIF; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. In addition, the project shall contribute a fair share (calculated to be 1.76%) toward restriping the westbound approach to provide dual left-turn lanes
 - **Nason Street/Alessandro Boulevard.** Add an eastbound through lane and a westbound through lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. In addition, the project shall contribute a fair share (calculated to be 1.4%) toward modification of the traffic signal to provide overlap phasing for the eastbound right-turn lane.
 - **Moreno Beach Drive/SR-60 Westbound Ramps.** The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the

design phase. Therefore, payment of the TUMF would mitigate the significant impact at this location.

- **Moreno Beach Drive/SR-60 Eastbound Ramps.** The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF would mitigate the significant impact at this location.
- **Moreno Beach Drive/Eucalyptus Avenue.** Convert the existing eastbound through lane to a left-turn lane and the eastbound right-turn lane to a shared through/right-turn lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. In addition, the project shall contribute a fair share (calculated to be 8.63%) toward modification of the traffic signal to provide right-turn overlap phasing for the westbound right turn.
- **Moreno Beach Drive/Cottonwood Avenue.** Add a southbound through lane. This improvement is programmed in the City's DIF program. Therefore, payment of the DIF would mitigate the significant impact at this location.
- **Moreno Beach Drive/Alessandro Boulevard.** Add 2 southbound through lanes, 2 northbound through lanes, an eastbound through lane, and a westbound through lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would mitigate the significant impact at this location.
- **Redlands Boulevard/SR-60 Westbound Ramps.** Install a traffic signal. This improvement is programmed in the City's DIF program and will be installed before building occupancy since it was identified as a direct project impact.
- **Redlands Boulevard/SR-60 Eastbound Ramps.** The Redlands Boulevard/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF. Therefore, payment of the TUMF would mitigate the significant impact at this location.
- **Redlands Boulevard/Fir Avenue-Eucalyptus Avenue.** Install a traffic signal and add a westbound left-turn lane, eastbound through lane, eastbound left-turn lane, and a westbound right-turn lane with overlap phasing. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. In addition, add a southbound through lane, southbound left-turn lane, northbound through lane, northbound left-turn lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF would mitigate the significant impact at this location.
- **Redlands Boulevard/Eucalyptus Avenue.** Install a traffic signal and add a westbound left-turn lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. In addition, add a northbound left-turn lane and a southbound left-turn lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF would mitigate the significant impact at this location.
- **Redlands Boulevard/Alessandro Boulevard.** Install a traffic signal. This improvement is programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. In addition, add a southbound left-turn lane, a northbound left-turn lane, a westbound left-turn lane, an eastbound left-turn lane, a westbound right-turn lane, and a southbound through lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF would mitigate the significant impact at this location.

Level of Significance after Mitigation. As identified in Table 4.11.I, with the implementation of the recommended improvements, the minimum level of service standards would be maintained for the Future Year (2035) with Project scenario and impacts would be reduced to a less than significant level for all identified intersections. In addition, reconstruction of the interchanges at the location of the deficient freeway ramp intersections identified in **Mitigation Measure 4.11.6.2D** are already programmed into the TUMF program. It is anticipated that by future year (2035) improvement to the identified freeway ramps and intersections would be built through the TUMF process and coordination by Caltrans, WRCOG, and the City of Moreno Valley. Because the project would pay its fair-share cost associated with the improvements and because such improvements are anticipated to be constructed by the future year (2035), impacts associated with this issue are less than significant after the identified mitigation measures have been implemented.

Mitigation Measure. To reduce impacts associated with General Plan Build Out intersection LOS, the following mitigation has been identified:

4.11.6.4E Prior to issuance of building permits, the project applicant shall implement the following improvements, either through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program, or through a fair-share contribution to the City of Moreno Valley as noted below:

- **Nason Street/Eucalyptus Avenue.** Add a north bound right-turn lane and an eastbound right-turn lane. These improvements are programmed in the City's DIF; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. Implementation of the improvements identified for this intersection in **Mitigation Measure 4.11.6.4D** would also partially mitigate the significant impact at this intersection. In addition, the project shall pay a fair share (calculated to be 1.6%) toward modification of the traffic signal to provide right-turn overlap phasing for the eastbound and northbound right turns.
- **Nason Street/Alessandro Boulevard.** Add an eastbound through lane and westbound through lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. Implementation of the improvements identified for this intersection in **Mitigation Measure 4.11.6.4D** would also partially mitigate the significant impact at this intersection. In addition, the project shall pay a fair share (calculated to be 1.35%) toward the addition of an eastbound left-turn lane and modification of the traffic signal to provide overlap phasing for the westbound right-turn lane.
- **Moreno Beach Drive/SR-60 Westbound Ramps.** The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF would mitigate the significant impact at this location.
- **Moreno Beach Drive/SR-60 Eastbound Ramps.** The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF would mitigate the significant impact at this location.
- **Moreno Beach Drive/Eucalyptus Avenue.** Restripe eastbound approach to dual left-turn lanes and add a northbound through lane, a westbound through lane, and a southbound right-turn lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. Implementation of the improvements identified for this intersection in **Mitigation Measure 4.11.6.4D** would also partially mitigate the significant impact at this intersection. In addition, the project shall pay a fair share (calculated to be

5.17%) toward modification of the traffic signal to provide right-turn overlap phasing for the southbound right-turn lane.

- **Moreno Beach Drive/Cottonwood Avenue.** Add a southbound through lane, a northbound through lane, an eastbound left-turn lane, an eastbound through lane, a westbound through lane, and a westbound left-turn lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would mitigate the significant impact at this location.
- **Moreno Beach Drive/Alessandro Boulevard.** Add 2 southbound through lanes, add 2 northbound through lanes, an eastbound through lane, and a westbound through lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would mitigate the significant impact at this location.
- **Auto Mall Drive/Eucalyptus Avenue.** Install a traffic signal. This improvement is programmed in the City's DIF program; therefore, payment of the DIF would mitigate the significant impact at this location.
- **Redlands Boulevard/SR-60 Westbound Ramps.** Install a traffic signal. This improvement is programmed in the City's DIF program and will be installed before building occupancy since it was identified as a direct project impact. Therefore, payment of the DIF would mitigate the significant impact at this location.
- **Redlands Boulevard/SR-60 Eastbound Ramps.** The Redlands Boulevard/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF. Therefore, payment of the TUMF would mitigate the significant impact at this location.
- **Redlands Boulevard/Fir Avenue-Eucalyptus Avenue.** Install a traffic signal and add a westbound left-turn lane, eastbound through lane, eastbound left-turn lane, a westbound right-turn lane with overlap phasing, and a southbound right-turn lane with overlap phasing. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. In addition, add a southbound through lane, a southbound left-turn lane, a northbound through lane, a northbound left-turn lane, and a northbound right-turn lane. These improvements are programmed in the TUMF. Therefore, payment of the TUMF would also partially mitigate the significant impact at this location. In addition, the project shall pay a fair share (calculated to be 10.44%) of the cost of adding a southbound left-turn lane.
- **Redlands Boulevard/Eucalyptus Avenue.** Install a traffic signal and add a westbound left-turn lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. In addition, add a northbound left-turn lane, a northbound through lane, a southbound left-turn lane, and a southbound through lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF would mitigate the significant impact at this location.
- **Redlands Boulevard/Cottonwood Avenue.** Add a northbound through lane and westbound through lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. In addition, add a northbound through lane, and a southbound through lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF would mitigate the significant impact at this location.
- **Redlands Boulevard/Alessandro Boulevard.** Install a traffic signal. This improvement is programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. In addition, add a southbound left-turn lane, a northbound left-turn lane, a westbound left-turn lane, an eastbound left-turn lane, a westbound right-turn lane, a southbound through lane, a

westbound through lane, and an eastbound through lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF would mitigate the significant impact at this location.

Level of Significance after Mitigation. As identified in Table 4.1 1.J, with the implementation of the recommended improvements, the minimum level of service standards would be maintained for the General Plan Build Out with Project scenario and impacts would be reduced to a less than significant level for all identified intersections. However, as noted previously, improvements to the freeway intersections and infrastructure are under the authority of Caltrans. In addition, the deficient freeway ramp intersections identified in **Mitigation Measure 4.11.6.2E** are already programmed into the TUMF program. It is anticipated that by the General Plan Build Out, improvements to the identified freeway ramps and intersections would be built through the TUMF process and coordination by Caltrans, WRCOG, and the City of Moreno Valley. Because the project would pay its fair-share cost associated with the improvements and because such improvements are anticipated to be constructed by the future year (2035), impacts associated with this issue are less than significant after the identified mitigation measures have been implemented.

Encilia Avenue and Quincy Street Connections. According to the City's General Plan Circulation Element, Encilia Avenue is planned to be extended west across the Quincy Channel (located on the east side of the project boundary), and then north to intersect with Eucalyptus Avenue. The project will not construct Encilia Avenue but will preserve right-of-way along the south project boundary to allow Encilia Avenue to be constructed in the future. Since the project will not construct Encilia Avenue, the study evaluates a scenario where Encilia Avenue is not constructed under General Plan Build Out conditions as well as a scenario where Encilia Avenue is constructed under Build Out conditions to compare levels of service near the project.

The project also proposes to eliminate the proposed Quincy Street connection to the north of the proposed Eucalyptus Avenue. Elimination of the Quincy Street connection creates a physical barrier between the industrial and residential uses, and will help to segregate and prevent truck traffic from entering future residential streets. The analysis in the preceding sections includes the above changes to the circulation network. The City requested an analysis to evaluate traffic operations under conditions wherein the circulation network is constructed as it is shown in the Circulation Element to compare traffic operations with the above changes.

The TIA evaluated General Plan Build Out conditions with the Quincy Street and Encilia Avenue connections. Base traffic volumes for this scenario were developed by using the RivTAM. The methodology used for this analysis was similar to the preceding project-related traffic impact evaluations. In addition, since the RivTAM is a 2035 model, these base volumes were adjusted by applying growth factors for north-south and east-west roadways based on comparison of 2035 and build out traffic volumes. Thirteen intersections were evaluated for the General Plan Build Out without and with Project conditions under this proposed roadway configuration. Under Build Out without Project conditions, the following intersections are forecast to operate at unsatisfactory LOS:

- Moreno Beach Drive/SR-60 Westbound Ramps (a.m. and p.m. peak hours);
- Moreno Beach Drive/SR-60 Eastbound Ramps (a.m. and p.m. peak hours);
- Moreno Beach Drive/Eucalyptus Avenue (a.m. and p.m. peak hours);
- Redlands Boulevard/SR-60 Westbound Ramps (a.m. and p.m. peak hours);
- Redlands Boulevard/SR-60 Eastbound Ramps (a.m. and p.m. peak hours);
- Redlands Boulevard/Eucalyptus Avenue-Fir Avenue (a.m. and p.m. peak hours);
- Redlands Boulevard/Encilia Avenue-Eucalyptus Avenue (a.m. and p.m. peak hours);

- Moreno Beach Drive/Encilia Avenue (a.m. and p.m. peak hours); and
- Quincy Street/Encilia Avenue-Eucalyptus Avenue (p.m. peak hour).

Project trips were assigned to this roadway network based on select zone model runs from the RivTAM. Under Build Out with Project conditions, the same intersections that operate at unsatisfactory levels of service listed under without project conditions also operate at unsatisfactory levels of service under with project conditions. Table 4.11.K shows the LOS impacts at the study intersections for this scenario. The improvements required under this scenario for all study intersections to meet the level of service standards are listed in **Mitigation Measure 4.11.6.4F**. As noted in **Mitigation Measure 4.11.6F**, the impacts to study intersections with the Encilia Avenue and Quincy Street connections are similar to the General Plan Build Out condition. The project impact at the intersections of Moreno Beach Drive/Eucalyptus Avenue and Redlands Boulevard/Fir Avenue-Eucalyptus Avenue is slightly worse, resulting in the need for minor additional improvements at these two intersection over those prescribed to mitigate the impacts in the General Plan Build Out condition.

Mitigation Measure. The following measure is recommended if the Encilia Avenue and Quincy Street Connection plan is implemented as part of the proposed project (from TIA Table RR):

4.11.6.4F If the Encilia Avenue and Quincy Street Connection plan is implemented as part of the proposed project, then prior to issuance of building permits, the project applicant shall implement the following improvements: In addition to those identified in **Mitigation Measure 4.11.6.4E**, either through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program, or through a fair-share contribution to the City of Moreno Valley as noted below:

- **Moreno Beach Drive/Eucalyptus Avenue.** Restripe the southbound shared through/right-turn lane to a southbound through lane. This improvement is programmed in the City's DIF program; therefore, payment of the DIF would mitigate the impacts of the project at this intersection.
- **Redlands Boulevard/Fir Avenue-Eucalyptus Avenue.** Pay the fair share (calculated to be 10.84%) to add a southbound right-turn lane.
- **Redlands Boulevard/Encilia Avenue-Eucalyptus Avenue.** Install a traffic signal and add a westbound left-turn lane. These improvements are programmed in the City's DIF program. In addition, add a northbound left-turn lane, northbound through lane, southbound left-turn lane, and a southbound through lane. These improvements are programmed in the TUMF program. Therefore, payment of the DIF and TUMF would fully mitigate the impact of the project at this intersection.
- **Moreno Beach Drive/Encilia Avenue.** Install a traffic signal, add a northbound through lane, southbound left-turn lane, and a southbound through lane. This improvement is programmed in the City's DIF program; therefore, payment of the DIF would mitigate the impacts of the project at this intersection.

The TIA analysis indicates that the traffic volumes on Encilia Avenue are very low during the a.m. and p.m. peak hours. The highest traffic volume on Encilia Avenue occurs during the p.m. peak hour on the easterly segment of proposed street. Approximately 600 two-way trips are forecast on this leg. The traffic volumes on Quincy Street between future Encilia Avenue and future Eucalyptus Avenue are lower still, with approximately 360 vehicles on the segment during the peak hour. Applying a peak hour to ADT conversion factor of 10 times peak hour trips translates to approximately 3,600 vehicles on Quincy Street and 6,000 vehicles on Encilia Avenue. Most traffic on Encilia Avenue is generated by the proposed residential development to the south of the future Encilia Avenue.

Table 4.11.K: Encilia Avenue and Quincy Street Connection Impacts

Intersection	Without Project				With Project				Improvements Required?	Project With Improvements			
	A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour			A.M. Peak Hour		P.M. Peak Hour	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS		Delay	LOS	Delay	LOS
Moreno Beach Drive/SR-60 WB Ramps	76.9	F	90.9	F	87.8	F	>100	F	Yes	27.4 C		23.5	C
Moreno Beach Drive/SR-60 EB Ramps	93.4	F	>100	F	>100	F	>100	F	Yes	34.3 C		43.5	D
Moreno Beach Drive/Eucalyptus Avenue	53.7	F	>100	F	69.4	F	>100	F	Yes	32.1 C		51.4	D
Moreno Beach Drive/Trail Ridge Way	15.6	B	20.9	C	15.6	B	20.9 C		No	15.6	B	20.9	C
Moreno Beach Drive/Auto Mall Drive	21.6	C	27.4	C	21.9	C	27.9 C		No	21.9	C	27.9	C
Auto Mall Drive/Eucalyptus Avenue	13	B	20.2	C	14.4	B	28.2	D No		14.4	B	28.2	F
Redlands Boulevard/SR-60 WB Ramps	>100	F	>100	F	>100	F	>100	F	Yes	20 B		18	F
Redlands Boulevard/SR-60 EB Ramps	>100	F	>100	F	>100	F	>100	F	Yes	27.1 C		34.6	D
Redlands Boulevard/Eucalyptus Avenue-Fir Avenue	>100	F	>100	F	>100	F	>100	F	Yes	33.2 C		42.9	B
Redlands Boulevard/Encilia Avenue-Eucalyptus Avenue	>100	F	>100	F	>100	F	>100	F	Yes	29.2 C		39.8	C
Moreno Beach Drive/Encilia Avenue	50.5	F	>100	F	52.1	F	>100	F	Yes	11 B		22.9	C
Quincy Street/Eucalyptus Avenue-Fir Avenue	15.8	C	15.7	C	26.1	D	22	C No		26.1	D	22	C
Quincy Street/Encilia Avenue-Eucalyptus Avenue	10.1	B	28.6	D	10.1	B	29.1	D	Yes	9.8 A		21.8	C
Driveway A/Eucalyptus Avenue	<i>Future Intersection</i>				12.2	B	15.6	C	No	12.2	B	15.6	C
Driveway B/Eucalyptus Avenue	<i>Future Intersection</i>				13.7	B	12.4 B		No	13.7	B	12.4	B
Driveway C/Eucalyptus Avenue	<i>Future Intersection</i>				14.5	B	16.4	C	No	14.5	B	16.4	C
Driveway D/Eucalyptus Avenue	<i>Future Intersection</i>				13.2	B	14.4 B		No	13.2	B	14.4	B
Driveway E/Eucalyptus Avenue	<i>Future Intersection</i>				11.5	B	15.5	C	No	11.5	B	15.5	C
Driveway F/Eucalyptus Avenue	<i>Future Intersection</i>				14.5	B	13.3 B		No	14.5	B	13.3	B
Driveway G/Eucalyptus Avenue	<i>Future Intersection</i>				11.4	B	14.4 B		No	11.4	B	14.4	B
Driveway H/Eucalyptus Avenue	<i>Future Intersection</i>				19.4 C	16.1 C			No	19.4	C	16.1	C

Source: Tables PP, QQ, and SS. Traffic Study, Eucalyptus Industrial Park. LSA Associates, Inc. April 2012

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In addition, all intersections that operate at satisfactory LOS with the Encilia Avenue and Quincy Street connections also operate at satisfactory LOS if Encilia Avenue and Quincy Street connections are not constructed. Therefore, elimination of these roadways from the General Plan does not have a significant adverse impact on the City's circulation network.

Level of Impact After Mitigation. With the implementation of the recommended improvements, all intersections operate at satisfactory LOS.

4.11.7 Cumulative Impacts

Cumulative impacts refer to incremental effects of an individual project when viewed in connection with the effects of past projects, current projects, and probable future projects. Cumulative projects are identified in Table 4.11.H. Cumulative impacts associated with traffic volumes are determined based on the addition of traffic volumes from approved and pending projects in the area and projected traffic growth to existing traffic volumes. The cumulative analysis forecasts that, with the development of the proposed project and the cumulative projects, eight intersections would require improvements in order to maintain the City's LOS standard of D. Those intersections are as follows:

- Moreno Beach Drive/SR-60 Eastbound Ramps (p.m. peak hour);
- Moreno Beach Drive/Cottonwood Avenue (p.m. peak hour);
- Moreno Beach Drive/Alessandro Avenue (p.m. peak hour);
- Redlands Boulevard/SR-60 Westbound Ramps (a.m. and p.m. peak hours);
- Redlands Boulevard/SR-60 Eastbound Ramps (a.m. and p.m. peak hours);
- Redlands Boulevard/Fir Avenue-Eucalyptus Avenue (a.m. and p.m. peak hours);
- Redlands Boulevard/Encilia Avenue-Eucalyptus Avenue (p.m. peak hour); and
- Redlands Boulevard/Alessandro Boulevard (p.m. peak hour).

Although the suggested improvements are consistent with the City's General Plan, the project will be responsible for contributing its fair share toward the funding of the future improvements via payment of the City's DIF. Of these six affected intersections, five intersections are under the jurisdiction of the City of Moreno Valley (Moreno Beach Drive/Cottonwood Avenue; Moreno Beach Drive/Alessandro Boulevard; Redlands Boulevard/Fir Avenue-Eucalyptus Avenue; Redlands Boulevard/Encilia Avenue-Eucalyptus Avenue, and Redlands Boulevard/Alessandro Boulevard).

Three intersections (Moreno Beach Drive/SR-60 Eastbound Ramps, Redlands Boulevard/SR-60 Westbound Ramps, and Redlands Boulevard/SR-60 Eastbound Ramps) are under the jurisdiction of Caltrans. The improvements identified in **Mitigation Measure 4.11.6.4C** would reduce impacts at these intersections to a less than significant level. However, since the affected freeway ramp intersections are under the jurisdiction of Caltrans, neither the project proponent nor the City has control over the specific timing of when the improvements would be constructed. It is anticipated that by opening year (2016), improvements at these intersections would not be constructed, as they are not currently planned for near-term construction. Therefore, this cumulative impact in opening year (2016) remains significant and unavoidable until such time as the improvements to this interchange are constructed by Caltrans, WRCOG, and the City of Moreno Valley through the TUMF process.

Because TUMF provides a mechanism for collecting fees from all development projects in the area that would contribute traffic to the existing roadway network, fees for the improvements to the affected freeway intersections would be collected. Therefore, it is anticipated that since the freeway intersection improvements are programmed into the TUMF program, such improvements would be constructed by future year (2035) and would be able to accommodate future year (2035) traffic levels, resulting in a less than significant cumulative impact.

4.12 UTILITIES AND SERVICE SYSTEMS

This section analyzes the existing and planned water supply and storm water facilities (as they relate to water) for the project site and the surrounding area, and evaluates the impacts to utility providers that could result from the construction and operation of the proposed on-site uses. This section is based in part on the *City of Moreno Valley General Plan*,¹ the Eastern Municipal Water District's *2010 Urban Water Management Plan*,² and information obtained from utility providers serving the proposed project site. Additionally, the analysis for the following section is derived in part from the *Water Supply Assessment (WSA)* (Water Supply Assessment approved by the Eastern Municipal Water District Board of Directors on February 23, 2012), and is included in its entirety as Appendix J to this EIR. Impacts related to wastewater and solid waste were determined to be less than significant in the Initial Study prepared for the proposed project and required no further analysis in the EIR.

4.12.1 Solid Waste Services

4.12.1.1 Existing Setting for Solid Waste Services

Solid waste disposal and recycling services for the proposed project site would be provided by Waste Management of the Inland Empire.³ Waste Management of the Inland Empire separates and markets recyclable materials collected within its service area. Solid wastes would primarily be transported to the Badlands Sanitary Landfill located at 31125 Ironwood Avenue in Moreno Valley. Additionally, Waste Management of the Inland Empire will also use other County landfills in the area, such as the Lamb Canyon Landfill on County land near the City of Beaumont and the El Sobrante Landfill in the City of Corona. The Badlands Sanitary Landfill is designated a Class III landfill run by the County of Riverside.⁴ Waste types accepted at the Badlands Sanitary Landfill include agricultural, construction/demolition, industrial, mixed municipal, and tires.

The Badlands Sanitary Landfill currently has a permitted capacity of 33.5 million cubic yards with a remaining capacity of 14.7 million cubic yards.⁵ The tonnage of any mass of solid waste is dependent on the material (e.g., metals, paper, and green waste) and its density (compacted or uncompacted). Utilizing conversion factors from various jurisdictions, one cubic yard of compacted municipal solid waste typically weighs 750 pounds (0.37 ton).⁶ Based on this conversion factor, remaining space at the Badlands Sanitary Landfill totals approximately 5.45 million tons with an estimated closure date of January 2024. The maximum daily permitted throughput of this facility is 4,000 tons/day. The Badlands Sanitary Landfill currently accepts approximately 1,683 tons/day.

Recyclable materials collected by Waste Management of the Inland Empire are handled at the Moreno Valley Transfer Station owned and operated by Waste Management, Inc. The Moreno Valley Transfer Station is a large-volume transfer and processing facility that accepts the following waste types: construction and demolition materials, green materials, metals, and mixed municipal waste. The Moreno Valley Transfer Station currently has a permitted capacity of 2,600 tons per day and currently accepts 2,000 tons per day. This facility currently has the capacity to accept an additional 600 tons per day.

¹ *City of Moreno Valley General Plan*, City of Moreno Valley, adopted by City Council Resolution No. 2006-83, July 11, 2006.

² *EMWD 2010 Urban Water Management Plan*, Eastern Municipal Water District, June 2011.

³ Trash service in the City of Moreno Valley is mandatory and Waste Management of Inland Valley is the only solid waste service provider.

⁴ Class III landfills are required to be located where adequate separation can be provided between non-hazardous solid waste and surface and subsurface waters. This class of landfill is not permitted to accept hazardous waste.

⁵ *Badlands Sanitary Landfill Facility/Site Summary Details*, CalRecycle website, <http://www.calrecycle.ca.gov/SWFacilities/Directory/33-AA-0006/Detail/>, website accessed December 21, 2011.

⁶ <http://www.recyclemaniacs.org/doc/measurement-tracking/CURC-profile-input-form-with-conversion-guide.xls>, website accessed December 21, 2011.

⁷ Based on 2011 average; e-mail correspondence with John Farrar, Administrative Services Assistant, County of Riverside Waste Management Department, December 21, 2011.

4.12.1.2 Existing Policies and Regulations

Assembly Bill 939 (AB 939) California Integrated Waste Management Act. AB 939 was signed into law in 1989 and established a 50 percent waste reduction requirement for cities and counties by the year 2000, along with a process to ensure environmentally safe disposal of waste that could not be diverted. Jurisdictions select and implement the combination of waste prevention, reuse, recycling, and composting that best meets the needs of their residents while achieving the diversion requirements of the Act. Cities and counties also have the flexibility to work cooperatively toward the 50 percent goal by forming regional agencies. According to the provisions of the Act, in the year 2000, waste-to-energy or biomass conversions may contribute 10 percent toward the goal, with the remaining 40 percent accomplished through source reduction, recycling, and composting. The statute also allows a time extension to meet these goals for cities and counties that experience adverse market or economic conditions.

Assembly Bill 1327 (AB 1327) California Solid Waste Reuse and Recycling Access Act of 1991. Signed into law in 1991, AB 1327 added Chapter 18 to Part 3 of Division 30 of the Public Resources Code. Chapter 18 required the California Integrated Waste Management Board (CIWMB) to develop a model ordinance for adoption of recyclable materials in development projects. Local agencies were then required to adopt the model, or ordinances of their own, in order to govern adequate areas for collection and loading of recyclable materials in development projects by September 1, 1993. If a local agency had not adopted a model ordinance by that date, the CIWMB model would be adopted and enforced by the local agency.

Senate Bill 1016 (SB 1016). As previously identified, the California Integrated Waste Management Act of 1989 (AB 939) requires each jurisdiction to divert 50 percent of its solid waste from being disposed in landfills. The new per capita disposal measurement system (SB 1016, Wiggins, Chapter 343, Statutes of 2008) became effective January 1, 2009. It builds on AB 939 compliance requirements by implementing a simplified measure of local jurisdictions' performance. SB 1016 accomplishes this by changing to a disposal-based indicator: the per capita disposal rate, which uses only two factors: a jurisdiction's population and its disposal as reported by disposal facilities. SB 1016 changes how each jurisdiction's progress is measured to reach the 50 percent goal for diverting waste from landfills. This measurement is no longer determinative of compliance. In order for the CIWMB and jurisdictions to more properly focus on successful program implementation, SB 1016 shifts from the historical emphasis on using calculated generation and estimated diversion to using annual disposal as a factor when evaluating jurisdictions' program implementation.

Riverside County Integrated Waste Management Plan. The Riverside Countywide Integrated Waste Management Plan (RCIWMP), adopted by the Riverside County Board of Supervisors on January 14, 1997, and approved by the RCIWMB on September 23, 1998, outlines the goals, policies, and programs the County and its cities, including the City of Moreno Valley, would implement to create an integrated and cost-effective waste management system that complies with the provisions of AB 939 and its diversion mandates. The RCIWMP is composed of the Riverside Countywide Summary Plan, the Source Reduction and Recycling Element (SRRE) for the County and each of its cities, the Nondisposal Facility Element (NDFE) for the County and each of its cities, the Household Hazardous Waste Element (HHWE) for the County and each of its cities, and the Riverside Countywide Siting Element.

City of Moreno Valley General Plan. The following are policies within the City's General Plan that pertain to solid waste and are applicable to the proposed project:

Conservation Element

Policy 7.8.1 Encourage recycling projects by individuals, non-profit organizations, or corporations and local businesses, as well as programs sponsored through government agencies.

Conservation Element Programs

Program 7-1 Support regional solid waste disposal efforts by the County of Riverside.

4.12.1.3 Methodology

The solid waste analysis is based on evaluating the existing capacity of nearby landfills that serve the City, future solid waste capacity that would be available to the City, and the identification of existing solid waste demand and future solid waste demand associated with the development of the proposed project. The analysis also identifies existing City goals, policies, and programs that the City implements to reduce generated waste.

4.12.1.4 Solid Waste Services Thresholds of Significance

Based on Appendix G of the *CEQA Guidelines*, a project is considered to have a significant impact on solid waste services if it results in either of the following:

- The project would be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs; and/or
- The project would fail to comply with applicable Federal, State, and local statutes and regulations related to solid waste.

4.12.1.5 No Impact/Less than Significant Impacts

The following solid waste impacts were determined to be less than significant. Adherence to established regulations, standards, and policies would reduce potential solid waste impacts to a less than significant level.

4.12.1.5.1 Solid Waste Facilities

Threshold	Would the proposed project be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs?
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Solid waste collection is a "demand-responsive" service and current service levels can be expanded and funded through user fees without difficulty. Based on a solid waste generation of 0.006 pound per square foot per day for industrial uses,¹ the proposed project is anticipated to generate approximately 6.73 tons of solid waste per day (2,456 tons/year).² Solid waste from the proposed project would be hauled by Waste Management of Inland Valley and transferred to the Badlands Sanitary Landfill, located in Moreno Valley. The Badlands Sanitary Landfill has a daily permitted throughput of 4,000 tons per day, a remaining capacity of 14,730,025 cubic yards, and an estimated closure date of 2024.³ The average daily throughput at the Badlands Sanitary Landfill for 2011 is estimated at 1,683 tons/day⁴ with a current surplus capacity totaling 2,317 tons/day.

¹ *Estimated Solid Waste Generation Rates*, California Integrated Waste Management Board, <http://www.ciwmb.ca.gov/WasteChar/WasteGenRates/Industrial.htm>, website accessed on December 21, 2011.
² 0.006 pound per square foot per day × 2,244,638 square feet = 13,466.5 lbs per day; 1 ton/2000 lbs × 13,466.5 lbs = 6.73 tons per day.
³ *Badlands Sanitary Landfill Facility/Site Summary Details*, CalRecycle website, <http://www.calrecycle.ca.gov/SWFacilities/Directory/33-AA-0006/Detail/>, website accessed December 21, 2011.
⁴ Based on 2011 average; e-mail correspondence with John Farrar, Administrative Services Assistant, County of Riverside Waste Management Department, December 21, 2011.

The volume of solid waste generated by the proposed project per day represents 0.17 percent of the current permitted throughput and 0.29 percent of the current surplus capacity at the Badlands Sanitary Landfill. As adequate daily surplus capacity exists at the receiving landfill, development of the proposed project would not significantly affect current operations or the expected lifetime of the landfill serving the project area. No significant solid waste disposal impact would occur and no mitigation is required.

4.12.1.5.2 Solid Waste Reduction

Threshold	Would the proposed project fail to comply with applicable Federal, State, and local statutes and regulations related to solid waste?
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Federal, State, and local governments have enacted a variety of laws and established programs to deal with the transport, use, storage, and disposal of hazardous materials to reduce the risks to public health and the environment. These laws and programs supplement existing regulations designed to control the contamination of air and water resources. There are no active landfills operating in Riverside County that accept hazardous wastes. Hazardous wastes generated within the County are disposed of at distant "Class I" landfills. The California Health Services Department regulates companies that haul hazardous waste. The California Highway Patrol (CHP) is responsible for the inspection of motor carriers that haul hazardous wastes. Inspections are made on roadways, at freeway truck scales and truck yards. The shipment of hazardous materials by truck or rail is regulated by Federal safety standards under the jurisdiction of the U.S. Department of Transportation. Federal safety standards are also included in the California Administrative Code, Environmental Health Division. The EPA ensures that containers of hazardous materials are properly labeled with instructions for use. The California Department of Industrial Relations, Cal-OSHA Division regulates the use of hazardous materials in the workplace. Regulations governing the storage and use of hazardous materials are also contained in the Uniform Building Code and the Uniform Fire Code. The Hazardous Materials Branch (HMB) of the Environmental Health Services Division of the Riverside County Health Department operates a hazardous waste program. The HMB inspects those involved in generating, hauling, storage, treating, and disposing of these wastes. The HMB also operates mobile household hazardous waste roundups and checks loads at local landfills for hazardous wastes.

The City of Moreno Valley is responsible for meeting the requirements of AB 939 and SB 1016, which includes a 50 percent reduction in disposal by the start of 2000 and preparation of a solid waste reduction plan to help reduce the amount of solid waste disposed of at the landfills. Programs implemented by the City of Moreno Valley to satisfy the mandated reduction in solid waste include, but are not limited to, the following:

- Public outreach via print and electronic media (public education);
- Municipal solid waste ordinances and product and landfill bans (policy incentives); and
- Operation of material recovery and composting facilities (facility recovery).

The proposed project would be required to coordinate with the waste hauler to develop collection of recyclable materials for the project on a common schedule as set forth in applicable local, regional, and State programs. Recyclable materials that would be recycled by the project include paper products, glass, aluminum, and plastic.

Additionally, the proposed project would be required to comply with applicable elements of AB 1327, Chapter 18 (California Solid Waste Reuse and Recycling Access Act of 1991) and other applicable local, State, and Federal solid waste disposal standards, thereby ensuring that the solid waste stream to the Badlands Sanitary Landfill is reduced in accordance with existing regulations. Impacts are considered less than significant and require no mitigation.

4.12.1.6 Significant Impacts

No impacts related to solid waste services or facilities have been identified as significant for the proposed project; therefore, no mitigation is required.

4.12.1.7 Cumulative Impacts to Solid Waste Services

AB 939 mandates the reduction of solid waste disposal in landfills. While the Badlands Sanitary Landfill has an estimated closure date of 2016, as previously identified, the City's waste hauler will also use other County landfills in the area (e.g., Lamb Canyon Landfill and El Sobrante Landfill). The estimated closure date of the Lamb Canyon Landfill is 2023 and the estimated closure date of the El Sobrante Landfill is 2030. With planned expansion activities of landfills in the project vicinity and projected growth rates contained within the City's General Plan EIR, sufficient landfill capacity would exist to accommodate future disposal needs through City build out in 2030. Therefore, build out of the City General Plan would not create demands for solid waste services that would exceed the capabilities of the County's waste management system. Consequently, cumulative impacts associated with solid waste within the City would be considered less than significant.

4.12.2 Water Supply

4.12.2.1 Existing Setting

The project site is located within the service area of the EMWD,¹ which owns, operates, and maintains the water system within the limits of the City and would be the purveyor of water to the proposed project site. As illustrated in Figure 4.12.1, the EMWD's service area encompasses approximately 555 square miles. The water supply available to the EMWD in 2010 totals approximately 154,700 acre-feet (AF).² Water sources for the EMWD include imported water purchased from the Metropolitan Water District of Southern California (Metropolitan), groundwater sources, desalted groundwater, and recycled water from the EMWD's five regional water reclamation facilities. Imported water from Metropolitan is either delivered directly as potable water, delivered to EMWD as raw water and treated at two local EMWD filtration plants, or delivered to EMWD as raw water for non-potable use.

Approximately 80 percent of the EMWD's water is imported from Metropolitan and the remaining 20 percent is supplied by groundwater wells. Approximately 33 percent of the water produced by EMWD is recycled water. Groundwater supplies are drawn from the EMWD wells located in the Hemet, San Jacinto, Moreno Valley, Perris Valley, and Murrieta areas.

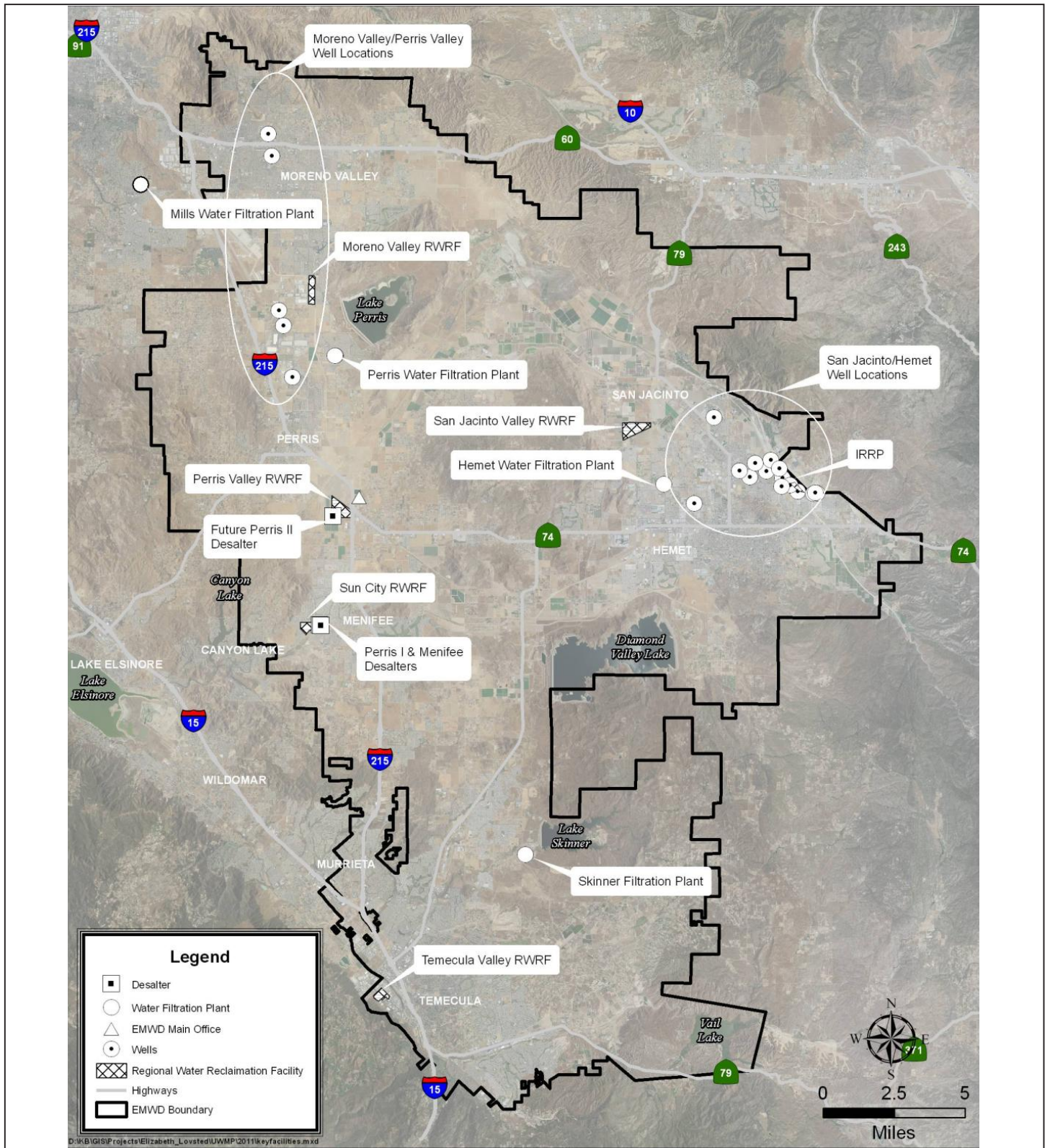
In June of 2011, the EMWD adopted its *2010 Urban Water Management Plan (UWMP)*, which details the reliability of the EMWD's current and future water supply. The document finds that with all of its existing and planned supplies, the EMWD can meet 100 percent of projected supplemental demand through 2035, even through a repeat of a severe drought. In addition, the UWMP addresses conservation, local supplies and reliability of imported supplies. Table 4.12.A identifies the EMWD's past, present, and projected water supplies and demand.

Water infrastructure in the vicinity of the proposed project site includes an existing 20-inch water line in Redlands Boulevard a half mile east of the proposed project site, and an existing 12-inch water line in Eucalyptus Avenue west of the proposed project site. In addition, the proposed project site is adjacent to an existing recycled water line (west of the project site underlying the existing Eucalyptus Avenue) that is currently not part of the recycled water system. Although currently active recycled

¹ *Eastern Municipal Water District Service Area*, Eastern Municipal Water District, https://id3446.securedata.net/emwd/water_service/water_districts.html, website accessed December 21, 2011.

² An acre-foot covers one acre to a depth of one foot. An acre-foot is approximately 326,000 gallons, which is enough to meet the needs of two average southern California households a year.

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FIGURE 4.12.1

*Eucahyptus Industrial Park
Environmental Impact Report*
Location of Eastern Municipal
Water District Supplies

SOURCE: Eastern Municipal Water District 2010 Urban Water Management Plan, 2011

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Table 4.12.A: EMWD Water Supplies and Demand for Average Year Hydrology

		2015	2020	2025	2030	2035
EMWD Water Supplies						
Supply Type	Supply Source	acre-feet per year				
Imported	Metropolitan Water District	149,300	170,700	190,700	210,000	226,200
Imported-Locally Treated	Metropolitan Water District					
Groundwater	West San Jacinto Management Area	13,200	13,200	13,200	13,200	13,200
Desalination	West San Jacinto Management Area	7,500	7,500	7,500	7,500	7,500
Recycled	EMWD Regional Water Reclamation Facilities	43,900	50,000	53,900	54,900	55,300
Supply Total		213,900	241,400	265,300	285,600	302,200
EMWD Water Demands						
Demand Source		acre-feet per year				
Retail Potable Water Sales		113,800	120,700	136,100	150,300	162,200
Water Sales to Other Agencies		47,600	61,600	65,000	69,000	72,400
Other Water Uses/Losses		52,500	59,100	64,200	66,300	67,600
Demand Total		213,900	241,400	265,300	285,600	302,200

Source: EMWD 2010 Urban Water Management Plan, Eastern Municipal Water District, June 2011 (Tables 3 and 9, WSA 2012).

water lines are not near this project, in the future, it may be possible to serve this project site with recycled water.

Water imported by the EMWD is treated at two facilities owned and operated by Metropolitan, the Mills and Skinner Filtration Plants, which serve the north west and southern areas of the EMWD service area. Treated water is supplied north of the EMWD service area by the Mills MWD Water Treatment Facility and in the southeastern portion of the EMWD service area by the Lake Skinner Water Treatment Facility. The City is located within the area served by the Mills Filtration Plant, which has a treatment capacity of 326 million gallons per day (mgd). The EMWD also utilizes untreated water delivered by Metropolitan from the State Water Project (SWP) pipeline running through the EMWD's jurisdiction. The EMWD currently treats the raw water for potable use or uses it raw for agriculture and for recharge. Treatment of raw water occurs at water filtration plants in Perris and in Hemet. The Hemet microfiltration plant has a capacity to filter 8,800 acre-feet per year (AFY) and the Perris microfiltration plant has the capacity to filter 17,600 AFY.

The EMWD constructed the Menifee Desalter and Perris Desalter facilities to recover high total dissolved solids (TDS) groundwater for potable use. In addition to being a source of water, the desalter facilities play a part in managing the groundwater subbasins by addressing the migration of brackish groundwater into areas of good quality groundwater. Additionally, the EMWD is currently in the process of constructing a third desalter facility, the Perris II Desalter.¹ This additional facility will increase the production of desalinated water to approximately 12,000 AFY.

In May 2007, a Federal court invalidated the Biological Opinion issued by the USFWS for operations of the SWP and Central Valley Project (CVP) with regard to the Delta smelt (*Hypomesus transpacificus*), a Federal- and State-listed threatened fish species that inhabits the estuaries of the Bay-Delta region. Prior to this court ruling, the Federal wildlife agencies and State and Federal project operators, voluntarily reinstituted consultation under the Federal Endangered Species Act (FESA) to

¹ Water Supply Desalination Infrastructure South Perris Project, Perris II Desalter, <http://www.emwd.org/modules/showdocument.aspx?documentid=90>, website accessed December 29, 2011.

address impacts from SWP and CVP operations. On May 31, 2007, the California Department of Water Resources (DWR) voluntarily shut down SWP pumps for 17 days in an effort to protect the Delta smelt. On August 31, 2007, the courts curtailed water operations in the Delta.

Based on the Water Allocation analysis released by the DWR on March 22, 2010, export restriction could reduce MWD deliveries by 150 to 200 AF under mean hydrologic conditions, and operations could remain restricted until a long-term solution is found to improve the stability of the Bay-Delta region. SWP operations may also be restricted by the new biological opinions for listed species under the FESA or by the CDFG's issuance of incidental take authorizations under the California Endangered Species Act (CESA). Additional new litigation, listing of additional species or new regulatory requirements could also restrict operations and limit water supply.

To address potential constraints on the SWP, MWD has developed near-term and long-term action plans to increase water supply reliability. Part of the near-term action developed to protect fish species includes the Two Gate System. This would provide movable barriers to modify flows and prevent vulnerable fish from being drawn toward pumping plants. This system is expected to help protect fish and allow an estimated 150 AF of water to be exported from the Delta when SWP allocations exceed 35 percent. The Two Gate System is subject to operational studies, environmental documentation, acquisition of rights-of-way, completion of design, and construction. It is anticipated to be in place in 2013.

MWD is also working with stakeholders throughout the State to develop and implement long-term solutions to the problem in the Bay Delta. The Bay Delta Conservancy Plan (BDCP), developed by State and Federal resource agencies, aims to address ecosystem needs and secure long-term operating permits for the SWP. A working draft of the BDCP was released in November 2010 and reflects significant progress toward consensus on a plan to restore the Bay-Delta ecosystem and associated sensitive species and to provide for improved water supply and reliability.

In evaluating the supply reliability for the 2010 Regional Urban Water Management Plan (RUWMP), MWD assumed a new Delta conveyance would be fully operational by 2022, bringing supply reliability close to 2005 levels prior to supply restrictions imposed due to the Biological Opinions. This assumption is consistent with MWD's long-term Delta action plan approved in 2007, and supported by recently passed legislation that included a roadmap for establishing governance structures and financing approaches to implement and manage a Delta solution. In response to the recent developments in the Delta, Metropolitan is engaged in planning processes that will identify solutions that, when combined with the rest of its supply portfolio, it will ensure a reliable long-term water supply for its member agencies. In the near term, Metropolitan will continue to rely on the plans and policies outlined in its RUWMP and Integrated Resource Plan (IRP) to address water supply shortages and interruptions (including potential shut downs of SWP pumps) to meet water demands. An aggressive campaign for voluntary conservation and recycled water usage, curtailment of groundwater replenishment water and agricultural water delivery are some of the actions outlined in the RUWMP. Metropolitan is maximizing supplies from existing agreements for water supply from its Palo Verde Crop Management and Water Supply Program and working with the State of Arizona in withdrawing water previously stored in its groundwater basin.

Imported sources of water will be supplemented by an increase in desalination of brackish groundwater, recycled water use, and water use efficiency. Metropolitan has analyzed the reliability of water delivery through the SWP and the Colorado River Aqueduct. Metropolitan's IRP and 2010 RUWMP conclude that with the storage and transfer programs developed by Metropolitan, there will be a reliable source of water to serve its member agencies' needs through 2035.¹

¹ *Eastern Municipal Water District 2010 Urban Water Management Plan*, Eastern Municipal Water District, June 2011.

4.12.2.2 Existing Policies and Regulations

Policies and regulations for water sources include the following:

- Federal Water Pollution Control Act;
- Water Conservation in Landscaping Act;
- Water Recycling in Landscaping Act;
- Sections 13550–13556 of the California Water Code (CWC);
- Urban Water Management Planning Act;
- Senate Bill 901;
- Senate Bill 610; and
- City of Moreno Valley General Plan.

Federal Water Pollution Control Act. The Federal Water Pollution Control Act requires discharges (from point and non-point sources) into navigable water to meet stringent National Pollutant Discharge Elimination System (NPDES) permit standards. The EPA has published regulations establishing requirements for application of storm water permits for specified categories of industries, municipalities, and certain construction activities. The regulations require that discharges of storm water from construction activity of 1.0 acre or more must be regulated and covered by an NPDES permit. When a construction area exceeds 1.0 acre in size, the applicant must develop and implement a Storm Water Pollution Prevention Plan (SWPPP). Additional analysis and information regarding NPDES requirements and regulations is provided in Section 4.7 (Hydrology and Water Quality) of this EIR.

Water Conservation in Landscaping Act. To ensure adequate supplies are available for future uses, and to promote the conservation and efficient use of water, local agencies are required to adopt a water-efficient landscape ordinance. When such an ordinance has not been adopted, a finding as to why (based on the climatic, geologic, or topographical conditions) such an ordinance is not necessary must be adopted. In the absence of such, an ordinance drafted by the State of California applies within the affected jurisdiction. The City of Moreno Valley implements landscape and irrigation design standards (Chapter 9.17 of the City's Municipal Code), which address the proper maintenance of landscaping or irrigation systems.¹

Water Recycling in Landscaping Act. The Water Recycling in Landscaping Act requires that a water producer capable of providing recycled water that meets certain conditions notify local agencies eligible to receive the recycled water. It also requires necessary infrastructure be provided to support the delivery of recycled water. The EMWD enforces Ordinance No. 68.2 *Amended Rules and Regulations Governing the Provision of Recycled Water System Facilities and Service*, to promote the conservation and reuse of water resources and to ensure maximum public benefit from the use of the EMWD's recycled water supply by regulating its use in accordance with applicable Federal, State, and local regulations. Upon the determination that the EMWD is capable of providing recycled water services to the proposed site, the project applicant must submit an application form for the EMWD to review. The EMWD may prescribe requirements in writing to the applicant as to the off-site or on-site facilities necessary to be constructed, the manner of connection, the financial responsibility, and the use of the recycled water. Prior to receiving recycled water service, the proposed use shall be approved by the Department of Health Services. The EMWD will inspect on-site recycled water facilities to ensure initial and future continued compliance with the EMWD's regulations and other applicable requirements.

¹ *Landscape Requirements City of Moreno Valley, California, City of Moreno Valley.*

Sections 13550–13556 of the CWC. These sections of the CWC state that local, regional, or State agencies shall not use water from any quality source of potable water for non-potable uses if suitable recycled water is available as provided in Section 13550 of the CWC.

Urban Water Management Planning Act (CWC Section 10631). Since 1984, the Urban Water Management Planning Act, has required “urban water suppliers” to develop written “urban water management plans.” While generally aimed at encouraging water suppliers to implement water conservation measures, it also created long-term planning obligations. In preparing urban water management plans, urban water suppliers must describe the following:

- Existing and planned water supply and demand;
- Water conservation measures and a schedule for implementing and evaluating such measures; and
- Water shortage contingency measures.

The Urban Water Management Planning Act requires that urban water suppliers use a 20-year planning horizon and update the data in the urban water plans every five years.

In preparing their 20-year management plans, water suppliers must directly address the subject of future population growth. The suppliers must also identify sources of supply to meet demand. The plan must “identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier.” In identifying these future water sources, the suppliers need not conduct environmental review.

Senate Bill 901: Water Supply and Demand Reliability Assessment (CWC Section 10910). Signed into law on October 16, 1995, Senate Bill 901 (SB 901) requires every urban water supplier to identify as part of its UWMP the existing and planned sources of water available to the supplier over a prescribed five-year period. SB 901 requires additional information to be included as part of a UWMP if groundwater is identified as a source of water available to the supplier. Provisions of SB 901 would require an urban water supplier to include in the plan a description of all water supply projects and programs that may be undertaken to meet total project water use. A city or county shall request each public water system serving a project to assess the projected water demand associated with said project and an assessment of whether the projected water demand associated with selected projects was included as part of the most recent UWMP. As part of this assessment, the public water system is required to indicate whether its total projected water supplies available during normal, single-dry, and multiple-dry water years will meet the project demand associated with the proposed project, in addition to the public water system’s existing and planned uses. Pursuant to Section 10912 of the CWC, a “project” is specifically defined as development meeting any of the following criteria:

- 500 or more dwelling units;
- Commercial center employing more than 1,000 persons or having more than 500,000 square feet;
- Office building employing more than 1,000 persons or having more than 250,000 square feet;
- A hotel/motel with 500 or more rooms;
- An industrial, manufacturing, processing plant, or industrial park employing more than 1,000 persons or occupying more than 40 acres, or having more than 650,000 square feet of floor area;
- A mixed-use project that would demand an amount of water equal to the amount of water required by a 500-dwelling unit project; or
- In areas where the public water system has fewer than 5,000 service connections, any development that would increase water demand by 10 percent or greater in the number of

existing service connections, or in the case of a mixed-use development, an increase in water required by residential development representing a 10 percent or greater increase in the number of existing service connections.

After receiving such information, cities and counties may agree or disagree with the conclusions of the water purveyors, but cannot approve projects in the face of documented water shortfalls without first making certain findings.

The proposed project is an industrial project that would meet the definition of a “project” and the water purveyor (EMWD) is therefore required to conduct a WSA (included as Appendix J) to indicate a reliable supply of water for the proposed project.

Senate Bill 610: Water Supply Planning (CWC Sections 10910 through 10915). Signed into law October 9, 2001, Senate Bill 610 (SB 610) resulted in amendments to Section 21151.9 of the Public Resources Code. Additionally, several sections of the CWC were amended, one was repealed, while portions of one section were added and/or repealed. Revising provisions established by SB 901 and SB 610 requires that any city or county having determined that a project is subject to CEQA identify public water systems that supply water for the project and request those public water systems to prepare a specified WSA if the project exceeds the specified threshold for a WSA. Such an assessment would include, among other information, the following:

- Identification of existing water entitlements, water rights, or water service contracts relevant to the water supply identified for a proposed project; and
- The amount of water received pursuant to such entitlements, rights, or contracts.

SB 610 requires the public water system, city, or county to submit plans for acquiring the required water supply for a proposed project if the WSA concludes that water supplies are or will become insufficient. Any such WSA and other information would be included in the environmental document prepared for the project pursuant to CEQA. A WSA¹ was prepared for the proposed project to identify existing water entitlements, water rights, and/or water service contracts relevant to the water supply as it relates to the operation of the proposed project.

More recently, water supply issues and the disclosure of these issues in environmental documents have come under litigation through *Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova*, 40 Cal 4th 412 (2007). The major standard articulated in *Vineyard Area Citizens* is that a CEQA water supply analysis must be supported by substantial evidence in the record demonstrating there is a “reasonable likelihood” that an identified water source will be available to serve the project. The court opinion also underscored the need to analyze the environmental impacts of supplying water to the project from the identified sources—a primary reason the Court held that it was insufficient merely to include a mitigation measure requiring that agreements and financing for water supplies be in place before issuance of development entitlements. An important caveat, however, is that single-phased projects that trigger the requirement for a WSA under SB 610, such as projects that include 500 or more dwelling units, must still demonstrate that water supply will be available for other planned future development. If a WSA is required, the CEQA water supply analysis should rely upon and be consistent with the WSA. SB 610 generally will require the WSA to demonstrate that there will be an available water supply to serve the project at issue plus all other existing and future water supply demands over a 20-year period. This appears to be a higher standard than articulated by the Court in *Vineyard Area Citizens*, and the Court’s decision will not trump this requirement of SB 610.

¹ *Water Supply Assessment*, EMWD, February 23, 2012.

City of Moreno Valley General Plan. The following policies within the *Community Development Element* and *Conservation Element* of the *City of Moreno Valley General Plan* pertain to utilities and are applicable to the proposed project.

Community Development Element Policies

- Policy 2.11.1** Permit new development only where and when adequate water services can be provided.
- Policy 2.13.1** Limit the amount of development to that which can be adequately served by public services and facilities, based upon current information concerning the capability of public services and facilities.
- Policy 2.13.2** Unless otherwise approved by the City, public water, sewer, drainage and other backbone facilities needed for a project phase shall be constructed prior to or concurrent with initial development within that phase.
- Policy 2.13.3** It shall be the ultimate responsibility of the sponsor of a development project to assure that all necessary infrastructure improvements (including system wide improvements) needed to support project development are available at the time that they are needed.

Conservation Element Policies

- Policy 7.3.1** Require water-conserving landscape and irrigation systems through development review. Minimize the use of lawn within private development, and within parkway areas. The use of mulch and native and drought-tolerant landscaping shall be encouraged.
- Policy 7.3.2** Encourage the use of reclaimed wastewater, stored rainwater, or other legally acceptable non-potable water supply for irrigation.

4.12.2.3 Methodology

The WSA is based on evaluating the existing water supply available to the City, future water supply that is anticipated to be available to the City, and the identification of existing water demand and future demand with the development of the proposed project. The WSA also identifies water conservation measures that would be incorporated by the proposed project to reduce the project's total water demand, with special reference to outdoor water usage and associated landscaping systems.

4.12.2.4 Thresholds of Significance

The following thresholds of significance regarding impacts to utilities and service systems are based on the recommended questions contained in *Guidelines for California Environmental Quality Act* (as amended through January 1, 2011). A project would have a significant impact on the provision of utilities or service systems if it would result in any of the following:

- Require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects; and/or
- Have in sufficient water supplies available to serve the project from existing entitlements and resources, or need new or expanded entitlements.

For the purpose of this EIR, significant and unavoidable impacts would occur if the aforementioned conditions cannot be overcome by reasonable design, construction, and maintenance practices.

4.12.2.5 No Impact/Less than Significant Impacts

4.12.2.5.1 Construction or Expansion of Water Treatment Facilities

Threshold	Would the proposed project require the construction of new water treatment facilities or expansion of existing facilities, the construction of which would cause significant environmental effects?
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As previously identified, Metropolitan currently does not have surplus water available, due in part to pumping restrictions imposed on the SWP in place to avoid and minimize impacts to Federal- and State-protected fish species in the Delta. Imported sources of water will be supplemented by an increase in desalination of brackish groundwater, recycled water use, and water use efficiency. Metropolitan and the EMWD have analyzed the reliability of water delivery through the SWP and the Colorado River Aqueduct. Metropolitan's IRP and 2010 RUWMP conclude that, with the storage and transfer programs developed by Metropolitan, there will be a reliable source of water to serve its member agencies' needs through 2035. Based on the WSA prepared for the proposed project, water demand for the proposed on-site uses would total approximately 73,256 gallons per day (gpd)¹ or 82 AFY.² As identified in previously referenced Table 4.12.A, anticipated water supplies for the EMWD total 213,900 and 302,200 AFY in 2015 and 2035. The water demand required for the proposed project totals 0.04 and 0.03 percent of the 2015 and 2035 projected EMWD supplies.

The EMWD's 2010 *Urban Water Management Plan* and Metropolitan's 2010 *Regional Urban Water Management Plan*³ have stated that, with the addition of all existing and planned water supplies, it would have the ability to meet all of its member agencies' projected supplemental demand through 2035, despite the latest ruling regarding the allocation of SWP water. This is based on continued commitment to conservation programs, water recycling, and development of local water resources.

While the EMWD is capable of meeting all of its member agencies' projected demand through 2035, other efforts are taken to further reduce the retail demand due to demographics change and population growth. Passive conservation efforts already implemented by the EMWD include adherence to the plumbing code and installation of low-flow toilets and showerheads in all new construction. In addition to passive programs, active conservation programs/measures are also implemented. The EMWD has implemented all of the California Urban Water Conservation Council (CUWCC) and Best Management Practices (BMPs). The CUWCC was created to increase efficient water use throughout the State through partnership with urban water agencies (including the EMWD), public interest organizations, and private entities. In 1992, the EMWD signed the CUWCC's Memorandum of Understanding Regarding Water Conservation in California and committed to developing and implementing fourteen comprehensive BMPs for urban water management.

The BMPs correspond to the fourteen Demand Management Measures listed in CWC Section 10631 (f) and include the following:

- Water survey programs for single-family residential and multifamily customers;
- Plumbing retrofits;
- Distribution system water audits, leak detection, and repair;
- Metering with commodity rates;
- Large landscape water audits and incentives;
- High-efficiency washing machine rebates;
- Public information;

¹ 700 gallons per acre per day × 105 net acres = 73,256 gallons per day.

² 73,256 gallons per day = 0.23 acre-foot per day × 365 days per year = 82.02 acre-feet per year.

³ *The Metropolitan Water District of Southern California Regional Urban Water Management Plan*, Metropolitan Water District of Southern California, November 2010.

- School education;
- Commercial, industrial, and institutional water conservation;
- Wholesale agency programs;
- Conservation pricing;
- Conservation corridor;
- Water waste prohibition; and
- Ultra-low flush toilet replacements.

With implementation of passive and active conservation measures, the EMWD can significantly reduce its retail water demand and continue to do so in the future.

As previously identified, Metropolitan has analyzed the reliability of water delivery through the SWP and the Colorado River Aqueduct. Metropolitan's IRP and 2010 RUWMP conclude that, with the storage and transfer programs developed by Metropolitan, there will be a reliable source of water to serve its member agencies' needs through 2035.

The amount of water demand would be within the existing available supply even with a reduction in deliveries from the SWP. Imported sources of water will be supplemented by an increase in desalination of brackish groundwater, recycled water reuse, and water use efficiency, and implementation of aggressive conservation measures by the EMWD. The proposed project would not require the construction of new water treatment facilities or expansion of existing facilities, which could cause significant environmental effects. Impacts related to this issue would be less than significant and no mitigation is required.

4.12.2.6 Significant Impacts

4.12.2.6.1 Storm Water Drainage Requirements

Threshold	Would the proposed project result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?
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As identified in Section 4.7 (Hydrology and Water Quality), the proposed project would route storm water flows from the project site into Quincy Channel after flows are routed through a combination of water quality basins and sand filters. From Quincy Channel, flows would be routed to the 250-foot wide earthen Perris Valley Storm Channel (PVSC). The PVSC is the primary collector of storm water in the Moreno Valley area. The storm channel was built and is owned and maintained by the Riverside County Flood Control and Water Conservation District (RCFCWCD). Flows routed to the PVSC are transported through Perris Valley and ultimately to the San Jacinto River. Additional information as it relates to Quincy Channel and its biological resources is provided in Section 4.4 (Biological Resources) in this EIR.

Previously referenced Table 4.7.I (Section 4.7, Hydrology and Water Quality) identifies changes in the volume of storm water runoff that would result from the development of buildings and impermeable surfaces without the development of the on-site basins. Due to the installation of impervious surfaces on the project site, the post-development flows would be higher than the pre-development flows. To avoid a significant impact to the existing drainage capacity, the post-development flows coming from the proposed project site are required to be equal to or less than pre-development flows.¹ To reduce flows to below or equal to pre-development conditions, the on-site storm water flows would be routed

¹ As part of the MS4 Permit issuance requirements, projects must identify any Hydrologic Conditions of Concern and demonstrate that changes to hydrology are minimized to ensure that post-development runoff rates and velocities from a site do not adversely affect downstream erosion, sedimentation, or stream habitat.

to the on-site detention basins¹ before flows are routed off site. While the increase in impervious surfaces attributable to the proposed project would contribute to a greater volume and higher velocity of storm water flows, the proposed project's water quality basins would accept and accommodate runoff that would result from project construction at pre-project conditions (previously referenced Table 4.7.J).

As identified in the Preliminary Hydrology Calculations² prepared for the project, to adequately contain and store the greatest volume that would be generated during the 2-year, 5-year, 10-year, and 100-year storm events, the project site would require a minimum storage volume of 13.6 acre-feet as shown in previously referenced Table 4.7.H. The proposed project would allocate approximately 20.3 acre-feet of storage area on the project site (9.6 acre-feet of storage for Detention Basin 1 on the northern portion of the site and 10.7 acre-feet of storage area for Detention Basin 2 on the southern portion of the site). The proposed amount of storage area (20.3 acre-feet) is greater than the required amount of storage area identified in Table 4.7.H (13.6 acre-feet). Based on this, it appears there is excess capacity of 6.7 acre-feet (20.3 acre-feet – 13.6 acre-feet = 6.7 acre-feet) of storage area available from the on-site detention basins; therefore, the proposed project appears to have adequate drainage capacity that would result in post-development flows being reduced to pre-development flows before leaving the project site. However, to ensure that impacts associated with on-site drainage capacity are reduced to a less significant level, the following mitigation has been identified.

Mitigation Measure. As shown below, implementation of the previously referenced **Mitigation Measure 4.7.6.3A** would ensure that the proposed project would not result in storm water drainage flows that would require the construction of new storm water drainage facilities or expansion of existing storm water drainage facilities that would in turn cause significant environmental effects.

4.7.6.3A Prior to the approval of associated project rough grading plan, the project proponent shall receive approval on a project-specific Final Hydrology Study, with supporting engineering calculations, from the City Engineer. The Final Hydrology Study shall incorporate relevant requirements identified by the City, and/or site-specific geotechnical investigations.

Level of Significance after Mitigation. Adherence to **Mitigation Measure 4.7.6.3A** would result in the project's compliance with the City's existing storm water infrastructure requirements, reducing the potential impact associated with storm water drainage capacity to a less than significant level.

4.12.2.6.2 Adequate Water Supply

Threshold	Would the proposed project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?
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A project-specific WSA³ was prepared for the proposed project to assess the water supply availability to the project site to satisfy the requirements under SB 610 and to make a determination that adequate water supplies are and will be available to meet the water demand associated with the proposed project. In accordance with CWC Section 10910(d) – (f), the WSA identifies:

¹ A detention basin is an area where excess storm water is stored or held temporarily and then slowly drains when water levels in the receiving channel recede. In essence, the water in a detention basin is temporarily detained until additional room becomes available in the receiving channel.
² Preliminary Hydrology Calculations for ProLogis Park Moreno Valley-Eucalyptus TPM 35679, Thienes Engineering, November 4, 2008.
³ Water Supply Assessment, EMWD, February 23, 2012.

- Any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and provides a description of the quantities of water received in prior years by the public water system, under existing water supply entitlements, water rights, or water service contracts.
- If no water has been received in prior years by the public water system, identify other public water systems or water service contract holders that receive a water supply or have existing water supply entitlements, water rights, or water service contracts to the same source of water as the public water system.
- If groundwater is included in the proposed supply, identify the groundwater basin or basins from which the proposed project will be supplied, and include any applicable documentation of adjudicated rights to pump. If the basin is not adjudicated, regardless of whether the basin has been identified as over-drafted, provide a detailed description and analysis of the amount and location of groundwater pumped by the public water system for the past five years from any groundwater basin from which the proposed project will be supplied, and provide a detailed description and analysis of the amount and location of groundwater from the basin or basins from which the proposed project will be supplied to meet the projected water demand associated with the proposed project.

There has been a shift in the water demand patterns in the last 15 years, as the residential market has replaced the agricultural market. Metropolitan, based on the its 2010 RUWMP,¹ has stated that with the addition of all water supplies existing and planned, it would have the ability to meet all of its member agencies' projected supplemental demand through 2035 even under a repeat of a worst drought scenario. Based on this assertion, the EMWD has stated it is able to meet an increased demand for water over the next 20 years, even during drought conditions. This is based on continued commitment to conservation programs, additional water recycling, and continued development of local water resources.

The EMWD would continue to work closely with Metropolitan in the implementation of water management plans as a means of ensuring the reliability of the EMWD's imported water supplies. Efforts to ensure reliable water supplies include the preparation and/or implementation of groundwater management plans, desalination programs, seasonal storage, and conjunctive use water recycling. The EMWD's 2010 UWMP presents fifteen Demand Management Measures (DMMs) related to water conservation and water recycling programs split into two types (Foundational and Programmatic).

The potable water demand estimated for the proposed project is within the limit of retail growth projected by the EMWD. The EMWD's total water use is presented in Table 4.12.B. To develop the projections used in the WSA, the EMWD used a development-tracking database that assesses future water demands for specific projects. The EMWD uses this database to help plan for future water supply and infrastructure needs by monitoring new projects through various stages of development. Changes in density and land use are also tracked in this database for planning purposes.

Table 4.12.B: EMWD Average Water Demand (2010–2035)

Demand Sources (acre-feet/year)	Actual	Projected				
	2010	2015	2020	2025	2030	2035
Retail Potable Water Sales	77,700	113,800	120,700	136,100	150,300	162,200
Water Sales to Other Agencies	27,100	47,600	61,600	65,000	69,000	72,400
Other Water Uses/Losses	49,900	52,500	59,100	64,200	66,300	67,600
Total Average Demand	154,700	213,900	241,400	265,300	285,600	302,200

Source: *Water Supply Assessment*, Table 9, EMWD, February 23, 2012.

¹ IRPSIM is a sophisticated water supply and demand-balancing model that utilizes 77 sequential hydrologies to determine variations in supply and demand due to changes in weather conditions.

The EMWD's 2010 UWMP also discusses the supply reliability for the EMWD during dry years. The supply for dry years is driven by demand. Demand increases slightly (less than 2%) during dry years, primarily due to the increased demand in winter for landscaping or agricultural water, and can be decreased up to 10 percent due to conservation as dry periods are extended. Tables 4.12.C, 4.12.D, and 4.12.E present estimates of demand from 2015 to 2035 in five-year increments for an average year, single dry year, and multiple dry years, respectively.

4.12.C: EMWD Water Resources, Average Year Hydrology (2015–2035)

Water Conditions ¹	2015	2020	2025	2030	2035
Metropolitan Water District	149,300	170,700	190,700	210,000	226,200
Recycled Water	43,900	50,000	53,900	54,900	55,300
Groundwater 13,20	0	23,200	13,200	0	13,200
Existing Desalter	7,500	7,500	7,500	7,500	7,500
Existing Total Supplies	213,900	241,400	265,300	285,600	302,200
Total Projected Demand	213,900	241,400	265,300	285,600	302,200

¹ based on a repeat of 2004-09 conditions
Source: *Water Supply Assessment, Table 11*, EMWD, February 23, 2012.

4.12.D: EMWD Water Resources, Single Dry Year Hydrology (2015–2035)

Water Conditions ¹	2015	2020	2025	2030	2035
Metropolitan Water District	155,300	177,600	198,300	218,300	235,100
Recycled Water	45,500	51,800	55,800	56,900	57,300
Groundwater 13,20	0	13,200	13,200	13,200	13,200
Existing Desalter	7,500	7,500	7,500	7,500	7,500
Existing Total Supplies	221,500	250,100	274,800	295,900	313,100
Total Projected Demand	221,500	250,100	274,800	295,900	313,100

¹ based on a repeat of 1977 conditions
Source: *Water Supply Assessment, Table 12*, EMWD, February 23, 2012.

4.12.E: EMWD Water Resources, Multiple Dry Years Hydrology (2015–2035)

Water Conditions ¹	2015	2020	2025	2030	2035
Metropolitan Water District	156,600	179,000	199,800	219,900	236,900
Recycled Water	45,800	52,200	56,200	57,800	57,700
Groundwater 13,20	0	13,200	13,200	13,200	13,200
Existing Desalter	7,500	7,500	7,500	7,500	7,500
Existing Total Supplies	223,100	251,900	276,700	297,900	315,300
Total Projected Demand	223,100	251,900	276,700	297,900	315,300

¹ based on a repeat of 1990–1992 conditions
Source: *Water Supply Assessment, Table 13*, EMWD, February 23, 2012.

Neither groundwater production nor recycled water deliveries are expected to increase or decrease significantly during dry years. The EMWD depends on Metropolitan to supply additional water during dry years. Based on Metropolitan's 2010 RUWMP, EMWD is confident of its ability to meet customer demands beyond the next 20 years in all reasonably predictable hydrological scenarios. For water shortages and interruptions, the plans and policies outlined in the RUWMP will be implemented.

It is anticipated that the majority of water for future development would be supplied by imported water from Metropolitan recognizing the following conditions:

- The ability of Metropolitan to meet the demands of member agencies as described in the 2010 RUWMP as the majority of EMWD's current and future supply rely on Metropolitan's supplies.

This assessment is based on representations by Metropolitan that it will provide the water requested by EMWD for the next 20 years under the conditions set forth in CWC Section 10910 as authorized by CWC Section 10631(k). This assessment is subject to review, modification, or rescission in the event that regulations, court decisions, or other events reduce or impair Metropolitan's ability to provide such water.

- The cost of new water supplies will continue to increase. The developer of this project is required to help fund the acquisition of new water supplies, new treatment or recycled water facilities, and water efficiency measures for existing customers to develop new water supplies. The extent of additional funding will be determined by the EMWD and may take the form of a new component of connection fees or a separate charge.
- New customers may also be required to pay a higher commodity rate for water used than existing customers to offset the rising costs to the EMWD for new water supplies.
- The developer will install water-efficient devices such as low-flow toilets and landscaping according to the requirements of the EMWD's water use efficiency ordinance(s) at the time of construction to reduce the impact of the project on water supplies.

Metropolitan does not place imported water limits on a member agency, but predicts the future water demand based on regional growth information. Metropolitan stated in its 2010 RUWMP that, with the addition of all water supplies, existing and planned, Metropolitan would have the ability to meet all of its member agencies' projected supplemental demand through 2035 even under a repeat of historical drought scenarios. For any short-term water shortages and interruptions caused by disaster or unprecedented drought, the plans and policies outlined in the 2010 RUWMP will be implemented.

The proposed project would be conditioned by the City to construct off-site and on-site water facilities needed to distribute water throughout the project area. A plan of service for the proposed project would be approved by the EMWD that would identify specific on-site improvements. The proposed project site is adjacent to an existing recycled water line (west of the project site underlying the existing Eucalyptus Avenue) that is currently not part of the recycled water system. Although currently active recycled water lines are not near this project, in the future, it may be possible to serve this project site with recycled water. EMWD policy recognizes recycled water as the preferred source of supply for all non-potable water demands, including irrigation of recreation areas, green-belts, open space common areas, commercial landscaping, and supply for aesthetic impoundment or other water features. The majority of landscaped areas within the project site will be designed to use recycled water to the greatest extent possible when it becomes available.

Water Demand Based on the Existing Site Condition. Currently, the site is vacant although a portion was previously used for citrus agriculture. The water demand for the site when citrus was in cultivation was 212 acre-feet per year or 189,348 gallons per day. The remaining vacant portion of the project site used no water as there was no development, landscaping, or agriculture on site that would require the use of water.

Water Demand Based on the Existing General Plan Land Uses for the Project Site. The proposed project consists of construction of approximately 2,244,638 square feet of building area on approximately 122.8 acres. This represents development on approximately 42.5 percent of the project site (floor to area ratio). Using this same ratio for the existing BP-designated portion of the site, it can be reasonably assumed that development of approximately 629,442 square feet of BP uses could be developed on the project site.¹ Based on an employee generation factor of 1 employee for every 1,465 square feet of warehouse uses,² the proposed project would generate up to 1,532 jobs

¹ 42.5% of 34 acres (area designated for BP uses) = 629,442 square feet.

² *Table II-B Average Employees Per Acre – Average of Riverside and San Bernardino Counties*, Employment Density Study Summary Report, Southern California Association of Government, The Natelson Company, Inc., October 31, 2001.

opportunities.¹ Using the same employment factor, development of approximately 629,442 square feet of warehouse uses on the existing BP-designated portion of the site would generate approximately 430 jobs. Based on an industrial water consumption factor of 0.146 acre-feet per employee per year, development of approximately 629,442 square feet of business park/light industrial uses (which is consistent with the existing BP-designated portion of the site) would create a demand for water of approximately 56,072 gpd or 63 AFY.

Based on a high density residential development water consumption factor of 3,600 gallons per acre per day,² water demand for the existing R-15 uses would total approximately 133,200 gpd or 149 AFY.³ Based on a low-density residential development water consumption factor of 2,100 gallons per day per acre,⁴ water demand for the existing R-5 uses would total approximately 48,300 gpd or 54 AFY. The EMWD has identified that agricultural operations typically have a water demand of 4.0 AF of water per year per acre. Based on this usage factor, the existing agricultural usage of the 53-acre portion project site would have a water demand of approximately 212 AFY. The total water demand for the existing uses under the General Plan for the project site totals 314 AFY.

Based on the WSA prepared for the proposed project, water demand for the proposed on-site uses would total 73,256 gpd or 82 AFY⁵. The anticipated water demand for the proposed project is substantially less than what is identified above for the General Plan land uses and what was used in the formulation of the 2010 UWMP. As identified in previously referenced Table 4.12.A, anticipated water supplies in the EMWD total 213,900 and 302,200 AFY in 2015 and 2035, respectively. The water demand required for the proposed project would total 0.05 and 0.04 percent of the EMWD's 2015 and 2035 supplies. The demand estimated for this project is substantially less and therefore still within the limit of growth projected in the 2010 UWMP.

When compared to the existing conditions of the project site, there would be a decrease in water demand of 232 acre-feet per year with the development of the proposed project. The site's water usage would decrease under the current development plan for the proposed project and it would remain lower than what is anticipated in the General Plan and the 2010 UWMP. Additionally, the increased water demand for the site has been analyzed by the WSA, which determined that a suitable water supply exists for the proposed project well into the future.

Table 4.12.F presents a comparison of the anticipated water demand of the project site based on the existing site conditions, the existing General Plan land use designations for the project site, and the proposed warehouse uses. The project's water consumption represents substantially less than 1 percent of the consumption yearly capacity and because the EMWD indicates that water to service the project's proposed industrial uses is available, no significant water supply impacts would occur with implementation of the industrial use, and no mitigation would be necessary.

Table 4.12.F: Comparison of Water Demand

Land Use	Acreage	Demand (gpd)	Demand (AFY)
Existing/Historical Site Conditions¹			
Agriculture 53		189,348	212
Vacant/Undeveloped 69.8		0	0
Total	122.8	189,348	212
Existing General Plan Land Use			
Business Park (BP)	34	56,072	63
High Density Residential (R-15)	36	133,200	149

¹ 1 employee/1,465 square feet of warehouse use × 2.244 million square feet of warehouse uses = 1,532 employees.
² *Draft Environmental Impact Report, City of Perris, State Clearinghouse Number 2004031135, Table 4.10.1-1.* Hogle-Ireland Inc., October 2004, IV-233.
³ Water Resources Department, Eastern Municipal Water District, June 16, 2008.
⁴ Ibid.
⁵ *Water Supply Assessment*, Eastern Municipal Water District, February 23, 2012.

Table 4.12.F: Comparison of Water Demand

Land Use	Acreage	Demand (gpd)	Demand (AFY)
Low Density Residential (R-5)	35	48,300	54
Agriculture 12		42,871	48
Roads 5.8		0	0
Total	122.8	280,443	314
Proposed Project Land Use			
Industrial 117		73,256	82
Roads/Sidewalks/Parking Lots	5.8	0	0
Total	122.8	73,256	82

¹ The site supports citrus on approximately 53 acres

Based on the previously stated information and the assurance that Metropolitan is engaged in planning processes that will identify solutions that, when combined with the rest of its supply portfolio, will ensure a reliable long-term water supply for its member agencies, the EMWD has determined that it will be able to provide adequate water supply to meet the potable water demand for the project in addition to existing and future users.

4.12.2.7 Cumulative Impacts to Water Supply Services

The cumulative area for water supply-related issues is the EMWD service area (previously referenced Figure 4.12.1). Existing and future development within the EMWD's service area would demand additional quantities of water. The adopted UWMP (2010) projects population within the EMWD service area to increase to 1,111,729 persons by the year 2035. Increases in population, square footage, and intensity of uses would contribute to increases in the overall regional water demand. The anticipated conversion of water-intensive uses (i.e., agriculture) and the implementation of existing water conservation measures and recycling programs would reduce the need for increased water supply.

The projected demand for the EMWD service area for the year 2015 is 213,900 AFY. The cumulative projects including the proposed project would make up approximately 0.11 percent of the projected demand for 2015. For the year 2035, the EMWD service area projected demand is 302,200 AFY. The proposed project would make up 0.63 percent of the project water demand. As the cumulative projects including the proposed project make up less than one percent of the projected water demand in both 2015 and 2025, the cumulative impact of the proposed project would be less than significant.

As previously identified, Metropolitan will continue to rely on the plans and policies outlined in its RUWMP and IRP to address water supply shortages and interruptions (including potential shut downs of SWP pumps) to meet water demands. An aggressive campaign for voluntary conservation and recycled water usage, along with curtailment of groundwater replenishment water and agricultural water delivery are some of the actions outlined in the RUWMP. As previously stated, Metropolitan currently does not have surplus water available, due in part to pumping restrictions imposed on the SWP in place to avoid and minimize impacts to Federal- and State-protected fish species in the Delta. However, Metropolitan has analyzed the reliability of water delivery through the SWP and the Colorado River Aqueduct. Metropolitan's IRP and RUWMP conclude that, with the storage and transfer programs developed by Metropolitan, there will be a reliable source of water to serve its member agencies' needs through 2035. The EMWD would have water supplies for projected growth through 2035 in wet, dry, and multiple-dry years, so cumulative impacts to water supply would be less than significant. The proposed project would connect to existing conveyance infrastructure and adequate treatment capacity is available, so the proposed project would not make a significant contribution to any cumulatively considerable impacts on water supply or infrastructure.

4.12.3 Wastewater Services

4.12.3.1 Existing Setting

The EMWD and the Edgemont Community Services District (ECSD) provides waste water (sewer) service in the City of Moreno Valley. The EMWD provides wastewater treatment, collection, and disposal service to most of the City and surrounding area and the ECSD provides sewer service to a small area in the southwestern portion of the City limits. The EMWD owns, operates, and maintains four regional water reclamation facilities including the Moreno Valley Regional Water Reclamation Facility (MVRWRF). The MVRWRF facility is located south of the City limits, east of Perris Boulevard, south of and adjacent to Mariposa Avenue. The MVRWRF treats domestic, commercial, and industrial wastewater, and currently accepts an average daily flow of approximately 11.2¹ million gallons per day (mgd), with an existing capacity of approximately 16 mgd.² Reclaimed water from the MVRWRF is primarily used to irrigate agriculture lands, greenbelts, and median strip areas. The EMWD has one existing dry sewer along Eucalyptus Avenue, west of Redlands Boulevard, which is currently not in operation. The EMWD expects this sewer to be in service once it is necessary for demand expected from the proposed project. The project site does not have any sewer infrastructure on site as it is currently fallow agricultural land. Existing businesses and residents in the vicinity of the project site currently utilize septic tanks.

4.12.3.2 Existing Policies and Regulations for Wastewater Services

Federal Water Pollution Control Act The major piece of Federal legislation dealing with wastewater is the Federal Water Pollution Control Act, which is designed to restore and preserve the integrity of the nation's waters. In addition to the Federal Water Pollution Control Act, other Federal environmental laws have a bearing on the location, type, planning, and funding of wastewater treatment facilities.

State Regional Water Quality Control Board. Operation of the MVRWRF is subject to regulations set forth by the California Department of Health Services (DHS) and State Water Resources Control Board (SWRCB). NPDES permits are required for operators of municipal separate storm sewer systems (MS4s), construction, projects, and industrial facilities that discharge to surface waters within the City.

City of Moreno Valley General Plan. The following are policies within the City's General Plan that pertain to wastewater services and are applicable to the proposed project:

Community Development Element

Policy 2.12.1 Prior to the approval of any new development application, ensure that adequate septic or sewer service capacity exists or will be available in a timely manner.

Policy 2.13.1 Limit the amount of development to that which can be adequately served by public services and facilities, based upon current information concerning the capability of public services and facilities.

Policy 2.13.2 Unless otherwise approved by the City, public water, sewer, drainage and other backbone facilities needed for a project phase shall be constructed prior to or concurrent with initial development within that phase.

Policy 2.13.3 It shall be the ultimate responsibility of the sponsor of a development project to assure that all necessary infrastructure improvements (including system wide

¹ Plus 0.4 mgd diverted to the Perris Valley Regional Water Reclamation Facility.

² Eastern Municipal Water District Moreno Valley Regional Water Reclamation Facility, <http://www.emwd.org/modules/showdocument.aspx?documentid=1423>, website accessed December 21, 2011.

improvements) needed to support project development are available at the time that they are needed.

4.12.3.3 Methodology

The methodology of determining wastewater service impacts is based on evaluating the existing wastewater infrastructure and capacity available to the City, future wastewater demand and capacity that is anticipated to be available to the City, and the identification of existing wastewater demands and future wastewater demands with the development of the proposed project.

4.12.3.4 Wastewater Services Thresholds of Significance

The proposed project is considered to have a significant impact on wastewater services if any of the following occurs:

- The project would exceed wastewater treatment requirements of the Santa Ana Regional Water Quality Control Board;
- The project would result in a determination by the wastewater treatment provider, which serves or may serve the project, that it lacks adequate capacity to serve the project's projected demand in addition to the provider's existing commitments; and/or
- The project would require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

4.12.3.5 No Impact/Less than Significant Impacts

4.12.3.5.1 Wastewater Treatment Requirements

Threshold	Would the proposed project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?
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Local governments and water districts are responsible for complying with Federal regulations, both for wastewater plant operation and for the collection systems (e. g., sanitary sewers) that convey wastewater to the wastewater treatment facility. Proper operation and maintenance is critical for sewage collection and treatment as impacts from these processes can degrade water resources and affect human health. For these reasons, publicly owned treatment works (POTW) receive Waste Discharge Requirements (WDRs) to ensure that such wastewater facilities operate in compliance with water quality regulations set forth by the State. WDRs, issued by the State, establish effluent limits on the kinds and quantities of pollutants that POTW can discharge. These permits also contain pollutant monitoring, recordkeeping, and reporting requirements. Each POTW that intends to discharge into the nation's waters must obtain a WDR prior to initiating its discharge.

The proposed project would result in a connection to the sewer line underlying the future Eucalyptus Avenue. As previously identified, the EMWD expects this sewer to be in service once it is necessary for demand expected from the proposed project. It is anticipated that all wastewater generated by the proposed project would be routed to and treated by the MVRWRF. The MVRWRF is a POTW, so operational discharge flows treated at the MVRWRF would be required to comply with the WDRs for that facility. Compliance with condition or permit requirements established by the City and WDRs at the MVRWRF would ensure that discharges into the wastewater treatment facility system from the operation of the proposed project would not exceed applicable Santa Ana Regional Water Quality Control Board wastewater treatment requirements. Expected wastewater flows from the proposed project will not exceed the capabilities of the serving treatment plant, so no significant impact related to this issue would occur and no mitigation would be required.

4.12.3.5.2 Wastewater Treatment Capacity and/or New or Expanded Wastewater Treatment Facilities

Threshold	Would the proposed project result in a determination by the wastewater treatment provider, which serves or may serve the project, that it lacks a adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?
Threshold	Would the proposed project require the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

The proposed project would connect to the sewer line in Eucalyptus Avenue west of the site through an 8-inch on-site sewer line. As previously identified, the EMWD expects this sewer to be in service once it is necessary for demand expected from the proposed project. Wastewater flows from the proposed project site would be handled by the EMWD and would be conveyed to the MVRWRF located in the southwestern portion of the City. Current capacity at this facility is 16 million mgd¹ with an existing average inflow of approximately 11.2 mgd.² Under current conditions, the average daily surplus treatment capacity is approximately 4.5 mgd. Generally, water use and wastewater flows are related in that wastewater is generated from indoor water uses. Based on EMWD wastewater generation calculations and as identified Table 4.12.G, the proposed project is anticipated to generate 68.3 equivalent dwelling units (EDUs) of wastewater. An EDU factor of 1 is based on a single-family home generating 235 gpd of wastewater.

Table 4.12.G: Anticipated Wastewater Generation Calculations

Total Base Unit (Open Storage Facilities/Warehouses)		÷	Base Unit	×	EDU Factor	=	Total EDUs to be Assessed
First 100,000 square feet	100,000 sq ft	÷	1,000	×	0.13	=	13
Additional square feet between 100,000 and 1,000,000	900,000 sq ft	÷	1,000	×	0.02	=	18
Remaining square feet over 1,000,000	1,244,638 sq ft	÷	1,000	×	0.03	=	37.3
Total	2,244,638 sq ft		—		—		68.3

Source: *Eastern Municipal Water District Sewer Financial Participation Charges Calculations*, https://id3446.securedata.net/emwd/new_biz/construction_charges-sewer.html, website accessed December 29, 2011. Calculations done by LSA Associates, Inc.

Based on this generation factor, the proposed project is anticipated to generate 16,051 gpd (0.016 mgd) of wastewater.³ The additional wastewater treatment demand of 0.016 mgd resulting from development of the proposed project totals approximately 0.3 percent of current surplus treatment capacity. Improvements planned for the MVRWRF facility would increase capacity at this facility from 16 mgd to 21 mgd with an ultimate expansion of this facility of 41 mgd. The planned expansion of the MVRWRF to increase capacity from 16 mgd to 21 mgd is anticipated to be completed by June 2013.⁴ Impacts associated with wastewater facilities would be less than significant because the amount of wastewater generated by the project would be within the existing surplus treatment capacity at the MVRWRF. The proposed project would not require the construction of new wastewater treatment facilities or expansion of existing facilities, which could cause significant environmental effects. Therefore, impacts associated with wastewater facilities would be less than significant and no mitigation is required.

¹ 5.13 *Public Services and Utilities*, City of Moreno Valley General Plan Final EIR, July 2006.
² Eastern Municipal Water District Moreno Valley Regional Water Reclamation Facility, <http://www.emwd.org/modules/showdocument.aspx?documentid=1423>, website accessed December 21, 2011.
³ 68.3 EDUs × 235 gallons of wastewater per day/1 EDU = 16050.5 gallons of wastewater per day.
⁴ 3.10.b *Regional Water Reclamation Facilities*, West San Jacinto Groundwater Basin Management Plan 2010 Annual Report, Eastern Municipal Water District, June 2011.

4.12.3.6 Significant Impacts

No impacts related to wastewater services or facilities have been identified as significant for the proposed project. However, Section 3 of this EIR indicates that, if the proposed project is constructed prior to the West Ridge project, ProLogis will install the infrastructure necessary to serve its project (e.g., roads, water, and sewer) and will be reimbursed by the City from the West Ridge developer at the time that project is constructed. If the West Ridge project is constructed first, ProLogis will contribute an appropriate amount to the City for a reimbursement account to help off-site improvement costs installed by the West Ridge project that serve the ProLogis project. The timing of improvements shall be coordinated by the City in cooperation with ProLogis and the West Ridge developer. If this is implemented as indicated, there will be no potential significant impacts regarding utility improvements for the proposed project.

4.12.3.7 Cumulative Impacts to Wastewater Facilities

The cumulative area for wastewater-related issues is the MVRWRF service area (Figure 4.12.1). Cumulative population increases and development within the area serviced by the MVRWRF would increase the overall regional demand for wastewater treatment service. The current treatment capacity at the MVRWRF is 16 mgd. Improvements planned for this facility would increase capacity at this facility from 16 mgd to 21 mgd by June 2013. Ultimate expansion of this facility is expected to be 41 mgd. The MVRWRF is expected to have adequate capacity to service the City's wastewater needs through 2030. Any proposed changes to capacity of the MVRWRF or any facility maintained by EMWD are reviewed throughout the year. EMWD has a funding and construction mechanism in place that ensures improvements to EMWD facilities occur in a timely manner. This funding mechanism is referred to as EMWD's Sewer Financial Participation Charge Program. For all new development within the EMWD service area, the Sewer Financial Participation Charge is allocated to assist in the financing of any future collection and disposal facilities and any future sewer treatment plant facilities. Cumulative development would not exceed the capacity of the wastewater treatment system because the MVRWRF would expand as growth occurred.

The proposed project would not have a cumulatively significant impact on wastewater infrastructure because the proposed project would not require the expansion of existing infrastructure; only connections to existing infrastructure would be required by the project. By adhering to the wastewater treatment requirements established by the Santa Ana RWQCB through the NPDES permit, wastewater from the project site that is processed through the MVRWRF would meet established standards. As the wastewater from all development within the service area of the MVRWRF would be similarly treated under the NPDES, no cumulatively significant exceedance of Santa Ana RWQCB wastewater treatment requirements would occur. The proposed project would not result in significant impacts to wastewater treatment or wastewater treatment facilities. The cumulative wastewater generation of the projects listed in Table 3.B is 1,026,488 gallons per day. The MVRWRF planned expansion will increase its capacity from 16 mgd to 21 mgd. The ultimate expansion of the MVRWRF will allow it to process 41 mgd of wastewater. The wastewater generation of the listed cumulative projects represents 4.8 percent of the future capacity of the 2013 expansion and 2.5 percent of the ultimate expansion of the MVRWRF. The projected wastewater generation of the cumulative projects represents a small percentage of the average wastewater capacity and, because there are no projects that would, in combination with the proposed industrial uses, result in any significant impact related to wastewater treatment or cause significant environmental effects, the project will not make a significant contribution to any cumulatively considerable impacts associated with wastewater.

4.13 GLOBAL CLIMATE CHANGE

This section provides a discussion of global climate change, existing regulations pertaining to global climate change, and an analysis of greenhouse gas (GHG) emissions associated with the proposed project located in the City of Moreno Valley, Riverside County. This analysis is based on the *Greenhouse Gas Emissions and Global Climate Change Study* (LSA Associates, Inc., November 2011) prepared for the project and included in Appendix B of this EIR. This section examines the short-term construction and long-term operational impacts and evaluates the effectiveness of measures incorporated as part of the project design.

4.13.1 Existing Setting

Global climate change refers to alterations in weather features which occur across the Earth as a whole, including temperature, wind patterns, precipitation, and storms. Global temperatures are moderated by naturally occurring atmospheric gases, including water vapor, carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). These gases allow solar radiation (sunlight) into the Earth's atmosphere, but prevent radiative heat from escaping, thus warming the Earth's atmosphere. Global climate change attributable to anthropogenic (human) emissions of greenhouse gases (primarily CO₂, CH₄, and N₂O) is currently one of the most important and widely debated scientific, economic, and political issues in the United States.

Gases that trap heat in the atmosphere are often referred to as greenhouse gases, analogous to a greenhouse effect. Greenhouse gases are emitted by both natural processes and human activities. The accumulation of greenhouse gases in the atmosphere regulates the Earth's temperature. Without these natural greenhouse gases, the Earth's temperature would be about 61 degrees Fahrenheit cooler. Emissions from human activities, such as vehicle, natural gas, electricity usage, and water usage have elevated the concentration of these gases in the atmosphere.

Greenhouse gases have varying global warming potential (GWP), which is a measure of how much a given mass of greenhouse gas is estimated to contribute to global warming. It is a relative scale that compares the gas in question (e.g., N₂O and CH₄) to that of the same mass of carbon dioxide. CO₂ is the reference gas with a GWP of 1 and is the baseline unit with which all other greenhouse gases are compared. The carbon dioxide equivalent is most appropriate method of assessing emissions because it gives weight to the GWP of the gas. Table 4.13.A presents a summary of the atmospheric lifetime and GWP of selected gases. The other main greenhouse gases that have been attributed to human activity—methane and nitrous oxides—have GWPs of 21 and 310 teragrams¹ of carbon dioxide equivalent (Tg CO₂ Eq.), respectively.

Table 4.13.A: Global Warming Potential of Selected Gases

Gas	Atmospheric Lifetime (years)	Global Warming Potential (100-year time horizon)
Carbon Dioxide	50-200	1
Methane	12 ± 3	21
Nitrous Oxide	120	310
HFC-23 264		11700
HFC-134a 1	4.6	1300
HFC-152a 1.5		140
PFC: Tetrafluoromethane (CF ₄) 500	00	6500
PFC: Hexafluoromethane (C ₂ F ₆) 100	00	9200
Sulfur Hexafluoride (SF ₆)	3200	23900

Source: Environmental Protection Agency, 2008.

¹ One teragram is equal to one million metric tons.

4.13.1.1 Inventory

This section summarizes the latest information on global, United States, California, and local GHG emission inventories.

Global Emissions. The International Energy Agency (IEA)¹ reports that worldwide emissions of CO₂e totaled 30.6 billion metric tons in 2010, a 5 percent increase over 2009. Global estimates are based on country inventories developed as part of programs of the United Nations Framework Convention on Climate Change (UNFCCC).

United States Emissions. In 2009, the United States emitted approximately 6.6 billion metric tons of CO₂e or approximately 24 tons per year (tpy) per person. Of the six economic sectors nationwide—electric power industry, transportation, industry, agriculture, commercial, and residential—the electric power industry and transportation sectors combined account for approximately 60 percent of the GHG emissions; the majority of the electrical power industry and all of the transportation emissions are generated from direct fossil fuel combustion. Between 1990 and 2009, total United States GHG emissions rose approximately 7.3 percent.²

State of California Emissions. According to California Air Resources Board (CARB) emission inventory estimates, California released approximately 474 million metric tons (MM T)³ of CO₂e emissions in 2008.⁴ This large number is due primarily to the sheer size of California compared to other states. By contrast, California has the fourth lowest per-capita CO₂ emission rate from fossil fuel combustion in the country, due to the success of its energy efficiency and renewable energy programs and commitments that have lowered the State's GHG emissions rate of growth by more than half of what it would have been otherwise.⁵

The CalEPA Climate Action Team stated in its December 2010 report that the composition of gross climate change pollutant emissions in California in 2002 (expressed in terms of CO₂e) was as follows:

- CO₂ accounted for 83.3 percent;
- CH₄ accounted for 6.4 percent;
- N₂O accounted for 6.8 percent; and
- Hydrofluorocarbon (HFC), perfluorocarbon (PFC), and sulfur hexafluoride (SF₆) accounted for 3.5 percent.⁶

The CARB estimates that transportation is the source of approximately 38 percent of the State's GHG emissions in 2004, followed by electricity generation (both in-State and out-of-State) at 23 percent, and industrial sources at 20 percent. The remaining sources of GHG emissions are residential and commercial activities at 9 percent, agriculture at 6 percent, high global warming potential gases at 3 percent, and recycling and waste at 1 percent.⁷

¹ International Energy Agency, <http://www.iea.org>, website accessed December 30, 2011.

² *The 2011 U.S. Greenhouse Gas Inventory Report*, U.S. Environmental Protection Agency, <http://www.epa.gov/climatechange/emissions/usinventoryreport.html>, accessed August 2011.

³ A metric ton is equivalent to approximately 1.1 tons.

⁴ *Greenhouse Gas Inventory Data - 1990 to 2004*, California Air Resources Board, <http://www.arb.ca.gov/cc/inventory/data/data.htm>, website accessed August 2011.

⁵ *Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004 - Final Staff Report*, publication # CEC-600-2006-013-SF, Sacramento, CA, December 22, 2006; and January 23, 2007, update to that report, California Energy Commission, 2007.

⁶ *Climate Action Team Report to Governor Schwarzenegger and the California Legislature*, CalEPA, December 2010.

⁷ California Air Resources Board, <http://www.climatechange.ca.gov/inventory/index.html>, September 2008.

The CARB is responsible for developing the California Greenhouse Gas Emission Inventory. This inventory estimates the amount of GHGs emitted to and removed from the atmosphere by human activities within the State of California and supports the AB 32 Climate Change Program. The CARB's current GHG emission inventory covers the years 2000 through 2008² and is based on fuel use, equipment activity, industrial processes, and other relevant data (e.g., housing, landfill activity, and agricultural lands). The emission inventory estimates are based on the amount of all fuels combusted in the State, which accounts for over 85 percent of the GHG emissions within California.

4.13.1.2 Global Warming

Global warming is the observed increase in the average temperature of the earth's atmosphere and oceans in recent decades. The earth's average near-surface atmospheric temperature rose $0.6 \pm 0.2^\circ$ Celsius ($^\circ\text{C}$) ($1.1 \pm 0.4^\circ$ Fahrenheit [$^\circ\text{F}$]) in the 20th century. The prevailing scientific opinion on climate change is that "most of the warming observed over the last 50 years is attributable to human activities."¹ The increased amounts of CO₂ and other GHGs are the primary causes of the human-induced component of warming. They are released by the burning of fossil fuels, land clearing, and agriculture, etc., and lead to an increase in the GHG effect.

4.13.1.3 Effects of Global Warming

Effects from global climate change may arise from temperature increases, climate-sensitive diseases, extreme events, and air quality. There may be direct temperature effects through increases in average temperature leading to more extreme heat waves and less extreme cold spells. Those living in warmer climates are likely to experience more stress and heat-related problems. Heat-related problems include heat rash and heat stroke. In addition, climate-sensitive diseases may increase, such as those spread by mosquitoes and other disease-carrying insects. Such diseases include malaria, dengue fever, yellow fever, and encephalitis. Extreme events such as flooding and hurricanes can displace people and agriculture, which would have negative consequences. Global warming may also contribute to air quality problems from increased frequency of smog and particulate air pollution. Table 4.13.B lists greenhouse gases, the effects of each greenhouse gas, and sources for each of the greenhouse gases.

Additionally, according to the 2006 California Climate Action Team (CAT) Report,² the following climate change effects, which are based on trends established by the United Nations Intergovernmental Panel on Climate Change (IPCC), can be expected in California over the course of the next century:

- A diminishing Sierra snowpack declining by 70 percent to 90 percent, threatening the state's water supply;
- Increasing temperatures from 8 to 10.4 $^\circ$ F under the higher emission scenarios, leading to a 25 percent to 35 percent increase in the number of days ozone pollution levels are exceeded in most urban areas;
- Increased vulnerability of forests due to pest infestation and increased temperatures;
- Increased electricity demand, particularly in the hot summer months; and
- Increased ground-level ozone formation due to higher reaction rates of ozone-precursors.

Changes in climate have the potential to affect fire regimes, especially in areas where climate, and not fuel, tends to be the limiting factor. A number of studies have been conducted on the likely effects of climate change on present-day fire regimes. In temperate regions, including the western United

¹ Intergovernmental Panel on Climate Change, *Climate Change 2001: The Scientific Basis*, http://www.grida.no/climate/ipcc_tar/wg1/index.htm.

² California Environmental Protection Agency, *Climate Action Team Report to Governor Schwarzenegger and the Legislature*, March 2006.

Table 4.13.B: Greenhouse Gas Properties, Effects, and Sources

Constituent	Description and Physical Properties	Health Effects	Sources
Water Vapor	Water vapor (H ₂ O) is the most abundant, important, and variable greenhouse gas in the atmosphere. Water vapor is not considered a pollutant; in the atmosphere it maintains a climate necessary for life. Changes in its concentration are primarily considered to be a result of climate feedbacks related to the warming of the atmosphere rather than a direct result of industrialization.	There are no health effects from water vapor. When some pollutants come in contact with water vapor, they can dissolve and then the water vapor can be a transport mechanism to enter the human body.	The main source of water vapor is evaporation from the oceans (approximately 85%). Other sources include evaporation from other water bodies, sublimation (change from solid to gas) from sea ice and snow, and transpiration from plant leaves.
Carbon Dioxide	Carbon dioxide (CO ₂) is an odorless, colorless natural greenhouse gas.	Outdoor levels of carbon dioxide are not high enough to result in negative health effects.	Carbon dioxide is emitted from natural and anthropogenic (human) sources. Natural sources include the following: decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources are from burning coal, oil, natural gas, and wood.
Methane	Methane (CH ₄) is an extremely effective absorber of radiation, though its atmospheric concentration is less than carbon dioxide and its lifetime in the atmosphere is brief (10–12 years) compared to other greenhouse gases.	There are no health effects from methane.	Methane has both natural and anthropogenic sources. It is released as part of the biological processes in low oxygen environments, such as in swamps and in rice production (at the roots of the plants). Over the last 50 years, human activities such as growing rice, raising cattle, using natural gas, and mining coal have added to the atmospheric concentration of methane. Other anthropogenic sources include fossil-fuel combustion and biomass burning.
Nitrous Oxide	Nitrous oxide (N ₂ O), also known as laughing gas, is a colorless greenhouse gas.	Nitrous oxide can cause dizziness, euphoria, and sometimes slight hallucinations. In small doses it is harmless. In some cases, heavy and extended use can cause Olney's Lesions (brain damage).	Concentrations of nitrous oxide also began to rise at the beginning of the industrial revolution. In 1998, the global concentration was 314 ppb. Nitrous oxide is produced by microbial processes in soil and water, including those reactions which occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. It is used as a aerosol spray propellant, e.g., in whipped cream bottles. It is also used in potato chip bags to keep chips fresh. It is used in rocket engines and in race cars.

Table 4.13.B: Greenhouse Gas Properties, Effects, and Sources

Constituent	Description and Physical Properties	Health Effects	Sources
Chloro-fluorocarbons	Chlorofluorocarbons (CFCs) are gases formed synthetically by replacing all hydrogen atoms in methane or ethane (C ₂ H ₆) with chlorine and/or fluorine atoms. CFCs are non-toxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth's surface).	In confirmed indoor locations, working with CFC-113 or other CFCs is thought to have resulted in death by cardiac arrhythmia (heart frequency too high or too low) or asphyxiation.	CFCs have no natural source, but were first synthesized in 1928. They were used for refrigerants, aerosol propellants, and cleaning solvents. Due to the discovery that they are able to destroy stratospheric ozone, a global effort to halt their production was undertaken and was extremely successful, so much so that levels of the major CFCs are now remaining level or declining. However, their long atmospheric lifetimes mean that some of the CFCs will remain in the atmosphere for over 100 years.
Hydro-fluorocarbons	Hydrofluorocarbons (HFCs) are synthetic man-made chemicals that are used as a substitute for CFCs. Out of all the greenhouse gases, they are one of three groups with the highest global warming potential. Prior to 1990, the only significant emissions were HFC-23. HFC-134a use is increasing due to its use as a refrigerant.	None.	HFCs are man-made for applications such as automobile air conditioners and refrigerants.
Per-fluorocarbons	Perfluorocarbons (PFCs) have stable molecular structures and do not break down through the chemical processes in the lower atmosphere. Because of this, PFCs have very long lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane (CF ₄) and hexafluoroethane (C ₂ F ₆).	None.	The two main sources of PFCs are primary aluminum production and semiconductor manufacture.
Sulfur Hexafluoride	Sulfur hexafluoride (SF ₆) is an inorganic, odorless, colorless, nontoxic, nonflammable gas. It also has the highest GWP of any gas evaluated, 23,900. Concentrations in the 1990's were about 4 ppt.	In high concentrations in confined areas, the gas presents the hazard of suffocation because it displaces the oxygen needed for breathing.	Sulfur hexafluoride is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.
Aerosols	Aerosols are particles emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light. Cloud formation can also be affected by aerosols.	Similar health effects associated with particulate matter.	Sulfate aerosols are emitted when fuel containing sulfur is burned. Another source of aerosols (in the form of black carbon or soot) is the result of incomplete combustion or the incomplete burning of fossil fuels. Although particulate matter regulation has been lowering aerosol concentrations in the United States, global concentrations are likely increasing as a result of other sources around the world.

Source: LSA Associates, Inc. November 2011

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States, there is a possibility that increased temperature would extend typical fire seasons, with more fires occurring earlier and later in a given year. There is also a possibility that global warming would foster the creation of faster, hotter fires that would be more difficult to contain and therefore affect larger areas potentially leading to increases in both the annual area burned and the number of potential catastrophic fires. Although the effects will vary considerably among different ecosystems types, the total area burned will likely increase in some regions. Other factors such as levels of carbon dioxide in the atmosphere may do more than change regimes through weather effects. Greater carbon dioxide availability may also lead to changes in plant growth and decomposition. However, it is important to realize that a single major fire event can have far greater consequences than small changes in temperature or rainfall over a period of decades. Similarly, the year-to-year and seasonal variations can be far greater than the small gradual changes of long-term climate change. The process of climate change is also thought to lead to a rise in average global temperature, changes in frequency and distribution of precipitation, and variations in the pattern and occurrence of droughts, floods, and sea level rise. Specifically, it is thought that global climate change impacts to the southwest region of the U.S. would result in an increased frequency of intense precipitation events and the increased risk of flash floods. However, no aspect of the current hydrologic practices or modeling is designed to specifically detect climate change or its effects on water resources or flooding.¹ In addition, many of the existing hydrologic modeling systems have significant data gaps or are designed to achieve specific accounting goals. As a result, many of the modeling procedures and modeling data is fragmented, poorly integrated, and unable to meet the predictive challenges of a rapidly changing climate.

Without reliable data to assess impacts of flooding associated with global climate change to any degree of specificity, it is not possible to discern the extent to which the flooding area would change or the frequency at which flooding would occur. Regardless of the potential for an increase in flood events, development in the existing flood areas are already designed to limit impacts to flood-related events. These design features include the use of materials resistant to flood damage, the placement of drainage paths around structures to guide floodwaters around and away from proposed structures, and the placement of the lowest floor of any structure at or above the base flood elevation.

4.13.2 Regulatory Setting

4.13.2.1 Federal Regulations/Standards

Federal Regulation of Climate Change. Climate change and GHG reduction are also concerns at the Federal level; however, at this time, no Federal legislation or regulations have been enacted specifically addressing GHG emissions reductions and climate change. On December 7, 2009, the EPA Administrator signed two distinct findings regarding greenhouse gases under Section 202(a) of the Clean Air Act:

- *Endangerment Finding:* The Administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases—CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆—in the atmosphere threaten the public health and welfare of current and future generations.
- *Cause or Contribute Finding:* The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution, which threatens public health and welfare.

These findings do not themselves impose any requirements on industry or other entities. However, this action is a prerequisite to finalizing the EPA's proposed greenhouse gas emission standards for light-duty vehicles, which were jointly proposed by EPA and the USDOT's National Highway Safety Administration on September 15, 2009.²

¹ *Scientific Assessment of the Effects of Global Change on the United States*, Committee on Environment and Natural Resources, National Science and Technology Council, May 2008.

² <http://www.epa.gov/climatechange/endangerment.html>.

4.13.2.2 State Regulations/Standards

Assembly Bill 1493 (AB 1493). In 2002, Governor Grey Davis signed AB 1493, which required the CARB to develop and adopt, by January 1, 2005, regulations that achieve “the maximum feasible reduction of greenhouse gases emitted by passenger vehicles and light-duty truck and other vehicles determined by the CARB to be vehicles whose primary use is noncommercial personal transportation in the State.”

Executive Order S-3-05. Executive Order S-3-05 was signed by Governor Schwarzenegger in 2005 proclaiming California is vulnerable to the impacts of climate change. It states that increased temperatures could reduce the Sierra Nevada’s snowpack, worsen California’s air quality problems, and potentially cause a rise in sea levels. The Executive Order establishes total GHG emission targets including emissions reductions to the 2000 level by 2010, and the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

Assembly Bill 32 (AB 32). In September 2006, Governor Schwarzenegger signed Assembly Bill 32 (AB 32), the California Global Warming Solutions Act of 2006. AB 32 directs the CARB to implement regulations for a cap on sources or categories of sources of GHG emissions. The bill requires that the CARB develop regulations to reduce emissions with an enforcement mechanism to ensure that the reductions are achieved, and to disclose how it arrives at the cap. It also includes conditions to ensure businesses and consumers are not unfairly affected by reductions.

AB 32 requires the CARB to:

- Adopt a list of discrete early action measures by July 1, 2007, that can be implemented before January 1, 2010;
- Establish a statewide GHG emissions cap for 2020 based on 1990 emissions and adopt mandatory reporting rules for significant sources of GHG by January 1, 2008;
- Indicate how emission reductions will be achieved from significant GHG sources via regulations, market mechanisms and other actions by January 1, 2009; and
- Adopt regulations by January 1, 2011, to achieve the maximum technologically feasible and cost-effective reductions in GHG, including provisions for using both market mechanisms and alternative compliance mechanisms.

AB 32 codifies Executive Order S-3-05’s¹ year 2020 goal by requiring that statewide GHG emissions be reduced to 1990 levels by the year 2020. This reduction will be accomplished through an enforceable statewide cap on GHG emissions that will be implemented no later than January 1, 2012. To effectively implement the cap, AB 32 directs the CARB to develop appropriate regulations and establish a mandatory reporting system to track and monitor global warming emissions levels.

Senate Bill 97 (SB 97). As directed by SB 97, the Natural Resources Agency adopted Amendments to the *CEQA Guidelines* for greenhouse gas emissions on December 30, 2009. On February 16, 2010, the Office of Administrative Law approved the Amendments, and filed them with the Secretary of State for inclusion in the California Code of Regulations. The Amendments became effective on March 18, 2010. Changes to the guidelines include new questions in Appendix G regarding Greenhouse Gas Emissions and major changes to the Transportation/Traffic checklist questions (Appendix A-3, *CEQA Guidelines* changes).

¹ Executive Order S-3-05 establishes greenhouse gas emission reduction targets for California.

Senate Bill 375. SB 375 was signed into law on October 1, 2008. SB 375 provides emissions-reduction goals around which regions can plan, integrating disjointed planning activities, and provides incentives for local governments and developers to follow new conscientiously planned growth patterns.

4.13.2.3 City of Moreno Valley General Plan Policies

Although the City of Moreno Valley General Plan does not include any specific GHG or climate change policies or goals, a number of the goals, objectives, policies, and programs identified in the air quality (Chapter 6 – Safety) and energy (Chapter 7 – Conservation) elements will result in an indirect reduction in GHG emissions through reductions in vehicle trips, vehicle miles traveled, and energy use. The specific policies of the General Plan that are relevant to the proposed project are as follows:

Air Quality Chapter:

Objective 6.6 Promote land use patterns that reduce daily automotive trips and reduce trip distance for work, shopping, school, and recreation.

Policy 6.6.1 Provide sites for new neighborhood commercial facilities within close proximity to the residential areas they serve.

Policy 6.6.2 Provide multi-family residential development sites in close proximity to neighborhood commercial centers in order to encourage pedestrian instead of vehicular travel.

Policy 6.6.3 Locate neighborhood parks in close proximity to the appropriate concentration of residents in order to encourage pedestrian and bicycle travel to local recreation areas.

Objective 6.7 Reduce mobile and stationary source air pollution emissions.

Policy 6.7.1 Cooperate with regional efforts to establish and implement regional air quality strategies and tactics.

Policy 6.7.2 Encourage the financing and construction of park-and-ride facilities.

Policy 6.7.3 Encourage express transit service from Moreno Valley to the greater metropolitan areas of Riverside, San Bernardino, Orange, and Los Angeles Counties.

Policy 6.7.4 Locate heavy industrial and extraction facilities away from residential areas and sensitive receptors.

Policy 6.7.5 Require grading activities to comply with the South Coast Air Quality Management District's (SCAQMD) Rule 403 regarding the control of fugitive dust.

Policy 6.7.6 Require building construction to comply with the energy conservation requirements of Title 24 of the California Administrative Code.

Conservation Chapter:

Energy Objective 7.5 Encourage efficient use of energy resources.

Policy 7.5.1 Encourage building, site design, and landscaping techniques that provide passive heating and cooling to reduce energy demand.

Policy 7.5.2 Encourage energy efficient modes of transportation and fixed facilities, including transit, bicycle, equestrian, and pedestrian transportation. Emphasize fuel efficiency in the acquisition and use of City-owned vehicles.

Policy 7.5.3 Locate areas planned for commercial, industrial and multiple family density residential development within areas of high transit potential and access.

Policy 7.5.4 Encourage efficient energy usage in all city public buildings.

Policy 7.5.5 Encourage the use of solar power and other renewable energy systems.

4.13.3 Methodology

The recommended approach for GHG analysis included in Office of Planning and Research (OPR) June 2008 release is to: (1) identify and quantify GHG emissions, (2) assess the significance of the impact on climate change, and (3) if significant, identify alternatives and/or mitigation measures to reduce the impact below a level of significance.¹ The June 2008 OPR guidance provides some additional direction regarding planning documents as follows:

“CEQA can be a more effective tool for GHG emissions analysis and mitigation if it is supported and supplemented by sound development policies and practices that will reduce GHG emissions on a broad planning scale and that can provide the basis for a programmatic approach to project-specific CEQA analysis and mitigation.... For local government lead agencies, adoption of general plan policies and certification of general plan EIRs that analyze broad jurisdiction-wide impacts of GHG emissions can be part of an effective strategy for addressing cumulative impacts and for streamlining later project-specific CEQA reviews.”

Revisions to Appendix G of the *CEQA Guidelines* suggest that the project be evaluated for the following impacts:

- Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?
- Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?

However, despite this, currently neither the CEQA statutes, OPR guidelines, nor the draft proposed changes to the *CEQA Guidelines* prescribes thresholds of significance or a particular methodology for performing an impact analysis; as with most environmental topics, significance criteria are left to the judgment and discretion of the Lead Agency.

4.13.4 Thresholds of Significance

On September 28, 2010, the SCAQMD proposed the following draft-tiered interim GHG significance threshold for development projects:

- **Tier 1** consists of evaluating whether or not the project qualifies for any applicable exemption under CEQA. If the project qualifies for an exemption, no further action is required. If the project does not qualify for an exemption, then it would move to the next tier.
- **Tier 2** consists of determining whether or not the project is consistent with a GHG reduction plan that may be part of a local general plan, for example. The concept embodied in this tier is equivalent to the existing consistency determination requirements in *CEQA Guidelines* Sections 15064(h)(3), 15125(d), or 15152(a). The GHG reduction plan must, at a minimum, comply with AB 32 GHG reduction goals; include an emissions inventory agreed upon by either the CARB or the SCAQMD, have been analyzed under CEQA and have a certified Final CEQA document, and have monitoring and enforcement components. If the proposed project is consistent with the qualifying local GHG reduction plan, it is not significant for GHG emissions. If the project is not consistent with a local GHG reduction plan, there is no approved plan, or the GHG reduction plan does not include all of the components described above, the project would move to Tier 3.
- **Tier 3** establishes a screening significance threshold level to determine significance using a 90 percent GHG emission capture rate. The 90 percent capture rate GHG significance screening level in Tier 3 for stationary sources was derived using the following methodology. Using the SCAQMD's Annual Emission Reporting (AER) Program, the reported annual natural gas

¹ State of California, 2008. Governor's Office of Planning and Research. *CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act Review*. June 19.

consumption for 1,297 permitted facilities for 2006 through 2007 was compiled and the facilities were rank-ordered to estimate the 90th percentile of the cumulative natural gas usage for all permitted facilities. Approximately 10 percent of facilities evaluated comprise more than 90 percent of the total natural gas consumption, which corresponds to 10,000 MTCO₂e/yr (the majority of combustion emissions comprise CO₂). The SCAQMD suggested the following GHG screening thresholds: Industrial (when SCAQM District is the Lead Agency): 10,000 tpy CO₂e; Residential: 3,500 tpy CO₂e; Commercial: 1,400 tpy CO₂e; Mixed-use: 3,000 tpy CO₂e. If a project's GHG emissions exceed the GHG screening threshold, the project would move to Tier 4.

- **Tier 4** establishes a decision tree approach that includes compliance options for projects that have incorporated design features into the project and/or implement GHG mitigation measures.
 - Efficiency Target (2020 Targets)
 - 4.8 metric tons (mt) CO₂e per SP for project level threshold (land use emissions only) and total residual emissions not to exceed 25,000 metric tons per year (mt) CO₂e.
 - 6.6 mt CO₂e per SP for plan level threshold (all sectors).
 - Efficiency Target (2035 Targets)
 - 3.0 mt CO₂e per SP for project level threshold.
 - 4.1 mt CO₂e per SP for plan level threshold.

If a project fails to meet any of these emission efficiency targets, the project would move to Tier 5.

- **Tier 5** would require projects that implement off-site GHG mitigation that includes purchasing offsets to reduce GHG emission impacts to purchase sufficient offsets for the life of the project (30 years) to reduce GHG emissions to less than the applicable GHG screening threshold level.

4.13.5 Less than Significant Impacts

The following impacts were identified as less than significant with the implementation of the proposed project.

4.3.5.1 Greenhouse Gas Plan, Policy, Regulation Consistency

Threshold	Would the proposed project conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?
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The CAT and the CARB have developed several reports to achieve the Governor's GHG targets that rely on voluntary actions of California businesses, local government and community groups, and State incentive and regulatory programs. These include the CAT's 2006 "Report to Governor Schwarzenegger and the Legislature," the CARB's 2007 "Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California," and the CARB's "Climate Change Proposed Scoping Plan: a Framework for Change."

The reports identify strategies to reduce California's emissions to the levels proposed in Executive Order S-3-05 and AB 32 (i.e., 29 percent below existing "business as usual" emissions) that are applicable to proposed project. Table 4.3.C presents the applicable Recommended Actions (qualitative measures) identified to date by CARB in its Climate Change Proposed Scoping Plan and whether or not the proposed project is consistent with the applicable Recommended Actions.

Table 4.3.C: Proposed Scoping Plan Recommended Actions for Climate Change

ID No.	Sector	Strategy Name	Applicable to Project?	Will Project Conflict with Implementation?
T-1	Transportation	Pavley I and II – Light-Duty Vehicle GHG Standards	Yes No	
T-2	Transportation	Low Carbon Fuel Standard (Discrete Early Action)	Yes No	
T-3	Transportation	Regional Transportation-Related GHG Targets	No No	
T-4	Transportation	Vehicle Efficiency Measures	Yes	No
T-5	Transportation	Ship Electrification at Ports (Discrete Early Action)	No No	
T-6 T	Transportation	Goods-movement Efficiency Measures	Yes No	
T-7	Transportation	Heavy Duty Vehicle Greenhouse Gas Emission Reduction Measure: Aerodynamic Efficiency (Discrete Early Action)	Yes No	
T-8	Transportation	Medium and Heavy-Duty Vehicle Hybridization	Yes No	
T-9	Transportation	High Speed Rail	No	No
E-1 Electricity and Natural Gas		Increased Utility Energy Efficiency Programs: More Stringent Building and Appliance Standards	Yes No	
E-2 Electricity and Natural Gas		Increased Combined Heat and Power Use by 30,000 GWh	No No	
E-3 Electricity and Natural Gas		Renewable Portfolio Standard	Yes	No
E-4 Electricity and Natural Gas		Million Solar Roofs	No	No
CR-1 Electricity and Natural Gas		Energy Efficiency	Yes	No
CR-2 Electricity and Natural Gas		Solar Water Heating	Yes	No
GB-1	Green Buildings	Green Buildings	Yes	No
W-1	Water	Water Use Efficiency	Yes	No
W-2 Water		Water Recycling	No	No
W-3	Water	Water System Energy Efficiency	No	No
W-4	Water	Reuse Urban Runoff	No	No
W-5	Water	Increase Renewable Energy Production	No No	
W-6	Water	Public Goods Charge (Water)	No	No
I-1	Industry	Energy Efficiency and Co-Benefits Audits for Large Industrial Sources	No No	
I-2	Industry	Oil and Gas Extraction GHG Emission Reduction	No No	
I-3	Industry	GHG Leak Reduction from Oil and Gas Transmission	No No	
I-4	Industry	Refinery Flare Recovery Process Improvements	No No	
I-5	Industry	Removal of Methane Exemption from Existing Refinery Regulations	No No	

Table 4.3.C: Proposed Scoping Plan Recommended Actions for Climate Change

ID No.	Sector	Strategy Name	Applicable to Project?	Will Project Conflict with Implementation?
RW-1	Recycling and Waste Management	Landfill Methane Control (Discrete Early Action)	No	No
RW-2	Recycling and Waste Management	Additional Reduction in Landfill Methane – Capture Improvements	No	No
RW-3	Recycling and Waste Management	High Recycling/Zero Waste	Yes	No
F-1	Forestry	Sustainable Forest Target	No	No
H-1	High Global Warming Potential Gases	Motor Vehicle Air Conditioning Systems (Discrete Early Action)	No	No
H-2	High Global Warming Potential Gases	SF ₆ Limits in Non-Utility and Non-Semiconductor Manufacturing (Discrete Early Action)	No	No
H-3	High Global Warming Potential Gases	Reduction in Perfluorocarbons in Semiconductor Manufacturing (Discrete Early Action)	No	No
H-4	High Global Warming Potential Gases	Limit High GWP Use in Consumer Products (Discrete Early Action, Adopted June 2008)	No	No
H-5	High Global Warming Potential Gases	High GWP Reduction from Mobile Sources	No	No
H-6	High Global Warming Potential Gases	High GWP Reductions from Stationary Sources	No	No
H-7	High Global Warming Potential Gases	Mitigation Fee on High GWP Gases	No	No
A-1	Agriculture	Methane Capture at Large Dairies	No	No

Source: LSA Associates, Inc. November 2011.

As identified in Table 4.3.C, of the 39 Recommended Actions, the applicable Recommended Actions are those that are within the Transportation, Electricity and Natural Gas, Green Buildings, and Water sectors.

Applicable Recommended Actions in the Transportation sector include Actions T-1, T-2, and T-4. Action T-1 involves improvements to light-duty vehicle technology for the purposes of reducing GHG emissions through focusing on legislating improved controls for vehicle manufacturers. This action would not generally be considered applicable to the proposed project; however, vehicles utilized by the proposed project would be subject to these standards, as applicable, and would be consistent with this action. Action T-2 involves implementation of a low carbon fuel standard. In order to reduce the carbon intensity of transportation fuels, the CARB is developing a Low Carbon Fuel Standard (LCFS), which would reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020 as called for by Governor Schwarzenegger in Executive Order S-01-07. While implementation of this standard is not within the purview of a development project, a land use such as that proposed under the proposed project would be a substantial consumer of fuels for its vehicle fleet. Vehicles utilized by the proposed project would be subject to these standards, as applicable, and would be consistent with this action.

Action T-4 concerns vehicle efficiency measures such as the promotion of sustainable tire practices. The CARB is pursuing a regulation to ensure that tires are properly inflated when vehicles are serviced. In addition, the California Energy Commission (CEC) in consultation with the California Integrated Waste Management Board (CIWMB) is developing an efficient tire program focusing first on data gathering and outreach, then on potential adoption of minimum fuel-efficient tire standards, and on the development of consumer information requirements for replacing tires. While implementation of this standard is not within the purview of a development project, a land use such as that proposed under the proposed project would be a contributor of vehicle miles traveled (VMT). Vehicles utilized by the proposed project would be subject to these standards, as applicable, and would be consistent with this action.

Applicable Recommended Actions in the Energy and Natural Gas sector includes Action E-1. Action E-1, together with Action GB-1 (Green Building), aims to reduce electricity demand by increased efficiency of Utility Energy Programs and adoption of more stringent building and appliance standards. Elements of this action include encouraging construction of zero net energy (ZNE) buildings and implementation of passive solar design. In addition to employing on-site electricity generation, a ZNE building must either replace natural gas use by generating surplus electricity for sale on the State's electricity grid. The proposed project is required to comply with the 2010 Title 24 Energy Efficiency Standards and applicable Green Building Standards; therefore, the proposed project would not conflict with these actions.

The City encourages residents and businesses to utilize solar power to increase use of renewable energy sources. Through a variety of programs and incentives, such as the 2008 Solar Special Program,¹ customers served by Moreno Valley Utility (MVU), MVU customers are encouraged to utilize solar power while helping the City meet its renewable energy goals. For similar projects in the region, the energy purveyor to the project, Southern California Edison (SCE), has rented out the rooftops to harness solar power, which would directly hook into the energy grid. There currently are no plans to install solar panels on the roofs of the proposed project; however, roofs would be designed to support the future installation of solar panels to facilitate the use such rooftops by energy purveyors.

The Leadership in Energy and Environmental Design (LEED) Green Building Rating System is the nationally accepted benchmark for the design, construction, and operation of high-performance green buildings. The LEED rating system encourages and accelerates global adoption of sustainable green building and development practice through the creation and implementation of universally understood and accepted tools and performance criteria. In the United States, buildings use one-third of total energy produced, two-thirds of electricity generated, and one-eighth of the water extracted. The LEED rating system is a voluntary, consensus-based, market-driven building rating system based on existing proven technology. It evaluates environmental performance from a whole building perspective over a building's life cycle. The rating system is organized into five environmental categories: Sustainable Sites, Water Efficiency, Energy and Atmosphere, Materials and Resources, and Indoor Environmental Quality. The rating system is a performance-oriented system where credits are earned for satisfying each criterion. Different levels of green building certification are awarded based on the total credits earned. To earn an LEED certification, the project must satisfy all of the prerequisites and a minimum number of points to attain the established LEED rating.

Based on preliminary LEED certified building design and construction guidelines project data, the proposed project will be a LEED Core and Shell Certified building. LEED for Core and Shell (LEED CS) is a rating system written and administered by the United States Green Building Council. The LEED CS Rating System was developed to serve the speculatively driven development market where project teams routinely do not control all aspects of a building's design and construction. The scope of

¹ The 2008 Solar Special Program gives customers of Moreno Valley Utility a rebate of \$4 for every watt of solar that is installed on the roof of a home or business. The maximum rebated for a commercial, industrial, or governmental installation of solar panels is \$100,000 (system size of 25 kW). The actual amount of the rebate will take into consideration solar panel output, inverter efficiency, and design factors.

LEED CS is limited to those elements of the project under the direct control of the Owner/Developer. As indicated in Table 4.13.D, the proposed project would incorporate various project design features and operational processes that would result in an LEED score of 20 out of a possible 69.

Table 4.13.D: LEED Scoring

Credits and Prerequisites	Feasible or Available?		
	Yes	No	Maybe
Sustainable Sites			
Prerequisite 1: Construction Activity Pollution Prevention	Required		
Credit 1: Site Selection	0	0	1
Credit 2: Development Density and Community Connectivity	0	1	0
Credit 3: Brownfield Redevelopment	0	0	1
Credit 4.1: Alternative Transportation: Public Transportation Access	0	0	1
Credit 4.2: Alternative Transportation: Bicycle Storage & Changing Rooms	0	0	1
Credit 4.3: Alternative Transportation: Low-Emission and Fuel-Efficient Vehicles	1	0	0
Credit 4.4: Alternative Transportation: Parking Capacity	1	0	0
Credit 5.1: Site Development: Protect or Restore Habitat	0	1	0
Credit 5.2: Site Development: Maximize Open Space	0	1	0
Credit 6.1: Storm Water Design: Quantity Control	0	0	1
Credit 6.2: Storm Water Design: Quality Control	0	0	1
Credit 7.1: Heat Island Effect, Non-Roof	0	0	1
Credit 7.2: Heat Island Effect, Roof	1	0	0
Credit 8: Light Pollution Reduction	0	0	1
Credit 9: Tenant Design & Construction Guidelines	1	0	0
Water Efficiency			
Credit 1.1: Water Efficient Landscaping: Reduce by 50%	1	0	0
Credit 1.2: Water Efficient Landscaping: No Potable Use or No Irrigation	0	0	1
Credit 2: Innovative Wastewater Technologies	0	0	1
Credit 3.1: Water Use Reduction: 20% Reduction	1	0	0
Credit 3.2: Water Use Reduction: 30% Reduction	0	0	1
Energy and Atmosphere			
Prerequisite 1: Fundamental Commissioning of the Building Energy Systems.	Required		
Prerequisite 2: Minimum Energy Performance	Required		
Prerequisite 3: Fundamental Refrigerant Management	Required		
Credit 1: Optimize Energy Performance	3	2	3
Credit 2: On-site Renewable Energy	0	0	3
Credit 3: Enhanced Commission	0	0	1
Credit 4: Enhanced Refrigeration Management	1	0	0
Credit 5.1: Measurement & Verification – Base Building	0	0	1
Credit 5.2: Measurement & Verification – Tenant Sub-meeting	0	0	1
Credit 6: Green Power	0	0	1
Mineral Resources			
Prerequisite 1: Storage & Collection of Recyclables	Required		
Credit 1.1: Building Reuse: Maintain 25% of Existing walls, Floor & Roof	0	1	0
Credit 1.2: Building Reuse: Maintain 50% of Existing walls, Floors & Roof	0	1	0
Credit 1.3: Building Reuse: Maintain 75% of Interior Non-Structural Elements	0	1	0

Table 4.13.D: LEED Scoring

Credits and Prerequisites	Feasible or Available?		
	Yes	No	Maybe
Credit 2.1: Construction Waste Management: Divert 50% from Disposal	1	0	0
Credit 2.2: Construction Waste Management: Divert 75% from Disposal	1	0	0
Credit 3: Material Reuse: 1%	0	1	0
Credit 4.1: Recycled Content: 10% (post-consumer + ½ pre-consumer)	1	0	0
Credit 4.2: Recycled Content: 20% (post-consumer + ½ pre-consumer)	0	0	1
Credit 5.1: Regional Materials: 10% Extracted, Processed & Manufactured Region	1	0	0
Credit 5.2: Regional Materials: 20% Extracted, processed & Manufactured Region	0	0	1
Credit 6: Certified Wood	0	0	1
Indoor Environmental Quality			
Prerequisite 1: Minimum Indoor Air Quality (IAQ) Performance	Required		
Prerequisite 2: Environmental Tobacco Smoke (ETS) Control	Required		
Credit 1: Outdoor Air Delivery Monitoring	0	0	1
Credit 2: Increased Ventilation	0	0	1
Credit 3: Construction IAQ Management Plan: During Construction	1	0	0
Credit 4.1: Low-Emitting Materials: Adhesives & Sealants	1	0	0
Credit 4.2: Low-Emitting Materials: Paints & Coatings	1	0	0
Credit 4.3: Low-Emitting Materials: Carpet System	1	0	0
Credit 4.4: Low-Emitting Materials: Composite Wood & Agrifiber Products	0	0	1
Credit 5: Indoor Chemical & Pollutant Source Control	0	0	1
Credit 6: Controllability of Systems: Thermal Comfort	0	0	1
Credit 7: Thermal Comfort: Design	0	0	1
Credit 8.1: Daylight & Views: Daylight 75% of Spaces	0	0	1
Credit 8.2: Daylight & Views for 90% of Spaces	0	0	1
Innovation & Design Process			
Credit 1.1: Innovation in Design: Provide Specific Title	1	0	0
Credit 1.2: Innovation in Design: Provide Specific Title	0	0	1
Credit 1.3: Innovation in Design: Provide Specific Title	0	0	1
Credit 1.4: Innovation in Design: Provide Specific Title	0	0	1
Credit 2: LEED Accredited Professional	1	0	0
Totals:	20	9	35

Source: ProLogis, 2010

Applicable Recommended Actions in the Water sector includes Action W-1. Action W-1, Water Use Efficiency, involves the reduction in the energy consumption used to convey, treat, distribute, and use water and wastewater. Increasing the efficiency of water transport and reducing water use would reduce GHG emissions. The proposed project would install water-efficient fixtures and appliances and would not conflict with this action.

GHG emissions reduction strategies were also set forth in the 2006 CAT Report, and the strategies included in the CAT Report that apply to the project are contained in Table 4.13.E, which also summarizes the extent to which the project would comply with the strategies to help California reach the emission reduction targets. The strategies listed in Table 4.13.E are addressed as either part of the project, required mitigation measures, or requirements under local or State ordinances.

Table 4.13.E: Project Compliance with Greenhouse Gas Emission Reduction Strategies

Strategy	Project Compliance
Mandatory Code	
<p>California Green Building Code. The Cal Green Code prescribes a wide array of measures that would result directly and indirectly in reduction of GHG emissions from the Business as Usual Scenario (CBC). The mandatory measures that are applicable to nonresidential projects include site selection, energy efficiency, water efficiency, materials conservation and resource efficiency, and environmental quality measures.</p>	<p>Compliant. The project would be required to adhere to the nonresidential mandatory measures as required by the Cal Green Code.</p>
Energy Efficiency Measures	
<p>Energy Efficiency. Maximize energy efficiency by building and appliance standards, and pursue additional efficiency efforts including new technologies, and new policy and implementation mechanisms. Pursue comparable investment in energy efficiency from all retail providers of electricity in California (including both investor-owned and publicly owned utilities).</p>	<p>Compliant with Mitigation Incorporated. The proposed project will comply with the updated Title 24 standards, including the new 2010 CBC, for building construction if any building interior improvements are required. In addition, the project would be required to comply with the requirements of Mitigation Measure 4.13.6.1, identified later, including measures to incorporate energy efficient building design features.</p>
<p>Renewables Portfolio Standard. Achieve a 33% renewable energy mix statewide.</p>	
<p>Green Building Strategy. Expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings.</p>	
Water Conservation and Efficiency Measures	
<p>Water Use Efficiency. Continue efficiency programs and use cleaner energy sources to move and treat water. Approximately 19% of all electricity, 30% of all natural gas, and 88 million gallons of diesel are used to convey, treat, distribute and use water and wastewater. Increasing the efficiency of water transport and reducing water use would reduce GHG emissions.</p>	<p>Compliant with Mitigation Incorporated. The project would be required to comply with the requirements of Mitigation Measure 4.13.6.1, identified later, including measures to increase water use efficiency.</p>
Solid Waste Reduction Measures	
<p>Increase Waste Diversion, Composting, and Commercial Recycling, and Move Toward Zero-Waste. Increase waste diversion from landfills beyond the 50 percent mandate to provide for additional recovery of recyclable materials. Composting and commercial recycling could have substantial GHG reduction benefits. In the long term, zero waste policies that would require manufacturers to design products to be fully recyclable may be necessary.</p>	<p>Compliant with Mitigation Incorporated. Data available from the California Integrated Waste Management Board indicates that the City of Moreno Valley has not achieved the 50 percent diversion rate. The proposed project would be required to comply with Mitigation Measure 4.13.6.1, identified later, including measures to increase solid waste diversion and recycling.</p>
Transportation and Motor Vehicle Measures	
<p>Regional Transportation-Related Greenhouse Gas Targets. Develop regional GHG emissions reduction targets for passenger vehicles. Local governments will play a significant role in the regional planning process to reach passenger vehicle GHG emissions reduction targets. Local governments have the ability to directly influence both the siting and design of new residential and commercial developments in a way that reduces GHGs associated with vehicle travel.</p>	<p>Compliant. Specific regional emission targets for transportation emissions do not directly apply to this project; regional GHG reduction target development is outside the scope of this project. The project will comply with any plans developed by the City.</p>

Table 4.13.E: Project Compliance with Greenhouse Gas Emission Reduction Strategies

Strategy	Project Compliance
<p>Vehicle Climate Change Standards. AB 1493 (Pavley) required the State to develop and adopt regulations that achieve the maximum feasible and cost effective reduction of GHG emissions from passenger vehicles and light-duty trucks. Regulations were adopted by the CARB in September 2004.</p>	<p>Compliant. The project does not involve the manufacture of vehicles. However, vehicles that are purchased and used within the project site would comply with any vehicle and fuel standards that the CARB adopts.</p>
<p>Light-Duty Vehicle Efficiency Measures. Implement additional measures that could reduce light-duty GHG emissions. For example, measures to ensure that tires are properly inflated can both reduce GHG emissions and improve fuel efficiency.</p>	
<p>Adopt Heavy- and Medium-Duty Fuel and Engine Efficiency Measures. Regulations to require retrofits to improve the fuel efficiency of heavy-duty trucks that could include devices that reduce aerodynamic drag and rolling resistance. This measure could also include hybridization of an increased engine efficiency of vehicles.</p>	
<p>Low Carbon Fuel Standard. The CARB identified this measure as a Discrete Early Action Measure. This measure would reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020.</p>	
<p>Measures to Reduce High Global Warming Potential Gases. The CARB has identified Discrete Early Action measures to reduce GHG emissions from the refrigerants used in car air conditioners, semiconductor manufacturing, and consumer products. The CARB has also identified potential reduction opportunities for future commercial and industrial refrigeration, changing the refrigerants used in auto air conditioning systems, and ensuring that existing car air conditioning systems do not leak.</p>	<p>Compliant. New products used or serviced on the project site (after implementation of the reduction of GHG gases) would comply with future CARB rules and regulations.</p>

AB = Assembly Bill
GHG = Greenhouse Gas

CARB = California Air Resources Board

CBC = California Building Code

Source: LSA Associates, Inc., November 2011.

As previously identified, implementation of the proposed project could result in the development of approximately 2,244,638 square feet of distribution warehouse uses. The proposed project includes a variety of physical attributes and operational programs that would generally contribute to a reduction in operational-source pollutant emissions including GHG emissions. As identified in Table 4.3.E, future development that would occur under the proposed project would be consistent with greenhouse gas emission reduction strategies and policies. The project would implement appropriate GHG reduction strategies and would ensure that it does not conflict with or impede implementation of reduction goals identified in AB 32, Governor's Executive Order S-3-05, and other strategies to help reduce GHGs to the level proposed by the Governor. In addition, the project would also be subject to all applicable regulatory requirements, which would also reduce the GHG emissions of the project. Therefore, the proposed project would not conflict with any applicable plan, program, policy, or regulation related to the reduction of GHG emissions. Impacts are considered less than significant.

4.13.6 Significant Impacts

4.13.6.1 Greenhouse Gas Emissions

Threshold	Would the proposed project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
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Future development that could occur within the proposed project site could generate GHG emissions during construction and operation activities. It is anticipated that the majority of energy consumption (and associated generation of GHG emissions) would occur during the project's operation (as opposed to its construction). Typically, more than 80 percent of the total energy consumption takes place during the use of buildings and less than 20 percent is consumed during construction.¹ As of yet, there is no study that quantitatively assesses all of the GHG emissions associated with each phase of the construction and use of an individual development.

The following activities are associated with the proposed project and could contribute directly or indirectly to the generation of GHG emissions:

- **Removal of Vegetation:** The net removal of vegetation for construction results in a loss of the carbon sequestration in plants. However, planting of additional vegetation would result in additional carbon sequestration and would lower the carbon footprint of the project.
- **Construction Activities:** During construction of the project, GHGs would be emitted through the operation of construction equipment and from worker and builder supply vendor vehicles, each of which typically uses fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs such as CO₂, CH₄, and N₂O.
- **Gas, Electric, and Water Use:** Natural gas use results in the emissions of two GHGs: CH₄ (the major component of natural gas) and CO₂ from the combustion of natural gas. Electricity use can result in GHG production if the electricity is generated by combusting fossil fuel. California's water conveyance system is energy-intensive. Preliminary estimates indicate that the total energy used to pump and treat this water exceeds 6.5 percent of the total electricity used in the State per year.²
- **Solid Waste Disposal:** Solid waste generated by the project could contribute to GHG emissions in a variety of ways. Landfilling and other methods of disposal use energy for transporting and managing the waste, and they produce additional GHGs to varying degrees. Landfilling, the most common waste management practice, results in the release of CH₄ from the anaerobic decomposition of organic materials. CH₄ is 25 times more potent than CO₂. However, landfill CH₄ can also be a source of energy. In addition, many materials in landfills do not decompose fully, and the carbon that remains is sequestered in the landfill and not released into the atmosphere.
- **Motor Vehicle Use:** Transportation associated with the proposed project would result in GHG emissions from the combustion of fossil fuels in daily automobile and truck trips.

The proposed project was analyzed using the SCAQMD CalEEMod model for the potential construction of the project's proposed land uses, water, sewer, and drainage infrastructure, and roadways. Implementation of the proposed project would result in the development of approximately 2,244,638 square feet of distribution warehouse uses. Table 4.3.F provides the GHG emissions that could be generated during construction activities on the project site. The total GHG emissions over the entire construction process are expected to be 2,700 metric tons.

¹ United Nations Environment Programme (UNEP), 2007. *Buildings and Climate Change: Status, Challenges and Opportunities*. Paris, France.

² *Water-Energy Sector Summary AB 32 Scoping Plan GHG Emission Reduction Strategies*, http://climatechange.ca.gov/climate_action_team/reports/CAT_subgroup_reports/Water_Sector_Summary_and_Analyses.pdf, Climate Change Action Team, website accessed December 30, 2011.

Table 4.3.F: Short-Term Regional Greenhouse Gas Construction Emissions

Construction Phase	Total Regional Pollutant Emissions, metric tons/year					
	Bio-CO ₂	NBio-CO ₂	Total-CO ₂	CH ₄	N ₂ O	CO ₂ e
Site Preparation	0	67	67	0.01	0	67
Grading 0		221	221	0.02	0	222
Building Construction	0	1,884	1,884	0.1	0	1,886
Architectural Coating	0	174	174	0.01	0	174
Paving 0		77	77	0.01	0	77

Bio-CO₂ = biologically generated CO₂
CH₄ = methane
CO₂ = carbon dioxide

NBio-CO₂ = non-biologically generated CO₂
CO₂e = carbon dioxide equivalent
N₂O = nitrous oxide

Source: Table E, LSA Associates, Inc., November 2011.

GHG emissions that could be generated on the proposed project site would occur over the short term from construction activities, consisting primarily of emissions from equipment exhaust. There would also be long-term regional emissions associated with project-related vehicular trips and stationary source emissions, such as natural gas used for heating. The results presented below in Table 4.3.G, include operational emissions in terms of CO₂ (both biologically and non-biologically generated), CH₄, N₂O, and an annual carbon dioxide equivalent (CO₂e) GHG emissions from increased energy consumption, water usage, solid waste disposal, and estimated GHG emissions from vehicular traffic that could result from the development of the project site. Calculations and CalEEMod run sheets for GHG emissions are provided in Appendix B of this EIR.

Table 4.3.G: Long-Term Regional Greenhouse Gas Operational Emissions

Emissions	Total Regional Pollutant Emissions, metric tons/year					
	Bio-CO ₂	NBio-CO ₂	Total-CO ₂	CH ₄	N ₂ O	CO ₂ e
Construction emissions amortized over 30 years	0	90	90	0.006	0	90
Area 0		0	0	0	0	0
Energy 0		2,200	2,200	0.09004	0	2,200
Mobile 0		66,000	66,000	2.6	0	66,000
Waste 4,900		0	4,900	290	0	11,000
Water 0		110	110	0.91	0.02	140
Total Project Emissions	4,900	68,000	73,000	290	0.06	79,000

Bio-CO₂ = biologically generated CO₂
CH₄ = methane
CO₂ = carbon dioxide

NBio-CO₂ = non-biologically generated CO₂
CO₂e = carbon dioxide equivalent
N₂O = nitrous oxide

Source: Table E, LSA Associates, Inc., November 2011.

Based on a comparison of the proposed project to the SCAQMD tiered interim GHG significance criteria, it is not exempt as described in Tier 1. Considering the Tier 2 criteria, there is not a GHG reduction plan in the Moreno Valley General Plan, nor any other GHG reduction plan applicable to the project. Considering the Tier 3 screening significance threshold level, the most applicable screening threshold listed is the Industrial (even though SCAQMD is not the Lead Agency) at 10,000 tpy CO₂e. The long-term project operational GHG emissions shown in Table 4.3.G exceed this threshold; thus, the project operational GHG emissions are significant.

Previously referenced Table 4.13.E lists strategies that are either part of the project design or a requirements under local or State ordinances. With implementation of these strategies/measures, the project's contribution to cumulative GHG emissions would be reduced. In order to ensure that the proposed project complies with and would not conflict with or impede the implementation of reduction goals identified in AB 32, the Governor's EO S-3-05, and other strategies to help reduce GHGs to the level proposed by the Governor, **Mitigation Measure 4.13.6.1** shall be implemented. Many of the

individual elements of this measure are already included as part of the proposed project or are required as part of project-specific mitigation measures.

Mitigation Measures. Previously referenced **Mitigation Measures 4.3.6.3A** through **4.3.6.3C** were introduced to reduce project air pollution emissions. These measures will also reduce the project's greenhouse gas emissions. To ensure that the proposed project's emissions of GHG are reduced to a less than significant level, and to ensure reductions below the expected "Business As Usual" (BAU) scenario, the following additional mitigation measures shall be implemented.

4.13.6.1A Prior to the issuance of building permits, the project applicant shall provide evidence to the City of Moreno Valley that building features have been incorporated in building plans as required by Title 24 of the California Code of Regulations. These features include but are not limited to the following:

- Exterior windows shall utilize window treatments for efficient energy conservation.
- Per CALGreen Code requirements, water-efficient fixtures and appliances, including but not limited to low-flow faucets, dual-flush toilets minimizing water consumption by 20 percent from the Building Standards Code baseline water consumption shall be used.
- Per CALGreen Code requirements, a Commissioning Plan shall be prepared and all building systems (e.g., heating, ventilation, and air-conditioning [HVAC], irrigation systems, lighting, and water heating) shall be commissioned by the Commissioning Authority.
- Per CALGreen Code, restrict watering methods (e.g., prohibit systems that apply water to non-vegetated surfaces) and control runoff.

4.13.6.1B Prior to the issuance of building permits, the project applicant shall provide evidence to the City of Moreno Valley that the following measures have been incorporated into the design and construction of the project:

- Use locally produced and/or manufactured building materials for at least 10 percent of the construction materials used for the project.
- Use "Green Building Materials," such as those materials that are resource efficient, and recycled and manufactured in an environmentally friendly way, for at least 10 percent of the project.
- Limit unnecessary idling of construction equipment. A reduction in equipment idling would reduce fuel consumption, and therefore, GHG emissions.
- Maximize the use of electricity from the power grid by replacing diesel- or gasoline-powered equipment. This would reduce GHG emissions because electricity can be produced more efficiently at centralized power plants.
- Design the project building to exceed the California Building Code (CBC) Title 24 energy standard, including, but not limited to, any combination of the following:
 - Increase insulation such that heat transfer and thermal bridging is minimized.
 - Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption.
 - Incorporate ENERGY STAR or better rated windows, space heating and cooling equipment, light fixtures, appliances, or other applicable electrical equipment.
- Provide a landscape and development plan for the project that takes advantage of shade, prevailing winds, and landscaping.

- Install efficient lighting and lighting control systems. Use daylight as an integral part of the lighting systems in buildings.
- Install light-colored “cool” roof and cool pavements.
- Install energy-efficient heating and cooling systems, appliances and equipment, and control systems.
- Install solar or light-emitting diodes (LEDs) for outdoor lighting.

4.13.6.1C Prior to the issuance of occupancy permits, the project applicant shall provide evidence to the City of Moreno Valley that the following measures have been incorporated into the operation of the project:

- The project applicant shall use less than 3,900 Global Warming Potential (GWP) hydrofluorocarbon (HFC) refrigerants or natural refrigerants (ammonia, propane, carbon dioxide [CO₂]) for refrigeration and fire suppression equipment.
- Provide vegetative or man-made exterior wall shading devices for east-, south-, and west-facing walls with windows.
- Devise a comprehensive water conservation strategy appropriate for the project and its location. The strategy may include the following, plus other innovative measures that may be appropriate:
 - Install drought-tolerant plants for landscaping.
 - Use reclaimed water for landscape irrigation within the project. Install the infrastructure to deliver and use reclaimed water.
 - Install water-efficient irrigation systems, such as sweat her-based and soil-moisture-based irrigation controllers and sensors for landscaping according to the California Department of Water Resources Model Efficient Landscape Ordinance.
- Provide employee education about reducing waste and available recycling services.

Level of Significance After Mitigation. The mitigation measures identified above would contribute to a reduction in GHG emissions from energy, mobile, and water usage sources. With implementation of the identified mitigation measures, the proposed project’s GHG emissions are reduced. As described above, project-related GHG emissions are not confined to a particular air basin but are dispersed worldwide. Consequently, it is speculative to determine how project-related GHG emissions would contribute to global climate change and how global climate change may affect the State. Therefore, project-related GHG emissions are not project-specific impacts to global warming but are instead the project’s contribution to this cumulative impact. As stated previously, project-related GHG emissions and their contribution to global climate change impacts in the State are less than significant and less than cumulatively considerable because: (1) the project’s impacts alone would not cause or significantly contribute to global climate change, and (2) the project has no substantial effect on consumption of fuels or other energy resources, especially fossil fuels that contribute to GHG emissions when consumed.

4.13.7 Cumulative Impacts

While it is not possible to determine whether the project individually will have a significant impact on global warming or climate change, it will contribute to cumulative greenhouse gas emissions. However, without the necessary science and analytical tools, it is not possible to determine with certainty, whether the project’s emissions of greenhouse gases will be cumulatively considerable, within the meaning of *CEQA Guidelines* Sections 15065(a)(3) and 15130. The CARB is currently in the process of designing regulations to monitor, limit, and ultimately reduce California GHG emissions

but there are as yet no clear standards for assessing the significance of cumulative impacts from projects.

Given the findings of AB 32 and the requirements of CEQA, the Lead Agency must determine whether a project will or will not have a cumulatively considerable contribution. Due to the lack of guidance for determining the significance of cumulative impacts to climate change from projects, and out of an overabundance of caution, the project has been evaluated to determine whether emissions of GHGs have been minimized to the extent feasible with current technology and measures. With implementation of the strategies and programs described in previously referenced Table 4.13.E, the project is consistent with the strategies to reduce California's emissions to the levels proposed in Executive Order S-3-05. Based on the threshold of the project's consistency with the measures contained in Executive Order S-3-05, the project has a less than significant impact as it complies with these measures. Additionally, since climate change is a global issue, it is unlikely that the proposed project would generate enough GHG emissions to influence global climate change on its own. Because the project's impacts alone would not cause or significantly contribute to global climate change, project-related CO₂e emissions and their contribution to global climate change impacts in the State of California would not make a significant contribution to cumulatively considerable GHG emission impacts.

5.0 ADDITIONAL TOPICS REQUIRED BY CEQA

Section 15126 of the *CEQA Guidelines* requires that all aspects of a project must be considered when evaluating its impacts on the environment, including planning, acquisition, development, and operation. As part of this analysis, the EIR must also identify (1) significant environmental effects of the proposed project; (2) significant environmental effects that cannot be avoided if the proposed project is implemented; and (3) growth-inducing impacts.

5.1 SIGNIFICANT ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED IF THE PROPOSED PROJECT IS IMPLEMENTED

Table 5.A illustrates the significant unavoidable impacts anticipated to result from the proposed project, even with implementation of the project-specific mitigation measures identified in the Chapter 4.0 analysis.

Table 5.A: Significant Environmental Effects Which Cannot Be Avoided

Topic	Type of Impact	Impact
Aesthetics	Scenic Vistas	No feasible mitigation is available to mitigate for the direct impacts associated with the loss of existing viewsheds in the area. Therefore, impacts associated with this issue remain significant and unavoidable.
Aesthetics	Scenic Resources and Scenic Highways	No feasible mitigation is available to mitigate for the direct impacts associated with the loss of existing viewsheds from SR-60, which is considered a local scenic road by the City. Therefore, impacts associated with this issue remain significant and unavoidable.
Aesthetics	Substantial degradation of the existing visual character or quality of the site and its surroundings	No feasible mitigation is available to mitigate for the direct impacts associated with the substantial change in visual character from planned residential to industrial uses. Therefore, impacts associated with this issue remain significant and unavoidable.
Aesthetics	Cumulative Aesthetic Impacts	The cumulative effect of development in the region will continue to result in the modification of existing viewsheds especially along SR-60. Construction of the proposed project, in conjunction with other planned developments within the cumulative study area, would contribute to the obstruction of existing views. There are no available mitigation measures to reduce this cumulative impact to a less than significant level. Therefore, cumulative impacts would remain significant and unavoidable.
Agricultural Resources	Loss of State Designated Farmland	No mechanism for the mitigation of impacts to Prime Farmland and/or existing agricultural operations has been enacted by either the City of Moreno Valley or the County of Riverside. Therefore, impacts associated with the conversion of Prime Farmland remain significant and unavoidable.
Agricultural Resources	Conversion to a Non-agricultural Use	No feasible mitigation is available to mitigate for the direct impacts associated with the conversion of an existing agricultural operation. Therefore, impacts associated with the conversion of farmland to a non-agricultural use remain significant and unavoidable.

Table 5.A: Significant Environmental Effects Which Cannot Be Avoided

Topic	Type of Impact	Impact
Agricultural Resources	Cumulative Loss of Agricultural Resources	The cumulative effect of development in the region will continue to result in the conversion of agricultural lands to non-agricultural uses. Construction of the proposed project, in conjunction with other planned developments within the cumulative study area, would contribute to the conversion of agricultural lands to non-agricultural uses. Therefore, cumulative impacts to agricultural resources would remain significant and unavoidable.
Air Quality	Construction Air Pollutant Emissions	Construction activities would result in exceedance of the SCAQMD threshold for ROG and NO _x . Even after application of mitigation measures, estimated air pollutant emissions during construction activities would remain significant and unavoidable for ROG and NO _x .
Air Quality	Construction Air Pollutant Emissions	Localized emissions associated construction activities would result in exceedance of localized thresholds for PM ₁₀ and PM _{2.5} . Even after application of mitigation measures, estimated localized air emissions during construction activities would remain significant and unavoidable for PM ₁₀ and PM _{2.5} .
Air Quality	Architectural Coating Emissions	The amount of VOC generated per day during the application of architectural coatings would exceed the SCAQMD VOC threshold. Although the identified mitigation measures would reduce the amount of VOC generated, the SCAQMD threshold would still be exceeded. Impacts would remain significant and unavoidable.
Air Quality	Operational Air Pollutant Emissions	No feasible mitigation is available. Estimated air pollutant emissions during operation of the project will remain significant and unavoidable for ROG, NO _x , PM ₁₀ , and PM _{2.5} .
Air Quality	Consistency with Air Quality Management Plan (AQMP)	The project will produce significant amounts of air pollutants on a daily and cumulative basis, both during construction and occupancy. Even with implementation of proposed mitigation, emissions will result in exceedances that are not consistent with implementation of the current AQMP. Impacts are significant and unavoidable until the proposed project is included in the next SCAG and SCAQMD AQMP projections.
Air Quality	Cumulative Pollutant Air Emissions	The Basin is in nonattainment for PM ₁₀ and ozone at the present time. Construction of the proposed project, in conjunction with other planned developments within the cumulative study area, would contribute to the existing nonattainment status. Therefore, the proposed project would exacerbate nonattainment of air quality standards within the SCAQMD and contribute to adverse cumulative air quality impacts.
Land Use and Planning	Conflict with applicable land use plans, policies or regulations	<p>The project is not consistent with SCAG growth projections, some related Compass Plan policies, and the AQMP since it proposed industrial uses in place of planned residential uses. However, the project will help improve the City's jobs/housing ratio; the City has been housing "rich" and jobs "poor" for many years which is consistent with regional goals.</p> <p>The project is not consistent with existing General Plan land use and zoning designations. Approval of the GPA and ZC will resolve this inconsistency.</p>
Land Use and Planning	Cumulative impact on consistency with land use plans, policies, or regulations	The proposed project will make a substantial contribution to additional industrial/warehouse uses in an area planned for a mixture of residential and non-residential uses. However, the project is consistent with the minimum buffer requirements of the City Municipal Code Section 9.05.

Table 5.A: Significant Environmental Effects Which Cannot Be Avoided

Topic	Type of Impact	Impact
Transportation	Opening Year (2016) with Project Level of Service	If the improvements defined in Mitigation Measures 4.11.6.1A are constructed, then minimum level of service standards would be maintained for the opening year (2016) with-project scenario and study area intersections and impacts would be reduced to a less than significant level. Because improvements to the free way roadways and infrastructure are under the authority of Caltrans, it is uncertain if improvements to these roadways would be constructed prior to project opening and impacts to these intersections would be significant and unavoidable.
Transportation	Opening Year (2016) Cumulative with Project Level of Service	If the improvements defined in Mitigation Measures 4.11.6.2A are constructed, then minimum level of service standards would be maintained for the opening year (2016) cumulative with-project scenario and study area intersections and impacts would be reduced to a less than significant level. Because improvements to the freeway roadways and infrastructure are under the authority of Caltrans, it is uncertain if improvements to these roadways would be constructed prior to project opening and impacts to these intersections would be significant and unavoidable.
Transportation	Cumulative Traffic Impacts	Construction of the proposed project, in conjunction with other planned developments within the cumulative study area, would contribute to the existing deficient levels of service on the existing roadway network. The improvements identified in Mitigation Measures 4.11.6.1A through 4.11.6.3C would reduce these cumulative impacts at deficient intersections to a less than significant level. However, since the affected freeway ramps and intersections are under the jurisdiction of Caltrans, neither the project proponent nor the City has control over the specific timing of when the improvements would be constructed. It is anticipated that such improvements would not be fully constructed by the opening year (2016) so these cumulative impacts remain significant and unavoidable until such time as the improvements are constructed by Caltrans, WRCOG, and the City of Moreno Valley through the TUMF process. However, it is anticipated that these improvements would be fully constructed by future year (2035) as these improvements are currently programmed into the TUMF program. Therefore, cumulative traffic impacts in future year (2035) are anticipated to be less than significant.

5.2 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES WHICH WOULD BE CAUSED BY THE PROPOSED PROJECT SHOULD IT BE IMPLEMENTED

Section 15126(c) of the *CEQA Guidelines* mandates that the EIR must address any significant irreversible environmental changes that would be involved in the proposed action should it be implemented. An impact would fall into this category if it resulted in any of the following:

- The project would involve a large commitment of nonrenewable resources;
- The primary and secondary impacts of the project would generally commit future generations of people to similar uses;
- The project involves uses in which irreversible damage could result from any potential environmental incidents associated with the project; and/or
- The proposed consumption of resources is not justified (e.g., the project could waste energy).

Determining whether the proposed project may result in significant irreversible effects requires a determination of whether key resources would be degraded or destroyed in such a way that there would be little possibility of restoring them. The project site is generally fallow agricultural land with citrus groves occupying the northwestern, northeastern, and eastern portions of the site. However, as identified within the City's General Plan, the City anticipates the eventual conversion of agricultural uses to urban uses and the proposed project would permanently alter the site by converting predominantly agricultural uses to urban uses. This is a significant irreversible environmental change that would occur as a result of project implementation. Because no significant mineral resources were identified within the project limits, no significant impacts related to these issues would result from development of the project site. Natural resources in the form of construction materials would be utilized in the construction of the proposed project and energy resources in the form of electricity and natural gas would be used during the long-term operation of the project; however, their use is not expected to have a negative impact on the availability of these resources. Existing scenic vistas were identified as being visible from the project limits. Implementation of the proposed project would result in the obstruction of the Russell Mountains and Box Springs Mountains from the nearest sensitive visual receptors and those traveling along SR-60. This is a significant and irreversible environmental change that would occur as a result of project implementation. Cumulatively, future development along SR-60 would also result in the obstruction of the existing views of surrounding mountains and visual features.

In addition, this industrial warehouse project, in concert with the other built or approved industrial warehouse projects to the east, will fundamentally change the character and land use pattern of this portion of the City. Many of the project-specific impacts are addressed, as outlined above, but the land use change represented by this and other industrial projects represents a substantial irreversible change in community character or quality of life for this area.

5.3 GROWTH-INDUCING IMPACTS

The proposed project site is currently utilized for citrus production on the northwestern, northeastern, and southwestern boundaries; the northern side abuts SR-60. Additionally, the southeastern portion of the project site is located approximately 50 feet from existing single-family residential uses, approximately 50 feet from active agricultural on the east, and approximately 60 feet from the Moreno Valley Auto Mall on the west. Existing single-family residential uses are located directly southeast of the project site. The Moreno Valley Auto Mall Specific Plan, approximately 151.89 acres located south of SR-60 at the Moreno Beach Drive off-ramp, provides for the development of commercial, residential (R-15), and open space (OS) and is located west of the project site. With implementation of the General Plan Amendment and Zone Change designation, the project may induce or create conditions that would accelerate development of the vacant parcels immediately east and southwest of the site. However, current economic conditions would likely inhibit development of these parcels in the near future.

The project proposes to eliminate the potential for 681 units of multifamily residential housing, some of which may contribute to meeting the City's affordable housing goals. This change would incrementally reduce the population and housing growth potential for this property. However, the project would add 2.2 million square feet of industrial space in the eastern portion of the City. Since the City currently has a low jobs-to-housing ratio, it is possible that the employment could be generated by this project can be accommodated by the City's existing workforce. In that way, the project is growth inducing in terms of employment. Due to relatively high vacancy rates in the City, it is also possible that the housing needs of new employees that do not already live in the City (i.e., own or rent) could largely be accommodated by the City's existing housing stock. Therefore, the proposed project would only produce modest growth inducement within Moreno Valley.

Water infrastructure in the vicinity of the proposed project site includes an existing 20-inch water line along Redlands Boulevard east of the site and a 12-inch water line located along Eucalyptus Avenue west of the proposed project site. The project proposes a 12-inch water line along future Eucalyptus

Avenue join the existing water lines identified above. Together, the proposed project and the West Ridge project will construct the identified infrastructure for this area. As public utilities and roadways are already available to the project area and, and because the proposed project does not warrant the expansion of existing or new water and wastewater treatment facilities, the development of the proposed project would not induce growth in an area currently devoid of public improvements or promote the extension of infrastructure in a manner facilitating an uneven pattern (e.g., leapfrog development) of development in the City. As the type and intensity of use proposed for the project site would be consistent once implementation of General Plan Amendment and Zone Change take place, and because the improvements necessary for development of the site would not facilitate growth that has not been anticipated in the project area, no significant growth-inducing effect would occur, and no mitigation is required.

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6.0 ALTERNATIVES

6.1 INTRODUCTION

An EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment. In compliance with *CEQA Guidelines* Section 15126.6(a), this Draft EIR must describe “a range of reasonable alternatives to the project, or to the location of the project which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project.” The EIR need not consider every conceivable alternative; rather it must consider a reasonable range of potentially feasible alternatives to the project, or to the location of the project, which would avoid or substantially lessen significant effects of the project, even if “these alternatives would impede to some degree the attainment of the project objectives, or would be more costly” (*CEQA Guidelines* Section 15126.6(b)). The discussion of project alternatives must “include sufficient information about each (to) allow meaningful evaluation, analysis, and comparison with the proposed project.” An EIR must evaluate a “No Project” alternative in order to allow decision-makers to compare the effect of approving the project to the effect of not approving the project.

The City, acting as the CEQA Lead Agency, is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. The range of alternatives addressed in an EIR is governed by a “rule of reason,” which requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. Of the alternatives considered, the EIR need examine in detail only those the Lead Agency determines could feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project. Per *CEQA Guidelines* Section 15364, “feasible” has been defined as “capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.”

6.1.1 Summary of the Proposed Project

The proposed project consists of the development of approximately 2,244,638 square feet of warehouse distribution uses, necessary parking, and associated site improvements on an approximately 122.8-acre site. The proposed project would consist of six buildings and would include a General Plan Amendment to change the General Plan Land Use designations for 71.3 acres of the southern portion of the site from “Residential” to “Light Industrial.” Implementation of the proposed project would require a zone change from Business Park-Mixed Use (BPX), Business Park (BP), Multi-Family Residential (R-15), Suburban Residential (R-5), and Residential Agriculture (RA-2) to Light Industrial for the entire 122.8 acres. Implementation of the proposed project would also remove Primary Animal Keeping Overlay (PAKO) designation from the 12 acres that are currently zoned RA-2. The project also proposes an amendment to the Circulation Element of the General Plan that would eliminate the undeveloped Quincy Street south of SR-60 and realign the undeveloped future Encelia Avenue roadway segment to connect at the existing terminus of Eucalyptus Avenue at the southeast corner of the site west across the Quincy Channel to Moreno Beach Drive.

6.1.2 Project Objectives

The purpose of the proposed project is to provide a new facility that specializes in warehouse distribution services. Upon development, the proposed project will achieve the following:

- Provide industrial warehouse facilities that meet the substantial and unmet demands of businesses located in the City and County;
- Provide new industrial development that is attractive and minimizes conflicts with the surrounding existing uses;

- Provide a variety of new employment opportunities for the citizens of Moreno Valley and surrounding communities;
- Encourage warehouse distribution services that take advantage of the area's close proximity to various freeways and transportation corridors;
- Encourage new development consistent with the capacity and municipal service capabilities;
- Provide infrastructure improvements to meet phased project needs in an efficient and cost-effective manner;
- Cluster industrial warehouse uses near access points to the State highway system to reduce traffic congestion on surface streets and to reduce air pollutant emissions from vehicle sources;
- Develop land uses that provide the City with a positive revenue/cost ratio and provide needed infrastructure in a timely fashion;
- Address community circulation, both vehicular and pedestrian, utilizing available capacity within the existing circulation system, and provide fair-share improvements to various future -year deficient intersection or road segments; and
- Reduce peak hour vehicle trips and energy and water consumption compared to existing General Plan land uses.

6.1.3 Summary of Proposed Project Significant Impacts

The analysis provided in Chapter 4.0 determined that, despite the implementation of mitigation measures, significant environmental impacts would result from the construction and operation of the proposed on-site uses. To satisfactorily provide the CEQA-mandated alternatives analysis, the alternatives considered must reduce the following project-related significant impact(s):

- Loss of existing visual resources and viewsheds for the nearest sensitive visual receptors and visual corridor impacts from SR-60.
- Conversion of agricultural land and agricultural uses to urban land and urban uses;
- Emissions of NO_x, PM₁₀, and PM_{2.5} during construction operations and LST thresholds;
- VOC emissions from architectural coatings;
- Long-term emissions of ROG and NO_x resulting from increased vehicular trips and operation of the proposed on-site uses, including AQMP consistency;
- Project-level and cumulative inconsistencies with regional and local land use plans and policies;
- Inconsistency with SCAG growth projections and related SCAG growth policies, and AQMP;
- Cumulative land use changes with shift from residential to industrial land uses;
- Traffic levels of service at intersections in the opening year (2016); and
- Traffic levels of service at intersections in the future year (2035) and cumulatively.

6.2 ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD FOR ANALYSIS

In determining an appropriate range of alternatives to be evaluated in the EIR, five possible alternatives were considered and rejected because they could not accomplish the basic objectives of the project as listed above or they were considered infeasible. Per the *CEQA Guidelines* (Section 15126.6(c)), factors that may be considered when addressing the feasibility of alternatives include a failure to meet most of the stated project objectives, infeasibility, or inability to avoid significant environmental effects. As outlined in the Project Objectives, the proposed project would provide

expand employment within and revenue for the City of Moreno Valley. The following five development scenarios were considered and rejected as potential alternatives to implementation of the proposed project:

- Continued Agriculture;
- Commercial Center Alternative;
- Residential Alternative;
- Public Sports Facility/Community Alternative; and
- Golf Course Alternative.

Based on Section 15126.6 of the *CEQA Guidelines*, the following alternatives were rejected based on the criteria of not feasibly attaining most of the basic objectives of the project while reducing or avoiding any of the significant effects of the proposed project. The reason or reasons for not selecting each of the rejected alternatives are discussed below.

6.2.1 Continued Agriculture Alternative

A Continued Agriculture Alternative would be very similar if not the same as the No Project – No Build Alternative, which is evaluated in Section 6.3.1. Therefore, this potential alternative was not looked at in any greater detail.

6.2.2 Commercial Center Alternative

A Commercial Center Alternative would consist of the development of the project site with 1,317,690¹ square feet of all commercial uses (assuming approximately 25% coverage), such as major retail outlets, restaurants, and boutique type uses. Similar to the proposed project, a zone change and General Plan Amendment would be required to change the existing business park and residential land uses to a commercial land use. Commercial uses may have a more aesthetic appearance than the proposed industrial project, but views would still be of commercial buildings from existing and proposed residential uses nearby, so it would not reduce potential aesthetic impacts. It would require a General Plan Amendment and Zone Change so it would not reduce land use impacts of the project. This amount of commercial space would generate over 54,000 vehicle trips per day (assuming 42.94 trips per 1,000 square feet) which would put significantly more (7 ×) daily and peak hour trips onto local streets and SR-60 than the proposed project. The large increase in vehicle trips would also substantially increase air pollutant emissions and noise levels, so these significant impacts of the project would not be eliminated. Utilizing an average employment factor of one employee for every 638 square feet of regional retail use,² this alternative would generate up to 2,066 retail jobs. The Commercial Center Alternative would provide additional retail options to residents of the City and would generate approximately 74 percent more employment opportunities than the proposed project. However, the development of the project site with all commercial uses would be situated near a newly developed existing commercial center on Moreno Beach Drive. Because of the close proximity of commercial uses to the west, development of the 122.8-acre project site with all commercial uses could compete with other existing commercial uses in the area, even the Moreno Valley Mall. It is possible that development of a Commercial Center Alternative would create retail uses above the current demand of such retail services and may contribute to a saturated commercial demand in that portion of Moreno Valley. Since this alternative would not reduce any of the anticipated impacts of the proposed project, it was eliminated from further evaluation of alternatives for the project site.

¹ Based on a FAR of 0.25.

² *Table II-B Derivation of Square Feet per Employee Based on Average Employees Per Acre, Employment Density Study Summary Report for Southern California Association of Governments, The Natelson Company, Inc., October 2001.*

6.2.3 Residential Alternative

The Residential Alternative consists of the development of the 122.8-acre project site with all residential uses, including approximately 644 single-family units and 548 multiple-family units.¹ A Zone Change and General Plan Amendment would be required for this alternative to change the northern portion of the project site from its existing industrial/business park designation to a residential designation. Since the Residential Alternative consists only of residential uses, employment-generating opportunities would not occur aside from temporary construction work, which would be filled by those already residing in the area. The project's full potential to utilize the area's close proximity to various freeways and transportation corridors would not be realized as only residential uses would occur under an all Residential Alternative. Based on average trip generation rates of 10 trips per single-family unit and 8 trips per multifamily unit, this alternative would generate approximately 10,824 average daily vehicle trips compared to the 7,527 trips of the proposed project (a 44% increase), and more of these trips would be expected to occur during peak periods. Additionally, the development of the entire 122.8-acre project site would result in the placement of the residential uses adjacent to a major transportation corridor and an approved industrial project immediately east of the site, which could potentially result in additional adverse impacts such as exposure to truck traffic, air pollutants, and noise. This alternative was rejected for further analysis because it would not reduce most of the project-related significant impacts, would result in some greater impacts, and would not satisfy the project objectives to the same degree as the proposed project. A discussion of existing zoning for the entire project has been analyzed under Alternative 1: No Project.

6.2.4 Regional Park/Public Sports Facility Alternative

The Regional Park/Public Sports Facility Alternative would include the development of recreational facilities on the entire 122.8-acre site and would include features such as community basketball, softball, and soccer fields, and associated picnic and restroom facilities. Although development under this alternative would produce some revenue through park usage fees, it would not produce the municipal revenues expected under the proposed project. A General Plan Amendment and Zone Change might be required, but the aesthetic and land use impacts of the proposed project would be largely eliminated by this alternative, except the inclusion of lighted sports fields would significantly increase aesthetic impacts related to night lighting. It is also reasonable to assume that employment opportunities associated with this alternative would be less than the jobs that would be generated by the proposed project. Although this alternative would be consistent with surrounding land uses, there are specific plans in the area that include approximately 120 acres of parkland. In addition, the placement of a public sports facility adjacent to a major transportation corridor such as SR-60 may result in air pollutant and noise impacts from the prolonged exposure of children and adults utilizing a sports facility in this location. It is also not clear if the City and/or even the County has or could raise sufficient funds to plan, construct, and operate such a facility. Because employment opportunities and revenue generation would be limited with this alternative, it was not carried forward for further analysis.

6.2.5 Golf Course Alternative

The Golf Course Alternative would include the development of an 18-hole golf course with associated clubhouse and golfing facilities on the entire 122.8-acre site. Although golf course uses are conditionally permitted in residential zoning areas, this alternative would require a Zone Change and General Plan Amendment to change the business park zoned area on the northern portion of the project. Although a Golf Course Alternative would utilize the project site's close proximity to the SR-60 and other transportation corridors, the development of the entire site with such uses would not provide the varied employment and service uses associated with the proposed project. There is an

¹ Based on assumption that the northern 33.75-acre portion of the site is rezoned Suburban Residential, which allows up to 15 dwelling units per acre; 33.75 acres × 15 dwelling units per acre = 506 dwelling units.

existing golf course just east of the City (Quail Ranch) that is underutilized, and three City-owned golf courses within the City boundaries. In addition, a future 125-acre golf course is planned at the Poorman Reservoir.¹ Although a golf course would produce some revenue through golf course usage fees, it would not produce the municipal revenues and employment expected from the proposed project. Therefore, this alternative would not meet the project objectives of providing new employment and revenue generation options in close proximity to local consumers. The employment opportunities and economic benefits derived from the proposed project are superior to a Golf Course Alternative, and employment opportunities would be limited with this alternative. In addition, development of a golf course in this area is speculative. For these reasons, this alternative was not carried forward for further analysis.

6.3 ALTERNATIVES ANALYSIS

The following alternatives have been identified and evaluated to provide decision-makers with a reasonable range of alternatives that would eliminate or reduce the impacts of the project. Factors considered in selecting the alternatives include site suitability, availability of infrastructure, other plans or regulatory limitations, economic viability, and whether the project proponent can reasonably acquire, control, or otherwise have access to the alternative site. An EIR need not consider an alternative whose impact cannot be reasonably ascertained and whose implementation is remote or speculative. In accordance with *CEQA Guidelines*, the alternatives considered in this EIR include those that 1) could accomplish most of the basic objectives of the project, 2) are reasonably feasible given the nature of the project and surrounding land uses, and 3) could avoid or substantially lessen one or more of the significant impacts of the project. The following have been identified as potential alternatives to implementation of the proposed project and are illustrated in Figure 6.1:

- Alternative 1: No Project – No Build Alternative;
- Alternative 2: No Project Alternative (TTM 32255);
- Alternative 3: Reduced Intensity Alternative;
- Alternative 4: Mixed Commercial/Office/Residential Alternative; and
- Alternative 5: Off-Site Location Alternative.

Alternative 1 is required under CEQA, but Alternative 2 was selected because there was already an approved Tentative Tract Map on the project site. Alternative 3 was developed to reduce air quality impacts and proximity to the residential uses to the southeast. Alternative 4 was developed to reduce traffic and air quality impacts, and resulted from discussions with City staff as to the appropriate mix of land uses if the currently approved uses were to be changed. Alternative 5 is required if there are other sites in the area onto which the project could be moved that would lessen one or more significant environmental impacts. The development characteristics of the various alternatives are shown in Table 6.A, while Table 6.B compares their peak hour and average daily trip generation. Similarly, Tables 6.C, 6.D., 6.E, and 6.F compare the water, waste water, solid waste, and greenhouse gas emissions, respectively, of the various alternatives. These estimates are based on the methodologies established in the appropriate sections of Chapter 4.0.

¹ *Moreno Valley Parks and Facilities*, City of Moreno Valley, http://www.moreno-valley.ca.us/resident_services/park_rec/pdfs/prks_map-1111.pdf, website accessed April 26, 2012.

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Project Boundary
Alternative 6 Off-site Boundary

Note: No project, no build is Alternative 1

Source: RCE: AirPhotoUSA, 2008
01101\Reports\EIR\fig6-1_Alt_Components.mxd (04/27/12)

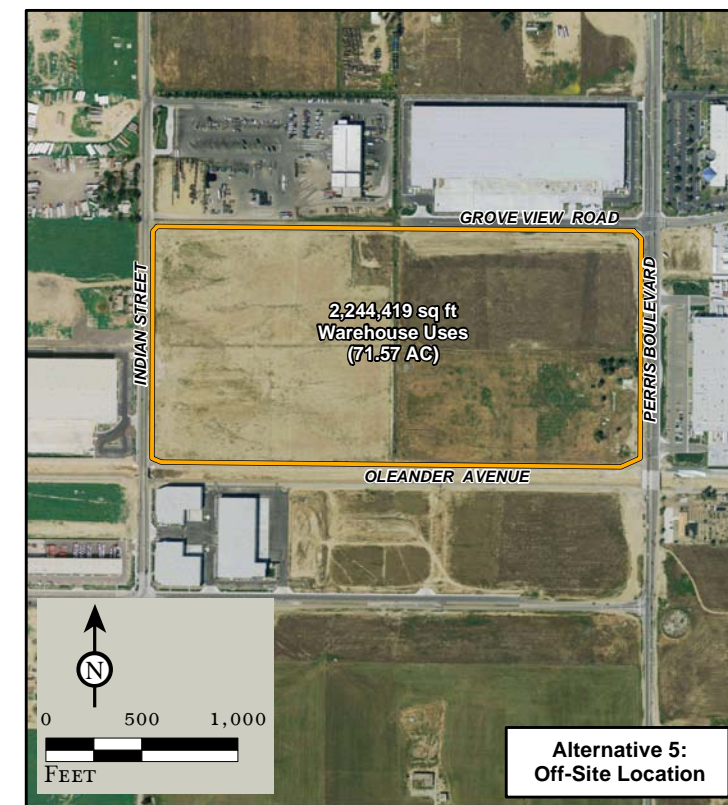
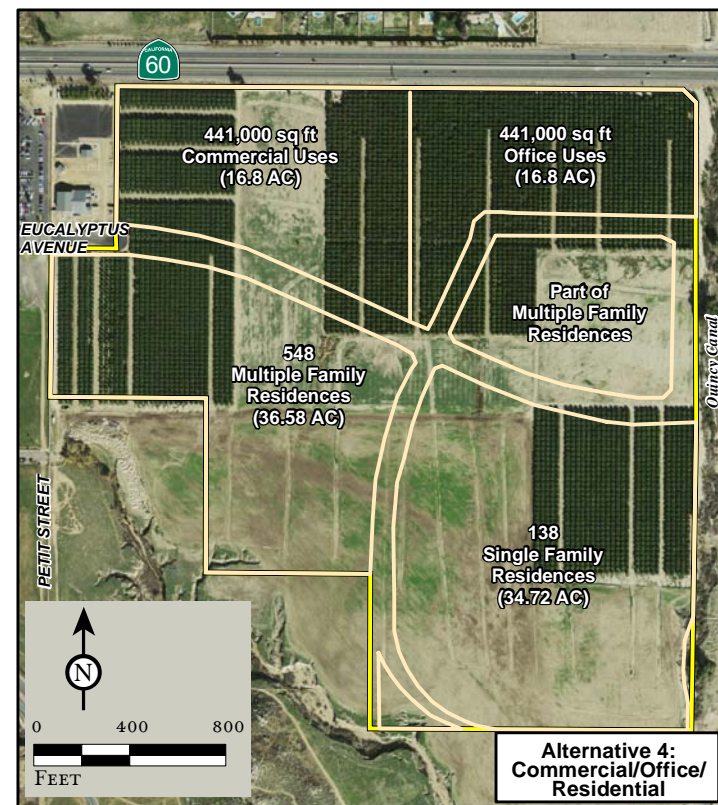
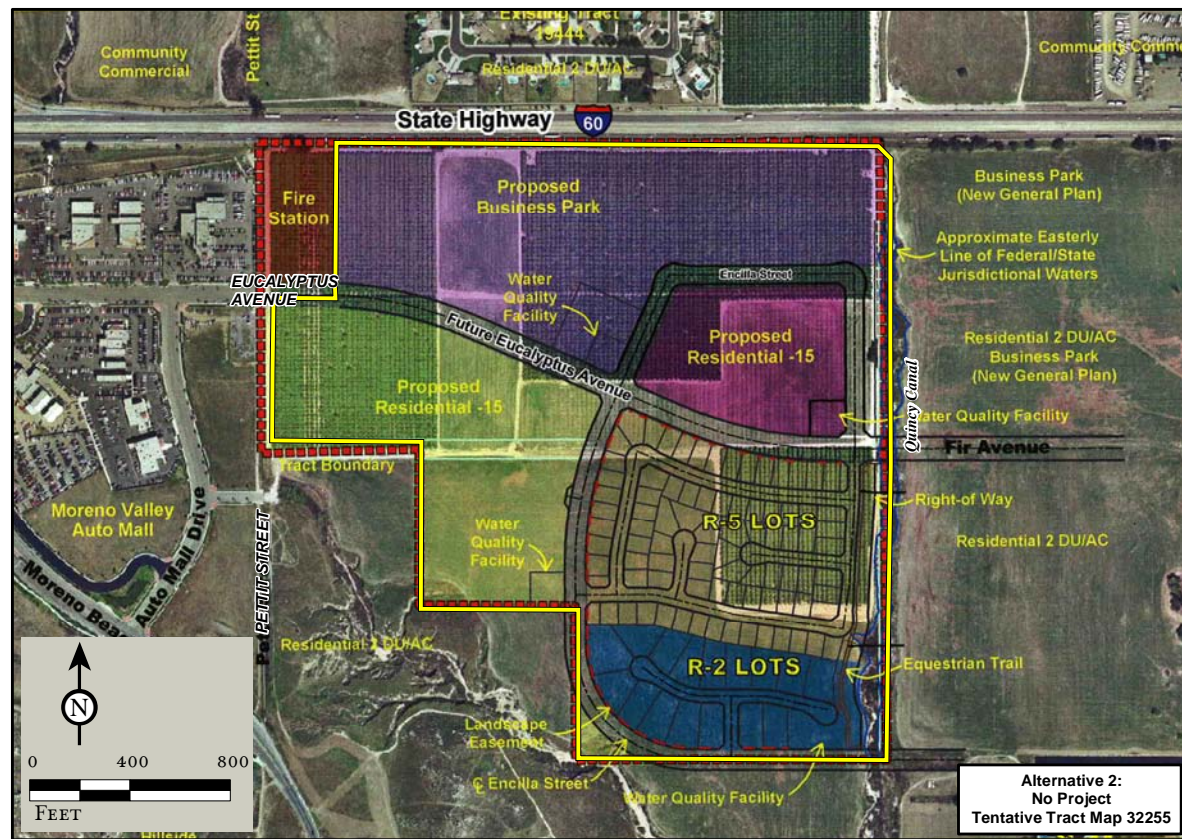


FIGURE 6.1

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Table 6.A: Summary of Analyzed Alternatives

Project Alternative	Alternative Description
Alternative 1 (No Project – No Build)	Under this alternative, no development would occur on the site and all of the potential impacts of developing the site would be avoided.
Alternative 2 (No Project) (Previously Approved Tentative Tract Map 32255)	Approximately 101 single-family and 548 multiple-family residential units on 88.3 acres and up to 574,000 square feet of business park uses on 33 acres would be developed. A Zone Change would be needed to allow buildings greater than 50,000 square feet.
Alternative 3 (Reduced Intensity)	Total warehouse uses would be reduced to 1,683,314 square feet on 92.1 acres with 30.7 acres remaining in agricultural. Zone Change and General Plan Amendment would still be required.
Alternative 4 (Mixed Commercial/Office/Residential)	Residential zoning would be retained on 71.3 acres and would be developed with 548 multiple-family residences and 138 single-family residences. The remaining 50 acres would be divided between office and commercial uses. Commercial uses would total 441,000 square feet and office uses would total 441,000 square feet. Zone Change and General Plan Amendment would be required for commercial portion of the project site.
Alternative 5 (Off-Site)	Warehouse uses consisting of 2.2 million square feet on 123 acres bounded by Grove View Road on the north, Perris Boulevard to the east, the Perris Storm Channel to the south, and Indian Avenue on the west. The off-site location is far to the south west of the project site, near the southwest corner of the City. No Zone Change or General Plan Amendment would be required. The applicant does not have control of this property.

Source: LSA Associates, Inc. 2011

Table 6.B: Comparison of Average Daily and P.M. Peak Hour Trips

Type of Development	P.M. Peak Hour	Average Daily Trips
Proposed Project	522	7,527
Alternative 1 (No Project – No Build)	0	0
Alternative 2 (Previously Approved Tentative Tract Map 32255) 1,182		11,935
Alternative 3 (Reduced Intensity)	480	4,787
Alternative 4 (Mixed Commercial/Office/Residential) 2,790		28,795
Alternative 5 (Off-Site Location)	522	7,527

Source: ITE Trip Generation Handbook, 7th Edition, LSA Associates, Inc., January 2012.

Table 6.C: Comparison of Average Water Use

Type of Development	Gallons per day (gpd)
Proposed Project	81,900
Alternative 1 (No Project – No Build)	5,000 ¹
Alternative 2 (Previously Approved Tentative Tract Map 32255)	277,660
Alternative 3 (Reduced Intensity)	61,272
Alternative 4 (Mixed Commercial/Office/Residential) 297,319	
Alternative 5 (Off-Site Location)	81,900

¹ Assumption based on current consumption of agriculture (citrus) on site.
Water Use Factor Source: *Water System Planning and Design Principle Guidelines Criteria*, Eastern Municipal Water District, July 2, 2007.

Table 6.D: Comparison of Average Wastewater Generation

Type of Development	Gallons per day (gpd)
Proposed Project	44,888
Alternative 1 (No Project – No Build)	0
Alternative 2 (Previously Approved Tentative Tract Map 32255)	226,718
Alternative 3 (Reduced Intensity)	33,666
Alternative 4 (Mixed Commercial/Office/Residential) 242,770	
Alternative 5 (Off-Site Location)	44,888

Wastewater Factor Source: *Sewage Generation Rates*, Draft CEQA Thresholds Guide, 2006.

Table 6.E: Comparison of Average Solid Waste Generation

Type of Development	Tons per year (tons/yr)
Proposed Project	2,456
Alternative 1 (No Project – No Build)	0
Alternative 2 (Previously Approved Tentative Tract Map 32255)	5,158
Alternative 3 (Reduced Intensity)	1,843
Alternative 4 (Mixed Commercial/Office/Residential) 5,499	
Alternative 5 (Off-Site Location)	2,456

Solid Waste Factor Source: *Estimated Solid Waste Generation Rates*, California Integrated Waste Management Board, <http://www.ciwmb.ca.gov/WASTECHAR/WasteGenRates/Commercial.htm>, website accessed April 26, 2012.

Table 6.F: Comparison of Greenhouse Gas Emissions

Alternatives	Greenhouse Gas Emissions (tons/yr)			Total CO ₂ equivalent (Tg/yr CO ₂ Eq.)*
	CO ₂	CH ₄	N ₂ O	
Proposed Project	13,000	0.49	0.95	0.012
Alternative 1 (No Project – No Build)	0	0	0	0
Alternative 2 (Previously Approved Tentative Tract Map 32255)	20,800	1.6	0.20	0.021
Alternative 3 (Reduced Intensity) 10,000	0	0.36	0.71	0.0094
Alternative 4 (Mixed Commercial/Office/Residential) 45,000		2.0	4.2	0.046
Alternative 5 (Off-Site Location)	13,000	0.49	0.95	0.012

* Tg/yr CO₂ Eq. = teragrams or one million metric tons per year; this denotation is the standard metric unit utilized worldwide. Source: LSA Associates, Inc. June 2012.

The following discussion compares the impacts of each alternative with the impacts of the proposed project, as detailed in Section 4.0 of this EIR. A conclusion is provided as to whether each alternative (i.e., Alternatives 2 through 5) would result in one of the following:

- Reduction or elimination of the impact;
- A greater impact than the project;
- The same impact as the project; or
- A new impact in addition to the impacts of the proposed project impacts.

6.3.1 No Project – No Build Alternative

Under the No Project – No Build Alternative, no development would take place within the project limits. No new ground-disturbing activities would take place, nor would any form of structure or facility be erected. Low intensity agriculture would likely continue on the site, although it is possible that more

intense agriculture might be pursued if development did not occur. Under either of these conditions, local residents may be subject to dust from agricultural activities at various times of the year. None of the impacts associated with the proposed project would occur, so this alternative would be considered the environmentally superior alternative. However, the *CEQA Guidelines* indicate that, if the No Project Alternative is determined to be the environmentally superior alternative, another alternative must also be identified. In addition, CEQA requires an evaluation of a reasonable range of alternatives that will reduce or eliminate at least one of the significant impacts identified for the proposed project.

6.3.2 Alternative 2: No Project (previously approved TTM 32255)

Given the goals and objectives of the City of Moreno Valley, it is highly reasonable in the event the proposed project were not approved, the site would be developed with some type of business park and residential uses. For analysis purposes, Alternative 2 assumes that the project site would be developed as outlined in a previously approved Tentative Tract Map for business park and single-family residential uses. The City Planning Commission approved Tentative Tract Map No. 32255 on February 13, 2007, which consisted of a subdivision of the project site into 83 single-family lots in the R5 zone, 16 single-family lots in the RA-2 zone, two R15 zoned lots, a BP zoned lot, and a BPX zone lot. Under this alternative, it is anticipated that approximately 101 single-family residential units, 548 multi-family residential units, and up to 574,000 square feet of business park uses¹ would be developed.

6.3.2.1 Aesthetics

Development of this alternative would result in the alteration of the existing visual character of the site; however, it would be similar to that outlined in the existing General Plan and zoning, and was previously approved by the City for development. It would be required to comply with design standards, such as setbacks, building height, lot dimensions, and maximum lot coverage contained in the City Municipal Code. Adherence to these design standards would ensure that on-site aesthetic impacts remain less than significant. The installation of on-site lighting to accommodate nighttime activities and for safety purposes would be required for this alternative, but to a lesser degree than the proposed project. Residential uses would be adjacent to the existing residential neighborhood to the southeast, and the multi-family residential uses and smaller business park uses would be visible further north, but would likely not block surrounding views to nearly the degree of the proposed project. Aesthetic impacts of this alternative would therefore be less than significant.

6.3.2.2 Agricultural Resources

As identified in Section 4.2 of the EIR, the development of the project site with urban uses would result in the conversion of Prime Farmland. Because no feasible mitigation is available to fully mitigate for the loss of Prime Farmland, impacts associated with development of this alternative would be significant and unavoidable, similar to the proposed project.

6.3.2.3 Air Quality

Since the amount of land to be developed under this alternative would be about the same as that developed under the proposed project, it is reasonable that a similar mix of equipment would operate during earthmoving and construction activities. As with the proposed project, peak daily construction emissions would be below SCAQMD thresholds of significance for CO, ROC, and SO_x. Peak localized daily construction emissions would also be similar for this alternative as the same amount of land would be disturbed during the construction phase. Although SCAQMD regulations and project-

¹ Based on a 30.94 acre BP zoned lot, a 2.02 acre BPX zoned lot, and 40% coverage of site.

specific mitigation measures would reduce the amount of construction emissions, impacts associated with construction emissions for NO_x remain significant and unavoidable.

As previously identified in Table 6.B, Alternative 2 would generate approximately 11,935 daily vehicle trips, which is more than the 7,527 trips associated with the proposed project. Although the total number of trips is increased, the volume of each operational pollutant emitted during operation of this alternative would be less since there would be no diesel trucks involved. As indicated in Table 6.G below, operational emissions would continue to exceed SCAQMD significance thresholds for NO_x, CO, and ROG (similar to the proposed project), but would not exceed operational thresholds for PM₁₀ and PM_{2.5}. These emissions were calculated using similar methodologies and pollutant generation rates as outlined in the project air quality study.

Table 6.G: Alternative 2 Operational Emissions

Source	Pollutant Emissions, lbs/day					
	CO	ROC	NO _x	SO _x	PM ₁₀	PM _{2.5}
Proposed Project	1,801	289	2,001	3.1	370	85
Alternative 2	850	114	230	1.2	130	11
Net Change	-951	-175	-1,771	-1.9	-240	-74
SCAQMD thresholds	550	55	55	150	150	55
Exceeds thresholds?	Yes	Yes	Yes	No	No	No

Source: data from TTM 32255 staff report and extrapolated from LSA Associates, Inc., June 2012

When this alternative is compared to the proposed project, impacts to air quality would be decreased, but the long-term air quality impacts resulting from this alternative, as with the proposed project, would continue to be significant and unavoidable.

6.3.2.4 Biological Resources

This alternative would require site development resulting in the grading of the entire project site. No plant species listed by the State and/or Federal government as endangered or threatened was identified on site during the field reconnaissance. Additionally, the project site is not located within any USFWS designated critical habitat. Based on the *Jurisdictional Delineation Report* prepared for the proposed project site, all three drainages (western, southern, and eastern) located on or adjacent to the project site are determined to be jurisdictional waters of the United States. Similar to the proposed project, adherence to **Mitigation Measures 4.4.6.2A** and **4.4.6.2B** would reduce impacts to less than significant levels.

While the project site is located within the MSHCP, the project site is not within any MSHCP criteria cell or habitat linkage.¹ Furthermore, the project site is not located within an MSHCP mammal or amphibian survey area; a Narrow Endemic Plant Species Survey Area or Criteria Area Plant Species Survey Area; or a riparian, wetland, or vernal pool habitat/species survey area.² The project site is within the Stephen's Kangaroo Rat Habitat Conservation Plan (SKR HCP) Fee Area, but is not within a Stephen's Kangaroo Rat Core Area. Focused surveys for SKR are not required for this project because the project lies within the SKR Fee Area; therefore, under the SKR HCP, only payment of a local mitigation fee is required.

Section 4.4 indicated the proposed project has the potential to affect one non-listed sensitive species, the burrowing owl. Approximately 72 acres of the project site are considered to support suitable burrowing owl habitat (eroded channel banks, suitable burrows, and abundant foraging habitat). A *Focused Burrowing Owl Survey* was conducted in accordance to the burrowing owl survey

¹ *Western Riverside County Multiple Species Habitat Conservation Plan, Volume I, Part I*, Dudek & Associates, June 17, 2003.

² *Ibid.*

instructions set forth in the California Burrowing Owl Consortium's *Burrowing Owl Survey Protocol and Mitigation Guidelines*.¹ The species was not detected on the site during the field survey. Although no burrowing owls were identified during the field study, the burrowing owl is a highly mobile species and a potential exists that, prior to project development, this species may occupy the site. Adherence to identified **Mitigation Measure 4.4.6.1C** would reduce impacts to a less than significant level. Similar to the proposed project, this alternative would produce less than significant impacts to biological resources with the adherence to identified mitigation measures.

6.3.2.5 Cultural Resources

Development of this alternative would result in extensive ground-disturbing activities affecting the entire project site, and similar archaeological and paleontological impacts would be anticipated when compared to the proposed project. While no such resources have previously been detected within the project limits, activities undertaken for this alternative (as with the proposed project) could encounter previously undetected cultural or paleontological resources. Adherence to the archaeological and paleontological mitigation measures identified for the proposed project in Section 4.5 of this EIR would reduce impacts to less than significant. Compared with the proposed project, no greater impact would occur with this alternative.

6.3.2.6 Forest Resources

The City of Moreno Valley's General Plan does not identify any forest resources on the project site or surrounding area. The project site is vacant with no trees at present, although it did support citrus trees in the past. There are no significant impacts under the proposed project or any other development scenario for the project site.

6.3.2.7 Geology and Soils

Development of this alternative would have similar geologic and soil-related impacts to those of the proposed project. Like all of southern California, the project site is located in a seismically active area and is subject to ground shaking resulting from activity on local and regional faults. However, the maximum credible earthquake event on the San Jacinto Fault zone affecting the project site would measure magnitude 7.2. This earthquake event is less than or equal to design levels as defined by the Uniform Building Code (UBC). The California Building Code (California Code of Regulations, Title 24) established engineering standards appropriate for the seismic zone in which development may occur. Development of the proposed project site would be required to adhere to UBC, the California Building Code, and City design and engineering standards. Impacts associated with this issue would be considered less than significant. Compared with the proposed project, no greater impact would occur with this alternative.

6.3.2.8 Global Climate Change

GHG emissions are correspondingly increased as Alternative 2 would increase the number of daily trips made to the site. As previously identified in the previous Table 6.F, this alternative would generate 18,450 tons of carbon (CO₂), 0.82 ton of methane (CH₄), and 1.7 tons of nitrous oxide (N₂O) per year, but implementation of the mitigation recommended for the proposed project or similar measures for residential projects would help keep these emissions at less than significant levels.

¹ *Burrowing Owl Survey Protocol and Mitigation Guidelines*, California Burrowing Owl Consortium, 1993.

6.3.2.9 Hazards and Hazardous Materials

Development of this alternative would result in the on-site handling of hazardous substances, both during project construction and operation. The development of business park and residential uses would be introduced in the area. Unlike commercial development, business parks and residences do not typically store, use, sell, or transport large amounts of household hazardous materials. Because all development in the City is required to adhere to existing local, State, and Federal regulations pertaining to hazardous materials, impacts associated with hazards and hazardous materials under this alternative would be reduced in magnitude and would remain less than significant, as identified for the proposed project.

6.3.2.10 Hydrology and Water Quality

As with the proposed project, the development of this alternative would require the modification of the existing on-site pattern of drainage and would require the installation of drainage improvements that may include detention/retention basins, connection to existing in-street drainage features, on-site storm drains, and other features. While the extent of the impermeable surfaces (paving area) required under each alternative is reduced from that required for the proposed project, the environmental impact of these improvements would be similar. All local, State, and Federal policies and regulations pertaining to surface water and groundwater resources would remain in effect under this alternative. Sedimentation and erosion from any on-site development has the potential to affect water quality. Similar to the proposed project, the construction of any on-site use would be required to follow applicable NPDES requirements, including the preparation of and adherence to a SWPPP and BMPs. As with the proposed project, runoff from paved surfaces, especially during a “first-flush” event, may be contaminated by a mixture of sediment, debris, and other contaminants. A standard condition with any such development would be preparation and implementation of a WQMP, which would effectively mitigate post-construction water quality impacts from the developed area. Similar to the proposed project, potential impacts related to hydrology and water quality would be less than significant.

6.3.2.11 Land Use and Planning

Development of this alternative would not require a General Plan Amendment for the residential uses or business park uses as these uses are allowed under the existing land use designations. However, the business park component of this alternative, which includes approximately 574,000 square feet, would require a change of zone to allow the construction of buildings greater than 50,000 square feet. Like the proposed project, this alternative would comply with applicable provisions of local and regional plans (e.g., Water Quality Control Plan and Air Quality Management Plan). Compliance with applicable City policies related to development within the project site would ensure that on-site alternative uses would be compatible with existing development in the project area. However, since the development envisioned under this alternative has already been tentatively approved by the City, this alternative would not need a General Plan Amendment. Therefore, land use impacts associated with this alternative would be reduced to less than significant levels when compared with the proposed project. This alternative would also be fully consistent with the City's Housing Element regarding future sites for affordable housing (i.e., R-15 parcels).

6.3.2.12 Mineral Resources

The City of Moreno Valley General Plan does not identify the project site as a locally important mineral resource recovery site as there are no identified Mineral Resource Zones located within the City of Moreno Valley. Development of the project site with any build alternatives would not result in the loss of or reduce the availability of mineral resources or the resource base from which they would be derived. Compared with the proposed project, no greater impact would occur for any of the project build alternatives.

6.3.2.13 Noise

The extent and duration of construction activities for this alternative are anticipated to be similar to those of the proposed project. Therefore, construction noise resulting from the construction of this mix of uses would be generally similar to the proposed project. Development of this alternative would require the implementation of mitigation measures to reduce construction noise impacts to a less than significant level. Compared with the proposed project, the short-term noise impacts resulting from project construction and stationary noise impacts associated with the operation of the shopping center would be similar and remain less than significant with mitigation incorporated.

The increase in project-related traffic for this alternative would result in an incremental increase in traffic noise. This alternative's contribution to future traffic noise would result in more trips on the area roadways, which increases the overall mobile source noise impact as compared to the proposed project. Parking lot noise and mechanical ventilation noise would still occur under this alternative and noise from the loading docks would still be present as the alternative includes a business park component. However, the uses envisioned under this alternative would increase the number (i.e., more commercial buildings) and extent of noise sources but would still have noise approaching levels identified for the proposed project. When compared to the proposed project, operational noise impacts would be similar.

6.3.2.14 Population and Housing

This alternative would result in the development of 574,000 square feet of business park uses, 101 single-family residential units, and 548 multi-family residential units. Utilizing an employment factor of one employee for every 629 square feet of service space,¹ this alternative is anticipated to generate approximately 913 jobs.² Unlike warehouse jobs, which can often be filled by most working adults, business park jobs under this alternative may require the employment of persons in specialized fields; however, it is speculative to conclude if or how many persons from outside of the area may be required to relocate to Moreno Valley to fill positions in the business park, so it is not possible to determine if this alternative would result in a population increase in the City.

The development of 101 single-family and 548 multi-family residential units would result in a direct increase to the existing population. Utilizing the Department of Finance factor of 3.72 people per household,³ and assuming every resident was a new citizen of the City, the residential component of this alternative could result in a population increase of up to 2,414 people.⁴ This alternative would generate new residents from the housing and possibly from the new employment, but as previously stated, it is not possible to tell exactly what proportion of business park residents would be City residents. It appears that this alternative would generate less population and employment than the proposed project, but its impacts related to population and housing would be less than significant.

6.3.2.15 Public Services

As discussed above, this alternative could result in population increase of at least 2,414 people within the City due to new housing. Because of the amount of residential development that would occur within the project limits, demands on schools, parks, other public facilities, law enforcement, and fire protection services would be greater in magnitude than what was identified for the proposed project. However, similar to the proposed project, development under this alternative would require payment of development impact fees for schools, police services, and fire services. The payment of

¹ Table IIB Average Number Employee per Square Foot, *Employment Density Report*, Southern California Association of Governments, Natelson Company, Inc, October 2001.

² 1 employee/629 square feet of service space × 574,000 square feet of business park use = 913 jobs.

³ *State of California, Department of Finance, E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2010, with 2000 Benchmark. Sacramento, California, May 2010.*, <http://www.dof.ca.gov/Research/Research.php>, website accessed April 26, 2012.

⁴ 3.72 people/household × 649 households = 2,414 people.

development impact fees would offset any impacts to these public services that may result from the development of this alternative. Therefore, when compared to the proposed project, impacts associated with public services would remain less than significant with the payment of development impact fees.

6.3.2.16 Recreation

Alternative 2 includes the construction of up to 574,000 square feet of business park uses and 101 single-family and 548 multi-family residential units. As previously stated, the increase in residential uses and business park uses would directly contribute to an increase of at least 2,414 people to the existing population from new housing. This increase in population would increase the demand for park and recreation facilities. The City has adopted a standard of 3 acres per thousand people as the parkland ratio standard. To meet this standard, this alternative would be required to dedicate or provide in-lieu fees for 7.24 acres of land for park uses. Because this alternative would directly contribute people to the existing population, recreation and park demands would be greater in magnitude than the proposed project. However, like the proposed project, the dedication of land or the payment of parkland fees would reduce these recreation impacts to a less than significant level.

6.3.2.17 Traffic

As identified in Table 6.B, this alternative would generate approximately 11,935 daily vehicle trips. In comparison to the proposed project, this alternative would result in a 59 percent increase in daily traffic (7,527 trips). With an increase in daily traffic, an increase in volumes on nearby roads and intersections would occur and be greater in magnitude when compared to the proposed project. With the increase in traffic under this alternative, impacts to LOS levels at nearby intersections and roadway segments would still occur and would require mitigation. The addition of traffic volumes associated with this alternative could result in a deficient LOS level at one or more of the intersections in the project vicinity during the lifetime of the development. While significant traffic impacts may occur under this alternative, these impacts would be mitigated in a manner similar to those of the proposed project. However, despite the identification of mitigation measures, certain roadway improvements would not be under the jurisdiction of the City and cannot be guaranteed to be in place when development under this alternative would become operational. Therefore, as identified for the proposed project, traffic-related impacts would remain significant and unavoidable under this alternative.

6.3.2.18 Utilities and Service Systems

Similar to the proposed project, development under this alternative would connect to existing utility infrastructure subject to the terms and conditions of the City and EMWD. As indicated in previously referenced Table 6.D, this alternative would generate approximately 226,718 gallons of wastewater per day, which is a five fold increase over what the proposed project would generate. When compared to the proposed project, wastewater treatment demand would be increased in magnitude as more wastewater would be generated under this alternative. However, like the proposed project, adherence to existing requirements identified by the City and EMWD would result in impacts remaining at a less than significant level.

The development of the business park and residential uses associated with this alternative would also require the installation of water supply infrastructure to serve the project site. As previously indicated in Table 6.C, Alternative 2 would consume approximately 277,660 gallons of water per day, which is over three times more than what would be consumed by the proposed project. When compared to the proposed project, water usage demands would be considerably greater. However, similar to the proposed project, development under this alternative would be required to obtain verification from the water purveyor (EMWD) that water is available to serve the development. In the event that the amount of water required for this alternative is available, impacts associated with this issue would be

less than significant. However, in the event that water is not available for the alternative, a new and significant impact associated with this issue would occur.

Like the proposed project, Alternative 2 would also generate solid waste. As previously identified in Table 6.E, this alternative would generate 5,158 tons of solid waste per year, which is over twice what the proposed project would generate. Therefore, demands on solid waste services and landfill capacity would be increased in magnitude. However, similar to the proposed project, development under Alternative 2 would be required to adhere to the provisions of the solid waste provider that would service the project site. When compared to the proposed project, solid waste impacts under this alternative would remain less than significant.

6.3.2.19 Cumulative Impacts

Similar to the proposed project, this alternative would contribute toward the permanent conversion of farmland, long-term operational air pollutant emissions, and increased traffic operations on local roadways and at local intersections. The amount of operational air pollutant emissions and traffic levels would be greater when compared to the proposed project. In addition, there are no mitigation measures that would reduce long-term air quality operational impacts to below the SCAQMD threshold standard and no mitigation measures that would reduce impacts associated with increased traffic in the area. Therefore, cumulative impacts associated with long-term air quality and long-term traffic would remain significant and unavoidable. This alternative would also require the development of the project site. Since there is no feasible mitigation that would reduce the cumulative impacts associated with the conversion of Prime Farmland, cumulative impacts associated with farmland conversion would remain significant and unavoidable like the proposed project.

6.3.2.20 Conclusion

Under Alternative 2, impacts related to short-term construction-related air quality would be similar to the proposed project as the same amount of land would be disturbed and the same mix of equipment would be utilized. Long-term operational-related air quality emissions would be increased in magnitude when compared to the project and would remain significant and unavoidable. Because of the increase in vehicle trips under this alternative, impacts to the operation of local roadways and intersections would be proportionally greater than what was identified for the proposed project. Long-term traffic impacts would remain significant and unavoidable. Traffic-related noise would be increased in magnitude but would be similarly mitigated like the proposed project and would remain less than significant.

This alternative would result in the development of business park uses that would generate permanent jobs, which may require workers who are not current residents of the City. Combined with the residential component, the office use would increase the total number of people that would be added to the City's population. Due to the increase in population, this alternative would have greater demands on public services and recreation. However, the payment of fees and dedication of parkland would reduce these impacts to a less than significant level. This alternative would increase the amount of water utilized and increase the amount of wastewater that would be generated on site. Similar to the proposed project, adherence to wastewater and water provision requirements would reduce the impacts to a less than significant level. In the event that water is not available for development envisioned under this alternative, impacts to water resources would be significant and unavoidable. Under this alternative, some of the proposed project objectives would not be met as warehouse uses would not be built. However, development of this alternative would provide new employment opportunities for residents of Moreno Valley.

6.3.3 Alternative 3: Reduced Intensity

With the intent of avoiding or substantially reducing significant agricultural, traffic, air quality, and noise impacts created by the project, the City has considered a Reduced Intensity Warehouse Alternative. This alternative includes four warehouse buildings covering approximately 1,683,314 square feet on 92.1 acres with agricultural activities on the remaining 30.7 acres as a buffer between the warehouses and the existing residential uses. Under this alternative, the proposed warehouse uses would represent a net decrease of approximately 25 percent compared to the proposed project.

6.3.3.1 Aesthetics

This alternative proposes the construction of warehouse uses on the northern portion of the property, adjacent to SR-60, with agricultural uses to remain on the southern portion of the property adjacent to existing residential uses to the southeast. The agricultural buffer would provide sufficient setback for the residences to the southeast so that their views to the northeast would no longer be blocked. However, they would still block views of residences north of the freeway similar to that anticipated for the proposed project (if they remained at the same height as the proposed project buildings).

The installation of on-site lighting to accommodate nighttime activities and for safety purposes would be required for this alternative, but at some distance away from the existing residential uses. Development of the warehouse uses under this alternative would be required to comply with design standards, such as setbacks, building height, lot dimensions, and maximum lot coverage contained in the City of Moreno Valley Municipal Code. While impacts associated with aesthetics for the Reduced Intensity Alternative would be less than those of the proposed project, the overall change in planned land uses and introduction of new lighting will still result in aesthetic impacts that are significant and unavoidable.

6.3.3.2 Agriculture

This alternative would leave approximately 30.7 acres of agricultural land as a buffer between the proposed warehouses and existing residential uses to the southeast. An agricultural parcel of this size may not be economically viable over the long-term, especially if or when the property immediately east of the project site (i.e., north of the existing residential neighborhood) develops with Residential Agriculture uses (2 units/acre). At that time, the on-site agricultural property would be essentially surrounded by development and would likely have to convert to some another use (most likely residential). However, until that time, impacts on agricultural resources would be reduced to less than significant levels (i.e., loss of prime agricultural land) according to the LESA methodology outlined in Section 4.2, *Agricultural Resources*.

6.3.3.3 Air Quality

The amount of land to be graded with Alternative 3 would be less than that of the proposed project, but a similar mix of equipment as the proposed project would still be used during earthmoving activities. Construction emissions from the development of Alternative 3 would be incrementally less than the proposed project, but would still be significant and unavoidable for NO_x, PM₁₀, and PM_{2.5}. Under this alternative, average daily traffic volumes would be reduced by 25 percent in comparison with the proposed project. As indicated in Table 6.H, the volume of each operational pollutant emitted during operation of this alternative would be correspondingly reduced. However, like the proposed project, operational emissions would still exceed daily SCAQMD thresholds, using the same methodologies and generation rates outlined in the project air quality study. Application of Leadership in Energy and Environmental Design (LEED) standards and green building design principles could reduce emissions from building operations such as heating and cooling; however, such standards and principles would not reduce operational emissions to below SCAQMD thresholds. For more information on the project relative to LEED, see Chapter 3.0, *Project Description*.

Table 6.H: Alternative 3 Operational Emissions

Source	Pollutant Emissions, lbs/day					
	CO	ROC	NO _x	SO _x	PM ₁₀	PM _{2.5}
Proposed Project	1,801	289	2,001	3.1	370	85
Alternative 3	1,351	217	1,501	2.3	278	64
Net Change	-450	-72	-500 -0.8		-92	-21
SCAQMD thresholds	550	55	55	150	150	55
Exceeds thresholds?	Yes	Yes	Yes	No	Yes	Yes

Source: LSA Associates, Inc., August 2011 (pro-rated based on traffic generation differences).

Although operational air pollutant emissions would be reduced when compared to the proposed project during operations only, impacts would remain significant and unavoidable as there are no feasible mitigation measures identified that would reduce emissions to below the SCAQMD thresholds.

6.3.3.4 Biological Resources

This alternative would require site development resulting in the grading of all but 30 acres of the project site. No plant species listed by the State and/or Federal government as endangered or threatened was identified on-site during the field reconnaissance. Additionally, the project site is not located within any USFWS designated critical habitat. Based on the *Jurisdictional Delineation Report* prepared for the proposed project site, all three drainages (western, southern, and eastern) located on or adjacent to the project site are determined to be jurisdictional waters of the United States. Similar to the proposed project, adherence to **Mitigation Measures 4.4.6.2A and 4.4.6.2B** would reduce impacts to less than significant levels.

While the project site is located within the MSHCP, the project site is not within any MSHCP criteria cell or habitat linkage.¹ Furthermore, the project site is not located within an MSHCP mammal or amphibian survey area; a Narrow Endemic Plant Species Survey Area or Criteria Area Plant Species Survey Area; or a riparian, wetland, or vernal pool habitat/species survey area.² The project site is within the SKR HCP Fee Area, but is not within a Stephen’s Kangaroo Rat Core Area. Focused surveys for SKR are not required for this project because the project lies within the SKR Fee Area; therefore, under the SKR HCP, only payment of a local mitigation fee is required.

Section 4.4 indicated the proposed project has the potential to affect one non-listed sensitive species, the burrowing owl. Approximately 72 acres of the project site is considered to support suitable burrowing owl habitat (eroded channel banks, suitable burrows, and abundant foraging habitat). A *Focused Burrowing Owl Survey* was conducted in accordance to the burrowing owl survey instructions set forth in the California Burrowing Owl Consortium’s *Burrowing Owl Survey Protocol and Mitigation Guidelines*.³ The species was not detected on the site during the field survey. Although no burrowing owls were identified during the field study, the burrowing owl is a highly mobile species and a potential exists that, prior to project development, this species may occupy the site. Adherence to identified **Mitigation Measure 4.4.6.1C** would reduce impacts to a less than significant level. Similar to the proposed project, this alternative would produce less than significant impacts to biological resources with the adherence to identified mitigation measures.

¹ *Western Riverside County Multiple Species Habitat Conservation Plan, Volume I, Part I*, Dudek & Associates, June 17, 2003.
² *Ibid.*
³ *Burrowing Owl Survey Protocol and Mitigation Guidelines*, California Burrowing Owl Consortium, 1993.

6.3.3.5 Cultural Resources

Development of this alternative would result in extensive ground-disturbing activities affecting the entire project site, and similar archaeological and paleontological impacts would be anticipated when compared to the proposed project. While no such resources have previously been detected within the project limits, activities undertaken for this alternative (as with the proposed project) could encounter previously undetected cultural or paleontological resources. Adherence to the archaeological and paleontological mitigation measures identified for the proposed project in Section 4.5 of this EIR would reduce impacts to less than significant. Compared with the proposed project, no greater impact would occur with this alternative.

6.3.3.6 Forest Resources

The City of Moreno Valley's General Plan does not identify any forest resources on the project site or surrounding area, and the project site is vacant with no trees at present, although it did support citrus trees in the past. There are no significant impacts under the proposed project or any other development scenario for the project site.

6.3.3.7 Geology and Soils

Development of any of the build alternatives would have similar geologic and soil-related impacts. Like all of southern California, the project site is located in a seismically active area and is subject to ground shaking resulting from activity on local and regional faults. However, the maximum credible earthquake event on the San Jacinto Fault zone affecting the project site would measure magnitude 7.2. This earthquake event is less than or equal to design levels as defined by the UBC. The California Building Code (California Code of Regulations, Title 24) established engineering standards appropriate for the seismic zone in which development may occur. Development of the proposed project site would be required to adhere to UBC, the California Building Code, and City design and engineering standards. Impacts associated with this issue would be considered less than significant. Compared with the proposed project, no greater impact would occur with any of the on-site build alternatives.

6.3.3.8 Global Climate Change

GHG emissions under this alternative are correspondingly reduced as traffic trips are reduced. As previously identified in Table 6.F, this alternative would generate 10,000 tons of carbon (CO₂), 0.36 ton of methane (CH₄), and 0.71 ton of nitrous oxide (N₂O) per year. The total CO₂ equivalent for this alternative would be 0.0094 Tg/yr CO₂ Eq., which is 21.7 percent less than the 0.012 Tg/yr CO₂ Eq. that would result from the operation of the proposed project. However, implementation of the mitigation recommended for the proposed project would help keep the emissions at less than significant levels.

6.3.3.9 Hazards and Hazardous Materials

Development of the project site under Alternative 3 would still result in the on-site handling of hazardous substances, both during project construction and operation. Compared to the proposed project, warehouse uses would be reduced by 25 percent. Because Alternative 3 would comprise fewer warehouse uses, impacts associated with the transport or use of hazardous materials or potential upsets or accidents may be reduced in magnitude due to the reduced quantities of hazardous materials that would be present on site. However, there would be some risk of upset associated with the use of agricultural chemicals if such materials were to be used on the project site. Since all development in the City is required to adhere to applicable local, State, and Federal standards associated with hazards and hazardous materials, hazardous waste impacts under the Reduced Intensity Alternative would remain less than significant, similar to the proposed project.

6.3.3.10 Hydrology and Water Quality

As with the proposed project, the development of this alternative would require the modification of the existing on-site pattern of drainage and would require the installation of drainage improvements that may include detention/retention basins, connection to existing in-street drainage features, on-site storm drains, and other features. While the extent of the impermeable surfaces (parking area) required under each alternative is reduced from that required for the proposed project, the environmental impact of these improvements would be similar. All local, State, and Federal policies and regulations pertaining to surface water and groundwater resources would remain in effect under these alternatives. Sedimentation and erosion from any on-site development has the potential to affect water quality. Similar to the proposed project, the construction of any on-site use would be required to follow applicable NPDES requirements, including the preparation of and adherence to an SWPPP and BMPs. As with the proposed project, runoff from paved surfaces, especially during a “first-flush” event, may be contaminated by a mixture of sediment, debris, and other contaminants. A standard condition with any such development would be preparation and implementation of a WQMP, which would effectively mitigate post-construction water quality impacts from the developed area. Similar to the proposed project, potential impacts related to hydrology and water quality would be less than significant.

6.3.3.11 Land Use and Planning

Implementation of the Reduced Intensity Alternative would require a General Plan Amendment that would change the General Plan designations for 7.13 acres of the project site from Residential to Business Park and an amendment to the Circulation Element of the General Plan, which includes the same changes identified for the proposed project. Implementation of this alternative would require a Zone Change from Business Park (BP), Multi-Family Residential (R-15), Suburban Residential (R-5), and Residential Agriculture (RA-2) to Light Industrial for the northern 92.1 acres with the southern 30.7 acres to remain for agricultural use as a “buffer” which would reduce potential land use impacts associated with the GPA and Zone Change to less than significant levels. However, the alternative would still be inconsistent with regional projections and the City’s Housing Element. Like the proposed project, this alternative would comply with applicable provisions of local and regional plans (e.g., Water Quality Control Plan and Air Quality Management Plan). Compliance with applicable land use impacts associated with this alternative would be reduced in magnitude when compared with the proposed project, but would still be significant.

6.3.3.12 Mineral Resources

The City of Moreno Valley General Plan does not identify the project site as a locally important mineral resource recovery site as there are no identified Mineral Resource Zones located within the City of Moreno Valley. Development of the project site with any build alternatives would not result in the loss of or reduce the availability of mineral resources or the resource base from which they would be derived. Compared with the proposed project, no greater impact would occur for any of the project build alternatives.

6.3.3.13 Noise

Under the proposed project, construction-related noise impacts were reduced to a less than significant level through the implementation of mitigation measures. Under this alternative, a similar amount of land would be disturbed; therefore, noise impacts associated with the construction of this alternative would be similar to those identified under the proposed project. With the implementation of mitigation identified for the proposed project, the short-term construction-related noise impacts associated with this alternative would remain less than significant, as identified for the proposed project. As with the proposed project, Alternative 3 would have truck deliveries and noise that would be generated during loading/unloading, trash compacting, and truck movements. Additionally, there would be noise associated with parking lot activities. These operational-related noise impacts

associated with this alternative would remain less than significant, as identified for the proposed project.

The reduction in project-related traffic under this alternative would result in a decrease in long-term traffic noise due to a reduction of daily traffic trips to the project site. Under the proposed project, the increase in future traffic noise along local roadway segments would not increase beyond the threshold of perception. Under this alternative, future increases in traffic-related noise would not be above the threshold of perception due to a decreased contribution of future traffic volumes. When compared to the proposed project, this alternative's contribution to future traffic noise would be reduced, thereby reducing overall mobile source noise impacts within the area. When compared to the proposed project, operational noise associated with the Reduced Intensity Alternative would result in a less than significant impact, as identified for the proposed project.

6.3.3.14 Population and Housing

This alternative would result in the development of 1,683,314 square feet of warehouse uses. Utilizing an employment factor of one employee for every 581 square feet of warehouse space,¹ the Reduced Intensity Alternative is anticipated to generate approximately 2,897 employment opportunities.² Since warehouse jobs do not require skills that would require a specialized workforce that may not reside in the City, it is anticipated that these warehouse jobs would be filled by persons already residing in the area. Therefore, no population increase would occur with the development of these warehouse jobs. However, this alternative would still eliminate planned housing on the site and have similar impacts to the proposed project. When this alternative is compared to the proposed project, the number of new jobs would be 25 percent less than the proposed project, with some small increase in agricultural jobs. Similar to the proposed project, impacts related to population and housing would remain less than significant as this alternative would continue the existing development trend envisioned by the City.

6.3.3.15 Public Services

Compared to the proposed project, this alternative would result in a reduction of approximately 25 percent of proposed warehouse uses as compared to the proposed project. Similar to the proposed project, demands on schools, parks, other public facilities, law enforcement, and fire protection services would be similar in magnitude as non-residential uses (impacts to schools and parks) are proposed under this alternative. Like the proposed project, development under this alternative would require payment of development impact fees for schools, police services, and fire services. The payment of development impact fees would offset any impacts to these public services that may result from the development of this alternative. Therefore, when compared to the proposed project, impacts associated with public services would remain less than significant with the payment of development impact fees.

6.3.3.16 Recreation

Similar to the proposed project, Alternative 3 does not contain a residential component. As identified in the Population and Housing section for Alternative 3, it is anticipated that the warehouse jobs would be filled by people already residing in the City. Therefore, there would be no increase in existing population and no increase in demand for park and recreation facilities. Because no increase in demand for recreational facilities would occur, impacts associated with recreation under this alternative would remain less than significant.

¹ Table IIB Average Number Employee per Square Foot, *Employment Density Report*, Southern California Association of Governments, Natelson Company, Inc, October 2001.

² 1 employee/581 square feet of warehouse use × 1,683,314 square feet of warehouse use = 2,897 warehouse jobs.

6.3.3.17 Traffic

Based on trip generation rates published in *ITE Trip Generation Handbook, 7th Edition*, this alternative would generate approximately 4,787 daily vehicle trips, which is approximately 37 percent less than what was identified for the proposed project. With a 37 percent reduction in daily trips, it is reasonable to conclude that traffic volumes (and congestion) on local roadways and intersections would be similarly reduced under this alternative. Although the volume of traffic is reduced under this alternative, impacts to LOS levels at nearby intersections and roadway segments would still occur and would require mitigation. The addition of traffic volumes associated with this alternative could result in an deficient LOS level at one or more of the intersections in the project vicinity during the lifetime of the development. While significant traffic impacts may occur under this alternative, these impacts would be mitigated in a manner similar to those of the proposed project. However, despite the identification of mitigation measures, certain roadway improvements would not be under the jurisdiction of the City and can not be guaranteed to be in place when development under Alternative 3 would become operational. Therefore, traffic-related impacts would remain significant and unavoidable, similar to the proposed project.

6.3.3.18 Utilities and Service Systems

Existing utility infrastructure for storm water and wastewater are present in adjacent roadways or parcels. Like the proposed project, development under this alternative would connect to existing utility infrastructure subject to the terms and conditions of the City and EMWD. As indicated in previously identified Table 6.D, this alternative would generate approximately 33,666 gallons of wastewater per day, which is a 25 percent decrease in wastewater than would be generated by the proposed project. When compared to the proposed project, this alternative's demands on wastewater treatment and capacity at existing wastewater treatment facilities would be reduced in magnitude. However, like the proposed project, adherence to existing requirements identified by the City and EMWD would result in impacts remaining at a less than significant level.

The development of the warehouse uses associated with this alternative would also require the installation of water supply infrastructure. However, as previously indicated in Table 6.C, this alternative would require approximately 61,272 gallons of water per day, which is a 25.2 percent decrease from that required by the proposed project. When compared to the proposed project, water usage demands would be reduced. However, similar to the proposed project, development under this alternative would be required to obtain verification from the water purveyor that water is available to serve the development. It is not known at this time specifically how much water new agricultural uses on site would utilize. Since this alternative would utilize less water than the proposed project and since water supply for the proposed project is available, it is reasonable to conclude that if this alternative was built in stead of the proposed project, adequate water would be available. Therefore, impacts related to water usage and water treatment/conveyance facilities would remain less than significant, similar to the proposed project.

Like the proposed project, the Reduced Intensity Alternative would also generate solid waste. As previously identified in Table 6.E, this alternative would generate 1,843 tons of solid waste per year, which is a 25 percent decrease to what the proposed project would generate. Therefore, demands on solid waste services and landfill capacity would be reduced in magnitude. However, similar to the proposed project, development under the Reduced Intensity Alternative would be required to adhere to the provisions of the solid waste provider that would service the project site. When compared to the proposed project, solid waste impacts would remain less than significant.

6.3.3.19 Cumulative Impacts

Similar to the proposed project, the Reduced Intensity Alternative would contribute to the permanent conversion of farmland, long-term operational air pollutant emissions of CO, ROC, NO_x, PM₁₀, and PM_{2.5}, and increased traffic operations on local roadways and at local intersections. Although the

amount of operational air pollutant emissions and traffic would be reduced in magnitude, because there are no feasible mitigation measures to reduce long-term air pollutant operational emissions and increased traffic, cumulative impacts would remain significant and unavoidable. This alternative would also require the development of the project site. Since there is no feasible mitigation that would reduce the cumulative impacts associated with the conversion of farmland, cumulative impacts associated with farmland conversion would remain significant and unavoidable.

6.3.3.20 Conclusion

Under the Reduced Intensity Alternative, impacts related to short-term construction-related air quality would be similar to the proposed project as the same amount of land would be disturbed and the same mix of equipment would be utilized. Long-term operational-related air quality impacts would be reduced in magnitude when compared to the project but would remain significant and unavoidable. Because this alternative would require a Zone Change and General Plan Amendment, land use impacts would be similar to the proposed project. The decrease in warehouse uses would result in a reduction of permanent jobs that would be created. This alternative would have a reduced demand on public services, recreation, and water use. However, similar to the proposed project, the payment of fees, dedication of parkland, and adherence to utility requirements would reduce these impacts to a less than significant level. This alternative reduces the impact associated with the loss of prime farmland to a less than significant level.

Because of the decrease in vehicle trips achieved under this alternative, impacts to the operation of local roadways and intersections would be proportionally reduced from what was identified for the proposed project; however, long-term traffic impacts would remain significant and unavoidable. Traffic-related noise would be reduced in magnitude but would be similarly mitigated like the proposed project and would remain less than significant. Water use for this alternative would be less than the proposed project and would generate less wastewater and solid waste. Under this alternative, the proposed project objectives are met and warehouse uses would still be built, but on a smaller scale.

6.3.4 Alternative 4: Mixed Commercial/Office/Residential

The Mixed Commercial/Office/Residential Alternative would result in the development of commercial, office and residential uses on the project site. The existing residential zoning of the project site (71.3 acres) would be retained and the development of 548 multiple-family residential units and 138 single-family residential units would occur in the southern and central portions of the site. The balance of the site (50 acres) would be developed with a mixture of up to a approximately 441,000 square feet of commercial uses and 441,000 square feet of office uses for a total of approximately 882,000 square feet of commercial and office uses.¹ The commercial component of this alternative would require a General Plan Amendment and Zone Change similar to the proposed project.

6.3.4.1 Aesthetics

The development of the alternative would result in the alteration of the existing visual character of the site but not to the same degree as the proposed project. The southern portion of the site would be developed with residential uses that would be similar to those outlined in the General Plan and current zoning. The northern portion of the property would have many more smaller buildings than the two large industrial buildings proposed by the current project. The appearance of these buildings would much likely be more attractive and less "monolithic" than the industrial buildings, so aesthetic impacts would be substantially reduced. With limitations on building heights, guided by the elevations of Building No. 2 of the proposed project, potential visual impacts of this alternative could be reduced

¹ Square footage is based on a 60 percent development of the project site.

to less than significant levels. However, it is likely that lighting impacts would still remain significant due to the large amount of new development that would be constructed.

6.3.4.2 Agricultural Resources

As identified in Section 4.2 of the EIR, the development of the project site with urban uses would result in the conversion of Prime Farmland. Because no feasible mitigation is available to fully mitigate for the loss of Prime Farmland, impacts associated with development of this alternative would be significant and unavoidable, similar to the proposed project.

6.3.4.3 Air Quality

Since the amount of land to be developed under this alternative would equal that developed under the proposed project, it is reasonable that a similar mix of equipment would operate during earthmoving and construction activities. As with the proposed project, peak daily construction emissions would be below SCAQMD thresholds of significance for CO, ROC, and SO_x. Peak localized daily construction emissions would also be similar for this alternative as the same amount of land would be disturbed during the construction phase. Although SCAQMD regulations and project-specific mitigation measures would reduce the amount of construction emissions, impacts associated with construction emissions for NO_x remain significant and unavoidable.

As previously identified in Table 6.B, the Mixed Commercial/Office/Residential Alternative would generate approximately 28,795 daily vehicle trips, which is more than the trips associated with the proposed project. Because the total number of trips is increased, the volume of each operational pollutants emitted during operation of this alternative would also be correspondingly increased. As indicated in Table 6.I, operational emissions would continue to exceed SCAQMD significance thresholds for NO_x as identified for the proposed project. This alternative would also exceed operational thresholds for CO, PM₁₀, and PM_{2.5}. These emissions were calculated based on similar methodologies and emission generation rates identified in the project air quality study.

Table 6.I: Alternative 4 Operational Emissions

Source	Pollutant Emissions, lbs/day					
	CO	ROC	NO _x	SO _x	PM ₁₀	PM _{2.5}
Proposed Project	1,801	289	2,001	3.1	370	85
Alternative 4	2,510	360	640	4.1	530	120
Net Change	+709	+71	+1,361	+1	+160	+35
SCAQMD thresholds	550	55	55	150	150	55
Exceeds thresholds?	Yes	Yes	Yes	No	Yes	Yes

Source: extrapolated from LSA Associates, Inc., December 2011

When this alternative is compared to the proposed project, impacts to air quality would be increased in magnitude. The volume of pollutants emitted would be increased and the long-term air quality impacts resulting from this alternative, as with the proposed project, would continue to be significant and unavoidable.

6.3.4.4 Biological Resources

This alternative would require site development resulting in the grading of the entire project site. No plant species listed by the State and/or Federal government as endangered or threatened was identified on-site during the field reconnaissance. Additionally, the project site is not located within any USFWS designated critical habitat. Based on the *Jurisdictional Delineation Report* prepared for the proposed project site, all three drainages (western, southern, and eastern) located on or adjacent

to the project site are determined to be jurisdictional waters of the United States. Similar to the proposed project, adherence to **Mitigation Measures 4.4.6.2A** and **4.4.6.2B** would reduce impacts to less than significant levels.

While the project site is located within the MSHCP, the project site is not within any MSHCP criteria cell or habitat linkage.¹ Furthermore, the project site is not located within an MSHCP mammal or amphibian survey area; a Narrow Endemic Plant Species Survey Area or Criteria Area Plant Species Survey Area; or a riparian, wetland, or vernal pool habitat/species survey area.² The project site is within the SKR HCP Fee Area, but is not within a Stephen's Kangaroo Rat Core Area. Focused surveys for SKR are not required for this project because the project lies within the SKR Fee Area; therefore, under the SKR HCP, only payment of a local mitigation fee is required.

Section 4.4 indicated the proposed project has the potential to affect one non-listed sensitive species, the burrowing owl. Approximately 72 acres of the project site is considered to support suitable burrowing owl habitat (eroded channel banks, suitable burrows, and abundant foraging habitat). A *Focused Burrowing Owl Survey* was conducted in accordance to the burrowing owl survey instructions set forth in the California Burrowing Owl Consortium's *Burrowing Owl Survey Protocol and Mitigation Guidelines*.³ The species was not detected on the site during the field survey. Although no burrowing owls were identified during the field study, the burrowing owl is a highly mobile species and a potential exists that, prior to project development, this species may occupy the site. Adherence to identified **Mitigation Measure 4.4.6.1C** would reduce impacts to a less than significant level. Similar to the proposed project, this alternative would produce less than significant impacts to biological resources with the adherence to identified mitigation measures.

6.3.4.5 Cultural Resources

Development of this alternative would result in extensive ground-disturbing activities affecting the entire project site, and similar archaeological and paleontological impacts would be anticipated when compared to the proposed project. While no such resources have previously been detected within the project limits, activities undertaken for this alternative (as with the proposed project) could encounter previously undetected cultural or paleontological resources. Adherence to the archaeological and paleontological mitigation measures identified for the proposed project in Section 4.5 of this EIR would reduce impacts to less than significant. Compared with the proposed project, no greater impact would occur with this alternative.

6.3.4.6 Forest Resources

The City of Moreno Valley's General Plan does not identify any forest resources on the project site or surrounding area, and the project site is vacant with no trees at present, although it did support citrus trees in the past. There are no significant impacts under the proposed project or any other development scenario for the project site.

6.3.4.7 Geology and Soils

Development of any of the build alternatives would have similar geologic and soil-related impacts. Like all of southern California, the project site is located in a seismically active area and is subject to ground shaking resulting from activity on local and regional faults. However, the maximum credible earthquake event on the San Jacinto Fault zone affecting the project site would measure magnitude 7.2. This earthquake event is less than or equal to design levels as defined by the UBC. The California Building Code (California Code of Regulations, Title 24) established engineering standards

¹ *Western Riverside County Multiple Species Habitat Conservation Plan, Volume I, Part I*, Dudek & Associates, June 17, 2003.

² *Ibid.*

³ *Burrowing Owl Survey Protocol and Mitigation Guidelines*, California Burrowing Owl Consortium, 1993.

appropriate for the seismic zone in which development may occur. Development of the proposed project site would be required to adhere to UBC, the California Building Code, and City design and engineering standards. Impacts associated with this issue would be considered less than significant. Compared with the proposed project, no greater impact would occur with any of the on-site build alternatives.

6.3.4.8 Global Climate Change

GHG emissions are correspondingly increased as the Mixed Commercial/Office/Residential Alternative would increase the number of daily trips made to the site. As previously identified in Table 6.F, the Mixed Commercial/Office/Residential Alternative would generate 45,000 tons of carbon (CO₂), 2.0 tons of methane (CH₄), and 4.2 tons of nitrous oxide (N₂O) per year. The total CO₂ equivalent for this alternative would be 0.046 Tg/yr CO₂ Eq., which is approximately 283.3 percent more than what was identified for the proposed project.

6.3.4.9 Hazards and Hazardous Materials

Development of this alternative would result in the on-site handling of hazardous substances, both during project construction and operation. The commercial and office uses would be introduced, while the number of residences would remain the same. Unlike commercial development, offices and residences do not typically store, use, sell, or transport large amounts of household hazardous materials. Because the amount of commercial uses would be increased, potential upsets or accidents would be increased in magnitude due to the increase in quantities of household hazardous materials that would be present on site. However, because all development in the City is required to adhere to existing local, State, and Federal regulations pertaining to hazardous materials, impacts associated with hazards and hazardous materials under the Mixed Commercial/Office/Residential Alternative would remain less than significant, as identified for the proposed project.

6.3.4.10 Hydrology and Water Quality

As with the proposed project, the development of this alternative would require the modification of the existing on-site pattern of drainage and would require the installation of drainage improvements that may include detention/retention basins, connection to existing in-street drainage features, on-site storm drains, and other features. While the extent of the impervious surfaces (paving area) required under each alternative is reduced from that required for the proposed project, the environmental impact of these improvements would be similar. All local, State, and Federal policies and regulations pertaining to surface water and groundwater resources would remain in effect under these alternatives. Sedimentation and erosion from any on-site development has the potential to affect water quality. Similar to the proposed project, the construction of any on-site use would be required to follow applicable NPDES requirements, including the preparation of and adherence to an SWPPP and BMPs. As with the proposed project, runoff from paved surfaces, especially during a "first-flush" event, may be contaminated by a mixture of sediment, debris, and other contaminants. A standard condition with any such development would be preparation and implementation of a WQMP, which would effectively mitigate post-construction water quality impacts from the developed area. Similar to the proposed project, potential impacts related to hydrology and water quality would be less than significant.

6.3.4.11 Land Use and Planning

Development of this alternative would not require a Zone Change or General Plan Amendment for the residential uses or office uses since they are allowed under the existing zoning. However, the commercial component of this alternative, which includes approximately 441,000 square feet, would require a change of zone and General Plan Amendment to allow the construction of commercial uses on the northwestern portion of the project site. These uses are physically isolated from the residential

uses to the southeast, and are generally consistent with commercial uses farther to the west along Moreno Beach Drive; however, they would be less consistent than the proposed project with the recently approved industrial uses immediately east of the project site (West Ridge). These uses may incrementally reduce vehicle trips (e.g., work, shopping) compared to the proposed industrial uses, and may be somewhat more compatible with existing residential uses since the commercial and office buildings will be smaller and separated compared to the more "monolithic" industrial buildings of the proposed project. This alternative land plan is much more similar to uses proposed in the existing General Plan and zoning, so potential land use impacts (i.e., by not having land use buffers between residential and industrial uses) would be reduced to less than significant levels. The addition of the residential uses would also eliminate potential impacts related to the Housing Element and growth management policies.

Like the proposed project, this alternative would comply with applicable provisions of local and regional plans (e.g., Water Quality Control Plan and Air Quality Management Plan). Compliance with applicable City policies related to development within the project site would ensure that on-site alternative uses would be compatible with existing development in the project area. Therefore, land use impacts associated with this alternative would be similar in magnitude when compared with the proposed project.

6.3.4.12 Mineral Resources

The City of Moreno Valley General Plan does not identify the project site as a locally important mineral resource recovery site as there are no identified Mineral Resource Zones located within the City of Moreno Valley. Development of the project site with any build alternatives would not result in the loss of or reduce the availability of mineral resources or the resource base from which they would be derived. Compared with the proposed project, no greater impact would occur for any of the project build alternatives.

6.3.4.13 Noise

The extent and duration of construction activities for this alternative are anticipated to be similar to those of the proposed project. Therefore, construction noise resulting from the construction of this mix of uses would be generally similar to the proposed project. Development of this alternative would require the implementation of mitigation measures to reduce construction noise impacts to a less than significant level. Compared with the proposed project, the short-term noise impacts resulting from project construction and stationary noise impacts associated with the operation of the shopping center would be similar to the proposed project, and remain less than significant with mitigation incorporated.

The increase in project-related traffic for this alternative would result in an incremental increase in traffic noise. This alternative's contribution to future traffic noise would result in more trips on the road, which increases the overall mobile source noise impact as compared to the proposed project. Parking lot noise and mechanical ventilation noise would still occur under this alternative and noise from the loading docks would still be present as the alternative includes a commercial component. However, the uses envisioned under this alternative would increase the number (i.e., more commercial buildings) and extent of noise sources but would still have noise approaching levels identified for the proposed project. When compared to the proposed project, operational noise impacts would be similar.

6.3.4.14 Population and Housing

The Mixed Commercial/Office/Residential Alternative would result in the development of 441,000 square feet of commercial uses, 441,000 square feet of office uses, 548 multiple-family residential units, and 138 single-family residential units. Retail jobs are likely to be filled by persons already

residing in the area. However, unlike retail jobs, which can often be filled by most working adults, office jobs under this alternative may require the employment of persons in specialized fields, which may not include persons already living in the area. Persons from outside of the area may be required to relocate to Moreno Valley to fill positions for office uses, resulting in a population increase in the City. To analyze a worst-case scenario, it is assumed that 50 percent of the office jobs would be filled by people who are not living in the area since some of the people that may work in the office jobs may relocate to the housing units proposed by this alternative. Utilizing employment factors of one employee for every 268 square feet of commercial use¹ and one employee for every 481 square feet of office uses, this alternative would create up to 2,563 jobs (1,646 commercial jobs and 917 office jobs).

The development of 548 multiple-family residential units and 138 single-family residential units would result in a direct increase to the existing population. Utilizing the Department of Finance factor of 3.717 people per household,² and assuming every resident was a new citizen of the City, the residential component of this alternative could result in a population increase of up to 2,550 people.³ When combined, the residential component and 50 percent of the office jobs may result in a direct increase of up to 3,009 people. When this alternative is compared to the proposed project, the number of new residents would be greater than that identified for the proposed project. However, similar to the proposed project, impacts related to population and housing would remain less than significant as this alternative would continue the existing development trend envisioned by the City.

6.3.4.15 Public Services

As discussed above, the Mixed Commercial/Office/Residential Alternative could result in population increase of up to 3,009 people within the City. Because of the amount of residential development that would occur within the project limits, demands on schools, parks, other public facilities, law enforcement, and fire protection services would be greater in magnitude than what was identified for the proposed project. However, similar to the proposed project, development under this alternative would require payment of development impact fees for schools, police services, and fire services. The payment of development impact fees would offset any impacts to these public services that may result from the development of this alternative. Therefore, when compared to the proposed project, impacts associated with public services would remain less than significant with the payment of development impact fees.

6.3.4.16 Recreation

The Mixed Commercial/Office/Residential Alternative includes the construction of up to 441,000 square feet of commercial uses, 441,000 square feet of office uses, 548 multiple-family residential units, and 138 single-family residential units. As previously stated, the increase in residential uses and offices uses would directly contribute to an increase of 3,009 people to the existing population. This increase in population would increase the demand for park and recreation facilities. The City has adopted a standard of 3 acres per thousand people as the parkland ratio standard. To meet this standard, the Mixed Commercial/Office/Residential Alternative would be required to dedicate or provide in-lieu fees for 9 acres of land for park uses. Because this alternative would directly contribute people to the existing population, recreation and park demands would be greater in magnitude than the proposed project. However, like the proposed project, the dedication of land or the payment of parkland fees would reduce these recreation impacts to a less than significant level.

¹ Table IIB, *Average Number of Employees per Square Foot, Employment Density Report*, Southern California Association of Governments, Natelson Company, Inc., October 2001.

² *State of California, Department of Finance, E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2010, with 2000 Benchmark. Sacramento, California, May 2010.*, <http://www.dof.ca.gov/Research/Research.php>, website accessed April 26, 2012.

³ 3.72 people/household × 548 multiple-family households = 2,037 people; 3.717 people/household × 138 single-family households = 513 people; 2,037 people + 513 people = 2,550 people.

6.3.4.17 Traffic

As identified in Table 6.B, this alternative would generate approximately 28,795 daily vehicle trips. In comparison to the proposed project, this alternative would result in a 261 percent increase in daily traffic. With an increase in daily traffic, an increase in volumes on nearby roads and intersections would occur and be greater in magnitude when compared to the proposed project. With the increase in traffic under this alternative, impacts to LOS levels at nearby intersections and roadway segments would still occur and would require mitigation. The addition of traffic volumes associated with this alternative could result in a deficient LOS level at one or more of the intersections in the project vicinity during the lifetime of the development. While significant traffic impacts may occur under this alternative, these impacts would be mitigated in a manner similar to those of the proposed project. However, despite the identification of mitigation measures, certain roadway improvements would not be under the jurisdiction of the City and cannot be guaranteed to be in place when development under this alternative would become operational. Therefore, as identified for the proposed project, traffic-related impacts would remain significant and unavoidable under this alternative.

6.3.4.18 Utilities and Service Systems

Similar to the proposed project, development under the Mixed Commercial/Office/Residential Alternative would connect to existing utility infrastructure subject to the terms and conditions of the City and EMWD. As indicated in previously identified Table 6.D, this alternative would generate approximately 242,770 gallons of wastewater per day, which is a 440.8 percent increase over what the proposed project would generate. When compared to the proposed project, wastewater treatment demand would be increased in magnitude as more wastewater would be generated under this alternative. However, like the proposed project, adherence to existing requirements identified by the City and EMWD would result in impacts remaining at a less than significant level.

The development of the commercial, office, and multiple-family uses associated with this alternative would also require the installation of water supply infrastructure to serve the project site. As previously indicated in Table 6.C, the Mixed Commercial/Office/Residential Alternative would require approximately 297,319 gallons of water per day, which is 263 percent greater than what would be required by the proposed project. When compared to the proposed project, water usage demands would be greater. However, similar to the proposed project, development under this alternative would be required to obtain verification from the water purveyor (EMWD) that water is available to serve the development. In the event that the amount of water required for this alternative is available, impacts associated with this issue would be less than significant. However, in the event that water is not available for the alternative, a new and significant impact associated with this issue would occur.

Like the proposed project, the Mixed Commercial/Office/Residential Alternative would also generate solid waste. As previously identified in Table 6.E, this alternative would generate 5,499 tons of solid waste per year, which is 123.9 percent more than what the proposed project would generate. Therefore, demands on solid waste services and landfill capacity would be increased in magnitude. However, similar to the proposed project, development under the Mixed Commercial/Office/Residential Alternative would be required to adhere to the provisions of the solid waste provider that would service the project site. When compared to the proposed project, solid waste impacts under this alternative would remain less than significant.

6.3.4.19 Cumulative Impacts

Similar to the proposed project, this alternative would contribute toward the permanent conversion of farmland, long-term operational air pollutant emissions, and increased traffic operations on local roadways and at local intersections. The amount of operational air pollutant emissions and traffic levels would be greater when compared to the proposed project. In addition, there are no mitigation measures that would reduce long-term air quality operational impacts to be low SCAQMD threshold standard and no mitigation measures that would reduce impacts associated with increased traffic in

the area. Therefore, cumulative impacts associated with long-term air quality and long-term traffic would remain significant and unavoidable. This alternative would also require the development of the project site. Since there is no feasible mitigation that would reduce the cumulative impacts associated with the conversion of Prime Farmland, cumulative impacts associated with farmland conversion would remain significant and unavoidable like the proposed project.

6.3.4.20 Conclusion

Under the Alternative 4, impacts related to short-term construction-related air quality would be similar to the proposed project as the same amount of land would be disturbed and the same mix of equipment would be utilized. Long-term operational-related air quality emissions would be increased in magnitude when compared to the project and would remain significant and unavoidable. Because of the increase in vehicle trips under this alternative, impacts to the operation of local roadways and intersections would be proportionally greater than what was identified for the proposed project. Long-term traffic impacts would remain significant and unavoidable. Traffic-related noise would be increased in magnitude but would be similarly mitigated like the proposed project and would remain less than significant.

Because this alternative would also require a Zone Change and General Plan Amendment, land use impacts would be similar to the proposed project. This alternative would result in the development of office uses that would generate permanent jobs, which may require workers who are not current residents of the City. Combined with the residential component, the office use would increase the total number of people that would be added to the City's population. This alternative would have greater demands on public services and recreation. However, the payment of fees and dedication of parkland would reduce these impacts to a less than significant level. This alternative would increase the amount of water utilized and increase the amount of wastewater and solid waste that would be generated on site. Similar to the proposed project, adherence to wastewater and solid waste requirements would reduce these impacts to a less than significant level. In the event that water is not available for development envisioned under this alternative, impacts to water resources would be significant and avoidable. Under this alternative, some of the proposed project objectives would not be met as warehouse uses would not be built. However, development of this alternative would provide new employment opportunities for residents of Moreno Valley.

6.3.5 Alternative 5: Off-Site Location

This alternative would result in the development of approximately 2.2 million square feet of warehouse uses on approximately 71.3 acres. The City reviewed its vacant land inventory to identify potential off-site locations for a project similar to that of the proposed project. There are only a few potential sites for a project of this size, mainly in the southern portion of the City within the Industrial Specific Plan. However, most of the sites large enough for development equivalent to the proposed project already have development proposals in process. The only feasible alternative project site identified by the City that is available at this time is bounded by Grove View Road on the north, Perris Boulevard to the east, Oleander Avenue to the south, and Indian Avenue on the west. However, this alternative off-site property is not owned or under the control of the applicant. Its location is shown as Site 14 on Figure 3.4, *Cumulative Projects*. The off-site location is currently zoned Industrial Specific Plan 208 (SP 208) and is designated Business Park/Light Industrial (BP) in the City's General Plan. As previously stated, the off-site location is within the Moreno Valley Industrial Area Plan (Specific Plan 208) which provides for business park, mixed use, light industry, and heavy industry districts on approximately 1,500 acres in southwestern Moreno Valley. Since the proposed uses are consistent with the uses identified for the off-site location, no zone change or General Plan Amendment would be required. It should be noted that there is a 1.6 million-square foot warehouse project proposed on this site at this time, and a Draft EIR for that project is currently in review.

6.3.5.1 Aesthetics

The Off-Site Location Alternative would consist of similar warehouse structures and uses as the proposed project, just on a different project site. However, with the off-site location, surrounding views would include similar warehouse uses. Under this alternative, development of the project site would still be required to comply with design standards contained in the City's Development Code such as setbacks, building height, lot dimensions, and maximum lot size. No significant visual resource has been identified within the limits of the alternative project site. Similar to the proposed project, this alternative would change the existing character of the site, replacing the current open space with developed uses. Like the proposed project, the warehouse uses would still require the installation and operation of parking and building lighting. Adherence to the City's lighting standards would reduce the significance of any impact associated with the generation of light or glare to a less than significant level. This alternative site is not in an area with designated scenic resources. Since the development of the project would not obstruct scenic views, the aesthetic impacts associated with this issue would be reduced in magnitude. Because changes to the visual character of the project site would be generally reduced under this alternative, impacts would be less than significant compared to the proposed project.

6.3.5.2 Agricultural Resources

Development of the off-site location would include the development of 71.3 acres with warehousing uses. As identified by the Riverside County Land Information System, the off-site location is identified as Prime Farmland and Farmland of Statewide Importance.¹ The total amount of farmland (71.3 acres) that would be converted to urban uses under the Off-Site Location Alternative would be less than the amount of farmland that would be converted under the proposed project (122.8 acres). The off-site location is not currently being actively farmed, and is located in an area that has been developed with urban uses and is still in the process of developing with more urban (mainly industrial) uses. Unlike the proposed project, which has other agricultural land to the east, housing to the southeast and north, and commercial development further west, the development of the off-site location would have a reduced potential to result in the additional conversion of adjacent farmland to urban uses as the rest of the March Air Reserve Base to the east and other warehouse/industrial projects to the west and south. Therefore, the potential for additional agricultural lands to be converted to urban uses would be reduced in magnitude when compared to the proposed project. Since there are no mitigation measures to fully mitigate for the loss of farmland to urban development, impacts remain significant and avoidable, similar to the proposed project.

6.3.5.3 Air Quality

Under the Off-Site Location Alternative, the total amount of land to be graded would be decreased by 50 acres as the alternative site location is 71.3 acres, which is smaller than the 122.8-acre proposed project site. It is anticipated that a similar mix of equipment would operate during earthmoving and construction activities on the project site. As with the proposed project, peak daily construction emissions would be below SCAQMD thresholds of significance for CO, SO_x, PM₁₀, and PM_{2.5}. Similar to the proposed project, compliance with SCAQMD rules would ensure fugitive dust emissions remain less than significant. However, since the off-site location is smaller than the proposed project site, construction emissions from the development of the Off-Site Location Alternative would be decreased in magnitude, but still not to less than significant levels.

Implementation of the Off-Site Alternative would result in the development of the same amount of warehouse space (2.2 million square feet) as the proposed project. Since the Off-Site Location Alternative would have the same square footage as the proposed project, it is reasonable to conclude that the Off-Site Location Alternative would generate the same amount of traffic. As previously indicated in Table 6.B, this alternative would generate approximately 7,527 daily vehicle trips. As

¹ *Riverside County Land Information System, Riverside County Geographic Information Services, <http://www3.tlma.co.riverside.ca.us/pa/rclis/index.html>, website accessed April 25, 2012.*

identified in Table 6. J, the volume of each operational pollutant emitted during operation of this alternative would be similar to that identified for the proposed project.

Table 6.J: Alternative 5 Operational Emissions

Source	Pollutant Emissions, lbs/day					
	CO	ROC	NO _x	SO _x	PM ₁₀	PM _{2.5}
Proposed Project	1,801	289	2,001	3.1	370	85
Alternative 5	1,801	289	2,001	3.1	370	85
Net Change	0 0 0			0	0	0
SCAQMD thresholds	550	55	55	150	150	55
Exceeds thresholds?	Yes	Yes	Yes	No	Yes	Yes

Source: LSA Associates, Inc., November 2011.

Although the off-site location would be located on a different site, CO hot spot conditions are anticipated to be similar to the proposed project as the off-site location is in close proximity to the project site and shares a common roadway. Because traffic associated with this alternative would be similar to what was identified for the proposed project, CO concentrations at local intersections would not be anticipated to exceed the State or Federal one-hour and eight-hour standards. No CO hot spots would occur, and the proposed project would not have a significant impact on local air quality for CO. For similar reasons, the off-site location does not have sensitive receptors nearby, so the alternative would not exceed the SCAQMD's LST thresholds. When the Off-Site Location Alternative is compared to the proposed project, impacts to air quality would be marginally reduced in magnitude for construction impacts. Although the volume of pollutants emitted would be similar during the operational phase of the project, the long-term air quality impacts resulting from this alternative would still contribute criteria pollutants to a non-attainment air basin. Therefore, long-term air quality impacts associated with this alternative would continue to be significant and unavoidable, similar to the proposed project.

6.3.5.4 Biological Resources

The Off-Site Location Alternative would require site development in a similar manner as would be required for the proposed project. The alternative site consists of fallow agricultural land surrounded by developing urban land uses. There are no drainage channels on site, and area drainage runs via sheet flow to the south and east toward the Perris Valley Storm Drain, a regional flood control facility. Biological surveys in the surrounding area have yielded no listed or otherwise sensitive species of plants or animals, but have found the potential for burrowing owl to be present in vacant land. Typical regulatory requirements would be to have a pre-construction survey of the property to identify the presence or absence of the burrowing owl. Mitigation for development projects on nearby properties has consisted mainly of paying MSHCP impact fees. The site is not within a Stephen's kangaroo rat (SKR) mitigation area. When compared to the proposed project, this alternative would result in a reduced but still less than significant impact on biological resources.

6.3.5.5 Cultural Resources

Although a detailed cultural assessment has not been conducted on this site, there have been development proposals in the area and their CEQA documentation indicates the area is generally sensitive for cultural resources, and several Native American tribes express ongoing interest for any development projects in this general area. However, implementation of standard mitigation measures, such as monitoring of grading by a qualified archaeologist, and tribal monitors if they are interested, can reduce potential impacts to less than significant levels.

6.3.5.6 Forest Resources

The City of Moreno Valley's General Plan does not identify any forest resources on the project site or surrounding area, and the project site is vacant with no trees at present, although it did support citrus trees in the past. There are no significant impacts under the proposed project or any other development scenario for the project site.

6.3.5.7 Geology and Soils

The alternative off-site area composed of deep alluvial soils with deep groundwater. The region is seismically active and the Elsinore Fault is several miles west of the site, but geotechnical constraints on this site are similar to those in surrounding industrial areas and even to the project site in terms of seismic risks. Construction of 2.2 million square feet of industrial space on the alternative site would not create or be subject to any significant or unusual geologic or soils constraints, and there would be no significant impact in this regard, similar to the proposed project.

6.3.5.8 Global Climate Change

GHG emissions are the same as the proposed project as the Off-Site Alternative is the proposed project on a different site in the City. As previously identified in Table 6.G, the Off-Site Location Alternative would generate 13,000 tons of carbon (CO₂), 0.49 ton of methane (CH₄), and 0.95 ton of nitrous oxide (N₂O) per year. The total CO₂ equivalent for this alternative would be 0.012 Tg/yr CO₂ Eq., which is the same amount that the proposed project would generate.

6.3.5.9 Hazards and Hazardous Materials

The off-site location is not identified on a list of hazardous waste generators or hazardous waste handlers.¹ While the presence of hazardous materials cannot be confirmed for the off-site location without a site-specific survey, because the off-site location has been utilized for agricultural production and because of the surrounding vacant land, it is anticipated that hazardous materials that could be found on site would be similar to what was identified for the proposed project. Because this alternative includes warehouse uses similar to the proposed project, development under this alternative would still result in the on-site handling of hazardous substances, both during project construction and during operations.

The off-site location would be located within the MARB Safety Zone Area 2.² MARB Safety Zone Area 2 limits residential development to one dwelling unit per 2.5 acres and allows agricultural, industrial, and commercial uses. Although the off-site location is within MARB Safety Zone Area 2, the type of development that would occur under this alternative would be consistent with the development allowed in Safety Zone Area 2. Therefore, airport hazards associated with this alternative would be less than significant. Similar to the proposed project, the off-site location is not located within 0.25 mile of an existing school. Therefore, hazards to nearby schools would be similar to that identified for the proposed project. Because the same regulations and standards associated with hazards and hazardous materials would apply under this alternative, impacts associated with the Off-Site Location Alternative would remain less than significant; similar to what was identified for the proposed project.

6.3.5.10 Hydrology and Water Quality

The alternative site area is relatively flat and drains mainly via sheet flow to the east and south. The Perris Valley Storm Drain, a regional flood protection facility, is located just east of the project area.

¹ *EnviroStor Database*, Department of Toxic Substances Control, <http://www.envirostor.dtsc.ca.gov/public/>, website accessed April 12, 2012.

² *March Air Reserve Base Safety Zone Map*, [http://www.rcaluc.org/filemanager/plan/old//March%20Air%20Reserve%20Base%20\(MARB\).pdf](http://www.rcaluc.org/filemanager/plan/old//March%20Air%20Reserve%20Base%20(MARB).pdf), website accessed April 26, 2012.

Development similar to the proposed project would be required to comply with existing City and County regulations/guidelines regarding industrial development, including locating pads out of identified floodways (the alternative site is not within a 100-year flood zone), and constructing improvements that protect local and regional water quality. The proposed project would have to comply with similar requirements regardless of where in Moreno Valley it was constructed. Therefore, potential impacts in this regard are considered to be less than significant with appropriate mitigation.

6.3.5.11 Land Use and Planning

The alternative project site identified by the City is bounded by Grove View Road on the north, Perris Boulevard to the east, Oleander Avenue to the south, and Indian Avenue on the west. This site is currently zoned Industrial Specific Plan 208 (SP 208) and is designated Business Park/Light Industrial (BP) in the City's General Plan. The Moreno Valley Industrial Area Plan (Specific Plan 208) provides for business park, mixed use, light industry, and heavy industry districts on approximately 1,500 acres in southwestern Moreno Valley. Since warehouse uses are permitted in the Moreno Valley Industrial Area Plan, the Off-Site Location Alternative would eliminate any land use incompatibility impacts associated with development of warehouse uses proximate to residential uses. For these reasons, land use impacts of this alternative would be less than significant compared to the proposed project.

6.3.5.12 Mineral Resources

The alternative offsite area is not designated as a mineral resource zone or aggregate resource area, so impacts of developing the site for industrial uses would have no significant impacts in this regard, similar to the proposed project.

6.3.5.13 Noise

The nearest sensitive receptors to the off-site location would be an existing single-family residence across Nandina Avenue, approximately 1,200 feet north of the off-site location northern boundary. The distance between the off-site location and the nearest sensitive receptor (1,200 feet) is greater than the distance between the proposed project site boundary and its nearest sensitive receptor (50 feet). Although the type of noise generated by the construction of the Off-Site Location Alternative is anticipated to be similar to that of the proposed project, the noise experienced at the closest sensitive receptor would be reduced due to a greater distance. No significant noise-related impacts were identified with the construction or operation of the proposed project. Noise generated from construction operations, parking lots, loading areas, truck deliveries, and building machinery with this alternative would be similar to that identified for the proposed project. Traffic-related noise is anticipated to be similar to the proposed project, as the Off-Site Location Alternative would generate the same number of daily vehicle trips. When compared to the proposed project, noise impacts would be similar in magnitude and would remain less than significant with mitigation.

6.3.5.14 Population and Housing

The Off-Site Location Alternative would result in the development of 2,244,638 square feet of warehouse space and would generate the same number of jobs (1,532 warehouse jobs) as the proposed project. Like the proposed project, it is anticipated that these warehouse jobs would be filled by persons already residing in the area. This alternative site would have no residential uses and is not planned to support any residential uses. Therefore, no population increase would occur with the development of this alternative site. When compared to the proposed project, impacts related to population and housing would be reduced but remain less than significant under this alternative.

6.3.5.15 Public Services

Similar to the proposed project, the off-site location is within an area already served by law enforcement, fire protection, and other public services. Under the Off-Site Location Alternative, the development of 2,244,638 square feet of warehouse uses would occur. This is the same amount of development envisioned by the proposed project. As with the proposed project, the payment of required development impact fees and adherence to development conditions imposed by the City and service providers would ensure no significant impact would occur, as the payment of development impact fees would offset any impacts to these public services that may result from the development of this alternative. Therefore, when compared to the proposed project, public service impacts associated with the alternative would remain less than significant, as identified for the proposed project.

6.3.5.16 Recreation

Similar to the proposed project, the Off-Site Alternative does not contain a residential component. It is anticipated that the warehouse jobs would be filled by people already residing in the City. Therefore, there would be no increase in existing population and no increase in demand for park and recreation facilities. Because no increase in demand for recreational facilities would occur, impacts associated with recreation under this alternative would remain less than significant.

6.3.5.17 Traffic

As identified in Table 6.B, this alternative would generate approximately 7,527 daily trips, which is the same number that would occur with the proposed project. With the level of traffic remaining the same, volumes on nearby roads and intersections would be similar in magnitude when compared to the proposed project. This alternative site and surrounding area have been planned for industrial uses similar to those that would be introduced under this alternative. The General Plan Circulation Element identified a number of roadway and intersection improvements that would need to occur in the future to maintain a adequate levels of service, including Interstate 215 to the west. While significant traffic impacts may occur under the Off-Site Location Alternative, these impacts would be mitigated in a manner similar to those of the proposed project. Until a detailed traffic study can be done, it is best to err on the side of caution and conclude that traffic-related impacts could be significant and unavoidable.

6.3.5.18 Utilities and Service Systems

Like the proposed project, development under the Off-Site Location Alternative would connect to existing utility infrastructure subject to the terms and conditions of the City and EMWD. As indicated in previously identified Table 6.D, since this alternative would result in the same amount of warehousing space, it is reasonable to conclude that the Off-Site Location Alternative would utilize the same amount as the proposed project. Therefore, this alternative is anticipated to generate approximately 44,888 gallons of wastewater per day, which is the same as the proposed project. However, like the proposed project, adherence to existing requirements identified by the City and EMWD would result in impacts remaining at a less than significant level.

As previously indicated in Table 6.C, the Off-Site Location Alternative would require approximately 81,900 gallons of water per day, which is the same amount required by the proposed project, as the same amount of square footage would be built under this alternative as identified by the proposed project. When compared to the proposed project, water usage demands would be the same. Similar to the proposed project, development under this alternative would be required to obtain verification from the water purveyor (EMWD) that water is available to serve the development. Since the amount of water needed for the proposed project is available, it is reasonable to conclude that the same amount of water for this alternative would be available. Therefore, impacts related to water usage and water treatment/conveyance facilities would remain less than significant which is similar to the proposed project.

Like the proposed project, the Off-Site Location Alternative would also generate solid waste. As previously identified in Table 6.E, this alternative would generate 2,456 tons of solid waste per year, which is the same amount of solid waste the proposed project would generate. Therefore, demands on solid waste services and landfill capacity would be similar in magnitude. However, similar to the proposed project, development under the Off-Site Location Alternative would be required to adhere to the provisions of the solid waste provider that would service the project site. When compared to the proposed project, solid waste impacts under this alternative would remain less than significant, similar to what was identified for the proposed project.

6.3.5.19 Cumulative Impacts

Similar to the proposed project, this alternative would contribute toward the permanent conversion of farmland, long-term operational air pollutant emissions, and increased traffic operations on local roadways and at local intersections. The amount of operational air pollutant emissions and traffic would be similar in magnitude as the Off-Site Location Alternative is the proposed project, only on a different site. Similar to the proposed project, there are no mitigation measures that would reduce long-term air quality operational impacts to below the SCAQMD threshold standard. Additionally, there are no mitigation measures that would reduce impacts associated with increased traffic in the area. Therefore, cumulative impacts associated with long-term air quality and long-term traffic would remain significant and unavoidable. This alternative would also require the development of the project site. Since there is no feasible mitigation that would reduce the cumulative impacts associated with the conversion of Prime Farmland, cumulative impacts associated with farmland conversion would remain significant and unavoidable like the proposed project.

6.3.5.20 Conclusion

With the Off-Site Location Alternative, impacts related to air quality and traffic would be similar to those identified with the proposed project. Long-term air quality operational impacts under this alternative would remain significant and unavoidable and would result in similar conditions as identified for the proposed project. Similarly, operational traffic would result in increased traffic on existing roadways and may affect existing intersection's level of service within the area. The alternative site is already an industrial zoned property in an industrial specific plan, so there would be no need for a Zone Change or General Plan Amendment. Since this alternative would result in a similar amount of development on the site, impacts to public services and recreation would remain the same when compared to the proposed project with the payment of fees reducing these impacts to a less than significant level. This alternative would require the same amount of water as the proposed project and would generate the same amount of wastewater and solid waste when compared to the proposed project. Similar to the proposed project, adherence to utility requirements would reduce these impacts to a less than significant level. This alternative would also eliminate the significant aesthetic, land use, and population/housing impacts of the proposed project.

6.4 COMPARISON OF PROJECT ALTERNATIVES

The following discussion compares the impacts of each alternative with the impacts of the proposed project, as detailed in Chapter 4.0 of this EIR. Table 6.K compares the impacts of the alternatives with those of the proposed project. This table identifies whether the alternative results in (1) a reduction of the impact; (2) a greater impact than the project; or (3) the same impact as the project. It should be noted that the No Project – No Build Alternative has no impacts compared to the proposed project.

Table 6.K: Comparison of Alternatives to the Proposed Project

Environmental Issue	Proposed Project	Alternative 1: No Project	Alternative 2: No Project (TTM32255)	Alternative 3: Reduced Intensity	Alternative 4: Mixed Commercial/ Office/ Residential	Alternative 5: Off-Site Location
Aesthetics SIG		-	← LTS	← SIG	← LTS	← LTS
Agricultural Resources	SIG -		=	← LTS	=	← SIG
Air Quality	SIG	-	← SIG	← SIG	→ SIG	SIG
Biological Resources	LTS/mit	- = =			=	← LTS
Cultural Resources	LTS/mit	- = =			=	=
Forest Resources	NI	- = =			=	=
Geology and Soils	LTS	-	=	=	=	=
Global Climate Change	LTS	- + =			+	=
Hazards and Hazardous Materials	LTS/mit	- = =			=	=
Hydrology and Water Quality	LTS/mit	- = =			=	=
Land Use and Planning	SIG -		← LTS	← SIG	=	← LTS
Mineral Resources	NI	- = =			=	=
Noise	LTS/mit	- = =			=	=
Population and Housing	LTS -		→ LTS =		← LTS	← LTS
Public Services	LTS	- = =			=	=
Recreation and Parks	LTS	- = =			=	=
Transportation and Traffic	SIG -		→ SIG	← SIG	→ SIG	SIG
Utilities and Service Systems	LTS	- = =			+	=

Impact Abbreviations

NI: No Impact
LTS: Less than Significant Impact
LTS/mit: Less than Significant Impact with Mitigation
SIG: Significant Impact with or without Mitigation

Project Alternatives

= Compared with the proposed project, no change in the significance of impact will occur.
→ Compared with the proposed project, the significance of the impact is increased.
← Compared with the proposed project, the significance of the impact is reduced.
+ Compared with the proposed project, a new impact has been identified.
- Compared with the proposed project, an impact has been eliminated.
←SIG Compared with the proposed project, the volume or extent of the impact is reduced, yet still significant.

6.5 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

As detailed in Tables 6.K and 6.L, Alternative 3 (Reduced Intensity Alternative) reduces the severity of project-related air quality impacts and is the only alternative that eliminates the significant agricultural impacts. However, reduced, long-term air quality impacts would remain significant after mitigation for this alternative. Alternative 3 would reduce the volume of daily traffic trips when compared to the proposed project; however, such impacts would remain significant and unavoidable until roadway improvements are completed. Alternative 2 (No Project - TTM32255) and Alternative 5 (Off-Site Location Alternative) would eliminate impacts associated with land use and planning as neither alternative would require a Zone Change or General Plan Amendment. The Off-Site Location would also eliminate the significant population/housing impacts and the significant aesthetic impacts. The remaining environmental issues would ultimately be similar to the proposed project through adherence to existing standards and mitigation measures. Though the Off-Site Location Alternative is located in a different part of the City, the amount of development under this alternative would remain the same as the proposed project, and it would satisfy all of the identified project objectives. Based on a review of all the potential impacts, the Reduced Intensity Alternative appears to be the environmentally superior alternative for the project site. These conclusions are based on the analysis in this section as summarized in Tables 6.K and 6.L.

Table 6.M: Summary of Significant Environmental Impacts of the Project Alternatives

Topic	Proposed Project Impact	Impacts of Alternatives ¹					
		PP	1	2	3	4	5
Aesthetics	Scenic Vistas	S		S			
Aesthetics	Scenic Resources and Scenic Highways	S			S		
Aesthetics	Substantial degradation of the existing visual character or quality of the site and its surroundings	S		S			
Aesthetics	Cumulative Aesthetic Impacts	S			S		
Agriculture	Loss of State Designated Farmland	S		S		S	S
Agriculture	Conversion to a Non-agricultural Use	S		S		S	S
Agriculture	Cumulative Agricultural Resources	S		S	S		S
Land Use	Consistency with Regional or Local Land Use Plans, Policies, or Goals	S			S	S	
Land Use	Cumulative land use changes	S			S		
Air Quality	Construction Air Pollutant Emissions	S		S	S	S	S
Air Quality	Architectural Coating Emissions	S		S	S		S
Air Quality	Operational Air Pollutant Emissions	S		S	S	S	S
Air Quality	Consistency with Air Quality Management Plan	S		S	S		
Air Quality	Cumulative Pollutant Air Emissions	S		S	S	S	S
Transportation	Opening Year (2016) with Project Level of Service	S		S	S	S	S
Transportation	Opening Year (2016) Cumulative with Project Level of Service	S		S	S	S	S
Transportation	Cumulative Traffic Impacts	S		S	S	S	S

¹ Proposed Project (PP)
 Alternative 1: No Project – No Build
 Alternative 2: No Project (Tentative Tract Map 32255)
 Alternative 3: Reduced Intensity
 Alternative 4: Mixed Commercial/Office/Residential
 Alternative 5: Off-Site Location
 S = Significant

CEQA (*CEQA Guidelines Section 15126.6 (e)[2]*) requires that the environmentally superior alternative be identified in the EIR. Because the Reduced Intensity Alternative allows for the development of smaller warehouse uses, provides new employment opportunities, reduces or eliminates most of the significant impacts of the project, including land use consistency, is consistent with the Housing Element, and generally meets the stated project objectives, it has been determined to be the environmentally superior alternative. The Off-Site Location is also environmentally superior to the proposed project by eliminating aesthetic and land use impacts, but significant air quality and agricultural impacts remain.

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9.0 ACRONYMS, ABBREVIATIONS, AND GLOSSARY OF TERMS

9.1 ACRONYMS AND ABBREVIATIONS

Acronyms and Abbreviations

§	Section
§§	Subsection
°C	degrees Celsius
°F	degrees Fahrenheit
µg/m ³	Micrograms per cubic meter
AAQS	Ambient Air Quality Standards
AB	Assembly Bill
ADA	Americans with Disabilities Act
ADT	Average Daily Traffic
AER	Annual Emission Reporting
AF ac	acre-feet
AFY	acre feet per year
AICUZ	Air Installation Compatible Use Zone
amsl	above mean sea level
ANSI	American National Standards Institute
AOU	American Ornithologists' Union
APN	Assessor's Parcel Number
AQMP	Air Quality Management Plan
AVR	Average Vehicle Ridership
Basin	South Coast Air Basin
BAU	Business As Usual
BDCP	Bay Delta Conservancy Plan
BMP	Best Management Practice
BP	Business Park
BPX	Business Park – Mixed Use
BTEX	Benzene, Toluene, Ethyl Benzene, and Xylene

Acronyms and Abbreviations

CAA	Federal Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CAPSSA	Criteria Area Plant Species Survey Area
CARB	California Air Resources Board
CASQA	California Stormwater Quality Association
CAT	California Climate Action Team
CBC	California Building Code
CBOC	California Burrowing Owl Consortium
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CDMG	California Department of Mines and Geology
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response Compensation Liability Act
CESA California	California Endangered Species Act
CFCP	California Farmland Conservancy Program
CFR	Code of Federal Regulations
CH ₄	Methane
CHMIRS	California Hazardous Material Incident Reporting Sites
CHP	California Highway Patrol
CHRIS California	California Historical Resources Information System
CIP	Capital Improvements Program
CIWMB California	California Integrated Waste Management Board
CMP Con	Construction Management Program
CNDDDB California	California Natural Diversity Data Base
CNEL	Community Noise Equivalent Level
CNG Comp	Compressed Natural Gas

Acronyms and Abbreviations

CNPS	California Native Plant Society
CO	Carbon Monoxide
CO ₂ Carbon	Dioxide
CO ₂ e Carbon	Dioxide Equivalent
CTR	California Toxics Rule
CUWCC	California Urban Water Conservation Council
CVC California	Vehicle Code
CVP	Central Valley Project
CWA	(Federal) Clean Water Act
CWC	California Water Code
CWMB	California Waste Management Board
DAMP	Drainage Area Management Plan
dB deci	bel
dBA	decibel on the A-weighted scale
DBESP	Determination of a Biologically Equivalent or Superior Preservation
DEH	Department of Environmental Health
DHS	(California) Department of Health Services
DIF	Development Impact Fees
DMM	Demand Management Measure
DOC	(California) Department of Conservation
DOF	(California) Department of Finance
DTSC	(California) Department of Toxic Substance Control
DWR	(California) Department of Water Resources
ECSD	Edgemont Community Services District
EDU	Equivalent Residential Dwelling Unit
EIC	Eastern Information Center
EIR	Environmental Impact Report
EMWD	Eastern Municipal Water District
EOP	Emergency Operations Plan
EPA	U.S. Environmental Protection Agency

Acronyms and Abbreviations

ERNS	Emergency Response Notification System
ESA	Environmental Site Assessment
FAR	Floor to Area Ratio
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FMMP	Farmland Mapping and Monitoring Program
ft foot/feet	
FTA	Federal Transit Administration
F-WQMP	Final Water Quality Management Plan
GHG Greenhouse gas	
GIS	Geographic Information Systems
GPA General Plan Amendment	
gpd	gallons per day
GWP Global Warming Potential	
HANS	Habitat Evaluation and Acquisition Negotiation Strategy
HCP	Habitat Conservation Plan
HFC Hydrofluorocarbon	
HHWE	Household Hazardous Waste Element
HI Hazard Indices	
HMB	Hazardous Materials Branch
HMBP	Hazardous Materials Business Plan
HMMA	Hazardous Materials Management Act
HMMP	Habitat Mitigation and Monitoring Plan
HPLV	High Pressure Low Volume
HRA Health Risk Assessment	
HVAC	Heating, Ventilating, and Air Conditioning
HWCL Hazardous Waste Control Law	
IAQ	Indoor Air Quality

Acronyms and Abbreviations

IEA	International Energy Agency
IPCC United	Nations Intergovernmental Panel on Climate Change
IRP Integrated	Resource Plan
IS Initial	Study
ISCST	Industrial Source Complex Short Term
ITE	Institute of Transportation Engineers
ITS	Intelligent Transportation Systems
kWh kilo	watt hour
LADP L-Aquil	a D’Pietra
lbs poun	ds
LCFS	Low Carbon Fuel Standard
L _{dn}	day-night average noise
LED light-emitting	diode
LEED	Leadership in Energy and Environmental Design
LEED CS	LEED for Core and Shell
L _{eq}	Equivalent continuous sound level (L _{eq})
LESA	(California) Land Evaluation and Site Assessments
LI Light	Industrial
L _{max}	maximum noise level
LNG	Liquefied Natural Gas
LOS	Level of Service
LSA	LSA Associates, Inc.
LST	Local Significance Threshold
m meter(s)	
MARB	March Air Reserve Base
MBTA	Migratory Bird Treaty Act
MC Munici	pal Code
MDP	Master Drainage Plan
MEI	maximum exposed individual
Metropolitan Metrop	olitan Water District of Southern California

Acronyms and Abbreviations

mg/Kg	milligrams per kilogram
mgd	million gallons per day
MICR	maximum individual cancer risk
MLD	Most Likely Descendant
MMRP	Mitigation Monitoring and Reporting Program
MMT	million metric tons
mph	miles per hour
MPO Metropolitan	Metropolitan Planning Organization
MPT	Master Plan of Trails
MRZ	Mineral Resource Zone
MS4	Municipal Separate Storm Sewer Systems
MSHCP	(Western Riverside County) Multiple Species Habitat Conservation Plan
mt metric	tons
mty	metric tons per year
MVPD	Moreno Valley Police Department
MVRWRF	Moreno Valley Regional Water Reclamation Facility
MVU	Moreno Valley Utility
MVUSD	Moreno Valley Unified School District
N ₂ O nitrous	oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NDDDB	National Diversity Data Base
NDFE	Nondisposal Facility Element
NDS	National Data and Surveying Services, Inc.
NEPA	National Environmental Policy Act
NEPSSA	Narrow Endemic Plant Species Survey Area
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NIA	Noise Impact Assessment
NO ₂ Nitrogen	Dioxide

Acronyms and Abbreviations

NOI	Notice of Intent
NOP	Notice of Preparation
NO _x	Oxides of Nitrogen
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NPPA	Native Plant Protection Act
NRCS	Natural Resource Conservation Service
O ₃ Ozo	ne
OEHHA	Office of Environmental Health Hazard Assessment
OHWM	Ordinary High Water Mark
OMB	(White House) Office of Management and Budget
OPR	Office of Planning and Research
OS Open	Space
PAKO	Primary Animal Keeping Overlay
PCE Passeng	er Car Equivalent
PFC Perfluorocarb	on
PM ₁₀	Particulate Matter with a Diameter of 10 Microns or Less
PM _{2.5}	Particulate Matter with a Diameter of 2.5 Microns or Less
POTW	Publicly Owned Treatment Works
ppm	parts per million
PRG	Preliminary Remedial Goal
PRIMP	Paleontological Resource Impact Mitigation Program
PVSC	Perris Valley Storm Channel
P-WQMP	Preliminary Water Quality Management Plan
q.v.	<i>quod vidē</i> , which see (presented elsewhere in the document)
R15	Residential 15 District (15 units per acre)
R2	Residential 2 District (2 units per acre)
R5	Residential 5 District (5 units per acre)
RA-2	Residential Agriculture (2 units per acre)

Acronyms and Abbreviations

RCFCWCD	Riverside County Flood Control and Water Conservation District
RCIWMP	Riverside Countywide Integrated Waste Management Plan
RCP Regi	onal Comprehensive Plan
RCRA	Resource Conservation and Recovery Act
RCTC	Riverside County Transportation Commission
RHNA	Regional Housing Needs Assessment
RivTAM	Riverside County Traffic Analysis Model
ROC Rea	ctive Organic Compounds
ROG	Reactive Organic Gas
ROW Right-	of-Way
RPR	(California) Rare Plant Ranking
RTA	Riverside Transit Agency
RTIP	Regional Transportation Improvement Plan
RUWMP	Regional Urban Water Management Plan
RWQCB	Regional Water Quality Control Board
SARA	Superfund Amendments and Reauthorization Act
SAWA	Santa Ana Watershed Association
SB Senate	Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
sf squ	are feet
SF ₆ Sulfur	Hexafluoride
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SKR	Stephen's kangaroo rat
SKR HCP	Stephen's kangaroo rat Habitat Conservation Plan
SO ₂	Sulfur Dioxide
SO _x Sulfur	Oxides

Acronyms and Abbreviations

SR-60	State Route 60
SRA	Source Receptor Area
SRRE	Source Reduction and Recycling Element
SVP	Society of Vertebrate Paleontology
SWIS	Solid Waste Information System
SWP State	Water Project
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminants
TAZ	Transportation Analysis Zone
T-BACT	Best Available Control Technology for Toxics
TCM	Transportation Control Measures
TCP	Traditional Cultural Place
TDM	Transportation Demand Management
TDS	Total Dissolved Solids
Tg CO ₂ Eq.	teragrams of carbon dioxide equivalent
TIA	Traffic Impact Analysis
TMA	Transportation Management Association
tpy	tons per year
TRI	Toxics Release Inventory
TRIS	Toxics Release Inventory System
TUMF	Transportation Uniform Mitigation Fee
UBC	Uniform Building Code
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USDOT	United States Department of Transportation
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

Acronyms and Abbreviations

UST	Underground Storage Tank
UWMP	Urban Water Management Plan
VIA	Visual Impact Assessment
VMT	Vehicle Miles Traveled
VOC Volatile	Organic Compounds
WDID	Water Discharge Identification
WDR Wa	stewater Discharge Requirement
WMUDS	Waste Management Units Database System
WQMP	Water Quality Management Plan
WRCOG	Western Riverside Council of Governments
WSA	Water Supply Assessment
ZC Zone	Change
ZNE Zero	Net Energy

9.2 GLOSSARY OF TERMS

Acre-Foot. An acre-foot is the quantity of volume of water that covers one acre to a depth of one foot; equal to 43,560 cubic feet or 325,851 gallons.

Aesthetics. The perception of artistic elements, or elements in the natural or human-made environment that are pleasing to the eye.

Air Quality Criteria. Air quality criteria are the levels of pollution and length of exposure at which adverse effects on health and welfare occur.

Air Quality Standards. Air quality standards are the prescribed level of pollutants in the outside air that cannot be exceeded legally during a specified time in a specified geographical area.

Ambient Noise. Ambient noise is the composite of noise from all sources near and far. The ambient noise level constitutes the normal or existing level of environmental noise at a given location.

Applicant. An applicant is a person who proposes to carry out a project which needs a lease, permit, license, certificate, or other entitlement, for use or financial assistance from one or more public agencies.

Arterial. An arterial is a major street carrying the traffic of local and collector streets to a end from freeways and other major streets, with controlled intersections and generally providing direct access to non-residential properties.

Attainment. Attainment means that there is compliance with State and Federal ambient air quality standards within an air basin.

A-Weighted Decibel (dBA). The dB on the A-weighted scale is the sound level obtained by use of A-weighting. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.

California Environmental Quality Act (CEQA). Enacted in 1970, CEQA requires State and local agencies to estimate and evaluate the environmental implications of their actions. It aims to prevent environmental effects of the agency actions by requiring agencies, when feasible, to avoid or reduce the significant environmental impacts of their decisions. If a proposed activity has the potential for a significant adverse environmental impact, an environmental impact report (EIR) must be prepared and certified as to its adequacy before taking a decision on the proposed project (California Public Resources Code §§21000 et seq.)

Capacity. The maximum rate of flow at which vehicles can be reasonably expected to traverse a point or uniform segment of a lane on roadway during a specified time period under prevailing roadway, traffic, and control conditions.

Collector. Relatively low-speed, low-volume street that provides circulation within and between neighborhoods. Collectors usually serve short trips and are intended for collecting trips from local streets and distributing them to the arterial network.

Community Noise Equivalent Level (CNEL). A 24-hour energy equivalent level derived from a variety of single-noise events, with weighting factors of 5 and 10 dBA applied to the evening (7 p.m. to 10 p.m.) and nighttime (10 p.m. to 7 a.m.) periods, respectively, to allow for greater sensitivity to noise during these hours.

Congestion Management Plan (CMP). A mechanism employing growth management techniques, including traffic level of service requirements, standards for public transit, trip reduction programs involving transportation systems management and jobs/housing balance strategies, and capital improvement programming, for the purpose of controlling and/or reducing the cumulative regional traffic impacts of development.

Cumulative Impact. As used in CEQA, the total impact resulting from the accumulated impacts of individual projects or programs over time.

Day-Night Average Level (L_{dn}). The average equivalent A-weighted sound level during a 24-hour day, obtained after the addition of 10 decibels to sound levels in the night after 10 p.m. and before 7 a.m. (Note: CNEL and L_{dn} represent daily levels of noise exposure averaged on an annual or daily basis, while L_{eq} represents the equivalent energy noise exposure for a shorter time period, typically one hour.)

Decibel (dB). The decibel (dB) is the unit of level that denotes the ratio between two quantities that are proportional to power; the number of decibels is 10 times the logarithm (to the base 10) of this ratio.

Emission Standard. The maximum amount of pollutant legally permitted to be discharged from a single source, either mobile or stationary.

Environment. In CEQA, the environment are “the physical conditions which exist within the area which will be affected by a proposed project, including land, air, water, mineral, flora, fauna, noise, and objects of historic or aesthetic significance.”

Environmental Impact Report (EIR). A report required pursuant to the California Environmental Quality Act that assesses all the environmental characteristics of an area, determines what effects or impacts will result if the area is altered or disturbed by a proposed action, and identifies alternatives or other measures to avoid or reduce those impacts.

Equivalent Energy Level (L_{eq}). L_{eq} is the sound level corresponding to a steady-state sound level containing the same total energy as a time-varying signal over a given sample period. L_{eq} is typically computed over 1-hour, 8-hour, and 24-hour sample periods.

Feasible. To be feasible, according to CEQA, means to be capable of being accomplished in a successful manner within a reasonable time taking into account economic, environmental, social, and technological factors.

Findings. Findings required by CEQA are the conclusions made regarding the significance of a project in light of its environmental impacts. A Statement of Overriding Considerations does not obviate the need to make other required CEQA findings.

Floor Area Ratio (FAR). The FAR is the gross floor area permitted on a site divided by the total net area of the site, expressed in decimals to one or two places. For example, on a site with 10,000 net square feet of land area, a floor area ratio of 1.0 will allow a maximum of 10,000 gross square feet of building floor area to be built. On the same site, an FAR of 1.5 would allow 15,000 square feet of floor area; an FAR of 2.0 would allow 20,000 square feet; and an FAR of 0.5 would allow 5,000 square feet. Also commonly used in zoning, FARs typically are applied on a parcel-by-parcel basis as opposed to an average FAR for an entire land use or zoning district.

Floor Area, Gross. The sum of the horizontal areas of the several floors of a building measured from the exterior face of exterior walls, or from the centerline of a wall separating two buildings, but not including any space where the floor-to-ceiling height is less than six feet. Some cities exclude specific kinds of space (e.g., elevator shafts, parking decks) from the calculation of gross floor area.

Freeway. A freeway is a high-speed, high-capacity, limited-access road serving regional and countywide travel. Such roads are free of tolls, and contrasted with turnpikes or other toll roads. Freeways generally are used for long trips between major land use generators. Major streets cross at a different grade level.

Incorporation by Reference. “Incorporation by reference” is a CEQA term meaning reliance on a previous environmental document for some portion of the environmental analysis of a project. See *CEQA Guidelines* §15150.

Initial Study. An Initial Study is a preliminary CEQA analysis prepared by a Lead Agency determining whether an EIR or Negative Declaration must be prepared, and identifying the significant environmental effects to be analyzed in an EIR.

Land Use. Any land use is the determination by a governing authority of the use to which land within its jurisdiction may be put so as to promote the most advantageous development of the community.

Lead Agency. The lead agency is the public agency that has the principal responsibility for carrying out or approving a project. The Lead Agency decides whether an EIR or Negative Declaration is required for a project, and causes the appropriate document to be prepared.

Level of Service (LOS). LOS is a qualitative measure describing operational conditions within a traffic stream and how motorists and/or passengers perceive them.

Maximum Noise Level (L_{max}). The maximum A-weighted sound levels measured on a sound level meter, during a designated time interval, using fast time averaging.

Mitigation Measure. A mitigation measure is a change in a project designed to avoid, minimize, rectify, reduce, or compensate for a significant environmental impact.

Mitigation Monitoring and Reporting Program (MMRP). When a lead agency adopts a mitigated negative declaration or an EIR, it must adopt a program of monitoring or reporting which will ensure that mitigation measures are implemented. (See CEQA Statute §21081.6(a) and *CEQA Guidelines* §§15091(d) and 15097.)

Noise. Noise is any sound that is undesirable because it interferes with speech and hearing, or is intense enough to damage hearing, or is otherwise annoying (unwanted sound).

Noise Contours. Noise contours are lines drawn about a noise source indicating equal levels of noise exposure.

Notice of Determination (NOD). An NOD is a brief notice filed with the State Clearinghouse to document project approval. The filing of the NOD starts the statute of limitations period. (See *CEQA Guidelines* §15373.)

Notice of Preparation (NOP). An NOP is a brief notice to notify the public, Responsible and Trustee Agencies that an EIR is being prepared for a project. The notice serves to solicit guidance from those

agencies and the public about the scope and content of the environmental information to be included in the EIR. (See *CEQA Guidelines* §15375.)

Peak Hour. The hour of highest traffic volume on a given section of roadway between 7:00 a.m. and 9:00 a.m. or between 4:00 p.m. and 6:00 p.m.

Project Description. A project description describes the basic characteristics of the project including location, need for the project, project objectives, technical and environmental characteristics, project size and design, project phasing and required permits. The level of detail provided in the project description varies according to the type of environmental document prepared.

Project EIR. A project EIR is an EIR that examines the impacts that would result from development of a specific project. (See *CEQA Guidelines* §15161.)

Project. According to CEQA, a project is the whole of an action that has the potential to result in significant environmental change in the environment, directly or ultimately. (See *CEQA Guidelines* §15378.)

Public Hearing. A public hearing is a mechanism for providing the public an opportunity to comment on and present evidence relating to a proposed project and its Draft EIR.

Responsible Agencies. According to CEQA, responsible agencies are all public agencies other than the Lead Agency that have discretionary approval power over the project. (See *CEQA Guidelines* §15381.)

Reviewing Agencies. Reviewing agencies are local, State and Federal agencies with jurisdiction over the project and are or resources potentially affected by the project. Cities and counties are also considered reviewing agencies.

Scoping Meeting. A scoping meeting is an optional meeting pursuant to CEQA in which the lead agency meets with members of the public or agency representatives after the Notice of Preparation has been issued to discuss environmental issues related to a project. Scoping sessions provide the opportunity to discuss environmental issues, project alternatives and potential mitigation measures that may warrant in-depth analysis in the environmental review process.

Sensitive Receptors. Sensitive receptors are people or institutions with people that are particularly susceptible to illness from environmental pollution, such as the elderly, very young children, people already weakened by illness (e.g., asthmatics), and persons engaged in strenuous exercise.

Significant Effect on the Environment. A significant effect on the environment means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance (*CEQA Guidelines* §15382).

Thresholds of Significance. Thresholds of significance are criteria for each environmental issue area to assist with determinations of significance of project impacts. They are based on *CEQA Guidelines* Appendix G.

Trustee Agency. According to CEQA, a Trustee agency is a State agency that has jurisdiction by law over natural resources affected by a project which are held in trust for the people of the State of California. (See *CEQA Guidelines* §15386.)

Volume (Transportation). The volume of traffic is the total number of vehicles that pass over a given point or section of a roadway during a given time interval. Volumes may be expressed in terms of annual, daily, hourly, or sub-hourly periods.

Wastewater. Wastewater is water carrying dissolved or suspended solids from homes, farms, businesses, and industries. The wastewater treatment process includes any process that modifies characteristics of the wastewater, usually for the purpose of meeting effluent standards.

Zoning. Regulation by zone districts of the height, use, and area of structures, the use of land, and the density of population and intensity of allowable uses.

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**Facts, Findings and Statement of Overriding Considerations
Regarding the Environmental Effects and the Approval of the
ProLogis Eucalyptus Industrial Park
(State Clearinghouse No. 2008021002)**

I. INTRODUCTION

The City Council of the City of Moreno Valley (this “Council”), in certifying the EIR for the Prologis Eucalyptus Industrial Park and approving a General Plan Amendment, a Zone Change, Tentative Parcel Map 35679 and a Master Plot Plan and related Plot Plans authorizing the construction of approving Tentative Parcel Map 35679 and a Site Plan authorizing the construction of up to approximately 2,244,638 ~~1,529,498~~ s 1,529,498 square feet of distribution warehouse space (the “Project”), makes the Findings described below and adopts the Statement of Overriding Considerations presented at the end of the Findings. The Environmental Impact Report (“EIR”) was prepared by the City of Moreno Valley (“City”) acting as lead agency pursuant to the California Environmental Quality Act (“CEQA”). Hereafter, unless specifically identified, the Notice of Preparation (“NOP”), Notice of Availability & Completion (“NOA/NOC”), Draft EIR (“DEIR”), Technical Studies, Final EIR containing Responses to Comments and textual revisions to the Draft EIR (“FEIR”), and the Mitigation Monitoring and Reporting Program (“MMRP”) will be referred to collectively herein as the “EIR.” These Findings are based on the entire record before this Council, including the EIR. This Council adopts the facts and analyses in the EIR, which are summarized below for convenience. The omission of some detail or aspect of the EIR does not mean that it has been rejected by this Council.

Background

The DEIR analyzed the Prologis Eucalyptus Industrial Park, Tentative Parcel Map 35679, and Site Plan as the construction of up to approximately 2,244,638 square feet of distribution warehouse space. Based on input received at the City’s public hearings and after completion of the FEIR on April 2, 2014, the applicant proposed the City adopt a less intensive modified plan which is consistent with similar to the Reduced Intensity Alternative evaluated in DEIR (pages 6-18 through 6-24 and 6-37 through 6-40). The Reduced Intensity Alternative evaluated developing 25% less warehousing on the site (1.7 million square feet) compared to the proposed Project (2.2 million square feet). The applicant has now proposed to develop 4 of the 6 warehouse buildings (1.5 million square feet) which is consistent with the Reduced

Intensity Alternative evaluated in DEIR Section 6.0 (1.7 million square feet). The DEIR did not contain a specific site plan depicting the Reduced Intensity Alternative, so the applicant has prepared a site plan that is consistent with the Reduced Intensity Alternative.

The proposed plan is consistent with the Reduced Intensity Alternative and proposes that 84.8 acres of the site would be developed for warehousing while the remaining 38 acres would remain undeveloped at this time. The vacant land would retain its existing General Plan and zoning designations (RA-2 and R-5). This represents a net decrease in square footage of approximately 32 percent compared to the original Proposed Project, and a 7 percent reduction in square feet compared to the Reduced Intensity Alternative evaluated in the DEIR (see Table 4.A of the FEIR). The plot plan applications for the two industrial buildings (Buildings 5 and 6 in the original site plan) that were closest to the residential homes to southeast of the project site have been withdrawn and the buildings removed from the master plot plan.

Warehouse buildings under the Reduced Intensity Alternative are 1,515 feet from the nearest existing residential neighborhood (southwest), and 1,636 feet from the existing neighborhood at the southeast corner. The proposed plan also provides a 250-foot buffer between the nearest warehouse truck court and future residential uses. In addition, the large detention basin that was proposed at the south end of Building 6 in the original plan would be moved to near the southeast corner of Building 4. Approval of this plan would also establish a minimum 250-foot buffer from truck activity areas and future residential uses on the former location of warehouse Buildings 5 and 6 under the original plan. Otherwise, the development characteristics of Buildings 1 through 4 would remain the same as those outlined and analyzed in the Draft EIR. For the purposes of the environmental analysis, the modified plan is considered equivalent to the Reduced Intensity Alternative except where noted in the FEIR that impacts are less than those of the Reduced Intensity Alternative. The modified Master Plot Plan exhibit is shown in Figure 4.2 in the FEIR.

It is important to emphasize that the proposed modified plan would allow development of future residential uses in the southeast portion of the project site, consistent with the existing R5 and RA-2 zoning (Parcel 5), adjacent to the existing residential neighborhood to the southeast. The modified plan also has a 250-foot setback from the project warehouses to the future residential uses, consistent with the City's municipal code requirements (i.e., use of a 250-foot buffer and a non-building easement over a portion of Parcel 5).

II. PROJECT SUMMARY

A. PROJECT DESCRIPTION

1. Site Location

The Project is located in the eastern portion of the City of Moreno Valley. The Project site consists of ten parcels totaling approximately 122.8 net acres located south of and adjacent to SR-60, east of Moreno Valley Auto Mall, and adjacent to and west of the Quincy Channel.

The Project site is vacant and supports mainly weedy vegetation. The major road that provides access to the Project site is Eucalyptus Avenue. Land adjacent to the Project site includes vacant land east and south of the proposed Project site, SR-60 to the north, and the Moreno Valley Auto Mall and the City of Moreno Valley Fire Station No. 58 northwest of the Project site. Existing single-family residential uses are located approximately 50 feet southeast of the southeastern corner of the Project site.

~~2. Project Description~~

~~The Project site is approximately 122.8 acres in size. The proposed Project includes the construction and operation of a warehouse facility comprising six buildings consisting of a total of approximately 2,244,638 square feet. The Project site is divided into northern and southern areas. The northern area, north of the future Eucalyptus Avenue, would contain approximately 1,030,377 square feet of warehouse uses divided between two buildings (No. 1 and 2). Development in the southern area, south of the future Eucalyptus Avenue, would consist of approximately 1,214,261 square feet of warehouse uses divided among four separate buildings (No. 3 through 6). The master and individual building plans, including grading, landscaping, elevations, and selected line of sight plans. The Project includes the construction of asphalt/concrete surfaces in parking and driving areas, and landscaping along the perimeter and roadway frontages.~~

~~The Project site is currently designated Residential in the City's General Plan. The site is zoned as Business Park (BP), Business Park/Mixed Use (BPX), Residential 15 District (R15), Residential 5 District (R5), and Residential Agriculture 2 (RA 2). The zoning is not consistent with the existing General Plan land use and the Project is not consistent with the General Plan and zoning. Therefore the Project will require a General Plan Amendment which would change the designation to Business Park and a Zone Change that would change the zoning of the site to Light Industrial (LI).~~

2. Project Description of the Reduced Intensity Alternative

The Project site is approximately 122.8 acres in size. The proposed Project includes the construction and operation of a warehouse distribution facility comprised of ~~ing six~~ four buildings consisting of a totaling ~~of approximately~~ 1,529,498~~500~~ square feet on four separate parcels. The Project site is divided into northern and southern areas. The northern area, north of the future Eucalyptus Avenue, would contain approximately 1,131,379 square feet of warehouse uses divided between two buildings (No. 1 and 2). Development in the southern area, south of the future Eucalyptus Avenue, would consist of approximately 398,121 square feet of warehouse uses divided among two separate buildings (No. 3 and 4). ~~The master and individual building plans, including grading, landscaping, elevations, and selected line of sight plans.~~The Project includes the construction of asphalt/concrete surfaces in parking and driving areas, and landscaping along the perimeter and roadway frontages.

The Project site is currently designated R15, R5 and RA-2 Residential and Business Park in the City's General Plan. The site is zoned as Business Park (BP), Business Park/Mixed Use (BPX), Residential 15 District (R15), Residential 5 District (R5), and Residential Agriculture 2 (RA-2). The proposed project ~~zoning~~ is not consistent with the existing General Plan land use and ~~the Project is not consistent with the General Plan and Zoning.~~ Therefore the Project requires a General Plan Amendment which would change the 33 acres of Residential 15 designation to Business Park and a Zone Change that would change the zoning of 84 acres of the site from Business Park and Residential 15 to Light Industrial (LI) ~~for the 33.3 acres.~~ ~~The 38~~~~Thirty eight~~ acres south of future Eucalyptus Avenue will remain R-5 and RA-2 General Plan land use and zoning to accommodate future residential units.

Finding: From this point forward the Reduced Intensity Alternative is reflected in the findings and the statement of overriding considerations. The modified plan is identified as the "Project" the City Council has considered as "environmentally superior" to the Project analyzed in the DEIR. Additional analysis comparing the Project as proposed in the DEIR has been provided in the FEIR.

34. Actions Covered by the EIR

The EIR will support the following discretionary and non-discretionary approvals:

- General Plan Amendment to amend the Land Use Element resulting in a change of land use designations for portions of the ~~southern portion of the~~ project site (approximately ~~71.3~~ 33.3 acres) from Residential 15, ~~Residential 5, and Residential Agriculture~~ to Business Park.

- General Plan Amendment to amend the Circulation Element including (1) elimination of undeveloped Quincy Street from Eucalyptus Avenue to Encilia Avenue; and (2) realignment of Encilia Avenue from its current alignment such that its westerly terminus is located at Moreno Beach Drive instead of the current General Plan westerly terminus at Eucalyptus Avenue. The segment between Quincy Channel and Moreno Beach Drive would be classified as a Collector.
- Change of Zone resulting in a change for 84 acres from Business Park (BP), Business Park Mixed-Use (BPX), and Residential 15 (R15), ~~Residential 5 (R5), and Residential Agriculture (RA-2)~~ to Light Industrial (LI) on the project site.
- ~~Modification of the Primary Animal Keeping Overlay (PAKO) zone district per the recommended change of zone.~~
- Modification of the Master Plan of Trails to eliminate trail segment along the west side of the Quincy Channel north of the future Eucalyptus Avenue and add a segment along the north side of Eucalyptus Avenue from the Quincy Channel to the west boundary of the project site.
- Approval of a Master Plot Plan and five-three related Plot Plans.
- Tentative Parcel Map approval.
- Certification of the Environmental Impact Report.
- Final Parcel Map, public improvement agreement, and related securities approval.
- Issuance of an encroachment permit for any construction work done in any City-controlled ROW. Encroachment permit issuance requires approval of improvement plans, public improvement agreement execution with securities posted, and satisfying those conditions of approval required prior to grading.
- Approval of a Storm Water Pollution Prevention Plan (SWPPP) to accommodate site runoff during construction.
- Approval of a Preliminary Water Quality Management Plan (P-WQMP) and Final Water Quality Management Plan (F-WQMP) to mitigate for post-construction runoff flows (non-discretionary).

- Issuance of a Grading Permit that requires approval of a grading plan, approval of the final drainage study, approval of the F-WQMP, obtaining an Notice of Intent and Water Discharge Identification Number, obtaining a WQMP#, and satisfying those conditions of approval required prior to grading (non-discretionary).
- Issuance of a Building ~~permit~~Permit. The comprehensive building permit includes building, plumbing, mechanical, and electrical permits (non-discretionary).

Approvals and permits required by other agencies include:

- Approval from the City and Riverside County Flood Control and Water Conservation District (RCFCWCD) to ensure that construction site drainage velocities are equal to or less than the pre-construction conditions and downstream water quality is not worsened
- Approval of Quincy Channel improvements from the RCFCWCD
- A Section 404 Permit from the U.S. Army Corps of Engineers (USACE)
- A Section 401 Water Quality Certification from the Regional Water Quality Control Board (RWQCB)
- A Section 1602 Streambed Alteration Agreement from the California Department of Fish and Wildlife (CDFW)
- Encroachment permits from Caltrans for any construction work done in any State-controlled right of way(i.e., SR-60)

B. PROJECT OBJECTIVES

The Project Objectives include the following:

- Provide industrial warehouse facilities that meet the substantial and unmet demands of businesses located in the City and County;
- Provide new industrial development that is attractive and minimizes conflicts with the surrounding existing uses;

- Provide a variety of new employment opportunities for the citizens of Moreno Valley and surrounding communities;
- Encourage warehouse distribution services that take advantage of the area's close proximity to various freeways and transportation corridors;
- Encourage new development consistent with the capacity and municipal service capabilities;
- Provide infrastructure improvements to meet phased Project needs in an efficient and cost-effective manner;
- Cluster industrial warehouse uses near access points to the state highway system to reduce traffic congestion on surface streets and to reduce air pollutant emissions from vehicle sources;
- Develop land uses that provide the City with a positive revenue/cost ratio and provide needed infrastructure in a timely fashion;
- Address community circulation, both vehicular and pedestrian, utilizing available capacity within the existing circulation system, and provide fair share improvements to various future-year deficient intersection or road segments; and
- Reduce peak hour vehicle trips, energy, and water consumption compared to existing General Plan land uses.

III. ENVIRONMENTAL REVIEW AND PUBLIC PARTICIPATION

The City has conducted an extensive review of this Project which included the DEIR, FEIR and supporting technical studies, along with a public review and comment period first during the circulation of the Notice of Preparation/Initial Study and then through the circulation of the DEIR. The following is a summary of the environmental review of this Project:

- On February 4, 2008, the City circulated a Notice of Preparation (“NOP”) and the Initial Study that identified the environmental issues that the City anticipated would be analyzed in the Project’s DEIR to the State Clearinghouse, responsible agencies, and other interested parties.

- On February 13, 2008, the City conducted a public scoping meeting to allow members of the public to provide comments and input regarding the scope and content of the DEIR.
- The NOP public review period ran for 30 days, from February 4 to March 4, 2008. Written comments on the NOP were received from 22 different agencies, organizations, and individuals. The scope of the issues identified in the comments expressing concern included potential impacts associated with:
 - Change in use from established General Plan and zoning designations. This issue was discussed in Section 4.1, Aesthetics, and Section 4.8, Land Use, of the DEIR [and FEIR](#);
 - Short-term and long-term air pollutant emissions including dust and diesel particulates from truck exhaust that could negatively affect nearby residential uses. This issue was discussed in Section 4.3, Air Quality, of the DEIR [and FEIR](#);
 - Short-term and long-term noise impacts that could affect nearby residential uses. These issues were discussed in Section 4.9, Noise, of the DEIR [and FEIR](#);
 - Potential impacts to future planned school sites were addressed in Section 4.8, Land Use, of the DEIR [and FEIR](#);
 - Potential water-related impacts (drainage, water quality of runoff from the project) were addressed in Section 4.7, Hydrology and Water Quality, in the DEIR [and FEIR](#);
 - Project truck traffic causing congestion on local roads, intersections, and freeway ramps, primarily on Redlands Boulevard, and impacts to vehicular, bicycle, and pedestrian safety. These issues were discussed in Section 4.11, Transportation, of the DEIR [and FEIR](#);
 - Impacts to aesthetics from loss of views, loss of neighborhood character, and increased night lighting as this area transitions from previously planned residential and business park uses to industrial uses along the south side of

SR-60. These issues were discussed in Section 4.1, Aesthetics, and 4.8, Land Use, of the DEIR [and FEIR](#); and

- Potential loss of biological or cultural (archaeological) resources by grading and development of the site, and suggestions to consult with local Native American tribes per SB 18. These issues were discussed in Section 4.4, Biological Resources, and 4.5, Cultural Resources, of the DEIR [and FEIR](#).
- Based on the Initial Study, included in the DEIR in Appendix A, and comments received pursuant to the NOP, it was determined that some issues need not be addressed in depth in the DEIR because previous studies of other analyses provided sufficient information, analysis, and mitigation to conclude that there was little or no potential for significant impacts. These environmental topics included: (1) Geology and Soils; (2) Mineral Resources; (3) Public Services; (4) Recreation; and, (5) Forest Resources.
- As required by the California Environmental Quality Act (CEQA) Guidelines Section 15087, a Notice of Completion (NOC) of the Draft EIR State Clearinghouse No. 2008021002 for the Eucalyptus Industrial Park project was filed with the State Clearinghouse on July 17, 2012, and the Notice of Availability (NOA) of the Draft EIR was filed with the Riverside County Clerk on July 18, 2012.
- The Draft EIR was circulated for public review for a period of 48 days, from July 18, 2012 to September 4, 2012. Copies of the Draft EIR were distributed to all Responsible Agencies and to the State Clearinghouse in addition to various public agencies, citizen groups, and interested individuals. Copies of the Draft EIR were also made available for public review at the City Planning Department, at one area library, and on the internet. A total of ~~thirteen~~ fourteen (14) comment letters were received on the DEIR. Ten of the comment letters received were from Federal, State, regional, or local agencies. ~~Three~~ Four comment letters were received from private organizations or conservation groups – no letters were received from individuals. The City prepared specific responses to all comments. The responses to comments are included in Section 2.0 of the FEIR.
- On August 26, 2014 the applicant requested the City Council consider the Reduced Intensity plan.

- On [September 29, 2014](#) in accordance with *Public Resources Code* Section 21092.5, the City provided written responses to public agencies that commented on the DEIR.
- On [October 3, 2014](#) Notice of the City Council hearing to consider the Project was provided in the following newspaper(s) of general and/or regional circulation: Press Enterprise.
- On [October 14, 2014](#) this Council held a public hearing to consider the Project and staff recommendations. The City, after considering written comments and oral testimony on the EIR, determined that no new information was presented that would require recirculation of the EIR. Following public testimony, submission of additional written comments, and staff recommendations, this Council certified the EIR, adopted these Facts, Findings and the Statement of Overriding Considerations, and the further recommendations in the Staff Report, and approved the Project (collectively the “Approvals”).

IV. INDEPENDENT JUDGMENT FINDING

The Applicant retained the independent consulting firm of LSA Associates, Inc. (“LSA”) to prepare the EIR for the Project. LSA has prepared the EIR under the supervision, direction and review of the City with the assistance of an independent peer review (Willdan Engineering). The City of Moreno Valley is the Lead Agency for the preparation of the EIR, as defined by CEQA CPRC Section 21067 as amended. The City Council has received and reviewed the EIR prior to certifying the EIR and prior to making any decision to approve or disapprove the Project.

Finding: The EIR for the Project reflects the City’s independent judgment. The City has exercised independent judgment in accordance with *Public Resources Code* Section 21082.1(c) (3) in directing the consultant in the preparation of the EIR, as well as reviewing, analyzing, and revising material prepared by the consultant.

A. GENERAL FINDING ON MITIGATION MEASURES

In preparing the Approvals for this Project, City staff incorporated the mitigation measures recommended in the EIR as applicable to the Project. In the event that the Approvals do not use the exact wording of the mitigation measures recommended in the EIR, in each such instance, the adopted Approvals are intended to be identical or substantially similar to the recommended mitigation measure. Any minor revisions were made for the purpose of improving clarity or to better define the intended purpose.

Finding: Unless specifically stated to the contrary in these findings, it is this Council's intent to adopt all mitigation measures recommended by the EIR which are applicable to the Project. If a measure has, through error, been omitted from the Approvals or from these Findings, and that measure is not specifically reflected in these Findings, that measure shall be deemed to be adopted pursuant to this paragraph. In addition, unless specifically stated to the contrary in these Findings, all Approvals repeating or rewording mitigation measures recommended in the EIR are intended to be substantially similar to the mitigation measures recommended in the EIR and are found to be equally effective in avoiding or lessening the identified environmental impact. In each instance, the Approvals contain the final wording for the mitigation measures.

V. ENVIRONMENTAL IMPACTS AND FINDINGS

City staff reports, the EIR, written and oral testimony at public meetings or hearings, these facts, findings, and statement of overriding considerations, and other information in the administrative record, serve as the basis for the City's environmental determination.

The detailed analysis of potentially significant environmental impacts and proposed mitigation measures for the Project is presented in Section 4.0 of the DEIR and Sections [3.0](#) and [4.0](#) of the FEIR. Responses to comments on the DEIR, along with copies of the comments, are provided in Chapter 2.0 of the FEIR.

The EIR evaluated thirteen major environmental categories for potential impacts including Aesthetics, Agricultural Resources, Air Quality, Biological Resources, Cultural Resources, Hazards and

Hazardous Materials, Hydrology and Water Quality, Land Use, Noise, Population and Housing, Transportation, Utilities and Service Systems, and Greenhouse Gases and Global Climate Change. Both Project-specific and cumulative impacts were evaluated. Of these thirteen major environmental categories, this Council concurs with the conclusions in the EIR that the issues and sub issues discussed in Sections V.A and V. B below either are less-than-significant without mitigation or can be mitigated below a level of significance. For the remaining potential environmental impacts that cannot feasibly be mitigated below a level of significance discussed in Section V.C, overriding considerations exist which make these potential impacts acceptable to this Council.

A. LESS-THAN-SIGNIFICANT ENVIRONMENTAL IMPACTS NOT REQUIRING MITIGATION

The Moreno Valley City Council hereby finds that the following potential environmental impacts of the Project are less-than-significant and therefore do not require the imposition of mitigation measures.

1. Aesthetics

a. Light and Glare

Potential Significant Impact: Whether the Project would create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

Findings: Potential impacts of the Project related to light and glare are discussed in detail in Section 4.1 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to light and glare with the adherence to established City ordinances and development guidelines, therefore, no mitigation is required.

Facts in Support of the Findings: Section 4.1 identifies no sources of light or glare on the Project site. Development of the Project site would introduce new sources of light and glare into the area in the form of street lighting, parking lot lighting, and security lighting for the buildings. Lighting within loading areas (areas within the public view include the loading areas of Buildings 1, 2, and 3) will be directed downward so as to not Project lighting into the sky. The overall increase in ambient light in the area is expected to be incremental with compliance with the City’s development standards for lighting. The Project will incrementally increase the amount of daytime glare in the Project area from introducing windows and metal fixtures into the area. All development in the City, which includes light generated

from warehouse buildings and parking lots, is required to adhere to lighting requirements contained in the City's Municipal Code. The Project is consistent with General Plan policies and Municipal Code requirements regarding light and glare, therefore, no impacts associated with this issue would occur and no mitigation is required (DEIR, pgs. 4.1-8 to 4.1-9).

2. Agricultural Resources

a. Conflict with an Existing Agricultural Zone

Potential Significant Impact: Would the proposed project conflict with an existing agricultural zone?

Findings: Potential impacts of the Project related to agricultural resources are discussed in detail in Section 4.1 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to with the existing agricultural zone; therefore, no mitigation is required.

Facts in Support of the Findings: The Project would not conflict with an existing agricultural zone. An approximately 12-acre portion of the project site is zoned Residential Agriculture (RA-2) with a PAKO designation, and is located near the southern border. With the development of the Project, this portion of the site would not be rezoned to Light Industrial to allow for the proposed warehouse distribution uses. This zone change would not conflict with the existing zone for this area of the project site. This type of change is expected, and planned for within the City, and is consistent with the City's overall vision. (FEIR, Section 3.0, Table 1.C, pg. 254)

32. Air Quality

a. Construction-Chronic Health Risk Impacts

Potential Significant Impact: Whether the Project would expose sensitive receptors to substantial pollutant concentrations.

For Maximum Individual Cancer Risk (MICR), the applicable thresholds are:

- An increased cancer risk greater than 10 in 1 million (1.0×10^{-5}) at any receptor location; or
- A cancer burden greater than 0.5.

For non-cancer chronic Hazard Index (HI); the applicable threshold is:

- A cumulative increase for any target organ system exceeding 1.0 at any receptor location.

Findings: Potential impacts of the Project related to construction-chronic health risks are discussed in detail in Section 4.3 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to sensitive receptor health risks and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.3 of the DEIR, the only toxic air pollution emissions in any significant quantity associated with the construction of the Project occur from diesel-powered equipment exhaust. A screening health risk assessment was performed according to the published Office of Environmental Health Hazard Assessment (OEHHA) health risk techniques.¹ According to the health risk assessment, the cancer risk due to construction of the Project is less than the threshold of 10 in 1 million. Therefore, health risks would be less than significant and no mitigation is required. (DEIR, pgs. 4.3-13 to 4.3-14)

b. Operational-Acute Health Risk Emission Impacts

Potential Significant Impact: Whether the Project would expose sensitive receptors to substantial pollutant concentrations.

For MICR, the applicable thresholds are:

- An increased cancer risk greater than 10 in 1 million (1.0×10^{-5}) at any receptor location; or

For non-cancer chronic and acute HI; the applicable threshold is:

- A cumulative increase for any target organ system exceeding 1.0 at any receptor location.

Findings: Potential impacts of the Project related to operational-acute health risks are discussed in detail in Section 4.3 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to operational-acute health risks and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.3 of the DEIR, a screening level health risk assessment was performed for the operational emissions associated with the Project based on the SCAQMD's *Health Risk Assessment Guidance for Analyzing Cancer Risk from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis* guidance. The operations expected to occur at this facility will not emit any toxic chemicals in any significant quantity other than vehicle exhaust. According

¹ OEHHA, *Air Toxics Hot Spots Program Risk Assessment Guidelines*, August 2003, Appendix D, *Risk Assessment Procedures to Evaluate Particulate Emissions from Diesel-Fueled Vehicles*.

to the health risk assessment the nearest residences would experience a cancer risk of 4.33 in 1 million, which is below the 10 in 1 million threshold. The nearest residences would also experience a chronic HI of 0.0016 and an acute HI of 0.0000088. Both the chronic and acute HI would be below the chronic and acute HI threshold of 1.0. Since the operational phase of the Project would not exceed any of the long-term acute health risk assessment thresholds, a less than significant impact would occur. No mitigation is required. (DEIR, pgs. 4.3-14 to 4.3-18)

c. Operational-Carcinogenic and Chronic Health Risk Emission Impacts

Potential Significant Impact: Whether the proposed Project would expose sensitive receptors to substantial pollutant concentrations.

For MICR, the applicable thresholds are:

- An increased cancer risk greater than 10 in 1 million (1.0×10^{-5}) at any receptor location; or

For non-cancer health risk HI; the applicable threshold is:

- A cumulative increase for any target organ system exceeding 1.0 at any receptor location.

Findings: Potential impacts of the Project related to operational-carcinogenic and chronic health risk emission impacts are discussed in detail in Section 4.3 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to health risks related to operational emissions and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.3 of the DEIR, the closest residences to the Project would be exposed to a lifetime inhalation cancer risk of no more than 4.33 in 1 million, a 30-year inhalation cancer risk of no more than 3.88 in 1 million, and nearby workers a 40-year career inhalation cancer risk of no more than 1.5 in 1 million. The chronic health risk index is significantly less than the threshold of 1.0, in this case 0.0016 for residents and workers. No significant carcinogenic or chronic health risks would occur from Project-related traffic. No significant health risk would occur from Project-related truck traffic, and no mitigation is necessary. (DEIR, pg. 4.3-18)

d. Air Quality Impacts to Adjacent Future Development

Potential Significant Impact: Whether the proposed Project would expose sensitive receptors to substantial pollutant concentrations.

Findings: Potential impacts of the Project related to air quality impacts to adjacent future developments are discussed in detail in Section 4.3 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to air quality impacts to adjacent future development and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.3 of the DEIR, based on the land use assumptions for the future L-Aquila D’Pietra (LADP) Project, residential development would be located along the southern Project boundary between the Project and the proposed LADP. It is anticipated that the Project site would be fully developed prior to the occupation of any dwelling units in LADP; therefore, no construction-related air quality impacts to adjacent sensitive receptors would result from development of the Project.

The primary health risk is from heavy-duty truck emissions is diesel particulate exhaust. According to the screening-level assessment, the future residential units south of the Project site would be exposed to an unmitigated inhalation cancer risk of approximately 4.3 in 1 million, which is less than the threshold of 10 in 1 million. The corresponding chronic and acute hazard indices would be approximately 0.0016 and 0.000088, which is less than the threshold of 1.0 for the chronic hazard index and acute hazard index. Since the screening-level analysis overall Project health risks are below established thresholds, any detailed assessment would also produce less than significant health risk levels. Therefore, a less than significant impact associated with future uses that may occupy adjacent properties subsequent to development of the Project would occur. No mitigation is required. (DEIR, pgs. 4.3-18 to 4.3-19)

e. Long-Term Microscale (CO Hotspot) Impacts

Potential Significant Impact: Whether the proposed Project would violate any air quality standard or contribute substantially to an existing or projected air quality violation. For CO, the applicable thresholds are:

- California State one-hour CO standard of 20.0 ppm; and
- California State eight-hour CO standard of 9.0 ppm.

Findings: Potential impacts of the Project related to long-term microscale emissions are discussed in detail in Section 4.3 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to long-term microscale emissions and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.3 of the DEIR, the highest one-hour CO concentration experienced at any of the intersections in the Project vicinity would not exceed the one hour CO State standard of 20 ppm. Based on the *Air Quality Analysis* prepared for the Project, the Project would contribute, at most, a 0.1 ppm increase to the one-hour CO concentrations for all scenarios. This is below the 1.0 ppm increase threshold. Also the highest eight-hour CO concentration experienced at any of the intersections in the Project vicinity would not exceed the eight-hour CO state standard of 35 ppm. Based on the *Air Quality Analysis* prepared for the proposed Project, the proposed Project would contribute, at most, a 0.1 ppm increase to the eight-hour CO concentrations for all scenarios. This is below the 0.45 ppm increase threshold. Since the Project would not exceed the one-hour or eight-hour CO concentration standards, it is reasonable to conclude that no CO hot spots would occur. Therefore, the Project would not have a significant impact on local air quality for CO and no mitigation measures would be required. (DEIR, pgs. 4.3-19 to 4.3-20)

f. Odors

Potential Significant Impact: Whether the Project would create objectionable odors affecting a substantial number of people.

Findings: Potential impacts of the Project related to objectionable odors are discussed in detail in Section 4.3 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts due to objectionable odors and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.3 of the DEIR, the Project does not propose land uses typically associated with emitting objectionable odors. Potential odors during Project construction may result from heavy equipment exhaust and the application of asphalt and architectural coatings. Standard construction requirements would minimize odor impacts from construction. The construction odor emissions would be temporary, short-term, and intermittent in nature and would cease upon completion of the respective phase of construction and is thus considered less-than-significant. Project-related operational odor sources such as vehicle exhaust and routine painting/ maintenance activities are typical of industrial/commercial activities and would be localized to the immediate Project

vicinity, with little or no off-site effects. Accordingly, impacts related to objectionable odors will be less-than-significant and no mitigation is required. (DEIR, pg. 4.3-20)

34. Biological Resources

a. Habitat Fragmentation/Wildlife Movement

Potential Significant Impact: Whether the Project would interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

Findings: Potential impacts of the Project related to habitat fragmentation and wildlife movement are discussed in detail in Section 4.4 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts to habitat and wildlife movement and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.4 of the DEIR, the Project site is isolated from regional wildlife corridors by existing barriers including urban development, agricultural uses, and roadways. Land uses adjacent to the Project site include fallow agricultural land to the south and east, commercial uses to the west, and residential uses to the north across SR-60. Due to the nature of development occurring in the Project area and the current condition of the Project site, it is highly unlikely that the Project site is utilized as a wildlife movement corridor, with the exception of the Quincy Channel. The Project will not affect the majority of Quincy Channel, thus allowing wildlife to continue using the existing channel to traverse the site. The quality of on-site habitat has been diminished due to the previous and frequent ground disturbance and past agricultural activities. In addition, the existing roadways and infrastructure features further isolate the Project site from natural areas. Due to the disturbed condition of the Project site, the nature of development to the southeast and west, the intervening presence of roadways and infrastructure, and adherence to City development standards identified in the Municipal Code, development of the Project will not result in significant habitat fragmentation or substantially affect established wildlife corridors or wildlife movement. A less than significant impact would result and no mitigation is required. (DEIR, pg. 4.4-23)

b. Adopted Policies and Ordinances

Potential Significant Impact: Whether the Project would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Findings: Potential impacts of the Project related to adopted policies and ordinances are discussed in detail in Section 4.4 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in conflict with local policies or ordinances and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.4 of the DEIR, city policies or ordinances identified in the General Plan protecting biological resources include: mitigation of impacts to riparian areas or other natural sensitive communities (Policy 7.4.1), preservation of natural drainage courses in their natural hydrological state (Policy 7.4.3), and City fulfillment of obligations set forth within any agreements and permits related to the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) implementation (Policy 7.4.5).

The Quincy Channel, located adjacent and to the east of the Project site, is considered a sensitive natural habitat due to the value it provides as nesting sites and foraging sites for migratory birds. The Project would be designed to minimize encroachment into this natural area through setback requirements established in Sections 9.16.120 and 9.05.040 of the City's Municipal Code, thus preserving this habitat area in its natural state pursuant to the City's General Plan. At the northeast corner of Building 2, the development plans call for a minimum setback from Quincy Channel due to the topography and alignment of the creek. From that point, the plan provides a setback and landscaped buffer area between the drainage area and the structures proposed on the site that widens and varies from 25 to 50 feet (including the flood control access road). Therefore, the Project would not conflict with local policies or ordinances protecting biological resources and a less than significant impact would occur. No mitigation is required. (DEIR, pg. 4.4-24)

c. Adopted Habitat Conservation Plans

Potential Significant Impact: Whether the Project would conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Findings: Potential impacts of the Project related to adopted habitat conservation plans are discussed in detail in Section 4.4 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in conflicts with local habitat conservation plans and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.4 of the DEIR, the Project site is located within the Western Riverside County MSHCP, however, the Project site is not within any MSHCP criteria cell or habitat linkage. Furthermore, the Project site is not located within an MSHCP mammal or amphibian survey area; a Narrow Endemic Plant Species Survey Area or Criteria Area Plant Species Survey Area; or a riparian, wetland, or vernal pool habitat/species survey area. A habitat assessment for the burrowing owl is required under the MSHCP. While the Project site is not within any MSHCP conservation areas, the Project is still subject to provisions of the MSHCP. In particular, the Project applicant will be required to provide payment of mitigation fees and adhere to the requirements established in the MSHCP. Pursuant to agreements with the USFWS and the CDFG, the payment of the mitigation fee prior to the issuance of a building permit by the City, and compliance with applicable provisions of the MSHCP provides full mitigation under CEQA, FESA, and CESA for impacts to the species and habitats covered by the MSHCP. Therefore, development of the Project will not conflict with the provisions of the MSHCP. A less than significant impact would occur and no mitigation is required.

In addition to the MSHCP, the Project site is within the boundaries of the Stephens Kangaroo Rat Habitat Conservation Plan (SKR HCP) established by the County of Riverside. Development of the Project will not conflict with the provisions of the SKR HCP. The payment of a local mitigation fee prior to issuance of a grading permit by the City will be required. There are no other requirements for the Project under the SKR HCP and a less than significant impact would occur with payment of the fee and no further mitigation is required. (DEIR, pg. 4.4-24)

d. Endangered and Threatened Species

Potential Significant Impact: Whether the Project would have a substantial adverse effect, either directly or through habitat modifications, on any species identified as endangered or threatened in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or U.S. Fish and Wildlife Service (USFWS).

Findings: Potential impacts of the Project related to endangered and threatened species are discussed in detail in Section 4.4 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts to endangered or threatened species and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.4 of the DEIR, no species listed by the State and/or Federal Government as Endangered or Threatened was identified on site during the field surveys;

however, Swainson's hawk, a State-listed species, and Stephens' kangaroo rat, a federally and State-listed species, have a low potential to occur on the site.

The Project site is not located within any USFWS designated critical habitat. Swainson's hawk would be expected to occur on the site, if at all, only during migration as foraging individuals. Swainson's hawk is covered by the MSHCP. Mitigation for covered species consists of participation in the MSHCP.

The Project site is also within the SKR HCP Fee Area. The Project site is not within an SKR Core Area. The SKR HCP provides Take Authorization for the SKR within its boundaries, and no surveys or additional measures are required other than paying a development fee prior to issuance of a grading permit by the City. In the absence of a significant impact, no mitigation is warranted. (DEIR, pg. 4.4-25)

e. Cumulative Biological Impacts

Potential Significant Impact: Whether the Project in connection with past, current, and probably future projects would incrementally affect biological resources.

Findings: Potential impacts of the Project related to cumulative biological impacts are discussed in detail in Section 4.4 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant cumulative impacts to biological resources and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.4 of the DEIR, the Project would not make a cumulatively considerable contribution to impacts on endangered or threatened species, riparian habitat or natural plant communities, jurisdictional waters, habitat fragmentation, wildlife movement, local policies and ordinances, or habitat conservation plans. There are no projects that would, in combination with the proposed Project, produce a significant impact to non-listed sensitive species. Therefore, there are no significant cumulative impacts anticipated to occur that are associated with biological resources. With implementation of Project-level Mitigation Measures 4.4.6.1 through 4.4.6.3, the Project's contribution to cumulative biological impacts will not be cumulatively considerable and no additional mitigation is required. (DEIR, pgs 4.4-30 to 4.4-31)

45. Cultural Resources

a. Historical Structures and Features

Potential Significant Impact: Whether the Project would cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5.

Findings: Potential impacts of the Project related to historical structures and features are discussed in detail in Section 4.5 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts to historical structures and features and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.5 of the DEIR, no structures or unique features are currently located within the Project limits. An online title search was conducted and historic maps were reviewed to determine the potential for structures and/or the remains of former sites of buildings or resources within the Project limits. No evidence of past structures or historic features was identified, nor was evidence of such structures identified during the on-site cultural resource survey or the records search. As no evidence has been identified to suggest the presence of past or current structures on site, no impacts related to historic structures or features will occur. In the absence of a significant impact, no mitigation is warranted. (DEIR, pg.4.5-5)

b. Human Remains

Potential Significant Impact: Whether the Project would disturb any human remains, including those interred outside of formal cemeteries.

Findings: Potential impacts of the Project related to human remains are discussed in detail in Section 4.5 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts to human remains and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.5 of the DEIR, the Project site was utilized for agricultural production. No evidence suggesting the Project site has been utilized in the past for human burials has been identified.² In the unlikely event human remains are discovered during grading or construction activities, State law (Health and Safety Code §7050.5) requires that no further disturbance shall occur until the County Coroner has made determination of the origin and disposition pursuant to Public Resources Code 5097.98. Because adherence to provisions of Health and Safety Code §7050.5 is required of all development projects, and because adherence to the requirements in State law sufficiently mitigates for potential impacts to human remains, no significant impact related to this issue will occur. Because potential impacts associated with this issue are less than significant, no mitigation is required. (DEIR, pg. 4.5-5)

² Chapter 5.10 Cultural Resources, City of Moreno Valley General Plan Final EIR, July 2006.

c. Cumulative Cultural Resources

Potential Significant Impact: Whether the Project in connection with past, current, and probable future projects would have a cumulative significant impact on cultural resources.

Findings: Potential impacts of the Project related to cumulative cultural resources are discussed in detail in Section 4.5 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant cumulative impacts to cultural resources and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.5 of the DEIR, on-site sediments and cumulative archaeological and paleontological discoveries elevate the potential for the on-site presence of archaeological and paleontological resources. The Project includes measures to identify, recover, and/or record any archaeological or paleontological resource that may occur within the Project limits. Although unlikely to occur, potential impacts associated with human remains would be reduced to a less than significant level through adherence to existing State law. There are no projects that would, in combination with the Project, result in any significant cumulative impacts on historical, archaeological, or paleontological resources, or cumulative impacts to human remains. Therefore, the Project will not make a significant contribution to any cumulatively considerable impacts associated with cultural resources, and no mitigation is required. (DEIR, pg. 4.5-8)

56. Hazards and Hazardous Materials

a. Routine Transport, Use, or Disposal of Hazardous Materials and Reasonable Foreseeable Upset and Accident Conditions

Potential Significant Impact: Whether the Project would create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Also, whether the Project would create a significant hazard to the public through the routine transport, use, or disposal of hazardous materials.

Findings: Potential impacts of the Project related to routine transport, use or disposal of hazardous materials and/or the risk of upset or accidental release of hazardous materials into the environment are discussed in detail in Section 4.6 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to routine transport, use or disposal of hazardous materials and, therefore, no mitigation is required.

As a result of the comments received on the DEIR, a mitigation measure has been added to reduce any potential impact from past agricultural uses on the project site even though there were detectable concentrations of organochlorine pesticides and PCBs in samples collected from possible drainage accumulation and pesticide usage on site.

4.6.6.1A Prior to issuance of a grading permit for the project, a qualified contractor shall test onsite soils for contamination by agricultural chemicals. If present in concentrations above established actionable levels or thresholds, these materials shall be removed and transported to an appropriate landfill by a licensed contractor. This measure shall be implemented to the satisfaction of the Building Division including written documentation of the disposal of any agricultural chemical residue in conformance with all applicable regulations.

Facts in Support of the Findings: Two *Phase I Environmental Site Assessments* (ESAs) were prepared for the Project site. During the on-site inspection, no hazardous materials handling, storage, or disposal areas were observed. Additionally, no evidence of stressed vegetation, discolored water, or pools of liquid was observed during the on-site reconnaissance. However, because the Project site has been historically utilized for agricultural production and because of the close proximity to SR-60, soil samples were taken in various parts of the Project site to further evaluate the potential contamination on the site. Laboratory results indicated no detectable concentrations of hydrocarbon compounds in the samples collected. However, there were detectable concentrations of organochlorine pesticides and PCBs in samples collected from possible drainage accumulation and pesticide usage on site. These concentrations were within the allowable Preliminary Remedial Goals (PRGs) for the Project.

During the Project's construction and operation, it is likely that materials such as fuels, lubricants, solvents, cleansers, and paints will be transported to and from the site. The use and transport of these materials and all potentially hazardous materials would be handled according to the appropriate State and Federal regulations. Adherence to existing regulations as they relate to the handling and transport of potentially hazardous materials during construction would reduce impacts associated with this issue to a less than significant level and no mitigation is required. (DEIR, pgs. 4.6-6 through 4.6-11)

b. Hazardous Material Sites

Potential Significant Impact: Whether the Project would be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.

Findings: Potential impacts of the Project related to hazardous material sites are discussed in detail in Section 4.6 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts due to hazardous material sites and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.6 of the DEIR, a database review was conducted for both of the Phase 1 ESAs conducted for the Project site. Based on the database review, the Project site is not included on the State of California Hazardous Waste and Substances Site List (Cortese list) pursuant to the California Code (Section 65962.5). The Project site is not listed in the NPL; Corrective Action Order Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) list; Emergency Response Notification System (ERNS) list; Resource Conservation and Recovery Act System; Toxic Release Inventory System (TRIS); CAL-SITES Database for Annual Work Plan; California Department of Toxic Substances Control (DTSC); Regional Water Quality Control Board (RWQCB); California Waste Management Board (CWMB); Solid Waste Information System (SWIS); Waste Management Units Database System (WMUDS); California Border Zone Properties (Deed Restriction Properties); DTSC Hazardous Waste and Substances Site List (Cortese list); or any Leaking Underground Storage Tank (LUST) database.

Because the Project site is not identified on a list of hazardous materials sites, the potential that the development of the site would create a significant hazard to the public or environment is less than significant. In addition, the results of the site investigations performed by RM Environmental indicate that no significant amount of any hazardous material exists on site. Therefore, impacts associated with this issue are less than significant and no mitigation would be required. (DEIR, pgs. 4.6-11 through 4.6-12)

c. Existing or Proposed Schools

Potential Significant Impact: Whether the Project would create hazardous emissions or handle acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

Findings: Potential impacts of the Project related to existing or proposed schools are discussed in detail in Section 4.6 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to existing or proposed schools and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.6 of the DEIR, at the time the NOP for the proposed Project was released, the Moreno Valley Unified School District (MVUSD) had identified three

potential school sites within the Project vicinity. Of these potential school sites, High School #5 was the closest planned school to the Project site as it was to be located on the adjacent parcel east of the Project site. Due to MVUSD concerns regarding the placement of schools in areas that may be rezoned with warehousing uses, MVUSD has made a decision to abandon the development of these school facility projects on the identified sites.³ Therefore, no planned school facilities would be located adjacent to or within 0.25 mile of the Project site. Since there are no schools planned, proposed, or operating within 0.25 mile of the Project site, no impacts associated with this issue would occur and no mitigation is required. (DEIR, pgs. 4.6-12 through 4.6-13)

d. Emergency Response Plan

Potential Significant Impact: Whether the Project would impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Findings: Potential impacts of the Project related to emergency response plans are discussed in detail in Section 4.6 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to emergency response plans and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.6 of the DEIR, in February 2006, the County of Riverside, in cooperation with the cities and special districts, completed its Emergency Operations Plan (EOP). The EOP establishes the emergency organization, assigns tasks, specifies general procedures, and provides for coordination of planning efforts of the various emergency staff and resources.

Construction activities that may temporarily restrict vehicular traffic would be required to implement adequate measures to facilitate the passage of people and vehicles through/around any required road closures. During the operational phase of the Project, on-site access for fire and emergency vehicles would be required to comply with standards established by the City Public Works Department. The size and location of fire suppression facilities (e.g., hydrants) and fire access routes would be required to conform to Fire Department standards. As required of all development in the City, the operation of the Project would be required to conform to applicable Uniform Fire Code standards. The submittal of such plans would be considered a condition of approval, which would be part of the permitting process initiated by the applicant and approved by the City in accordance with City standards. As with any development, access to and through the Project would be required to comply with the required street

³ Resolution No. 2007-08-8, Board of Education of the Moreno Valley Unified School District, April 15, 2008.

widths, as determined in the General Plan Circulation Element, and the Uniform Fire Code. Therefore, implementation of the Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. No significant impact would occur and no mitigation is required. (DEIR, pg. 4.6-13)

e. Wildland Fires

Potential Significant Impact: Whether the Project would expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildland.

Findings: Potential impacts of the Project related to wildland fires are discussed in detail in Section 4.6 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to wildland fires and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.6 of the DEIR, the Project site is not located within a “High Fire Hazard Area” or within an area susceptible to wildfires identified by the City of Moreno Valley. Areas surrounding the Project site consist of urban, built, and open space. Because of lack of abundant vegetation and the extensive amount of development within the vicinity of the Project site, on-site and adjacent areas do not have the capability to support a wildfire. The proposed uses on site do not typically create a fire hazards nor are they subject to wildland fire hazards due to the type of construction materials used. The Project will be designed and constructed to comply with adopted standards and guidelines for fire protection. Irrigated landscaping will surround Project buildings, and are required to include fire suppression features by law. Due to the location of the fire station adjacent to the Project in the northwest corner and the low probability that the Project site would be subject or susceptible to wildland fires, no significant impact related to this issue would occur. No mitigation is required. (DEIR, pgs. 4.6-13 through 4.6-14)

f. Cumulative Impacts from Hazards and Hazardous Materials

Potential Significant Impact: Whether the Project in connection with past, current, and probable future projects would cumulatively increase the risk of hazardous materials and exposure to hazardous materials.

Findings: Potential impacts of the Project related to cumulative hazardous materials impacts are discussed in detail in Section 4.6 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to cumulative hazardous materials and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.6 of the DEIR, the Project would not result in significant cumulative impacts associated with the routine transport, use, and disposal of hazardous materials; or the emission or handling of hazardous substances. As areas of the eastern portion of Moreno Valley continue to develop, the amount of truck traffic is expected to increase in proportion to the amount of industrial or commercial development that take place in the area. The trucks traveling in the area of the Project and the surrounding areas may contain hazardous materials as well as contribute to emission in the cumulative area. Accidental spills and leaks are unplanned occurrences. It is impossible to predict the occurrences of such events and the likelihood of such events occurring in close proximity to each other at the same time is very small; therefore, such events cannot be considered cumulatively significant.

As anticipated in the City's General Plan, demographic increases, continued retail and service demands, and the availability of vacant property will lead to the new residential, commercial, and industrial development in the City and surrounding area. While the project-specific hazardous material impacts of individual development projects will be addressed separately in future CEQA documents, anticipated future development will contribute, through increases in the number of locations that sell, store, transport, or dispose of hazardous materials, to a cumulative increase in risk for hazardous material incidents. As with the proposed Project, it is anticipated that future development projects will be required to adhere to applicable local, State, and Federal requirements that regulate the use, release, storage, sale, and transport of hazardous materials. Such compliance would ensure that the Project will not make a significant contribution to a cumulatively considerable impact in this regard, and no mitigation measures for cumulative impacts are required. (DEIR, pg. 4.6-14)

67. Hydrology, Drainage, and Water Quality

a. Groundwater

Potential Significant Impact: Whether the Project would substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level

Findings: Potential impacts of the Project related to groundwater are discussed in detail in Section 4.7 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to groundwater and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.7 of the DEIR, the Project would obtain water service from the EMWD. It is anticipated that the Project would primarily utilize imported water

purchased from Metropolitan. In the event that imported water is not available, this imported water would be supplemented by local groundwater sources.

The implementation of the existing West San Jacinto Groundwater Basin Management Plan would ensure that local groundwater resources are conserved and groundwater overdraft does not occur. If the use of groundwater supplies was necessary, the Project would be required to comply with any future water use restricting regulations further minimizing impacts to groundwater supply.

As identified in the City's General Plan, the Project would not interfere with groundwater recharge as the Project site is not identified as a groundwater recharge area.⁴ Therefore, the Project would not interfere with groundwater recharge activities. Impacts associated with this issue are less than significant and no mitigation measure is required. (DEIR, pg. 4.7-14)

b. Flooding-Related Impacts

Potential Significant Impact: Whether the Project would place within a 100-year flood hazard area structures that would impede or redirect flood flows.

Findings: Potential impacts of the Project related to flooding are discussed in detail in Section 4.7 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to flooding and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.7 of the DEIR, flooding in the City of Moreno Valley could result from intense storms resulting in rapid runoff. The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) identify areas subject to flooding during the 100-year storm.⁵ Based on these FIRMs and the Project site does not fall within a 100-year flood zone.⁶ The Project is industrial in nature and the implementation of the Project would not result in the placement of housing within a 100-year floodplain. Because the Project site does not lie within a 100-year floodplain and does not include housing, impacts related to this issue are less than significant. No further discussion or mitigation is required. (DEIR, pgs. 4.7-14 through 4.7-17)

⁴ Section 5.7 Hydrology/Water Quality, City of Moreno Valley General Plan Final Program EIR, City of Moreno Valley, July 2006.

⁵ The term "100-year" is a measure of the size of the flood, not how often it occurs. The "100-year flood" is a flooding event that has a one percent chance of occurring in any given year.

⁶ FEMA DFIRM Data, 2008.

c. Drainage Pattern-Related Impacts

Potential Significant Impact: Whether the Project would substantially alter the existing local drainage patterns of the site and substantially increase the rate or amount of surface runoff in a manner which would result in substantial erosion, siltation, or flooding on or off site.

Findings: Potential impacts of the Project related to drainage patterns are discussed in detail in Section 4.7 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts related to drainage patterns and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.7 of the DEIR, the proposed Project would alter the existing drainage patterns and affect surface runoff; however, several BMPs would be designed and installed on site to minimize these alterations, resulting in a less than significant impact. Development of the Project site would result in increased impervious surfaces in the form of roadways, parking lots, and industrial warehouse buildings. The Project incorporates ~~six~~ detention/sedimentation basins for both water quality and quantity control purposes. The Project would also include vegetated swales, detention/sedimentation basins, and sand filters.

Under post-development conditions, all on-site flows would be routed to Quincy Channel. This drainage pattern would mimic the existing drainage pattern, which has flows draining to the Quincy Channel and the unnamed dry wash to the south. Since the unnamed dry wash connects to Quincy Channel farther south of the Project, all flows under existing conditions drain into Quincy Channel. Flows in Quincy Channel are routed to the Perris Valley Storm Drain where flows continue onto the San Jacinto River and eventually reach Lake Elsinore.

Increased runoff from the site could result in substantial erosion of local drainage ways and siltation of downstream receiving waters. However, with the proposed drainage system installed on site, the Project would not produce any post-development peak flow leaving the site larger than the pre-development peak flows leaving the site for the analyzed storms. In addition, because the implementation of various BMPs will reduce off-site flow velocity and volume, erosional runoff and silt volumes would be minimized to the greatest extent practical. Because the Project would maintain existing drainage patterns on site and implement BMPs that would minimize erosion and generation of silt on site, impacts associated with this issue are less than significant and no mitigation measures are required. (DEIR, pg. 4.7-17)

d. Hydrology and Water Quality Cumulative Impacts

Potential Significant Impact: Whether the Project in connection with past, current, and probable future projects would have significant cumulative impacts on hydrology and water quality.

Findings: Potential impacts of the Project related to cumulative hydrology and water quality impacts are discussed in detail in Section 4.7 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant cumulative impacts to hydrology and water quality and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.7 of the DEIR, increases in the amount and extent of development in the City and surrounding areas will increase the potential for pollutants in runoff, which in turn would affect water quality. The Project’s water quality impacts will be mitigated through on-site detention/sedimentation basins and other water pollution control mechanisms such as vegetated swales, sand filters, and storm drain inlet filters. Similar requirements will be placed on all other development in the Project vicinity by the City and the RWQCB, further reducing the potential for cumulative impacts. Since all development within the City is required to account and mitigate for their individual water quality impacts before runoff leaves each individual site, it is reasonable to conclude that water quality would be maintained throughout the cumulative area. Adherence to NPDES, SWPPP, and WQMP requirements will reduce any such cumulative water quality impact to a less than significant level.

Groundwater recharge policies and practices implemented by the RWQCB and local agencies will ensure groundwater supplies are maintained at appropriate levels. As such, no significant cumulative groundwater supply impacts are anticipated to occur with the development of the Project.

The drainage system for the Project would be designed so that runoff from the Project site after Project development is directed to on-site treatment BMPs and flow volumes would be equal to or less than historic conditions at any given discharge location. This same requirement will be placed on all other development in the vicinity of the Project site by the City of Moreno Valley. Therefore, the Project will not make a significant contribution to any cumulatively considerable impacts related to drainage or water quality and no mitigation is required. (DEIR, pgs. 4.7-28 through 4.7-29)

8. Land Use and Planning

a. **Physically Divide an Established Community**

Potential Significant Impact: Whether the Project would physically divide an established community.

Findings: Potential impacts of the Project related to the physically dividing an established community are discussed in detail in Section 4.8 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts due to a physical divide of an established community and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.8 of the DEIR, land uses adjacent to the Project site include residential uses to the southeast, vacant land to the south, commercial uses to the west, SR-60 and residential uses to the north, and active hay/alfalfa production uses to the east. The Project site does not contain any existing housing, nor does the site complement or constitute part of a community or neighborhood. Based on this information, the Project will not physically divide an existing established community. No impact related to this issue would occur; therefore, no mitigation is required. (DEIR, pgs. 4.8-4 through 4.8-5)

b. **Conflict with Any Applicable Habitat or Natural Community Conservation Plan**

Potential Significant Impact: Whether the Project would conflict with any applicable habitat conservation plan or natural community conservation plan.

Findings: Potential impacts of the Project related to the conflict with any applicable habitat conservation plan are discussed in detail in Section 4.8 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant impacts due to a conflict with any applicable habitat or natural community conservation plan and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.8 in the DEIR, the Project site is located within the MSHCP area.⁷ The Project site is not within an MSHCP criteria cell or habitat linkage. Furthermore, the Project site is not located within an MSHCP mammal or amphibian survey area, Narrow Endemic Plant Species Survey Area (NEPSSA), Criteria Area Plant Species Survey Area (CAPSSA), or a riparian, wetland, or vernal pool habitat/species survey area.⁸

⁷ City of Moreno Valley General Plan Final Program EIR, Figure 5.9-4 Reche Canyon/Badlands Area.

⁸ <http://www.rctlma.org/gis/rciprepgen.html>, site accessed December 4, 2007.

While the Project site is not within any conservation area delineated in the MSHCP, the Project is still subject to provisions of the MSHCP. In particular, the Project proponent will be required to provide payment of mitigation fees and adhere to the requirements established in the MSHCP. Pursuant to agreements with the USFWS and the CDFW, the payment of the mitigation fees and compliance provisions of the MSHCP provides full mitigation under the CEQA, FESA, and CESA for impacts to the species and habitats covered by the MSHCP. Since the City has adopted the MSHCP and its requirements and provisions, and since the Project is within the City, the Project would be required to adhere to applicable MSHCP requirements and fees. Therefore, the Project would not conflict with any applicable HCP and no significant impact associated with this issue would occur. No mitigation would be required. (DEIR, pg. 4.8-4)

c. Cumulative Land Use Impacts

Potential Significant Impact: Whether the Project in connection with past, current, and foreseeable future projects would incrementally affect biological resources.

Findings: Potential impacts of the Project related to cumulative land use impacts are discussed in detail in Section 4.8 of the DEIR. Based on the entire record before us, this Council finds that development of the Project will not result in significant cumulative impacts related to land uses and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.8 of the DEIR, implementation of the Project represents establishment of new land uses within the currently undeveloped Project site that would result in an intensification of permitted land uses associated with a land use change from Business Park and Residential to Light Industrial uses, changes to the General Plan Circulation Element, ~~and the loss of the Primary Animal Keeping Overlay (PAKO) associated with the RA-2 zone.~~ However, the Project is generally consistent with regional plans and planning efforts, although it is not fully consistent with the SCAG's RTP and Compass Blueprint Plan because it eliminates some housing in favor of industrial employment uses. It will incrementally improve the City's long-standing jobs/housing ratio, which is also a regional goal of the various SCAG plans. It is also not consistent with existing General Plan land use designations, objectives and policies, nor is it consistent with existing zoning designations on the site. For these reasons, a General Plan Amendment and Zone Change are proposed for consideration by the City.

The proposed changes in land use will also result in a loss of up to 584 (R-15) multi-family residential units, many of which could have contributed to the City's affordable housing supply at some point in the future. However, this was determined to be a less than significant Project impact on local housing because

the City's Housing Element identifies over twice as much potential affordable housing as the City's RHNA allocation, so it will not make a significant contribution to a cumulatively considerable impact on regional housing.

The Project would also not make a similar cumulatively considerable land use impact relative to dividing an established community or conflicting with an approved habitat conservation plan and no mitigation is required. (DEIR, pgs. 4.8-17 to 4.8-18)

8. Noise

a. **Airport Noise**

Potential Significant Impacts: Whether a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would result in exposure of people residing or working in the Project area to excessive noise levels. Or if a Project within the vicinity of a private airstrip, would expose people residing or working in the Project area to excessive noise levels.

Findings: Potential impacts of the Project relating to airport noise are discussed in detail in Section 4.9 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to airport noise will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.9 of the DEIR, the proposed Project site is located approximately 5 miles northeast of the March Air Reserve Base. Aircraft operations from the airport currently contribute intermittent single-event noise. However, the Project is not identified as being within the noise or safety contours delineated for the MARB Airport. The Project is not located within two miles of a public or private airport; therefore, the Project would not have the potential to expose people to excessive noise levels from airport operations and no impact regarding this issue would occur with implementation of the Project. No mitigation is required. (DEIR, pg. 4.9-10)

b. **Ground-Borne Vibrations**

Potential Significant Impact: Whether the Project would result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

Findings: Potential impacts of the Project relating groundborne vibration and groundborne noise are discussed in detail in Section 4.9 of the DEIR. Based on the entire record before us, this Council finds

that no significant impacts related to ground-borne vibration and groundborne noise will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.9 of the DEIR, the Project site is not located near steel-wheeled trains. Additionally, roadways in the Project area are either paved or would be paved and would not result in traffic driving over rough roads. Construction activities for the Project site do not include blasting or pile driving. The primary vibratory source during the construction of the proposed Project would be large bulldozers. Based on published data, typical bulldozer activities generate an approximate vibration level of 0.089 in/sec at a distance of 25 feet. At the distance of the nearest residence to the Project boundary (about 50 feet) the estimated vibration level will be 0.0415 in/sec. While heavy-duty earthmoving equipment would be used during the construction phase of the Project, the level of vibration would not be excessive or permanent, nor would it exceed the level at which building damage typically occurs. Therefore, impacts from construction-related groundborne vibration construction would be less than significant and no mitigation is required. (DEIR, pg. 4.-11)

c. Long-Term Traffic Noise

Potential Significant Impact: Whether the Project would result in a substantial temporary, periodic, and/or permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project.

Findings: Potential impacts of the Project related to long-term noise are discussed in detail in Section 4.9 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to long-term noise will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.9 of the DEIR, the *Noise Impact Analysis* (Appendix H) indicates that implementation of the Project would result in relatively minor changes in traffic noise levels except along Eucalyptus Avenue between Moreno Beach Drive and Driveway A. The largest Project-related increase in traffic noise would be along Eucalyptus Avenue/Fir Avenue between Auto Mall Drive and Redlands Boulevard. This segment would experience a 13.6 dBA increase over the baseline (with the Project) scenario and a 13.3 dBA increase over the baseline (with the Project) scenario in opening year (2012). In addition, the roadway segment along Eucalyptus Avenue between Moreno Beach Drive and Auto Mall Drive would experience a 4.5 dBA increase over the baseline scenario in 2012. However, no noise-sensitive uses exist or are planned near either roadway segment.

For the Project build out year (2035) analysis, the greatest increase in noise levels is along Eucalyptus Avenue between Auto Mall Drive and Redlands Boulevard, where an increase of up to 1.3 dBA is predicted, with the ambient noise level predicted to be 71.6 dBA at 50 feet from the centerline of the street. In addition, the greatest increases in noise levels associated with the General Plan Build Out Year is along Eucalyptus Avenue between Auto Mall Drive and Redlands Boulevard, where an increase of up to 0.9 dBA is predicted, with the ambient noise level predicted to be 73.0 dBA at 50 feet from the centerline of the street. However, no noise-sensitive uses exist or are planned near the roadway segment. Therefore, noise impacts at the roadway segments where an increase of more than 3.0 dBA would occur are considered less than significant because there are no sensitive receptors located along the roadway segments that would be affected. All other roadway segments would have an increase in noise of less than 3.0 dBA, which would not be perceptible to the human ear in an outdoor environment. Therefore, impacts would be less than significant and no mitigation measures would be required for off-site areas. (DEIR, pgs. 4.9-11 to 4.9-19)

d. Long-Term Operational Noise

Potential Significant Impact: Whether the Project would cause exposure of persons to or generation of noise levels in excess of standards established in the City of Moreno Valley General Plan, Moreno Valley Municipal Code, or applicable standards of other agencies.

Findings: Potential impacts of the Project related to long-term operational noise are discussed in detail in Section 4.9 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to long-term operational noise will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.9 of the DEIR, potential long-term stationary noise impacts would primarily be associated with operations at the proposed warehouse and the light industrial uses. The proposed on-site uses would generate noise from truck delivery, loading/unloading activities at the loading areas, and other noise-producing activities within the parking lot. Through distance divergence, attenuation, and building shielding these sources of noise would be reduced to less than significant levels; and no mitigation is required. (DEIR, pgs. 4.9-20 to 4.9-22)

e. Noise Impacts to Adjacent Future Development

Potential Significant Impact: Whether the Project would result in a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project.

Findings: Potential impacts of the Project related to noise impacts to adjacent future development are discussed in detail in Section 4.9 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to noise impacts to adjacent future development and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.9 of the DEIR, based on the land use assumptions for the future LADP Project, residential development would be located along the southern Project boundary between the Project and the proposed LADP. It is anticipated that the Project site would be fully developed prior to the occupation of any dwelling units in LADP; therefore, no construction-related noise impacts to future adjacent sensitive receptors would result from development of the Project. Also, the proposed on-site uses would generate noise from truck delivery, loading/unloading activities at the loading areas, and other noise-producing activities within the parking lot. Through distance divergence, attenuation, and building shielding these sources of noise would be reduced to less than significant levels. Therefore, a less than significant impact would occur to adjacent future development and no mitigation is required. (DEIR, pgs. 4.9-23 to 4.9-24)

f. Cumulative Noise Impacts

Potential Significant Impact: Whether the Project in connection with past, current, and probable future Project would cause cumulative noise impacts within the City of Moreno Valley.

Findings: Potential impacts of the Project related to cumulative noise are discussed in detail in Section 4.9 of the DEIR. Based on the entire record before us, this Council finds that no significant cumulative impacts related to noise will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: Construction crew commutes and the transport of construction equipment, materials, and fill to the site for the proposed Project would incrementally increase noise levels on access roads leading to the site. Secondary sources of noise would include noise generated during excavation, grading, and building erection on the Project site. Although it is unlikely that adjacent properties will be developed at the same time as the Project, if adjacent properties are developed at the same time as the Project, implementation of the stated mitigation measures in Section 4.9 of the DEIR would render the cumulative impacts of the Project to less than significant levels.

Section 4.9 of the DEIR compared cumulative noise levels that would occur both with and without the Project. According to the analysis the Project would not expose sensitive uses located adjacent to area

roadways to excessive noise levels. The future roadway noise assessment concludes that there will be no significant roadway noise impacts associated with cumulative and cumulative plus Project conditions. Therefore, there are no projects that would, in combination with the Project, produce significant noise impacts to sensitive land uses from on-site operational noise. Thus, no cumulatively considerable noise impacts are expected to occur in this area, and the Project will not make a significant contribution to cumulative noise impacts, so no mitigation measures are required. (DEIR, pg. 4.9-27)

9. Population and Housing

a. Population Growth

Potential Significant Impact: Whether the Project would induce substantial population growth in an area, either directly (e.g., new homes and businesses) or indirectly (e.g., extension of roads and infrastructure).

Findings: Potential impacts of the Project related to population growth are discussed in detail in Section 4.10 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to population growth will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.10 of the DEIR, the development of the proposed on-site warehouse distribution uses would create new jobs in the local economy. The Project would generate up to 1,532 [job \(1,044 jobs with the modified plan\)](#) opportunities.⁹ The new employment opportunities resulting from development of the proposed warehouse uses would improve the City's current jobs-to-housing ratio by providing jobs to local residents. While the places of residence of the persons accepting employment provided by the proposed uses is uncertain, due to the City's projected jobs-to-housing ratio, it is reasonable that a large percentage of these jobs would be filled by persons already living within the City or Project area; therefore, no significant increase in population of the City would result from the development or operation of the proposed on-site uses. In the absence of a significant impact, no mitigation is required. (DEIR, pgs. 4.10-3 to 4.10-5)

b. Displace Substantial Housing/People

Potential Significant Impact: Whether the Project would displace substantial numbers of people or existing housing, necessitating the construction of replacement housing elsewhere.

⁹ 1 employee/1,465 square feet of warehouse use × [2,244,419/1,529,500](#) square feet of warehouse uses = [1,532-1,044](#) employees.

Findings: Potential impacts of the Project related to displacement of housing or people are discussed in detail in Section 4.10 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to displacement of housing or people will occur as a result of development of the Project—and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.10 of the DEIR, the Project site has not been historically utilized for residential uses, and no residential structures are currently located within the Project limits. The construction and operation of the proposed on-site uses would neither displace existing housing or residents nor require the construction of replacement housing elsewhere in the City. However, the areas currently zoned for residential uses on the site could support up to 681 units. Approximately 80 percent of that potential new housing was in the R15 category, which is considered high enough density to support affordable housing programs. In addition, a portion of the Project site is shown in the latest Housing Element for the City (2008–2014) as a potential location for affordable housing in the future (2011 Housing Element, Vacant Properties Inventory). Development of the site as proposed could eliminate as many as 681 housing units from the site, with 80 percent of those units (548) at a density that is generally accepted as helping to promote housing affordability (15 units per acre) on a regional level. These changes may incrementally hinder the City’s ability to achieve its affordable housing goals in the future. However, the Project would not reduce the City’s potential pool of affordable housing to below its RHNA number; therefore, it would not create a significant impact related to the City’s Housing Element, and no mitigation is required. (DEIR, pg. 4.10-6)

c. Cumulative Population and Housing Impacts

Potential Significant Impact: Whether the Project could cause an increase in population that is substantial in relation to the past, current, and probable future projects.

Findings: Potential impacts of the Project related to cumulative impacts of the Project on housing or population are discussed in detail in Section 4.10 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to cumulative impacts on housing or population will occur as a result of development of the Project and, therefore, no mitigation is required.

Fact Supporting the Findings: The project includes development of 2.2 million square feet ([1.5 million square feet with the modified plan](#)) of new industrial uses, but would eliminate the potential for up to 681 new residential units ([548 new residential units with the modified plan](#)), most of which would be in the R15 category, which can support affordable housing programs. The proposed industrial uses would provide additional employment opportunities for City and area residents. The Project, together with the

other developments identified in Chapter 3 [of the DEIR](#), will serve existing and future cumulative demands for both housing and employment within the City. The proposed uses would not induce significant population or housing growth in areas where growth was not previously anticipated.

10. Transportation

a. Air Traffic Patterns

Potential Significant Impact: Whether the Project would result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

Findings: Potential impacts of the Project related to air traffic patterns are discussed in detail in Section 4.11 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to air traffic patterns will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.11 of the DEIR, the Project site is located approximately 5.5 miles northwest of the March Air Reserve Base and is not within the designated safety zones or the flight paths established for this facility.¹⁰ ~~The~~ [The Project](#) does not consist of any uses that would cause changes to air traffic volumes or otherwise affect air traffic patterns. Additionally, the Project does not include any visual, electronic, or physical hazards to aircraft in flight and is not anticipated to disrupt or alter air traffic patterns, including either an increase in traffic levels or a change in location. As such, no impacts associated with this issue would occur and no mitigation is required. (DEIR, pg. 4.11-16)

b. Design Features or Incompatible Uses

Potential Significant Impact: Whether the proposed Project would substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

Findings: Potential impacts of the Project related to design features or incompatible uses are discussed in detail in Section 4.11 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to design features or incompatible uses will occur as a result of development of the Project and, therefore, no mitigation is required.

¹⁰ March Air Reserve Compatibility Plan, December 29, 2004. [http://www.rcaluc.org/filemanager/plan/old//March%20Air%20Reserve%20Base%20\(MARB\).pdf](http://www.rcaluc.org/filemanager/plan/old//March%20Air%20Reserve%20Base%20(MARB).pdf). Accessed June 3, 2008.

Facts in Support of the Findings: According to Section 4.11 of the DEIR, roadway improvements in and around the Project site would be designed and constructed to satisfy all City requirements for street widths, corner radii, intersection control as well as incorporate design standards tailored specifically to site access requirements.

The final design of all roadways and intersections within the Project site access would be reviewed by a licensed professional civil engineer to ensure adequate safety when traveling to and from the Project site. The Project does not include any sharp curves or dangerous intersections in its design. Adherence to applicable existing requirements of the City of Moreno Valley consistent with the City's Circulation Element Objectives 5.1 (create a safe, efficient, and neighborhood-friendly street system), 5.5 (maximize efficiency of the local circulation system by using appropriate policies and standards to design, locate, and size roadways), and 5.11 (eliminate obstructions that impede safe movement of vehicles, bicyclists, and pedestrians) and other agencies would reduce impacts associated with this issue to a less than significant level and no mitigation is required. (DEIR, pgs. 4-17)

c. Inadequate Emergency Access

Potential Significant Impact: Whether the Project would result in inadequate emergency access.

Findings: Potential impacts of the Project related to emergency access are discussed in detail in Section 4.11 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to emergency access will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.11 of the DEIR, the developers of the Project would be required to design, construct, and maintain structures, roadways, and facilities to provide for adequate emergency access and evacuation. Construction activities, which may temporarily restrict vehicular traffic, would be required to implement adequate and appropriate measures to facilitate the passage of persons and vehicles through/around any required road closures. The Project design would be submitted to and approved by the City's Fire and Police Departments prior the issuance of building permits. Adherence to applicable existing requirements of the City of Moreno Valley and other agencies would reduce impacts associated with this issue to a less than significant level and no further discussion is required. (DEIR, pgs. 4.11-17 to 4.11-18)

d. Inadequate Parking Capacity

Potential Significant Impact: Whether the Project would result in inadequate parking capacity.

Findings: Potential impacts of the Project related to parking capacity are discussed in detail in Section 4.11 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to parking capacity will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.11 of the DEIR, the preliminary site plan indicates that 1,091 automobile parking spaces are provided, which includes spaces for employees, drivers, and handicap spaces, and is well above the minimum requirement of 562 spaces. The design of the would be required to comply with parking standards prior to final site plan approval. Adherence to parking standards contained in the Zoning Code would ensure that the Project would not result in inadequate parking capacity. Impacts associated with parking capacity are less than significant and no mitigation is required. (DEIR, pg. 4.11-18)

e. Alternative Transportation

Potential Significant Impact: Whether the proposed Project would conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

Findings: Potential impacts of the Project related to alternative transportation are discussed in detail in Section 4.11 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to alternative transportation will occur as a result of development of the and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.11 of the DEIR, the design of the would be required to adhere to applicable City of Moreno Valley standards that support and/or facilitate alternative modes of transportation, including but not limited to pedestrian pathways and sidewalks consistent with the City's Circulation Element Objective 5.8. Through the City's [Project-project](#) review process, policies, plans, and/or programs supporting alternative transportation would be reviewed and incorporated as applicable. Consequently, a less than significant impact would occur as a result of the and no mitigation is required. (DEIR, pg. 4.11-18)

11. Utilities and Service Systems

a. **Solid Waste Facilities**

Potential Significant Impact: Whether the Project would be served by a landfill with insufficient permitted capacity to accommodate the Project's solid waste disposal needs.

Findings: Potential impacts of the Project related to solid waste facilities are discussed in detail in Section 4.12 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to solid waste facilities will occur as a result of development of the and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.12 of the DEIR, based on a solid waste generation of 0.006 pound per square foot per day for industrial uses, the Project is anticipated to generate approximately 6.73 -tons of solid waste per day [and 2,456 tons/year \(4.59 tons/day and 1,675 tons/year for the modified plan\)](#). Solid waste from the Project would be hauled by Waste Management of Inland Valley and transferred to the Badlands Sanitary Landfill, located in Moreno Valley, northeast of the Project site. [The Badlands Sanitary Landfill has a daily permitted throughput of 4,000 tons per day, a remaining capacity of 14,730,025 cubic yards, and an estimated closure date of 2024. The average daily throughput at the Badlands Sanitary Landfill for 2011 is estimated at 1,683 tons/day with a current surplus capacity totaling 2,317 tons/day.](#) The volume of solid waste generated by the Project per day represents 0.17 percent [\(0.11 percent for the modified plan\)](#) of the current permitted throughput and 0.29 percent [\(0.19 percent for the modified plan\)](#) of the current surplus capacity at the Badlands Sanitary Landfill. As adequate daily surplus capacity exists at the receiving landfill, development of the Project would not significantly affect current operations or the expected lifetime of the landfill serving the Project area. No significant solid waste disposal impact would occur and no mitigation is required. (DEIR, pgs. 4.12-3 to 4.12-4)

b. **Solid Waste Reduction**

Potential Significant Impact: Whether the Project would fail to comply with applicable Federal, State, and local statutes and regulations related to solid waste.

Findings: Potential impacts of the Project related to solid waste reduction are discussed in detail in Section 4.12 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to solid waste reduction will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.12 of the DEIR, the Project would be required to coordinate with the waste hauler to develop collection of recyclable materials for the Project on a common schedule as set forth in applicable local, regional, and State programs. Recyclable materials that would be recycled by the Project include paper products, glass, aluminum, and plastic.

Additionally, the Project would be required to comply with applicable elements of AB 1327, Chapter 18 (California Solid Waste Reuse and Recycling Access Act of 1991) and other applicable local, State, and Federal solid waste disposal standards, thereby ensuring that the solid waste stream to the Badlands Sanitary Landfill is reduced in accordance with existing regulations. Impacts are considered less than significant and require no mitigation. (DEIR, pg. 4.12-4)

c. Solid Waste Cumulative Impacts

Potential Significant Impact: Whether the Project in connection with past, current, and probable future projects would have an incremental impact on solid waste.

Findings: Potential impacts of the Project related to cumulative solid waste are discussed in detail in Section 4.12 of the DEIR. Based on the entire record before us, this Council finds that no significant cumulative impacts related to solid waste will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.12 of the DEIR, the Badlands Sanitary Landfill has an estimated closure date of ~~2016~~2024, the City's waste hauler will also use other County landfills in the area (e.g., Lamb Canyon Landfill and El Sobrante Landfill). The estimated closure date of the Lamb Canyon Landfill is 2023 and the estimated closure date of the El Sobrante Landfill is 2030. With planned expansion activities of landfills in the Project vicinity and projected growth rates contained within the City's General Plan EIR, sufficient landfill capacity would exist to accommodate future disposal needs through City build out in 2030. Therefore, build out of the City General Plan would not create demands for solid waste services that would exceed the capabilities of the County's waste management system. Consequently, cumulative impacts associated with solid waste within the City would be considered less than significant and no mitigation is required. (DEIR, pg. 4.12-5)

d. Construction or Expansion of Water Treatment Facility

Potential Significant Impact: Whether the Project would require the construction of new water treatment facilities or expansion of existing facilities, the construction of which would cause significant environmental effects.

Findings: Potential impacts of the Project related to construction or expansion of water treatment facilities are discussed in detail in Section 4.12 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts that would cause the construction or expansion of water treatment facilities will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.12 of the DEIR, the water demand required for the Project totals 0.04 and 0.03 percent of the 2015 and 2035 projected Eastern Municipal Water District (EMWD) supplies. The amount of water demand would be within the existing available supply even with a reduction in deliveries from the State Water Project (SWP). Imported sources of water will be supplemented by an increase in desalination of brackish groundwater, recycled water use, and water use efficiency, and implementation of aggressive conservation measures by the EMWD. The Project would not require the construction of new water treatment facilities or expansion of existing facilities, which could cause significant environmental effects. Impacts related to this issue would be less than significant and no mitigation is required. (DEIR, pgs. 4.12-15 to 4.12-16)

e. Adequate Water Supply

Potential Significant Impact: Whether the Project would have sufficient water supplies available to serve the Project from existing entitlements and resources, or are new or expanded entitlements needed.

Findings: Potential impacts of the Project related to adequate water supply are discussed in detail in Section 4.12 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to adequate water supply will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.12 of the DEIR, the anticipated water demand for the Project is substantially less than what is identified for the General Plan land uses and what was used in the formulation of the 2010 Urban Water Management Plan. The water demand required for the Project is would total 0.05 and 0.04 percent of the EMWD’s 2015 and 2035 supplies and for the -less intense plan would total approximately 56,000 gallons per day (gpd)¹¹ or 62 AFY.¹² The less intense plan would total 0.05-02 and 0.04-02 percent of the EMWD’s 2015 and 2035 supplies of 213,900 and 302,200 AFY in 2015 and 2035. The Project’s water consumption represents substantially less than 1 percent of the consumption yearly capacity and because the EMWD indicates that water to service the Project’s

¹¹ 700 gallons per acre per day × 80 net acres = 56,000 gallons per day.

¹² 56,000 gallons per day = 0.17 acre-foot per day × 365 days per year = 62.05 acre-feet per year.

proposed industrial uses is available, no significant water supply impacts would occur with implementation of the industrial use, and no mitigation would be necessary. (DEIR, pg. 4.12-17 to 4.12-22)

f. Cumulative Impacts to Water Supply Services

Potential Significant Impact: Whether the Project in connection with past, current, and probable future projects would have a cumulative impact to water supply services.

Findings: Potential impacts of the Project related to cumulative water supply services are discussed in detail in Section 4.12 of the DEIR. Based on the entire record before us, this Council finds that no significant cumulative impacts related to water supply services will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.12 of the DEIR, the projected demand for the EMWD service area for the year 2015 is 213,900 acre-feet per year (AFY). The cumulative projects including the Project would make up approximately 0.11 percent of the projected demand for 2015. For the year 2035, the EMWD service area projected demand is 302,200 AFY. ~~The Project would consist of 0.63 percent of the Project water demand.~~ As the cumulative projects including the Project constitute less than one percent of the projected water demand in both 2015 and 2025, the cumulative impact of the Project would be less than significant.

Metropolitan Water District (Metropolitan) will continue to rely on the plans and policies outlined in its Regional Urban Water Master Plan (RUWMP) and Integrated Regional Water Plan (IRP) to address water supply shortages and interruptions (including potential shut downs of SWP pumps) to meet water demands. Metropolitan has also analyzed the reliability of water delivery through the SWP and the Colorado River Aqueduct. Metropolitan's IRP and RUWMP conclude that, with the storage and transfer programs developed by Metropolitan, there will be a reliable source of water to serve its member agencies' needs through 2035. The EWMD is a member agency of Metropolitan and would have water supplies for projected growth through 2035 in wet, dry, and multiple-dry years, so cumulative impacts to water supply would be less than significant. The Project would connect to existing conveyance infrastructure and adequate treatment capacity is available, so the Project would not make a significant contribution to any cumulatively considerable impacts on water supply or infrastructure and no mitigation is required. (DEIR, pg 4.12-22)

g. Wastewater Treatment Requirements

Potential Significant Impact: Whether the Project would exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board (RWQCB).

Findings: Potential impacts of the Project related to wastewater treatment requirements are discussed in detail in Section 4.12 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related to wastewater treatment requirements will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.12 of the DEIR, the Project would result in a connection to the sewer line underlying the future Eucalyptus Avenue. The EMWD expects this sewer to be in service once it is necessary for demand expected from the Project. It is anticipated that all wastewater generated by the Project would be routed to and treated by the Moreno Valley Regional Water Reclamation Facility (MVRWRF). The MVRWRF is a Publically Owned Treatment Works (POTW), so operational discharge flows treated at the MVRWRF would be required to comply with the Waste Discharge Requirements (WDRs) for that facility. Compliance with condition or permit requirements established by the City and WDRs at the MVRWRF would ensure that discharges into the wastewater treatment facility system from the operation of the Project would not exceed applicable Santa Ana RWQCB wastewater treatment requirements. Expected wastewater flows from the Project will not exceed the capabilities of the serving treatment plant, so no significant impact related to this issue would occur and no mitigation would be required. (DEIR, pg. 4.12-24)

h. Wastewater Treatment Capacity and/or New or expanded Wastewater Treatment Facilities

Potential Significant Impact: Whether the Project would result in a determination by the wastewater treatment provider, which serves or may serve the Project, that it lacks adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments.

Also, whether the Project would require the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Findings: Potential impacts of the Project related to wastewater capacity are discussed in detail in Section 4.12 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts

related to wastewater capacity will occur as a result of development of the Project and no new wastewater treatment facilities or expansion of existing facilities would be required, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.12 of the DEIR, the Project would result in a connection to the sewer line underlying the future Eucalyptus Avenue. The EMWD expects this sewer to be in service once it is necessary for demand expected from the Project. It is anticipated that all wastewater generated by the Project would be routed to and treated by the MVRWRF. The MVRWRF is a POTW, so operational discharge flows treated at the MVRWRF would be required to comply with the WDRs for that facility. Compliance with condition or permit requirements established by the City and WDRs at the MVRWRF would ensure that discharges into the wastewater treatment facility system from the operation of the Project would not exceed applicable Santa Ana RWQCB wastewater treatment requirements. Expected wastewater flows from the Project will not exceed the capabilities of the serving treatment plant, so no significant impact related to wastewater would occur and no mitigation would be required. (DEIR, pg. 4.12-25)

i. Cumulative Impacts to Wastewater Facilities

Potential Significant Impact: Whether the Project in connection with past, current, and probable future projects would result in cumulative impacts to wastewater facilities.

Findings: Potential impacts of the Project related to cumulative wastewater facilities are discussed in detail in Section 4.12 of the DEIR. Based on the entire record before us, this Council finds that no significant cumulative impacts related to wastewater facilities will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.12 of the DEIR, the Project would not have a cumulatively significant impact on wastewater infrastructure because the Project would not require the expansion of existing infrastructure; only connections to existing infrastructure would be required by the Project. By adhering to the wastewater treatment requirements established by the Santa Ana RWQCB through the NPDES permit, wastewater from the Project site that is processed through the MVRWRF would meet established standards. As the wastewater from all development within the service area of the MVRWRF would be similarly treated under the NPDES, no cumulatively significant exceedance of Santa Ana RWQCB wastewater treatment requirements would occur.

The Project would not result in significant impacts to wastewater treatment or wastewater treatment facilities. The MVRWRF also plans expand the capacity of the wastewater facility. The ultimate expansion of the MVRWRF will allow it to process 41 mgd of wastewater. The wastewater generation of the listed cumulative projects represents 4.8 percent of the future capacity of the 2013 expansion and 2.5 percent of the ultimate expansion of the MVRWRF. The projected wastewater generation of the cumulative projects represents a small percentage of the average wastewater capacity and, because there are no projects that would, in combination with the proposed industrial uses, result in any significant impact related to wastewater treatment or cause significant environmental effects, the Project will not make a significant contribution to any cumulatively considerable impacts associated with wastewater and no mitigation is required. (DEIR, pg. 4.12-26)

4.12. Global Climate Change

a. Greenhouse Gas Plan, Policy, Regulation Consistency

Potential Significant Impact: Whether the Project would conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

Findings: Potential impacts of the Project related to greenhouse gas plans, policies, or regulation consistency are discussed in detail in Section 4.13 of the DEIR. Based on the entire record before us, this Council finds that no significant impacts related greenhouse gas plans, policies or regulations will occur as a result of development of the Project and, therefore, no mitigation is required.

Facts in Support of the Findings: According to Section 4.13 of the DEIR, the Project includes a variety of physical attributes and operational programs that would generally contribute to a reduction in operational-source pollutant emissions including GHG emissions. Future development that would occur under the Project would be consistent with state and local greenhouse gas emission reduction strategies and policies. The Project would implement appropriate GHG reduction strategies and would ensure that it does not conflict with or impede implementation of reduction goals identified in AB 32, Governor's Executive Order S-3-05, and other strategies to help reduce GHGs to the level proposed by the Governor. In addition, the Project would also be subject to all applicable regulatory requirements, which would also reduce the GHG emissions of the Project. Therefore, the Project would not conflict with any applicable plan, program, policy, or regulation related to the reduction of GHG emissions. Impacts are considered less than significant and no mitigation is required. (DEIR, pgs. 4.13-10 to 4.13-17)

B. ENVIRONMENTAL IMPACTS MITIGATED TO A LEVEL OF LESS-THAN-SIGNIFICANT

Public Resources Code Section 21081 states that no public agency shall approve or carry out a project for which an EIR has been completed which identifies one or more significant effects unless the public agency makes one or more of the following findings:

- I. Changes or alterations have been required in, or incorporated into, the Project which mitigate or avoid the significant effects on the environment.
- II. Those changes or alterations are within the responsibility and jurisdiction of another public agency and have been, or can and should be, adopted by that other agency.
- III. Specific economic, legal, social, technological, or other considerations make infeasible the mitigation measures or alternatives identified in the EIR, and overriding economic, legal, social, technological, or other benefits of the Project outweigh the significant effects on the environment.

Certain of the following issues from the environmental categories analyzed in the EIR, including biological resources, cultural and paleontological resources, hydrology, drainage, and water quality, noise (short-term construction), transportation (local intersections), utilities, and global climate change (individually and cumulatively) were found to be potentially significant, but can be mitigated to a less-than-significant level with the imposition of mitigation measures. This Council hereby finds pursuant to *Public Resources Code* Section 21081 that all potentially significant impacts listed below can and will be mitigated to below a level of significance by imposition of the mitigation measures in the EIR; and that these mitigation measures are included as Conditions of Approval and set forth in the Mitigation Monitoring and Reporting Program (MMRP) adopted by this Council. Specific findings of this Council for each category of such impacts are set forth in detail below.

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1. **Air Quality**

a. **Localized Construction Equipment Exhaust Emissions Impacts**

Potentially Significant Impact: The EIR evaluated and concluded that the Project has the potential to exceed short-term construction thresholds.

Finding: Implementation of the following mitigation measures will reduce the potential adverse impacts to sensitive or special status species to less than significant:

4.3.6.3A Prior to the issuance of grading permits, the project applicant shall require by contract specifications that all trucks hauling dirt, sand, soil, or other loose materials are to be covered or shall maintain at least 2 feet of freeboard in accordance with the requirements of California Vehicle Code (CVC) Section 23114 (freeboard means vertical space between the top of the load and top of the trailer).

4.3.6.3B Prior to the issuance of grading permits, the project applicant shall provide evidence to the City that construction access roads shall be paved at least 100 feet onto the site from the main road.

4.3.6.3C Prior to the issuance of grading permits, the project applicant shall require by contract specifications that all streets within the construction site shall be swept once per day if visible soil materials are carried to adjacent streets.

Facts in Support of the Finding: SCAQMD has developed LST methodology that can be used to determine whether or not a project may generate significant adverse localized air quality impacts. LSTs represent the maximum emissions from a project that would not cause or contribute to an exceedance of the most stringent applicable Federal or State ambient air quality standard and are developed based on the ambient concentrations of that pollutant for each source receptor area. The emissions of concern from construction activities are NO_x, CO, PM₁₀, and PM_{2.5} resulting from on-site combustion emissions from construction equipment and on-site fugitive PM₁₀ dust from construction site preparation activities.

According to Section 4.3 of the DEIR, the air pollutant emission rates for the proposed construction activities are below the localized construction thresholds at the nearest sensitive receptor for CO, NO_x, PM₁₀, and PM_{2.5}. Thus, no mitigation is required. However, implementation of **Mitigation Measures 4.3.6.2A through 4.3.6.2M** and the incorporation of these additional requirements as **Mitigation Measures 4.3.6.3A through 4.3.6.3C** are designed to track both standard requirements and mitigation

measures as part of the project's Mitigation Monitoring and Reporting Program (MMRP). Therefore, impacts related to construction exhaust emissions are less than significant. (DEIR, pgs. 4.3-29 to 4.3-30)

2. Biological Resources

a. Candidate, Non-listed Sensitive, or Other Special Status Species

Potential Significant Impact: The EIR evaluated and concluded that the Project has the potential to affect migratory bird species and 15 non-listed special status species, including burrowing owl.

Finding: Implementation of the following mitigation measures will reduce the potential adverse impacts to sensitive or special status species to less than significant:

4.4.6.1A *If tree removal or clearing and grubbing activities must take place during the general nesting season (February 1 through August 31), a nesting bird survey shall be conducted within seven (7) days prior to any vegetation disturbance activities. If passerine birds are found to be nesting or there is evidence of nesting behavior inside the impact area, an exclusion buffer, to be determined by the appropriate agency (e.g. the City, County, and/or CDFG), shall be set in place around the nest where no vegetation disturbance will be permitted. For raptor species, such as hawks and owls, this buffer may be as large as 500 feet. A qualified biologist shall closely monitor nests until it is determined that they are no longer active, at which time construction activity in the vicinity of nests may continue.*

4.4.6.1B *Prior to site grading, a pre-construction survey shall be required for the burrowing owl to confirm the presence/absence of this species from the site. The survey shall be conducted by a qualified biologist within 30 days prior to ground disturbance, and in accordance with MSHCP survey requirements, to avoid direct take of burrowing owls. If burrowing owls are determined to occupy the project site or immediate vicinity, the City of Moreno Valley Planning Department shall be notified and avoidance measures as identified in Mitigation Measure 4.4.6.1C shall be implemented. Implementation of avoidance measures shall be executed pursuant to the MSHCP, the California Fish and Game Code, and the MBTA, and according the Burrowing Owl Survey Protocol and Mitigation Guidelines (CBOC 1993) and reviewed the City of Moreno Valley, the County of Riverside, and/or by the CDFG.*

4.4.6.1C *As recommended in the BUOW Survey and Mitigation Guidelines prepared by the CBOC, no disturbance to an occupied burrow shall occur within approximately 160 feet of an occupied burrow during the non-breeding season (September 1 through January 31), or within approximately 250 feet of an occupied burrow during the breeding season (February 1 through August 31). For unavoidable impacts, passive relocation of burrowing owls shall be implemented. Passive relocation shall be conducted by a qualified biologist in accordance with procedures set forth by the MSHCP and California Burrowing Owl Consortium. Passive relocation of occupied burrows supporting a breeding pair of burrowing owls shall be conducted outside of the breeding season pursuant to the California Fish and Game Code and the MBTA.*

Facts in Support of the Finding: According to Section 4.4 of the DEIR, one non-listed special status species, grasshopper sparrow, was observed on the site during the burrowing owl survey. Fourteen other non-listed special status species, including burrowing owl, have a low to moderate potential to occur on the site based on existing habitat quality. None of these species is listed as Threatened or Endangered under State or Federal law, all are relatively widespread, and the site does not contain high quality habitat for any of them. Therefore, any impacts to these species by the Project would not be considered significant. Neither additional surveys nor additional conservation measures for these species will be required for the Project, with the exception of burrowing owl.

The planning area may support habitat for bird species protected under the California Fish and Game Code and Migratory Bird Treaty Act (MBTA). If clearing and grubbing activities take place during the general bird nesting season (February 1 through August 31), potential impacts to bird species protected under the California Fish and Game Code and MBTA may occur, therefore **Mitigation Measure 4.4.6.1A** is required.

The Project site also contains habitat suitable to support the burrowing owl. Although burrowing owl was not found on the site during the focused survey, the species is highly mobile, so there is a potential that at some future date prior to Project development, this species may occupy the site. This is a potentially significant impact requiring **Mitigation Measures 4.4.6.1B and 4.4.6.1C**. Implementation of the above-listed mitigation measures would reduce impacts to migratory bird species and non-listed sensitive species to a less than significant level. (DEIR, pgs. 4.4-25 to 4.4-27).

b. Riparian Habitat or Other Sensitive Natural Communities

Potential Significant Impact: The EIR evaluated and concluded that the Project has the potential to permanently affect 0.36 acre of riparian/riverine habitat and to temporarily affect 0.35 acre of riparian/riverine habitat.

Finding: Implementation of the following mitigation measures will reduce the potential adverse impacts to riparian habitat or other sensitive natural communities to less than significant:

4.4.6.2A As outlined in the project's Determination of a Biologically Equivalent or Superior Preservation (DBESP) report, the project applicant shall compensate for the temporary and permanent impact on and loss of jurisdictional waters and streambeds by providing a minimum 2:1 off-site replacement of equivalent riverine/riparian habitat prior to project construction. Offsite restoration, enhancement, and/or land purchase mitigation for the drainage impacts will occur at an offsite location through one or more of the following: an USACE approved mitigation bank, through an in lieu fee mitigation program, and/or land purchase and conservation. DFG and USFWS will need to provide concurrence that this mitigation is equivalent or superior to that proposed for impact through their review and acceptance of the DBESP.

4.4.6.2B Riparian/riverine resources that are temporarily impacted by project construction shall be returned to their preconstruction contours and hydroseeded, as outlined in the DBESP.

Facts in Support of the Findings: According to Section 4.4 of the DEIR, the Project site consists of highly disturbed land from which most natural vegetation has been removed by regular disking for weed abatement and historical citrus cultivation. No special status species plants were recorded on site within the southern and western drainages due to the site's long-standing disturbances and the fact that on-site soils may not be capable of supporting most sensitive plant species.

However, implementation of the Project would result in permanent impacts on 0.36 acre of riparian/riverine areas as a result of the construction of the detention basins, and drain outlets. In addition to permanent impacts, the Project would result in temporary impacts on 0.35 acre of riparian/riverine areas associated with construction activities. Minimal intrusion into the drainages would be necessary and no construction is anticipated in the drainages themselves.

Following construction, temporary impact areas would be restored to their pre-construction contours and revegetated per a Habitat Mitigation and Monitoring Plan (HMMP) to be written for the Project site. The HMMP would be developed to address temporary impacts on riverine/riparian areas subject to jurisdiction under the MSHCP, waters of the United States subject to jurisdiction under Section 404 of the Clean Water Act (CWA), waters of the state subject to jurisdiction under Section 401 of the CWA, and jurisdictional streambeds subject to jurisdiction under Sections 1600–1616 of the California Fish and Game Code. Therefore, the proposed mitigation design is directed at providing adequate mitigation based on impacts on the largest jurisdictional area (namely, CDFW jurisdictional streambeds). Because implementation of the Project would have impacts on riparian/riverine areas on site, mitigation would be required. Implementation of the **Mitigation Measures 4.4.6.2A and 4.4.6.2B** would reduce impacts to riparian habitat to a less than significant level. (DEIR, pgs. 4.4-29 to 4.4-27)

c. Jurisdictional Waters/Wetlands

Potential Significant Impact: The EIR evaluated and concluded that the Project has the potential to permanently affect 0.051 non-wetland waters of the United States (US) and 0.362 acre of CDFW jurisdictional area, and to temporarily affect 0.054 acre of non-wetland waters of the U.S. and 0.33 acre of CDFW jurisdictional area.

Findings: Implementation of the following mitigation measures will reduce the potential adverse impacts to jurisdictional waters and wetlands to less than significant:

4.4.6.3A The project applicant shall obtain a Section 404 Nationwide or Individual Permit, as appropriate, from the USACE, a Section 401/Porter-Cologne Water Quality Certification from the RWQCB, and a Section 1602 Streambed Alteration Agreement from the CDFG. Offsite restoration, enhancement, and/or land purchase mitigation of jurisdictional drainage impacts will occur at an off-site location through one or more of the following: an USACE approved mitigation bank, through an in-lieu fee mitigation program, and/or land purchase and conservation.

Facts in Support of the Findings: According to Section 4.4 of the DEIR, there is a clear connection to drainages associated with the San Jacinto watershed, and all three drainages (western, southern, and eastern) located on or adjacent to the Project site are determined to be jurisdictional waters of the United States. Implementation of the Project would result in permanent impacts to 0.051 acre (354 linear feet) of non-wetland waters of the US and waters of the State and 0.362 acre (440 linear feet) of state streambed associated with the eastern, southern, and western drainages. In addition to permanent impacts, the Project

would result in temporary impacts to 0.054 acre (332 linear feet) of non-wetland waters of the US and waters of the State and 0.33 acre (547 linear feet) of State streambed associated with construction activities. This is a significant impact requiring mitigation.

The proposed on-site restoration of temporary impact areas and the long-term enhancement of off-site riparian/riverine habitat managed by Santa Ana Water Authority provides adequate mitigation for identified impacts to on-site jurisdictional areas. Implementation of the recommended **Mitigation Measure 4.4.6.3A** would reduce impacts to jurisdictional waters to less than significant levels. (DEIR, pgs. 4.4-29 to 4.4-30)

3. Cultural Resources

a. Prehistoric Cultural Resources

Potential Significant Impact: The EIR evaluated and concluded that the Project could have an adverse effect on significant archaeological resource pursuant to Section 15064.5.

Finding: Implementation of the following mitigation measures will reduce the impact to unique archaeological resources to less than significant:

4.5.6.1A *Prior to the issuance of a grading permit, the Project Applicant shall provide evidence to the City of Moreno Valley that a Cultural Resources Monitoring Agreement has been secured for qualified Tribal representatives, and that a professional archaeological monitor meeting Secretary of Interior standards has been retained by the Applicant to conduct monitoring of all mass grading and trenching activities and has the authority to temporarily halt and redirect earthmoving activities in the event that suspected archaeological resources are unearthed during Project construction. The Project Archaeologist and Tribal representatives shall attend the pre-grading meeting with the City and contractors to explain and coordinate the requirements of the monitoring program.*

4.5.6.1B *Prior to the issuance of a grading permit, the Applicant shall provide evidence to the City of Moreno Valley that appropriate Native American representative(s), Project Archaeologist, and the Tribal representative(s) shall be allowed to monitor and have received a minimum of 30 days advance notice of all mass grading and trenching activities. During grading and trenching operations, the Tribal representatives and the project archaeological monitor shall observe all mass grading and trenching activities*

per the Cultural Resources Monitoring Agreement. If the Tribal representatives suspect that an archaeological resource may have been unearthed, the archaeologist, in consultation with the tribal representative, shall immediately halt and redirect grading operations in a 100-foot radius around the find to allow identification and evaluation of the suspected resource. In consultation with the appropriate Native American Tribe(s), the archaeological monitor shall evaluate the suspected resource and make a determination of significance pursuant to California Public Resources Code Section 21083.2.

4.5.6.1C If a significant archaeological resource(s) is discovered on the property, ground disturbing activities shall be suspended 100 feet around the resource(s). The archaeological monitor and representatives of the appropriate Native American Tribe(s), the Project Applicant, and the City Planning Division shall confer regarding mitigation of the discovered resource(s). A treatment plan and/or preservation plan shall be prepared and by the archaeological monitor and reviewed by representatives of the appropriate Native American Tribe(s), the Project Applicant, and the City Planning Division and implemented by the archaeologist to protect the identified archaeological resource(s) from damage and destruction. The landowner shall relinquish ownership of all archaeological artifacts that are of Native American origin found on the Project site to the culturally affiliated Native American tribe(s) for proper treatment and disposition. A final report containing the significance and treatment findings shall be prepared by the archaeologist and submitted to the City Planning Division, the appropriate Native American tribe(s), and the Eastern Information Center at the University of California, Riverside. All cultural material, excluding sacred, ceremonial, grave goods and human remains, collected during the grading monitoring program and from any previous archaeological studies or excavations on the project site shall be curated, as determined by the treatment plan, according to the current professional repository standards and may include the Pechanga Bands curatorial facility.

4.5.6.1D Prior to grading permit issuance, the City shall verify that the following note is included on the Grading Plan:

“If any suspected archaeological resources are discovered during ground-disturbing activities and the archaeological monitor or Tribal representatives are not present, the construction supervisor is obligated to halt work in a 100-foot radius around the find and

call the project archaeologist and the Tribal representatives to the site to assess the significance of the find."

4.5.6.1E If human remains are encountered, California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the Riverside County Coroner has made the necessary findings as to origin. Further, pursuant to California Public Resources Code Section 5097.98(b), remains shall be left in place and free from disturbance until a final decision as to the treatment and disposition has been made by the Coroner. If the Riverside County Coroner determines the remains to be Native American, the California Native American Heritage Commission must be contacted within 24 hours. The Native American Heritage Commission must then immediately notify the "most likely descendant(s)" of receiving notification of the discovery. The most likely descendant(s) shall then make recommendations within 48 hours, and engage in consultations concerning the treatment of the remains as provided in Public Resources Code §5097.98.

Facts in Support of the Finding: Based on Section 4.5 of the DEIR, a reconnaissance pedestrian-survey for the Project site was conducted in November 2007. Although the Project site is located within the Moreno Hills Complex, no archaeological resources were identified on the Project site during the field survey, and the cultural resource assessment concluded the Project would have no significant impacts; however, there is a potential for Project grading to disturb previously undiscovered cultural resources. While there is no recorded or surface evidence that archaeological resources are present on site, the Project is located in an area with a high potential of containing prehistoric archaeological resources. Therefore, a potential exists that excavation and construction activities may uncover previously undetected prehistoric or historic cultural resources. This is a potentially significant impact under CEQA and requires mitigation. Adherence to the above **Mitigation Measures 4.5.6.1A** through **4.5.6.1E** would reduce potential impacts to archaeological resources to a less than significant level. (DEIR, pgs. 4.5-6 to 4.5-7)

b. Paleontological Resources

Potential Significant Impact: The EIR evaluated and concluded that the Project could have an adverse effect on significant paleontological resource or site or unique geologic feature.

Findings: Implementation of the following mitigation measures will reduce the impact to unique paleontological resource or unique geologic feature to less than significant:

4.5.6.2A *Prior to the issuance of grading permits, the project applicant shall submit to and receive approval from the City, a Paleontological Resource Impact Mitigation Program (PRIMP). The PRIMP shall include the provision of a trained paleontological monitor during on-site soil disturbance activities. The monitoring for paleontological resources shall be conducted during the rough-grading phase of the project. In the event that paleontological resources are unearthed or discovered during excavation, Mitigation Measure 4.5.6.2C shall apply. Conversely, if no paleontological resources are unearthed or discovered on site during excavation, no additional action is required.*

4.5.6.2B *The paleontological monitor shall be equipped to rapidly remove any large fossil specimens encountered during excavation. During monitoring, samples of soil shall be collected and processed to recover microvertebrate fossils. Processing shall include wet screen washing and microscopic examination of the residual materials to identify small vertebrate remains.*

4.5.6.2C *If paleontological resources are unearthed or discovered during excavation of the project site, the monitoring for paleontological resources shall be conducted on a full-time basis for the duration of the rough-grading of the project site. The following recovery processes shall apply:*

- *Upon encountering a large deposit of bone, salvage of all bone in the area shall be conducted with additional field staff and in accordance with modern paleontological techniques.*
- *All fossils collected during the project shall be prepared to a reasonable point of identification. Excess sediment or matrix shall be removed from the specimens to reduce the bulk and cost of storage. Itemized catalogs of all material collected and identified shall be provided to the museum repository along with the specimens.*
- *A report documenting the results of the monitoring and salvage activities and the significance of the fossils shall be prepared.*
- *All fossils collected during this work, along with the itemized inventory of these specimens, shall be deposited in a museum repository for permanent curation and storage.*

4.5.6.2D Prior to grading permit issuance, the City shall verify that the following note is included on the Grading Plan:

“If any suspected paleontological resources are discovered during ground-disturbing activities, the construction supervisor is obligated to halt work in a 100-foot radius around the find and call a qualified paleontologist to the site to assess the significance of the find. A qualified paleontologist shall evaluate the suspected resource. If the paleontologist determines that the find is not unique, construction shall be permitted to proceed. However, if the paleontologist determines that further information is needed to evaluate significance, the City of Moreno Valley shall be notified and a treatment plan shall be prepared and implemented in consultation with the City to protect the identified paleontological resource(s) from damage and destruction.”

Facts in Support of the Findings: According to Section 4.5 of the DEIR, the Project site is located within an area that has a high potential to contain near-surface Pleistocene fossils.¹³ The paleontological literature search indicated that there is potential for significant, nonrenewable resources that to encountered during onsite construction activities. Therefore, a paleontological resources impact mitigation program (PRIMP), including excavation monitoring by a qualified paleontologist, is recommended for earthmoving activities in Pleistocene sediments on the Project site with potential to contain significant, nonrenewable paleontological resources. Although no paleontological resources were identified on site during the field survey, because of the location of the Project site and associated sensitivity for paleontological resources, the potential exists that paleontological resources maybe uncovered during construction. Adherence to the **Mitigation Measures 4.5.6.2A through 4.5.6.2D** will reduce potential impacts to paleontological resources to a less than significant level. (DEIR, pgs. 4.5-7 to 4.5-8)

4. Hydrology, Drainage, and Water Quality

a. **Construction-Related Water Quality Impacts**

Potential Significant Impact: The EIR evaluated and concluded that the Project could violate water quality standards or waste discharge requirements during construction phases of the Project in form of increased soil erosion, sedimentation, or storm water discharges.

¹³ Ibid.

Findings: Implementation of the following mitigation measures will reduce the impact to construction-related water quality to less than significant:

4.7.6.1A *Prior to grading plan approval and the first issuance of a grading permit by the City, the project applicant shall provide evidence to the City that a Notice of Intent (NOI) has been filed with the Regional Water Quality Control Board for coverage under the State NPDES General Construction Permit for discharge of storm water associated with construction activities.*

4.7.6.1B *Prior to grading plan approval and the first issuance of a grading permit by the City, the project applicant shall submit to the City of Moreno Valley a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP shall include a surface water control plan and erosion control plan citing specific measures to control on-site and off-site erosion during the entire grading and construction period. Additionally, the SWPPP shall identify structural and nonstructural BMPs to control sediment and nonvisible discharges from the site. BMPs to be implemented in the SWPPP may include (but shall not be limited to) the following:*

- *Sediment discharges from the site may be controlled by the following: sandbags, silt fences, straw wattles and temporary debris basins (if deemed necessary), and other discharge control devices. The construction and condition of the BMPs will be periodically inspected during construction, and repairs will be made when necessary as required by the SWPPP.*
- *No materials of any kind shall be placed in drainage ways.*
- *Materials that could contribute nonvisible pollutants to storm water must be contained, elevated, and placed in temporary storage containment areas.*
- *All loose piles of soil, silt, clay, sand, debris, and other earthen material shall be protected per RWQCB standards to eliminate any discharge from the site. Stockpiles will be surrounded by silt fences.*
- *The SWPPP will include inspection forms for routine monitoring of the site during the construction phase to ensure NPDES compliance.*
- *Additional BMPs and erosion control measures will be documented in the SWPPP and utilized if necessary.*

- *The SWPPP will be kept on site for the entire duration of project construction and will also be available to the local RWQCB for inspection at any time.*

In the event that it is not feasible to implement the above BMPs, the City of Moreno Valley can make a determination that other BMPs will provide equivalent or superior treatment either on or off site.

4.7.6.1C *Prior to the issuance of grading permits, the project applicant shall provide evidence to the City that the following provisions have been added to construction contracts for the project:*

- *The Construction Contractor shall be responsible for performing and documenting the application of BMPs identified in the SWPPP. Weekly inspections shall be performed on sediment control measures called for in the SWPPP. Monthly reports shall be maintained by the Contractor and submitted to the City for inspection. In addition, the Contractor will also be required to maintain an inspection log and have the log on site to be reviewed by the City of Moreno Valley and the representatives of the Regional Water Quality Control Board.*

Facts in Support of the Findings: According to Section 4.7 of the DEIR, the construction and grading phases of the project site would require the disturbance of surface soils and removal of existing orange groves and vegetative cover. During the construction period, grading and excavation activities would result in exposure of soil to storm runoff, potentially causing erosion and sediment in runoff. If not managed through Best Management Practices (BMPs), the runoff could cause erosion and increased sedimentation in local drainage ways such as the Quincy Channel. The potential for chemical releases is present at most construction sites in the form of fuels, solvents, glues, paints, and other building construction materials. However, implementation of construction practices and adherence to existing water quality regulations and **Mitigation Measures 4.7.6.1A** through **4.7.6.1C** would reduce these impacts to a less than significant level. (DEIR, pgs. 4.7-21 to 4.7-23)

b. Operational-Related Water Quality Impacts

Potential Significant Impact: The EIR evaluated and concluded that the Project could violate water quality standards or waste discharge requirements during the operational phases of the project in the form of increased soil erosion, sedimentation, or urban runoff.

Findings: Implementation of the following mitigation measure will reduce the impact to operational-related water quality to less than significant:

4.7.6.2A *Prior to grading plan approval and the first issuance of a grading permit by the City, the project applicant shall receive approval from the City of Moreno Valley for a Final Water Quality Management Plan (F-WQMP). The F-WQMP shall specifically identify pollution prevention, site design, source control, and treatment control BMPs that shall be used on site to control predictable pollutant runoff in order to reduce impacts to water quality to the maximum extent practicable. BMPs to be implemented in the F-WQMP may include (but shall not be limited to) the following:*

- *Required landscaped areas shall not use decorative concrete or impervious surfaces.*
- *Landscape plans shall incorporate native and drought-tolerant plants, trees, and shrubs. Landscaping shall be maintained weekly and maintenance contractor will properly dispose of all landscape wastes.*
- *Irrigation systems shall be inspected monthly by the landscape contractor to check for overwatering, leaks, or excessive runoff to paved areas. Timers will be used to prevent overwatering.*
- *Signage will be inspected and maintained twice a year for legibility.*
- *Outdoor Loading/Unloading truck docks shall be kept in a clean and orderly condition with weekly inspections, continuous monitoring and immediate clean up of spills.*
- *Parking area maintenance shall be swept or vacuumed at least quarterly, if there is any trash or debris in between the routine sweeping, it shall be swept or vacuumed immediately.*
- *Trash enclosures will be inspected and maintained weekly or as needed by maintenance contractor.*

- *On-site extended detention/sedimentation basins and sand filters will treat all of the site's runoff via vegetated swales and will be maintained and inspected at least twice a year and prior to October 1.*
- *Additional BMPs will be documented in the WQMP and utilized if necessary.*

In the event that it is not feasible to implement the above BMPs, the City of Moreno Valley can make a determination that other BMPs will provide equivalent or superior treatment either on or off site.

Facts in Support of the Findings: According to Section 4.7 of the DEIR, the Project would result in the conversion of existing on-site permeable surfaces to impermeable surfaces, thereby altering the current drainage pattern. Upon development of the proposed on-site uses, storm runoff from the roadways, parking lots, and buildings may carry a variety of pollutants such as sediment, pathogens, petroleum products, commonly utilized construction materials, landscaping chemicals, and (to a lesser extent) trace metals such as zinc, copper, lead, cadmium, and iron, which may lead to the degradation of storm water in downstream channels. These impacts to water quality are considered significant impacts that require mitigation. **Mitigation Measure 4.7.6.2A** has been identified to reduce impacts to water quality to less than significant.

The Project would also incorporate on-site drainage that would have hydrodynamic infrastructure components that would meet City and County water quality requirements. Through the use of site design BMPs, source control BMPs, and treatment control BMPs, the resulting pollutant loads coming from the Project would be reduced thereby ultimately reducing pollutants discharged from urban storm water runoff to surface water bodies. Because adherence to the requirements of the NPDES permit, which include implementation of the BMPs outlined in the WQMP, would be required by the City during the operation of the Project, potential water quality impacts resulting from storm water and urban runoff would be reduced to a less than significant level. (DEIR, pgs. 4.7-23 to 4.7-26)

c. Drainage Capacity-Related Impacts

Potential Significant Impact: The EIR evaluated and concluded that the Project could create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.

Findings: Implementation of the following mitigation measure will reduce the impact to drainage to less than significant:

4.7.6.3A *Prior to the approval of a rough grading plan, the project proponent shall receive approval on a project-specific Final Hydrology Study, with supporting engineering calculations, from the City Engineer. The Final Hydrology Study shall incorporate relevant requirements identified by the City, and/or site-specific geotechnical investigations.*

Facts in Support of the Findings: According to Section 4.7 of the DEIR, development and operation of the Project would result in the generation of the additional storm water flows that would be above those generated in existing site conditions. With the construction and maintenance of adequate storm water drainage systems, through the adherence of **Mitigation Measure 4.7.6.3A**, impacts would be less than significant. In addition, the design and installation of the proposed drainage improvements will be required to adhere to applicable City and County standards. (DEIR, pgs. 4.7-26 to 4.7-28)

5. Noise

a. **Short-Term Construction Noise**

Potential Significant Impact: The EIR evaluated and concluded that noise levels from grading and other construction activities for the proposed Project may range up to 91 dBA at the closest residences southeast of the Project site for very limited times when construction occurs near the Project's boundary. Construction-related noise impacts from the Project would be potentially significant.

Finding: Implementation of the following mitigation measures will reduce potential short-term construction noise impacts to less than significant:

4.9.6.1A *During all project site excavation and grading on site, the project contractor shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards.*

4.9.6.1B *The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest to the project site.*

4.9.6.1C *The construction contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise sources and noise-sensitive receptors nearest to the project site during all project construction.*

4.9.6.1D *During project site construction activities at Building 6 (i.e., closest to existing residences), the construction contractor shall limit all construction-related activities s to*

between the hours of 6:00 a.m. and 8:00 p.m. on weekdays and between the hours of 7:00 a.m. to 8:00 p.m. on weekends and holidays, unless written approval is obtained from the City Building Official or City Engineer for specific construction activities that must be conducted outside of the permitted time periods.

Facts in Support of the Finding: According to Section 4.9 of the DEIR, two types of short-term noise impacts could occur during the construction of the Project. First, construction crew commutes and the transport of construction equipment and materials to the site for the Project would incrementally increase noise levels on access roads leading to the site. The second type of short-term noise impact is related to noise generated during excavation, grading, and building erection on the Project site. Construction of the Project is expected to require the use of scrapers, bulldozers, and water and pickup trucks. The site preparation phase, which includes excavation and grading of the site, tends to generate the highest noise levels, because the noisiest construction equipment is earthmoving equipment. Earthmoving equipment includes excavating machinery such as backfillers, bulldozers, draglines, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve one or two minutes of full-power operation followed by three to four minutes at lower power settings. The maximum noise level generated by each scraper on the Project site is assumed to be approximately 87 dBA L_{max} at 50 feet from the scraper. Each bulldozer would generate approximately 85 dBA L_{max} at 50 feet. The maximum noise level generated by water and pickup trucks is approximately 86 dBA L_{max} at 50 feet from these vehicles. Each doubling of the sound sources with equal strength increases the noise level by three (3) dBA. Assuming that each piece of construction equipment operates at some distance from the other equipment, the worst-case composite noise level during this phase of construction would be 91 dBA L_{max} at a distance of 50 feet from the active construction area.

The nearest noise-sensitive receptor locations to the Project site are existing residences approximately 50 feet to the southeast. These nearest residents may be subject to short-term, intermittent, maximum noise reaching 91 dBA L_{max} , generated by construction activities on the Project site. This noise level would exceed the City's exterior noise standard of 60 dBA¹⁴ CNEL for residential uses. However, no significant construction noise impacts would occur if construction of the Project would occur within the permitted hours of 6:00 a.m. to 8:00 p.m. of any working day, and within the permitted hours of 7:00 a.m. and 8:00 p.m. on Sundays and Federal holidays. Compliance with the construction hours specified in the City's Municipal Code would result in construction noise impacts that are less than significant. While impacts

¹⁴ Chapter 11.80.030 Table 11.80.030-2, City of Moreno Valley Municipal Code, City of Moreno Valley.

would be considered less than significant as long as construction activities occur within the designated hours identified in the City's Municipal Code, mitigation measures have been identified to reduce the noise levels that would expose nearby sensitive receptors to noise levels in excess of the City's noise standards.

With adherence to the City's designated construction hours and with implementation of the proposed **Mitigation Measures 4.9.6.1A through 4.9.6.1D**, potential short-term construction noise impacts would be reduced below the level of significance. (DEIR, pgs. 4.9-25 to 4.9-27)

6. Transportation

a. Future Year 2035 with Project Conditions (Intersection) Traffic and Level of Service

Potential Significant Impact: The EIR evaluated and concluded that the Project could cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system.

Findings: Implementation of the following mitigation measures will reduce the impact related to future traffic LOS to less than significant:

4.11.6.4A Prior to issuance of a Certificate of Occupancy, the project applicant shall construct the following traffic improvements:

- Redlands Boulevard/SR-60 Westbound Ramps. Install a traffic signal. This improvement is currently approved, and permitted by Caltrans. If not otherwise completed prior to project opening, the required traffic signal shall be constructed by the Applicant prior to issuance of the first Certificate of Occupancy.
- Redlands Boulevard/Fir Avenue/Eucalyptus Avenue. If not otherwise completed prior to project opening, prior to issuance of the first Certificate of Occupancy, the Applicant shall construct the following improvements: Install a traffic signal and add a northbound left-turn lane and a southbound left-turn lane.

If the improvements are constructed by others prior to the Certificate of Occupancy, the applicant shall pay its fair share towards the improvements through the City's DIF program.

4.11.6.4B *Prior to issuance of building permits, the project applicant shall pay the fair-share contribution toward the following traffic improvements through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program:*

- **Moreno Beach Drive/SR-60 Eastbound Ramps.** *The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF would mitigate the significant impact at this location. This project is scheduled to go into construction by the end of this year and completed by the end of 2013.*
- **Redlands Boulevard/SR-60 Westbound Ramps.** *Install a traffic signal. This improvement is currently approved, and permitted by Caltrans. If not otherwise completed prior to project opening, the required traffic signal shall be constructed by the Applicant prior to issuance of the first Certificate of Occupancy.*
- **Redlands Boulevard/Fir Avenue/Eucalyptus Avenue.** *If not otherwise completed prior to project opening, prior to issuance of the first Certificate of Occupancy, the Applicant shall construct the following improvements: Install a traffic signal. This improvement is listed in the City's DIF program. Add a northbound left-turn lane and a southbound left-turn lane.*

4.11.6.4C *Prior to issuance of building permits, the project applicant shall pay the fair-share contribution toward the following traffic improvements through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program:*

- **Moreno Beach Drive/SR-60 Eastbound Ramps.** *The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF would mitigate the significant impact at this location.*
- **Moreno Beach Drive/Cottonwood Avenue.** *Add a southbound through lane. This improvement is listed in the City's DIF program. Therefore, payment of the DIF would mitigate the significant impact at this location.*
- **Moreno Beach Drive/Alessandro Boulevard.** *Add a southbound through lane. This improvement is listed in the City's DIF program. Therefore, payment of the DIF would mitigate the significant impact at this location.*

- **Redlands Boulevard/SR-60 Westbound Ramps.** Install a traffic signal. This improvement is listed in the City's DIF program and will be installed before building occupancy since it was identified as a direct project impact. Add a northbound through lane. The Redlands Boulevard/SR-60 Interchange reconstruction would implement the northbound through lane. The interchange reconstruction project is programmed in the TUMF. Therefore, payment of the DIF and TUMF would mitigate the significant impact at this location.
- **Redlands Boulevard/SR-60 Eastbound Ramps.** The Redlands Boulevard/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF. Therefore, payment of the TUMF would mitigate the significant impact at this location.
- **Redlands Boulevard/Fir Avenue/Eucalyptus Avenue.** Install a traffic signal. Add a westbound right-turn lane and provide overlap phasing for the westbound right turns. Add a westbound left-turn lane and an eastbound left-turn lane. These improvements are programmed in the City's DIF program. Add a northbound left-turn lane a southbound through lane and a southbound left-turn lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF would mitigate the significant impact at this location.
- **Redlands Boulevard/Eucalyptus Avenue.** Add a southbound right-turn lane. This improvement is programmed in the TUMF. Therefore, payment of the TUMFs would mitigate the significant impact at this location.
- **Redlands Boulevard/Alessandro Boulevard.** Add a southbound left-turn lane. This improvement is programmed in the TUMF. Therefore, payment of the TUMFs would mitigate the significant impact at this location.

4.11.6.4D Prior to issuance of building permits, the project applicant shall pay the fair-share contribution toward the following traffic improvements through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program. At some locations, the DIF and TUMFs would not fully mitigate the projects impact. For these locations, additional improvements shall be implemented by the project applicant prior to the issuance of a certificate of occupancy for the project:

- **Nason Street/Eucalyptus Avenue.** Add a northbound right-turn lane. This improvement is programmed in the City's DIF; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. In addition, the project shall contribute a fair share (calculated to be 1.76%) toward restriping the westbound approach to provide dual left-turn lanes
- **Nason Street/Alessandro Boulevard.** Add an eastbound through lane and a westbound through lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. In addition, the project shall contribute a fair share (calculated to be 1.4%) toward modification of the traffic signal to provide overlap phasing for the eastbound right-turn lane.
- **Moreno Beach Drive/SR-60 Westbound Ramps.** The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF would mitigate the significant impact at this location.
- **Moreno Beach Drive/SR-60 Eastbound Ramps.** The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF would mitigate the significant impact at this location.
- **Moreno Beach Drive/Eucalyptus Avenue.** Convert the existing eastbound through lane to a left-turn lane and the eastbound right-turn lane to a shared through/right-turn lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. In addition, the project shall contribute a fair share (calculated to be 8.63%) toward modification of the traffic signal to provide right-turn overlap phasing for the westbound right turn.
- **Moreno Beach Drive/Cottonwood Avenue.** Add a southbound through lane. This improvement is programmed in the City's DIF program. Therefore, payment of the DIF would mitigate the significant impact at this location.

- **Moreno Beach Drive/Alessandro Boulevard.** Add 2 southbound through lanes, 2 northbound through lanes, an eastbound through lane, and a westbound through lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would mitigate the significant impact at this location.
- **Redlands Boulevard/SR-60 Westbound Ramps.** Install a traffic signal. This improvement is programmed in the City's DIF program and will be installed before building occupancy since it was identified as a direct project impact.
- **Redlands Boulevard/SR-60 Eastbound Ramps.** The Redlands Boulevard/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF. Therefore, payment of the TUMF would mitigate the significant impact at this location.
- **Redlands Boulevard/Fir Avenue-Eucalyptus Avenue.** Install a traffic signal and add a westbound left-turn lane, eastbound through lane, eastbound left-turn lane, and a westbound right-turn lane with overlap phasing. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. In addition, add a southbound through lane, southbound left-turn lane, northbound through lane, northbound left-turn lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF would mitigate the significant impact at this location.
- **Redlands Boulevard/Eucalyptus Avenue.** Install a traffic signal and add a westbound left-turn lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. In addition, add a northbound left-turn lane and a southbound left-turn lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF would mitigate the significant impact at this location.
- **Redlands Boulevard/Alessandro Boulevard.** Install a traffic signal. This improvement is programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. In addition, add a southbound left-turn lane, a northbound left-turn lane, a westbound left-turn lane, an eastbound left-turn lane, a westbound right-turn lane, and a southbound through lane. These improvements are

programmed in the TUMF. Therefore, payment of the DIF and TUMF would mitigate the significant impact at this location.

4.11.6.4E *Prior to issuance of building permits, the project applicant shall implement the following improvements, either through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program, or through a fair-share contribution to the City of Moreno Valley as noted below:*

- ***Nason Street/Eucalyptus Avenue.*** *Add a northbound right-turn lane and an eastbound right-turn lane. These improvements are programmed in the City's DIF; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. Implementation of the improvements identified for this intersection in **Mitigation Measure 4.11.6.4D** would also partially mitigate the significant impact at this intersection. In addition, the project shall pay a fair share (calculated to be 1.6%) toward modification of the traffic signal to provide right-turn overlap phasing for the eastbound and northbound right turns.*
- ***Nason Street/Alessandro Boulevard.*** *Add an eastbound through lane and westbound through lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. Implementation of the improvements identified for this intersection in **Mitigation Measure 4.11.6.4D** would also partially mitigate the significant impact at this intersection. In addition, the project shall pay a fair share (calculated to be 1.35%) toward the addition of an eastbound left-turn lane and modification of the traffic signal to provide overlap phasing for the westbound right-turn lane.*
- ***Moreno Beach Drive/SR-60 Westbound Ramps.*** *The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the design phase. Therefore, payment of the TUMF would mitigate the significant impact at this location.*
- ***Moreno Beach Drive/SR-60 Eastbound Ramps.*** *The Moreno Beach Drive/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF and is currently in the*

design phase. Therefore, payment of the TUMF would mitigate the significant impact at this location.

- ***Moreno Beach Drive/Eucalyptus Avenue.*** *Restripe eastbound approach to dual left-turn lanes and add a northbound through lane, a westbound through lane, and a southbound right-turn lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. Implementation of the improvements identified for this intersection in **Mitigation Measure 4.11.6.4D** would also partially mitigate the significant impact at this intersection. In addition, the project shall pay a fair share (calculated to be 5.17%) toward modification of the traffic signal to provide right-turn overlap phasing for the southbound right-turn lane.*
- ***Moreno Beach Drive/Cottonwood Avenue.*** *Add a southbound through lane, a northbound through lane, an eastbound left-turn lane, an eastbound through lane, a westbound through lane, and a westbound left-turn lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would mitigate the significant impact at this location.*
- ***Moreno Beach Drive/Alessandro Boulevard.*** *Add 2 southbound through lanes, add 2 northbound through lanes, an eastbound through lane, and a westbound through lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would mitigate the significant impact at this location.*
- ***Auto Mall Drive/Eucalyptus Avenue.*** *Install a traffic signal. This improvement is programmed in the City's DIF program; therefore, payment of the DIF would mitigate the significant impact at this location.*
- ***Redlands Boulevard/SR-60 Westbound Ramps.*** *Install a traffic signal. This improvement is programmed in the City's DIF program and will be installed before building occupancy since it was identified as a direct project impact. Therefore, payment of the DIF would mitigate the significant impact at this location.*
- ***Redlands Boulevard/SR-60 Eastbound Ramps.*** *The Redlands Boulevard/SR-60 Interchange reconstruction would fully mitigate the project impact at this location. The interchange reconstruction project is programmed in the TUMF. Therefore, payment of the TUMF would mitigate the significant impact at this location.*

- **Redlands Boulevard/Fir Avenue-Eucalyptus Avenue.** Install a traffic signal and add a westbound left-turn lane, eastbound through lane, eastbound left-turn lane, a westbound right-turn lane with overlap phasing, and a southbound right-turn lane with overlap phasing. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. In addition, add a southbound through lane, a southbound left-turn lane, a northbound through lane, a northbound left-turn lane, and a northbound right-turn lane. These improvements are programmed in the TUMF. Therefore, payment of the TUMF would also partially mitigate the significant impact at this location. In addition, the project shall pay a fair share (calculated to be 10.44%) of the cost of adding a southbound left-turn lane.
- **Redlands Boulevard/Eucalyptus Avenue.** Install a traffic signal and add a westbound left-turn lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. In addition, add a northbound left-turn lane, a northbound through lane, a southbound left-turn lane, and a southbound through lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF would mitigate the significant impact at this location.
- **Redlands Boulevard/Cottonwood Avenue.** Add an eastbound through lane and westbound through lane. These improvements are programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. In addition, add a northbound through lane, and a southbound through lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF would mitigate the significant impact at this location.
- **Redlands Boulevard/Alessandro Boulevard.** Install a traffic signal. This improvement is programmed in the City's DIF program; therefore, payment of the DIF would partially mitigate the significant impact at this intersection. In addition, add a southbound left-turn lane, a northbound left-turn lane, a westbound left-turn lane, an eastbound left-turn lane, a westbound right-turn lane, a southbound through lane, a westbound through lane, and an eastbound through lane. These improvements are programmed in the TUMF. Therefore, payment of the DIF and TUMF would mitigate the significant impact at this location.

4.11.6.4F *If the Encilia Avenue and Quincy Street Connection plan is implemented as part of the proposed project, then prior to issuance of building permits, the project applicant shall implement the following improvements: In addition to those identified in **Mitigation Measure 4.11.6.4E**, either through fees paid to the City of Moreno Valley based on the City's DIF system and the County's TUMF program, or through a fair-share contribution to the City of Moreno Valley as noted below:*

- **Moreno Beach Drive/Eucalyptus Avenue.** *Restripe the southbound shared through/right-turn lane to a southbound through lane. This improvement is programmed in the City's DIF program; therefore, payment of the DIF would mitigate the impacts of the project at this intersection.*
- **Redlands Boulevard/Fir Avenue-Eucalyptus Avenue.** *Pay the fair share (calculated to be 10.84%) to add a southbound right-turn lane.*
- **Redlands Boulevard/Encilia Avenue-Eucalyptus Avenue.** *Install a traffic signal and add a westbound left-turn lane. These improvements are programmed in the City's DIF program. In addition, add a northbound left-turn lane, northbound through lane, southbound left-turn lane, and a southbound through lane. These improvements are programmed in the TUMF program. Therefore, payment of the DIF and TUMF would fully mitigate the impact of the project at this intersection.*
- **Moreno Beach Drive/Encilia Avenue.** *Install a traffic signal, add a northbound through lane, southbound left-turn lane, and a southbound through lane. This improvement is programmed in the City's DIF program; therefore, payment of the DIF would mitigate the impacts of the project at this intersection.*

Facts in Support of the Findings: Future Year (2035) with Project conditions considers the addition of traffic generated by the Project to Future Year (2035) Baseline conditions. The addition of project traffic to the Future Year (2035) scenario would result in conditions exceeding City and Caltrans LOS standards at twelve intersections.

All of the intersections that are forecast to experience a deficient LOS with the Project would also operate with a deficient LOS without the Project. Although the Project does not cause these intersections to operate at an unsatisfactory LOS, it does contribute to the worsening of the intersections' LOS and therefore mitigation would be required to offset the cumulative impact of the project.

Freeway mainline and ramp junctions were evaluated in the Future Year 2035 plus Project condition. Nine segments are forecast to operate at an unsatisfactory level of service in the Future Year 2035 Cumulative plus Project condition. The Traffic Study for the Project also analyzes the Future Year 2035 plus Project conditions a.m. and p.m. peak hour ramp merge-diverge volumes and levels of service for the freeway segments on SR-60. Nine ramp junctions are forecast to operate at an unacceptable level of service in the future Year 2035 plus Project condition. (DEIR pgs. 4.11-25 to 4.11-27)

According to Section 4.11 in the DEIR, with the implementation of the recommended improvements, the minimum level of service standards would be maintained for the Future Year (2035) with Project scenario and impacts would be reduced to a less than significant level for all identified intersections. In addition, reconstruction of the interchanges at the location of the deficient freeway ramp intersections identified in **Mitigation Measure 4.11.6.2D** [are](#) already programmed into the TUMF program. It is anticipated that by future year (2035) improvement to the identified freeway ramps and intersections would be built through the TUMF process and coordination by Caltrans, WRCOG, and the City of Moreno Valley. Because the project would pay its fair-share cost associated with these improvements and because such improvements are anticipated to be constructed by the future year (2035), impacts associated with this issue are less than significant after the identified mitigation measures have been implemented. (DEIR, pg. 4.11-35)

**b. General Plan Build Out With Project Conditions (Intersection)
Traffic and Level of Service Impacts**

Potential Significant Impact: The EIR evaluated and concluded that the Project could cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system.

Findings: Implementation of **Mitigation Measure 4.11.6.4E** will reduce the impact related to General Plan buildout to less than significant.

Facts in Support of the Findings: General Plan Build Out with project conditions considers the addition of traffic generated by the Project to General Plan Build Out baseline conditions. An intersection LOS analysis was conducted to determine General Plan Build Out intersection performance. The addition of project traffic to the General Plan Build Out scenario would result in conditions exceeding City and Caltrans LOS standards at 13 intersections.

All of the intersections that are forecast to experience a deficient LOS with the Project would also operate with a deficient LOS without the Project. Although the Project does not cause these intersections to

operate at an unsatisfactory LOS, it does contribute to the worsening of the intersections' LOS and therefore mitigation would be required to offset the cumulative impact of the project. (DEIR, pg. 4.11-28)

According to Section 4.11 of the DEIR, with the implementation of the recommended improvements, the minimum level of service standards would be maintained for the General Plan Build Out with Project scenario and impacts would be reduced to a less than significant level for all identified intersections. However, as noted previously, improvements to the freeway intersections and infrastructure are under the authority of Caltrans. In addition, the deficient freeway ramp intersections identified in **Mitigation Measure 4.11.6.2E** are already programmed into the TUMF program. It is anticipated that by the General Plan Build Out, improvements to the identified freeway ramps and intersections would be built through the TUMF process and coordination by Caltrans, WRCOG, and the City of Moreno Valley. Because the project would pay its fair-share cost associated with these improvements and because such improvements are anticipated to be constructed by the future year (2035), impacts associated with this issue are less than significant after the identified mitigation measures have been implemented. (DEIR, pg. 4.11-37)

7. Utilities and Service Systems

a. **Storm Water Drainage Requirements**

Potential Significant Impact: The EIR evaluated and concluded that the Project could result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Findings: Implementation of the following mitigation measures will reduce the impact to storm water drainage to less than significant:

4.7.6.3A *Prior to the approval of associated project rough grading plan, the project proponent shall receive approval on a project-specific Final Hydrology Study, with supporting engineering calculations, from the City Engineer. The Final Hydrology Study shall incorporate relevant requirements identified by the City, and/or site-specific geotechnical investigations.*

Facts in Support of the Findings: According to Section 4.12 of the DEIR, the Project would route storm water flows from the Project site into Quincy Channel after flows are routed through a combination of water quality basins and sand filters. Due to the installation of impervious surfaces on the Project site, the post-development flows would be higher than the pre-development flows. To avoid a significant impact to the existing drainage capacity, the post-development flows coming from the Project site are required to

be equal to or less than pre-development flows.¹⁵ To reduce flows to below or equal to pre-development conditions, the on-site storm water flows would be routed to the on-site detention basins¹⁶ before flows are routed off site. While the increase in impervious surfaces attributable to the Project would contribute to a greater volume and higher velocity of storm water flows, the Project's water quality basins would accept and accommodate runoff that would result from project construction at pre-project conditions.

As identified in the Preliminary Hydrology Calculations¹⁷ prepared for the Project, to adequately contain and store the greatest volume that would be generated, the Project site would require a minimum storage volume of 13.6 acre-feet. The proposed amount of storage area (20.3 acre-feet) is greater than the required amount of storage area. Based on this, it appears there is excess capacity of 6.7 acre-feet (20.3 acre-feet – 13.6 acre-feet = 6.7 acre-feet) of storage area available from the on-site detention basins; therefore, the Project appears to have adequate drainage capacity that would result in post-development flows being reduced to pre-development flows before leaving the Project site. However, to ensure that impacts associated with on-site drainage capacity are reduced to a less significant level, the **Mitigation Measure 4.7.6.3A** has been identified to reduce potential impacts to less than significant levels. (DEIR, pgs. 4.12-16 to 4.12-17)

8. Global Climate Change

a. Greenhouse Gas Emissions

Potential Significant Impact: The EIR evaluated and concluded that the Project could have an adverse effect due to the generation of greenhouse gas emissions (GHGs).

Findings: Implementation of the following mitigation measures will reduce the impact related to greenhouse gas emissions to less than significant:

4.13.6.1A *Prior to the issuance of building permits, the project applicant shall provide evidence to the City of Moreno Valley that building features have been incorporated in building plans as required by Title 24 of the California Code of Regulations. These features include but are not limited to the following:*

¹⁵ As part of the MS4 Permit issuance requirements, projects must identify any Hydrologic Conditions of Concern and demonstrate that changes to hydrology are minimized to ensure that post-development runoff rates and velocities from a site do not adversely affect downstream erosion, sedimentation, or stream habitat.

¹⁶ A detention basin is an area where excess storm water is stored or held temporarily and then slowly drains when water levels in the receiving channel recede. In essence, the water in a detention basin is temporarily detained until additional room becomes available in the receiving channel.

- *Exterior windows shall utilize window treatments for efficient energy conservation.*
- *Per CALGreen Code requirements, water-efficient fixtures and appliances, including but not limited to low-flow faucets, dual-flush toilets minimizing water consumption by 20 percent from the Building Standards Code baseline water consumption shall be used.*
- *Per CALGreen Code requirements, a Commissioning Plan shall be prepared and all building systems (e.g., heating, ventilation, and air-conditioning [HVAC], irrigation systems, lighting, and water heating) shall be commissioned by the Commissioning Authority.*
- *Per CALGreen Code, restrict watering methods (e.g., prohibit systems that apply water to non-vegetated surfaces) and control runoff.*

4.13.6.1B *Prior to the issuance of building permits, the project applicant shall provide evidence to the City of Moreno Valley that the following measures have been incorporated into the design and construction of the project:*

- *Use of locally produced and/or manufactured building materials for at least 10 percent of the construction materials used for the project.*
- *Use of “Green Building Materials,” such as those materials that are resource efficient, and recycled and manufactured in an environmentally friendly way, for at least 10 percent of the project.*
- *Limit unnecessary idling of construction equipment. A reduction in equipment idling would reduce fuel consumption, and therefore, GHG emissions.*
- *Maximize the use of electricity from the power grid by replacing diesel- or gasoline-powered equipment. This would reduce GHG emissions because electricity can be produced more efficiently at centralized power plants.*
- *Design the project building to exceed the California Building Code’s (CBC) Title 24 energy standard, including, but not limited to, any combination of the following:*

¹⁷ *Preliminary Hydrology Calculations for ProLogis Park Moreno Valley-Eucalyptus TPM 35679, Thienes Engineering, November 4, 2008.*

- *Increase insulation such that heat transfer and thermal bridging is minimized.*
- *Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption.*
- *Incorporate ENERGY STAR or better rated windows, space heating and cooling equipment, light fixtures, appliances, or other applicable electrical equipment.*
- *Provide a landscape and development plan for the project that takes advantage of shade, prevailing winds, and landscaping.*
- *Install efficient lighting and lighting control systems. Use daylight as an integral part of the lighting systems in buildings.*
- *Install light-colored “cool” roof and cool pavements.*
- *Install energy-efficient heating and cooling systems, appliances and equipment, and control systems.*
- *Install solar or light-emitting diodes (LEDs) for outdoor lighting for auto parking areas.*

4.13.6.1C *Prior to the issuance of occupancy permits, the project applicant shall provide evidence to the City of Moreno Valley that the following measures have been incorporated into the operation of the project:*

- *The project applicant shall use less than 3,900 Global Warming Potential (GWP) hydrofluorocarbon (HCF) refrigerants or natural refrigerants (ammonia, propane, carbon dioxide [CO₂]) for refrigeration and fire suppression equipment.*
- *Provide vegetative or man-made exterior wall shading devices for east-, south-, and west facing walls with windows.*
- *Devise a comprehensive water conservation strategy appropriate for the project and its location. The strategy may include the following, plus other innovative measures that may be appropriate:*
 - *Install drought-tolerant plants for landscaping.*

- *Use reclaimed water for landscape irrigation within the project. Install the infrastructure to deliver and use reclaimed water.*
- *Install water-efficient irrigations systems, such as weather-based and soil-moisture-based irrigation controllers and sensors for landscaping according to the California Department of Water Resources Model Efficient Landscape Ordinance.*
- *Provide employee education about reducing waste and available recycling services.*

Facts in Support of the Findings: Future development that could occur on the Project site could generate GHG emissions during construction and operation activities. It is anticipated that the majority of energy consumption (and associated generation of GHG emissions) would occur during the project’s operation (as opposed to its construction). The total GHG emissions over the entire construction process are expected to be 2,700 metric tons. [Under the less intensive modified plan, impacts due to operational air pollutant emissions would be reduced by eliminating 32% of development proposed in the southeast portion of the site \(Buildings 5 and 6\) compared to the Proposed Project.](#) Based on a comparison of the Project to the South Coast Air Quality Management District tiered interim GHG significance criteria, the most applicable screening threshold listed is the Industrial at 10,000 ton per year (tpy) CO₂e. The long-term project operational GHG emissions for the Project are 79,000 tpy CO₂e [and less for the modified plan but still](#) exceed this threshold; therefore, the ~~project~~ Project operational GHG emissions are significant. In order to ensure that the Project complies with and would not conflict with or impede the implementation of reduction goals identified in AB 32, the Governor’s EO S-3-05, and other strategies to help reduce GHGs to the level proposed by the Governor, **Mitigation Measures 4.13.6.1A** through **4.13.6.1C** shall be implemented. The mitigation measure would contribute to a reduction in GHG emissions from energy, mobile, and water usage sources. With implementation of the identified mitigation measures, the Project’s GHG emissions would be reduced to less than significant levels.

C. ENVIRONMENTAL IMPACTS NOT FULLY MITIGATED TO A LEVEL OF LESS-THAN-SIGNIFICANT

The Moreno Valley City Council finds the following environmental impacts identified in the EIR remain significant even after application of all feasible mitigation measures: aesthetics (individually and cumulative), agricultural resources (individually and cumulative), air quality

(individually and cumulative), cumulative population and housing, and transportation. In accordance with CEQA Guidelines Section 15092(b)(2), the City Council of the City of Moreno Valley cannot approve the Project unless it first finds (1) under *Public Resources Code* Section 21081(a)(3), and CEQA Guidelines Section 15091(a)(3), that specific economic, legal, social technological, or other considerations, including provisions of employment opportunities to highly trained workers, make infeasible the mitigation measures or Project alternatives identified in the EIR; and (2) under CEQA Guidelines section 15092(b), that the remaining significant effects are acceptable due to overriding concerns described in the CEQA Guidelines Section 15093 and, therefore, a statement of overriding considerations is included herein.

1. **Aesthetics (Individual and Cumulative Impacts)**

a. **Scenic Vistas**

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project could have adverse effects on one or more scenic vistas, notably views of the Box Springs Mountains, the Badlands, Moreno Peak, and the Russell Mountains.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant as there are no known feasible mitigation measures that could reduce this impact to a level of less than significant. Accordingly, Project-related impacts to scenic vistas will remain significant and unavoidable.

Facts in Support of the Finding: According to Section 4.1 of the DEIR, the nearest sensitive permanent visual receptor to the Project would be the existing single-family residences to the southeast across future Encilia Avenue. In general, views for the residences southeast of the site will change from vacant land to industrial buildings with extensive landscaping including rows of citrus trees to help provide a visual buffer. Permanent views for residences north of SR-60 and transient views for travelers on SR-60 will change as the tops of the proposed industrial buildings will partially block views of the mountains to the south. Despite the provision of ornamental landscaping and citrus trees along the northern, western, and southern boundaries, implementation of the Project would obstruct background views of the distant Box Springs Mountains for residences southeast of the Project, foreground and midground views of travelers on SR-60, and background views of the Mount Russell Range for residences north of SR-60 and along Pettit Street. This obstruction of views is a significant visual impact of the Project. The sizes, heights, and general locations of buildings on the site are limited by the types of uses being proposed as part of this Project. Therefore, there is no feasible mitigation available to reduce impacts related to the loss of this

viewshed. Since there is no feasible mitigation available to reduce adverse effects on scenic vistas, impacts associated with this issue would remain significant and unavoidable. (DEIR, pgs. 4.1-9 to 4.1-17)

b. Scenic Resources and Scenic Highways

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project could have adverse effects on one or more scenic vistas, including views of the Box Springs Mountains and the Badlands for both residents and travelers on SR-60.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant as there are no known feasible mitigation measures that could reduce this impact to a level of less than significant. Accordingly, Project-related impacts to scenic vistas and scenic highways will remain significant and unavoidable.

Facts in Support of the Finding: According to Section 4.1 of the DEIR, the City of Moreno Valley identifies SR-60 as a local scenic road.¹⁸ According to the City's General Plan, the man-made environment is equally important as natural landforms in terms of scenic values (e.g., buildings, landscaping and signs). Agricultural uses, such as citrus groves, are one example of a man-made environment that constitutes a visually pleasing feature.

Existing views for motorists traveling eastbound and westbound on SR-60 consist of noise attenuation walls, commercial and residential development, landscaping, parking lots, open space, and orange groves in addition to the mountains and badlands in the distance. Development of the Project would alter the existing view by introducing large industrial buildings adjacent to the freeway. Existing eastbound views on SR-60 would be altered with the development of the Project. Motorists would still view noise attenuation walls, urban development, landscaping, and scattered trees as they look to the south, although these views would be of short duration for motorists traveling at normal freeway speeds.

The Project would have highly reflective surfaces at the taller (43 feet) glass veneered office towers, but would not result in development along ridge lines. The Project would result in an increased number of large bulk structures, but would include colors and materials that are compatible with the existing environment. The proposed ornamental landscaping and citrus trees would provide some visual screening. However, the Project would result in the obstruction of most of the Mount Russell Range for motorists traveling on SR-60, so the proposed buildings would obstruct the view of a scenic feature. The Project meets criteria in both the moderate and major visual intrusion categories. In an overabundance of caution,

¹⁸ *Conservation Element, Figure 7-2 Major Scenic Resources, City of Moreno Valley General Plan, adopted July 11, 2006.*

the worst-case scenario is utilized. Therefore, it is anticipated that based on Project design features, the Project would have a major visual intrusion (i.e., significant impact) for motorists traveling on SR-60. Incorporation of the proposed building façades and ornamental landscaping design features will soften the visual appearance of the buildings from SR-60; however, the obstruction of local views will still be significant, and there are no feasible mitigation measures available that would reduce these impacts to less than significant levels. Therefore, impacts associated with this issue would remain significant and unavoidable. (DEIR, pgs. 4.1-17 to 4.1-19)

c. Existing Visual Character or Quality of Site and its Surroundings

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project could have adverse effects that change the general character of the Project site (e.g., loss of open area), the components of the visual settings (e.g., landscaping and architectural elements), and the visual compatibility between proposed site uses and adjacent land uses.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant as there are no known feasible mitigation measures that could reduce this impact to a level of less than significant. Accordingly, Project-related impacts to the existing visual character of the site will remain significant and unavoidable.

Facts in Support of the Finding: The significance of visual impacts is inherently subjective as individuals respond differently to changes in the visual characteristics of an area. Development of the Project would change the existing character of the Project site from open space to a more urbanized setting with large industrial buildings. The change in the character of the site would constitute a significant alteration of the existing visual character of the Project site.

According to Section 4.1 of the DEIR, the Project features a variety of architectural elements including façade accents such as corner treatments and roof trim. The Project also provides variation in wall planes that serve to avoid an institutional appearance and break up the bulk of the buildings. This variation would create shadow lines at various times of the day. The proposed ornamental landscaping would replace the scattered weedy vegetation. Landscaping on the site would be provided in accordance with City Municipal Code Chapter 9.17, which requires the installation of landscaping on site and the planting of one tree for every 30 linear feet of building dimension that is visible from the parking lot or public right-of-way. As part of conditions of approval for the Project, orange trees would be planted on the northern portion of the Project site adjacent to SR-60 and along the perimeter of the Project site adjacent to the public right-of-way or residential zoning.

Since the Project site is currently vacant, suburban development of any type would cause a fundamental change in the visual characteristics of the Project site. In addition, the site is currently planned for industrial, business park, single-family, and multifamily uses, which would be different in appearance from the proposed industrial warehouse buildings. Of these uses, the lower density housing (R2) is currently designated adjacent to the existing residences southeast of the Project site.

The Project would replace the existing vacant parcel and citrus groves with development that is visually compatible with the existing commercial development to the west and the existing and the approved Ridge industrial development to the east, but it will not be compatible with the residential uses to the southeast or farther to the north across SR-60.

Incorporation of the proposed building façades and landscaping design features will soften the visual appearance of the buildings from both SR-60 and nearby residences; however, the fundamental change in visual character of the area will still be significant. Even with compliance with the City's General Plan and Municipal Code development guidelines for industrial development, including the 250-foot buffer between industrial and residential land uses, the anticipated fundamental change in views expected in this area will be significant. Due to the heights and masses of buildings needed to accommodate the proposed land uses, no feasible mitigation is available that would reduce these potential impacts to less than significant levels. Therefore, impacts associated with this issue would remain significant and unavoidable. (DEIR, pgs. 4.1-19 to 4.1-21)

d. Cumulative Aesthetics Impacts

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project could in connection with past, present, and probable future projects adversely affect one or more scenic vistas.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant as there are no known feasible mitigation measures that could reduce this cumulative impact to a level of less than significant. Accordingly, Project-related cumulative impacts to scenic vistas will remain significant and unavoidable.

Facts in Support of the Finding: The development of the Project would partially obstruct views of surrounding mountain ranges from current vantage points near the Project structures. However, vistas would not be completely obstructed from viewpoints through parking circulation areas, openings between rows of buildings or trees, or at the end of vehicular rights-of-way. Development of lands within the City, particularly along SR-60, would result in the cumulative conversion from open space to a more urbanized

land use. The Project would continue a recent development trend in the City to expand industrial uses along the south side of SR-60 east of the City's Auto Center. This development trend has not yet been incorporated into the City's General Plan. The Project, in conjunction with other cumulative projects, would be developed in a manner consistent with existing development trends in the City. Since other cumulative projects in the area would include similar distribution uses, it can be anticipated that such uses would have a similar design and massing as the Project. Since the Project would obstruct views of the surrounding mountains, it can be reasonable to conclude that similar warehouse distribution uses would also obstruct views of the surrounding mountains. In addition, General Plan Policy 7.7.4 in the Conservation Element requires the designation of SR-60 as a local scenic roadway. Therefore, the Project, in combination with other cumulative projects in the eastern portion of the City and along SR-60 would have a cumulatively significant and unavoidable impact on aesthetics (i.e., views and scenic resources) in this portion of the City. (DEIR, pgs. 4.1-21 to 4.1-22)

2. Agricultural Resources (Individual and Cumulative Impacts)

a. Conversion of State Designated Farmland

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project could impact 82.5 acres of Prime Farmland.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant as there are no known feasible mitigation measures that could reduce this impact to a level of less than significant. Accordingly, Project-related impacts to state designated farmland will remain significant and unavoidable.

Facts in Support of the Finding: Section 4.2 of the DEIR identifies several potential agricultural conservation measures contained in the City's General Plan that include: enrolling productive agricultural land into a Williamson Act Contract; providing protection to ongoing agricultural operations from complaints and nuisance complaints from adjacent new development; protecting productive agricultural land subject to conversion through the purchase of or transfer of its development rights; purchasing conservation easements on existing agricultural land to ensure that the land is never converted to urban uses; and donating funds to a regional or statewide program that promotes and implements the use of agricultural land conservation easements.

The potential agricultural conservation measures identified in the DEIR are not considered to be feasible by the City for the following reasons:

Williamson Act Contracts: Williamson Act contracts are entered into voluntarily by property owners and the City cannot force owners to participate in this program. In addition, Williamson Act contracts will result only in temporary preservation of agricultural land since property owners have the option of non-renewal of these contracts at any time after the ten-year contract period ends.

Protecting Existing Agricultural Operations: Providing protection for ongoing agricultural activities from new developments, such as buffers between agricultural operations and new development or requiring the notification and disclosure of agricultural activities to the purchasers adjacent properties, will not permanently protect agricultural land.

Transfer of Development Rights, Conservation Easements, or Agricultural Conservation Bank: The purchase or transfer of development rights, purchase of conservation easements, or donation of funds to assist in the conservation of agricultural land would need to be implemented to ensure the preservation of agricultural land. As stated previously, the City anticipates the conversion of agricultural land within the City and does not set aside land for permanent preservation. The current General Plan does not include any agricultural designations. The City allows agricultural uses in all land use designations as an interim use until such time as the land is developed per the vision identified in the General Plan. One of the goals stated in the City's recent General Plan is the "...orderly conversion of agricultural lands." For this reason, the City expects that the majority of the land within the City will be converted to urban uses, although some agriculture will continue as interim uses, as allowed by the City's Development Code for all zoning categories. The existing and continued reduction in productive agricultural operations within the City is produced by several factors including; urbanization in the City and Inland Empire resulting in dramatically increasing land prices; high water and labor costs; environmental regulation (e.g., insects, odors, groundwater contamination, and solid waste removal); and competition from Kern County and the Central Valley with lower land costs and reduced regulations. (DEIR, pgs. 4.1-10 to 4.1-14)

The City has determined that these measures are economically infeasible and that they are contrary to the City's vision (as stated in its General Plan) for the Project site and alternative mitigation has not been identified, and impacts related to this issue remain significant and unavoidable. (DEIR, pgs. 4.2-6 to 4.2-9)

b. Conversion of Farmland to a Non-Agricultural Use

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project would result in the development of industrial uses on land that has historically been utilized for citrus production.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant as there are no known feasible mitigation measures that could reduce this impact to a level of less than significant. Accordingly, Project-related impacts from the conversion of farmland to a non-agricultural use will remain significant and unavoidable.

Facts in Support of the Finding: According to Section 4.2 of the DEIR, the Project site has historically been in agricultural production and was most recently used to grow citrus. The conversion of the Project site to a non-agricultural use is a result of various economic and demographic factors. Increased cost for water and a continuing demand for housing and other development in the City and region are the primary reasons for this agricultural land conversion. A LESA model was also used to evaluate the site. It was determined that the Project LESA score is 85.3, which is considered significant. The Project does not include design features that would prevent the existing agricultural operations in the area from continuing. The Project would convert land that was previously used for agriculture and the development of the Project may contribute to the conversion of adjacent lands. However, the Project is a logical extension of development in the City and does not create leapfrog development or islands of agricultural land that would be difficult to farm. The City recognizes development pressures within the City, and that these pressures will increase as the City continues to build out. Additionally, while the Project would not directly cause the conversion of adjacent agricultural land to non-agricultural uses because it has lain fallow for several years, it would contribute to development pressure within the City that could potentially lead to the conversion of agricultural land off site. However, as stated in the previous discussion of these Findings regarding the conversion of state designated farmland, the City has determined the agricultural conservation measures identified by the City are economically infeasible and that they are contrary to the City's vision (as stated in its General Plan) for the Project site and alternative mitigation has not been identified. Therefore, impacts associated with this issue remain significant and unavoidable. (DEIR, pgs. 4.1-9 to 4.1-10)

c. Cumulative Agricultural Resource Impacts

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project would have a significant cumulative impact on agricultural resources in Riverside County.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant as there are no known feasible mitigation measures that could reduce this impact to a level of less than significant. Accordingly, Project-related impacts to cumulative state designated farmland will remain significant and unavoidable.

Facts in Support of the Finding: According to Section 4.2 of the DEIR, the Project-related impacts to Prime Farmland and the conversion of agricultural land to a non-agricultural use cannot be mitigated through a local or regional program to mitigate impacts to agricultural resources. As stated previously, the City does not maintain a General Plan or zoning designation for agricultural uses and there are no Project-level feasible mitigation measures that would help reduce cumulative impacts. The cumulative effect of development in the region will continue to result in the conversion of agricultural lands to non-agricultural uses. Because agricultural land, including Prime Farmland, Farmland of Statewide Importance, and Farmland of Local Importance are finite resource, the conversion of approximately 122.8 acres of farmland to industrial uses, combined with planned and future development in the City and region, represents a significant cumulative impact to agricultural operations and resources. As stated in the previous discussion of these Findings regarding the conversion of state designated farmland and conversion of agricultural land to a non-agricultural land use, the City has determined the agricultural conservation measures identified by the City are economically infeasible and that they are contrary to the City’s vision (as stated in its General Plan) for the Project site and alternative mitigation has not been identified. Therefore, cumulative impacts to agricultural resources are considered significant and unavoidable. (DEIR, pg. 4.1-11)

2. Air Quality (Project-Specific and Cumulative Impact)

a. Air Quality Management Plan Consistency

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project has the potential to conflict with implementation of regional Air Quality Management Plan and the SIP.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant but will be reduced to the extent feasible through mitigation measures. The Council finds that **Mitigation Measures 4.3.6.2A** through **4.3.6.2M** and **4.3.6.3A** through **4.3.6.3C** are incorporated into the MMRP for the Project, and will be implemented as specified therein. However, the Council finds that even with application of these mitigation measures, the Project will not be consistent with AQMP and the SIP and therefore impacts are considered significant and unavoidable.

Facts in Support of the Finding: An Air Quality Management Plan (AQMP) describes air pollution control strategies to be taken by counties or regions classified as nonattainment areas. The AQMP’s main purpose is to bring the area into compliance with the requirements of Federal and State air quality standards. The AQMP uses the assumptions and projections by local planning agencies to determine control strategies for regional compliance status. Therefore, any projects causing a significant impact on

air quality would impede the progress of the AQMP. CEQA requires that projects resulting in a General Plan Amendment be analyzed for consistency with the AQMP.

For a Project in the Basin to be consistent with the AQMP, the pollutants emitted from the Project must not exceed the South Coast AQMD significant threshold or cause a significant impact on air quality. One measurement tool in determining consistency with the AQMP is to determine how a Project accommodates the expected increase in population or employment. The Project site is located in an urbanizing area of the City of Moreno Valley along SR-60, which accommodates traffic in the area. In addition, the proposed warehouse uses would be within walking distance of existing homes and commercial areas in the local vicinity. The Project would add jobs resulting from the development of the warehouse uses to the City, with the potential to minimize the VMT traveled within the Project site and community.

The SCAQMD also has the following consistency criteria: the Project cannot result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay the timely attainment of air quality standards or the interim emissions reductions specified in the AQMP; and the Project cannot exceed the assumptions in the AQMP in 2010 or increments based on the year of Project build-out phase.

Implementation of the Project would require a zone change from Business Park (BP), Business Park Mixed Use (BPX), Multi-Family Residential (R-15), ~~Suburban Residential (R-5), and Residential Agriculture (RA-2)~~ to Light Industrial for the entire [122-833](#) acres. Since the Project will require a General Plan Amendment, the Project has not been considered in preparation of the General Plan and therefore it is uncertain if it is consistent with the AQMP.

Because the Project site is located in a nonattainment air basin for ozone, PM₁₀ and PM_{2.5}, the Project's emission of ozone precursors (CO, ROG, and NO_x), PM₁₀ and PM_{2.5} would contribute to the existing nonattainment status in the Basin. Thus, according to the SCAQMD Consistency Criterion No. 1, the Project is not consistent with the AQMP.

The Project would have significant impacts. **Mitigation Measures 4.3.6.2A** through **4.3.6.2M** and **Mitigation Measures 4.3.6.3A** through **4.3.6.3C** shall be implemented as part of the Project. The Project would be considered to be consistent only after the City of Moreno Valley General Plan Amendment is approved. Once the City's General Plan Amendment and the required zoning changes are approved, the Project would be included in the next SCAG and SCAQMD AQMP projections. When that occurs, the Project would be consistent with the regional AQMP and the SIP. However, until that occurs, the Project

is inconsistent with the regional AQMP and the impacts are considered significant and unavoidable. (DEIR, pgs. 4.3-21 to 4.3-22)

b. Equipment Exhaust from Construction-Related Activities

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project has the potential to exceed applicable daily thresholds that may affect sensitive receptors.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant but will be reduced to the extent feasible through mitigation measures. The Council finds that Mitigation Measures 4.3.6.2A through 4.3.6.2M are incorporated into the MMRP for the Project, and will be implemented as specified therein. However, the Council finds that even with application of these mitigation measures, the Project will have a significant impact due to equipment exhaust from construction related activities and therefore impacts are considered significant and unavoidable.

4.3.6.2A *Prior to the issuance of a grading permit, the Project developer shall require by contract specifications that contractors shall place construction equipment staging areas at least 200 feet away from sensitive receptors. Contract specifications shall be included in the Project construction documents, which shall be reviewed by the City.*

4.3.6.2B *Prior to the issuance of a grading permit, the Project developer shall require by contract specifications that contractors shall utilize power sources (e.g., power poles) or clean-fuel generators. Contract specifications shall be included in the Project construction documents, which shall be reviewed by the City.*

4.3.6.2C *Prior to the issuance of a grading permit, the project developer shall require by contract specifications that contractors shall utilize California Air Resources Board (CARB) Tier II Certified equipment or better during the rough/mass grading phase for the following pieces of equipment: rubber-tired dozers and scrapers. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the City.*

Project start to December 31, 2014: All off-road diesel-powered construction equipment greater than 50 horsepower shall meet Tier 3 off-road emission standards. In addition, all construction equipment shall be outfitted with Best Available Control Technology (BACT) devices certified by CARB. Any emission control devices used by the contractor shall achieve emission reductions that are no less than what would be achieved by a

Level 3 diesel emission control strategy for a similarly sized engine as defined by CARB regulations.

Post January 1, 2015: All off-road diesel-powered construction equipment greater than 50 horsepower shall meet Tier 4 emission standards, where available. In addition, all construction equipment shall be outfitted with Best Available Control Technology (BACT) devices certified by CARB. Any emission control devices used by the contractor shall achieve emission reductions that are no less than what would be achieved by a Level 3 diesel emission control strategy for a similarly sized engine as defined by CARB regulations.

A copy of each unit's certified tier specifications, BACT documentation, and CARB or SCAQMD operating permit shall be provided at the time of mobilization of each applicable unit of equipment.

4.3.6.2D All clearing, grading, earthmoving, or excavation activities shall cease when winds (as instantaneous gusts) exceed 25 mph per SCAQMD guidelines in order to limit fugitive dust emissions.

4.3.6.2E The contractor shall ensure that all disturbed unpaved roads and disturbed areas within the Project are watered at least three times daily during dry weather. Watering, with complete coverage of disturbed areas, shall occur at least three times a day, preferably in the mid-morning, afternoon, and after work is done for the day.

4.3.6.2F The contractor shall ensure that traffic speeds on unpaved roads and Project site areas are reduced to 15 miles per hour or less to reduce PM_{10} and $PM_{2.5}$ fugitive dust haul road emissions. Speed limit signs (15 mph maximum) shall be posted at entry points to the Project site, and along any unpaved roads providing access to or within the Project site and/or any unpaved designated on-site travel routes.

4.3.6.2G Groundcover shall be replaced, and/or non-toxic soil stabilizers shall be applied (according to manufacturers' specifications) to any inactive construction areas (previously graded areas inactive for ten days or more).

4.3.6.2H The contractor shall minimize pollutant emissions by maintaining equipment engines in good condition and in proper tune according to manufacturer's specifications and by not

allowing construction equipment to be left idling for more than five minutes (per California law).

4.3.6.2I *The contractor shall ensure use of low-sulfur diesel fuel in construction equipment as required by the California Air Resources Board (CARB) (diesel fuel with sulfur content of 15 ppm by weight or less).*

4.3.6.2J Grading plans, construction specifications and bid documents shall also include the following requirements:

- Off-road construction equipment shall utilize alternative fuels where feasible e.g., biodiesel fuel (a minimum of B20), natural gas (CNG), liquefied natural gas (LNG), propane, except for equipment where use of such fuels would void the equipment warranty;
- Gravel pads shall be provided at all access points to prevent tracking of mud onto public roads;
- Install and maintain trackout control devices at all access points where paved and unpaved access or travel routes intersect;
- The contractor or builder shall designate a person or person(s) to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust off site;
- The contractor or builder shall post a publicly visible sign with the telephone number and person to contact regarding dust complaints. The contact person shall take corrective action within 24 hours;
- High-pressure injectors shall be provided on diesel construction equipment if available;
- Engine size of construction equipment shall be limited to the minimum practical size;
- Substitute gasoline-powered for diesel powered construction equipment where gasoline powered equipment is available;
- Use electric construction equipment where it is practical to use such equipment;

- Install catalytic converters on gasoline-powered equipment where this type of equipment is available;
- Ride-sharing program for the construction crew shall be supported by contractor(s) via incentives or other inducement;
- Documentation shall be provided to the City of Moreno Valley indicating that construction workers have been encouraged to carpool or otherwise reduce VMT to the greatest extent practical, including providing information on available park and ride programs;
- Lunch vendor services shall be allowed on site during construction to minimize the need for off-site vehicle trips; and
- All forklifts used during construction and in subsequent operation of the project shall be electric or natural gas powered.

4.3.6.2K Throughout project construction, a construction relations officer/community liaison, appointed by the Applicant, shall be retained on site. In coordination and cooperation with the City, the construction relations officer/community liaison shall respond to any concerns related to PM10 (fugitive dust) generation or other construction-related air quality issues within 24 hours.

4.3.6.2L All Project entrances shall be posted with signs which state:

- Truck drivers shall turn off engines when not in use;
- Diesel delivery trucks servicing the Project shall not idle for more than three (3) minutes; and
- Telephone numbers of the building facilities manager and CARB, to report violations.

These measures shall be enforced by the on-site facilities manager (or equivalent).

4.3.6.2M During Project grading and construction, the various Project contractors shall adhere to the control measures listed in Tables 1 and 2.

Air Quality Measure 4.3.6.2M Table 1: Best Available Control Measures for Fugitive Dust (Applicable to All Construction Activity Sources)

<i>Source Category</i>	<i>Control Measures</i>	<i>Guidance</i>
<i>Backfilling</i>	<ul style="list-style-type: none"> • <i>Stabilize backfill material when not actively handling; and</i> • <i>Stabilize backfill material during handling; and</i> • <i>Stabilize soil at completion of activity.</i> 	<ul style="list-style-type: none"> • <i>Mix backfill soil with water prior to moving; and</i> • <i>Dedicate water truck or high capacity hose to backfilling equipment; and</i> • <i>Empty loader bucket slowly so that no dust plumes are generated; and</i> • <i>Minimize drop height from loader bucket.</i>
<i>Clearing and grubbing</i>	<ul style="list-style-type: none"> • <i>Maintain stability of soil through pre-watering of site prior to clearing and grubbing; and</i> • <i>Stabilize soil during clearing and grubbing activities; and</i> • <i>Stabilize soil immediately after clearing and grubbing activities.</i> 	<ul style="list-style-type: none"> • <i>Maintain live perennial vegetation where possible; and</i> • <i>Apply water in sufficient quantity to prevent generation of dust plumes.</i>
<i>Clearing forms</i>	<ul style="list-style-type: none"> • <i>Use water spray to clear forms; or</i> • <i>Use sweeping and water spray to clear forms; or</i> • <i>Use vacuum system to clear forms.</i> 	<ul style="list-style-type: none"> • <i>Use of high pressure air to clear forms may cause exceedance of Rule requirements.</i>
<i>Crushing</i>	<ul style="list-style-type: none"> • <i>Stabilize surface soils prior to</i> 	<ul style="list-style-type: none"> • <i>Follow permit conditions for</i>

Air Quality Measure 4.3.6.2M Table 1: Best Available Control Measures for Fugitive Dust (Applicable to All Construction Activity Sources)

<i>Source Category</i>	<i>Control Measures</i>	<i>Guidance</i>
	<p><i>operation of support equipment; and</i></p> <ul style="list-style-type: none"> • <i>Stabilize material after crushing.</i> 	<p><i>crushing equipment; and</i></p> <ul style="list-style-type: none"> • <i>Pre-water material prior to loading into crusher; and</i> • <i>Monitor crusher emissions opacity; and</i> • <i>Apply water to crushed material to prevent dust plumes.</i>
<i>Cut and fill</i>	<ul style="list-style-type: none"> • <i>Pre-water soils prior to cut and fill activities; and</i> • <i>Stabilize soil during and after cut and fill activities.</i> 	<ul style="list-style-type: none"> • <i>For large sites, pre-water with sprinklers or water trucks and allow time for penetration; and</i> • <i>Use water trucks/pulls to water soils to depth of cut prior to subsequent cuts.</i>
<i>Demolition – mechanical/manual</i>	<ul style="list-style-type: none"> • <i>Stabilize wind erodible surfaces to reduce dust; and</i> • <i>Stabilize surface soil where support equipment and vehicles will operate; and</i> • <i>Stabilize loose soil and demolition debris; and</i> 	<ul style="list-style-type: none"> • <i>Apply water in sufficient quantities to prevent the generation of visible dust plumes.</i>

Air Quality Measure 4.3.6.2M Table 1: Best Available Control Measures for Fugitive Dust (Applicable to All Construction Activity Sources)

<i>Source Category</i>	<i>Control Measures</i>	<i>Guidance</i>
	<ul style="list-style-type: none"> • <i>Comply with AQMD Rule 1403.</i> 	
<i>Disturbed soil</i>	<ul style="list-style-type: none"> • <i>Stabilize disturbed soil throughout the construction site; and</i> • <i>Stabilize disturbed soil between structures.</i> 	<ul style="list-style-type: none"> • <i>Limit vehicular traffic and disturbances on soils where possible; and</i> • <i>If interior block walls are planned, install as early as possible; and</i> • <i>Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes.</i>
<i>Earthmoving activities</i>	<ul style="list-style-type: none"> • <i>Pre-apply water to depth of proposed cuts; and</i> • <i>Re-apply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 100 ft in any direction; and</i> • <i>Stabilize soils once earthmoving activities are complete.</i> 	<ul style="list-style-type: none"> • <i>Grade each Project phase separately, timed to coincide with construction phase; and</i> • <i>Upwind fencing can prevent material movement on site; and</i> • <i>Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes.</i>
<i>Importing/exporting of</i>	<ul style="list-style-type: none"> • <i>Stabilize material while loading to reduce fugitive dust emissions; and</i> 	<ul style="list-style-type: none"> • <i>Use tarps or other suitable enclosures on haul trucks;</i>

Air Quality Measure 4.3.6.2M Table 1: Best Available Control Measures for Fugitive Dust (Applicable to All Construction Activity Sources)

<i>Source Category</i>	<i>Control Measures</i>	<i>Guidance</i>
<i>bulk materials</i>	<ul style="list-style-type: none"> • <i>Maintain at least 6 inches of freeboard on haul vehicles; and</i> • <i>Stabilize material while transporting to reduce fugitive dust emissions; and</i> • <i>Stabilize material while unloading to reduce fugitive dust emissions; and</i> • <i>Comply with CVC Section 23114.</i> 	<p><i>and</i></p> <ul style="list-style-type: none"> • <i>Check belly-dump truck seals regularly and remove any trapped rocks to prevent spillage; and</i> • <i>Comply with track-out prevention/mitigation requirements; and</i> • <i>Provide water while loading and unloading to reduce visible dust plumes.</i>
<i>Landscaping</i>	<i>Stabilize soils, materials, slopes</i>	<ul style="list-style-type: none"> • <i>Apply water to materials to stabilize; and</i> • <i>Maintain materials in a crusted condition; and</i> • <i>Maintain effective cover over materials; and</i> • <i>Stabilize sloping surfaces using soil binders until vegetation or ground cover can effectively stabilize the slopes; and</i> • <i>Hydroseed prior to rain season.</i>

Air Quality Measure 4.3.6.2M Table 1: Best Available Control Measures for Fugitive Dust (Applicable to All Construction Activity Sources)

<i>Source Category</i>	<i>Control Measures</i>	<i>Guidance</i>
<i>Road shoulder maintenance</i>	<ul style="list-style-type: none"> • <i>Apply water to unpaved shoulders prior to clearing; and</i> • <i>Apply chemical dust suppressants and/or washed gravel to maintain a stabilized surface after completing road shoulder maintenance.</i> 	<ul style="list-style-type: none"> • <i>Installation of curbing and/or paving of road shoulders can reduce recurring maintenance costs; and</i> • <i>Use of chemical dust suppressants can inhibit vegetation growth and reduce future road shoulder maintenance costs.</i>
<i>Screening</i>	<ul style="list-style-type: none"> • <i>Pre-water material prior to screening; and</i> • <i>Limit fugitive dust emissions to opacity and plume length standards; and</i> • <i>Stabilize material immediately after screening.</i> 	<ul style="list-style-type: none"> • <i>Dedicate water truck or high capacity hose to screening operation; and</i> • <i>Drop material through the screen slowly and minimize drop height; and</i> • <i>Install wind barrier with a porosity of no more than 50 percent upwind of screen to the height of the drop point.</i>
<i>Staging areas</i>	<ul style="list-style-type: none"> • <i>Stabilize staging areas during use; and</i> • <i>Stabilize staging area soils at Project completion.</i> 	<ul style="list-style-type: none"> • <i>Limit size of staging area; and</i> • <i>Limit vehicle speeds to 15 miles per hour; and</i> • <i>Limit number and size of staging area entrances/exits.</i>

Air Quality Measure 4.3.6.2M Table 1: Best Available Control Measures for Fugitive Dust (Applicable to All Construction Activity Sources)

<i>Source Category</i>	<i>Control Measures</i>	<i>Guidance</i>
<i>Stockpiles/ bulk material handling</i>	<i>Stabilize stockpiled materials, and stockpiles within 100 yards of off-site occupied buildings must not be greater than 8 ft in height; or must have a road bladed to the top to allow water truck access or must have an operational water irrigation system that is capable of complete stockpile coverage.</i>	<ul style="list-style-type: none"> • <i>Add or remove material from the downwind portion of the storage pile; and</i> • <i>Maintain storage piles to avoid steep sides or faces.</i>
<i>Traffic areas for construction activities</i>	<ul style="list-style-type: none"> • <i>Stabilize all off-road traffic and parking areas; and</i> • <i>Stabilize all haul routes; and</i> • <i>Direct construction traffic over established haul routes.</i> 	<ul style="list-style-type: none"> • <i>Apply gravel/paving to all haul routes as soon as possible to all future roadway areas; and</i> • <i>Barriers can be used to ensure vehicles are only used on established parking areas/haul routes.</i>
<i>Trenching</i>	<ul style="list-style-type: none"> • <i>Stabilize surface soils where trencher or excavator and support equipment will operate; and</i> • <i>Stabilize soils at the completion of trenching activities.</i> 	<ul style="list-style-type: none"> • <i>Pre-watering of soils prior to trenching is an effective preventive measure. For deep trenching activities, pre-trench to 18 inches, soak soils via the pre-trench and resuming trenching; and</i> • <i>Washing mud and soils from equipment at the conclusion of trenching activities can prevent crusting and drying</i>

Air Quality Measure 4.3.6.2M Table 1: Best Available Control Measures for Fugitive Dust (Applicable to All Construction Activity Sources)

<i>Source Category</i>	<i>Control Measures</i>	<i>Guidance</i>
		<i>of soil on equipment.</i>
<i>Truck loading</i>	<ul style="list-style-type: none"> • <i>Pre-water material prior to loading; and</i> • <i>Ensure that freeboard exceeds 6 inches (CVC 23114).</i> 	<ul style="list-style-type: none"> • <i>Empty loader bucket such that no visible dust plumes are created; and</i> • <i>Ensure that the loader bucket is close to the truck to minimize drop height while loading.</i>
<i>Turf overseeding</i>	<ul style="list-style-type: none"> • <i>Apply sufficient water immediately prior to conducting turf vacuuming activities to meet opacity and plume length standards; and</i> • <i>Cover haul vehicles prior to exiting the site.</i> 	<ul style="list-style-type: none"> • <i>Haul waste material immediately off site.</i>
<i>Unpaved roads/parking lots</i>	<ul style="list-style-type: none"> • <i>Stabilize soils to meet the applicable performance standards; and</i> • <i>Limit vehicular travel to established unpaved roads (haul routes) and unpaved parking lots.</i> 	<ul style="list-style-type: none"> • <i>Restricting vehicular access to established unpaved travel paths and parking lots can reduce stabilization requirements.</i>
<i>Vacant land</i>	<i>In instances where vacant lots are 0.10 ac or larger and have a cumulative area of 500 sf or more that are driven over and/or used by motor vehicles and/or off-road vehicles, prevent motor vehicle and/or off-road vehicle trespassing,</i>	

Air Quality Measure 4.3.6.2M Table 1: Best Available Control Measures for Fugitive Dust (Applicable to All Construction Activity Sources)

<i>Source Category</i>	<i>Control Measures</i>	<i>Guidance</i>
	<i>parking and/or access by installing barriers, curbs, fences, gates, posts, signs, shrubs, trees, or other effective control measures.</i>	

ac = acre(s) AQMD = Air Quality Management District

CVC = California Vehicle Code ft = feet sf = square feet

Air Quality Measure 4.3.6.2M Table 2: Contingency Control Measures for Fugitive Dust (During High Winds in Excess of 25 mph)

<i>Fugitive Dust Source Category</i>	<i>Control Measures</i>
<i>Earthmoving</i>	<ul style="list-style-type: none"> • <i>Cease all active operations; or</i> • <i>Apply water to soil not more than 15 minutes prior to moving such soil.</i>
<i>Disturbed surface areas</i>	<ul style="list-style-type: none"> • <i>On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than 4 consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than $\frac{1}{20}$ of the concentration required to maintain a stabilized surface for a period of 6 months; or</i> • <i>Apply chemical stabilizers prior to wind event; or</i> • <i>Apply water to all unstabilized disturbed areas 3 times per day. If there is any evidence of wind driven fugitive dust, watering frequency is increased to a</i>

Air Quality Measure 4.3.6.2M Table 2: Contingency Control Measures for Fugitive Dust (During High Winds in Excess of 25 mph)

<i>Fugitive Dust Source Category</i>	<i>Control Measures</i>
	<p><i>minimum of 4 times per day; or</i></p> <ul style="list-style-type: none"> • <i>Establish a vegetative ground cover within 21 days after active operations have ceased. Ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter; or</i> • <i>Utilize any combination of these control actions such that, in total, these actions apply to all disturbed surface areas.</i>
<i>Unpaved roads</i>	<ul style="list-style-type: none"> • <i>Apply chemical stabilizers prior to wind event; or</i> • <i>Apply water 2 times per hour during active operation; or</i> • <i>Stop all vehicular traffic.</i>
<i>Open storage piles</i>	<ul style="list-style-type: none"> • <i>Apply water 2 times per hour; or</i> • <i>Install temporary coverings.</i>
<i>Paved road track-out</i>	<ul style="list-style-type: none"> • <i>Cover all haul vehicles; or</i> • <i>Comply with the vehicle freeboard requirements of Section 23114 of the CVC for both public and private roads.</i>
<i>All categories</i>	<ul style="list-style-type: none"> • <i>Executive Officer and the USEPA as equivalent to the methods specified in this table may be used.</i>

CVC = California Vehicle Code

USEPA = United States Environmental Protection Agency

Facts in Support of the Finding: Grading and other construction activities produce combustion emissions from various sources such as site grading, utility engines, on-site heavy-duty construction vehicles, equipment hauling materials to and from the site, asphalt paving, and motor vehicles transporting the construction crew. The use of construction equipment on site would result in localized

exhaust emissions. Activity during peak grading days typically generates a greater amount of air pollutants than other Project construction activities.

Section 4.3 of the DEIR indicates construction equipment/vehicle emissions during proposed on-site grading periods would exceed the SCAQMD daily thresholds for ROG and NO_x. Although construction of the structures uses different types of equipment on site than during grading periods, similarities do exist in terms of equipment exhaust emissions and fugitive dust emissions. While it is anticipated that total emissions during construction would be below the peak grading day emissions, construction emissions of ROG and NO_x would still exceed the SCAQMD daily threshold. This is a significant impact requiring **Mitigation Measures 4.3.6.2A** through **4.3.6.2M**. The use of low-NO_x diesel fuel in construction equipment typically reduces NO_x emissions by 16 percent.¹⁹ Use of this fuel would reduce NO_x emissions but not below SCAQMD thresholds. However, there is no reasonable way to ensure that that retrofitted diesel-powered equipment, low- NO_x diesel fuel, and alternative fuel sources would be available during the construction period; therefore, it is not possible to quantify reductions in NO_x emissions that would result from **Mitigation Measures 4.3.6.2A** through **4.3.6.2M**. Because no additional feasible mitigation is available to reduce construction-related NO_x emissions, this impact remains significant and unavoidable. Furthermore, there is no feasible mitigation to reduce the ROG emissions during architectural coating phase to less than the daily threshold. Thus, the emissions during construction of NO_x and ROG will remain significant. (DEIR, pgs. 4.3-22 to 4.3-29)

c. Architectural Coating Impacts

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project could potentially exceed applicable daily thresholds for VOC.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant but will be reduced to the extent feasible through mitigation measures. The Council finds that Mitigation Measure 4.2.6.4A is incorporated into the MMRP for the Project, and will be implemented as specified therein. However, the Council finds that even with application of this mitigation measures, impacts related to architectural coatings are considered significant and unavoidable.

4.3.6.4A *The Project applicant shall use “Low-Volatile Organic Compounds” paints, coatings, and solvents with a VOC content lower than required under Rule 1113 (not to exceed 150 grams/liter; 1.25 pounds/gallon). High Pressure Low Volume (HPLV) applications of*

¹⁹ <http://www.aqmd.gov/ceqa/igr/2006/feb/10-01.pdf>, site accessed December 30, 2011.

paints, coatings, and solvents shall be consistent with South Coast Air Quality Management District Rule 1113. Alternatively, the Project applicant shall use materials that do not require painting or are pre-painted.

Facts in Support of the Finding: Architectural coatings contain volatile organic compounds (VOC) that are similar to ROG and are part of the O₃ precursors. Rule 1113 is applicable to any person who applies or solicits the application of any architectural coating within the Basin. Rule 1113 sets limits on the amount of VOC emissions allowed for all types of architectural coatings, along with a time table for tightening the emissions standards in the future.

According to Section 4.3 of the DEIR, approximately 344 pounds of ROG would be generated during the architectural coating phase of the Project. Manual applications such as paintbrush, hand roller, trowel, spatula, dauber, rag, or sponge have 100 percent transfer efficiency. Construction of the Project using the required HVLP spray method reduces the daily VOC emissions to 224 pounds per day during the architectural coatings application period. The amount of VOC generated per day from the application of architectural coating even with the use of the required HVLP spray method (224 pounds) during the application of architectural coatings would exceed the SCAQMD VOC threshold of 75 lbs/day. Emissions associated with architectural coatings can be reduced by using pre-coated/natural-colored building materials, water-based or low VOC coating or by using coating transfer or spray equipment with high transfer efficiency. Adherence to SCAQMD Rule 1113 and **Mitigation Measure 4.3.6.4A** would reduce the Project's architectural coatings emissions impact. However, even with adherence to SCAQMD Rule 1113, the SQAQMD VOC threshold would still be exceeded. Therefore, impacts associated with this issue would remain significant and unavoidable. (DEIR, pg. 4.3-31)

d. Long-Term Project-Related Emissions Impacts

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project could potentially exceed applicable daily thresholds for operational activities.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant but will be reduced to the extent feasible through mitigation measures. The Council finds that Mitigation Measures 4.3.6.5A and 4.3.6.5B are incorporated into the MMRP for the Project, and will be implemented as specified therein. However, the Council finds that even with application of these mitigation measures, long term construction emissions-related air quality impacts are considered significant and unavoidable.

4.3.6.5A *Prior to issuance of building permits, the Project applicant shall provide evidence to the City that applicable (as determined by the City) Transportation Demand Management (TDM)/Transportation Control Measure (TCM) strategies such as preferential parking for employee vanpooling/carpooling, bicycle parking facilities (such as bicycle lockers and racks), bus turnouts, and other strategies are incorporated into the design of the Project.*

4.3.6.5B *Prior to issuance of building permits, the project applicant shall provide evidence to the City that energy-efficient and low-emission methods and features of building construction shall be incorporated into the project design. These methods and features may include (but are not limited to) the following:*

- *Construction of buildings that exceed statewide energy requirements beyond 10 percent of that identified in Title 24, Part 6 Energy Efficiency Standards:*
 - o Use of low-emissions water heaters;*
 - o Use of central water-heating systems;*
 - o Use of energy-efficient appliances;*
 - o Use of increase insulation;*
 - o Use of automated controls for air conditioners;*
 - o Use of energy-efficient parking lot lighting; and*
 - o Use of lighting controls and energy-efficient lighting.*
- *Utilize low-VOC interior and exterior coatings during project repainting.*
- *Provide on-site improvements such as sidewalks or pedestrian walkways to promote pedestrian activity and reduce the amount of vehicle trips.*
- *Installation of skylights and energy-efficient lighting that exceeds California Title 24 standards where feasible, including electronic dimming ballasts and computer-controlled daylight sensors in the buildings.*

- Shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and building shall be planted at the proposed project site. These strategies will minimize the heat island effect and thereby reduce the amount of air conditioning required.
- Strategies to be considered include fans to assist natural ventilation, centralized water and space conditioning systems, high efficiency individual heating and cooling units, and automatic setback thermostats.
- Reduction of energy demand associated with potable water conveyance through the following methods:
 - o Incorporating drought-tolerant plants into the landscaping palette; and
 - o Use of water-efficient irrigation techniques.
- Energy-efficient low-pressure sodium parking lot lights or lighting equivalent as determined by the City, shall be used;
- Buildings shall be oriented north-south where feasible;
- Implement an on-site circulation plan in parking lots to reduce vehicle queuing;
- Develop a trip reduction plan to achieve 1.5 average vehicle ridership (AVR) for businesses with fewer than 250 employees or multitenant worksites;
- Include bicycle parking facilities such as bicycle lockers and racks;
- Include showers for bicycling employees use; and
- Construct on-site pedestrian facility improvements such as building access that is physically separated from street and parking lot traffic and walk paths.

Facts in Support of the Finding: Although implementation of **Mitigation Measures 4.3.6.5A** through **4.3.6.5B** may reduce vehicle trips associated with the Project, it is not possible to quantify the reduction in the amount of emissions that may occur. Considering the volume of emissions generated and current commuter habits, it is unlikely the implementation of TDMs/TCMs will result in a reduction of

operational Project emissions to below existing SCAQMD thresholds. Application of Leadership in Energy and Environmental Design (LEED) standards and green building design principles could reduce emissions from building operations such as heating and cooling; however, such standards and principles would not reduce emissions of CO, ROG, NO_x, PM₁₀, and PM_{2.5} to below SCAQMD thresholds. No other feasible mitigation measures have been identified to reduce the operational emissions of CO, ROG, NO_x, PM₁₀, and PM_{2.5} to a less than significant level. Because the Project site is located in a nonattainment air basin for criteria pollutants, the addition of air pollutants resulting from operation of the Project would contribute to the continuation of nonattainment status in the Basin. In the absence of mitigation to reduce the Project's emission of contribution of CO, ROG, NO_x, PM₁₀, and PM_{2.5} to below SCAQMD thresholds, long-term air quality impacts resulting from the operation of the Project would remain significant and unavoidable. (DEIR, pgs. 4.2-26 to 4.2.28)

e. Project-Related Localized Operational Emissions Impacts

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project could potentially exceed applicable long-term operational daily thresholds.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant but will be reduced to the extent feasible through mitigation measures. The Council finds that **Mitigation Measures 4.3.6.6A** and **4.3.6.6B** are incorporated into the MMRP for the Project, and will be implemented as specified therein. However, the Council finds that even with application of these mitigation measures, long term operational-related emission impacts are considered significant and unavoidable.

4.3.6.6A Prior to issuance of the first building permit, building and site plan designs shall ensure that the project's energy efficiencies surpass applicable 2008 California Title 24, Part 6 Energy Efficiency Standards by a minimum of 10 percent until January 1, 2014. For building permits issued after that date, new state energy standards require a 20 percent reduction from 2008 Title 24, Part 6 Energy Efficiency Standards. Verification of increased energy efficiencies shall be documented in Title 24 Compliance Reports provided by the Applicant, and reviewed and approved by the City. The following design features shall be used to fulfill this requirement:

- Buildings shall exceed California Title 24 Energy Efficiency performance standards for water heating and space heating and cooling, as deemed acceptable by the City.*

- Increase in insulation such that heat transfer and thermal bridging is minimized.
- Limit air leakage through the structure or within the heating and cooling distribution system to minimize energy consumption.
- Incorporate dual-paned or other energy efficient windows.
- Incorporate energy efficient space heating and cooling equipment.
- Interior and exterior energy efficient lighting which exceeds the California Title 24 Energy Efficiency performance standards shall be installed, as deemed acceptable by the City. Automatic devices to turn off lights when they are not needed shall be implemented.
- To the extent that they are compatible with landscaping guidelines established by the City, shade-producing trees, particularly those that shade paved surfaces such as streets and parking lots and buildings shall be planted at the project site.
- Paint and surface color palette for the project shall emphasize light and off-white colors which reflect heat away from the buildings.
- All buildings shall be designed to accommodate renewable energy sources, such as photovoltaic solar electricity systems, appropriate to their architectural design.
- To reduce energy demand associated with potable water conveyance, the project shall implement the following:
 - Landscaping palette emphasizing drought-tolerant plants;
 - Use of water-efficient irrigation techniques; and,
 - U.S. EPA Certified WaterSense labeled for equivalent faucets, high-efficiency toilets (HETs), and water-conserving shower heads.
- The project shall provide secure, weather-protected, on-site bicycle storage/parking.
- The project shall provide on-site showers (one for males and one for females). Lockers for employees shall be provided.
- The project will establish a Transportation Management Association (TMA). The TMA will coordinate with other TMAs within the City to encourage and coordinate carpooling among building occupants. The TMA will advertise its services to building occupants, and offer transit and/or other incentives to reduce greenhouse gas (GHG) emissions. A

plan will be submitted by the TMA to the City within two months of project completion that outlines the measures implemented by the TMA, as well as contact information.

- The project shall provide preferential parking for carpools and vanpools. Locations and configurations of proposed preferential parking for carpools and vanpools are subject to review and approval by the City. Prior to final site plan approval, preferential parking for carpools and vanpools shall be delineated on the project site plan.
- The project shall provide at least two electric vehicle charging stations. Locations and configurations of proposed charging stations are subject to review and approval by the City. Prior to issuance of the first building permit, stub outs for charging stations shall be indicated on the project building plans.
- Lease/purchase documents shall identify that tenants are encouraged to promote the following:
 - Implementation of compressed workweek schedules.
 - SmartWay partnership;
 - Achievement of at least 20 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of consolidated trips carried by SmartWay carriers until it reaches a minimum of 90 percent of all long-haul trips carried by SmartWay 1.0 or greater carriers.
 - Achievement of at least 15 percent per year (as a percentage of previous percentage, not total trips) increase in percentage of long-haul trips carried by SmartWay carriers until it reaches a minimum of 85 percent of all consolidator trips carried by SmartWay 1.0 or greater carriers.
 - Use of fleet vehicles conforming to 2010 air quality standards or better.
 - Installation of catalytic converters on gasoline-powered equipment.
 - Inclusion of electric powered and/or compressed natural gas fueled trucks and/or vehicles in fleets.
 - Establishment and use of carpool/vanpool programs, complemented by parking fees for single-occupancy vehicles.
 - Provision of preferential parking for EV and CNG vehicles.

- Use of electrical equipment (instead of gasoline-powered equipment) for landscape maintenance.
- Use of electric (instead of diesel or gasoline-powered) yard trucks.
- Use of SmartWay 1.25 rated trucks.
- Each facility operator shall provide regular sweeping of onsite parking and drive areas using street sweepers that comply with applicable SCAQMD Rules.
- Each facility operator shall maintain a log of all trucks entering the facility to ensure that, on average, the daily truck fleet meets applicable air quality emission standards. This log shall be available for inspection by City staff at any time.
- Each facility operator shall prohibit all vehicles from idling in excess of five minutes in all onsite areas.
- Each facility operator shall ensure that onsite staff in charge of keeping the daily log and monitoring for excess idling will be trained and certified in diesel health effects and technologies, such as by requiring attendance at CARB-approved courses.
- Each facility operator which upon occupancy does not already operate 2007 and newer trucks shall in good faith be required to apply for funding to replace or retrofit their trucks such as Carl Moyer, VIP, Prop 1B or similar funds. Should funds be awarded, the tenant shall be required to accept and use them.

4.3.6.6B

The Project shall be designed to facilitate the reduction of waste generated by building occupants that is hauled to and disposed of in landfills by providing easily accessible areas that are dedicated to the collection and storage of recyclable materials including paper, cardboard, glass, plastics, and metals. Locations of proposed recyclable materials collection areas are subject to review and approval by the City. Prior to Final Site Plan approval, locations of proposed recyclable materials collection areas shall be delineated on the Project site plan.

g. Cumulative Air Quality Impacts

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project could potentially result in a cumulatively considerable net increase of criteria pollutants for which the Project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant as there are no known feasible mitigation measures that could reduce this impact to a level of less than significant. Accordingly, Project-related impacts cumulative air quality impacts will remain significant and unavoidable.

Facts in Support of the Finding: Included in Section 4.3 of the DEIR, the Project would contribute criteria pollutants to the area during Project construction. A number of individual projects in the area may be under construction simultaneously with the Project. Depending on construction schedules and actual implementation of projects in the area, generation of fugitive dust and pollutant emissions during construction would result in substantial short-term increases in air pollutants. This would be a contribution to short-term cumulative air quality impacts.

The traffic study included vehicular trips from all present and future projects in the Project vicinity; therefore, the CO hot spot concentrations calculated at these intersections include the cumulative traffic effect. Based on this, no significant cumulative CO impacts would occur.

Long-term operation of the Project would exceed the standards for CO, ROC, NO_x, PM₁₀, and PM_{2.5}. The Basin is in nonattainment for PM₁₀ and ozone at the present time; therefore, the construction and operation of the Project would exacerbate nonattainment of air quality standards for PM₁₀ and ozone within the Basin and contribute to cumulative air quality impacts. Therefore, long-term cumulative air quality impacts are considered to be significant and unavoidable.

The Health Risk Assessment (HRA) conducted for the Project identified the increase in health risks to the nearby sensitive receptors from the Project's air pollutant emissions. This HRA identified that the Project's incremental increase is only a very small fraction of the ambient condition. Therefore, the concentration of diesel particulates at the Project site is below the established risk threshold. Individuals living and working in southern California may be exposed to levels of diesel emissions that are cumulatively significant; however, that circumstance is not created by the Project.

It is reasonable to anticipate that advancements in truck/transportation technology would reduce the amount of particulate matter in future years. However, a determination of the amount and extent of that reduction in diesel particulate matter from these types of activities is not available at this time. Therefore, in an overabundance of caution, because other cumulative projects in the area would also contribute diesel particulates in the area and because the Riverside area has a level of particulate matter that is above the SCAQMD's recommended cancer risk threshold of 10 in one million, regional impacts associated with

diesel particulate matter are considered cumulatively considerable and the Project will make a significant contribution to that cumulative impact. (DEIR, pgs. 4.3-37 to 4.3-38)

4. Land Use and Planning (Individual and Cumulative)

b. Conflict with Applicable Land Use Plans, Policies, or Regulations

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project would potentially conflict with various land use plans, policies, or regulations.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant as there are no known feasible mitigation measures that could reduce bring the Project into compliance with all land use plans. Accordingly, Project-related conflicts with land use plans will remain significant and unavoidable.

Facts in Support of the Finding: According to Section 4.8 of the DEIR, a discussion of the Project’s consistency with the 2007 AQMP has been analyzed in Section 4.3 (Air Quality) of this EIR. “Since the Project will require a General Plan Amendment, the Project has not been considered in preparation of the City’s General Plan and therefore is inconsistent with the AQMP. Amendments to the City of Moreno Valley General Plan, zoning reclassification, and plan approval are required before the affected portion of the Project can be implemented. This is a significant impact requiring mitigation.” That section of this EIR concluded that, despite the recommended mitigation, Project air quality impacts related to the AQMP would remain significant.

The Project proposes the development of warehouse uses, which would result in an inconsistency with the existing residential zoning on the southern portion of the site, and the BP zone on the northern portion of the site. The development that would occur with the zone change has the potential to create indirect environmental impacts since the zone change would permit more intense and larger industrial/warehousing uses on the Project site, requiring a discretionary action based on an environmental determination of the Project. These environmental impacts are analyzed through this EIR for each of the environmental topics. The baseline for comparative analysis of environmental impacts would be the existing condition of the Project site. Currently, there is no existing development on the Project site, which represents the worst-case scenario on which the EIR analysis is based. With implementation of the zone change, the Project would be consistent with zoning requirements identified by the City.

According to the latest development plans, the closest loading and unloading operations of the Project (e.g., truck courts) would be located 395 feet northwest of the nearest single-family residence (see plans in Appendix K). In addition, the reconfigured roadways surrounding the Project site would discourage industrial traffic through the residential areas to the southeast. Despite these design characteristics, the fundamental change from residential/business park uses to industrial adjacent to residential represents an incremental adverse effect on the “quality of life” of existing residents in this area, which represents a potentially significant land use compatibility impact. This impact requires the City Council to approve a Zone Change to bring the proposed zoning designations into consistency with the Zoning Map and Municipal Code.

The Compass Growth Vision plan provides a framework for local and regional decision-making regarding growth, transportation, land use, and economic development. The main objective of the Compass Growth Vision is to manage the forecast growth while improving future living conditions for all people within the SCAG area, including live, work, and play activities.

The Project may not be fully consistent with the growth principles of the Compass Growth Vision plan. The nature of the Project allows the transport of commodities from a single area rather than multiple areas, minimizing vehicle trip generation. Conversely, trucks from the Project may increase localized and freeway congestion. The Project eliminates a planned transition of land uses that may incrementally reduce livability in this portion of the City. The Project does support increased prosperity by providing additional (mainly “blue collar”) employment opportunities close to existing housing within the City of Moreno Valley. The Project is located in an area where existing infrastructure (freeway, sewer, electrical, water, etc.) is present. The development of the Project will augment existing services available in the City and region. In these ways, the Project is only partially consistent with the principles of the Compass Growth Vision. (DEIR, pgs. 4.8-5 to 4.8-17)

a. Cumulative Land Use and Planning

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project would have a cumulative impact to land use and planning issues.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant as there are no known feasible mitigation measures that could reduce this impact to a level of less than significant. Accordingly, Project-related cumulative impacts to land use and planning will remain significant and unavoidable.

Facts in Support of the Finding: Implementation of the Project represents establishment of new land uses within the currently undeveloped Project site that would result in an intensification of permitted land uses associated with a land use change from Business Park and Residential to Light Industrial uses, changes to the General Plan Circulation Element, ~~and the loss of the Primary Animal Keeping Overlay (PAKO) associated with the RA-2 zone.~~ The Project is generally consistent with regional plans and planning efforts, although it is not fully consistent with the SCAG's RTP and Compass Blueprint Plan because it eliminates some housing in favor of industrial employment uses. However, it will incrementally improve the City's long-standing jobs/housing ratio, which is also a regional goal of the various SCAG plans. It is also not consistent with existing General Plan land use designations, objectives and policies, nor is it consistent with existing zoning designations on the site. For these reasons, a General Plan Amendment and Zone Change are proposed for consideration by the City.

In addition, the Project represents a fundamental change in community character for this portion of the City (i.e., mixed residential and business park to industrial warehouse buildings), which can represent an incremental adverse change in terms of public perception. This change would be particularly acute if both the Project and the approved West Ridge Commerce Centre (an industrial Project just east of the Project) were built within a relatively short period of time, as they would both follow relatively closely the completion of the Sketchers Logistics Center (another warehouse Project) east of both the Project and the West Ridge Project, on the east side of Redlands Boulevard. Furthermore, the addition of industrial space from the Project and the adjacent West Ridge (industrial) Project may create an over-supply of warehousing space in the City, based on current economic conditions.

The proposed changes in land use will also result in a loss of up to 584 (R-15) multi-family residential units. However, this was determined to be a less than significant Project impact on local housing because the City's Housing Element identifies over twice as much potential affordable housing as the City's RHNA allocation, so it will not make a significant contribution to a cumulatively considerable impact on regional housing.

Similar to the Project, some of the cumulative projects within the Project vicinity would also require amendments to the existing General Plan and zoning, which may in turn cause additional cumulative impacts. Therefore, planned industrial development in the City may contribute to a cumulatively considerable impact or change in the overall character of the surrounding area, and the Project would make a significant contribution to that change in terms of consistency with adopted land use plans. No feasible mitigation is available to reduce this significant contribution. However, the Project would not

make a similar cumulatively considerable land use impact relative to dividing an established community or conflicting with an approved habitat conservation plan. (DEIR, pgs. 4.8-17 to 4.8-18)

5. Transportation

a. Existing (2011) With Project Conditions (Intersection) Traffic and Level of Service Impacts

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project would cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant but will be reduced to the extent feasible through mitigation measures. The Council finds that **Mitigation Measure 4.11.6.4A** is incorporated into the MMRP for the Project, and will be implemented as specified therein. However, the Council finds that even with application of these mitigation measures, existing (2011) with Project LOS impacts are considered significant and unavoidable.

Facts in Support of the Finding: As indicated in Section 4.11 of the DEIR, with the addition of Project traffic, the following intersections are forecast to operate at unsatisfactory levels of service: Redlands Boulevard/SR-60 Westbound Ramps (a.m. and p.m. peak hours); and Redlands Boulevard/Eucalyptus Avenue-Fir Avenue (p.m. peak hour).

The Project would contribute to the worsening of the already unsatisfactory LOS at the intersection of Redlands Boulevard/SR-60 Westbound Ramps and would create a significant impact at the intersection of Redlands Boulevard/Eucalyptus Avenue-Fir Avenue. Therefore, mitigation is required at both intersections.

Also, the following segments are forecast to operate at an unsatisfactory level of service in the Existing plus Project condition: SR-60 Eastbound: Pigeon Pass Road to Heacock Street (a.m. and p.m. peak hours); SR-60 Westbound: Heacock Street to Perris Boulevard (a.m. peak hour); and SR-60 Westbound: Perris Boulevard to Nason Street (a.m. peak hour).

The Project would add to the existing unsatisfactory LOS on these three freeway segments; therefore, the addition of Project traffic would be considered a cumulative impact. Neither the Project applicant nor the City has jurisdiction over Caltrans facilities; therefore, implementation of improvements to the freeway mainline cannot be guaranteed. Review of the SCAG Regional Transportation Improvement Plan (RTIP)

indicates that there are no projects programmed on SR-60 within the study area. Furthermore, Caltrans does not have a mechanism for development projects to contribute to improvements on State Highways. Therefore, the cumulative impact to these three segments of SR-60 would be significant and unavoidable. (DEIR, pgs. 4.11-19)

b. Opening Year 2016 With Project Conditions (Intersection) Traffic and Level of Service Impacts

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project would cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant but will be reduced to the extent feasible through mitigation measures. The Council finds that **Mitigation Measure 4.11.6.4B** is incorporated into the MMRP for the Project, and will be implemented as specified therein. However, the Council finds that even with application of these mitigation measures, existing (2016) with Project LOS impacts are considered significant and unavoidable.

Facts in Support of the Finding: Opening Year (2016) with Project conditions considers the addition of traffic generated by the Project to Opening Year (2016) without Project conditions. Section 4.11 of the DEIR indicates that the following intersections would operate at unsatisfactory LOS: Moreno Beach Drive/SR-60 Westbound Ramps (p.m. peak hour); Redlands Boulevard/SR-60 Westbound Ramps (a.m. and p.m. peak hours); and Redlands Boulevard/Eucalyptus Avenue-Fir Avenue (p.m. peak hour). The Project would have a significant impact at all three intersections, and therefore mitigation would be required.

Freeway mainline and ramp junctions were evaluated in the Opening Year (2016) plus Project condition. The following segments are forecast to operate at an unsatisfactory level of service in the Opening Year (2016) plus Project condition: SR-60 Eastbound: Pigeon Pass Road to Heacock Street (a.m. and p.m. peak hours); SR-60 Eastbound: Heacock Street to Perris Boulevard (p.m. peak hour); SR-60 Westbound: Heacock Street to Perris Boulevard (a.m. peak hour); and SR-60 Westbound: Perris Boulevard to Nason Street (a.m. peak hour).

The Project would add to the existing unsatisfactory LOS on these four freeway segments; therefore, the addition of Project traffic would be considered a cumulative impact. Neither the Project applicant nor the City has jurisdiction over Caltrans facilities; therefore, implementation of improvements to the freeway

mainline cannot be guaranteed. Review of the RTIP indicates that there are no projects programmed on SR-60 within the study area. Furthermore, Caltrans does not have a mechanism for development projects to contribute to improvements on State Highways. Therefore, the cumulative impact to these three segments of SR-60 would be significant and unavoidable.

**c. Opening Year 2016 Cumulative With Project Conditions
(Intersection) Traffic and Level of Service Impacts**

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project would cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant but will be reduced to the extent feasible through mitigation measures. The Council finds that **Mitigation Measure 4.11.6.4C** is incorporated into the MMRP for the Project, and will be implemented as specified therein. However, the Council finds that even with application of these mitigation measures, existing (2016) cumulative with Project LOS impacts are considered significant and unavoidable.

Facts in Support of the Finding: According to Section 4.11 of the DEIR, an intersection LOS analysis was conducted to determine Opening Year (2016) Cumulative intersection performance. The addition of Project traffic to the Opening Year (2016) Cumulative scenario would result in conditions exceeding the established LOS standard at the following intersections: Moreno Beach Drive/SR-60 Eastbound Ramps (p.m. peak hour); Moreno Beach Drive/Cottonwood Avenue (p.m. peak hour); Moreno Beach Drive/Alessandro Avenue (p.m. peak hour); Redlands Boulevard/SR-60 Westbound Ramps (a.m. and p.m. peak hours); Redlands Boulevard/SR-60 Eastbound Ramps (a.m. and p.m. peak hours); Redlands Boulevard/Fir Avenue-Eucalyptus Avenue (a.m. and p.m. peak hours); Redlands Boulevard/Encilia Avenue-Eucalyptus Avenue (p.m. peak hour); and Redlands Boulevard/Alessandro Boulevard (p.m. peak hour).

While these intersections are forecast to exceed satisfactory levels of service in Opening Year (2016) Cumulative with Project conditions, with the exception of the intersection of Redlands Boulevard/Eucalyptus Avenue-Fir Avenue and Redlands Boulevard/Encilia Avenue-Eucalyptus Avenue, these intersections already exceeded established LOS standards in the Opening Year (2016) Cumulative without-Project condition. Because the Project would contribute to and would cause intersections to operate at unsatisfactory levels, mitigation is required.

Freeway mainline and ramp junctions were evaluated in the Opening Year 2016 Cumulative plus Project condition. The following segments are forecast to operate at an unsatisfactory level of service in the Opening Year 2016 Cumulative plus Project condition: SR-60 Eastbound: Pigeon Pass Road to Heacock Street (a.m. and p.m. peak hours); SR-60 Eastbound: Heacock Street to Perris Boulevard (a.m. and p.m. peak hours); SR-60 Eastbound: Perris Boulevard to Nason Street (a.m. and p.m. peak hours); SR-60 Westbound: Heacock Street to Perris Boulevard (a.m. and p.m. peak hours); SR-60 Westbound: Perris Boulevard to Nason Street (a.m. and p.m. peak hours); and SR-60 Westbound: Nason Street to Moreno Beach Drive (a.m. peak hour).

The Project would add to the existing unsatisfactory LOS on these six freeway segments; therefore, the addition of Project traffic would be considered a cumulative impact. Review of the RTIP indicates that there are no projects programmed on SR-60 within the study area. Furthermore, neither the Project applicant nor the City has jurisdiction over Caltrans facilities; therefore, implementation of improvements to the freeway mainline cannot be guaranteed. Furthermore, Caltrans does not have a mechanism for development projects to contribute to improvements on State Highways. Therefore, the cumulative impact to these segments of SR-60 would be significant and unavoidable.

d. Cumulative Transportation Impacts

Significant Unavoidable Impact: The EIR evaluated and concluded that the Project would have a cumulative significant impact to transportation.

Finding: Based on the entire record before us, this Council finds that this impact is potentially significant but will be reduced to the extent feasible through mitigation measures. The Council finds that Mitigation Measure 4.11.6.4C is incorporated into the MMRP for the Project, and will be implemented as specified therein. However, the Council finds that even with application of these mitigation measures, cumulative transportation impacts are considered significant and unavoidable.

Facts in Support of the Finding: Cumulative impacts associated with traffic volumes are determined based the addition of traffic volumes from approved and pending projects in the area and projected traffic growth to existing traffic volumes. The cumulative analysis forecasts that, with the development of the Project and the cumulative projects, eight intersections would require improvements in order to maintain the City's LOS standard of D.

Those intersections are as follows: Moreno Beach Drive/SR-60 Eastbound Ramps (p.m. peak hour); Moreno Beach Drive/Cottonwood Avenue (p.m. peak hour); Moreno Beach Drive/Alessandro Avenue

(p.m. peak hour); Redlands Boulevard/SR-60 Westbound Ramps (a.m. and p.m. peak hours); Redlands Boulevard/SR-60 Eastbound Ramps (a.m. and p.m. peak hours); Redlands Boulevard/Fir Avenue-Eucalyptus Avenue (a.m. and p.m. peak hours); Redlands Boulevard/Encilia Avenue-Eucalyptus Avenue (p.m. peak hour); and Redlands Boulevard/Alessandro Boulevard (p.m. peak hour).

Although the suggested improvements are consistent with the City's General Plan, the Project will be responsible for contributing its fair share toward the funding of the future improvements via payment of the City's DIF. Of these eight affected intersections, five intersections are under the jurisdiction of the City of Moreno Valley.

Three intersections are under the jurisdiction of Caltrans. The improvements identified in **Mitigation Measure 4.11.6.4C** would reduce impacts at these intersections to a less than significant level. However, since the affected freeway ramp intersections are under the jurisdiction of Caltrans, neither the Project proponent nor the City has control over the specific timing of when the improvements would be constructed. It is anticipated that by opening year (2016), improvements at these intersections would not be constructed, as they are not currently planned for near-term construction. Therefore, this cumulative impact in opening year (2016) remains significant and unavoidable until such time as the improvements to this interchange are constructed by Caltrans, WRCOG, and the City of Moreno Valley through the TUMF process.

Because TUMF provides a mechanism for collecting fees from all development projects in the area that would contribute traffic to the existing roadway network, fees for the improvements to the affected freeway intersections would be collected. Therefore, it is anticipated that since these freeway intersection improvements are programmed into the TUMF program, such improvements would be constructed by future year (2035) and would be able to accommodate future year (2035) traffic levels, resulting in a less than significant cumulative impact.

D. ADEQUACY OF THE RANGE OF PROJECT ALTERNATIVES

The EIR analyzed four alternatives to the Project as proposed, and evaluated these alternatives for their ability to meet the Project’s objectives as described in Section II.B above. CEQA requires the evaluation of a “No Project Alternative” to assess a maximum net change in the environment as a result of implementation of the Project. The No Project Alternative, referred to as the No Project/Existing Zoning Alternative, makes a reasoned assessment as to the future development of the subject site should the Project under consideration not be developed yet the site would be developed in a similar manner to the Project and consistent with existing zoning for the site. A Reduced Intensity Alternative, a Commercial Center (mixed retail/office) Alternative, and an Off-site Alternative were also selected for analysis. CEQA requires the evaluation of alternatives that can reduce the significance of identified impacts and “feasibly attain most of the basic objectives of the Project.” Thus, in order to develop a range of reasonable alternatives, the Project Objectives must be considered when this Council is evaluating the alternatives.

1. Alternative 1 – No Project/Existing Zoning Alternative

Description: The No Project/Existing Zoning Alternative (hereinafter referenced as the “No Project” Alternative), considers the environmental conditions that would occur if the subject site were developed consistent with its existing Specific Plan 208 zoning designation, consisting of an underlying land use of Business Park/Industrial. To allow for quantified comparison of potential impacts, the No Project Alternative was assumed to result in the development of approximately 1,420,000 square feet of industrial warehouse uses on approximately 63 acres and approximately 180,000 square feet of commercial service uses on approximately 8 acres as would be allowed under the existing zoning and land use designations. The commercial service component of this alternative would be located along the frontage of Perris Boulevard while the industrial warehouse uses would occupy the remaining portion of the site. (DEIR, pg. 6-12)

Impacts: The No Build Alternative, as referenced in Section 6.0 of the DEIR, would result in similar impacts when compared to the Project. Similar to the Project, the No Build Alternative would result in less than significant impacts in the following areas: Aesthetics; Williamson Act Contracts/Agricultural Zoning and Forestry Resources; Biological Resources; Cultural Resources; Geology and Soils; Hazards and Hazardous Materials; Hydrology and Water Quality; Land Use; Mineral Resources; Noise; Population and Housing; Public Services; Recreation and Parks; and Utilities and Service Systems. The Project’s significant and unavoidable agricultural impacts, air quality impacts, climate change and GHG

impacts, and transportation impacts would also occur in the same manner as the Project. However, under the No Build Alternative, potential air quality, climate change, and traffic/transportation impacts would be greater than the Project because of the higher trip generation potential of the commercial uses.

Objectives: Under the No Build Alternative, the subject site would develop in a similar manner as the Project, and most of the Project Objectives would be achieved. However, the objectives specifically oriented towards warehouse and industrial uses would be met at a reduced level due to the commercial component included in this Alternative.

Finding: Under the No Build Alternative, the Project site would be developed with approximately 1,420,000 square feet of industrial warehouse uses on approximately 63 acres and approximately 180,000 square feet of commercial service uses on approximately 8 acres. This Alternative would result in the same significant and unavoidable impacts associated with agricultural resources, air quality, climate change and greenhouse gases, and traffic that have been identified within the DEIR. However, potential air quality, climate change, and traffic/transportation impacts would be greater than the Project because of the higher trip generation potential of the commercial uses. Because the No Build Alternative results in an increase in potential significant and unavoidable impacts in comparison to the Project, the City Council hereby rejects the No Build Alternative.

2. Alternative 2 – Reduced Intensity Alternative

Description: The Reduced Intensity Alternative assumes the same general land use type as the Project, but at a development intensity scoped to reduce the extent of regional threshold exceedances for air pollution and greenhouse gas emissions that would otherwise result from the Project. In that the same type of development is proposed, most if not all the Project Objectives would be achieved to a certain extent but at a reduced level. Implementation of the Reduced Intensity Alternative would yield approximately 1,212,100 square feet of development, a reduction of approximately 25 percent or approximately 434,033 square feet, when compared to the approximately 1,616,133 square-foot Project analyzed in the EIR.

Impacts: Under the Reduced Intensity Alternative, impacts related to agricultural resources would be similar to the Project as the same amount of land would be disturbed. Similarly, impacts related to short-term construction-related air quality would be similar to the Project as the same amount of land would be disturbed and the same mix of equipment would be utilized. Because of the decrease in vehicle trips achieved under this alternative, impacts to the operation of local roadways and intersections would be proportionally reduced from what was identified for the Project; however, long-term traffic impacts to

state freeway segments and merge/diverge areas would remain significant and unavoidable. Long-term operational-related air quality impacts would be reduced in magnitude when compared to the Project but would remain significant and unavoidable. Impacts associated with the generation of greenhouse gas emissions would also be reduced proportionate to the reduction in building area in comparison to the Project, but would remain significant and unavoidable.

Objectives: The Reduced Intensity Alternative would, to some degree, realize the Project Objectives. However, because the scale of the development would be diminished under this Alternative, the resulting generation of sales tax, the number of jobs created, and potential second tier economic benefits to the City and region (e.g. wholesale/retail support sales; temporary and long-term construction jobs, and facilities maintenance employment opportunities) would likely be reduced when compared to the Project.

Finding: Under the Reduced Intensity Alternative, a light industrial warehouse/ distribution facility reduced by approximately 25 percent (or 434,033 square feet) would be realized as compared to the Project. The City Council hereby finds that the Reduced Intensity Alternative will not avoid or substantially reduce the significant and unavoidable agricultural resources impacts, construction and operational air quality impacts, and cumulative greenhouse gas impacts identified in the EIR. This Alternative would not meet Project Objectives to the same extent as the Project. Furthermore, the scale of the reduction in intensity would not maximize or realize the economic potential of the site. Based on the reduced scope of development, the Reduced Intensity Alternative would diminish capacities and capabilities to satisfy existing and projected unmet market demands within the trade area. The Reduced Intensity Alternative would also result in comparatively fewer opportunities to provide jobs, as compared to the Project. Therefore, the City Council rejects the Reduced Intensity Alternative on the basis that it fails to avoid or substantially reduce the significant and unavoidable impacts of the Project and does not meet the Project Objectives as well as the Project. The City Council also finds that each of these considerations constitutes a ground for rejecting this alternative that is independently sufficient to support the City Council's rejection of this alternative.

3. Alternative 3 - Commercial Center (Mixed Commercial/Office)

Description: As identified in Section 6.0 of the DEIR, the Commercial Center Alternative would result in the development of commercial service and office uses on the Project site. Although business and professional offices, financial institutions, and medical clinics are permitted in SP208, they are permitted only in the industrial support areas while commercial service-oriented uses are a permitted throughout the SP208 Industrial designation. For this reason, the General Plan and zoning designations for the site would

need to be amended to accommodate the business and professional offices. Permitted commercial service uses include, but are not limited to, Automotive Sales/Rental/Leasing & Accessories, Automotive/Truck Repair, Business Supply/Equipment Sales/Rental & Services, and Repair Services. Approximately 760,000 square feet of commercial service uses would be developed on approximately 35 acres. The balance of the site (35 acres) would be developed with up to approximately 760,000 square feet of office uses.

Impacts: As identified in Section 6.0 of the DEIR, the Commercial Center Alternative would result in similar impacts for the following eight environmental issues: Agriculture and Forestry Resources; Biological Resources; Cultural Resources; Geology and Soils; Hazards and Hazardous Materials; Hydrology and Water Quality; Land Use and Planning; and Mineral Resources. Because of the increase in vehicle trips under this alternative, impacts to the operation of local roadways and intersections would be proportionally greater than what was identified for the Project. Long-term traffic impacts to state freeway mainline segments and merge/diverge areas would remain significant and unavoidable. Under the Commercial Center Alternative, impacts related to short-term construction emissions would be similar to the Project as the same amount of land would be disturbed and the same mix of equipment would be utilized. Long-term operational-related air quality emissions would be increased in magnitude because of the increase in vehicle trips when compared to the Project and would remain significant and unavoidable. Traffic-related noise would be increased in magnitude but would be similarly mitigated like the Project and would remain less than significant.

Objectives: Under this alternative, some of the Project objectives are not met as warehouse uses would not be built. However, development of this alternative would provide new employment opportunities for residents of Moreno Valley, but not within the industrial employment sector.

Findings: Under the Commercial Center Alternative, development of commercial service and office uses would occur. This Alternative would have similar impacts that have been identified within the DEIR. However, the Commercial Center Alternative would result in an increase in trip generation in comparison to the Project, and would result in an increase in the severity of the significant and unavoidable impacts to construction and operational air pollution emissions, climate change and greenhouse gas emission, and traffic. The City Council finds that the Commercial Center Alternative would fulfill some but not all of the Project Objectives. Moreno Valley residents would have more opportunities for employment but a warehouse would not be built. Because the Commercial Center Alternative will not fulfill the primary objective of the Project and the severity of significant and unavoidable impacts would be increased in comparison to the Project, the Council hereby rejects the Commercial Center Alternative.

4. Alternative 4 - Off-Site Location

Description: As identified in Section 6.0 of the DEIR, this alternative would result in the same intensity of development of approximately 1,616,133 square feet of warehouse uses on approximately 70.3 acres. The alternative Project site identified by the City is bounded by Kramaria Street (extended) to the north, vacant and partially developed property and March Air Reserve Base to the west, Indian Street to the east, and the Perris Valley Storm Drain and vacant land to the south. The off-site location is approximately 1.0 miles northwest of the Project site and is within the same Industrial Area Specific Plan as the Project. This alternative off-site property is not owned or under the control of the applicant. The off-site location is currently zoned SP 208 I and is designated Business Park in the City's General Plan, identical to the Project development of this site would not require soil import, inherently reducing impacts from air pollution emissions during construction.

Impacts: Section 6.0 of the DEIR, identifies nine environmental issues that would have similar impacts as the Project. These issues are: Cultural Resources; Geology and Soils; Hydrology and Water Quality; Land Use and Planning; Mineral Resources; Population and Housing; Public Services; Recreation; and Utilities and Service Systems. With the Off-Site Location Alternative, impacts related to air quality and traffic impacts would be similar to those identified with the Project. Short-term construction and long-term air quality operational and climate change/greenhouse gas emissions impacts under this alternative would remain significant and unavoidable and would result in similar conditions as identified for the Project. Additionally, due to adjacent sensitive receptors, potential impacts to these receptors would be greater in magnitude when compared to the Project. Similarly, noise impacts would be greater in magnitude due to the adjacent sensitive receptors. Operational traffic would result in increased traffic on vanity roadways and may impact different intersection and roadways in comparison to the Project. Under this Alternative, impacts to agricultural resources would be eliminated.

Objectives: The Off-Site Alternative would meet most of the Project objectives. The location of the Off-Site Alternative further north of Harley Knox Boulevard would not meet the Project objectives of locating distribution services near transportation corridors and clustering such uses near the state highway system.

Finding: Under the Off-Site Alternative, development of the warehouse would occur in a different location. This Alternative would have similar impacts that have been identified within the DEIR. And most of the objectives of the Project would be met, would not meet the Project objectives of locating distribution services near transportation corridors and clustering such uses near the state highway system. The Council finds that the Off-Site Alternative would have similar impacts to all environmental issues

except for agriculture because this Alternative would eliminate the significant and unavoidable impacts to agricultural resources.. Because the Off-Site Alternative will not substantially reduce the environmental impact of the Project and it would not meet the Project objectives of locating distribution services near transportation corridors and clustering such uses near the state highway system, the Council hereby rejects the Off-Site Alternative.

5. Alternatives Considered and Rejected

A variety of additional alternatives were considered as part of the DEIR's Alternatives Analysis. (DEIR, pgs. 6-3 through 6-5) Three possible alternatives were considered and rejected because they could not accomplish the basic objectives of the Project or they were considered infeasible. Per the *CEQA Guidelines* (Section 15126.6(c)), factors that may be considered when addressing the feasibility of alternatives include failure to meet most of the stated Project objectives, infeasibility, or inability to avoid significant environmental effects. The purpose of the Project is to provide for and expand employment and revenue opportunities within the City of Moreno Valley. The Project would expand employment options in a location that is convenient to existing transportation corridors, convenient to existing and future City residents and would augment the City's economic base. The following provides a discussion of the three development scenarios that were considered and rejected as potential alternatives to implementation of the Project based on Section 15126.6 of the *CEQA Guidelines* because they did not feasibly attain most of the basic objectives of the Project while reducing or avoiding any of the significant effects of the Project:

- No Build Alternative: No development would take place within the Project limits and no impacts would occur. However, disallowing development of the site, as suggested by this alternative, would not fulfill the primary objectives of the Project and the site would likely be developed in accordance with existing zoning should the Project not move forward. Retention of the Project site in its current condition would not expand employment opportunities to residents of the City. Retaining the site in its current undeveloped condition would not generate the revenue (e.g., property tax) that could augment the City's current revenue stream. Therefore, the No Build Alternative was rejected from further consideration in the EIR.
- Residential Alternative: The Residential Alternative would develop the 71-acre Project site with approximately 355 single-family units based on the City's R5 zone. The R5 zone was utilized as this is the zoning designation of the nearest residential uses to the north along Perris Boulevard and north of the Perris Valley Storm Drain channel. A zone change, General Plan Amendment,

and Specific Plan Amendment would be required for this alternative to change the Project site from its existing Business Park/Light Industrial (BP) General Plan designation and Industrial Area Plan (SP208 I) zoning designation to a residential R5 designation. Furthermore, a Specific Plan Amendment would be required to remove the Project site from the underlying Industrial Specific Plan 208. Since the Residential Alternative consists only of residential uses, employment-generating opportunities would not occur aside from temporary construction work, which would be filled predominantly by those already residing in the area. The residential uses would produce demand for public services that would exceed the amount of municipal revenues it would generate. The Project's full potential to utilize the area's close proximity to various freeways and transportation corridors would not be realized as only residential uses would occur under the Residential Alternative. Additionally, the development of the entire 71-acre Project site under this alternative would result in the placement of the residential uses within an area planned for industrial uses which could result in additional adverse impacts such as exposure to air pollutants, noise, and land use incompatibilities. This alternative has been rejected because it would result in greater impacts and would not satisfy the basic City employment generating objectives for development of the Project site.

- Mixed Commercial/Residential Alternative: The Mixed Commercial/Residential Alternative would develop the 71-acre Project site with approximately 690,000 square feet of Community Commercial uses and 532 multiple-family units. A zone change, General Plan Amendment, and Specific Plan Amendment would be required for this alternative to change the Project site from its existing Business Park/Light Industrial (BP) General Plan designation and SP208 I zoning designation to a residential designation and commercial designation. Additionally, a Specific Plan Amendment would be required to remove the Project site from the underlying Industrial Specific Plan 208. While the commercial component of this Alternative would utilize the Project site's close proximity to nearby transportation corridors, the development of the remainder of the site with residential uses would not provide the varied employment and service uses and revenue associated with the Project. The development of approximately half of the Project site under this alternative with residential uses would result in the placement of the residential uses adjacent to SP208 I industrial/business park uses which could potentially result in additional adverse impacts such as exposure to air pollutants, noise, and land use incompatibilities. The residential component of this alternative would produce demand for public services that would exceed the amount of municipal revenues it would generate, and there would be little to no employment opportunities created. Therefore, the mixed commercial/residential alternative would not meet the

Project objectives of providing new employment and revenue generation options in close proximity to local consumers to the same degree as the Project. The employment opportunities and economic benefits derived from the Project are superior to the Mixed Commercial/Residential Alternative. This alternative has been rejected because it would result in greater impacts and would not satisfy the basic City employment generating objectives for development of the Project site.

6. Environmentally Superior Alternative

As explained by Section 6.0 in the DEIR, Alternative 2 (Reduced Intensity Alternative) reduces the severity of Project related air quality impacts. However, long-term air quality impacts, would remain significant after mitigation for this alternative for ROG, NO_x, PM₁₀ and PM_{2.5}. In a similar manner, Alternative 2 would reduce the volume of daily traffic trips when compared to the Project; however, such impacts to state freeway mainline segments and merge/diverge areas would remain significant and unavoidable until freeway improvements are completed by the state. Alternative 2 would also reduce the quantity of greenhouse gas emission when compared to the Project; however, impacts to Climate Change would remain significant and unavoidable. The remaining environmental issues would ultimately be similar to the Project through adherence to existing standards and mitigation measures. Based on the analysis in Section 6.0 and the summary contained in Table 6.K, Alternative 2, the Reduced Intensity Alternative, is the environmentally superior alternative. The amount of development under this alternative would be reduced when compared to the Project; however, the Alternative 2 would not satisfy several of the Project objectives because it would reduce the level at which it meets the employment generating Project objectives. Because the Reduced Intensity Alternative allows the development of warehouse uses and the provision of new employment opportunities, it meets many of the City's stated Project objectives, while at the same time reduces the impacts associated with the Project. However, because of the lower industrial density, the Alternative fails to meet several key employment generating objectives related to density efficiencies in the same manner as the Project.

E. GROWTH-INDUCING IMPACTS

CEQA requires a discussion of ways in which the Project could be growth inducing. Specifically, CEQA Guidelines Section 1512602(d) states that an EIR must describe the ways in which the Project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment.

Section 5.0 of the DEIR identifies the extent to which the new jobs created by a Project are filled by existing residents is a factor that tends to reduce the growth inducing effect of a Project. Construction of the Project will create short-term construction jobs. Due to the existing high unemployment levels that exist in the City, the potential exists for these short-term positions to be filled by workers who, for the most part, reside in the City or neighboring communities to the Project area. Therefore, construction of the Project will not generate a permanent increase in population within the Project area.

As previously identified, the Project is expected to employ 646 people. These full-time positions are also anticipated to be filled by workers who, for the most part, reside in the Project area due to high unemployment levels that exist in the City. Operations of the Project will not generate a permanent increase in population within the Project area.

The area surrounding the Project site is governed by the City of Moreno Valley General Plan and the area is guided by Specific Plan 208. Specific Plan 208 guides land use within the Project area to ensure that new development and redevelopment is implemented consistent with the land use policies, controls, and standards contained in Specific Plan 208. Any development of remaining undeveloped land adjacent to the Project site would require its own discretionary approvals and is not reliant on the Project. However, development of the Project site may lead to indirect growth in the Specific Plan area by making available the extension of infrastructure such as water, sewer, drainage, etc. This growth has been planned for and is guided by Specific Plan 208.

The Project would occur within an area currently designated for industrial uses. The Project would not require a General Plan Amendment nor does it require a change in the underlying zoning designation. In addition, the Project reflects the City of Moreno Valley's vision for the area and is consistent with Specific Plan 208. Land uses surrounding the Project site would be in conformance with the City's General Plan and Specific Plan 208. Impacts to population and housing are less than significant; see Section 13 Population and Housing of the Initial Study (Appendix A of the DEIR).

The Project would not eliminate a constraint for development of an approved Project within the City of Moreno Valley. There are no projects in the City of Moreno Valley or surrounding cities that have been approved but are conditioned or dependent on additional improvements at the Project site. Specific Plan 208 guides land uses surrounding the Project site to ensure compatibility between existing operations and adjacent surrounding development. Additionally, the Project would not add

capacity to urban services or infrastructure that would be utilized by other Project proponents in the surrounding area.

The Project would not result in any significant pressure to redevelop the area around the Project site at a higher density. As previously stated, the development of remaining undeveloped land adjacent to the Project site is independent and not reliant on the Project. Therefore, implementation of the Project would not result in redevelopment of adjacent lands at a higher intensity than already prescribed in the City of Moreno Valley's General Plan and Specific Plan 208.

F. SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

Public Resources Code Section 21100(b)(2)(B) and CEQA Guidelines Sections 15126(c), 15126.2(c), and 15127, require that for certain types or categories of projects, an EIR must address significant irreversible environmental changes that would occur should the Project be implemented. As presented at CEQA Guidelines Section 15127, the topic of Significant Irreversible Environmental Changes needs to be addressed in EIRs prepared in connection with any of the following activities:

- (a) The adoption, amendment, or enactment of a plan, policy, or ordinance of a public agency;
- (b) The adoption by a local agency formation commission of a resolution making determinations; or
- (c) A Project which will be subject to the requirements for preparing of an environmental impact statement pursuant to the requirements of the National Environmental Policy Act of 1969, 42 U.S.C. Sections 4321-4347.

The Project does not trigger any of the conditions cited in Guidelines §15127. Nonetheless, this EIR analysis addresses any significant irreversible environmental changes which would be involved in the proposed action should it be implemented [Guidelines, Sections 15126(e) and 15127]. An impact would fall into this category if:

- The Project would involve a large commitment of nonrenewable resources;
- The primary and secondary impacts of the Project would generally commit future generations of people to similar uses;

- The Project involves uses in which irreversible damage could result from any potential environmental incidents associated with the Project; and/or
- The proposed consumption of resources is not justified (e.g., the Project could waste energy).

Determining whether the Project may result in significant irreversible effects requires a determination of whether key resources would be degraded or destroyed in such a way that there would be little possibility of restoring them. The Project site is generally fallow agricultural land with the site historically used for sod farming operations. However, as identified within the City's General Plan, the City anticipates the eventual conversion of agricultural uses to urban uses and the Project would permanently alter the site by converting predominantly agricultural uses to urban uses. This is a significant irreversible environmental change that would occur as a result of Project implementation. Because no significant mineral resources were identified within the Project limits, no significant impacts related to these issues would result from development of the Project site. Natural resources in the form of construction materials would be utilized in the construction of the Project and energy resources in the form of electricity and natural gas would be used during the long-term operation of the Project; however, their use is justified in supporting the City's planned use of the site and is not expected to negatively impact the availability of these resources.

In addition, this industrial warehouse Project, in concert with the other built or approved industrial warehouse projects, will fundamentally change the character and land use pattern of this portion of the City. Many of the Project-specific impacts are addressed, as outlined above, but the change in the use of the land from agricultural to industrial represents a substantial irreversible change for this area. However, this is an intended change as verified by the City's General Plan land use designations and zoning for the area. (DEIR pgs. 5-2 and 5-3)

VI. STATEMENT OF OVERRIDING CONSIDERATIONS

The Moreno Valley City Council adopts this Statement of Overriding Considerations with respect to the significant unavoidable impacts associated with adoption of the Project as addressed in the EIR, specifically:

1. Aesthetics - Scenic Vistas;
2. Aesthetics - Scenic Resources and Scenic Highways;

3. Aesthetics - Existing Visual Character or Quality of Site and its Surroundings;
4. Aesthetics – Cumulative;
5. Agricultural Impacts - Conversion of State Designated Farmland;
6. Agricultural Impacts - Conversion of Farmland to a Non-Agricultural Use;
7. Agricultural Impacts - Cumulative;
8. Air Quality Impact - Air Quality Management Plan Consistency;
9. Air Quality Impact - Equipment Exhaust from Construction-Related Activities;
10. Air Quality Impact - Architectural Coatings;
11. Air Quality Impact - Long-Term Project-Related Emissions;
12. Air Quality Impact - Project-Related Localized Operational Emissions;
13. Air Quality Impact - Cumulative;
14. Land Use and Planning Impact - Conflict with Applicable Land Use Plans, Policies, or Regulations;
15. Land Use and Planning - Impact Cumulative;
16. Transportation Impact - Existing With Project Conditions (Intersection) Traffic and Level of Service;
17. Transportation Impact - Opening Year With Project Conditions (Intersection) Traffic and Level of Service;
18. Transportation Impact - Opening Year 2016 Cumulative With Project Conditions (Intersection) Traffic and Level of Service; and
19. Transportation Impact – Cumulative.

The Moreno Valley City Council hereby declares that, pursuant to CEQA Guidelines Section 15093, the City Council has balanced the benefits of the Project against any significant and unavoidable

environmental impacts in determining whether to approve the Project. If the benefits of the Project outweigh the unavoidable adverse environmental impacts, those impacts are considered “acceptable.”

The City Council hereby declares that the EIR has identified and discussed significant effects that may occur as a result of the Project. With the implementation of the mitigation measures discussed in the EIR, these impacts can be mitigated to a level of less than significant except for the unavoidable and significant impacts discussed in Section V(C) herein.

The City Council hereby declares that it has made a reasonable and good faith effort to eliminate or substantially mitigate the potential impacts resulting from the Project.

The City Council hereby declares that to the extent any mitigation measures recommended to the City are not incorporated, such mitigation measures are infeasible because they would impose restrictions on the Project that would prohibit the realization of specific economic, social, and other benefits that this City Council finds outweigh the unmitigated impacts.

The City Council further finds that except for the Project, all other alternatives set forth in the EIR are infeasible because they would prohibit the realization of the Project objectives and/or specific economic, social or other benefits that this City Council finds outweigh any environmental benefits of the alternatives or the other alternatives do not substantively reduce the severity of unavoidable and significant impacts.

The City Council hereby declares that, having reduced the adverse significant environmental effects of the Project, to the extent feasible by adopting the proposed mitigation measures, having considered the entire administrative record on the Project and having weighed the benefits of the Project against its unavoidable significant impact after mitigation, the City Council has determined that the social, economic and environmental benefits of the Project outweigh the potential unavoidable significant impacts and render those potential significant impacts acceptable based on the following considerations:

- The Project will provide development consistent municipal standards, codes and policies;
- The Project provides development that improves and maximizes economic viability of a vacant site by transitioning the Project site into a productive light industrial use;
- The Project creates additional employment-generating opportunities for the City of Moreno Valley and surrounding communities; and

- The Project provides adequate infrastructure and public amenities, including upgrading and widened streets, signal upgrades and utility improvements.
- The modified plan would allow for future development of a mix of residential uses on 38 acres of land in the southeast portion of the project property, adjacent to the existing residential neighborhood to the southeast, which will also help support existing commercial uses west of the site.

As the CEQA Lead Agency for the proposed action, the City of Moreno Valley has reviewed the Project description and the alternatives presented in the EIR, and fully understands the Project and Project alternatives proposed for development. Further, this Council finds that all potential adverse environmental impacts and all feasible mitigation measures to reduce the impacts from the Project have been identified in the Draft EIR, the Final EIR and public testimony. This Council also finds that a reasonable range of alternatives was considered in the EIR and this document, Section V(E) above, and finds that approval of the Project is appropriate.

This Council has identified economic and social benefits and important policy objectives, Section V above, which result from implementing the Project. The Council has balanced these substantial social and economic benefits against the unavoidable significant adverse effects of the Project. Given the substantial social and economic benefits that will accrue from the Project, this Council finds that the benefits identified herein override the unavoidable environmental effects.

California Public Resource Code 21002 provides: “In the event specific economic, social and other conditions make infeasible such Project alternatives or such mitigation measures, individual projects can be approved in spite of one or more significant effects thereof.” Section 21002.1(c) provides: “In the event that economic, social, or other conditions make it infeasible to mitigate one or more significant effects of a Project on the environment, the Project may nonetheless be approved or carried out at the discretion of a public agency...” Finally, California Administrative Code, Title 4, 15093 (a) states: “If the benefits of a Project outweigh the unavoidable adverse environmental effects, the adverse environmental effects may be considered „acceptable.””

The City Council hereby declares that the foregoing benefits provided to the public through approval and implementation of the Project outweighs the identified significant adverse environmental impacts of the Project that cannot be mitigated. The City Council finds that each of the Project benefits

outweighs the unavoidable adverse environmental impacts identified in the EIR and, therefore, finds those impacts to be acceptable.

Facts in Support of the Finding (Overriding Considerations). The ProLogis project has four overriding considerations: (1) development consistent with City standards; (2) economic viability; (3) employment generation; and (4) infrastructure improvements.

(1) Consistency with City Goals. The City's Development Review process will assure the proposed development is consistent with the City's General Plan, zoning, and Municipal Code upon approval of the requested General Plan Amendment, Zone Change, and other development applications. The analysis in the DEIR indicates the ProLogis project is generally consistent with the following development goals of the City's General Plan and the requirements of the City zoning code and municipal code for the five environmental issues that were determined to be significant even after implementation of proposed mitigation:

- **DEIR Section 4.1 Aesthetics - Consistency with General Plan Policies.** The project is consistent with Objective 2.5 and Policy 2.5.1 by providing industrial uses near SR-60 and within the FAR limits outlined. The project does not appear to be fully consistent with Policies 2.5.2 and 2.5.3 because it places industrial uses adjacent to lower density residential uses without the typical buffering land uses (e.g., higher density residential or business park). The project is consistent with Policy 2.5.4 as it precludes industrial traffic through residential areas by eliminating Quincy Street south of the new Eucalyptus Avenue road alignment and eliminating the new Encilia Avenue (old Eucalyptus Avenue) west of the Quincy Channel. The project is generally consistent with Objective 2.10 and Policies 2.10.1 through 2.10.5 by providing detailed architectural and landscaping themes for the proposed buildings and grounds, including adjacent to SR-60. The project is consistent with Policies 2.10.7 and 2.10.8 relative to lighting, although the tower accent features at the corners of the buildings may produce new off-site glare. The project appears to be consistent with Policy 2.10.9 as its fences and walls will incorporate landscaping and materials designed to reduce graffiti (see design details in DEIR Appendix K). The project may not be fully consistent with Policy 2.10.11 in terms of buffering for nearby residential uses, although it does comply with the new Municipal Code requirement of a 250-foot buffer between industrial and residential uses. Policies 2.10.12 and 2.10.13 require screening for parking areas and the project is consistent with that policy.

- **DEIR Section 4.1 Aesthetics -Consistency with Municipal Code Requirements.** The previous analysis indicates the project is not consistent with Objective 7.7 and Policies 7.7.4 and 7.7.5 as it does not fully preserve significant views and vistas, including those along SR-60. Signage will be consistent with Municipal Code requirements so it is consistent with Policy 7.7.3. Finally, the project appears to be consistent with the various Municipal Code requirements for the proposed land uses outlined in Section 4.1.2 related to landscaping, setbacks, parking, storage, etc.
- **DEIR Section 4.2 Agriculture – Consistency with General Plan Policies -** The Moreno Valley General Plan policies and zoning designations support agriculture only as an interim use, and no land in the City is designated solely for agricultural use or for agricultural preservation. ~~Despite this, the proposed zone change would conflict with the existing zone and Primary Animal Keeping Overlay (PAKO) designation for this portion of the project site; however, this change would remove less than one percent of the PAKO-designated land and would not represent a significant loss of land under this overlay designation.~~ Based on the recent trends of urban development in the City, development pressures will eventually lead to the conversion of agricultural land in the City to suburban uses.

The City’s General Plan recognizes that these conversions will eventually occur, and the Project is a demonstration of that trend. The Project would result in the conversion of Prime Farmland, development of this site and the surrounding area is consistent with the long-term vision of the City as outlined in the General Plan. The Moreno Valley General Plan policies support agriculture as an interim use, and no land in the City is designated for agricultural preservation.

- **DEIR Section 4.3 Air Quality – Consistency with General Plan Policies –** Chapter 9 of the City’s General Plan defines goals and policies related to air quality within the City of Moreno Valley. The specific policies of the General Plan that are relevant to the Project are as follows:
 - *Objective 6.7: Reduce mobile and stationary source air pollutant emissions.*
 - *Policy 6.7.1: Cooperate with regional efforts to establish and implement regional air quality strategies and tactics.*
 - *Policy 6.7.5: Require grading activities to comply with South Coast Air Quality Management District’s Rule 403 regarding the control of fugitive dust.*
 - *Policy 6.7.6: Require building construction to comply with the energy conservation requirements of Title 24 of the California Administrative Code.*

The Project site is located in an urbanizing area of the City along SR-60 which accommodates traffic in the area. In addition, the proposed warehouse uses would be within walking distance of existing homes and commercial areas in the local vicinity. The Project will incrementally reduce overall vehicle miles traveled (VMT) in the region by introducing employment into an area (i.e., the City of Moreno Valley) with a low jobs/housing ratio as monitored by the Southern California Association of Governments (SCAG). This reduction in VMT will consequently reduce air pollutant emissions so the project is consistent with City General Plan Objective 6.7 and Policies 6.7.1. Mitigation Measures 4.3.6.2A through [4.3.6.2M](#) to control dust, and Mitigation Measure 4.3.6.5B requires the project to exceed Title 24 energy conservation requirements, so the project is consistent with General Plan Policies 6.7.5 and 6.7.6.

• **DEIR Section 4.8 Land Use and Planning – Consistency with General Plan Policies – Section 9.2.2 Community Development of the General Plan contains the following goals and objectives:**

- *Goal 2.1: A pattern of land uses which organizes future growth, minimizes conflicts between land uses, and which promotes the rational utilization of presently underdeveloped and undeveloped parcels.*
- *Goal 2.2: An organized, well-designed, high quality, and functional balance of urban and rural land uses that will meet the needs of a diverse population, and promote the optimum degree of health, safety, well-being, and beauty for all areas of the community, while maintaining a sound economic base.*
- *Objective 2.1: Balance the provision of urban and rural lands within Moreno Valley by providing adequate land for present and future urban and economic development needs, while retaining the significant natural features and the rural character and lifestyle of the northeastern portion of the community.*
- *Objective 2.5: Promote a mix of industrial uses which provide a sound and diversified economic base and ample employment opportunities for the citizens of Moreno Valley with the establishment of industrial activities that have good access to the regional transportation system, accommodate the personal needs of workers and business visitors; and which meets the service needs of local businesses.*
- *Policy 2.5.1: The primary purpose of areas designated Business Park/Light Industrial is to provide for manufacturing, research and development, warehousing and distribution, as well as office and support commercial activities. The zoning regulations shall identify the particular uses permitted on each parcel of land. Development intensity should not*

exceed a Floor Area Ratio of 1.00 and the average floor area ratio should be significantly less.

- *Policy 2.5.2: Locate manufacturing and industrial uses to avoid adverse impacts on surrounding land uses.*
- *Policy 2.5.3: Screen manufacturing and industrial uses where necessary to reduce glare, noise, dust, vibrations and unsightly views.*
- *Policy 2.5.4: Design industrial development to discourage access through residential areas.*

In addition, General Plan Section 9.6.2 Safety Element contains the following applicable objective:

- *Objective 6.6: Promote land use patterns that reduce daily automotive trips and reduce trip distance for work, shopping, school, and recreation.*

The City's adopted General Plan Land Use Map designations for the existing project area largely reflect the existing land use pattern. The northern portion of the Project site is designated Business Park/Light Industrial, while the southern area, south of proposed Eucalyptus Avenue, is designated Residential in the City's General Plan. The primary purpose of areas designated Business Park/Light Industrial is to provide for manufacturing, research and development, warehousing and distribution, as well as office and support commercial activities.²⁰ The Project is not consistent with the current General Plan and zoning, and includes a General Plan Amendment (and related Zone Change) so the project will be consistent with the General Plan.

General Plan Objective 2.1 and Policy 2.5.1 require a transition of buffer of land uses between residential and industrial uses. In this area, the R5 and R15 zone areas in the southern portion of the site act as a buffer from the BP uses near the freeway and the RA2 residential uses. It should be noted that, while there is an existing transition of land uses from BP to R2 in the vicinity of the project site, it is not the function of either the R-5 or R-15 zones to act as a buffer between non-residential land uses and low density residential uses.

The ~~project~~ Project provides light industrial uses close to freeway access that will generate short- and long-term employment for the City while minimizing conflicts with existing residential land uses to the southeast through planned changes in the circulation network, so it is consistent with

²⁰ Moreno Valley General Plan. *Chapter 9 Goals and Objectives. Policy 2.5.1.* Pg. 9-7.

Land Use Goals 2.1 and 2.2, Objectives 2.1 and 2.5, Policies 2.5.1 through 2.5.4, and Safety Objective 6.6. In addition, the Project is generally consistent with SR-60 East Corridor Study and can accommodate limited expansions of the Moreno Valley Auto Mall if necessary in the next two years.

- Relative to the City's Housing Element, the Project would result in the loss of potential housing units as the General Plan Amendment (GPA) and Zone Change (ZC) request a change to industrial uses. Development of the site as proposed could eliminate as many as [681 housing units \(548 reduction with the less intense plan\)](#) from the site; [Those units would have been \(548\)](#) at a density that is generally accepted as helping to promote housing affordability (15 units per acre) on a regional level. The loss of the (max) potential 548 units (R-15 land) from the Project would reduce the total potential affordable units from 20,894 to 20,346 or still 2.7 times the RHNA number. The Project would not reduce the City's potential pool of affordable housing to below its RHNA number; therefore, it would not create a significant impact related to the City's Housing Element.
- **DEIR Section 4.8 Land Use and Planning – Consistency with the Municipal Code.** Section 9.05, Industrial Districts, of the City Municipal Code requires a minimum 250-foot buffer between residential uses and truck activity areas of industrial uses. The site plan of the Project provides a buffer of almost 400 feet from the closest residence to the southeast, so the project is consistent with this adopted land use buffer requirement.
- **DEIR Section 4.11 Transportation – Consistency with General Plan Policies** – The project is consistent with Community Development Policy 2.2.17 because the proposed amendment to the Circulation Element will prevent industrial traffic from traveling through existing residential areas southeast of the site. The project is also consistent with most of the relevant policies of the Circulation Element, including: providing adequate emergency access (Policy 5.1.1); minimizing traffic conflicts (Policies 5.1.2, 5.5.3, and 5.5.4); providing adequate off-street parking (Policy 5.1.3), ADA and Title 24 consistency (Policy 5.1.5); promoting through access (Policies 5.1.6, 5.2.2, 5.3.1, and Objective 5.5); mitigating project-related traffic impacts (Policy 5.5.8); allow for bicycle, pedestrian, and non-vehicular access options (Objective 5.8 and Policy 5.8.4, Objective 5.10 and Policy 5.10.1, Objective 5.11 and Policies 5.11.1 and 5.11.2); and using safe project design procedures (Policies 5.5.5, 5.5.9, and 5.5.10) plus applicable Municipal Code requirements.

The project is not fully consistent with Objective 5.2 which requires Level of Service C or roadways or Level of Service D on local freeway segments, but will make improvements, pay City Development Impact Fees, and make contributions to the County's Traffic Uniform Mitigation Fee (TUMF) program to offset project impacts, which is consistent with City Policies 5.3.5, 5.3.6, and 5.3.7).

(2) Economic Viability. ProLogis estimates the project would result in a property tax increase from \$282,058 in 2013 to \$1.4 million at project buildout, representing an increase of \$1.2 million. [The property tax increase would be less under the modified plan.](#) Although a fiscal/economic study was not prepared for the ProLogis project, a comprehensive fiscal study was recently prepared by David Taussig and Associates (DTA²¹) for 41 million square feet of logistics warehousing proposed east of the ProLogis project site. This study indicated that logistics warehousing in Moreno Valley generates a surplus of City revenues versus costs. Since the ProLogis project is also logistics warehousing, it is reasonable to assume similar ratios of revenues and costs as outlined in the DTA study. Based on data in the DTA study, the ProLogis project could be expected to generate a surplus of approximately \$330,000 per year to the City at buildout [and less for the modified plan.](#)²² This estimate is supported by data from a similar fiscal study prepared for a recent warehouse project in the City of Perris²³. That study estimated 1.7 million square feet of warehousing would generate an annual surplus of \$216,500 which would equal \$331,000 if a similar cost/revenue ratio was applied to the proposed ProLogis project²⁴.

(3) Employment Generation. ProLogis estimates the project would generate a need for approximately 1,400 temporary construction—related workers²⁵ and approximately 600 permanent full-time employee positions at buildout of the proposed warehousing. [The number of permanent full time positions will be less under the modified plan.](#)

(4) Traffic and Infrastructure Improvements. The DEIR²⁶ indicated that the ProLogis project would produce an estimated 4,408 or 37 percent fewer Passenger Car Equivalent or PCE trips per day compared to the site as presently zoned (7,527 trips for [Project evaluated in the DEIR ProLogis](#) compared

²¹ "Fiscal and Economic Impact Study for the World Logistics Center Specific Plan." David Taussig and Associates, Inc. January 15, 2013.

²² The DTA 2013 study estimated a surplus of \$6 million for 41 million square feet of logistics warehousing in the City, so the ProLogis project (2.25 million square feet) would generate a surplus of approximately \$330,000 using similar data and assumptions.

²³ Andrew Chang and Company, LLC. Stratford Ranch Industrial Development, Fiscal and Economic Impacts, City of Perris. September 2012.

²⁴ \$216,500 for 1.7 million square feet (Stratford Ranch) is equal to \$331,000 for 2.6 million square feet (ProLogis).

²⁵ Estimate of construction-related employees generated by the ProLogis Ontario project, May 2014.

²⁶ ProLogis trip generation on DEIR Table 4.11.E, page 4.11-15, and existing zoning trip generation outlined on Table 6.B, page 6-9.

to 11,935 trips under current zoning, [and 5,292 trips with the modified plan](#)). Note the PCE calculation takes into account large trucks in the vehicle mix.

ProLogis estimates the Project would pay approximately \$4.5 million for onsite road improvements including mainly Eucalyptus Avenue as an arterial street. In addition, ProLogis will provide \$9.2 million in Development Impact Fees (DIFs) to the City and other agencies in the following categories:

- * Moreno Valley Unified School District school impact fees
- * Arterial Streets
- * Traffic Signals
- * Interchange Improvements
- * Fire Facilities
- * Police Facilities
- * City Hall
- * Corporate Yard
- * Maintenance Equipment
- * Transportation Uniform Mitigation Fee (TUMF-separate from DIF)(see below)
- * Multi-Species Habitat Conservation Plan (MSHCP-County)
- * Riverside County Area Drainage Fee
- * Stephen's Kangaroo Rat Habitat Conservation Plan Fee (SKR HCP)
- * SR-60/Moreno Beach Drive/Redlands Blvd. Improvement Fee
- * Fair Share for DIF and TUMF improvements per project traffic study
- * Santa Ana Watershed Authority (SAWA) mitigation for Quincy Channel impacts
- * Eastern Municipal Water District (various – water, sewer, landscaping, etc.)

The ProLogis project will also make a variety of improvements (e.g., utilities, streets) both onsite and in the surrounding area, and offsite improvements, or contributions to needed roadway and intersection improvements, are shown below as summarized from the project Traffic Impact Assessment²⁷ and as outlined in Mitigation Measures 4.11.6.4A-[4.11.6.4F](#):

Make Improvements or Fully Fund Before Project Opening

- o Redlands Boulevard/SR-60 Westbound Ramps – Install traffic signal.

²⁷ LSA Associates, Inc. April 24, 2012 as summarized in the ProLogis Draft EIR Section 4.15, Transportation and Traffic.

- Redlands Boulevard/Fir Avenue/Eucalyptus Avenue – Install a traffic signal, add a northbound left-turn lane, and add a southbound left-turn lane.
- Moreno Beach Drive/SR-60 Eastbound Ramps – TUMF fee includes interchange.

Make a Fair Share Contribution (Year 2016 Impacts)

- Moreno Beach Drive/SR-60 Eastbound Ramps – TUMF fee contributes to a planned interchange upgrade.
- Moreno Beach Drive/Cottonwood Avenue – DIF fee contributes to the addition of a southbound through lane.
- Moreno Beach Drive/Alessandro Blvd. – DIF fee contributes to the addition of a southbound through lane.
- Redlands Blvd./SR-60 Westbound Ramps – DIF and TUMF fees contribute to installation of a traffic signal and add a northbound through lane.
- Redlands Blvd./SR-60 Eastbound Ramps – TUMF fee contributes to improvement costs.
- Redlands Blvd./Fir Avenue/Eucalyptus Avenue – DIF fee contributes to installation of a traffic signal, adding a westbound right-turn lane, and adding an eastbound left-turn lane. TUMF fee will cover installation of a northbound left-turn lane and a southbound through lane.
- Redlands Blvd./Eucalyptus Avenue – TUMF fee contributes to the addition of a southbound right-turn lane.
- Redlands Blvd./Alessandro Blvd. – TUMF fee contributes to the addition of a southbound left-turn lane.

Make a Fair Share Contribution (Year 2035 Impacts)

- Nason Street/Eucalyptus Avenue – DIF fee will contribute to installation of a northbound right-turn lane and restriping the westbound approach to provide dual left-turn lanes.
- Nason Street/Alessandro Blvd. – DIF fee will contribute to installation of an eastbound through lane, westbound through lane, and overlap phasing for the eastbound right-turn lane.
- Moreno Beach Drive/SR-60 Westbound Ramps – TUMF fee contributes to improvements.
- Moreno Beach Drive/SR-60 Eastbound Ramps – TUMF fee contributes to improvements.
- Moreno Beach Drive/Eucalyptus Avenue – DIF fee contributes to traffic signal and various lane improvements/restriping.

- Moreno Beach Drive/Cottonwood Avenue – DIF fee contributes to addition of a southbound lane.
 - Moreno Beach Drive/Alessandro Blvd. – DIF fee contributes to various lane improvements and restriping.
 - Redlands Blvd./SR-60 Westbound Ramps – DIF fee contributes to installation of a traffic signal.
 - Redlands Blvd./SR-60 Eastbound Ramps – TUMF fee contributes to various interchange improvements at this location.
 - Redlands Blvd./Fir Avenue/Eucalyptus Avenue – DIF and TUMF fees contribute to installation of a traffic signal and various lane improvements.
 - Redlands Blvd./Eucalyptus Avenue – DIF and TUMF fees contribute to installation of a traffic signal and various lane improvements.
 - Redlands Blvd./Alessandro Blvd. - DIF and TUMF fees contribute to installation of a traffic signal and various lane improvements.
- **Make a Fair Share Contribution (General Plan Buildout Impacts)(In addition to 2035)**
 - Nason Street/Eucalyptus Avenue – DIF fee will contribute to installation of a northbound right-turn lane and eastbound right-turn lane.
 - Nason Street/Alessandro Blvd. – DIF fee will contribute to installation of an eastbound left-turn lane and traffic signal improvements,
 - Moreno Beach Drive/Eucalyptus Avenue – DIF fee contributes to various lane improvements/restriping.
 - Moreno Beach Drive/Cottonwood Avenue – DIF fee contributes to addition of a southbound lane.
 - Moreno Beach Drive/Alessandro Blvd. – DIF fee contributes to various lane improvements and restriping.
 - Auto Mall Drive/Eucalyptus Avenue – DIF fee contributes to installation of a traffic signal.
 - Redlands Blvd./Alessandro Blvd. - DIF and TUMF fees contribute to installation of various lane improvements.

If the Encilia Avenue/Quincy Street Connection is Approved, the project will make the following improvements:

- Moreno Beach Drive/Eucalyptus Avenue – DIF fee will contribute to installation of various lane improvements and restriping.
- Redlands Blvd./Fir Avenue/Eucalyptus Avenue – Fair share contribution toward the addition of a southbound right-turn lane.
- Redlands Blvd./Encilia Avenue/Eucalyptus Avenue – DIF and TUMF fees contribute to installation of a traffic signal and various lane improvements.
- Moreno Beach Drive/Encilia Avenue - DIF fee contributes to installation of a traffic signal and various lane improvements.

VII. CERTIFICATION OF THE FINAL ENVIRONMENTAL IMPACT REPORT

The Moreno Valley City Council finds that it has reviewed and considered the FEIR in evaluating the Project, that the FEIR is an accurate and objective statement that fully complies with CEQA and the CEQA Guidelines, and that the FEIR reflects the independent judgment of the City Council.

The City Council declares that no new significant information as defined by CEQA Guidelines Section 15088.5 has been received by the City Council after the circulation of the DEIR that would require recirculation. All of the information added to the FEIR merely clarifies, amplifies or makes insignificant modifications to an already adequate DEIR pursuant to CEQA Guidelines Section 15088.5(b).

The City Council hereby certifies the EIR based on the following findings and conclusions:

A. Findings

1. CEQA Compliance

As the decision-making body for the Project, the City Council has reviewed and considered the information contained in the Findings and supporting documentation. The City Council determines that the Findings contain a complete and accurate reporting of the environmental impacts and mitigation measures associated with the Project, as well as complete and accurate reporting of the unavoidable impacts and benefits of the Project as detailed in the Statement of Overriding Considerations. The City Council finds that the EIR was prepared in compliance with CEQA and that the City Council complied with CEQA’s procedural and substantive requirements.

2. Significant Unavoidable Impacts/Statement of Overriding Considerations

The Project will have significant adverse impacts even following adoption of all feasible mitigation measures which are required by the City Council. The following significant environmental impacts have been identified in the FEIR and will require mitigation but cannot be mitigated to a level of insignificance as set forth in Section V(C) of these Findings:

- *Aesthetics Impacts (Scenic Vistas; Scenic Resources and Scenic Highways; Existing Visual Character or Quality of Site and its Surroundings; and Cumulative Impacts)* as a result of substantial change in visual characteristics of the Project compared to the existing site and the fact that the site was planned for Business Park and Residential uses and no feasible mitigation measures are available.
- *Agricultural Impacts (Conversion of State Designated Farmland; Conversion of Farmland to a Non-Agricultural Use; and Cumulative Impacts)* due to loss of 82.5 of Prime Farmland and Former Agriculture Activities and there is not an established regional mitigation program available.
- *Air Quality Impacts (Air Quality Management Plan Consistency; Equipment Exhaust from Construction-Related Activities; Architectural Coatings; Long-Term Project-Related Emissions; Project-Related Localized Operational Emissions; and Cumulative Impacts;)* due to the size and type of project, the Project would exceed SCAQMD thresholds and available mitigation would not reduce impacts to less than significant levels.
- *Land Use and Planning Impacts (Conflicts with Applicable Land Use Plans, Policies, or Regulations; and Cumulative Impacts)* due to the Project not being consistent with current General Plan land use and zoning designation
- *Transportation Impacts (Existing With Project Conditions (Intersection) Traffic and Level of Service; Opening Year With Project Conditions (Intersection) Traffic and Level of Service; Opening Year Cumulative With Project Conditions (Intersection) Traffic and Level of Service; and Cumulative Impacts.)* due to various mitigation measures being under the jurisdiction of Caltrans and so implementation cannot be guaranteed by the Lead Agency (City).

The City Council has eliminated or substantially reduced environmental impacts where feasible as described in the Findings, and the City Council determines that the remaining unavoidable significant adverse impacts are acceptable due to the reasons set forth in the preceding Statement of Overriding Considerations.

3. Conclusions

- a. All potentially significant environmental impacts from implementation of the Project have been identified in the EIR and, with the implementation of the mitigation measures defined herein and set forth in the MMRP, will be mitigated to a less-than-significant level, except for the impacts identified in Section V(C) above.
- b. Other reasonable alternatives to the Project that could feasibly achieve the basic objectives of the Project have been considered and rejected in favor of the Project.
- c. Environmental, economic, social and other considerations and benefits derived from the development of the Project override and make infeasible any alternatives to the Project or further mitigation measures beyond those incorporated into the Project.

VII. ADOPTION OF MITIGATION MONITORING AND REPORTING PROGRAM

Pursuant to *Public Resources Code* Section 21081.6, the City Council hereby adopts, as conditions of approval of the Project, the Mitigation Monitoring and Reporting Plan (MMRP) set forth in Section 4.0 of the Final EIR. In the event of any inconsistencies between the mitigation measures as set forth herein and the MMRP, the MMRP shall control, except to the extent that a mitigation measure contained herein is inadvertently omitted from the MMRP, in which case such mitigation measure shall be deemed as if it were included in the MMRP.



APPROVALS	
BUDGET OFFICER	<i>me</i>
CITY ATTORNEY	<i>SMB</i>
CITY MANAGER	<i>d</i>

Report to City Council

TO: Mayor and City Council

FROM: Richard Teichert, Chief Financial Officer

AGENDA DATE: October 14, 2014 (Continued from September 23, 2014)

TITLE: INTRODUCE AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF MORENO VALLEY, CALIFORNIA, SIMPLIFYING THE BUSINESS LICENSE FEES FOR MULTIPLE SINGLE FAMILY RESIDENTIAL RENTAL PROPERTY

RECOMMENDED ACTION

Recommendations: That the City Council:

1. Introduce Ordinance No. 881. An Ordinance of the City Council of the City of Moreno Valley, California, Amending Section 5.02.085 of Title 5 of the City of Moreno Valley Municipal Code Relating to the Separate Computation of License Fee and Tax – Branch Establishments. This amendment provides an exception for owners of single family residential rental properties who own ten or less properties and require that they only pay one business license fee, currently \$61, rather than one fee per property.

SUMMARY

This report recommends steps to amend the City's Business License Program to create an exception for owners of single family residential rental properties who own ten or less properties and require that they only pay one business license fee, currently \$61, rather than one fee per property.

To accomplish this objective, staff recommends that the Council adopt Ordinance No. 881 and amend Section 5.02.085 of Title 5 of the Municipal Code to reflect the change in the definition of Branch Establishments. As it is currently written, Section 5.02.085 of Title 5 of the Municipal Code states that each physical location for a business shall be required to pay the business license fee as if it were a separate business. The proposed

Ordinance will add an exception to this requirement for single family residential rental properties where property owners own ten or less properties.

This proposal was presented to the Finance Sub-committee at their meeting on September 18 and the committee members voted to recommend this change to the Municipal Code.

DISCUSSION

Section 5.02.085 of Title 5 of the Municipal Code sets forth that a separate Business License Fee will be charged for each fixed place of business. Therefore, businesses that have multiple branches or locations of operation will be charged a business fee and tax for each physical location.

In 2013 local investors in single family residential rental properties asked that the City review its practice of charging a separate Business License Fee, currently priced at \$61 based on the current fee schedule, for each location or rental property. For investors that held multiple properties, they were required to pay a separate business license fee for each property.

The Treasury Operations Division staff performed an analytical review of the business license/tax data maintained within the business tracking software related to single family residential rental property ownership within the City in order to develop a profile of this population and to define this issue. A summary of that data has been provided.

Total number of Single Family Residential Properties 1,380
Number of individual property owners 669

Comparison of Ownership Size and Properties Held				
	# of Owners		# of Properties	
One property	575	86%	575	42%
2 to 5 properties	71	11%	189	14%
6 to 10 properties	9	1%	67	4%
11 to 20 properties	6	1%	91	7%
Over 20 properties	8	1%	458	33%
Total	669	100%	1,380	100%

Based on the table above, we can see that 98% of the owners of single family residential rental property own between one and ten properties and account for approximately 60% of the properties. The original request to review the fee charging practice was from the family based or small investors. The intent that was expressed at that time was to provide a level of relief for those investors who were making these investments to provide for retirement or other similar investment goals. This is in contrast to the large corporate investor or hedge fund that may have bought these properties as a result of the mortgage foreclosure crisis and are looking to hold the

properties as rental property for the short-term and then resell when the housing market recovers and home prices rise.

Staff is recommending that section 5.02.085 of the Municipal Code be amended to add a paragraph that would provide an exception for owners of single family residential rental properties who own ten or less properties and require that they only pay one business license fee, currently \$61, rather than one fee per property. As shown in the table above, this change would impact 80 property owners and would result in only charging for 80 business license fees rather than the fee being charged to each of the 256 properties that are held by those property owners. The fiscal impact of this change is discussed below.

ALTERNATIVES

1. Introduce the proposed Ordinance, an Ordinance of the City Council of Moreno Valley, California, amending section 5.02.085 of Title 5 of the City of Moreno Valley Municipal Code. This amendment provides an exception for owners of single family residential rental properties who own ten or less properties and require that they only pay one business license fee, currently \$61, rather than one fee per property.
2. Do not approve the proposed Ordinance, an Ordinance of the City Council of Moreno Valley, California, amending section 5.02.085 of Title 5 of the City of Moreno Valley Municipal Code and provide staff with additional direction.

Staff recommends Alternative 1.

FISCAL IMPACT

Enacting this Ordinance would result in a reduction in business license revenues by approximately \$10,500. Under the fee structure that currently exists, the City would charge the Business License Fee of \$61 to all 1,380 single family residential rental properties for total revenues of approximately \$84,000. Under the proposed fee structure, the business license fee would be reduced by applying the exception to 176 properties (256 properties less 80 owners=176) resulting in estimated revenues from the business license fee as related to the single family residential property holders totaling \$73,500. In order to provide some perspective on how this change would impact the revenue budget, consider that on a city-wide basis the current Business License Fee of \$61 is applied to all businesses in the Business License program (approximately 7,000 businesses) totaling approximately \$427,000 annually.

Due to the minor nature of the proposed financial impact that this action would have on revenues, we are not recommending any amendment to the FY 14-15 revenue budget at this time.

CITY COUNCIL GOALS

Revenue Diversification and Preservation: Develop a variety of revenue sources and policies to create a stable revenue base and fiscal policies to support essential City services, regardless of economic climate.

NOTIFICATION

Published Agenda

ATTACHMENTS

Attachment 1: Proposed Ordinance amending Section 5.02.085 of Title 5 of the City of Moreno Valley Municipal Code

Attachment 2: Proposed Ordinance – Redline Copy

Prepared By:
Brooke McKinney
Treasury Operations Division Manager

Department Head Approval:
Richard Teichert
Chief Financial Officer

ORDINANCE NO. 881

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF MORENO VALLEY, CALIFORNIA, AMENDING SECTION 5.02.085 OF TITLE 5 OF THE CITY OF MORENO VALLEY MUNICIPAL CODE RELATING TO THE SEPARATE COMPUTATION OF LICENSE FEE AND TAX-BRANCH ESTABLISHMENTS

The City Council of the City of Moreno Valley does ordain as follows:

SECTION 1. AMENDMENT OF SECTION 5.02.085 OF CHAPTER 2.085 OF TITLE 5 OF THE MORENO VALLEY MUNICIPAL CODE

5.02.085 Separate computation of license fee and tax—Branch establishments.

A. Where a license fee is imposed upon any business pursuant to this chapter and such business is conducted with branch establishments or at separate fixed places, the fee and tax shall be computed as if each such branch or place were a separate and independent business.

B. A separate license shall be obtained for each branch establishment or location of the business and, except as otherwise provided herein, for each separate type of business at the same location. Each license shall authorize the licensee to transact and carry on only the business licensed thereby, at the location specified in the license, and in the manner designated in such license.

C. Single Family Rental Property exemption. Single family residential property investors who utilize the property for rental purposes and have ten (10) or less individual properties will be required to pay one license fee per owner rather than a license fee for each location.

D. Warehouses and distributing plants used in connection with and incidental to a business shall not be deemed to be separate places of business or branch establishments within the meaning of this section.

E. Nothing in this section shall be construed to relieve any person who is eligible for or claims to be eligible for exemption from payment of a branch establishment business license fee from the requirement to obtain a business license. Such person shall apply to the business license officer or collector for a license in the same manner, and at the same time as is required in this chapter of all other persons applying for a business license and shall be subject to the same procedures for enforcement and for penalties as provided herein. (Ord. 504 § 2.1, 1996)

SECTION 2. EFFECT OF ENACTMENT:

Except as specifically provided herein, nothing contained in this ordinance shall be deemed to modify or supersede any prior enactment of the City Council which addresses the same subject addressed herein.

SECTION 3. NOTICE OF ADOPTION:

Within fifteen days after the date of adoption hereof, the City Clerk shall certify to the adoption of this ordinance and cause it to be posted in three public places within the City.

SECTION 4. EFFECTIVE DATE:

This ordinance shall take effect thirty days after the date of its adoption.

APPROVED AND ADOPTED this 28th day of October, 2014.

Mayor

ATTEST:

City Clerk

APPROVED AS TO FORM:

City Attorney

2
Ordinance No. 881
Date Adopted: October 28, 2014

ORDINANCE JURAT

STATE OF CALIFORNIA)

COUNTY OF RIVERSIDE) ss.

CITY OF MORENO VALLEY)

I, Jane Halstead, City Clerk of the City of Moreno Valley, California, do hereby certify that Ordinance No. 881 had its first reading on October 14, 2014 and had its second reading on October 28, 2014, and was duly and regularly adopted by the City Council of the City of Moreno Valley at a regular meeting thereof held on the 28th day of October, 2014, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

(Council Members, Mayor Pro Tem and Mayor)

CITY CLERK

(SEAL)

3
Ordinance No. 881
Date Adopted: October 28, 2014

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ORDINANCE NO. 881

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF MORENO VALLEY, CALIFORNIA, AMENDING SECTION 5.02.085 OF TITLE 5 OF THE CITY OF MORENO VALLEY MUNICIPAL CODE RELATING TO THE SEPARATE COMPUTATION OF LICENSE FEE AND TAX-BRANCH ESTABLISHMENTS

The City Council of the City of Moreno Valley does ordain as follows:

SECTION 1. AMENDMENT OF SECTION 5.02.085 OF CHAPTER 2.085 OF TITLE 5 OF THE MORENO VALLEY MUNICIPAL CODE

5.02.085 Separate computation of license fee and tax—Branch establishments.

A. Where a license fee is imposed upon any business pursuant to this chapter, and such business is conducted with branch establishments or at separate fixed places, the fee and tax shall be computed as if each such branch or place were a separate and independent business.

B. A separate license shall be obtained for each branch establishment or location of the business and, except as otherwise provided herein, for each separate type of business at the same location. Each license shall authorize the licensee to transact and carry on only the business licensed thereby, at the location specified in the license, and in the manner designated in such license.

C. Single Family Rental Property exemption. Single family residential property investors who utilize the property for rental purposes and have ten (10) or less individual properties will be required to pay one license fee per owner rather than a license fee for each location.

D. Warehouses and distributing plants used in connection with and incidental to a business shall not be deemed to be separate places of business or branch establishments within the meaning of this section.

E. Nothing in this section shall be construed to relieve any person who is eligible for or claims to be eligible for exemption from payment of a branch establishment business license fee from the requirement to obtain a business license. Such person shall apply to the business license officer or collector for a license in the same manner, and at the same time as is required in this chapter of all other persons applying for a business license and shall be subject to the same procedures for enforcement and for penalties as provided herein. (Ord. 504 § 2.1, 1996)

SECTION 2 EFFECT OF ENACTMENT:

Except as specifically provided herein, nothing contained in this ordinance shall be deemed to modify or supersede any prior enactment of the City Council which addresses the same subject addressed herein.

SECTION 3 NOTICE OF ADOPTION:

Within fifteen days after the date of adoption hereof, the City Clerk shall certify to the adoption of this ordinance and cause it to be posted in three public places within the city.

SECTION 4 EFFECTIVE DATE:

This ordinance shall take effect thirty days after the date of its adoption.

APPROVED AND ADOPTED this 28th day of October 2014.

Mayor

ATTEST:

City Clerk

APPROVED AS TO FORM:

City Attorney

ORDINANCE JURAT

STATE OF CALIFORNIA)
COUNTY OF RIVERSIDE) ss.
CITY OF MORENO VALLEY)

I, Jane Halstead, City Clerk of the City of Moreno Valley, California, do hereby certify that Ordinance No. 881 had its first reading on October 14, 2014 and had its second reading on October 28, 2014, and was duly and regularly adopted by the City Council of the City of Moreno Valley at a regular meeting thereof held on the 28th day of October, 2014, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

(Council Members, Mayor Pro Tem and Mayor)

CITY CLERK

(SEAL)

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APPROVALS	
BUDGET OFFICER	<i>me</i>
CITY ATTORNEY	<i>SMB</i>
CITY MANAGER	<i>d</i>

Report to City Council

TO: Mayor and City Council

FROM: Ahmad R. Ansari, P.E., Public Works Director/City Engineer

AGENDA DATE: October 14, 2014

TITLE: INTRODUCE ORDINANCE NO. 884 REPEALING ORDINANCE NO. 25 AND ADDING CHAPTER 12.44 TO THE CITY OF MORENO VALLEY MUNICIPAL CODE PROHIBITING VEHICLES FOR SALE ON CERTAIN STREETS

RECOMMENDED ACTION

Recommendations: That the City Council:

1. Introduce Ordinance No. 884. An Ordinance of the City Council of the City of Moreno Valley, California, Repealing Ordinance No. 25 and Amending the City of Moreno Valley Municipal Code by Adding Chapter 12.44 "PARKING RESTRICTIONS ON VEHICLES DISPLAYING FOR SALE SIGNS WHILE PARKED ON PUBLIC STREETS."

SUMMARY

This report recommends introduction of an Ordinance to prohibit vehicles for sale on certain streets within the City of Moreno Valley. As detailed in this report, the proposed Ordinance would prohibit parking vehicles for sale on public streets with an arterial designation or higher and/or any public streets that have posted speed limits of 35 mph or greater. To further address safety concerns regarding impeding corner sight distance, this prohibition will also include the 100-foot portion of any public streets that are adjacent to and intersect with any of the restricted roadways.

DISCUSSION

Vehicles for sale on City streets have presented a longstanding issue within the community. Many residents, business owners, elected officials, and staff have voiced

their concerns regarding safety and the negative impacts this activity has on businesses and residential neighborhoods.

The majority of vehicles for sale are parked by sellers along major arterials with high traffic volumes to maximize exposure to potential buyers. The majority of vehicles for sale are parked by sellers along major arterials with high traffic volumes to maximize exposure to potential buyers. They present variety of safety concerns that include the following:

1. Obstruction of traffic flow caused by motorists that might slow down or stop to view or examine the vehicles for sale.
2. Impeding corner sight distance with vehicles that may be parked at or near driveways or intersections.
3. Illegal pedestrian activity such as mid-block crossing or jaywalking.
4. Safety hazards associated with pedestrian movement around vehicles parked for display and sales.

With the cars for sale occurring on a daily basis, but often at random locations city-wide, it is problematic to attribute each and every incident directly associated with the activity. However, in comparing collision rates from the known sale sites to other areas of similar roadway characteristics, it is evident that the vehicles for sale contribute to a higher number of collisions and diminished traffic safety as shown in the table below:

Impacted Location	Collision Rate of Impacted Location*	Similar Facilities**	Collision Rate of Similar Facilities	Comparison to Similar Facilities
Perris Blvd at Suburban Ln	1.92	Perris Blvd at Red Maple Ln	0.96	Higher by 100%
Perris Blvd at Delphinium Ave	1.91	Perris Blvd at Gentian Ave	0.95	Higher by 100%
Perris Blvd at Elder Ave	2.50	Perris Blvd at Webster Ave	1.25	Higher by 100%
Perris Blvd at Dracaea Ave	1.69	Perris Blvd at Fir Ave	1.26	Higher by 34%
Alessandro Blvd at Covey Quail Ln	1.83	Alessandro Blvd at Ramsdell Dr	0.73	Higher by 150%
Alessandro Blvd between Perris Blvd and Indian St	3.81	Alessandro Blvd between Heacock St and Indian St	2.19	Higher by 74%
Frederick St at Dracaea Ave	2.53	Frederick St at Bay Ave	0.64	Higher by 295%
Frederick St at Towngate Blvd	3.21	Frederick St at Centerpointe Dr	2.75	Higher by 17%
Heacock St at Cottonwood Ave	0.59	Heacock St at Bay Ave	0.59	Same

*Collision rates are calculated based on the total number of collisions (mid-block+intersection related) in 2012, traffic volume of the subject locations, and length of the subject locations.

** Similar facilities are chosen because of their shared characteristics with the impacted locations, including but not limited to: street classification, speed limit, volume, intersection configuration (T-intersection, 4-way), intersection

control (signalized, non-signalized), surrounding land-use, terrain, length, etc.)

To address these safety concerns, Public Works has implemented parking restrictions along streets where vehicles are often displayed for sale. Although these measures are effective at reducing the vehicles for sale at specific locations, it is not uncommon for sellers to move the vehicles onto an adjacent roadway in the same general area. This presents a continual effort necessary to address the problem. With many other higher priority issues and limited resources, a more comprehensive effort is required.

On July 23, 1985, the City Council of the City of Moreno Valley adopted Ordinance 25, which provides that "No person shall park or place any vehicle upon any public street or public property for the purpose of selling such vehicle or displaying such vehicle for sale, or offering such vehicle for sale." However, Ordinance 25 was never codified in the Moreno Valley Municipal Code and there is no evidence that Ordinance 25 has been repealed. Further, Ordinance 25 does not refer to or identify any state law authorizing its enactment. In addition, Ordinance 25 does not set forth any evidence relied upon or findings made by the City Council in its adoption.

Therefore, staff recommends that the City Council repeal Ordinance 25 and introduce a new Ordinance pursuant to California Vehicle Code (CVC) Section 22651.9 to prohibit the parking of vehicles for sale on designated public streets. CVC Section 22651.9 authorizes the City to enact parking restriction ordinances and allows City staff to remove vehicles for sale on public streets if all of the following conditions are met:

1. The vehicle is displaying a placard or sign with intent of selling the vehicle.
2. Within the last 30 days, the vehicle is known to have been issued a notice of parking violation, under local ordinance, which was accompanied by a notice containing all of the following:
 - (A) A warning that an additional parking violation may result in the impoundment of the vehicle.
 - (B) The vehicle may be impounded, even if moved to another street, as long as the signs or placards offering the vehicle for sale remain on the vehicle.
 - (C) The listing of the streets subject to the adopted Ordinance.
3. The notice of parking violation was issued at least 24 hours prior to the removal of the vehicle.
4. The City has adopted an Ordinance authorizing the removal of vehicles from the street on which the vehicle is located.

In recognition that Moreno Valley residents should not be precluded from parking their own vehicles for sale on low-volume residential local streets, staff recommends that the Ordinance only prohibit vehicles for sale on public streets with an arterial designation or higher and/or any public streets that have posted speed limits of 35 mph or greater. However, to address safety concerns regarding impeding corner sight distance, this prohibition will also include the 100-foot portion of any public streets that are adjacent to and intersect with any of the restricted roadways.

This item was presented to the Traffic Safety Commission (TSC) at its regular monthly meeting on August 6th, 2014. The TSC unanimously approved introducing an Ordinance that will prohibit vehicles for sale on certain public streets in accordance with all applicable California Vehicle Code regulations and provisions.

ALTERNATIVES

1. Introduce the proposed Ordinance, repealing Ordinance No. 25 and amending the City of Moreno Valley Municipal Code by adding Chapter 12.44 "PARKING RESTRICTIONS ON VEHICLES DISPLAYING FOR SALE SIGNS WHILE PARKED ON PUBLIC STREETS". *This action will improve traffic safety by restricting the parking of vehicles for sale on certain streets throughout the City.*
2. Do not introduce proposed Ordinance, repealing Ordinance No. 25 and amending the City of Moreno Valley Municipal Code by adding Chapter 12.44 "PARKING RESTRICTIONS ON VEHICLES DISPLAYING FOR SALE SIGNS WHILE PARKED ON PUBLIC STREETS". *This action will continue to allow the parking of vehicles for sale on public streets throughout the City.*

FISCAL IMPACT

There is no anticipated fiscal impact with the introduction of the proposed Ordinance.

CITY COUNCIL GOALS

PUBLIC SAFETY: Provide a safe and secure environment for people and property in the community, control the number and severity of fire and hazardous material incidents, and provide protection for citizens who live, work and visit the City of Moreno Valley.

POSITIVE ENVIRONMENT: Create a positive environment for the development of Moreno Valley's future.

NOTIFICATION

Publication of Agenda

ATTACHMENTS

Attachment 1 - Proposed Ordinance
Attachment 2 - Existing Ordinance No. 25

Prepared By:
Vincent L. Tran, P.E.
Associate Engineer

Concurred By:
Eric Lewis, P.E., T.E.
City Traffic Engineer

Department Head Approval:
Ahmad R. Ansari, P.E.
Public Works Director/City Engineer

Concurred By:
Joel Ontiveros
Chief of Police

ORDINANCE NO. 884

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF MORENO VALLEY, CALIFORNIA, REPEALING ORDINANCE 25 AND AMENDING THE CITY OF MORENO VALLEY MUNICIPAL CODE BY ADDING CHAPTER 12.44 "PARKING RESTRICTIONS ON VEHICLES DISPLAYING FOR SALE SIGNS WHILE PARKED ON PUBLIC STREETS."

WHEREAS, the City of Moreno Valley has experienced a proliferation of used vehicles parked on public streets for the purpose of advertising or displaying the vehicle for sale, resulting in a negative impact on the City, its residents, and businesses; and

WHEREAS, California Courts have ruled that a city or county may reasonably regulate the time, place, and manner in which its public streets are used for the sale of vehicles; and

WHEREAS, the California Legislature enacted Section 22651.9 of the California Vehicle Code authorizing cities and counties to remove and impound vehicles advertised or displayed for sale on designated streets or public lands; and

WHEREAS, the City Council finds and determines that the restrictions imposed by this ordinance upon the parking of vehicles upon the designated streets for the purpose of advertising or displaying that vehicle for sale are necessary to protect the general health, safety, and welfare of the community; and

WHEREAS, the unrestricted parking of vehicles for such commercial purposes upon designated high-traffic or high-speed streets causes passing motorists to slow down or stop to obtain information from the signage on the parked vehicles, causes motorists to illegally park next to such vehicles and get out of their vehicles thereby blocking traffic, and encourages jaywalking across streets by prospective buyers to examine the vehicles advertised or displayed for sale, thereby creating dangerous traffic conditions for other motorists and pedestrians; and

WHEREAS, although California Vehicle Code Section 22651.9 authorizes cities and counties to remove and impound vehicles parked for the purpose of advertising or displaying that vehicle for sale on all city or county streets, the purpose of this ordinance is to narrowly restrict the parking of vehicles for sale by prohibiting them only on public streets with an arterial designation or higher and/or any public streets that have posted speed limits of 35 mph or greater, as designated in Chapter 12.44 of the Moreno Valley Municipal Code.

THEREFORE, the City Council of the City of Moreno Valley does ordain as follows:

SECTION 1. REPEAL OF ORDINANCE 25:

1.1 The City Council of the City of Moreno Valley previously adopted Ordinance 25, which provides that "No person shall park or place any vehicle upon any public street or public property for the purpose of selling such vehicle or displaying such vehicle for sale, or offering such vehicle for sale." However, Ordinance 25 was never codified in the Moreno Valley Municipal Code and Ordinance 25 does not refer to or identify any state law authorizing its enactment. Therefore, Ordinance 25 is hereby repeal in its entirety.

SECTION 2. MUNICIPAL CODE AMENDED:

2.1 The list of Chapters prefacing Chapter 12 of the City of Moreno Valley Municipal Code is hereby amended by adding thereto "Chapter 12.44 Parking Restrictions On Vehicles Displaying For Sale Signs While Parked On Public Streets."

2.2 Title 12 of the City of Moreno Valley Municipal Code is hereby further amended by adding thereto a new Chapter 12.44 reading as follows:

"Chapter 12.44

Parking Restrictions On Vehicles Displaying For Sale Signs While Parked On Public Streets

Sections:

- 12.44.010 Findings.**
- 12.44.020 Authority.**
- 12.44.030 Definitions.**
- 12.44.040 Parking For On-Street Sales Prohibited.**
- 12.44.050 Notice Of Parking Violation/Authorization For Removal Of Vehicle.**
- 12.44.060 Post Removal Hearing Required For Removed Vehicles.**

12.44.010 Findings.

The City Council of the City of Moreno Valley finds as follows:

A. Persons and businesses are using City streets as de facto used car lots to sell used vehicles.

B. The act of selling a car on public streets invites prospective buyers into the roadway to examine the vehicle. It is well known that prospective buyers examine the condition of vehicles for sale and look for evidence of damage or repairs. When done in the public roadway, this poses an obvious risk to public and traffic safety that the City wishes to avoid. These risks are most severe on and near streets and roadways that are heavily trafficked or on which vehicles move at a high rate of speed.

C. The parking of vehicles for sale on City streets creates a distraction for drivers and pedestrians, thereby creating a public safety hazard. Because

drivers may attempt to not only read a for sale sign in or on a vehicle but also commit to memory, write down, or call a telephone number on such a sign, these signs pose a greater risk of accidents than do other types of signs that may be displayed in or on a parked vehicle.

D. The significant increase in vehicles parked for the purpose of sale has created a nuisance by decreasing the parking available for local residents and businesses.

E. The City has an important and substantial public interest in protecting public safety, reducing collisions, removing impediments to the orderly flow of traffic such as illegal and hazardous parking.

12.44.020 Authority.

This Chapter is adopted pursuant to the authority granted to the City of Moreno Valley by Article XI, Section 7 of the Constitution of the State of California and Section 22651.9 of the California Vehicle Code, which permits the removal of vehicles, under certain conditions, for being illegally parked for purposes of advertising the vehicle for sale. Section 22852 of the California Vehicle Code requires that a hearing take place after the removal of any vehicle under Section 22651.9 of the California Vehicle Code.

12.44.030 Definitions.

A. "City" means the City of Moreno Valley, California.

B. "Officer" means and refers to any peace officer as set forth by Section 830 of the California Penal Code, or employee of the City of Moreno Valley who is engaged in directing traffic or enforcing parking laws and regulations.

C. "Park" or "parking" means and refers to the standing of a vehicle as set forth by Section 463 of the California Vehicle Code.

D. "Arterial or higher" means any street classified from "Arterial" to "Freeway," inclusive by the Circulation Plan or Circulation Element of City of Moreno Valley General Plan-Circulation Element, as from time to time amended and re-adopted.

E. "Street" or "roadway" means any street, road, alley or highway accepted into the City maintained system.

F. "Vehicle" means and refers to any device as set forth by Section 670 of the California Vehicle Code, which is defined as "a device by which any person or property may be propelled, moved, or drawn upon a highway, excepting a device moved exclusively by human power or used exclusively upon stationary rails or tracks."

12.44.040 Parking For On-Street Sales Prohibited.

A. It is unlawful for any person to park any vehicle on any street that is designated as an arterial or higher by the City of Moreno Valley General Plan-

Circulation Element, as from time to time amended and re-adopted, and/or any streets that have posted speed limits of 35 mph or greater, as shown in the table below, when it appears because of a sign or placard on the vehicle that the primary purpose of parking the vehicle at that location is to advertise to the public the private sale of that vehicle.

Street	Limits
Alessandro Boulevard	Old 215 Frontage Road to Gilman Springs Road
Bay Avenue	Ramsdell Drive to Lasselle Street
Box Springs Road	Morton Road to Day Street
Brodiaea Avenue	Frederick Street to Lasselle Street
Cactus Avenue	Old 215 Frontage Road to terminus east of Redlands Boulevard
Calle San Juan De Los Lagos	Veterans Way to Frederick Street
Camino Flores	Iris Avenue to Avenida De Portugal
Campus Parkway	Day Street to Towngate Circle
Cottonwood Avenue	Old 215 Frontage Road to Redlands Boulevard
Day Street	Old 215 Frontage Road to Ironwood Avenue
Dracaea Avenue	Elsworth Street to Morrison Street; Gershwin Way to Redlands Boulevard
Elder Avenue	Terminus west of Perris Boulevard to Nason Street
Elsworth Street	Cactus Avenue to Eucalyptus Avenue
Eucalyptus Avenue	Towngate Boulevard to Moreno Beach Drive
Frederick Street	Cactus Avenue to Sunnymead Boulevard
Gentian Avenue	Heacock Street to Indian Street; Kitching Street to Lasselle Street
Goldencrest Drive	Commerce Center Drive to Veterans Way
Gilman Springs Road	Eucalyptus Avenue to south city limit
Graham Street	Cactus Avenue to Sunnymead Boulevard
Heacock Street	South city limit to Perris Boulevard
Hemlock Avenue	Pigeon Pass Road to Heacock Street

Hidden Springs Drive	Pigeon Pass Road to Old Lake Drive
Highland Boulevard	Ironwood Avenue to Redlands Boulevard
Indian Street	South city limit to Manzanita Avenue
Iris Avenue	Heacock Street to Via Del Lago
Ironwood Avenue	Day Street to Theodore Street
John F. Kennedy Drive	Heacock Street to Lasselle Street; Oliver Street to Cactus Avenue
Kitching Street	Plumeria Lane to Sunnymead Boulevard
Krameria Avenue	Perris Boulevard to Cahuilla Drive
Lasselle Street	South city limit to Eucalyptus Avenue; Ironwood Avenue to Boulder Ridge Drive
Locust Avenue	Moreno Beach Drive to Redlands Boulevard
Manzanita Avenue	Heacock Street to Perris Boulevard
Moreno Beach Drive	Via Del Lago to Locust Avenue
Morrison Street	Alessandro Boulevard to Eucalyptus Avenue
Morton Road	Box Springs Road to Penunuri Way
Nandina Avenue	Heacock Street to Perris Boulevard
Nason Street	Iris Avenue to Ironwood Avenue
Old 215 Frontage Road	Cactus Avenue to Eucalyptus Avenue
Old Lake Drive	Pigeon Pass Road to Sunnymead Ranch Parkway
Oliver Street	Iris Avenue to Cottonwood Avenue
Perris Boulevard	South city limit to Reche Vista Drive
Pigeon Pass Road	Sunnymead Boulevard to north city limit
Presidio Hills Drive	Pigeon Pass Road to Espada Creek Road
Reche Vista Drive	Heacock Street to north city limit
Redlands Boulevard	Cactus Avenue to north city limit
San Michele Road	Heacock Street to Perris Boulevard

Sunnymead Boulevard	Frederick Street to Kitching Street
Sunnymead Ranch Parkway	Pigeon Pass Road to Perris Boulevard
Towngate Boulevard	Eucalyptus Avenue to Frederick Street
Theodore Street	Alessandro Boulevard to Ironwood Avenue
Veterans Way	Cactus Avenue to Alessandro Boulevard
Via Del Lago	Iris Avenue to South city limit

B. It is unlawful for any person to park any vehicle on any street intersecting with or entering into a street that is designated as an arterial or higher by the City of Moreno Valley General Plan-Circulation Element, as from time to time amended and re-adopted, and/or any streets that have posted speed limits of 35 mph or greater, within one hundred (100) feet of any such intersection or entry when it appears because of a sign or placard on the vehicle that the primary purpose of parking the vehicle at that location is to advertise to the public the private sale of that vehicle.

C. A person shall be deemed guilty of a separate offense for each and every day or portion thereof during which any violation is committed, continued or permitted.

12.44.050 Notice of Parking Violation/Authorization For Removal Of Vehicle.

Any vehicle found to be in violation of this Chapter shall be issued a notice of parking violation. Pursuant to Section 22651.9 of the California Vehicle Code, any officer may issue the notice of parking violation and is hereby authorized to remove the vehicle when it is found upon any prohibited street if all of the following requirements are satisfied:

A. Because of a sign or placard on the vehicle, it appears that the primary purpose of parking the vehicle at that location is to advertise to the public the private sale of that vehicle; and

B. Within the past 30 days, the vehicle is known to have been previously issued a notice of parking violation pursuant to Section 12.44.040, which was accompanied by a notice containing all of the following:

1. A warning that an additional parking violation may result in the impoundment of the vehicle;
2. A warning that the vehicle may be impounded pursuant to this Section, even if moved to another street, so long as the signs or placards offering the vehicle for sale remain on the vehicle; and
3. A listing of the streets and portions of streets that are subject to Section 12.44.040; and

C. The notice of parking violation was issued at least 24 hours prior to the removal of the vehicle.

D. A notice of parking violation shall be posted directly on the vehicle and may take any of the following forms:

1. A letter or written notice;
2. An administrative citation; or
3. A parking citation.

12.44.060 Post Removal Hearing Required For Removed Vehicles.

A post-storage hearing pursuant to Section 22852 of the California Vehicle Code applies with respect to the removal of any vehicle pursuant to this Section and is incorporated by reference as if set forth in full herein and provides, in summary, that whenever an authorized member of a public agency directs the storage of a vehicle, the City shall provide the vehicle's registered and legal owner(s) of record, or their agent(s), with the opportunity for a post-storage hearing to determine the validity of the storage. Notice of the storage shall be mailed or personally delivered to the registered and legal owner(s) within 48 hours, excluding weekends and holidays, as specifically provided for under California Vehicle Code Section 22852. The notice shall include the name, address and telephone number of the agency providing the notice; the location of the place of storage; a description of the vehicle (including the make, model, license number and mileage if possible); the authority and purpose for the removal of the vehicle; and a statement that in order to receive a post-storage hearing, the owner(s) of record, or their agent(s), must request a hearing in person, in writing, or by telephone within 10 days of the date appearing on the notice, excluding weekends and holidays. The notice must also state that failure of the registered or legal owner(s) to request or attend a post-storage hearing shall satisfy the post-storage hearing requirement. The City may authorize its own officer or employee or contracted employee to conduct the hearing within 48 hours of such hearing request, excluding weekends and holidays, as long as the hearing officer is not the same person who directed the storage of the vehicle."

SECTION 2. EFFECT OF ENACTMENT:

Except as specifically provided herein, nothing contained in this ordinance shall be deemed to modify or supersede any prior enactment of the City Council which addresses the same subject addressed herein.

SECTION 3. NOTICE OF ADOPTION:

Within fifteen days after the date of adoption hereof, the City Clerk shall certify to the adoption of this ordinance and cause it to be posted in three public places within the city.

SECTION 4. EFFECTIVE DATE:

This ordinance shall take effect thirty days after the date of its adoption.

APPROVED AND ADOPTED this 28th day of October, 2014.

Mayor

ATTEST:

City Clerk

APPROVED AS TO FORM:

City Attorney

ORDINANCE JURAT

STATE OF CALIFORNIA)
COUNTY OF RIVERSIDE) ss.
CITY OF MORENO VALLEY)

I, Jane Halstead, City Clerk of the City of Moreno Valley, California, do hereby certify that Ordinance No. 884 had its first reading on October 14, 2014 and had its second reading on October 28, 2014, and was duly and regularly adopted by the City Council of the City of Moreno Valley at a regular meeting thereof held on the 28th day of October, 2014, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

(Council Members, Mayor Pro Tem and Mayor)

CITY CLERK

(SEAL)

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ORDINANCE NO. 25

AN ORDINANCE OF THE CITY OF MORENO VALLEY,
STATE OF CALIFORNIA, PROHIBITING THE PARKING
OF VEHICLES ON PUBLIC STREETS AND PROPERTY
FOR SPECIFIED PURPOSES; MAKING THE VIOLATION
OF SUCH PROHIBITION AN INFRACTION; AND
PROVIDING A PENALTY FOR SUCH VIOLATION.

The City Council of the City of Moreno Valley does ordain
as follows:

SECTION 1. Definitions:

Unless otherwise required by the context, the following
words, when used with initial capitalization, shall have the
meaning ascribed to them by this Section:

- 1.1 City - the City of Moreno Valley.
- 1.2 Person - a natural person, a partnership, a corporation,
or any other entity.
- 1.3 Public Property - any real property owned or controlled
by the City or by the Moreno Valley Community Services District.
- 1.4 Public Street - any public street, highway, or street
right of way within the boundaries of the City.
- 1.5 Registered Owner - the Person who is the registered
owner, as defined in Section 505 of the Vehicle Code, of a
Vehicle at the time when such Vehicle has been parked, displayed
for sale, or offered for sale in violation of this Ordinance.
- 1.6 Structure - any thing other than a Vehicle which is
built or constructed or composed of parts joined together in some
definite manner, including without limitation, a boat, boat trailer,
semi-trailer, house trailer, or platform.
- 1.7 Vehicle - a vehicle as defined in Section 670 of the
Vehicle Code, as the same now reads or may hereafter be amended.

1.7 Vehicle Code - the Vehicle Code of the State of California.

SECTION 2. Prohibitions:

2.1 No Person shall park or place any Vehicle upon any Public Street or Public Property for the purpose of selling such Vehicle or displaying such Vehicle for sale, or offering such Vehicle for sale.

2.2 No Person shall park or place any Vehicle or place any Structure upon any Public Street or Public Property for the purpose of selling therefrom any article or thing, including without limitation that or any other Vehicle or Structure, and no Person shall sell, display for sale, or offer for sale any such article or thing either from or in any such Vehicle or Structure so parked.

SECTION 3. Exceptions:

3.1 Section 2 of this Ordinance shall not be deemed to prohibit a Person from taking orders for or from delivering any article or thing from a Vehicle which is parked on a Public Street adjacent to the premises of a Person who has ordered or who wishes to buy such article or thing.

3.2 Section 2 of this Ordinance shall not be deemed to prohibit any Person from temporarily parking a Vehicle upon a Public Street or upon Public Property while actually engaged in selling an article or thing, other than a Vehicle, to another Person.

SECTION 4. State Highways:

4.1 Whenever this Ordinance regulates the use of a

Public Street which is also designated as a highway of the State of California and such regulation requires the prior approval of the Department of Transportation of the State of California, such regulation shall not be effective in respect to such highway without such prior approval having been obtained.

4.2 Whenever the Department of Transportation of the State of California has granted permission to regulate a state highway, as provided in Section 4.1 of this Ordinance, and thereafter withdraws such permission, then in respect to such highway only, this Ordinance shall cease to be operative six months after receipt by the City of written notice that such permission has been withdrawn.

SECTION 5. Penalty for Violation:

5.1 Any person who violates any provisions of this Ordinance shall be guilty of an infraction and, upon conviction thereof, shall be subject to the fine established for that class of offenses by the Vehicle Code of the State of California.

5.2 In the event a Vehicle or Structure remains parked or left standing on any Public Street or Public Property for six hours or more after the issuance of a citation for violation of this Ordinance in respect to such parking or standing, any person so authorized by the City Manager or by the Chief of Police of the City or by the person acting ex officio as the Chief of Police of the City, may remove such vehicle or structure from the Public Street or Public Property in the manner provided by and, as appropriate, subject to the requirements of the California Vehicle Code.

SECTION 6. Proof of Violation:

6.1 The parking or placing of any Vehicle or Structure upon a Public Street or Public Property with a sign or other advertising device thereon or in proximity thereto, indicating that such Vehicle, or any article or thing within such Vehicle or Structure is for sale, shall constitute prima facie evidence that such Vehicle or Structure was parked or placed at such place for the purpose of selling, displaying for sale, or offering for sale such Vehicle, article or thing.

6.2 In any prosecution of a Registered Owner for violation of this Ordinance, proof that the particular Vehicle described in the complaint was parked or placed in violation of this Ordinance, together with proof that the named defendant was the Registered Owner at the time of the alleged violation, shall constitute prima facie evidence that the Registered Owner was the Person who parked or placed the Vehicle at the site of the violation and for the time of the violation.

SECTION 7. No effect on Existing Regulation:

Except as otherwise specifically provided in this Ordinance, no prior resolution or ordinance regulating the subject matter hereof shall be deemed repealed or modified hereby.

SECTION 8. Severability:

It is the intention of the City Council in adopting this Ordinance that each provision, section, sentence, clause and phrase shall be given effect and enforced to the extent legally possible without regard to whether any other provision, section, sentence, clause or phrase is found to be invalid or unenforceable.

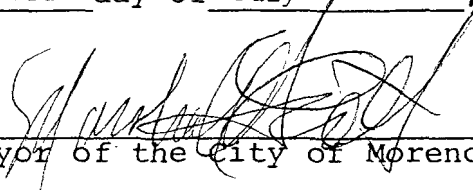
SECTION 9. Posting:

The City Clerk shall certify to the adoption of this resolution and, as so certified, shall post copies hereof in three public places within the City of Moreno Valley as heretofore established by resolution of the City Council.

SECTION 10. Effective Date:

This Ordinance shall become effective thirty (30) days after the date of its adoption.

ADOPTED by the City Council and signed by the Mayor and attested by the City Clerk this 23rd day of July, 1985.



Mayor of the City of Moreno Valley

ATTEST:



City Clerk of the City of Moreno Valley

APPROVED AS TO FORM:

APPROVED AS TO CONTENT:

City Attorney

City Manager

I, Pamela L. Lee, Deputy, City Clerk of the City of Moreno Valley, California, hereby certify that the foregoing ordinance was duly and regularly introduced at a meeting of the City Council on the 9th day of July, 1985, and that thereafter the said ordinance was duly and regularly adopted at a meeting of the City Council on the 23rd day of July, 1985, by the following vote, to wit:

Ayes: Councilmembers Horspool, Nieburger, Webb and Mayor Scott

Noes:

Absent: Councilmember Lynn

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the City of Moreno Valley, California, this 25th day of July, 1985.

(SEAL)



City Clerk of the City of Moreno Valley



APPROVALS	
BUDGET OFFICER	<i>me</i>
CITY ATTORNEY	<i>SMB</i>
CITY MANAGER	<i>d</i>

Report to City Council

TO: Mayor and City Council

FROM: Thomas M. DeSantis, Assistant City Manager

AGENDA DATE: October 14, 2014

TITLE: ORDINANCE NO. 885. AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF MORENO VALLEY, CALIFORNIA, ADDING CHAPTER 11.11 TO TITLE 11 OF THE CITY OF MORENO VALLEY MUNICIPAL CODE PROHIBITING THE POSSESSION, STORAGE, SALE OR DISTRIBUTION OF INTOXICATING CHEMICAL COMPOUNDS KNOWN AS SYNTHETIC DRUGS

RECOMMENDED ACTION

Recommendations: That the City Council:

1. Introduce Ordinance No. 885. An Ordinance of the City Council of the City of Moreno Valley, California, Adding Chapter 11.11 to Title 11 of the City of Moreno Valley Municipal Code Prohibiting the Possession, Storage, Sale or Distribution of Intoxicating Chemical Compounds Known as Synthetic Drugs.

SUMMARY

Presented at the direction of the City Council's Public Safety Committee, the proposed Ordinance is intended to close the statutory "loopholes" which frustrate attempts by law enforcement agencies and cities to curtail the proliferation of synthetic drugs. This Ordinance prohibits the sale or any other distribution of certain synthetic drugs often deceptively marketed as "bath salts" and/or "incense." These synthetic drugs are ingested to produce intoxicating and/or hallucinogenic effects. The National Institute on Drug Abuse has shown the effects of synthetic drugs to include hallucinations, agitation, psychosis, aggression, suicidal and homicidal ideations, and death.

DISCUSSION

Despite the extreme dangers associated with their use, synthetic drugs continue to gain popularity at an alarming rate, particularly among high school students and young adults. Various forms of synthetic drugs are widely available in stores despite prohibitions imposed under California Health and Safety Code 11375.5 and the Federal Controlled Substance Act ("CSA") (21 U.S.C. Section 81, et seq.). While Section 11375.5 and the Controlled Substance Act prohibit specific compounds used to create synthetic drugs such as "bath salts," they are not sufficiently comprehensive to completely eliminate the distribution and sale of all synthetic drugs. By slightly altering ingredients, makers of synthetic drugs can skirt statutory prohibitions which rely upon a list of specifically banned substances.

The makers of synthetic drugs have also begun marketing the drugs with advertisements stating that the products do not contain compounds specifically banned by Section 11375.5. Marketing of synthetic drugs often disguises these illicit compounds as glass cleaner, bath salts, spice, incense, potpourri, cleaning products and plant food. These products, when manufactured using synthetic drugs, are typically sold at a price five to ten times the normal price of legitimate products which perform the advertised function. They are also sold in businesses such as liquor stores, smoke shops and gas stations, all of which are not the type of retail outlets where legitimate versions of these items would normally be sold.

The flaws in existing State and Federal legislation leave communities vulnerable to the insidious effects of this rapidly emerging menace to the safety and well-being of our residents. The City Council's Public Safety Committee feels strongly that Moreno Valley must join the growing number of cities which have taken the lead in making their neighborhoods safer by outlawing synthetic drugs of all types and forms.

The proposed ordinance would prevent any individual or business from possessing, selling, storing and/or marketing synthetic drugs in the City of Moreno Valley. Because the chemical composition of synthetic drugs is constantly evolving, this Ordinance does not rely upon an all-inclusive list of compounds or monikers. This Ordinance precludes sale of synthetic drugs by those who would brazenly seek to circumvent state and federal law through the enforcement of the City's administrative, criminal, and civil enforcement procedures. Because this local measure supplements existing statutory prohibitions, it does not apply to any activity already regulated by Health and Safety Code Section 11375.5, the CSA, or any other applicable state or federal law or regulation.

The proposed Ordinance provides for Civil Remedies in addition to penalties. Any person, including the city of Moreno Valley, who prevails in any action or proceeding for the abatement of a public nuisance as addressed in the Ordinance shall be entitled to recover attorneys' fees incurred in any such action or proceeding.

FISCAL IMPACT

There are no fiscal impacts projected with the approval of this ordinance.

CITY COUNCIL GOALS

Public Safety: Provide a safe and secure environment for people and property in the community, control the number and severity of fire and hazardous material incidents, and provide protection for citizens who live, work and visit the City of Moreno Valley.

Positive Environment: Create a positive environment for the development of Moreno Valley's future.

ATTACHMENTS

1. Proposed Ordinance

Prepared By:
Felicia London
Management Analyst

Department Head Approval:
Thomas M. DeSantis
Assistant City Manager

Concurred By:
Suzanne Bryant
City Attorney

Concurred By:
Joel Ontiveros
Police Chief

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ORDINANCE NO. 885

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF MORENO VALLEY, CALIFORNIA, ADDING CHAPTER 11.11 TO TITLE 11 OF THE CITY OF MORENO VALLEY MUNICIPAL CODE PROHIBITING THE POSSESSION, STORAGE, SALE OR DISTRIBUTION OF INTOXICATING CHEMICAL COMPOUNDS KNOWN AS SYNTHETIC DRUGS

The City Council of the City of Moreno Valley does ordain as follows:

SECTION 1.

Title 11 of the Moreno Valley Municipal Code is hereby amended by adding thereto a new Chapter 11.11 reading as follows:

CHAPTER 11.11

PSYCHOACTIVE BATH SALTS, PSYCHOACTIVE HERBAL INCENSE,
AND OTHER SYNTHETIC DRUGS

11.11.010 – Purpose and Findings

Recreational use of psychoactive bath salts, psychoactive herbal incense, and similar products commonly known as "synthetic drugs" has been documented to cause hallucinations, agitation, psychosis, aggression, suicidal and homicidal ideations and death. While state and federal laws and regulations prohibit some synthetic drugs, the makers of these drugs continually alter the composition of the compounds in their products so as to escape the scope of these laws and regulations. The purpose and intent of this chapter is to provide the city with measures to address the dangers to the community posed by synthetic drugs that are not regulated by state or federal law.

Synthetic drugs are extremely dangerous and are gaining popularity at an alarming rate among high school and college-aged individuals, as well as among parolees and probationers. These drugs are available in stores, despite the state of California's attempt to ban such drugs under Health and Safety Code Section 11375.5 ("Section 11375.5") and the federal government's attempt to ban such drugs under the Controlled Substances Act (the "CSA") (21 U.S.C. Section 81, et seq.). The city council further finds that the dangers of synthetic drugs, which have been documented to cause hallucinations, agitation, psychosis, aggression, suicidal and homicidal ideations, cannibalism, and death, require regulation.

While Section 11375.5 and the CSA prohibit certain compounds that are used to create synthetic drugs, they are not sufficiently comprehensive to eliminate the distribution and sale of all synthetic drugs in the city. Specifically, the council finds that the makers of synthetic drugs continually alter the composition of the compounds in their products to evade the prohibition of Section 11375.5, the CSA and other laws and regulations that attempt to prohibit the sale of synthetic drugs. In fact, products which are being marketed for use as synthetic drugs are packaged with advertisements stating that the product does not contain the compounds specifically banned by Section 11375.5. Thus, the city council finds that this chapter is necessary to implement effective measures to prohibit the distribution and sale of synthetic drugs.

An effective way to prevent and abate the health, safety, and welfare concerns that exist as a result of the marketing, distribution, and sale of synthetic drugs in manners that brazenly seek to circumvent state and federal law is through the enforcement of the city's administrative, criminal, and civil enforcement procedures. This chapter shall not apply to any activity already regulated by Health and Safety Code Section 11375.5, the CSA, or any other applicable state or federal law or regulation.

11.11.020 - Definitions

The following terms and phrases, whenever used in this chapter, shall be construed as defined in this section:

“Business” means and includes professions, trades, occupations, and all and every kind of calling, whether or not conducted for profit.

“Consume” “Consuming” or “Consumption” means to ingest, inhale, inject, smoke or snort (insufflate).

“Distribute” “Distributing” or “Distribution” means to furnish, give away, exchange, transfer, deliver or supply, whether for monetary gain or not.

“Person” means any natural person, business, firm, company, corporation, public corporation, club, trust, partnership, association or similar organization.

“Possess” “Possessing” or “Possession” means to have for consumption, distribution or sale in one's actual or constructive custody or control, or under one's authority or power, whether such custody, control, authority or power be exercised solely or jointly with others.

“Provide” “Providing” or “Provision” means offering to distribute or sell a product or substance to any person.

“Psychoactive bath salts” means any crystalline or powder product that contains a synthetic chemical compound that, when consumed, elicits psychoactive or psychotropic stimulant effects. The term "psychoactive bath salts" includes without limitation:

(1) Products that elicit psychoactive or psychotropic stimulant effects and contain any of the following intoxicating chemical compounds:

(A) Cathinone (2-amino-1-phenyl-1-propanone), 4- methylmethcathinone (2-methylamino-1-(4-methylphenyl)propan-1-one), 4-methoxymethcathinone (1-(4-methoxyphenyl)-2-(methylamino)propan-1-one), MDPV (methylenedioxypropylone), MDMA (3, 4- methylenedioxy-N-methylamphetamine), methylene (3,4-methylenedioxy- N-methylcathinone), methcathinone (2-(methylamino)-1-phenyl-propan-1-one), flephedrone (4-fluoromethcathinone), 3-FMC (3-fluoromethcathinone), ethcathinone (2-ethylamino-1-phenyl-propan-1-one), butylone (13-keto-N-methylbenzodioxolylbutanamine), a-PPP (a-pyrrolidinopropiophenone), MPPP (4'-methyl-a-pyrrolidinopropiophenone), MDPPP (3',4'-methylenedioxy-a-pyrrolidinopropiophenone), a-PVP (1-phenyl-2-(1-pyrrolidinyl)-1-pentanone) or naphyrone (1-naphthalen-2-yl-2-pyrrolidin-1-ylpentan-1-one);

(B) Any derivative of the above listed intoxicating chemical compounds;

(C) Any synthetic substance and its isomers with a chemical structure similar to the above listed compounds;

(D) Any chemical alteration of the above listed intoxicating chemical compounds; or

(E) Any other substantially similar chemical structure or compound; and

(2) Products that elicit psychoactive or psychotropic stimulant effects and are marketed under any of the following trade names: Bliss, Blizzard, Blue Silk, Bonzai Grow, Charge Plus, Charlie, Cloud Nine, Euphoria, Hurricane, Ivory Snow, Ivory Wave, Lunar Wave, Ocean, Ocean Burst, Pixie Dust, Posh, Pure

Ivory, Purple Wave, Red Dove, Scarface, Snow Leopard, Stardust, Vanilla Sky, White Dove, White Night and White Lightning.

The term "psychoactive bath salts" shall not include any product, substance, material, compound, mixture or preparation that is specifically excepted by the California Uniform Controlled Substances Act ("UCSA") (Health and Safety Code §§ 11000 et seq.), listed in one of the UCSA's schedules of controlled substances (Health and Safety Code §§ 11053-11058), regulated by one of the UCSA's Synthetic Drug Laws (Health and Safety Code §§ 11357.5, 11375.5 and 11401), regulated by the Federal Controlled Substances Act (the "CSA") (21 USC §§ 81 et seq.) or approved by the Food and Drug Administration ("FDA").

"Psychoactive herbal incense" means any organic product consisting of plant material that contains a synthetic stimulant compound that, when consumed, elicits psychoactive or psychotropic euphoric effects. The term "psychoactive herbal incense" includes without limitation:

(1) Products that elicit psychoactive or psychotropic euphoric effects and contain any of the following chemical compounds:

(A) *Salvia divinorum* or *salvinorum* A; all parts of the plant presently classified botanically as *salvia divinorum*, whether growing or not, the seeds thereof, any extract from any part of such plant, and every compound, manufacture, salts derivative, mixture or preparation of such plant, its seeds or extracts;

(B) Cannabicyclohexanol 2-[(1R,3S)-3-hydroxycyclohexyl]-5-(2-methylnonan-2-yl)phenol), JWH-018 (naphthalen-1-yl-(1-pentylindol-3-yl) methanone), JWH-073 (naphthalen-1-yl-(1-butylindol-3-yl)methanone), JWH-200 (1-(2-morpholin-4-ylethyl)indol-3-yl)-naphthalen-1-ylmethanone, HU-210 or 1.1-dimethylheptyl-11-hydroxy-delta8-tetrahydrocannabinol) (6aR, 10aR)-9-(Hydroxymethyl)-6,6-dimethyl-3-(2-methyloctan-2-yl)-6a,7,10,10a-tetrahydrobenzo[c] chromen-1-ol), CP 47,497 2-[(1R,3S)-3-hydroxycyclohexyl]-5-(2-methyloctan-2-yl)phenol) and the dimethylhexyl, dimethyloctyl and dimethylnonyl homologues of CP-47, 497, AM-2201 1-[(5-fluoropentyl)-1H-indol-3-yl]-(naphthalen-1-yl)methanone), 1-Pentyl-3-(2-methoxyphenylacetyl)indole (also known as JWH-250), 1-Hexyl-3-(1-naphthoyl)indole (also known as JWH-019), 1-Pentyl-3-(4-chloro-1-naphthoyl)indole (also known as JWH-398), N-benzylpiperazine (also

known as BZP), 1-(3-trifluoromethylphenyl) piperazine (also known as TFMPP);

(C) Any derivative of the above listed intoxicating chemical compounds;

(D) Any synthetic substance and its isomers with a chemical structure similar to the above listed intoxicating chemical compounds;

(E) Any chemical alteration of the above listed intoxicating chemical compounds; or

(F) Any other substantially similar chemical structure or compound; or

(G) Any other synthetic cannabinoid; and

(2) Products that elicit psychoactive or psychotropic euphoric effects and are marketed under any of the following names: K2, K3, Spice, Genie, Smoke, Potpourri, Buzz, Spice 99, Voodoo, Pulse, Hush, Mystery, Earthquake, Stinger, Ocean Blue, Stinger, Serenity, Fake Weed and Black Mamba.

The term "psychoactive herbal incense" shall not include any product, substance, material, compound, mixture, or preparation that is specifically excepted by the UCSA (Health and Safety Code §§ 11000 et seq.), listed in one of the UCSA's schedules of controlled substances (Health and Safety Code §§ 11053—11058) regulated by one of the USCA's Synthetic Drug Laws (Health and Safety Code §§ 11357.5, 11375.5 and 11401), regulated by the CSA (21 USC §§ 81 et seq.) or approved by the FDA.

"Psychoactive or psychotropic stimulant effects" means affecting the central nervous system or brain function to change perception, mood, consciousness, cognition or behavior in ways that are comparable to the effects of cocaine, methylphenidate or amphetamines.

"Psychoactive or psychotropic euphoric effects" means affecting the central nervous system or brain function to change perception, mood, consciousness, cognition or behavior in ways that are similar to the effects of cannabis.

"Sell" "Selling" or "Sale" means to furnish, exchange, transfer, deliver or supply for monetary gain.

“Synthetic drug” shall include psychoactive bath salts and psychoactive herbal incense, as those terms are defined hereinabove.

11.11.030 – Possession, Storage, Provision, Sale, and Distribution of Synthetic Drugs Prohibited

- (A) It is unlawful for any person to provide, display for sale, distribute or sell any synthetic drug within the City of Moreno Valley.
- (B) Merely disclaiming a synthetic drug as "not safe for human consumption" will not avoid the application of this section.
- (C) It is unlawful for any person to store, provide, sell, or distribute, or to permit the storage, provision, sale, or distribution of synthetic drugs from any real property owned, possessed, managed, or controlled by that person in the city of Moreno Valley.

11.11.040 - Provision, Display for Sale, Sale or Distribution of Substances Claimed or Represented to Be Synthetic Drugs Prohibited

- (A) It is unlawful for any person to claim or represent that a product that person is providing, displaying for sale, distributing or selling is a synthetic drug within the City of Moreno Valley.
- (B) To determine if a person is claiming or representing that a product is a synthetic drug, the enforcing officer may consider any of the following evidentiary factors:
 - (1) The product is not suitable for its marketed use (such as a crystalline or powder product being marketed as "glass cleaner");
 - (2) The business providing, displaying for sale, distributing or selling the product does not typically provide, distribute or sell products that are used for that product's marketed use (such as a liquor store selling "plant food");
 - (3) The product contains a warning label that is not typically present on products that are used for that product's marketed use (such as "not for human consumption," "not for purchase by minors," or "does not contain chemicals banned by section 11357.5");

- (4) The product is significantly more expensive than products that are used for that product's marketed use (such as half of a gram of a substance marketed as "glass cleaner" costing \$50.00);
 - (5) The product resembles an illicit street drug (such as cocaine, methamphetamine or marijuana); or
 - (6) The product's name or packaging uses images or slang referencing an illicit street drug (such as "Eight Ballz" or "Green Buddha").
- (C) Merely disclaiming a substance claimed or represented to be a synthetic drug as "not safe for human consumption" will not avoid the application of this section.

11.11.050 – Possession of Synthetic Drugs Prohibited

It is unlawful for any person to possess any synthetic drug within the City of Moreno Valley.

11.11.060 - Public Nuisance

- (A) It is a public nuisance for any person to provide, display for sale, distribute or sell any synthetic drug within the City of Moreno Valley.
- (B) It is a public nuisance for any person to allow the provision, display for sale, distribution or sale of any synthetic drug on property owned, controlled or managed by such person within the City of Moreno Valley.
- (C) It is a public nuisance for any person to provide, display for sale, distribute or sell any substance claimed or represented to be a synthetic drug within the City of Moreno Valley.
- (D) It is a public nuisance for any person to allow the provision, display for sale, distribution or sale of any substance claimed or represented to be a synthetic drug on property owned, controlled or managed by such person within the City of Moreno Valley.

- (E) To determine if a person is claiming or representing that a substance or product is a synthetic drug, the enforcing officer may consider any of the evidentiary factors set forth in Section 11.11.040 of this chapter.
- (F) Civil Remedies Available; Remedies Cumulative. In addition to the penalties provided in Section 11.11.080, any property used in violation of any provision of this chapter shall constitute a public nuisance and may be abated by the city by civil process by means of a restraining order, a preliminary or permanent injunction, or in any manner provided by law for the abatement of such nuisance. All remedies herein are cumulative and non-exclusive.
- (G) Attorneys' Fees. Any person, including the city of Moreno Valley, who prevails in any action or proceeding for the abatement of a public nuisance as provided herein shall be entitled to recover attorneys' fees incurred in any such action or proceeding.

11.11.070 – Summary of Abatement

Because the use of synthetic drugs has been documented to cause hallucinations, agitation, psychosis, aggression, suicidal and homicidal ideations, cannibalism and death, any violation of this division presents a grave and imminent danger not only to the person consuming the synthetic drug, but also to the public at large. If the code compliance officer, based on the facts then known, determines that a violation of this division presents an imminent danger or hazard or is imminently injurious to the public health or safety, then that violation is punishable by the summary abatement procedures set forth Section 6.040 of this Code.

11.11.080 - Penalties

- (A) Misdemeanor violation. Failure to comply with any of the requirements of this division is a misdemeanor punishable by imprisonment in the county jail for a period not exceeding six months or by fine not exceeding \$1,000.00, or by both, provided that where the city attorney determines that such action would be in the interest of justice, he/she may specify in the accusatory pleading that the offense shall be an infraction.
- (B) Infraction violation. Where the city attorney determines that, in the interest of justice, a violation of this division is an infraction, such infraction is punishable by a fine not exceeding \$100.00 for a first violation, a fine not

exceeding \$200.00 for a second violation of the same provision within one year, and a fine not exceeding \$500.00 for each additional infraction violation of the same provision within one year. An infraction is not punishable by imprisonment. A person charged with an infraction shall not be entitled to a trial by jury and shall not be entitled to have the public defender or other counsel appointed at public expense to represent him/her, unless he/she is arrested and not released on his/her written promise to appear, his/her own recognizance or a deposit of bail. However, any person who has previously been convicted two or more times during any 12-month period for any violation of this division for a crime made punishable as an infraction shall be charged with a misdemeanor upon the third violation.

- (C) The fine amounts set forth above may be modified, from time to time, by city council resolution. In no event shall such fine amounts exceed the amounts authorized by state law.

11.11.090 - Seizure of Evidence

Any product(s) or substance(s) possessed, provided, distributed or sold in violation of any provision of this division shall be seized by the enforcing officers and removed, stored and disposed of in accordance with law.

11.11.100 - Exclusions

- (A) This division shall not apply to drugs or substances lawfully prescribed or to intoxicating chemical compounds that have been approved by the federal Food and Drug Administration or which are specifically permitted by California law, including without limitation, intoxicating chemical compounds that are specifically excepted by the California Uniform Controlled Substances Act (Health and Safety Code § 11000 et seq.).
- (B) This division shall not apply to drugs or substances that are prohibited by state or federal law, including without limitation, California Health and Safety Code §§ 11357.5, 11375.5, 11401 and the Federal Controlled Substances Act.
- (C) This division shall not be deemed to prescribe any act that is positively permitted, prohibited or preempted by any state or federal law or regulation.

SECTION 2. EFFECTIVE DATE

This ordinance shall become effective thirty (30) days after the date of adoption.

SECTION 3. SEVERABILITY

If any provision of this ordinance or the application thereof to any person or circumstance is held invalid, such invalidity shall not affect other provisions or applications, and the provisions of this ordinance are declared to be severable.

SECTION 4. EFFECT OF ENACTMENT:

Except as specifically provided herein, nothing contained in this ordinance shall be deemed to modify or supersede any prior enactment of the City Council which addresses the same subject addressed herein.

SECTION 5. NOTICE OF ADOPTION:

Within fifteen days after the date of adoption hereof, the City Clerk shall certify to the adoption of this ordinance and cause it to be posted in three public places within the city.

APPROVED AND ADOPTED this 28th day of October, 2014.

Mayor

ATTEST:

City Clerk

APPROVED AS TO FORM:

City Attorney

10
Ordinance No. 885
Date Adopted: October 28, 2014

ORDINANCE JURAT

STATE OF CALIFORNIA)
COUNTY OF RIVERSIDE) ss.
CITY OF MORENO VALLEY)

I, Jane Halstead, City Clerk of the City of Moreno Valley, California, do hereby certify that Ordinance No. 885 had its first reading on October 14, 2014 and had its second reading on October 28, 2014, and was duly and regularly adopted by the City Council of the City of Moreno Valley at a regular meeting thereof held on the 28th day of October, 2014, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

(Council Members, Mayor Pro Tem and Mayor)

CITY CLERK

(SEAL)

11
Ordinance No. 885
Date Adopted: October 28, 2014

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ORDINANCE NO. 880

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF MORENO VALLEY, CALIFORNIA, APPROVING PA13-0068 (CHANGE OF ZONE) CHANGING THE ZONING FROM NEIGHBORHOOD COMMERCIAL (NC) TO RESIDENTIAL 30 (R30) AND PLACING THE MIXED USE OVERLAY DISTRICTS DESIGNATION ON THREE PARCELS (APNS: 485-220-019, 485-220-026, AND 485-220-027) LOCATED AT THE SOUTHWEST CORNER OF PERRIS BOULEVARD AND SANTIAGO DRIVE.

The City Council of the City of Moreno Valley does ordain as follows:

SECTION 1.

1.1 Pursuant to the provisions of law, public hearings were held before the City of Moreno Valley Planning Commission and the City Council.

1.2 The matter was fully discussed and the public and other agencies presented testimony and documentation.

1.3 Page 140 of the City of Moreno Valley Official Zoning Atlas shall be modified to reflect the Zone Change (PA13-0068) and the addition of the three parcels into the Mixed Use Overlay Districts as "Mixed-Use Neighborhood (MUN)".

1.4. An Initial Study has been completed for PA13-0068 (Zone Change). Based upon the Initial Study, a determination has been made that this project will not result in a significant impact to the environment. Therefore, adoption of a Negative Declaration is appropriate.

SECTION 2: FINDINGS

2.1 With respect to the proposed change to page 140 of the City of Moreno Valley Official Zoning Atlas, and based upon substantial evidence presented to the City Council during the public hearing on June 26, 2014, including written and oral staff reports, and the record from the public hearing, the City Council hereby specifically finds as follows:

1. Conformance with General Plan Policies – The proposed Change of Zone is consistent with the General Plan and its goals, objectives, policies and programs.

FACT: The project includes two applications, a General Plan Amendment and Zone Change to change the existing land use for three parcels (Assessor's Parcel Numbers 485-220-019, 485-220-026, and 485-220-027). This project proposes to change the General Plan designation from Commercial (C) to R30 (Residential 30), and the zoning designation from Neighborhood Commercial

(NC) to R30 (Residential 30). The Mixed Use Districts Overlay will also be expanded to include these three parcels as Mixed-Use Neighborhood (MUN).

There is no development application associated with the proposed land use change. The request for the General Plan Amendment and Change of Zone was made by the current owner of the property, Perris at Pentecostal LLC, for consistency with the existing land use designations of their property to the west and southwest.

The Transportation Engineering Division required a traffic analysis for the General Plan Amendment. The Traffic Analysis found that if the land use designation is changed as requested, then project related trips are projected to decrease by 466 daily trips. It was assumed that 30 apartment units would be developed with the land use change. This would result in 200 daily trips. Capacity analyses performed for the land use change under General Plan build-out conditions showed adequate capacity along Perris Boulevard with a satisfactory level of service.

Since future development under the proposed Change of Zone would result in fewer daily trips than a development under the current zoning and be consistent with the proposed General Plan designation, Change of Zone and Mixed Use Districts Overlay, the project would not conflict with the goals, objectives, policies or programs of the General Plan.

2. Health, Safety and Welfare – The proposed Change of Zone will not be detrimental to the public health, safety or welfare or materially injurious to properties or improvements in the vicinity.

FACT: The proposed Change of Zone will not adversely affect the public health, safety or general welfare. An Initial Study has been prepared in accordance with the provisions of the California Environmental Quality Act (CEQA). Based on the Initial Study, it was determined that the potential impacts of the project, including the Change of Zone, are at a less than significant level. A Negative Declaration is recommended.

3. Conformance with Title 9 – The proposed amendment to change the zoning atlas is consistent with the purposes and intent of Title 9.

FACT: With the adoption of the proposed Change of Zone, the proposed project would be consistent with the zoning. As proposed, the Change of Zone from Neighborhood Commercial (NC) to R30 (Residential 30) for the 2.68 acres is consistent with the purposes and intent of Title 9. The proposed Residential 30 (R30) use is compatible with the established land use designations of the parcels to the west, northwest and southwest of the project parcels, including the four parcels also owned by Perris at Pentecostal LLC. The four parcels currently

zoned Residential 30 (R30) total approximately 23 acres and with the addition of these three parcels, the acreage will total approximately 25.68.

SECTION 3: ZONE CHANGE

3.1 Based on the findings contained in Section 2 of this Ordinance, the City Council hereby adopts a Zone Change to change the zoning district from Neighborhood Commercial (NC) to R30 (Residential 30) and into the Mixed Use Overlay Districts as "Mixed-Use Neighborhood (MUN)" for the approximately 2.68 acres located at the southwest corner of Perris Boulevard & Santiago Drive and north of Iris Avenue (APNs: 485-220-019, 485-220-026, and 485-220-027), subject to the revised zoning designations depicted in the attached Exhibit A.

SECTION 4: EFFECT OF ENACTMENT

4.1 Except as specifically provided herein, nothing contained in this ordinance shall be deemed to modify or supersede any prior enactment of the City Council which addresses the same subject addressed herein.

SECTION 5: NOTICE OF ADOPTION

5.1 Within fifteen days after the date of adoption hereof, the City Clerk shall certify to the adoption of this ordinance and cause it to be posted in three public places within the city.

SECTION 6: EFFECTIVE DATE

6.1 This ordinance shall take effect thirty days after the date of its adoption.

APPROVED AND ADOPTED this 14th day of October, 2014.

Mayor

ATTEST:

City Clerk

APPROVED AS TO FORM:

City Attorney

ORDINANCE JURAT

STATE OF CALIFORNIA)

COUNTY OF RIVERSIDE) ss.

CITY OF MORENO VALLEY)

I, Jane Halstead, City Clerk of the City of Moreno Valley, California, do hereby certify that Ordinance No. 880 had its first reading on September 23, 2014 and had its second reading on October 14, 2014, and was duly and regularly adopted by the City Council of the City of Moreno Valley at a regular meeting thereof held on the 14th day of October, 2014, by the following vote:

AYES:

NOES:

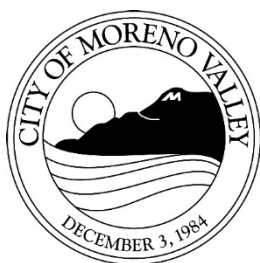
ABSENT:

ABSTAIN:

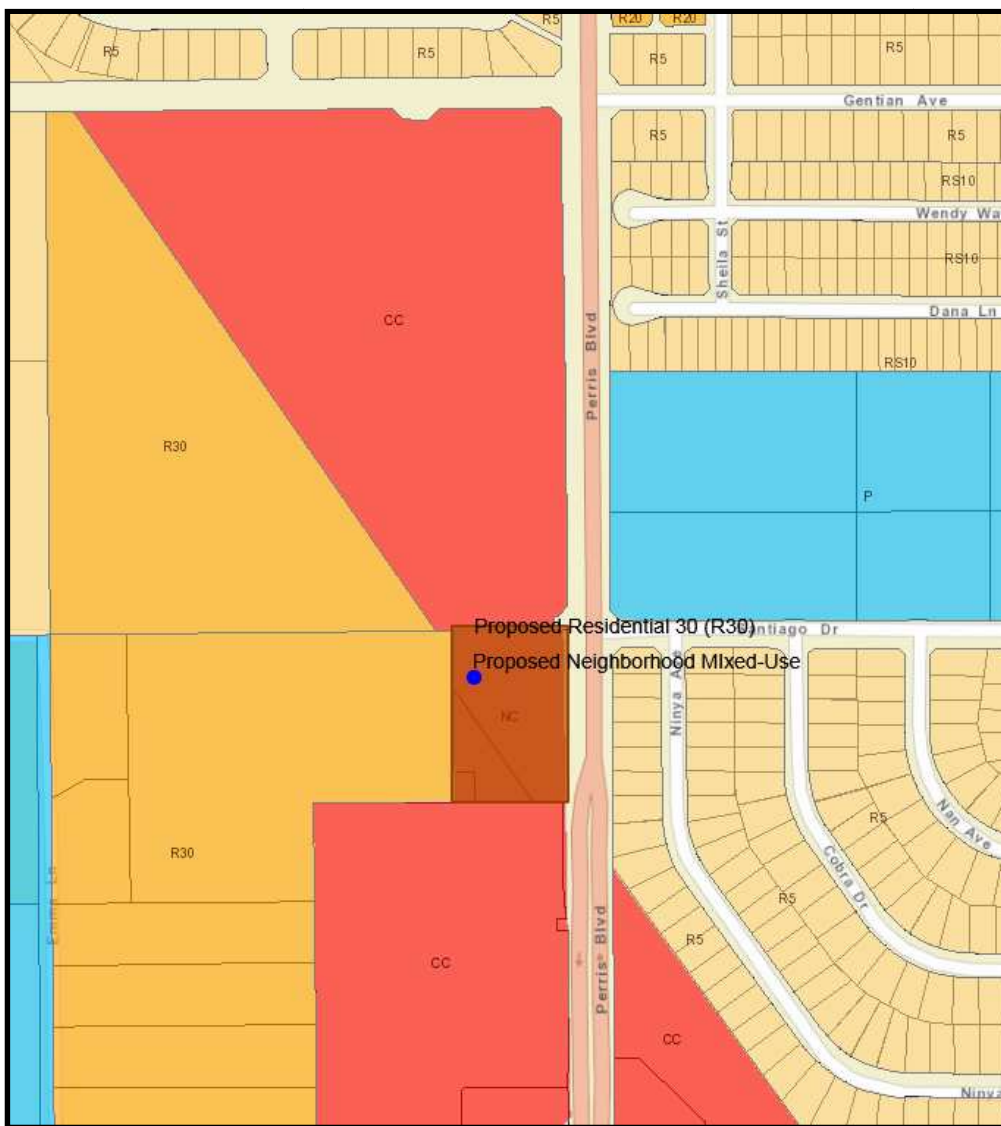
(Council Members, Mayor Pro Tem and Mayor)

CITY CLERK

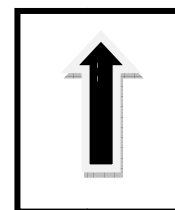
(SEAL)



CHANGE OF ZONE
ORDINANCE NO. 880
 (Related to PA13-0068)
 Date Adopted: October 14, 2014
 Effective Date: November 13, 2014



Proposed Zoning/Mixed-Use Overlay Districts:	R30/MUN
Residential 30 (R30) & Mixed-Use Neighborhood (MUN)	
Current Zoning: Neighborhood Commercial (NC)	NC



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 Ordinance No. 880
 Date Adopted: October 14, 2014

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